



Sargent Quarry Mining and Reclamation Plan

February 2022



Name and Address of Owner

(PRC §2772(c)(1)):

See attached list of Owners

Contact: Howard Justus

Telephone: 619 220 8900

Name and Address of Operator

Sargent Ranch Partners, LLC

Agent

Freeman Associates

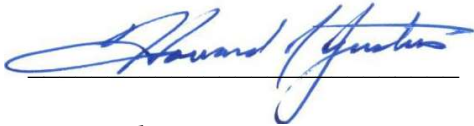
994 San Antonio Road

Palo Alto, CA 94303

STATEMENT OF RECLAMATION RESPONSIBILITY (PRC §2772(c)(10))

I certify that the information in this Sargent Quarry Mining and Reclamation Plan is correct, to the best of my knowledge, and that all of the owners of possessory interest in the property in question have been notified of the planned operation and potential uses of the land after reclamation. I also certify that I am authorized on behalf of Sargent Ranch Partners, LLC to accept responsibility for reclaiming the mined lands described and submitted herein, with any modification required by the Santa Clara County and agreed to as Conditions of Approval.

Signed this 6 day of July, 2020.



Howard Justus

for Sargent Ranch Partners, LLC.

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PLAN SUMMARY

Operation Name:	Sargent Quarry
California Mine Identification Number:	California Mine ID _____.
Mine Operator:	Sargent Ranch Partners LLC
Street Address or P.O. Box:	Old Monterey Road
City, State, Zip Code:	Gilroy, California
Telephone Number:	
Contact Person:	Howard Justus
Owner of Property Name:	See attached list
Owner of Mineral Rights:	See attached list
Street Address or P.O. Box:	PO Box 60094
City, State, Zip Code:	San Diego, CA 92166
Telephone Number:	619 220 8900
Contact Person:	Howard Justus
Location:	Approximately 5 miles south of the City of Gilroy off Highway 101 in Santa Clara County, CA
Assessor's Parcel Numbers:	Portions of 810-38-014, 017, and 018 Also see Appendix A, Site Legal Description
Section, Township and Range:	Sections 32 & 33 of Township 11 South, Range 4 East and Sections 5, 6 & 7 Township 12 South, Range 4 East MDB&M
Latitude and Longitude (at center of project):	36°55'01" N Latitude 121°33'47" W Longitude
Directions to the site:	From Gilroy drive approximately 5 miles south on Highway 101 to Old Monterey Road; site on the right
Total area within plan boundary	403+- acres
Total area to be mined:	Approximately 298 acres (excluding geotechnical setback areas)
Total area to be reclaimed:	Approximately 403 acres (including geotechnical setback areas)
Quantity and type of materials to be mined:	35,016,000 cubic yards of overburden, sand and gravel.
Proposed start-up date and Termination date:	Anticipated Start-up: January 2023 Anticipated Termination: December 31, 2053
Potential land use after reclamation:	Mined lands will be reclaimed to a condition suitable for cattle ranching

1 PURPOSE AND OBJECTIVES

1.1 PURPOSE OF PLAN

The Sargent Quarry Mining and Reclamation Plan has been prepared in accordance with the requirements of the California Surface Mining and Reclamation Act (SMARA, or the statute) found in California Public Resources Code (PRC) Section 2710 et seq., the state regulations implementing SMARA found in Title 14 of the California Code of Regulations (CCR) Section 3500 et seq., and the Santa Clara County zoning ordinance 4.10.370, and Santa Clara County General Plan. "SMARA was enacted by the Legislature in recognition that 'the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety.' (See § 2711, subd. (a).)" (*Mineral Associations Coalition v. State Mining & Geology Bd.* (2006) 138 Cal.App.4th 574, 580.)

This Mining and Reclamation Plan describes the proposed mining of sand and gravel in accordance to the mining plans developed by Triad Holmes Associates. Aggregate materials (sand and gravel) are extracted from a pit and hillside deposit in the foothills of the Coast Range Mountains. The project, totaling a 403-acre area (298 acres of which would be actively mined), includes four phases of mining areas on an existing cattle ranch. The Plan is prepared in a format that addresses each reclamation plan requirement found in the statute (primarily PRC §2772-2773, 2773.3) and the standards that must be met in reclamation implementation, as specified in CCR §3500-3505 and CCR §3700 through CCR §3713. Applicable PRC and CCR references are provided throughout this document.

The Mining and Reclamation Plan is intended to serve several purposes:

1. Describe the mining and reclamation process and standards as specified in PRC §2772 and CCR §3502, including ensuring compliance with all applicable performance standards set forth in CCR §§3700-3713;
2. Serve as a reference manual for the mine operator to guide mining and site reclamation consistent with the approved Plan, to assist in regulatory compliance for operational activities, and to provide appended regulation and informational materials; and
3. Serve as a compliance document for the County of Santa Clara, as Lead Agency, in monitoring ongoing compliance with the Mining and Reclamation Plan, as approved.

This Mining and Reclamation Plan, for the mining of a new surface area, has been written to be consistent with the mining ordinances and regulations of Santa Clara County

4.10.370, and SMARA requirements found primarily in PRC §2772-2773, and in CCR §3502. Minimum standards to be followed (CCR §3503) and reclamation performance standards (CCR §3700 *et seq.*), as applicable to the operation and its approved plan, must be met during operations and reclamation. This Plan employs a comprehensive approach to the statute and regulations to avoid ambiguity in determining regulatory compliance during mining, on-going operations, reclamation, and post-reclamation.

1.2 SITE HISTORY, APPROVED PLANS, AND AMENDMENTS

1.2.1 History and Mining Authority

The Sargent Ranch property is owned by a number of tenants in common. A list is attached as Table 19. Sargent Ranch Partners LLC will operate the Sargent Quarry. The operation is new and no previous mining has occurred on the site. The Sargent Ranch property encompasses 5,274 acres in Santa Clara County. The ranch has a long history dating back to the 1850s when it was created from Spanish land grants. The ranch has been used primarily as a cattle ranch with some portions of the property engaged in oil production.

1.2.2 Reclamation Plan Approvals

No previous Mining and Reclamation Plan has been approved for the project site. This Plan does not amend or supersede any other plans.

1.3 MINING AND RECLAMATION OBJECTIVES (CCR §3502(a))

The Mining and Reclamation Plan includes actions designed to meet physical reclamation treatment objectives for lands disturbed by mining activities:

- Provide for long-term stability of slopes;
- Prevent wind and water erosion by stabilizing the soil surface through proper grading, erosion control, drainage, and revegetation; and
- Implement a revegetation program that is designed to establish self-sustaining native and naturalized vegetative cover.

In enacting SMARA, the legislature clearly expressed its intent for the following in mining and reclamation:

PRC §2712(a) Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses.

PRC §2712(b) The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.

PRC §2712(c) Residual hazards to the public health and safety are eliminated.

The mining and reclamation activities described in this Mining and Reclamation Plan are specifically developed and formatted to address these fundamental legislative objectives. The Reclamation Standards described in Section 4.6 are formatted to respond to the applicable requirements of the statute and regulations.

1.4 PROPOSED POST RECLAMATION LAND USE (PRC §2772(c)(7))

1.4.1 Land Use Goal

Reclamation of the Sargent Quarry includes the proposed restoration of the mined surface areas to a condition suitable for subsequent cattle grazing as depicted in Figures 17 through 20. All owners of a possessory interest in the land have been notified of this proposed potential use as evidenced by the Statement of Reclamation Responsibility enclosed herein.

1.4.1.1 General Plan

The County's general plan designates the site as "AR Agricultural Ranchlands." Mining is consistent with that designation, provided that a conditional use permit is obtained. No general plan amendments are necessary for the approval of this Mining and Reclamation Plan.

1.4.1.2 Zoning

Santa Clara County Surface Mining Ordinance, Section 4.10.370 lists requirements for all surface mining operations in the County. This Mining and Reclamation Plan conforms to all the development standards listed in the referenced zoning code, and reflects the applicant's request for a deviation from the Planning Commission from the County's standard permitted hours of operation (6:00 a.m. – 8:00 p.m.). The Project site is zoned AR-d1 and AR-d1-sr. The AR zone refers to Agricultural Ranchlands, where surface mining is a permitted use subject to obtaining a Use Permit and Architecture and Site Approval (Zoning Code Section 2.20.010 (B); Santa Clara County 2018).

1.4.2 Mining and Reclamation Overview

Mining is planned to be conducted in four phases, shown on Figure 2. (See also Figures 9 through 16: Mine Grading Plans.) During the first phase the operations area will be set up to include an office, shop and maintenance buildings, bone yard, employee and equipment parking area, scale, existing well, aggregate processing plant with stockpiles, process water pond, and sediment basin. Before mining can commence at the beginning of each phase of the quarry to be mined, the vegetation will be removed and disposed of off-site, and then the topsoil and overburden will be removed and stockpiled separately in accordance with CCR §3711 [performance standards for topsoil salvage, maintenance

and redistribution]. Extraction of sand and gravel will result in temporary slopes with gradients of 2:1 and 10-foot-wide benches every 40 vertical feet, Figures 9 through 16.

Mining operations will begin in Phase 1, as shown on Figure 10, with overburden placed to create a berm adjacent to Hwy 101. For access to Phases 3 and 4 an overland conveyor with a 22-foot wide maintenance road will be constructed as shown on Figures 9a and b. Generally, the road will follow the east side of the western ridge of the Sargent Valley, staying out of the Sargent Valley floor and riparian corridor and also remaining hidden from view from Highway 101.

Some of the Phase 1 overburden may be placed in a berm to the west of the plant site shown on Figure 9. These berms will be landscaped and graded to resemble the surrounding topography to the greatest extent possible. Once sand and gravel excavation in Phase 1 is complete, operations will move westerly into the Phase 2 area of the quarry. Reclamation actions will also begin in the Phase 1 area. Overburden from Phase 2 will be placed in the excavated area of Phase 1 and also be used to construct the permanent slope faces. Slopes will be seeded as is detailed in Chapter 4 "Reclamation Plan". The maintenance road will be left in place to continue to provide access to the mined locations, while reclamation activities are still ongoing.

Phase 1 and 2 mining operations are closer to the plant site and may use a conveyor belt to transport material to the plant site. Mining operations will use the disappearing hillside mining method, mining the back side of hills to minimize visual impacts. Phase 1 and 2 overburden will be stockpiled in the berm located to west of the plant site shown on Figure 8. Much of the overburden will be used in the final reclamation of the Phase 1 and 2 pit area to create the final 2:1 slopes. Topsoil from all phases will be also be stored separately. Topsoil will be used to cover the finished slopes just prior to re-seeding.

Final slopes of all phases may have to be laid back at a gentler angle to achieve final stability under SMARA. These geotechnical setback areas are shown on Figures 10 through 13.

Beginning with Phase 2, reclamation will be ongoing while other portions of the site are being mined. The Operator will construct fill slopes against the cut slopes to leave the site with stable slope gradients of 3:1, which will be suitable for the designated end use (Figure 17: Phase 3 and 4 Final Reclamation). Slopes will be revegetated with plant species suitable for erosion control and similar to vegetative cover that is naturally occurring in the surrounding area consistent with CCR 3705. (See Figure 23: Revegetation Plan). Additional oak tree planting will further integrate the reclaimed area with the surrounding undisturbed lands. Grading will be completed in such a manner as to ensure proper surface drainage (Figures 17 and 18). Surfaces will be graded or stabilized for erosion control. All equipment and structures associated with the mining operation will be removed.

Recoverable topsoil will be stockpiled for use in areas that are re-contoured and revegetated. The soil will be placed to enhance revegetation as surfaces are completed. The revegetated areas will be monitored and sampled to measure success after completion of final reclamation to ensure successful revegetation and erosion control. (See CCR §3705(m).)

1.5 ENVIRONMENTAL COMPLIANCE

The California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 *et seq.*) requires the preparation of an Environmental Impact Report (EIR) for any project that a Lead Agency determines may have a significant impact on the environment. According to Section 21002.1(a) of the CEQA Statutes: *“The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.”* CEQA also establishes mechanisms whereby the public and decision makers can be informed about the nature of the project being proposed, and the extent and types of impacts that the project and its alternatives would have on the environment if they were to be implemented.

The overall purpose of an EIR is to assess and disclose potential impacts to the physical environmental associated with the construction and maintenance of the proposed project. The EIR process and the information it generates will be used for the following purposes:

- To give government officials and the community the opportunity to have input into the decision-making process;
- To provide agencies with information necessary to determine if they have jurisdiction over some aspect of the project and, if so, to identify project permitting requirement; and
- To assist the public and decisionmakers with understanding the reasonably foreseeable and potentially significant adverse environmental effects of the Project, and the potentially feasible mitigation measures and alternatives to avoid or substantially lessen those significant effects.

An EIR will be prepared for the proposed project in compliance with all criteria, standards, and procedures of CEQA. (Pub. Resources Code Section 21000 *et seq.*; Cal. Code Regs., tit. 14, Section 15000, *et seq.*). The State Clearinghouse Identification Number for the EIR is SCH 2016072058.

Z:\01 Mammoth\020 Sargent Ranch\Local\Improvement Plans\Plan Set_R4\Fig. 1 Regional Location.dwg Dec 01, 2020 - 11:56am, rpaolovsky



t h a
trud/haines assoc
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 land surveying
 MAMMOTH LAKES
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PREPARED & SUBMITTED BY:
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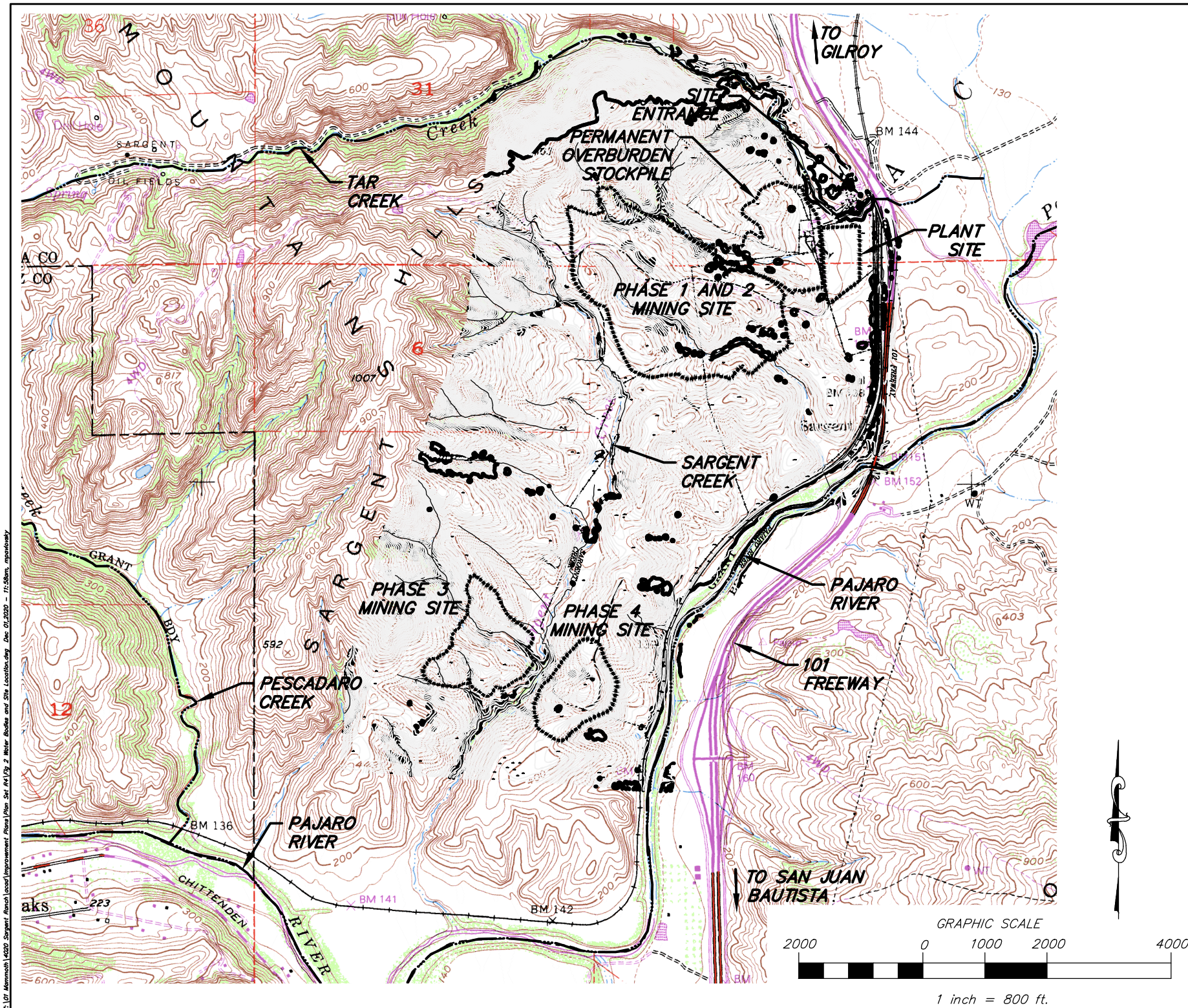
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 PALO ALTO, CA 94303

SARGENT RANCH QUARRY
REGIONAL LOCATION MAP

DATE: 12/01/2020
 SCALE: AS SHOWN
 DRAWN: SCR
 JOB NO.: 01.4020
 DWG:

NOT TO SCALE

FIGURE 1



2:107 Mammoth 14020 Sargent Ranch Load Improvement Plans (Plan Set AK157) 2 Meter Bodies and Site Location.dwg Dec 01/2020 - 11:58am mapshow

PREPARED & SUBMITTED BY:
 DATE:

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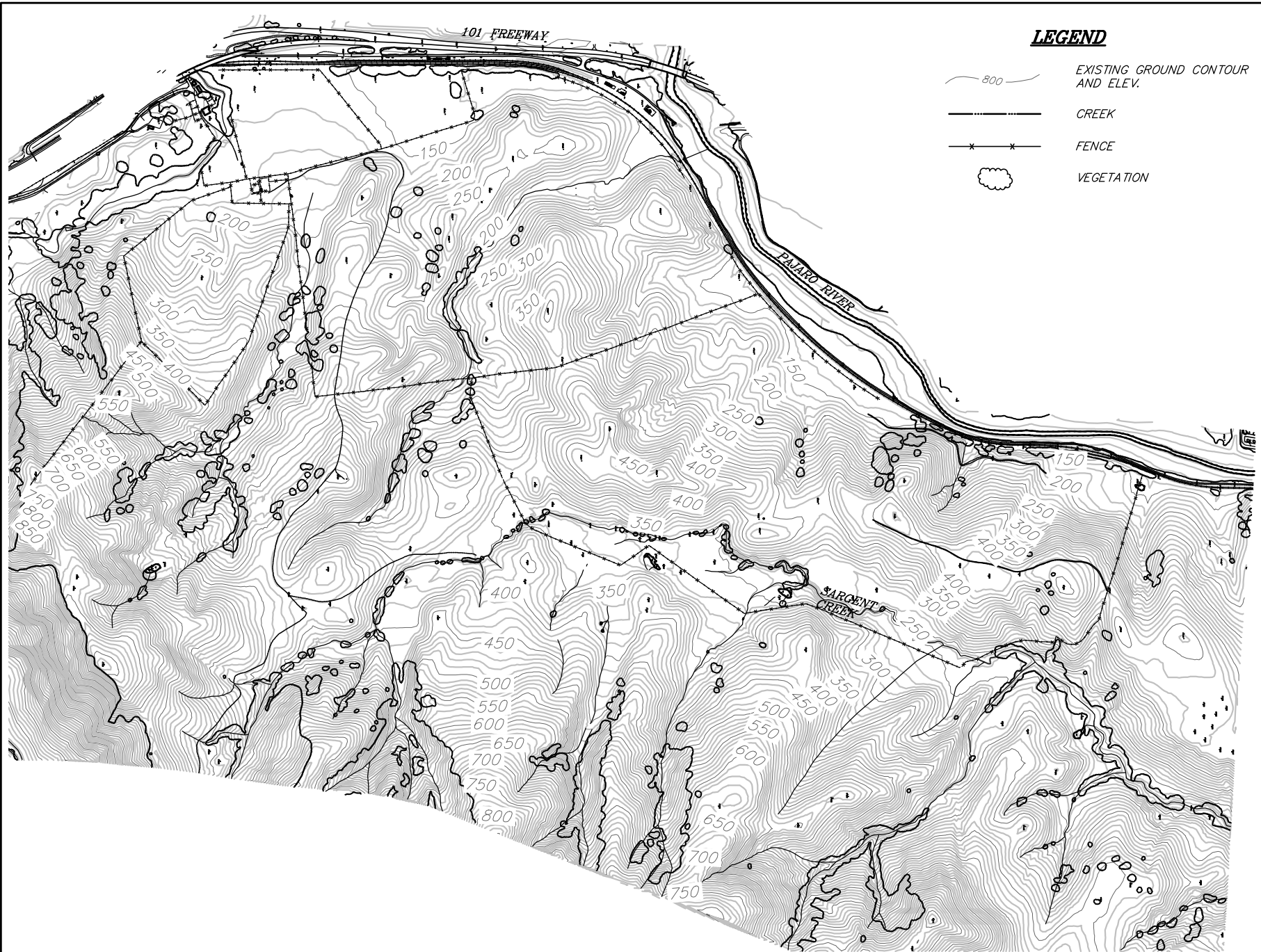
REVISIONS	BY:

PREPARED FOR:
 NERVE FREEMAN
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 PALO ALTO, CA 94303





SARGENT RANCH QUARRY
SURFACE WATER BODIES
AND SITE LOCATION

DATE: 12/01/2020
 SCALE: AS SHOWN
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FIGURE 2



LEGEND

-  800 EXISTING GROUND CONTOUR AND ELEV.
-  CREEK
-  FENCE
-  VEGETATION

t h a
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 civil engineering
 land surveying
 MAMMOTH LAKES
 BISHOP
 REDWOOD CITY
 SAN LUIS OBISPO
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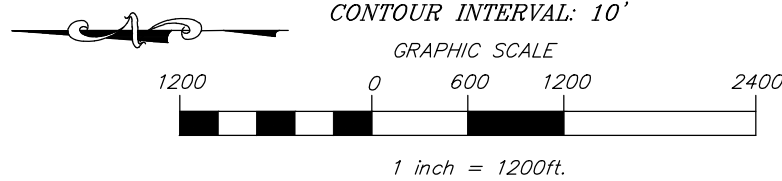
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 ONE SAN ANTONIO RD
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**SARGENT RANCH QUARRY
 EXISTING CONDITIONS**

- NOTES:**
1. EXISTING DRAINAGE IS SHOWN ON FIGURE 4.
 2. EXISTING GEOLOGY IS SHOWN ON FIGURE 6.
 3. EXISTING BIOTIC HABITATS ARE SHOWN ON FIGURE 7.
 4. PLANT SITE IMPROVEMENTS ARE SHOWN ON FIGURE 8.



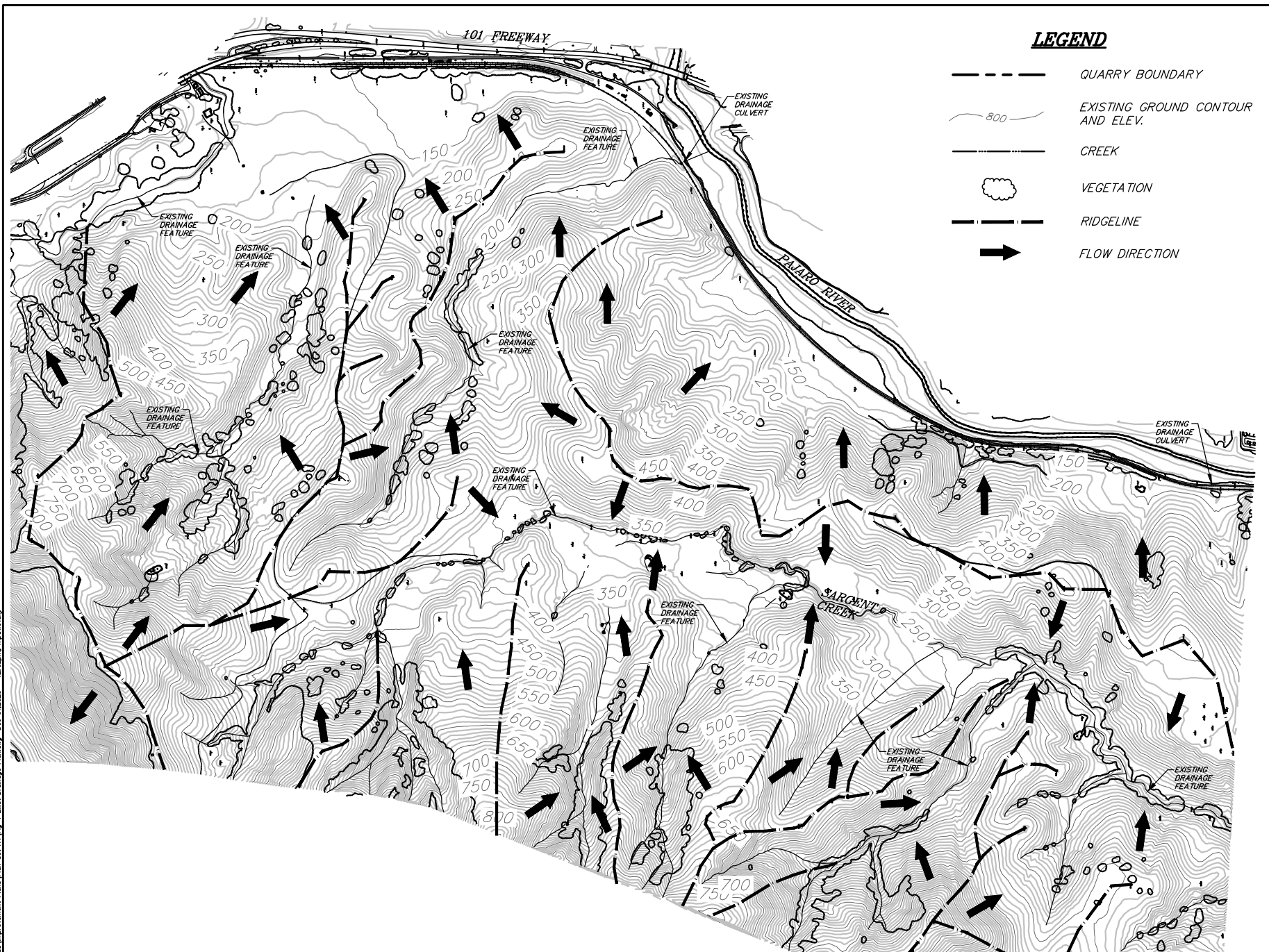
DATE 12/01/2020
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FIGURE 3

Z:\07 Mammoth\4020 Sargent Ranch\Load\Improvement Plans\Plan Set\AK179 J Existing Conditions.dwg Dec 01, 2020 - 12:07pm, mparsons

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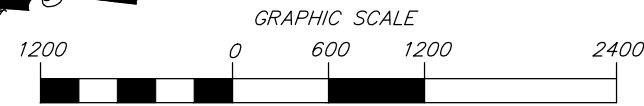
SARGENT RANCH QUARRY
EXISTING DRAINAGE PLAN



LEGEND

- QUARRY BOUNDARY
- 800 EXISTING GROUND CONTOUR AND ELEV.
- CREEK
- ☁ VEGETATION
- RIDGELINE
- ➔ FLOW DIRECTION

CONTOUR INTERVAL: 10'



- NOTES:**
- EXISTING GEOLOGY IS SHOWN ON FIGURE 6.
 - EXISTING BIOTIC HABITATS ARE SHOWN ON FIGURE 7.

Z:\01 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set_R41\79_4 Exist Drainage Plan.dwg Dec 01 2020 12:02pm mammoth

2 SITE DESCRIPTION AND ENVIRONMENTAL SETTING (CCR §3502(b)(1))

This section (2.0) is intended to satisfy the requirement of sections 3502, subdivision (b)(1) and 3705, subdivision (a), of Title 14 of the California Code of Regulations, as well as some of the requirements of Public Resources Code section 2772. The former provision requires that a reclamation plan include a discussion of “the environmental setting of the site of operations and the effect that possible alternative reclaimed site conditions may have upon the existing and future uses of surrounding lands.” The latter provision identifies the information that by statute must be included in a reclamation plan. Much of the background information included in this section is also relevant to later portions of this document dealing with specific reclamation practices and standards. Where environmental setting information is relevant to such practices and standards, this section will identify the relevant statutes and regulations.

2.1 SITE LOCATION AND SIZE (PRC §2772(c)(5))

Sargent Quarry is located approximately five miles south of Gilroy, Calif. (see Figure 1: Regional Location, and Figure 2: Site Location), in Santa Clara County. The mine operations and processing areas occupy approximately 403 acres of a 5,274 acre site on portions of Assessor’s Parcel numbers 810-38-014, 017 and 016 and is contained in the USGS 7.5’ Chittenden Quadrangle. Of the 403 acres, 298 acres are proposed for mining and 105 acres as geotechnical setback areas. The site is further identified as being located within Sections 32 & 33 of Township 11 South, Range 4 East and Sections 5, 6 & 7 Township 12 South, Range 4 East MDB&M.

2.1.1 Legal Description

The APN map of the Sargent Quarry is shown in Figure-5 and included in Appendix A. The approximately 403-acre area is located in an unincorporated section of Santa Clara County, Calif., within the foothills of the Coast Range Mountains.

2.2 TOPOGRAPHY

Elevations of the existing proposed Sargent Quarry site ranges from a high of approximately 650 feet National Geodetic Vertical Datum (NGVD) near the northwestern edge of the site boundary, to a low of approximately 120 feet NGVD at the easterly edge of the processing area.

2.3 PATTERN OF OWNERSHIP & USES ON & SURROUNDING THE SITE

The mining site consists of an irregularly shaped group of parcels, which is generally bordered by State Highway 101 to the northeast with Tar Creek on the north side of the highway, and open rangeland beyond that. Open rangeland also borders the site to the northwest and southwest. To the east are the Pajaro River, the Union Pacific rail line and Highway 101. The major land use in the immediate vicinity of the site is rangeland. Graded ranch roads and corrals and a few ranch buildings are the only improvements currently evident on the site. The parcels immediately adjacent to the quarry site and their land uses are depicted in Figure 5: Ownership Map, and their ownership are shown on Table 1. The existing land use on the proposed project site is cattle grazing, some oil extraction and an undeveloped mineral reserve.

Table 1 – List of Property Owners Adjacent to Sargent Quarry

LIST OF PROPERTY OWNERS ADJACENT TO SARGENT QUARRY	
ASSESSOR'S PARCEL NUMBER	
Santa Clara County	
810-81-005	Castro Valley LLC
810-82-004	Castro Valley LLC
841-36-018	Bloomfield Ranch LLC
841-36-019	JB Limited
841-36-022	JB Limited
841-36-023	Santa Clara Valley Water Dist.

DATE:

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NO.	DATE	BY

PREPARED FOR:

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SARGENT RANCH QUARRY OWNERSHIP MAP

DATE: 12/01/2020

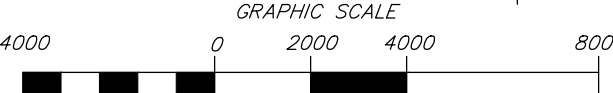
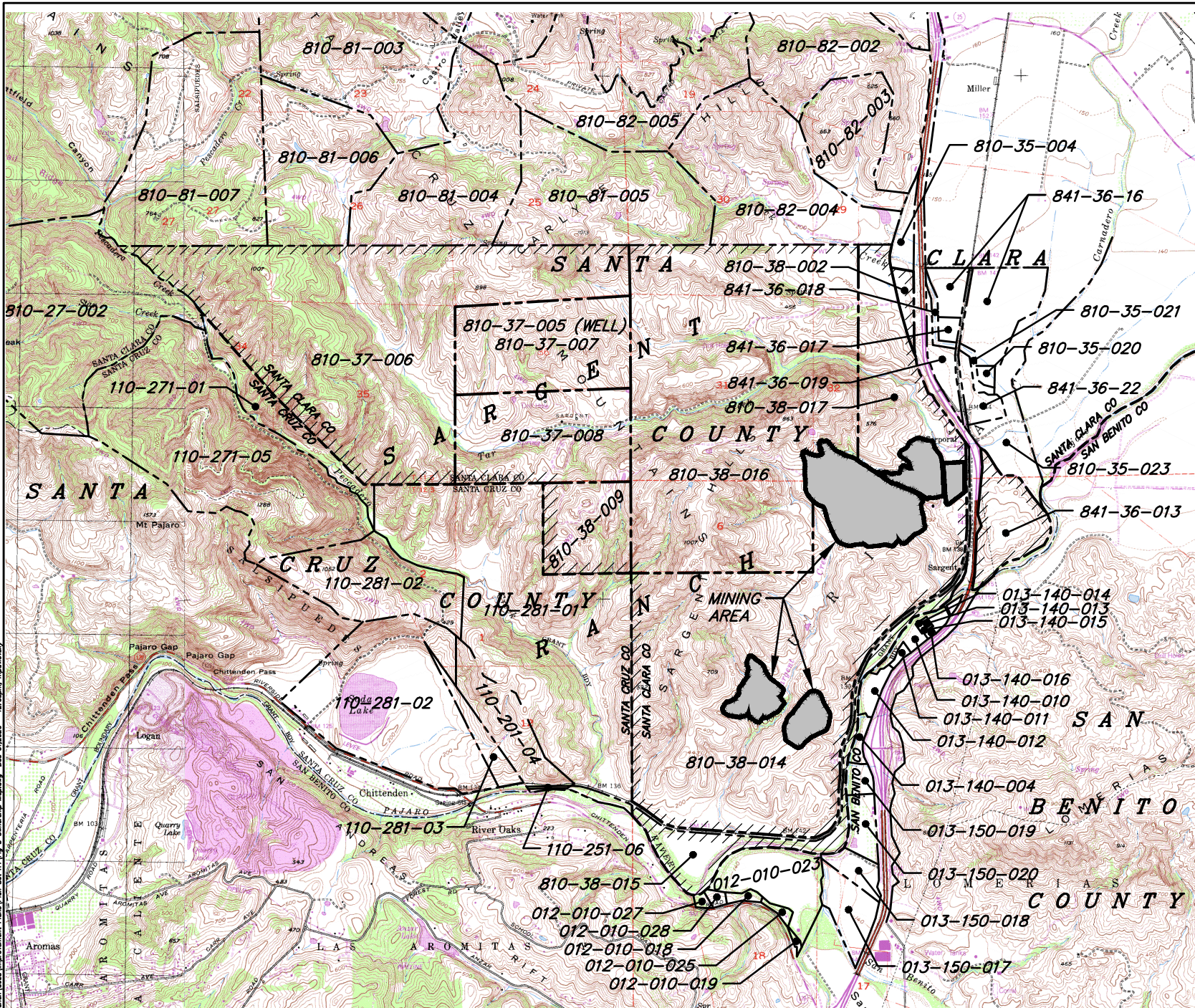
SCALE: AS SHOWN

DRAWN: SCR

JOB NO: 01.4020

DWG:

FIGURE 5



1 inch = 4000ft.

2:101 Mammoth 14200 Sargent Ranch Local Improvement Plans Plan Set No. 12/15/2020 - 12/01/2020

2.4 ACCESS (*PRC §2772(c)(5)*)

The site will be accessed from Highway 101 on to Old Monterey Road serving as primary ingress to the quarry for the majority of traffic heading southbound on Highway 101. The majority of traffic exiting the site will be northbound on an unnamed paved ranch road entering onto Highway 101 approximately one-quarter mile north of the processing plant. The ranch road will need to be widened to a minimum of 30 feet and paved to accommodate the truck traffic. An acceleration lane will also need to be added to northbound Highway 101. A new access road will extend about 500 feet into the site, terminating at the operations area. The new access features and private roads are shown on Figures 8 and 9.

2.5 UTILITIES

Utilities necessary for the mining operation are currently available at the site, and provided as follows:

1. Power is and will continue to be provided by Santa Clara Valley Energy. Three-phase power is located on Highway 101 on overhead lines running parallel with the highway.
2. Water for drinking purposes will be brought in by private vendors.
3. Water for aggregate washing will be provided by a new groundwater well shown on Figure 8.
4. Sewage disposal will be provided by an on-site sewage disposal system designed and installed as part of the quarry operation. The on-site system will consist of a septic tank, distribution box, and leach field.
5. Mining and reclamation activities would not affect public utilities facilities or service systems. No additional extensions of public utilities or alterations to existing utility service would be necessary to carry out reclamation activities identified in this Mining and Reclamation Plan.

2.6 GEOLOGY, SEISMICITY AND SOILS (*PRC §2772(c)(5)*)

2.6.1 Geology

The Sargent Ranch lies in an unincorporated part of Santa Clara County. Geographically, the county covers approximately 1,304 square miles and ranges in elevation from sea level to over 4,200 feet. The geology of the region reflects the action of plate tectonics between the North American Plate and the Pacific Plate as well as the interaction of two major faults: the San Andreas Fault and the Sargent Fault.

The Sargent Fault is located within Sargent Ranch trending from the southeast to the northwest through the site near Tar Creek. The San Andreas Fault trends in the same

direction as the Sargent Fault and is located just south of the southerly boundary of Sargent Ranch as shown on Figure 6, Site Geology.

Tertiary marine and nonmarine sediments are prevalent throughout the site. The marine and nonmarine units, denoted as TSCM and TSCN respectively, were mapped by Dibble and Brabb (1978) as deriving from the Pliocene Epoch and included as part of the Etchegoin Formation. The Etchegoin consists of siltstone, sandstone, and conglomerate. The sediments making up these rocks were deposited in shallow marine, marginal marine, and nonmarine environments.

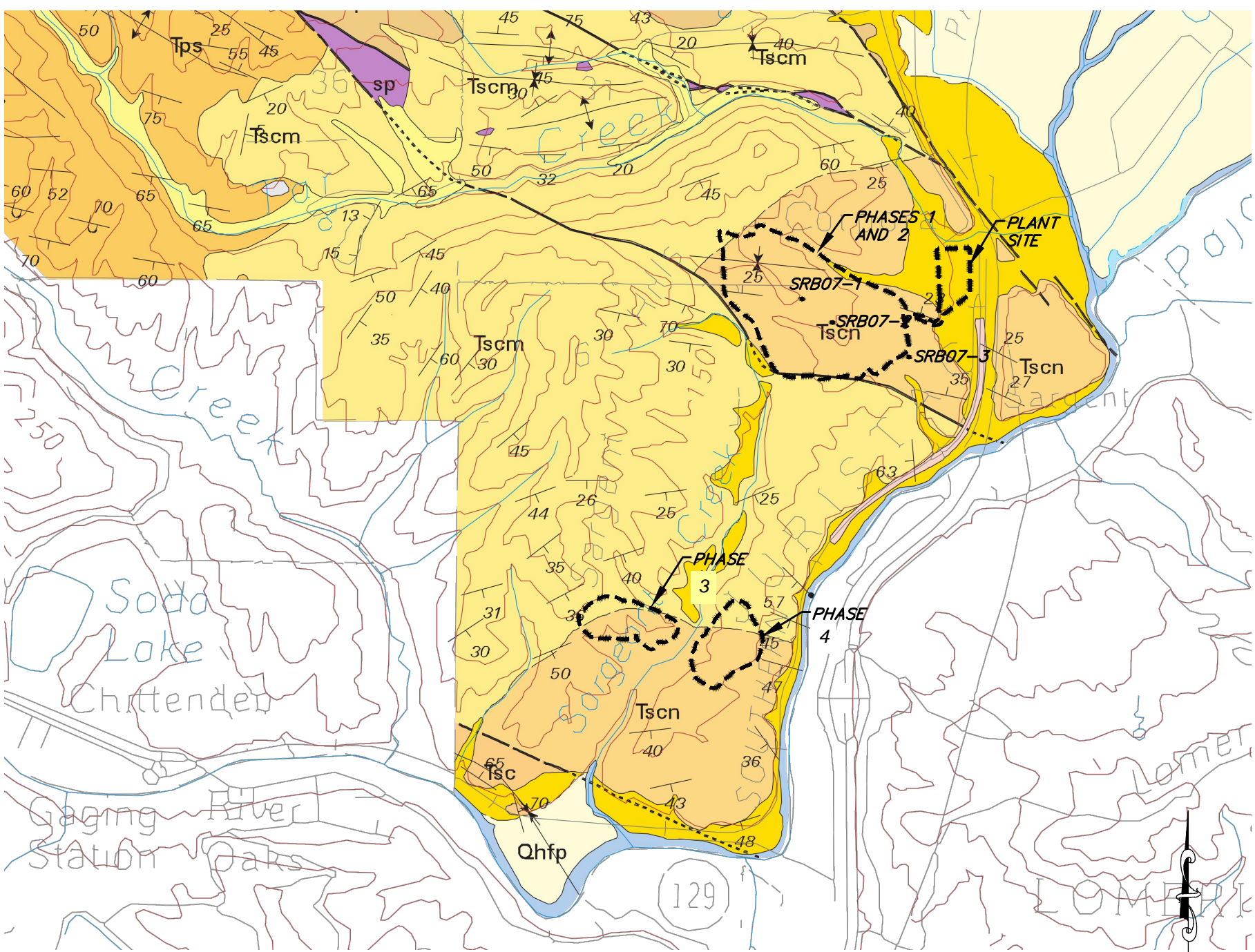
Geologic deposits more specifically consist of conglomerate, sandstone, and siltstones (Graymer, 1997). The sediments contain interbedded pebble and cobble conglomerates; coarse- to fine-grained lithic, mica lithic, and quartz lithic sandstones; and brown siltstone and silty claystones. Clasts in the conglomerate are well rounded to subrounded, and contain the following: greenstone, greywacke, white weathered siliceous mudstone, laminated chert, red chert, metachert, laminated fine-grained white quartz sandstone, and serpentinite.

The majority of the deposits are northeast striking and dip from roughly 30 to 45 degrees to the southeast except near anticlinal and synclinal axis and the Sargent Fault zone (Graymer, 1997). The geologic conditions we observed during our reconnaissance are consistent with those represented in the literature. SGS measured some attitudes where exposed, and these verified with those noted. Figures 3 and 5 include bedding attitudes of the deposits on the site.

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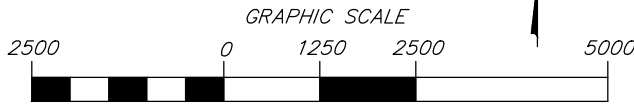
**SARGENT RANCH QUARRY
 SITE GEOLOGY**

DATE	03/02/2015
SCALE	AS SHOWN
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DWG	FIGURE 6



LEGEND

See Section 2.6.2



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2.6.2 Units within the Sargent Ranch Region

Tscn: Siltstone, Quartz Lithic Sandstone Marine Deposits

Tscm: Siltstone, Pebble and Quartz Conglomerate Marine Deposits

Qts: Pebble, Gravel, Sand and Clay Stream Deposits.

Qls: Landslide Rubble

Qal: Alluvial Gravel, Sand and Clay of Valley Areas

2.6.3 Soil Delineations and Map Unit Descriptions

Nine soil-mapping units have been identified on the project site and these soils are described in greater detail in Table 2. None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types are considered well-drained. None of these soils is a serpentine or alkaline soil, therefore, they would not be expected to support special status plant species that are endemic to serpentine or alkaline soils.

Table 2 – Descriptions of Soil Mapping Units of the 403-Acre Study Area

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0

Source: USDA NRCS Web Soil Survey

See Figure 3 of the appended “Biological Evaluation” by Live Oak Associates for the Soils Map. (See Appendix C.)

2.6.4 Landslides

Based on a review of the County of Santa Clara Landslide Hazard Zone Map, the site is located in an area prone to landslides. Several surficial to moderately-sized, deep-seated (backscarps of up to 40 feet in height) landslides are located in multiple areas across the property. The majority of the slides appear to be surficial and originate at the contact with the Topsoil/Colluvium and the underlying tertiary deposits along the side slopes of incised drainages. In a few areas however, the landslides did extend below the surficial deposits into the underlying bedrock.

2.6.5 Faulting and Seismicity

The project site area is located in an extremely tectonically active area between the San Andreas fault approximately 2 miles to the south, and the Sargent fault that runs through the northern portion of the site. Per the Santa Clara County Fault Rupture Hazard Zone Map the northern portion of the property is located in a fault rupture hazard zone. These faults have the potential for generating strong ground motions and surface rupture at the project area.

The Sargent Fault Zone (Southeastern Section)

The Sargent fault zone is located in an extremely complex contractional system of generally northeastward-vergent thrust and reverse faults bounding the eastern side of the Santa Cruz Mountains. This thrust system has been described as an eastward-propagating structure which roots toward the larger San Andreas fault zone. The Sargent fault zone extends from its complex junction with the San Andreas fault near Lake Elsman runs southeast through the Santa Cruz Mountains, crosses the Pajaro River floodplain, and extends near the northeastern front of the Lomerias Muertas and Flint Hills. The mapped surface traces end a few kilometers east of Hollister and it is not known if the fault extends farther south-southeast to join the Calaveras fault zone.

The San Andreas Fault Zone (Santa Cruz Mountain Section):

The 1,100-kilometer-long San Andreas fault zone is the principal element of the San Andreas fault system, a network of faults with predominantly dextral strike-slip displacement that collectively accommodates the majority of relative N-S motion between the North American and Pacific plates. In the vicinity of the project site, the Santa Cruz Mountains section of the San Andreas fault extends from Black Mountain in the northern Santa Cruz Mountains and runs southeast to just south of San Juan Bautista. The northern boundary is marked by an approximately 0.6-mile (1-kilometer-wide), left-compressional bend near Black Mountain. The southern boundary with the creeping section is taken as the approximate southern termination of surface fault rupture associated with the 1906 San Francisco earthquake.

The Santa Cruz Mountains section is delineated by geomorphic features characteristic of Holocene dextral offset such as dextrally deflected and offset drainages, linear drainages, sidehill benches, closed depressions, aligned benches, linear scarps, linear troughs, aligned saddles, and linear vegetation contrasts. Local surface traces of the fault are complex and distributive and/or concealed by massive landslide deposits.

2.6.6 Regionally-Significant Mineral Reserve

Following California's mineral classification procedures, the Division of Mines and Geology (DMG)--now the California Geologic Survey--produced *Special Report 146 – Mineral Land Classification: Aggregate Materials in Monterey-Santa Clara County Production-Consumption Region*, issued in 1992. An update of that classification study was prepared in 1996.

State land classification is presented in the form of Mineral Resource Zones (MRZs) and directions for identification of MRZs are set forth in the DMG's Special Publication 51. Relevant nomenclature can be provided if requested.

The deposit, upon which Sargent Quarry is located, is not yet identified as a MRZ-2 deposit, containing Portland cement concrete (PCC)-grade aggregate. Application for State designation has been filed, and is pending the new publication of State mineral resource report (MRZ) for the local region.

2.7 HYDROLOGY/DRAINAGE (PRC §2772(c)(5))

2.7.1 Climate and Rainfall

The annual average temperature in the general vicinity of the study area is 58°F (with an extreme high of 105°F and extreme low of 16°F); annual precipitation in the general vicinity of the study area averages 25 inches, almost 85% of which falls between October and March. Virtually all precipitation falls in the form of rain.

2.7.2 Drainage of Surface Waters

For the portion of the property that falls within the mining boundary of Phases 1 and 2, storm water from the higher elevations and ridges flows into two ephemeral drainages and several drainage channels which traverse across the site from the high point at the northwestern edge of the mining area joining Tar Creek just north of the processing area. The storm water runoff readily infiltrates into the soils. However, when infiltration capacity has been reached, accumulated surface storm water runoff drains southeast down through natural swales and ravines into culverts, passing under Highway 101 and flowing into the Pajaro River, as shown on Figure 4: Existing Drainage Plan. The drainage of the existing topography of the areas proposed for mining as part of Phases 1 and 2, currently flow to Sargent Creek and continue south to the Pajaro River. Prior to discharge into Sargent Creek, surface water from Phases 1 and 2 will be conveyed to retention ponds to allow for sediment to settle out of the water.

Several drainages with a defined bed and bank also occur within the project site footprint, and an access road that will be constructed as part of Phase III and Phase IV will traverse Sargent Creek and associated drainages in several locations.

2.7.3 Groundwater

Groundwater is not expected to be encountered at any time during the excavation of the quarry. The greatest depth of the excavation to elevation 130 feet above sea level is at least 50 feet above any known ground water levels as detected in the nearby well. (Figure 3.) If, by chance, groundwater is encountered in the course of mining operations, then methods for mining below the groundwater table will be followed as outlined in section 3.6.13.

2.7.4 Project Well

Well water will be used for the operation of the quarry, providing water for operation of the plant, including for dust control and onsite storage for fire protection. An

additional new well will be added to supplement water supply. The small existing well is shown on Figure 3: Existing Site Conditions, within the Sargent Ranch property on the east of Highway 101.

2.8 VEGETATION AND WILDLIFE

2.8.1 Vegetation (CCR §§3502(b)(1), 3705(a))

Two biotic habitats and one land use have been identified on the project site (Table 3, Figure 7A); and these habitats and land uses have been named pursuant to land cover types defined in the Santa Clara Valley Habitat Conservation Plan (HCP) (ICF Int. 2012). More detailed habitat descriptions are provided below. For the purposes of this plan, the natural terrestrial communities are identified as California annual grassland, coast live oak forest and woodland; and the one land use is identified as agriculture, including use for Grain, Row Crop, Hay and Pasture. Lists of vascular plants observed on the greater 6,400-acre Sargent Ranch property during LOA's 2004 through 2014 surveys is provided in Appendix A; and a list of terrestrial vertebrates observed on the greater ranch property and/or potentially present on the study area, based on both PNWB and LOA surveys, has been provided in Appendix C.

Table 3 – Habitats and Land Uses within the Project Footprint & Geotechnical Setback Areas by Project Phase (acres)

Habitats Land Uses	Plant Site, Stockpiles, Access Roads, and Conveyor Belt	Phase 1 Acres	Phase 2 Acres	Phase 3 Acres	Phase 4 Acres	Phase 1 and Phase 2 Setback Acres	Phase 3 Setback Acres	Phase 4 Setback Acres	Roadway Improvements and Railroad Spur Acres	Total
California Annual Grassland	44.86	75.82	50.4	25.36	41.33	75.23	11.95	11.51	0.85	337.31
Coast Live Oak Forest and Woodland	2.88	13.3	6.48	0	0	5.78	0	0	0.56	29
Coyote Brush Scrub	0	0	0	0	0	0	0	0	0.25	0.25
Mixed Riparian Woodland and Forest	4.32	1.45	4.89	0.03	0.51	0.21	0	0	0	11.41
Grain, Row Crop, Hay and Pasture	22.82	0	0	0	0	0	0	0	0.68	23.5
Developed (dirt and paved roads, rural residential and railroad)	0.23	0	0	0	0	0	0	0	1.17	1.4
Stock Pond	0	0	0	0	0	0.34	0	0	0	0.34
Seasonal Wetland	0	0	0	0	0	0.05	0	0	0	0.05
Wetland Seep	0	0	0	0	0	0.03	0	0	0	0.03
Total	75.11	90.57	61.77	25.39	41.84	81.64	11.95	11.51	3.51	403.29
Creeks, Streams and Drainages	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Total
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	1,922	1,739	2,010	0	899	115	0	0	315	7,000

2.8.2 California Annual Grassland

California annual grassland habitat is the dominant habitat within the project area, occupying approximately 241 acres of the quarry site and 113.9 acres of the geotechnical setback area. Grasslands on the site are dominated by non-native grass species such as wild oats (*Avena barbata* and *A. fatua*), ripgut (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian rye grass (*Festuca perennis*); and weedy non-native forb species such as filarees (*Erodium* spp.), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), summer mustard (*Hirschfeldia incana*) and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow (*Achillea millefolium*), clarkia (*Clarkia* sp.), rattlesnake weed (*Daucus pusillus*), Pacific rye grass (*Elymus glaucus* ssp. *virescens*), lupines (*Lupinus* spp.), California melic (*Melica californica*), purple needle-grass (*Nassella pulchra*) and gray mules ears (*Wyethia helenioides*).

The grassland habitat is expected to support a host of plant and animal species. California tiger salamanders (*Ambystoma californiense*) are known to breed in stock ponds in the site's vicinity, for example, and therefore may occur within the project area. This potential for occurrence will be considered in the EIR. Reptilian species observed or expected to also potentially occur onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*), western rattlesnake (*Crotalis viridis*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*).

This grassland habitat also provides foraging habitat for a number of birds. Bird species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaidura macroura*), great horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and the resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*), western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher

(*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianus*). Other medium-sized and larger mammals that might also be expected to occur on the site but that have not been directly observed include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

2.8.3 Coast Live Oak Forest and Woodland

Oak woodlands dominated by coast live oak (*Quercus agrifolia*) occupy approximately 26.1 acres of the site's Phase 3 and Phase 4 areas, 7.1 acres on other areas of the project area, and 6 acres in the geotechnical setback area. This habitat type is primarily associated with an ephemeral drainage in the southern portion of Phase I and with a deep ravine in the central portion of Phase 3 and northeastern portion of Phase 4. Coast live oak woodlands of the site generally have a relatively closed canopy and an understory that is either barren or covered by dense leaf litter, with very little herbaceous vegetation present.

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker (*Melanerpes formicivorus*), California quail, wild turkey, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Representative animal species of oak-dominated forests include arboreal salamander (*Aneides lugubris*), southern alligator lizard, common kingsnake, ringneck snake (*Diadophis punctatus*), western screech owl (*Otus kennicottii*), scrub jay, acorn woodpecker, western bluebird, opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.8.4 Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed

Dry-farmed oat hay fields occur in the footprint of the proposed plant area in the eastern portion of the main quarry site near Highway 101. Vegetation similar to that occurring in annual grasslands as described above was observed to grow along the disturbed edges of the fields. Wildlife using adjacent habitats would be expected to also use this habitat for foraging and movement activities.

2.8.5 Ephemeral Drainages and Sargent Creek

Ephemeral drainages that would be considered HCP Category 2 streams occur on all four phases of the proposed quarry project. These drainages were mapped by LOA during a delineation effort that was conducted on the greater Sargent Ranch property in 2007 and were later verified by USACE. For the most part, these ephemeral drainages were not observed to support wetland vegetation, but did exhibit a defined bad and bank and evidence of an Ordinary High Water mark on opposing banks, and, as such, would likely be considered jurisdictional by USACE, RWQCB and CDFW. Vegetation within ephemeral drainages of the site was observed to be generally similar to that found in the surrounding upland California annual grassland habitats and species utilizing drainages of the site would also be similar to those using grasslands of the site. These drainages would only have water present during and immediately after rainstorm events and would not be a significant source of seasonal water for native plants and wildlife; and they would not likely provide habitat values in excess of those provided by surrounding upland habitats.

The alignment of the access road that will be constructed for Phases 3 and 4, as currently planned, will traverse Sargent Creek in one location, as well as traverse several associated ephemeral drainages. Sargent Creek is considered a Category 1 stream under the HCP. Sargent Creek does not support significant stands of woody riparian vegetation except at

the very lowest reaches near the southern boundary of the greater Sargent Ranch property; however, discrete stands of red and arroyo willows (*Salix laevigata* and *S. lasiolepis*, respectively) and mulefat (*Baccharis salicifolia*) do occur at various locations along the middle and upper reaches of the creek and the creek channel was observed to support herbaceous wetland vegetation throughout most of its reach on the Sargent Ranch property, including but not limited to, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), slough sedge (*Carex obnupta*), spike rush (*Eleocharis macrostachya*), and tall flat sedge (*Cyperus eragrostis*).

Amphibian species observed within Sargent Creek during LOA surveys included Pacific tree frogs (*Hylla regilla*), California red-legged frogs (*Rana draytonii*) and western toads (*Anaxyrus boreas*). California red-legged frogs are known to breed in stock ponds within the creek's watershed on the greater Sargent Ranch property. Although California tiger salamanders have not been observed within the Sargent Creek watershed during surveys, they are known to breed in stock ponds to the north of Tar Creek, and stock ponds within the Sargent Creek watershed appear to support appropriate hydrology to function as breeding habitat for this species. Although western pond turtles have never been documented in Sargent Creek or nearby stock ponds, potentially western pond turtles may occur in the creek during the wet season.

Avian species observed in Sargent Creek during LOA surveys foraging for amphibian and invertebrate prey during the wet season include great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and snowy egrets (*Egretta thula*).

The creek likely functions as an important movement corridor for several mammal species that have been observed within its vicinity during LOA surveys, including but not limited to, striped skunks, gray fox, bobcat, cougar, wild pig and black-tailed deer. The creek likely also provides an important seasonal supply of water for local wildlife.

2.8.6 Movement Corridors

Generally, ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches (Harris and Gallagher 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of corridors. They believed, however, that connectivity questions make sense only in terms “of a particular focal species and landscape.” For example, volant (flying) species are less affected by barriers than small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be and are useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the City of San Jose.

The quality of habitat within the corridors is important: “better” habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply do to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in hills surrounding San Jose include California buckeye (*Aesculus californica*), dogwood (*Cornus* sp.), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus* sp.), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

- 1.) Wide ranging mammals can migrate and find mates;
- 2.) Plants can propagate within the corridor and beyond;
- 3.) Genetic integrity can be maintained;
- 4.) Animals can use the corridor in response to environmental changes or a catastrophic event;
- 5.) Individuals can recolonize areas where local extinctions have occurred.

A corridor is “wide enough” when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of “passage species” (those species who typically use a corridor for the express purpose of moving from one intact area to another) and “corridor dwellers” (slow moving species such as

plants and some amphibians and reptiles that require days or generations to move through the corridor).

A number of reptiles, birds, and mammals may use the project site as part of their home range and dispersal movements. Creeks and drainages, for example, are generally known to facilitate wildlife movement. The two creek corridors that occur in proximity to portions of the project site, i.e. Sargent Creek and Tar Creek, may provide important movement habitat for many native wildlife species travelling north-south and east-west, respectively, as may be limited by Highway 101. Ephemeral drainages occurring within the footprints of the project, however, generally support vegetation that is undifferentiated from surrounding upland grassland habitats and are not likely to function as anything but marginal movement corridors due to lack of significant woody vegetation cover. The EIR prepared for the project will consider the potential effects on identified wildlife corridors.

2.8.7 Special Status Species

Many several species of plants and animals within the state of California have low populations, limited distributions, or both, and are therefore considered “rare,” “threatened,” or “endangered.” As described more fully in Section 3.2, and in the EIR, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as “candidates” for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2014). Collectively, these plants and animals are referred to as “special status species.”

A number of special status plants and animals occur in the vicinity of the site (Figure 7B). These species and their potential to occur in the study area are listed in Table 3. Sources of information for this table included *California’s Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2014), *Endangered and Threatened Wildlife and Plants* (USFWS 2014), *State and Federally Listed Endangered and Threatened Animals of California* (CDFWCDFW 2014), and *The California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014). This information was used to evaluate the potential for special status plant and animal species to occur onsite for purposes of this Reclamation Plan. Figure 7b depicts the location of special status species found by the California Natural Diversity Data Base (CNDDDB)

within a three-mile radius of the site in 2017. It is important to note that the CNDDDB is a volunteer database; therefore, it may not contain all known or gray literature records. The EIR will provide additional information as required by CEQA.(See also, Appendix C [Biological Baseline Studies].)



LEGEND

On-site Species Observations

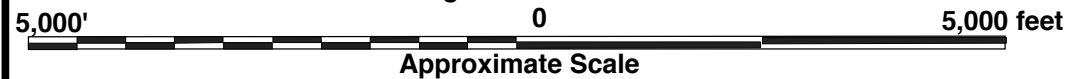
- CTS** California Tiger Salamander
- CRLF** California Red-legged Frog
- BF** Bullfrog
- ETS** Eastern Tiger Salamander
- WPT** Western Pond Turtle
- Fish** Fish

Habitats

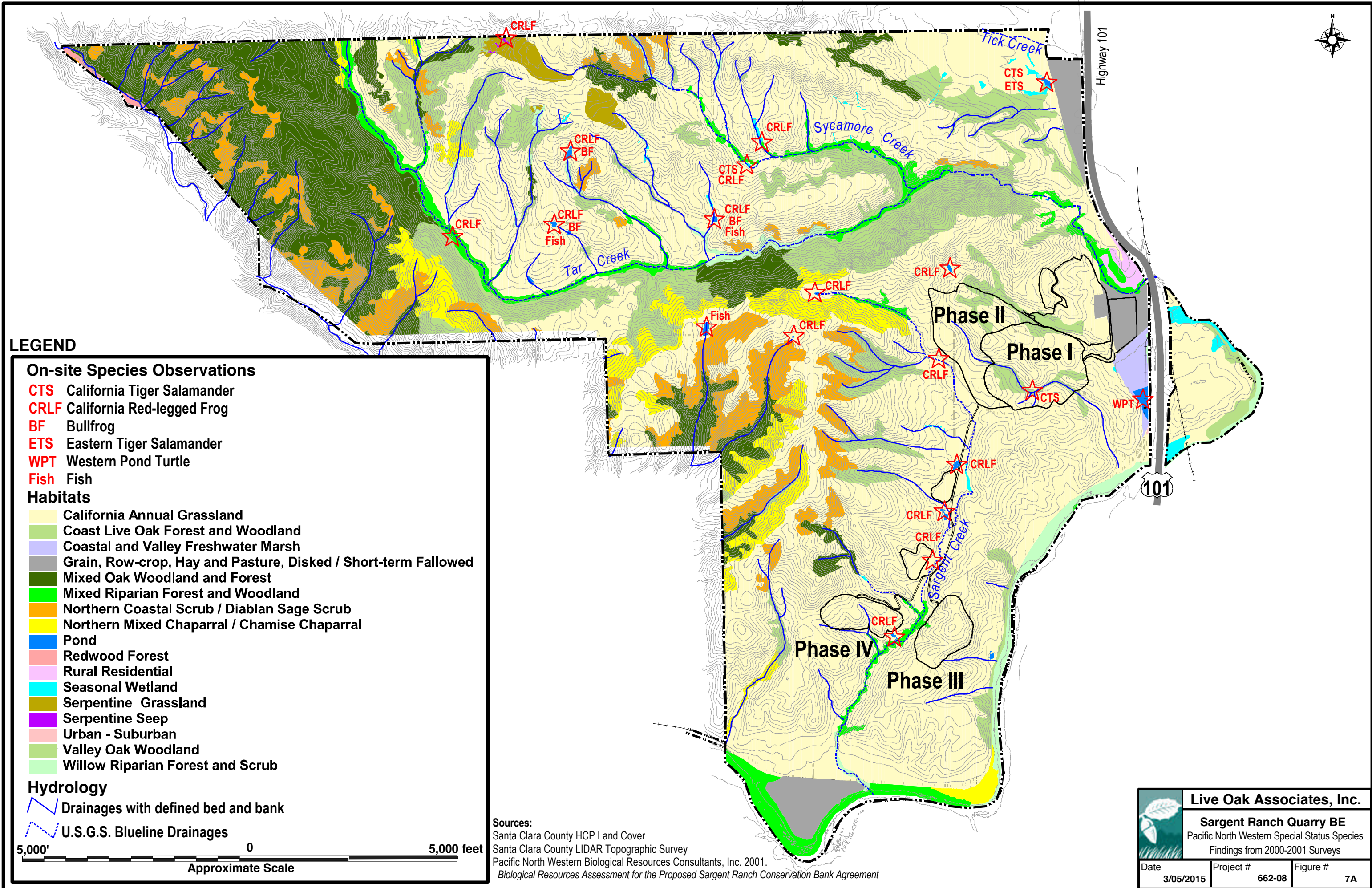
- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

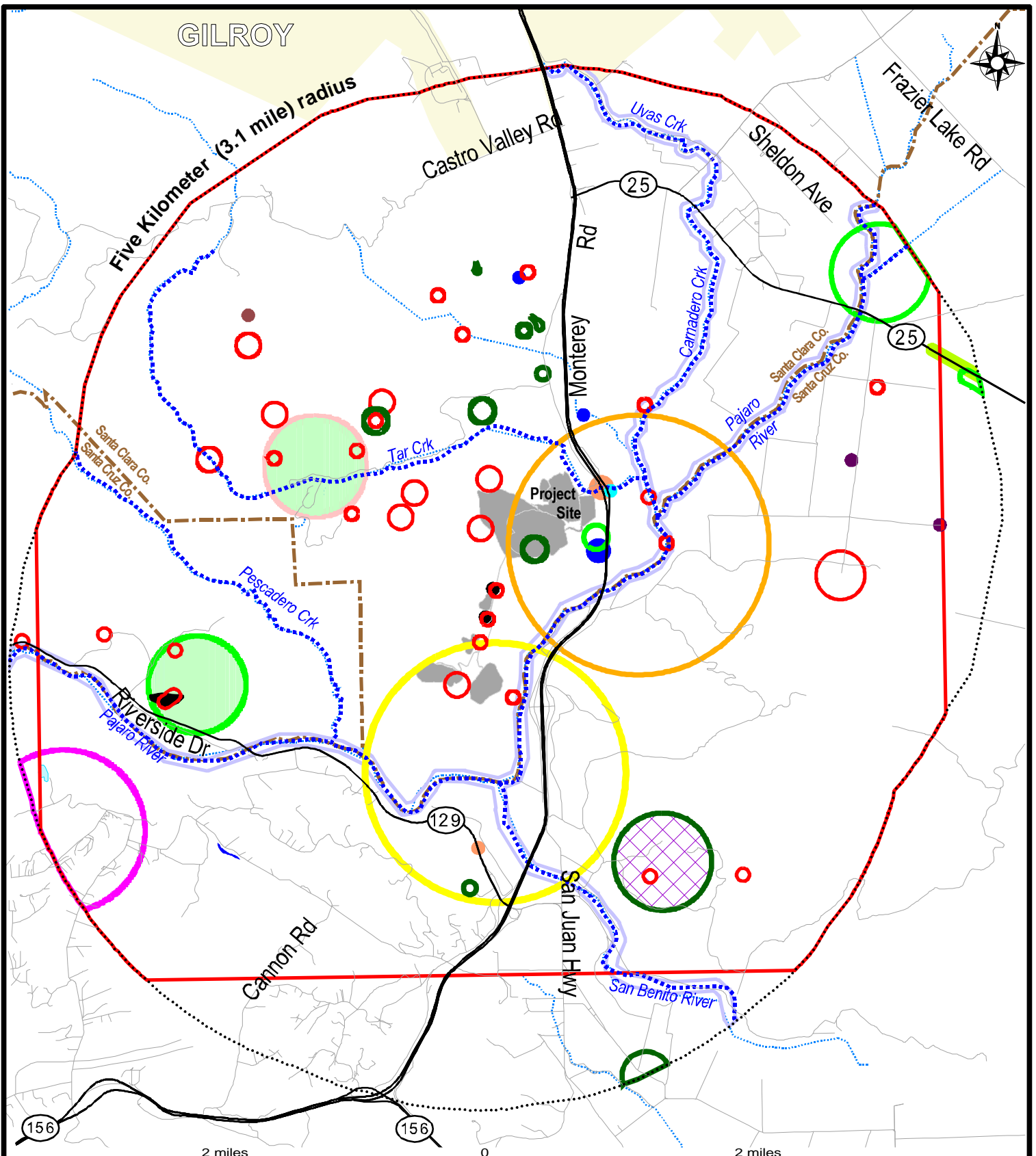
- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages



Sources:
 Santa Clara County HCP Land Cover
 Santa Clara County LIDAR Topographic Survey
 Pacific North Western Biological Resources Consultants, Inc. 2001.
 Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement



Live Oak Associates, Inc.		
Sargent Ranch Quarry BE		
Pacific North Western Special Status Species		
Findings from 2000-2001 Surveys		
Date	Project #	Figure #
3/05/2015	662-08	7A



GILROY

Five Kilometer (3.1 mile) radius

Castro Valley Rd

25

Sheldon Ave

Frazier Lake Rd

25

Santa Clara Co.
Santa Cruz Co.

Santa Clara Co.
Santa Cruz Co.

Project Site

Riverside Dr.
Pajaro River

129

San Juan Hwy

Cannon Rd

San Benito River

156

156

2 miles 0 2 miles

approximate scale

LEGEND

Special-status Species Observations

(Polygon extents can reflect location uncertainty)


- Pink creamsacs
- American badger
- California Alkali grass
- California red-legged frog
- California tiger salamander

- Hoover's button-celery
- Monterey hitch
- Bank swallow
- Burrowing owl
- Fragrant fritillary
- Least Bell's vireo
- Most beautiful jewelflower

- Saline clover
- Steelhead
- Tricolored blackbird
- Western pond turtle
- U.S.F.W.S. Critical Habitat**
- Steelhead

Sources:

California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service

	Live Oak Associates, Inc.		
	Sargent Ranch Quarry Special-status Species		
Date	Project #	Figure #	
3/18/2021	662-08	7B	

3 MINING PLAN

3.1 AREA AFFECTED BY MINING

The quarry operator, Sargent Ranch Management LLC proposes to mine and perform mining operations on 302 acres of a 5,274-acre property owned by the Sargent Ranch tenants in common. An additional 105 acres may be needed as geotechnical setback areas to ensure slope stability and to remediate any unforeseeable slope failures; thus, ensuring the final slopes achieve stability as required by SMARA and its implementing regulations. Consequently, a total of 403 acres may be disturbed by the proposed mining. The “geotechnical setback areas” are shown on Figures 10 – 13 as the lined shaded areas surrounding the respective mining pits. The quarry property is contained in Chittenden USGS 7.5’-quadrangle; and is further identified by Santa Clara County Assessor Parcel numbers 810-38-014, 017, and 018.

The plan for mining is shown on Figure 9: Mining Site Plan, with detailed mining plans on Figures 10 through 13 and cross-sections on Figures 14 and 15. The Plan encompasses a mining operations area eventually reaching the 403 ± acres mentioned previously. The processing, office, scales, and maintenance area covers 14 acres. Overburden and topsoil stockpile areas cover approximately 50 to 60 acres and will depend on the amount of overburden generated from mining operations. These acres are included in the total estimated area of potential disturbance (i.e. 403 acres). The rest of the site is intended to remain undisturbed by mining activities. Actual active surface disturbance will be kept to the minimum areas necessary for mining and processing at any time period, in accordance with the phasing plan, shown in Figure 9: Mining Site Plan. This figure shows the maximum extent of disturbed area. Access roads may be constructed within this disturbed area and an access road from the processing plant to the Phase 3 and 4 mining sites will also be constructed along the western side of the eastern ridge of the Sargent Valley and above the Sargent Creek, as shown on Figures 9a and b. Table 20 summarizes the estimated disturbance areas.

3.2 ACCESS TO THE MINING AREA

The Sargent Quarry will be accessed from the north via State Highway 101 onto Old Monterey Road. The access road will be a gated, two-way road. The access route is shown on the Figure 2: Site Location Map. Northbound trucks exiting the processing area will reach Highway 101 via a new paved ranch road. An acceleration lane will be installed onto northbound 101 per Caltrans standards. All visitors must check in at the administration office, have proper safety gear, and be accompanied to any restricted areas. The property will be fenced and gated.

3.3 STARTING DATE, ESTIMATED LIFE, AND DURATION *(PRC §2772(c)(3) and PRC §2772(c)(6))*

3.3.1 Starting Date

The anticipated start date for commencing the mining operations, upon obtaining all the necessary permits, is March 1, 2023. Table 21 outlines the tentative schedule of construction, mining and reclamation actions.

3.3.2 Estimated Life of the Operation

The Sargent Quarry operations are presently planned from the time of approval until approximately December 31, 2053. Operations will conclude in April 2053 with final reclamation concluding in May of 2058.

3.4 OPERATION SCHEDULE AND STATE OF READINESS

3.4.1 Operating Schedule

The Sargent Quarry will be active throughout the year. The level of activity is highest during the construction season between April and October each year and lowest during the rainy season. The Quarry operation will be closed on all Sundays and holidays consistent with the County Code. Special projects that require material delivery during those times may continue to occur subject to the County's approval. Maintenance of equipment may be conducted on any day of the week.

The quarry will operate up to 310 days per year. Generally, the quarry will also be closed on any day with 0.50 inches of rain or more to preserve quarry equipment and to maintain safe operations for employees.

3.4.2 Quarry Activities

Figure 8: Aggregate Plant Site Plan, identifies the proposed aggregate processing activity areas which includes the processing plant, shop and maintenance buildings, vehicle parking areas, bone yard (miscellaneous equipment and materials), office/scale house, stockpiles (product, overburden, and topsoil), process water pond, and storm water basins. The sand and gravel processing plant, maintenance and shop building areas are at the northeast portion of the site. The new proposed groundwater well will be located in the northwesterly portion of the plant site from the quarry and is also shown on Figure 8. The vehicles used for mining will be parked near the rock processing plant and the stockpiles at the end of work hours. Aggregate stockpiles are located easterly from the processing plant and shown on Figure 8. The office/scale house is located near the entrance to the quarry.

Quarry excavation areas and overburden stockpile locations are presented on Figure 9: Mining Site Plan. Overall, the quarry is anticipated to produce approximately 41 million tons of product from the quarry mining activity areas as shown on the Plan.

3.5 DESCRIPTION OF QUARRIED MATERIAL & LEVEL OF PRODUCTION

3.5.1 Geology of the Site

The Sargent Quarry aggregate resource is a marine deposit that contains sand and gravel deposits mixed with clay and silt.

3.5.1.1 Mineral Commodity Being

Sand and gravel are the primary resources being mined. The sand will be sold as various sands; and the gravel will be sold as drain rock. Clay from the overburden will also be sold as engineered fill.

3.5.1.2 Composition of Mined Material

The sand and gravel are intermixed with clay and silt. The sand constitutes about 50%, gravel is about 25%, and the remainder is made up of clay and silt. The clay and silt materials do not meet construction aggregates specifications. These materials initially will be placed in the overburden stockpile areas and the majority subsequently will be disposed of in the quarry, either graded onto the final quarry slopes as part of reclamation activities or sold as engineered fill. Bulldozers, front-end wheel loaders, motor graders, and excavators can harvest the sand, gravel, and clay.

3.5.2 Anticipated Quantity of Materials to be Mined

The quarry is expected to yield a total of approximately 35 million cubic yards (approximately 40 million tons) of saleable aggregate materials that will be mined over the 30 year life of the operation. Total excavation includes overburden and clay, total sand and gravel is 41 million tons. Based on the limitations of load out and sales it is likely that only 33 million tons of material will be sold during the 30 year mining term. The excess material still left in the deposit may be subject to future permitting actions. Final mining grading contours are shown in Figures 9 through 15. Estimated quantities of product (sand and gravel) and overburden excavated during mining operations are tabulated as follows:

Table 4 –Mining Quantities by Phase

Mining Phase	Phase 1	Phase 2	Phase 3	Phase 4	Total
Product (cy)	9,600,000	11,900,000	2,565,000	1,240,000	25,305,000
Overburden (cy)	3,325,000	4,100,000	900,000	540,000	8,865,000
Topsoil (cy)	375,000	300,000	135,000	36,000	846,000
Excavation Total (cy)	13,300,000	16,300,000	3,600,000	1,816,000	35,016,000
Tonnage of Product	tons @ 1.5 tons/cy	25,305,000 Total Product (cy) *1.5 tons/cy			37,957,500

3.5.3 Production Level (*PRC §2772(c)(2)*)

Annual estimates of production vary from year to year based on market demand. Rock products are excavated and processed on a daily basis to build up reserves. The maximum annual export (product only) is approximately 1,142,400 tons per year and the average about 990,000 tons per year. Production will be increased or decreased to meet market demand consistent with the assumptions in the EIR and as may be approved by the County.

In the initial five years of operation, the maximum tons of material proposed to be mined each day (as product only) is 2,500. After five years, the maximum tons per day for product will be 6,000.

3.5.4 Anticipated Quantity of Topsoil and Overburden

Approximately 846,000 cubic yards (CY) of topsoil and 8,865,000 CY of overburden will be excavated over the life of the project. The topsoil and overburden will be stockpiled in the locations shown on Figures 12 and 13. Phase 1 topsoil and overburden quantities are estimated to be 375,000 CY and 3,325,000 CY, respectively. Phase 1 topsoil and overburden will be placed in a canyon near the Phase 1 excavation area. A small amount of overburden used to construct a visual screening berm as shown on Figure 8 at the processing plant site will be placed at the outset of mining.

The Phase 2 overburden quantity of 4,200,000 CY will be placed in the Phase 1 mining area. A portion of the Phase 2 overburden will be stockpiled in Phase 1 for future reclamation of Phase 2. The Phase 2 topsoil quantity of 300,000 CY will be stockpiled (shown on Figure 13) north of the Phase 3 pit.

90,000 cubic yards of the Phase 1 overburden will be used to build the visual screening berm and the rear berm around the processing area.

The Phase 4 overburden will be placed in the Phase 3 pit and the Phase 4 topsoil will be used in the revegetation of the Phase 3 pit.

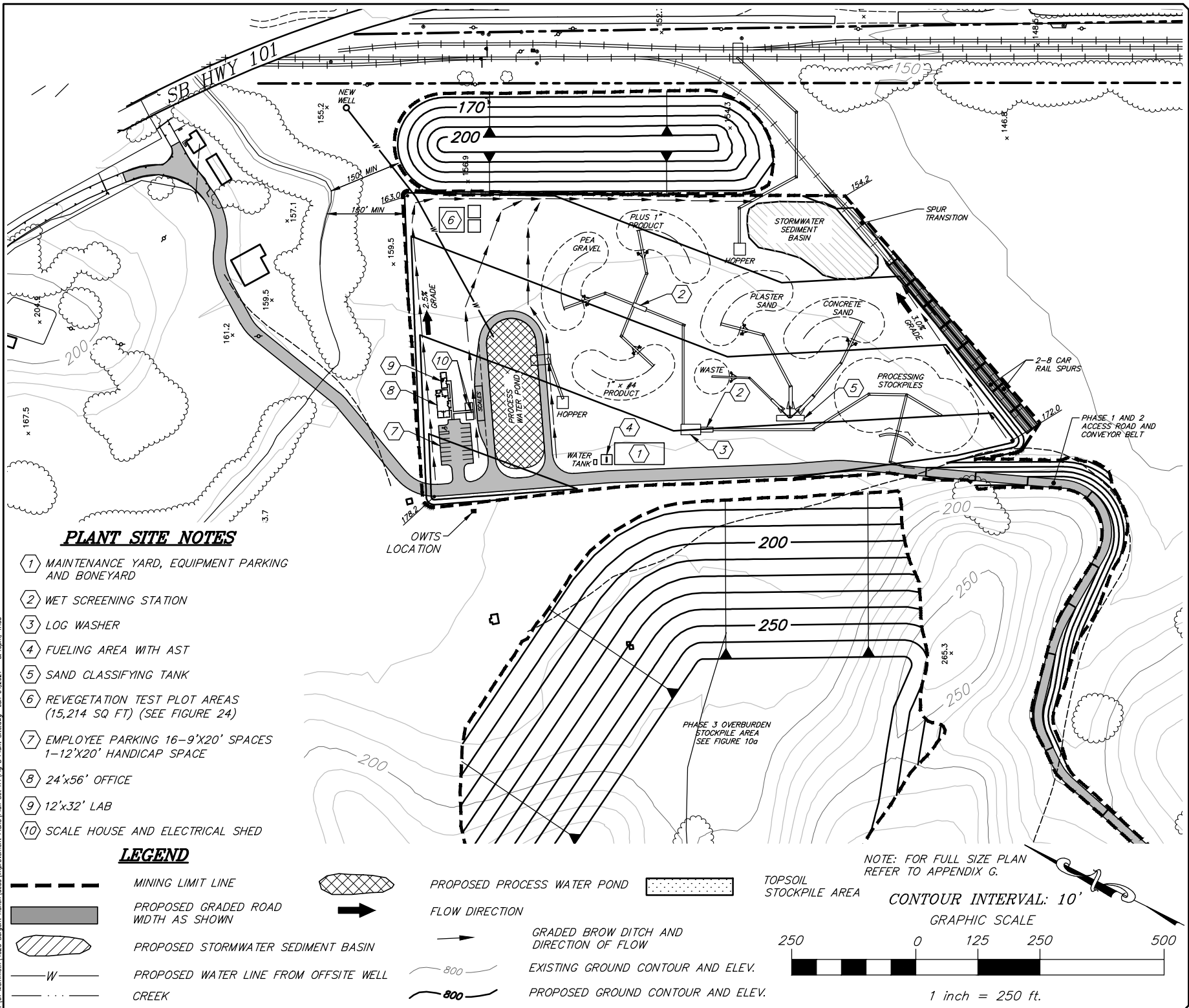
Final proposed fill elevations of each of the excavated pits is shown in Figures 17 and 18 and may be revised subject to County approval, including at the completion of reclamation when the volume of available stockpiled overburden and topsoil can be measured. Actual volume of overburden and topsoil stockpiles will vary based on geologic and market (sales of overburden) conditions, and anticipated reclamation finish grades shown on Figures 17 and 18 reflect this. Both topsoil and the overburden will be used to re-soil the areas that are revegetated, shown on Figures 23: Revegetation Plan. The designated location for topsoil and overburden stockpiles are shown on Figures 11 through 13 that depict the mining plans for the 4 phases of the project.

3.5.5 Mine Plan and Mined Topography *(PRC §2772(c)(6))*

Existing topography and conditions at the site are shown on Figure 3: Existing Conditions. The planned mining and grading activities shown on Figures 10 through 16 are based on the geotechnical criteria in Appendix D. The topography of the reclaimed site (Figures 17 and 18) is designed to create a safe condition for the resumption of cattle grazing. The reclaimed site will include a maximum slope gradient of 3:1 (horizontal to vertical). The final reclaimed slopes will be the same gradient or less as the steeper slopes within Sargent Ranch.

NO.	DESCRIPTION	DATE	BY

**SARGENT RANCH QUARRY
 AGGREGATE PLANT
 SITE PLAN**



PLANT SITE NOTES

- ① MAINTENANCE YARD, EQUIPMENT PARKING AND BONEYARD
- ② WET SCREENING STATION
- ③ LOG WASHER
- ④ FUELING AREA WITH AST
- ⑤ SAND CLASSIFYING TANK
- ⑥ REVEGETATION TEST PLOT AREAS (15,214 SQ FT) (SEE FIGURE 24)
- ⑦ EMPLOYEE PARKING 16-9'X20' SPACES 1-12'X20' HANDICAP SPACE
- ⑧ 24'x56' OFFICE
- ⑨ 12'x32' LAB
- ⑩ SCALE HOUSE AND ELECTRICAL SHED

LEGEND

- | | | | | | |
|--|-------------------------------------|--|---------------------------------------|--|---|
| | MINING LIMIT LINE | | PROPOSED PROCESS WATER POND | | TOPSOIL STOCKPILE AREA |
| | PROPOSED GRADED ROAD WIDTH AS SHOWN | | FLOW DIRECTION | | GRADED BROW DITCH AND DIRECTION OF FLOW |
| | PROPOSED STORMWATER SEDIMENT BASIN | | PROPOSED WATER LINE FROM OFFSITE WELL | | EXISTING GROUND CONTOUR AND ELEV. |
| | CREEK | | PROPOSED GROUND CONTOUR AND ELEV. | | |

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.

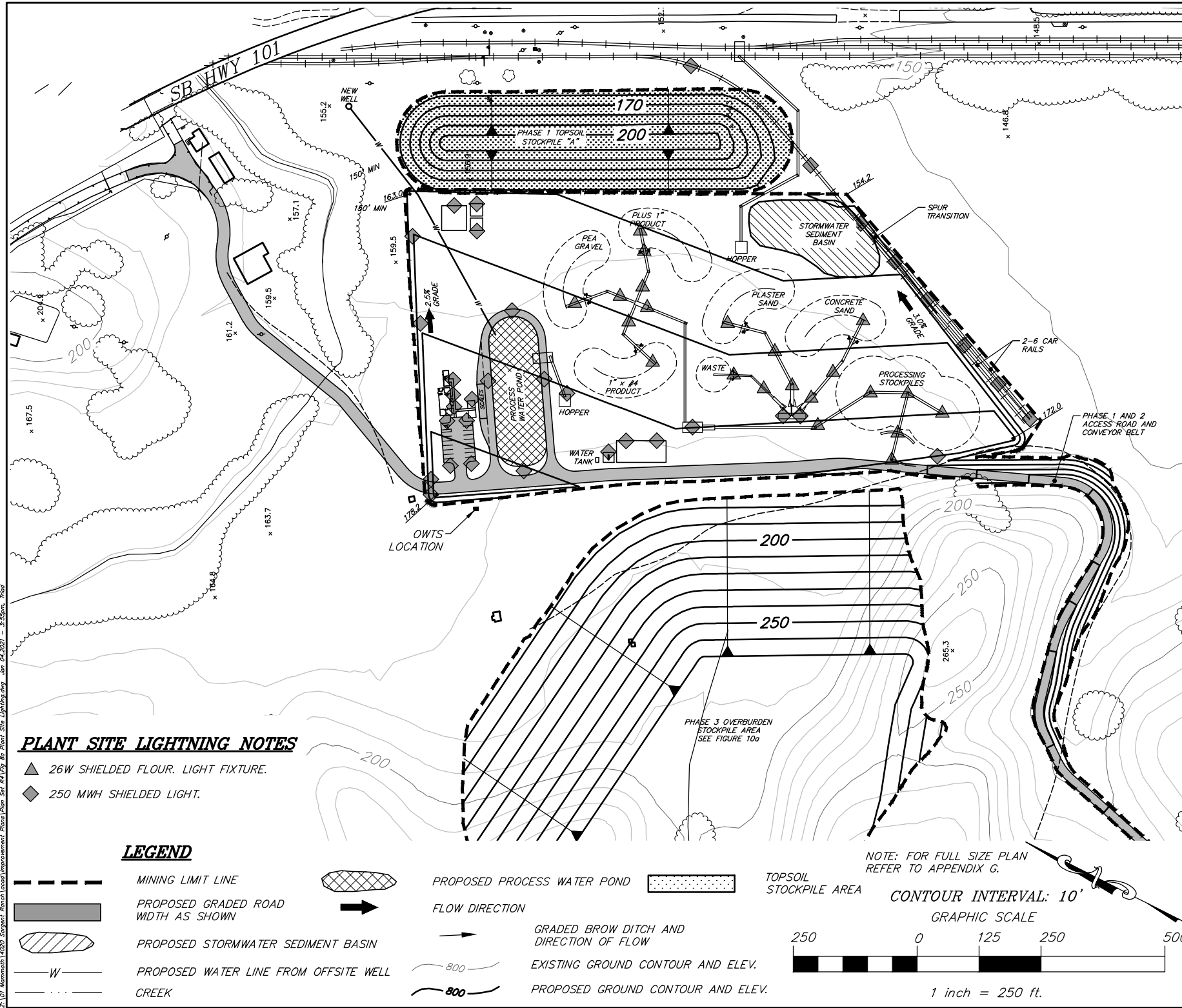
CONTOUR INTERVAL: 10'

GRAPHIC SCALE



1 inch = 250 ft.

Z:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\04\Fig 8 Plant Site.dwg - 3.46pm, Triod



PLANT SITE LIGHTNING NOTES

- ▲ 26W SHIELDED FLOOR LIGHT FIXTURE.
- ◆ 250 MW SHIELDED LIGHT.

LEGEND

- MINING LIMIT LINE
- PROPOSED PROCESS WATER POND
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- FLOW DIRECTION
- PROPOSED STORMWATER SEDIMENT BASIN
- GRADED BROW DITCH AND DIRECTION OF FLOW
- PROPOSED WATER LINE FROM OFFSITE WELL
- EXISTING GROUND CONTOUR AND ELEV.
- CREEK
- PROPOSED GROUND CONTOUR AND ELEV.

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE



1 inch = 250 ft.

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 civil engineering
 land surveying

MAMMOTH LAKES
 BISHOP
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 SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

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PREPARED FOR:

VERNE FREDMAN
 894 SAN ANTONIO RD
 PALO ALTO, CA 94303

**SARGENT RANCH QUARRY
 AGGREGATE PLANT
 LIGHTING PLAN**

DATE: 12/01/2020

SCALE: AS SHOWN

DRAWN: SCR

JOB NO.: 01_4020

OWN:

FIGURE 8a

Z:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\04\Fig. 8a Plant Site Lighting.dwg Jan 04/2021 - 3:55pm, trid

**QUARRY EXCAVATION
ESTIMATED QUANTITIES**

TOTAL VOLUME 35,016,000 CY

TOTAL PRODUCT 25,305,000 CY
X 1.5 37,957,500 TONS

PLANT SITE GRADING
1,180 CY CUT AND 75,000 CY FILL

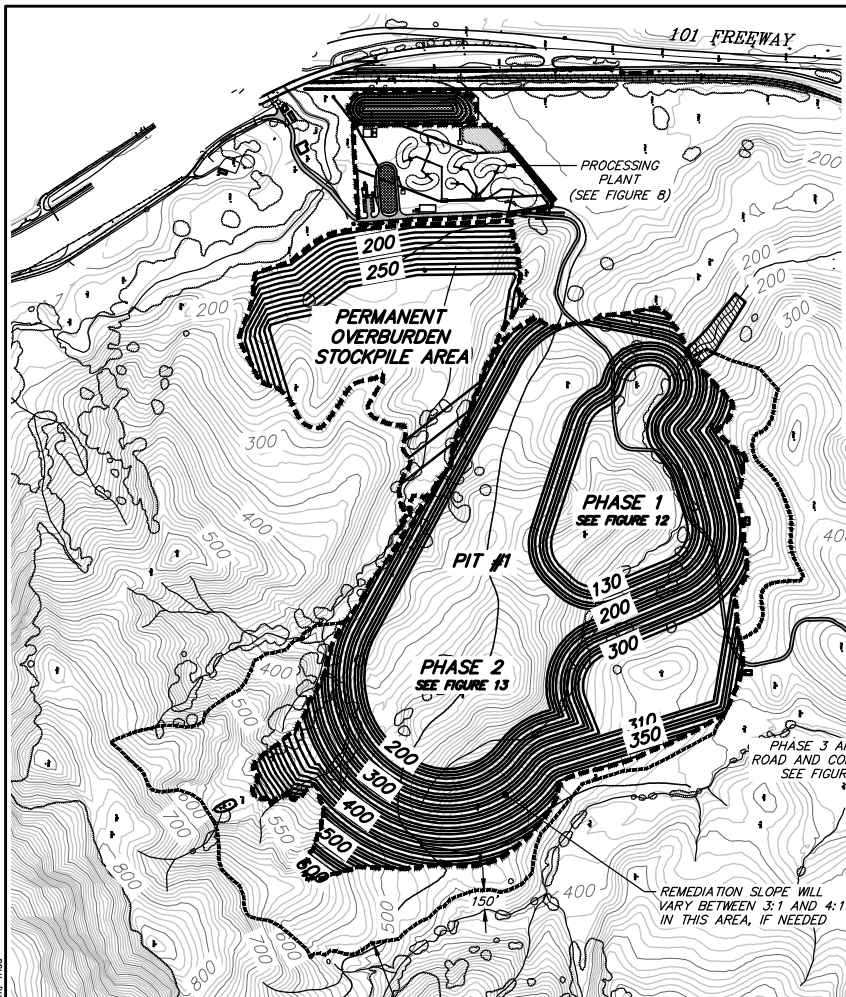
ACCESS ROAD TO PHASE 3 AND 4
88,000 CY CUT AND 14,000 CY FILL

PHASE 1 TOTAL VOLUME 13,300,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET) 375,000 CY
PHASE 1 OVERBURDEN 3,325,000 CY
PHASE 1 PRODUCT 9,600,000 CY

PHASE 2 TOTAL VOLUME 16,300,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET) 300,000 CY
PHASE 2 OVERBURDEN 4,100,000 CY
PHASE 2 PRODUCT 11,900,000 CY

PHASE 3 TOTAL VOLUME 3,600,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET) 135,000 CY
PHASE 3 OVERBURDEN 900,000 CY
PHASE 3 PRODUCT 2,565,000 CY

PHASE 4 TOTAL VOLUME 1,816,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET) 36,000 CY
PHASE 4 OVERBURDEN 540,000 CY
PHASE 4 PRODUCT 1,240,000 CY



DISTURBANCE AREAS

- PIT # 1 - 152.27 ACRES
- PIT # 3 - 56.14 ACRES (INCLUDES ROAD TO PITS 3 AND 4, PLANT SITE, AND TOPSOIL STOCKPILE "A")
- PIT # 4 - 28.80 ACRES

PERMANENT OVERBURDEN STOCKPILE - 42.6 ACRES

ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) - 120.5 ACRES

NOTES:

1. FIGURES 10-13 PROVIDE MORE DETAILED INFORMATION BY MINE PHASE.
2. REFER TO FIGURES 14 AND 15 FOR MINE CROSS SECTIONS.
3. FOR FULL SIZE PLAN REFER TO APPENDIX G.

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- SLIDE REMEDIATION LIMIT LINE
- PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- VEGETATION
- TOPSOIL STOCKPILE AREA
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1200 0 600 1200 2400

1 inch = 1200 ft.



PREPARED & SUBMITTED BY:

DATE:

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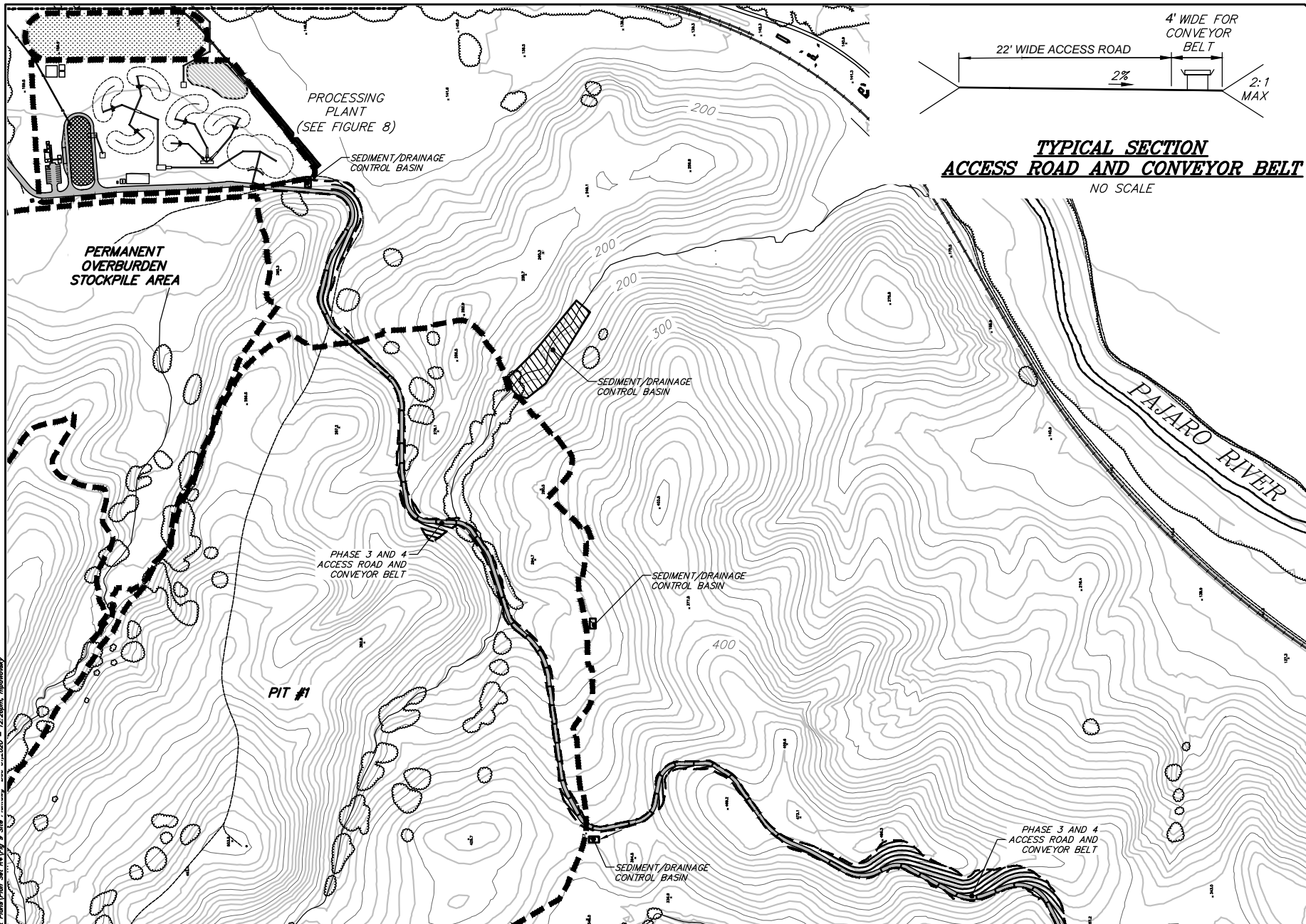
REVISIONS:	BY:

PREPARED FOR:
VERNE FREEMAN
300 SAN ANTONIO RD
PALO ALTO, CA 94303

**SARGENT RANCH QUARRY
MINING SITE PLAN**

DATE 12/01/2020
SCALE AS SHOWN
DRAWN SCR
JOB NO. 01.4020
DWC
FIGURE 9

Z:\01 Mammoth\4020 Sargent Ranch Local Improvement Plans\Plan Set\RA\Fig 9 Site Plan.dwg Jan 04, 2021 - 4:07pm. Print



TYPICAL SECTION
ACCESS ROAD AND CONVEYOR BELT
 NO SCALE

2:07 Ammonia 14020 Support Road Lead Improvement Phase 3/4 8/1/17 9 2/16 12:29pm mps/afw

LEGEND

- | | | | | | |
|--|---------------------------------------|--|-----------------------------------|--|--|
| | MINING LIMIT LINE | | PROPOSED PROCESS WATER POND | | SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2 |
| | PROPOSED GRADED ROAD | | VEGETATION | | TOPSOIL STOCKPILE AREA |
| | PROPOSED STORMWATER SEDIMENT BASIN | | EXISTING GROUND CONTOUR AND ELEV. | | PROPOSED GROUND CONTOUR AND ELEV. |
| | PROPOSED WATER LINE FROM OFFSITE WELL | | | | |
| | CREEK | | | | |

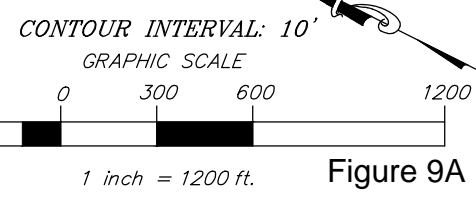
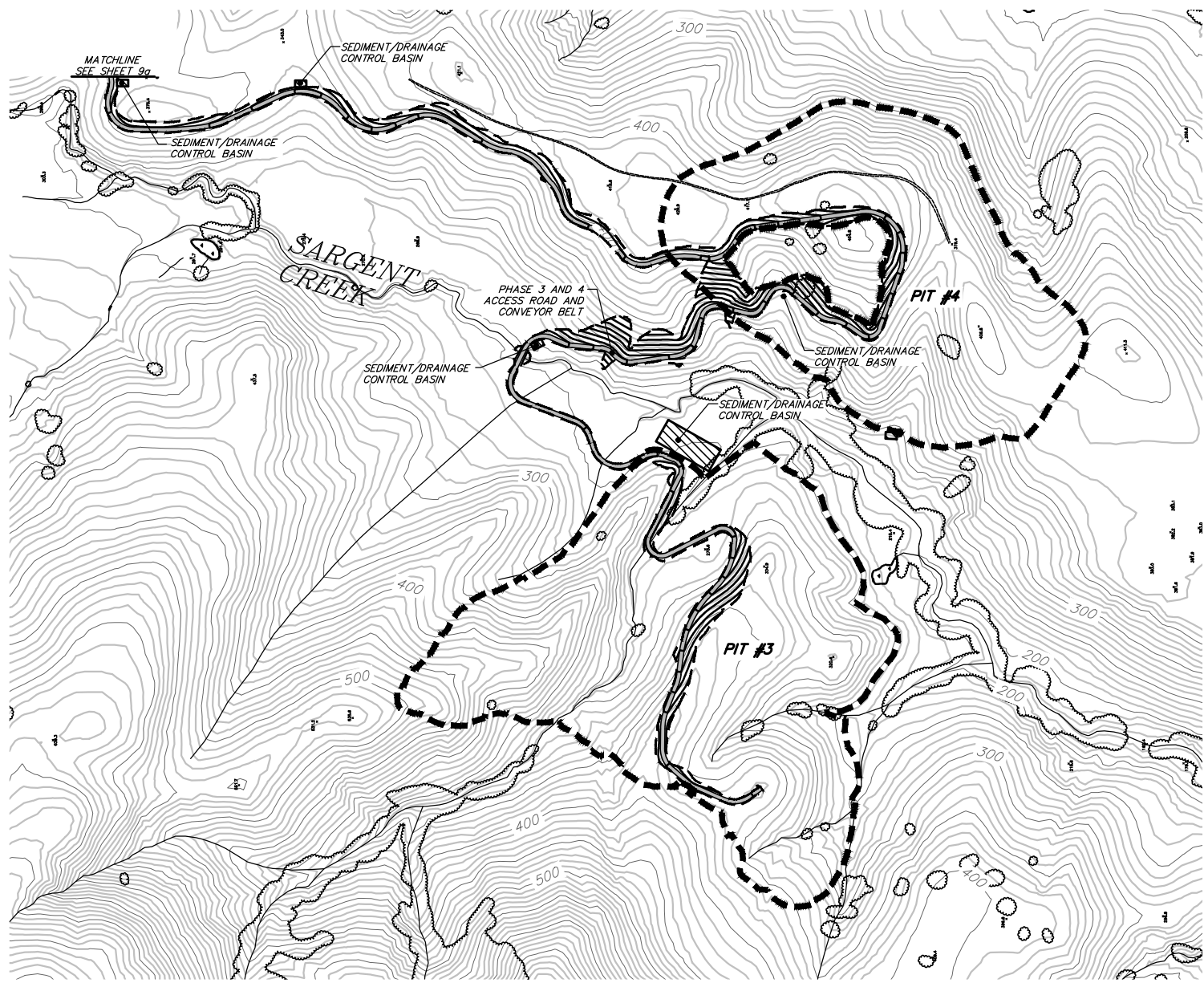


Figure 9A










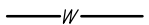



REVISIONS:	BY:

SARGENT RANCH QUARRY

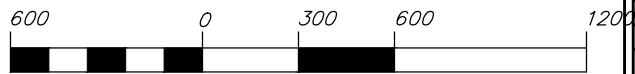
PHASE 3 AND 4 ACCESS ROAD



LEGEND

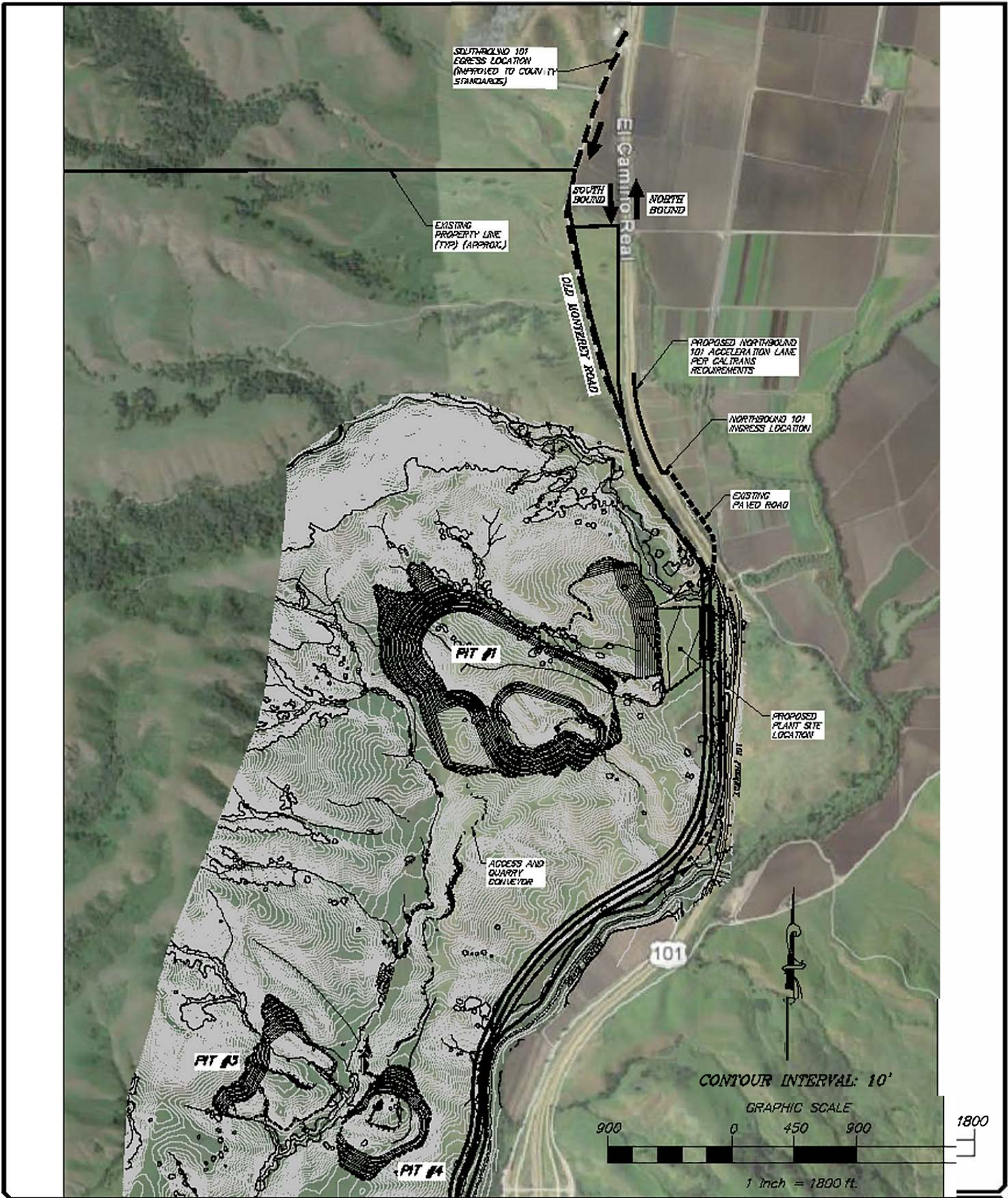
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  PROPOSED PROCESS WATER POND
  SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2
-  PROPOSED GRADED ROAD
  VEGETATION
  TOPSOIL STOCKPILE AREA
-  PROPOSED STORMWATER SEDIMENT BASIN
  EXISTING GROUND CONTOUR AND ELEV.
  PROPOSED GROUND CONTOUR AND ELEV.
-  PROPOSED WATER LINE FROM OFFSITE WELL
  800
-  CREEK
  800

CONTOUR INTERVAL: 10'
 GRAPHIC SCALE



1 inch = 1200 ft.

Z:\07 Mammoth\4020 Sargent Ranch\Load\Improvement Plans\Plan Set\AK\Fig 9 Site Plan.dwg Dec 01, 2020 - 12:28pm mpanofsky



REV 12/01/2020
 REV 01/04/20
FIGURE 9C1

SARGENT RANCH QUARRY
ACCESS AND TRUCK TRAFFIC PLAN

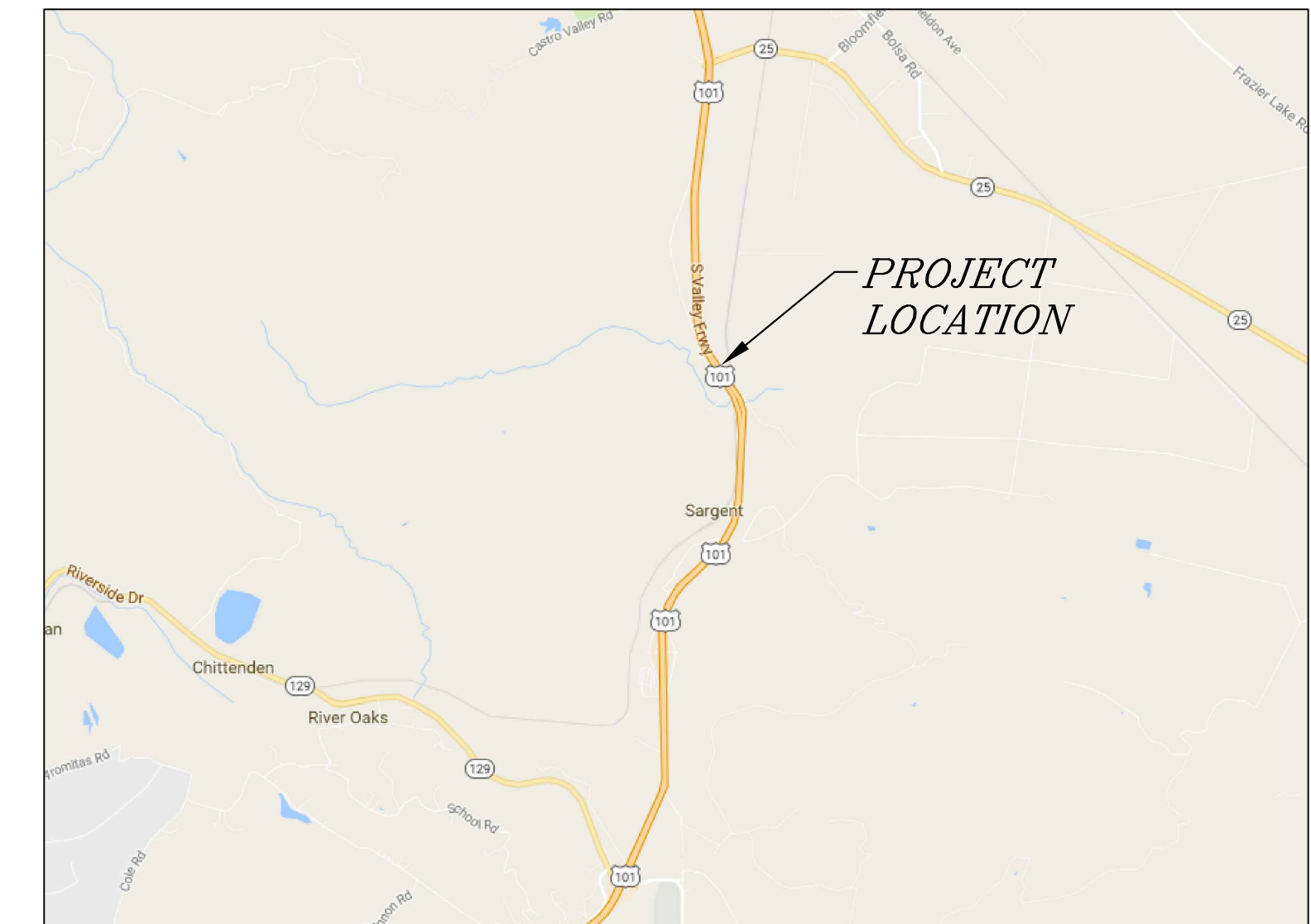
thc
 MAMMOTH LAKES
 BISHOP
 REDWOOD CITY

thc GROUP/THOMAS ASSOC
 civil engineering
 land surveying

SARGENT RANCH QUARRY

HIGHWAY 101 POST MILE 1.14 – 1.44

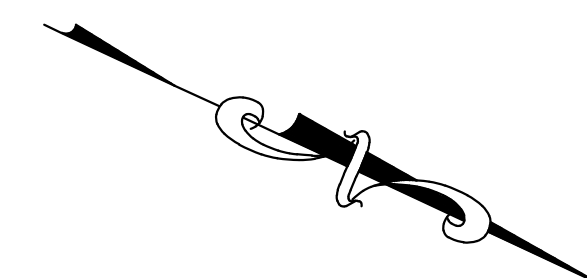
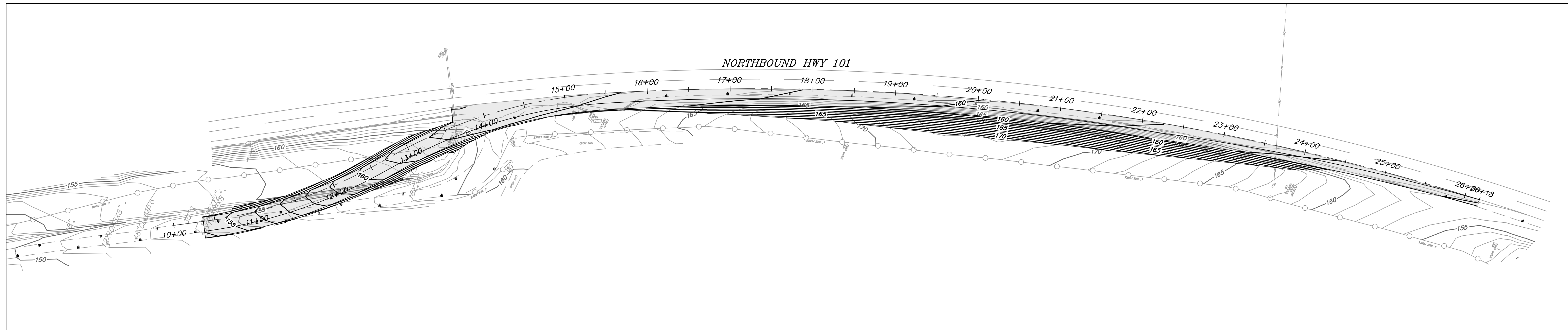
CONCEPTUAL HIGHWAY ACCESS ACCELERATION LANE



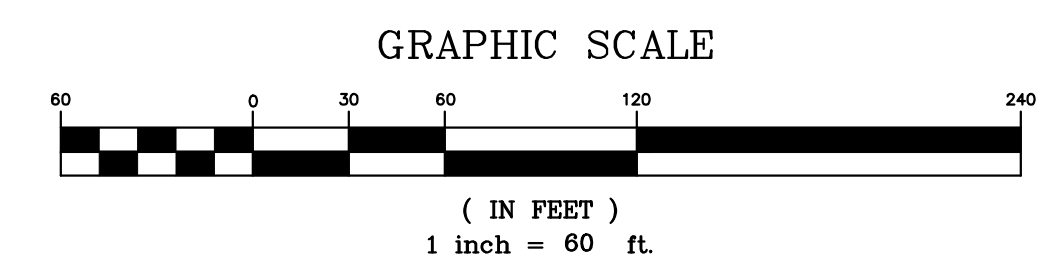
VICINITY MAP
N. T.S.

INDEX TO SHEETS

- C1. COVER SHEET
- C2. PLAN AND PROFILE STA 10+00 – 19+50
- C3. PLAN AND PROFILE STA 19+50 – 26+18



CONTOUR INTERVAL: 1'



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 civil engineering
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 SAN LUIS OBISPO

PREPARED & SUBMITTED BY:
 REGISTERED PROFESSIONAL ENGINEER
 THOMAS A. PLATZ
 NO. C 41039
 CIVIL
 STATE OF CALIFORNIA
 DATE:

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 394 SAN ANTONIO RD
 PALO ALTO, CA 94303

SARGENT RANCH QUARRY HIGHWAY ACCESS
COVER SHEET

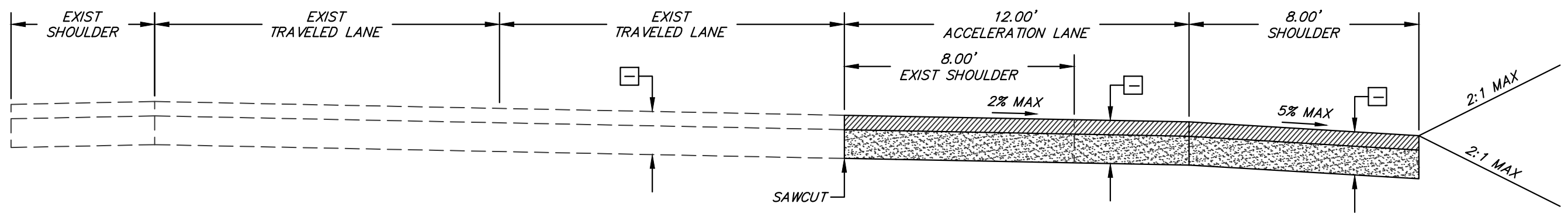
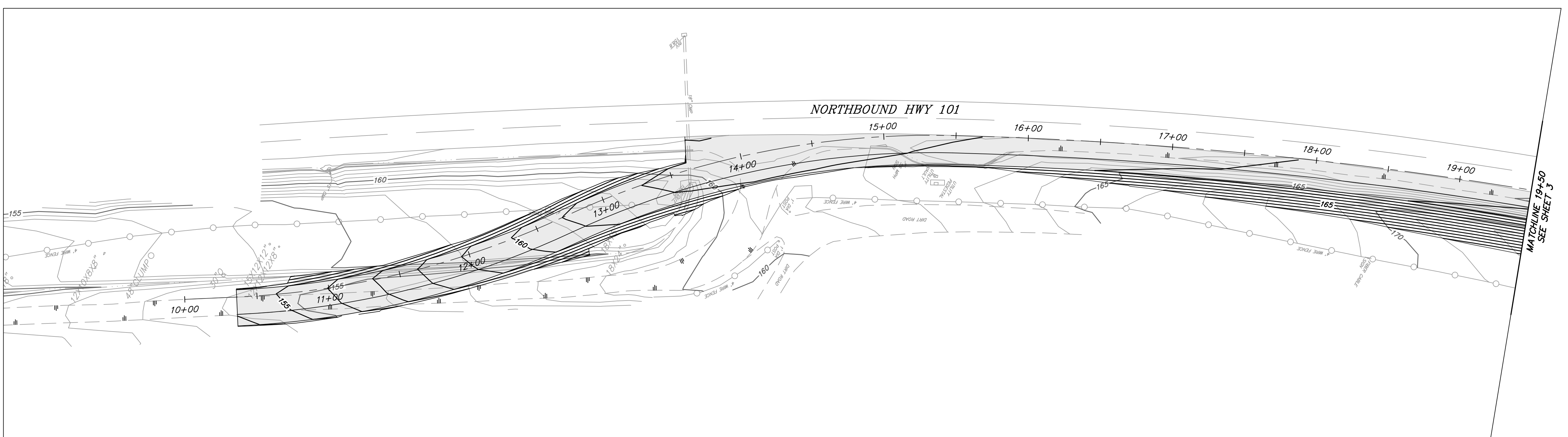
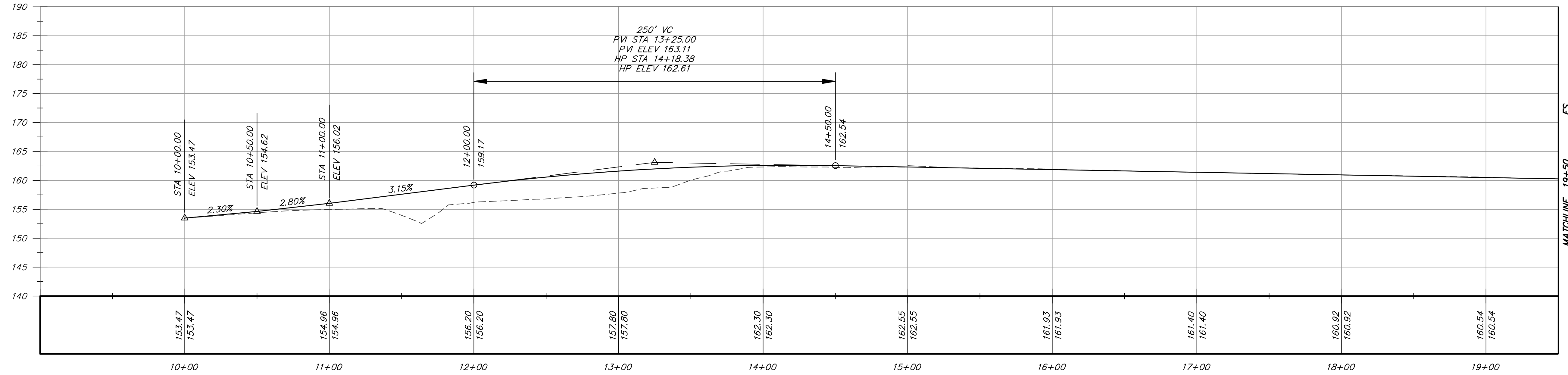
DATE	05/01/2017
SCALE	1" = 60'
DRAWN	SR
JOB NO.	01.4020
DWG	C1
SHEET	1 OF 3

REVISIONS:	BY:

PREPARED FOR:
 VERNIE FREEMAN
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 PALO ALTO, CA 94303

SARGENT RANCH QUARRY HIGHWAY ACCESS
CONCEPTUAL HIGHWAY ACCESS
ACCELERATION LANE

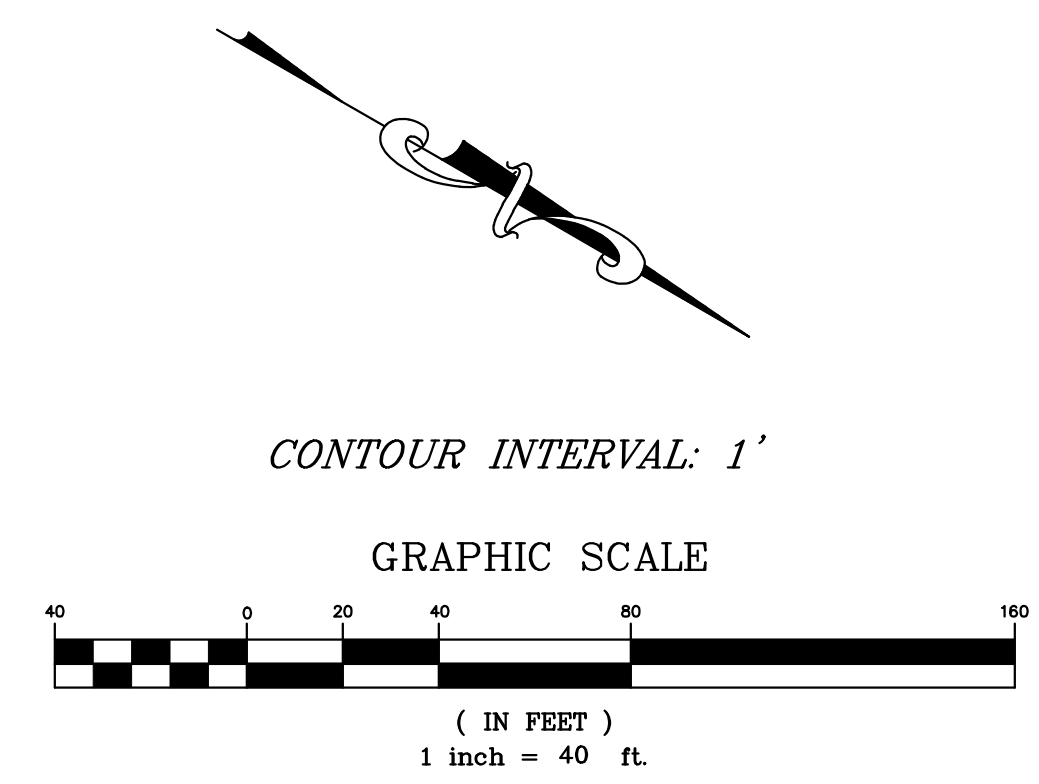
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 JOB NO.: 01.4020
 DWG: C2
 SHEET 2 OF 3



NORTHBOUND HIGHWAY 101
 TYP SECTION STA 15+47.99 TO STA 21+86.32

EARTHWORK ESTIMATE

CUT = 2,950 CY
 FILL = 1,000 CY
 EARTHWORK QUANTITIES DO NOT INCLUDE ANY ADJUSTMENTS
 FOR SHRINKAGE, ROCK LOSS, STRIPPING, FOUNDATION AND
 TRENCH SPOILS, COMPACTION AND CONSOLIDATION OR
 OVEREXCAVATION. THE CONTRACTOR SHALL MAKE AN
 INDEPENDENT QUANTITY TAKEOFF AND BASE HIS BID ON
 QUANTITIES SO CALCULATED.

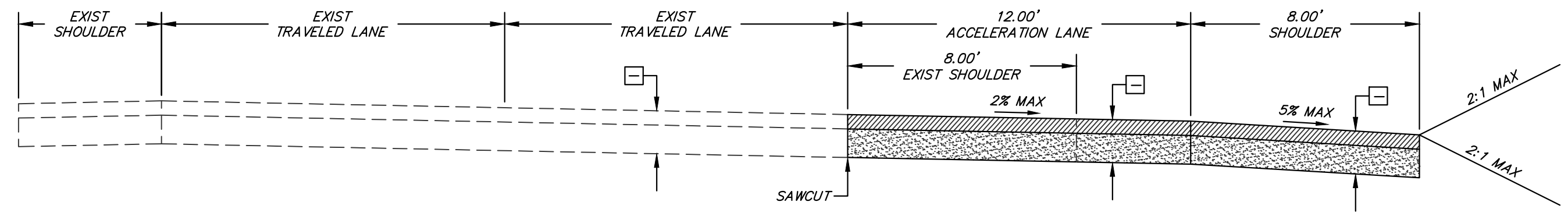
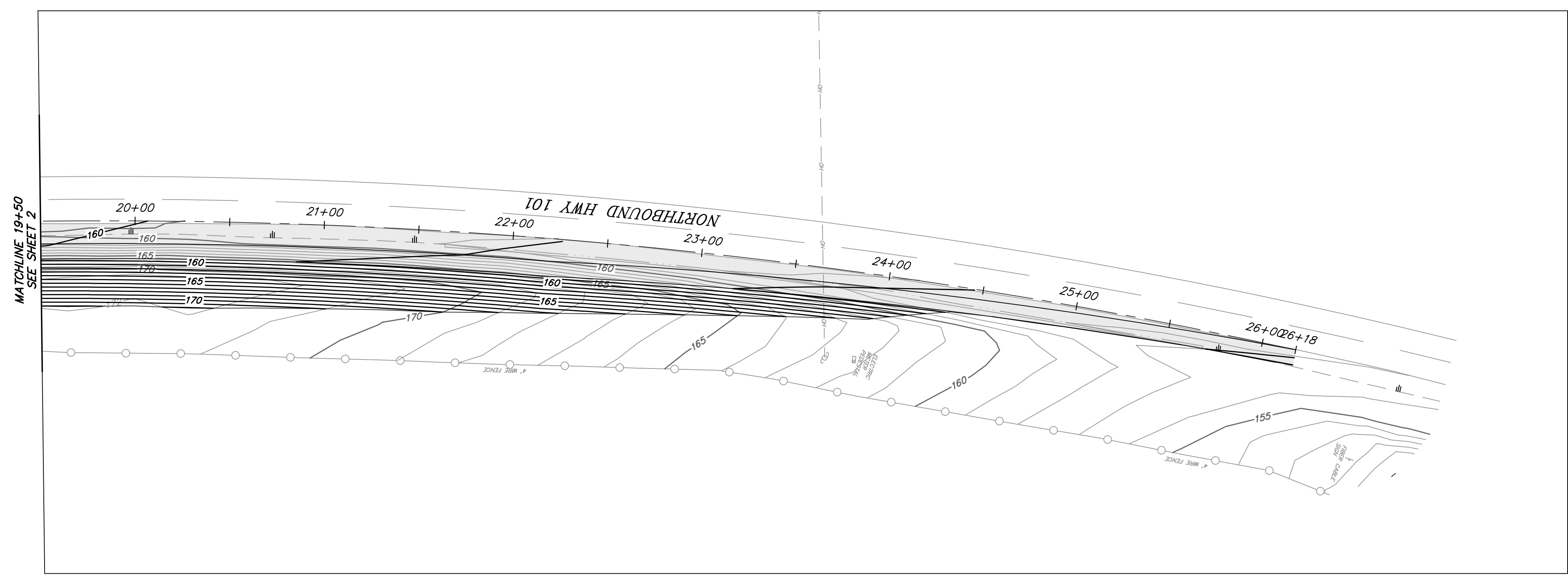
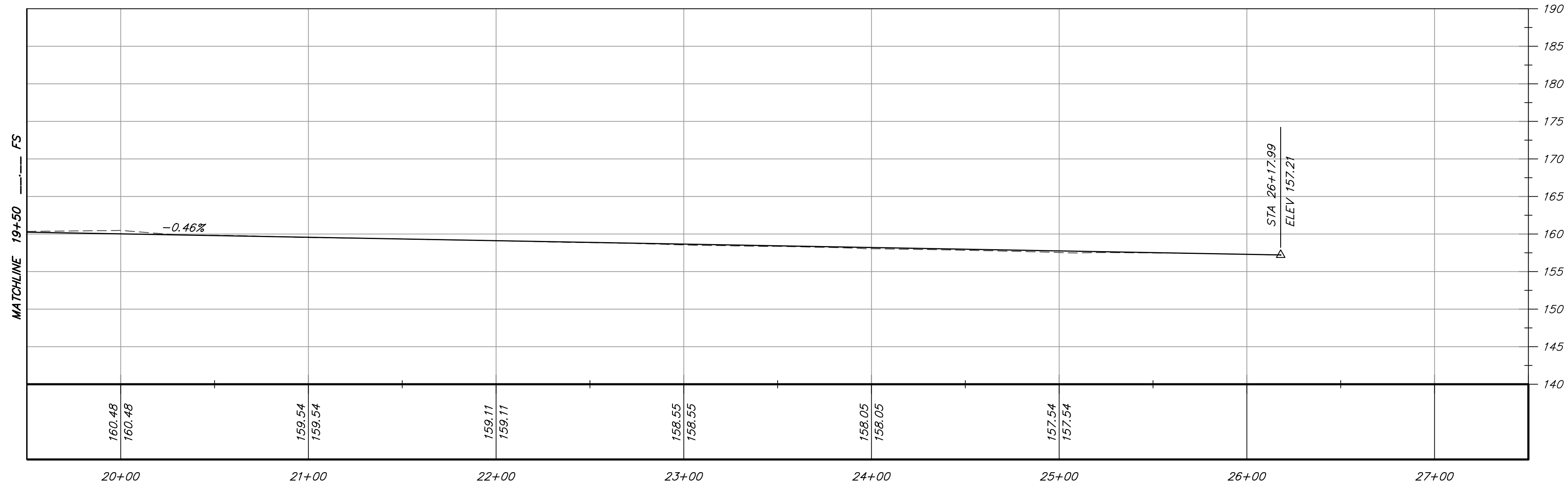


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**SARGENT RANCH QUARRY HIGHWAY ACCESS
 CONCEPTUAL HIGHWAY ACCESS
 ACCELERATION LANE**

LEGEND

- PROPERTY LINE
- CENTERLINE
- EDGE OF PAVEMENT
- BOULDER, DRAWN TO APPROX. SIZE ORIENTATION VARIES
- FENCE
- TREE TYPE & SIZE
P=PINE/F=FIR/S=SNAG
- EXISTING GROUND CONTOUR & ELEV.
- FIRE HYDRANT
- WATER VALVE BOX
- SEWER MANHOLE
- EXISTING WATERLINE
- EXISTING SEWERLINE
- OVERHEAD UTILITIES

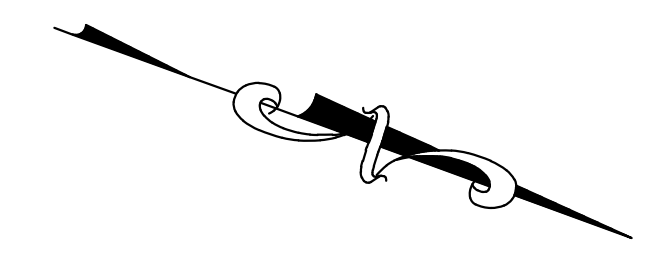


NORTHBOUND HIGHWAY 101
 TYP SECTION STA 15+47.99 TO STA 21+86.32

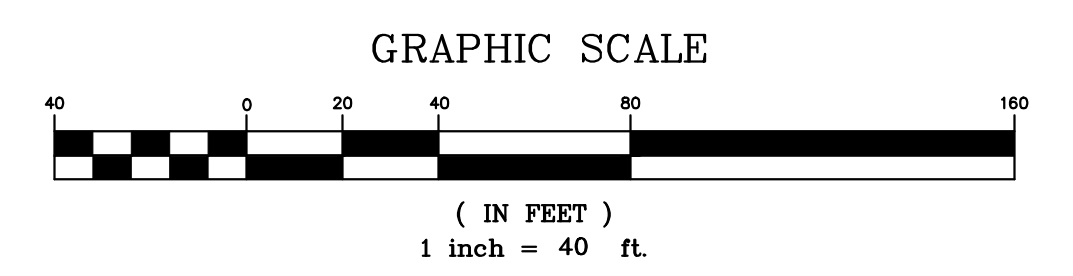
EARTHWORK ESTIMATE

CUT = 2,950 CY
 FILL = 1,000 CY

EARTHWORK QUANTITIES DO NOT INCLUDE ANY ADJUSTMENTS FOR SHRINKAGE, ROCK LOSS, STRIPPING, FOUNDATION AND TRENCH SPOILS, COMPACTION AND CONSOLIDATION OR OVEREXCAVATION. THE CONTRACTOR SHALL MAKE AN INDEPENDENT QUANTITY TAKEOFF AND BASE HIS BID ON QUANTITIES SO CALCULATED.



CONTOUR INTERVAL: 1'



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3.6 DESCRIPTION OF MINING METHODS AND ON-SITE PROCESSING

3.6.1 Description of Mining Plan

The Sargent quarry aggregate reserve is an alluvial deposit that has been lifted by geological force to elevations up to 625 above sea level. The primary focus of the mining plan is to excavate the sand and gravel resource from the designated quarry areas. Mining operations will occur in the site between the elevation of 625 and 130 msl. Material will be hauled from the mined hillside and pit areas by truck or conveyor to the processing plant. All processing of mined materials will be done on-site. Overburden or unsalable material for aggregate construction purposes will be stockpiled and sold as engineered fill or used in the final reclamation grading of fill slopes at mining's conclusion in each phase.

Typical mining includes the development of an open pit with 2:1 side walls and 10-foot-wide benches every 40 vertical feet. These geotechnical criteria will maximize the harvest of the mineral resource as indicated on Figures 10, 12 and 14. The final reclaimed fill slopes will have varying gradients of 3:1 or flatter (Figures 13 and 15). The mine and reclamation grading configurations are supported by the slope stability analysis in Appendix D. Surplus water, if any, will be either stored on-site in a pond located in the pit area for dust control or in tanks for fire suppression purposes.

Mining of the site will occur in four phases starting with Phase 1 shown on Figure 9. Phase 1 mining will consist of excavating a portion of the quarry area approximately 2,400 feet in length to a maximum depth of 250 feet. During mining operations, a road will be graded from the mining area down to the plant area. This road will also be used to access the overburden stockpile area. Operations in the Phase 1 mining area will excavate the upper 220 feet of the northeasterly trending ridge that is the anticipated limit of viable aggregate resource. To ensure that the more visible mining areas at the ridge are reclaimed as soon as possible, the easterly portion of Phase 1 will be reclaimed at the time Phase 2 is being mined. Overburden excavated from Phase 1 will be stockpiled in the northeastern corner by the plant and northwestern area as shown as the Overburden Stockpile area on the Figure 9.

Phase 2 mining will commence once Phase 1 mining has been completed. A mining operations road will be graded to the top of the Phase 2 mining area near an elevation of 600 feet located in the westerly most area of the Phase 4 mining disturbance. The 2:1 temporary mining operations slope will be excavated down to the Phase 2 pit level of 200 feet. Operations in the Phase 2 mining will continue excavation of the northeasterly trending ridge begun in Phase 1. Excavation of the ridge down to the pit level will remove the upper 250 feet of the ridge that is the anticipated limit of viable aggregate

resource in that portion of the quarry. Phase 2 overburden will be placed onto the northern, eastern, and western temporary slopes to create the permanent slope of 3:1. The overburden will also be placed in the Phase 1 pit. The Phase 2 Mining Plan is presented on Figure 13.

Phase 3 and 4 mining will commence after the completion of Phase 2. To access these phases a 1.6 mile-long overland conveyor with a maintenance road will be constructed on the west side of the eastern ridge of the Sargent Valley. In general, the 48 inch wide conveyor will stay upland from the Sargent Creek and a 22 feet wide road will be constructed along its pathway. Excavation of the pits in Phases 3 and 4 will remove the upper 200 feet that is the anticipated limit of aggregate resource and will start at the top of each hill located in each phase. The remaining Phase 3 and all of the Phase 4 overburden will be stockpiled in the area behind the plant site. Topsoil from both Phase 3 and 4 will be stockpiled in the area shown on Figure 10a.

3.6.2 Mining Method

The Sargent Quarry will be an open pit quarry. The areas to be excavated will be cleared of vegetation, with the topsoil and overburden removed and stockpiled separately in designated locations shown on Figure 8: Aggregate Plant Site Plan. Initial grading of any area should, when feasible, be conducted during the dry season from approximately April 16 through October 14. Should grading occur during the wet season, appropriate Best Management Practices would be utilized, including the use of coir wattles, silt fences, sediment traps, and stilling basins.

The mineral resources will be removed using bulldozers, excavators, graders, and front-end loaders. No blasting will be required. Mined slopes will be constructed with a temporary gradient no greater than 2:1 or flatter with 10-foot-wide benches every 40 vertical feet. The benches will have a longitudinal grade of no less than 4 percent and no more than 12 percent. The mining operation involves boundary staking, vegetation removal, and topsoil and overburden salvage, harvesting, processing, and shipping as described below. The northern portion of the quarry during Phase 1 and 2 will mine the ridge located between the ephemeral drainages to a depth of 400 to 450 feet and will be graded to slope at 2:1 with 10-foot-wide benches every 40 vertical feet. The northwesterly corner of the mined area will include mining the ridge of the bluff along with the removal of a knob to a depth of 250 feet. The southern portion of the quarry will be mined to a quarry floor of approximately 900 feet in width that will be graded to have a cross slope of about 5 to 7 percent for the westerly 100 feet. The rest of the floor will be mined to slope at 4:1 to the northeast corner of the floor.

3.6.3 Grading Control

The boundaries of the mining area will be staked prior to beginning excavation in each new mining area. Staking identifies the top edge and lateral limits of the excavation. Staking also identifies areas for topsoil salvage.

3.6.4 Topsoil Salvage

Topsoil removal is done at the outset of each mining increment. As mining proceeds, topsoil will be stockpiled (as shown on Figure 8) for later use in re-soiling the final reclaimed benches, slopes, and quarry floor. About 525,000 CY of topsoil will be salvaged during the life of the quarry. The soil fines removed during the wet process at the processing plant are also an ongoing source of planting material. The soil fines and overburden will be used as soil materials to supplement the topsoil. All three soil types will be amended if the Test Plot planting program indicates a need for amendments. The stockpiles of overburden, topsoil, and soil fines shall be managed to prevent erosion and will be clearly identified with signs.

3.6.5 Harvesting

Bulldozers and front-end wheel loaders are used to excavate the sand and gravel deposits. Conveyer belts, scrapers or haul trucks will be used to transport the native pit material to the aggregate plant where it will be processed, washed, and sorted into product piles.

3.6.6 Contour Grading

Grading control of the mining and adherence to the mining plan will be the responsibility of the quarry manager and his direction to the quarry employees. The quarry manager will give direction to the equipment operators. The final contours will have smooth transition to existing grades, rather than abrupt, engineered transitions at the native slopes.

3.6.7 Excavation Equipment and Technique

Topsoil and overburden will be removed by bulldozers and pushed downslope. Topsoil will be stockpiled for later reuse consistent with the CCRs. Bulldozers, excavators, scrapers, and front-end wheel loaders will remove overburden, sand, and gravel. Overburden will be stockpiled for use as on-site fill for the earth buttresses and in the pit and basins, for re-soiling the reclamation planting areas, and/or for sale as engineered fill. Scrapers or trucks will be used to transport topsoil, overburden, sand, and gravel from the harvest areas using temporary access roads. Conveyors may also be used to move the excavated materials from the harvesting area to the rock processing plant.

3.6.8 Mid-Slope Benches

Runoff from the quarry slopes will be directed into interceptor ditches on the benches and then into either side collector ditches or a lined ditch that carries the water to collector ditches on the quarry pit. After final grading configuration of each bench has been achieved, runoff from the quarry slopes will be directed into interceptor ditches on the benches and proceed into drop inlets flowing into over side drain culverts. A typical section is shown on Figure 16. Ditches at the toe of the quarry slopes will carry storm water to the basins/pit. Each bench will be constructed with a minimum 4 percent back slope to prevent runoff from flowing over the quarried slopes.

The collector, interceptor ditches, drop inlets, and over side drain culverts will be constructed after the final reclamation grading configuration of each bench has been achieved. All of the benches will be a minimum of 10 feet wide. The benches will intercept loose rock that may come off the slope. The benches will minimize the chance of slope erosion or weakening of the slope resulting from runoff saturation.

3.6.9 Fill Buttresses

The mined 2:1 cut slopes will be overlain with fill buttresses using the overburden and topsoil. The buttresses will have a maximum gradient of 3:1 with 1-3 foot benches in areas where oak trees will be planted every 30 vertical feet as shown on Figures 18a and b: Reclamation Cross-Sections. The reclamation benches will be sloped inward to collect runoff with ponding areas around oak tree plantings. The fill buttresses shall consist of compacted crushed rock material, 6 inches in maximum size, placed in 8-12 inch lifts and compacted using a large self-propelled compactor to at least 95 percent relative compaction in accordance with ASTM D1557 Test Standard. The upper 12 inches may be granular soil material suitable to support plant growth, including a 6 inch layer of topsoil.

3.6.10 Drainage from the Quarry

The quarry will be graded to achieve positive drainage consistent with the performance standards contained in the CCRs for drainage and diversion. Surface runoff and drainage from surface mining activities, for example, will be controlled by berms, silt fences, sediment ponds, revegetation, hay bales, or other erosion control measures, to ensure that surrounding land and water resources are protected from erosion, gullyng, sedimentation and contamination. Erosion control methods have been designed to handle runoff from not less than the 20 year/1 hour intensity storm event consistent with CCR section 3706(d) [Performance Standards for Drainage, Diversion Structures, Waterways, and Erosion Control]. Specifically, storm water falling on the quarry floor will be directed into drainage ditches and swales, and conveyed to the pit and basins (Figure 16: Mine Drainage Plan). These ditches will be maintained during mining and relocated as mining moves into new areas. Runoff from the quarried slopes and benches

will always be directed down to the quarry floor through drainage ditches. Energy dissipaters will be located at the base of the slope where the runoff will flow into ditches that drain into the pit and basins. Runoff from the quarry slopes will join runoff from the quarry floor in the pit and basins. The basins will retain storm water until it percolates into the ground consistent with the performance standards required in CCR section 3706.

3.6.11 Geotechnical Setback Areas

The proposed limits of quarry mining are defined by the solid black line and consist of an area of 298 acres of excavation area. Cut slopes are sloped at a 2:1 angle with 10-foot benches every 40 feet of slope angle. Finished and reclaimed slopes will be back filled to an angle of 3:1.

However, since the quarry is new and geotechnical information regarding the proposed cut slopes cannot be based on direct observations of existing similar cut slopes, it is necessary to provide buffer areas around portions of the defined quarry excavation area in case of cut slope instability. These “geotechnical setback areas” provide regions within the approved project footprint that are not proposed for mining but may be used if slopes in certain portions of the project need to be laid back at a more gradual angle to achieve stability. Reasons for potential slope instability may include landslides, clay lenses, perched water tables or any other reasons as directed by a geotechnical engineer from time to time. The total acreage included in these areas is 105 acres.

The geotechnical setback areas are shown on Figures 10 – 13.

3.6.12 Geotechnical Monitoring Frequency

A licensed geotechnical engineer will monitor the construction of the quarry cut slopes. The engineer shall submit a report to the County geologist and to the operator and list any concerns regarding the stability of the cut slope and list all remedial actions that may have to be taken by the operator. The geotechnical engineer shall visit the mine site once each time a 30-foot bench has been excavated and construction of that bench is completed for the first three years and from time to time after that.

3.6.13 Mining Below the Groundwater Table

Groundwater, whether static or perched, may be encountered during the mining of the Sargent Quarry. If the groundwater is perched, efforts shall be made to drain the water from the mining area using, brow ditches, pumps or other methods to drain the water away from the excavation area. The water will be drained into the low point of the nearest mining pit and allowed to percolate into the groundwater. Once the area is drained and the slopes stabilized, mining can proceed as planned.

Should static groundwater be encountered during mining of any of the phases of the quarry, then the operator shall initiate wet mining in accordance with this section.

Wet mining will be accomplished with the use of a dragline crane or large, long reach excavator that can cast its bucket below the water surface and retrieve material. Sand and gravel harvested underwater will be placed in a stockpile area where the material can drain prior to transport back to the processing plant. Water draining from this stockpile will be channeled to drain back into the pit/lake area. Dragline cranes can typically harvest material to an elevation of 45 feet below the water surface. Optionally, the use of "Deadman" pulley systems can harvest to 90 feet below the water's surface. Once the operator has determined that the wet mining phase has been completed and no more material can be economically recovered, the operator shall notify the lead agency, and reclamation will begin on this phase of mining.

Mined out phases that include exposed groundwater ponds will be filled with overburden or other imported fill, if necessary, to bury and cap the groundwater and not leaving any groundwater exposed to evaporation after reclamation is completed. At least 20 feet of fill will be placed over the elevation of ground water's surface. Once the bottom elevation has been established, other reclamation actions will be taken as detailed in Chapter 4 of the Reclamation Plan.

3.6.14 Erosion Control

The combination of planned drainage, revegetation improvements, and management of stockpiles control erosion during mining and reclamation. Construction of benches, interceptor and collector ditches, and energy dissipaters at the base of slopes; installation of culverts, drop inlets, and over side drain pipes' and the use of sediment basins shown in Figure 16: Mining Drainage Plan and consistent with the CCRs will minimize the opportunity for runoff to concentrate and cause erosion. The long-term overburden pile will be seeded and have coir wattles placed on the slope for erosion control. During reclamation and afterwards (once mining ceases), drainage ditches and sediment basins (Figures 17 and 18), combined with revegetation and erosion control measures, will provide appropriate sediment and erosion control.

Revegetation with grassland, herbaceous species, and trees will bind the soil particles together and break up the erosion energy of raindrops. Temporary erosion control measures to be implemented in conjunction with revegetation efforts include the use of coir wattles strategically placed on the fill slopes every 20 vertical feet. Stockpiles at the processing plant will be managed for wind and erosion to control erosion and sediments that may contribute to silt build-up in the sediment basin. Temporary erosion control measures to be used on the stockpiles during the rainy season may include surrounding the stockpiles with devices such as coir wattles or silt fences. Other measures may include constructing drainage ditches that collect stormwater from the stockpiles and

directs the flow into one of the sediment basins and pits. Topsoil stockpiles that are not going to be used in the near-term will be hydro seeded.

3.6.15 Final Reclamation Grading and Drainage Plan

The final reclamation grading configuration, drainage ditches, and basins are shown on the Final Reclamation Plans on Figures 17 and 18. Figures 20 and 21 contain representative cross sections through the site showing both mined and final reclamation grades, as well as drainage details.

3.6.16 Shipping

Front-end loaders are used for loading the rock material directly into haul trucks. Haul trucks typically have a tonnage capacity of 20 to 25 tons (average 23 tons per load). An overland conveyor will be used to transport material from the mining site to the plant for processing.

3.6.17 Detailed Description of Mining Phases

Mining phases are described below and shown on Figures 10 through 15. Reclamation grading, revegetation, and drainage are illustrated on Figures 13 and 15. Some mining and reclamation operations will be performed concurrently. For example, as a new phase is started the reclamation of the previous phase will be conducted concurrently.

Setting up the new quarry operation will require installation of acceleration and deceleration lanes on Highway 101. At the new operations area, a rock processing plant with a process water pond will be set up as well as office, scale and maintenance buildings, bone yard, stockpiles, and an unpaved equipment parking area. A sediment basin will be constructed to receive all surface water from the areas disturbed by mining via drainage ditches and swales. A new well will be drilled and used as a source of water. The operations area is presented on Figure 8: Aggregate Plant Site Plan. The first phase of mining work starts with stripping away surface vegetation along with removing the topsoil and overburden in separate layers and stockpiling them separately. The locations of these stockpiles are indicated on Figure 10a.

3.6.18 Phase 1 - Detailed Description

Phase 1 mining is shown of Figure 11. Hills to be mined will be mined from east to west creating a disappearing hillside effect. Temporary 2:1 slopes with 10 foot benches every 40 feet will be constructed as part of mining; the final slope configuration of the Phase 1 mining area will use overburden to backfill the slopes to 3:1 without benches. Once overburden placement operations are completed in Phase 1, the slopes, and overburden stockpile area will be revegetated by either hydro seeding, drill seeding, or imprint seeding except for a small area to be used as a Phase 2 stockpile area (See Figure 11 for location). The revegetation program is shown on Figure 23: Revegetation Plan, and the plants and seed mixes are described on Tables 5 through 7.

3.6.19 Phase 2 – Detailed Description

The next phase of mining will commence with stripping away surface vegetation along with removing topsoil and overburden in separate layers and stockpiling them separately. The topsoil will be placed on the overburden plateau area created during Phase 1 overburden placement. Phase 2 overburden will be placed in the Phase 1 pit and also used to create the permanent slopes of 3:1 in the easterly portion of Phase 1. Once the overburden has been placed from Phase 2, the stockpiled Phase 1 topsoil will be placed on the easterly slopes and in the pit. Any unused soil will be stockpiled in the westerly portion of the Phase 1 pit utilized later in reclaiming the Phase 2 mining area. As rock material (sand and gravel) are excavated from Phase 2 area slopes, it will be pushed down the quarry face and placed into a truck or onto a conveyor; or the material harvested from the quarry pit will be transported to the plant by truck or conveyor. Temporary slopes and benches will be constructed as part of mining; the final slope configuration of the Phase 2 mining area will be constructed at the end of Phase 2 mining.

At the beginning of Phase 2, the final reclamation grading of Phase 1 will be completed per the grading configurations shown on Figures 10, 11, 15, and 16. In addition the final drainage ditches on the benches will be installed while these reclaimed slopes and benches are completed. A small landslide identified in the Slope Stability Report, by Sierra Geotechnical, will be removed prior to the commencement of the Phase 2 excavation. Final reclamation work in the Phase 1 area may include installation of an irrigation system to water the oak tree seedlings. However, irrigation will only be installed if the Test Plot planting program determines that supplemental water improves the survival rate of the oak trees. During Phase 2, the Phase 1 area will be revegetated after final reclamation grading; it will include hydro-seeding the slopes with a gradient of 3:1 or more, flatter slopes and benches, and planting oak tree masses in designated locations on the reclaimed benches. The revegetation program is shown on the Revegetation Plan on Figure 23, and the plants and seed mixes are described on Tables 5 through 7. All of the sediment basins, as shown on Figure 9, will remain in place during mining to provide sediment control.

When mining is completed in the Phase 1 and 2 areas, final reclamation of the quarry will commence in accordance with Figures 17 through 21. The stockpiled overburden and topsoil will be used to reclaim the Phase 1 and 2 slopes, benches, and quarry floors. The remaining balance soil materials will be used to fill the quarry pit to an elevation at or below the surrounding grade with the final elevation depending on the amount of available fill material. The final drainage ditches on the benches will be installed as these reclaimed slopes and benches are completed. Final reclamation work in the Phase 1 and 2 areas may include installation of an irrigation system to water the oak tree seedlings. All areas disturbed by mining during Phases 1 and 2 will be revegetated after final

reclamation grading which will include hydro-seeding the slopes and benches, and planting oak tree masses in designated locations on the benches.

3.6.20 Phases 3 and 4 – Detailed Description

Prior to mining commences from the Phase 3 area, a conveyor belt will be constructed to transport material to the plant. The conveyors path is shown on Figure 9a and b.

Phase 3 and 4 mining is shown on Figure 10. These deposits are in two hills on both the east and west side the Sargent Creek. An overland conveyor belt with a maintenance road will be constructed through the Sargent Valley, primarily staying on the west side of the creek and out of the Sargent Valley. An approximate total of 7,500,000 cubic yards will be excavated from Phases 3 and 4. Mining in Phases 3 and 4 is expected to take approximately 10 – 13 years. No visual impacts will occur from these phases as they are located in a region of the mining site that is hidden from view from public vantage points.

These phases of mining will commence with stripping away surface vegetation while removing topsoil and overburden in separate layers and stockpiling them separately in the front and rear berms located around the plant area. The detailed mining plan is show on Figure 10. The conveyor belt will be used to transport both overburden and sand and gravel.

Revegetation Test Plots will be set up before or at the beginning of Phase 3 and will be located near the office in an area that will not be disturbed by mining activities.

The access road to Phase 3 and 4 along the Sargent Creek may be left in place to access the site during reclamation. Afterward reclamation of Phases 3 and 4 has been successful, the access road will be removed, the bridges taken out and the roadway surface revegetated. Other un-necessary haul roads and the quarry floor will be disked, graded to have positive drainage, resoiled, and seeded.

3.6.21 Depth of Maximum Excavation *(PRC §2772(c)(4))*

The mining depth varies, as surface elevation varies throughout the hillside site. The maximum depth of cut perpendicular to the face of the slopes is in approximately the center of the quarry, in the Phase 2 pit where the final depth of excavation is planned at a maximum depth of approximately 130 feet above mean sea level (Figure 15: Mine Cross-Sections). Final elevations of the Phase 2 pit will be revised during the final stages of mining as overburden stockpile locations are combined and relocated to the pit as indicated on Figures 17 through 21. The operation is expected to excavate to depths that are above the local groundwater table.

3.6.22 On-Site Processing

All excavated sand and gravel will be washed and screened at the rock processing plant. The rock and sand will be washed to remove fines and to produce finished products for sale. Electrical power for the plant and other processing equipment will be provided by SVCE.

3.6.23 Routine Maintenance Procedures

An integral part of the mining operation is the routine removal of debris from benches, removal of accumulated sediment from drainage ditches and basins, and re-grading of the haul roads. A loader, bulldozer, or bobcat may be used to remove debris from the benches if the debris impairs drainage on the bench and if removal of the debris will not impact the revegetation program on the benches. If it is necessary to remove the debris without impacting the revegetation program, then the debris will need to be removed by hand. A backhoe or an excavator is used to clean out drainage ditches and basins annually before the winter rains come and when it is observed that a ditch is impacted by accumulated debris. A road grader is used to smooth unpaved access roads. Spilled rock or soil is cleaned up by hand or by using a loader.

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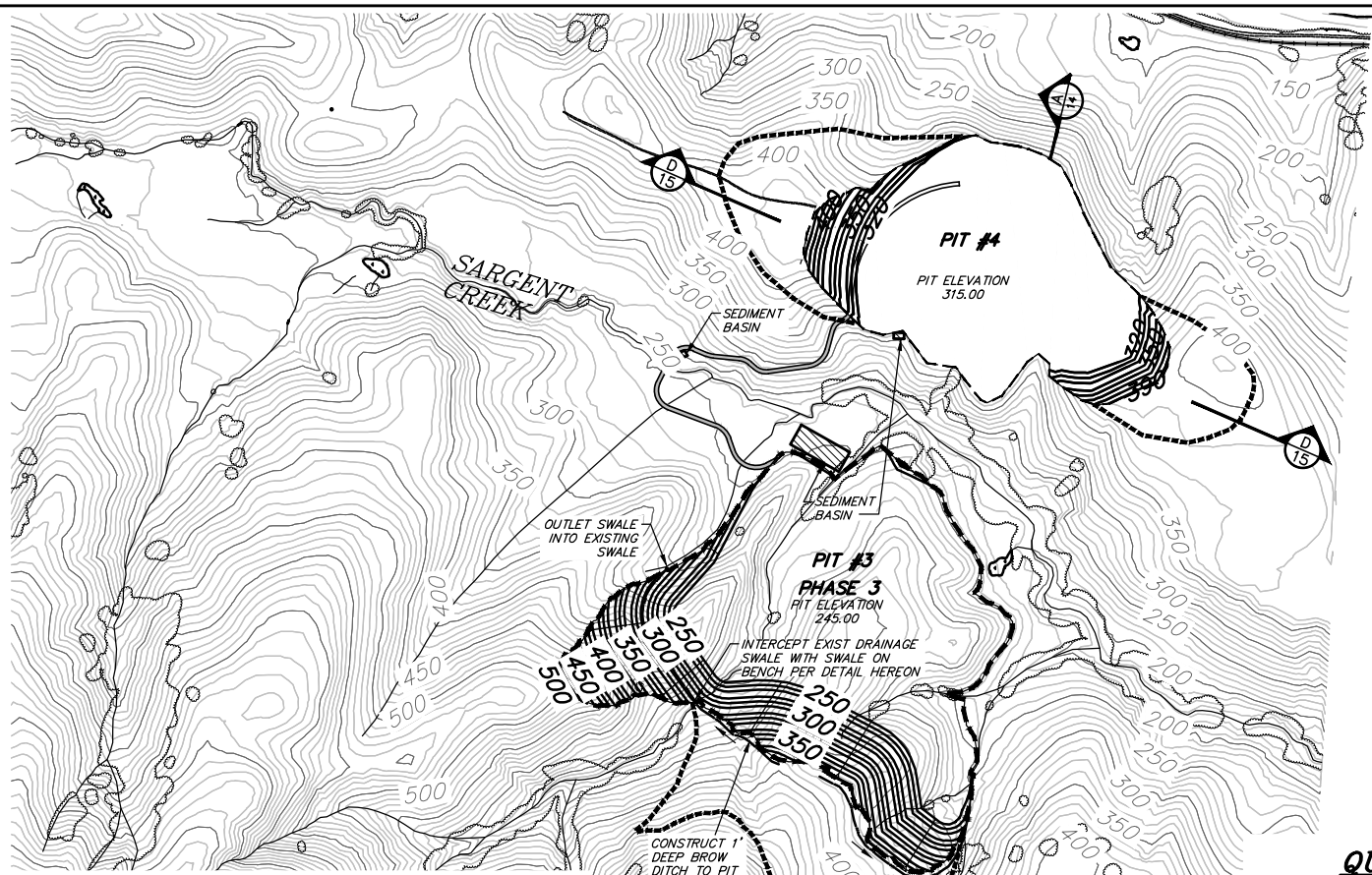
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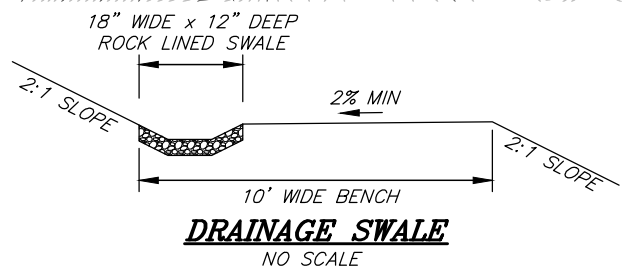
PREPARED FOR:
 VERNIE FREEMAN
 504 SAN ANTONIO RD
 PALO ALTO, CA 94303

**SARGENT RANCH QUARRY
 PHASE 3 AND 4 EXCAVATION PLAN**

DATE: 12/01/2020
 SCALE: AS SHOWN
 DRAWN: SCR
 JOB NO.: 01.4020
 DWG: **FIGURE 10**



- NOTES:**
1. TOPSOIL FROM PHASE 3 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a FOR LATER USE WITH RECLAMATION PLANTING OF PHASE 2 AND PLANT SITE.
 2. OVERBURDEN IN PHASE 3 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
 3. OVERBURDEN IN PHASE 4 WILL BE USED FOR RECLAMATION GRADING OF PHASE 3. ENOUGH OVERBURDEN SHALL BE STOCKPILED IN PHASE 3 FOR USE AS RECLAMATION GRADING OF PHASE 4. ADDITIONAL OVERBURDEN SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
 4. TOPSOIL FROM PHASE 4 SHALL BE USED FOR RECLAMATION PLANTING OF PHASE 3.
 5. A PORTION OF TOPSOIL FROM PHASE 1 SHALL BE USED AS RECLAMATION PLANTING FOR PHASE 3 AND 4.
 6. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 7. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
 8. REFER TO FIGURES 20-21 FOR MINE RECLAMATION CROSS SECTIONS.
 9. FOR FULL SIZED PLANS REFER TO APPENDIX G.



LEGEND

- | | | | |
|--|---------------------------------------|--|-----------------------------------|
| | MINING LIMIT LINE | | PROPOSED PROCESS WATER POND |
| | PROPOSED GRADED ROAD | | TOPSOIL STOCKPILE AREA |
| | PROPOSED STORMWATER SEDIMENT BASIN | | SECTION LINE |
| | SLIDE REMEDIATION LIMIT LINE | | EXISTING GROUND CONTOUR AND ELEV. |
| | PROPOSED WATER LINE FROM OFFSITE WELL | | PROPOSED GROUND CONTOUR AND ELEV. |
| | CREEK | | |

**QUARRY EXCAVATION
 ESTIMATED QUANTITIES**

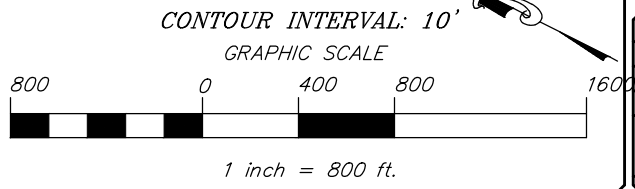
PHASE 3 TOTAL VOLUME	3,600,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	135,000 CY
PHASE 3 OVERBURDEN	900,000 CY
PHASE 3 PRODUCT	2,565,000 CY

PHASE 3 ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) – 25.0 ACRES

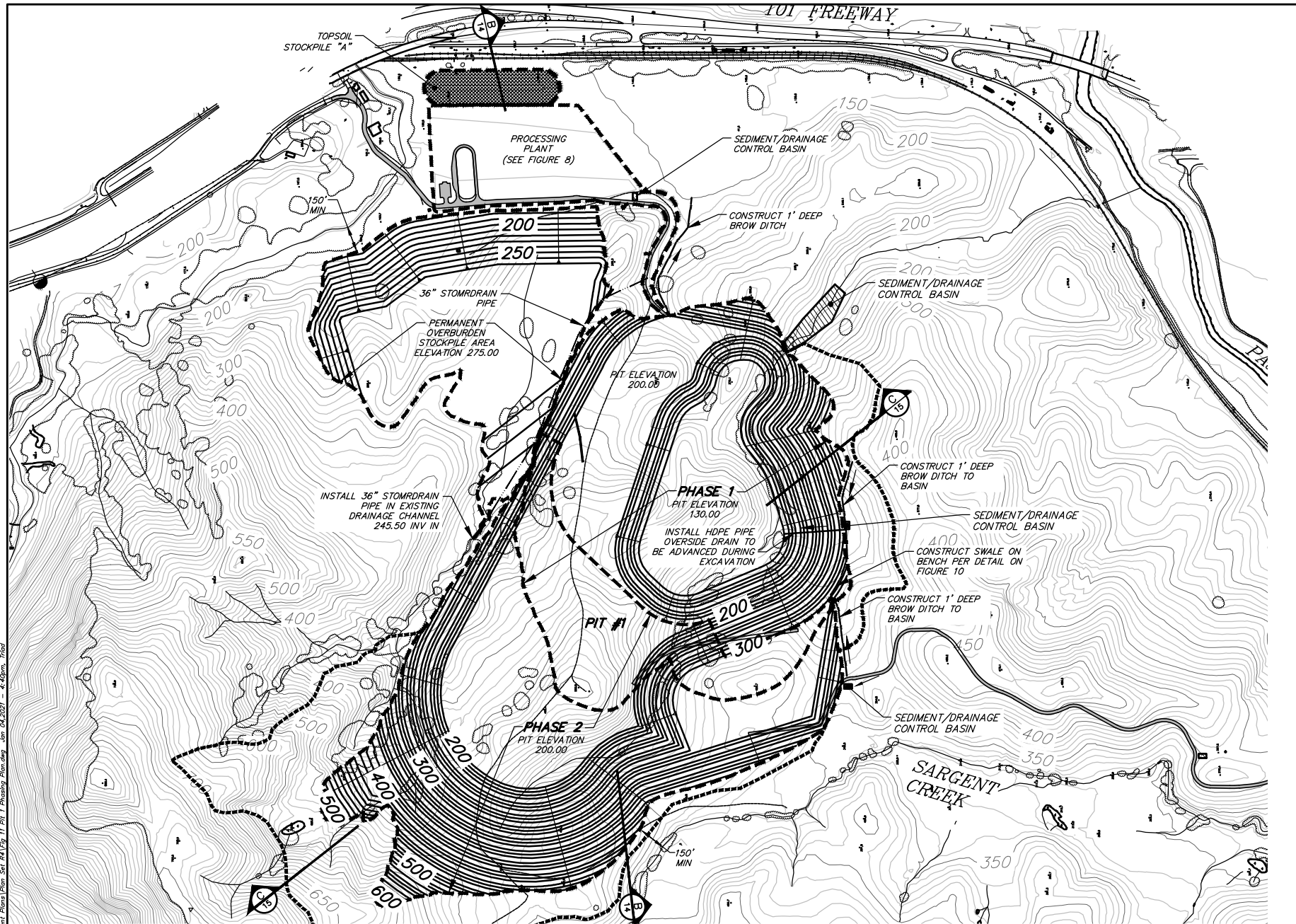
PHASE 4 TOTAL VOLUME	1,816,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	36,000 CY
PHASE 4 OVERBURDEN	540,000 CY
PHASE 4 PRODUCT	1,240,000 CY

PHASE 4 ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) – 12.0 ACRES

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.



Z:\01 Mammoth\4020 Sargent Ranch Local Improvement Plans\Plan Set\04\Fig. 10 Phase 3 and 4 Planning - 41.Mammoth



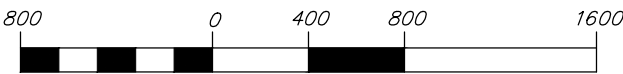
LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- SLIDE REMEDIATION LIMIT LINE
- PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- SECTION LINE
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE



1 inch = 800 ft.

PREPARED & SUBMITTED BY:

DATE:

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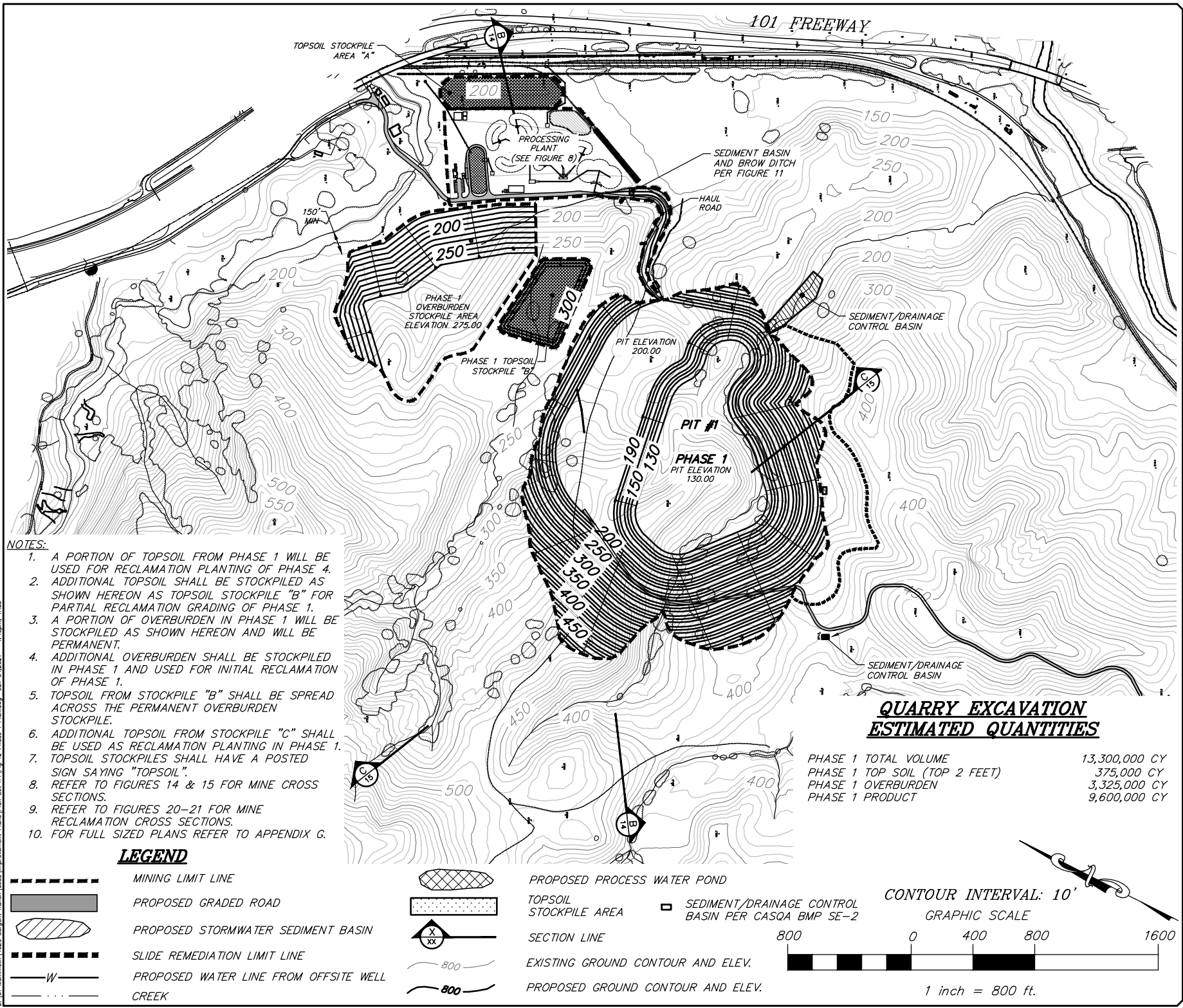
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 3000 ANTONIO RD
 PALO ALTO, CA 94303

**SARGENT RANCH QUARRY
 PIT 1 GRADING AND PHASING PLAN**

Z:\07 Mammoth Lakes Sargent Ranch Local Improvement Plans\Plan Set\04\Fig. 11_Pit 1 Phasing Plan.dwg Job: 01.4020 - 4.dgn, Plot

NO.	DATE	BY	DESCRIPTION

SARGENT RANCH QUARRY
PHASE 1 EXCAVATION PLAN



- NOTES:**
1. A PORTION OF TOPSOIL FROM PHASE 1 WILL BE USED FOR RECLAMATION PLANTING OF PHASE 4.
 2. ADDITIONAL TOPSOIL SHALL BE STOCKPILED AS SHOWN HEREON AS TOPSOIL STOCKPILE "B" FOR PARTIAL RECLAMATION GRADING OF PHASE 1.
 3. A PORTION OF OVERBURDEN IN PHASE 1 WILL BE STOCKPILED AS SHOWN HEREON AND WILL BE PERMANENT.
 4. ADDITIONAL OVERBURDEN SHALL BE STOCKPILED IN PHASE 1 AND USED FOR INITIAL RECLAMATION OF PHASE 1.
 5. TOPSOIL FROM STOCKPILE "B" SHALL BE SPREAD ACROSS THE PERMANENT OVERBURDEN STOCKPILE.
 6. ADDITIONAL TOPSOIL FROM STOCKPILE "C" SHALL BE USED AS RECLAMATION PLANTING IN PHASE 1.
 7. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 8. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
 9. REFER TO FIGURES 20-21 FOR MINE RECLAMATION CROSS SECTIONS.
 10. FOR FULL SIZED PLANS REFER TO APPENDIX G.

LEGEND

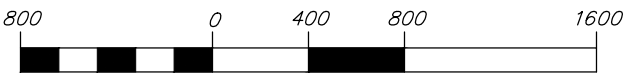
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| | MINING LIMIT LINE | | PROPOSED PROCESS WATER POND |
| | PROPOSED GRADED ROAD | | TOPSOIL STOCKPILE AREA |
| | PROPOSED STORMWATER SEDIMENT BASIN | | SECTION LINE |
| | SLIDE REMEDIATION LIMIT LINE | | EXISTING GROUND CONTOUR AND ELEV. |
| | PROPOSED WATER LINE FROM OFFSITE WELL | | PROPOSED GROUND CONTOUR AND ELEV. |
| | CREEK | | |

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 1 TOTAL VOLUME	13,300,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	375,000 CY
PHASE 1 OVERBURDEN	3,325,000 CY
PHASE 1 PRODUCT	9,600,000 CY

CONTOUR INTERVAL: 10'

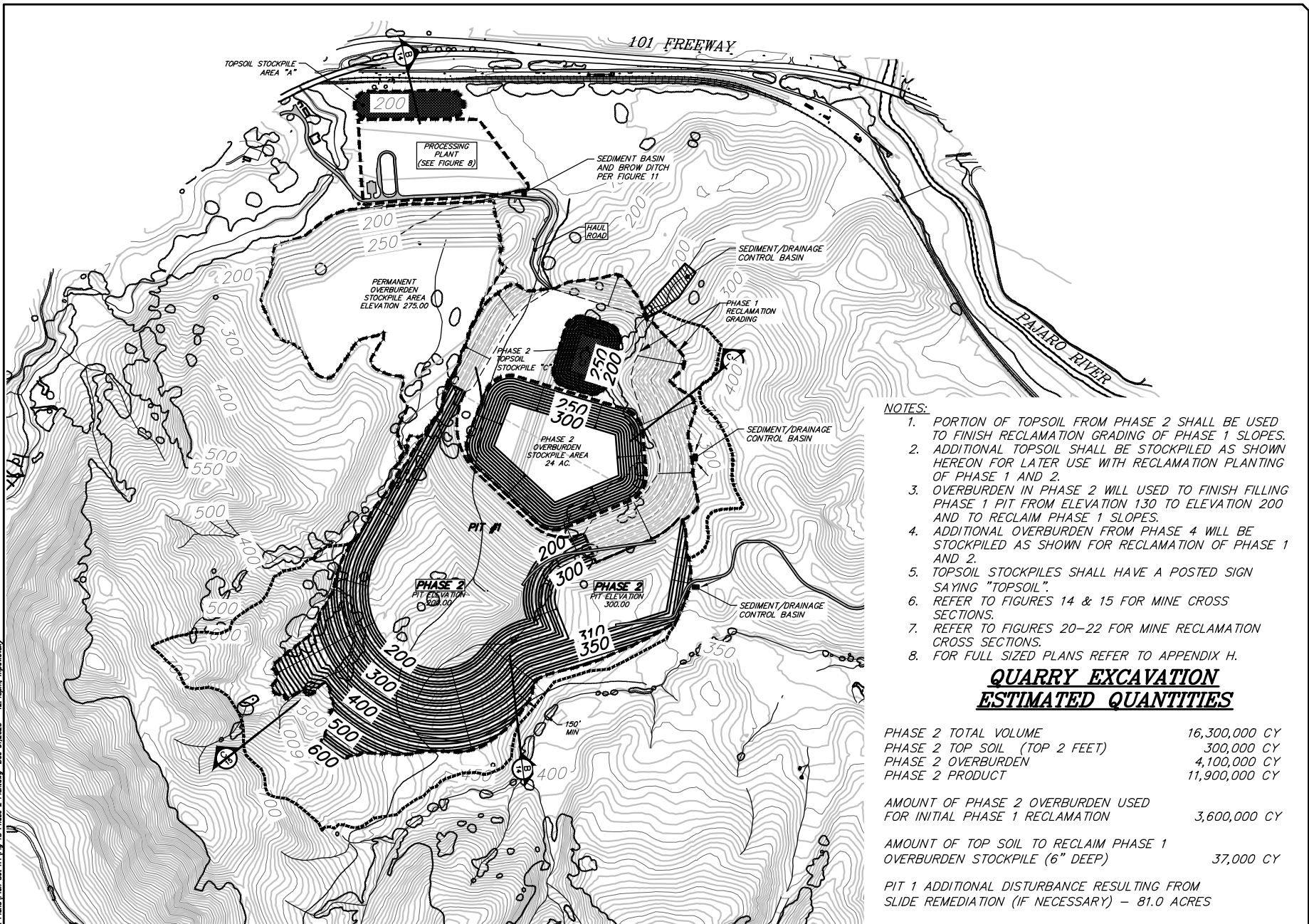
GRAPHIC SCALE



1 inch = 800 ft.

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SARGENT RANCH QUARRY
PHASE 2 EXCAVATION PLAN AND
PHASE 1 RECLAMATION











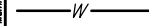

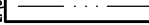


- NOTES:**
1. PORTION OF TOPSOIL FROM PHASE 2 SHALL BE USED TO FINISH RECLAMATION GRADING OF PHASE 1 SLOPES.
 2. ADDITIONAL TOPSOIL SHALL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING OF PHASE 1 AND 2.
 3. OVERBURDEN IN PHASE 2 WILL BE USED TO FINISH FILLING PHASE 1 PIT FROM ELEVATION 130 TO ELEVATION 200 AND TO RECLAIM PHASE 1 SLOPES.
 4. ADDITIONAL OVERBURDEN FROM PHASE 4 WILL BE STOCKPILED AS SHOWN FOR RECLAMATION OF PHASE 1 AND 2.
 5. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 6. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
 7. REFER TO FIGURES 20-22 FOR MINE RECLAMATION CROSS SECTIONS.
 8. FOR FULL SIZED PLANS REFER TO APPENDIX H.

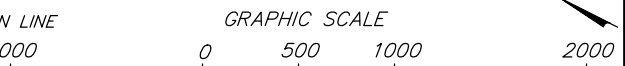
QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 2 TOTAL VOLUME	16,300,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	300,000 CY
PHASE 2 OVERBURDEN	4,100,000 CY
PHASE 2 PRODUCT	11,900,000 CY
AMOUNT OF PHASE 2 OVERBURDEN USED FOR INITIAL PHASE 1 RECLAMATION	3,600,000 CY
AMOUNT OF TOP SOIL TO RECLAIM PHASE 1 OVERBURDEN STOCKPILE (6" DEEP)	37,000 CY
PIT 1 ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) - 81.0 ACRES	

LEGEND

	MINING LIMIT LINE		PROPOSED PROCESS WATER POND		SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2
	PROPOSED GRADED ROAD		VEGETATION		SECTION LINE
	PROPOSED STORMWATER SEDIMENT BASIN		TOPSOIL STOCKPILE AREA	1000	
	SLIDE REMEDIATION LIMIT LINE		EXISTING GROUND CONTOUR AND ELEV.	0 500 1000 2000	
	PROPOSED WATER LINE FROM OFFSITE WELL		PROPOSED GROUND CONTOUR AND ELEV.	1 inch = 1000 ft.	
	CREEK				

CONTOUR INTERVAL: 10'



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DATE:

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SARGENT RANCH QUARRY

MINE CROSS SECTIONS

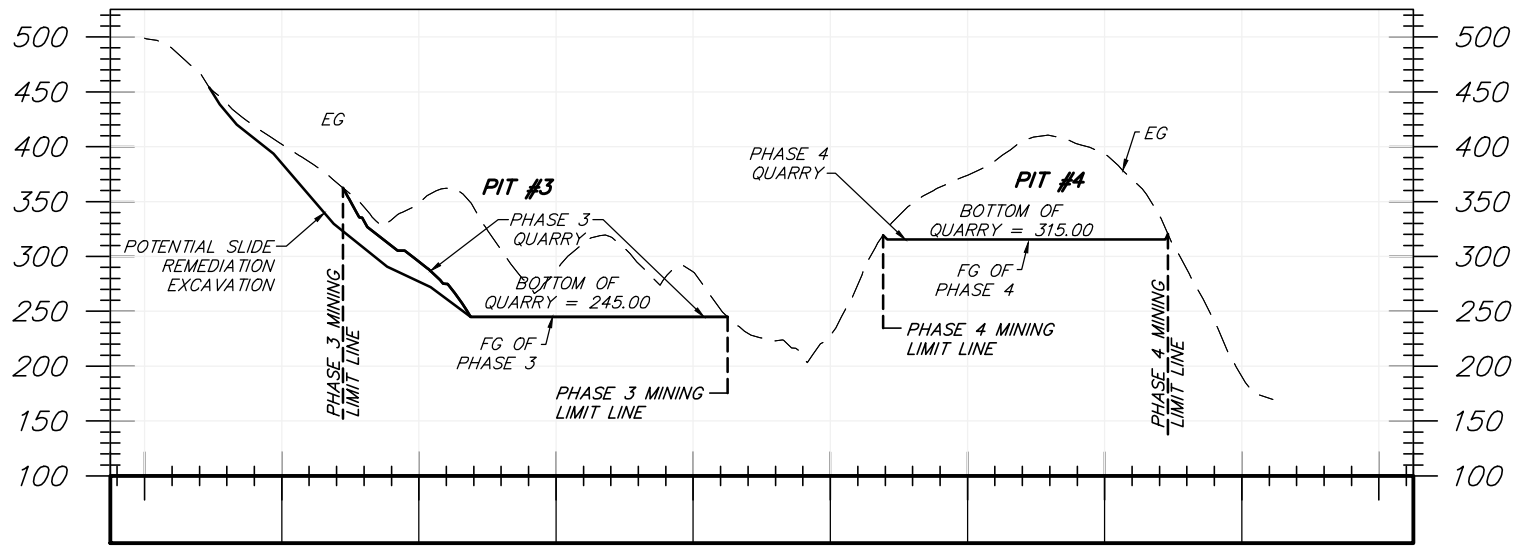
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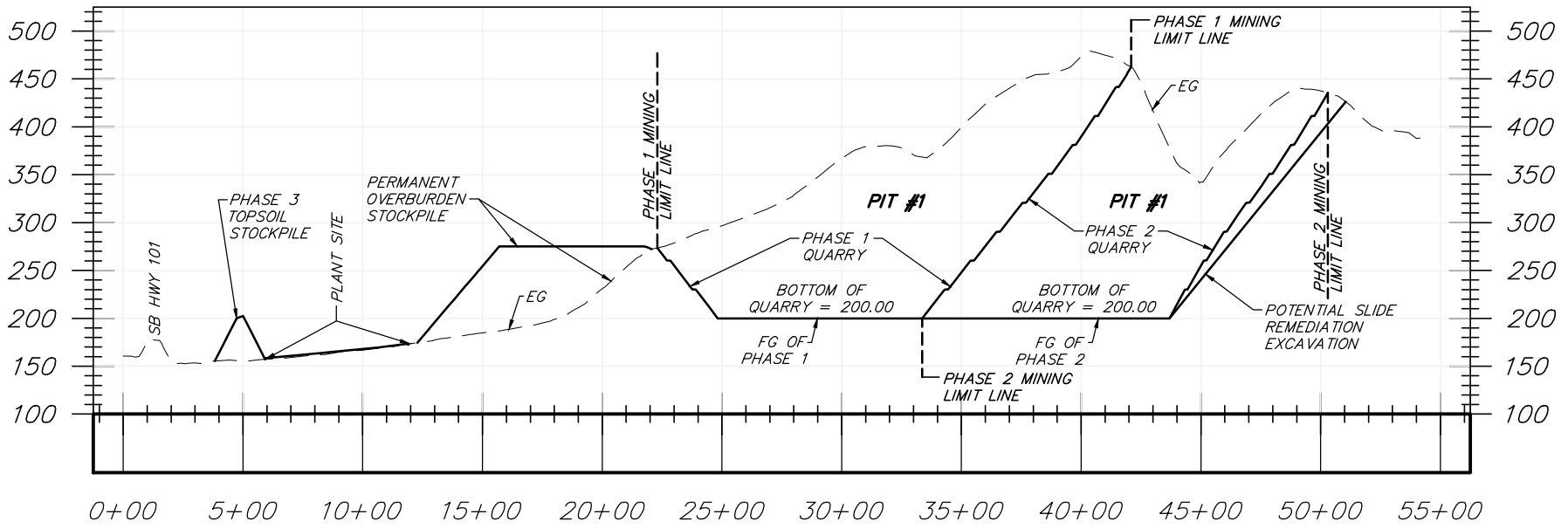
FIGURE 14



SECTION A

 SCALE: HORIZ 1"=700

 VERT 1"=125'



SECTION B

 SCALE: HORIZ 1"=700

 VERT 1"=125'

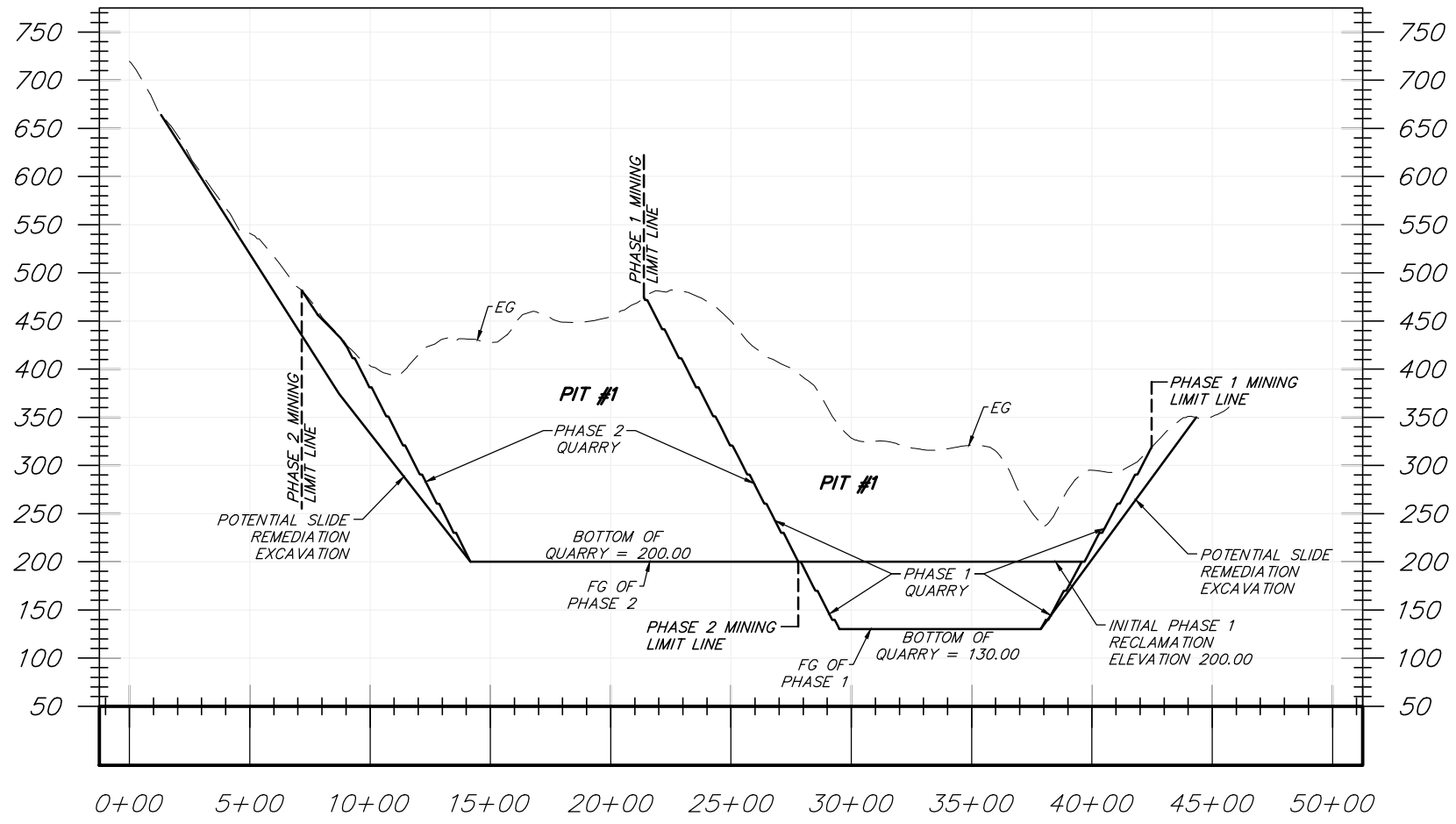
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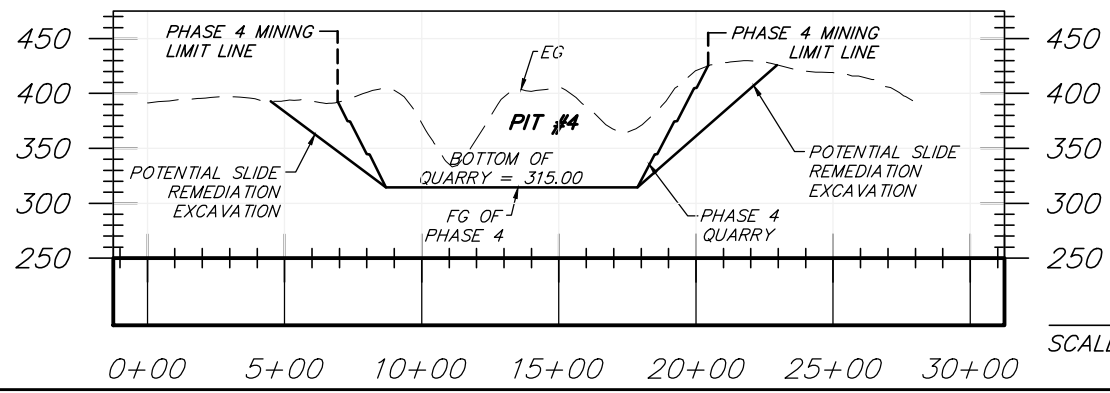
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SARGENT RANCH QUARRY
MINE CROSS SECTIONS

DATE: 12/01/2020
 SCALE: AS SHOWN
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 DWG:



SECTION C
 SCALE: HORIZ 1"=700
 VERT 1"=125'



SECTION D
 SCALE: HORIZ 1"=700
 VERT 1"=125'

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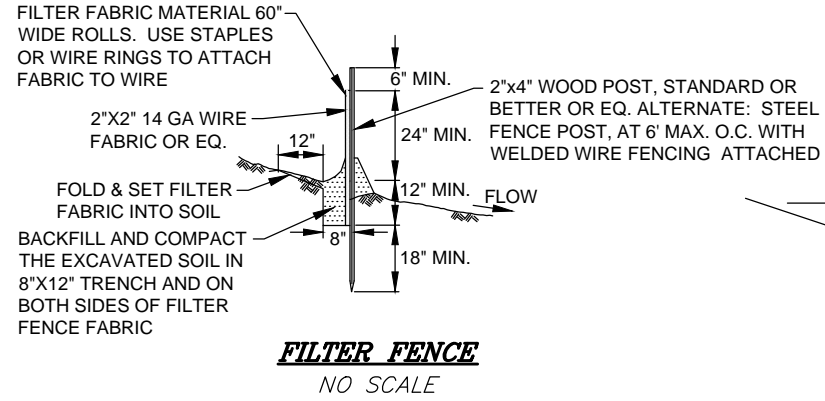
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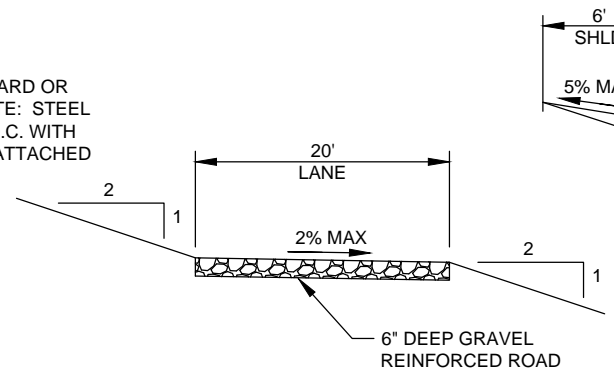
SARGENT RANCH QUARRY

MINE CROSS SECTIONS



FILTER FENCE

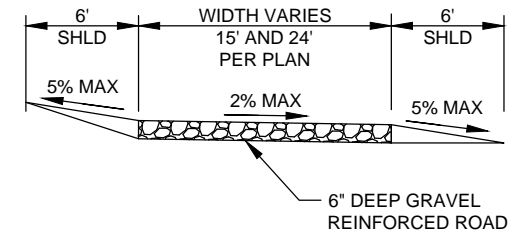
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TYPICAL SECTION

MINE ROAD

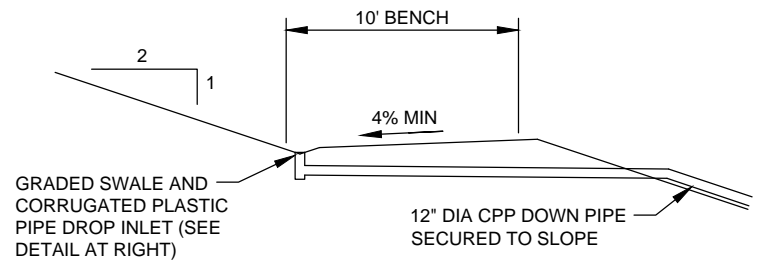
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TYPICAL SECTION

ENTRANCE LOOP ROAD

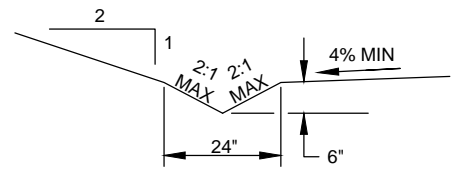
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TYPICAL QUARRY SLOPE BENCHING

AND DRAINAGE DETAIL

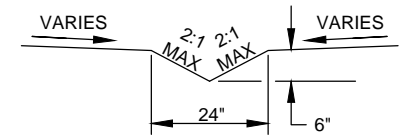
 NO SCALE



GRADED SWALE

AT SLOPE BENCHING

 NO SCALE



GRADED DRAINAGE

SWALE

 NO SCALE

PREPARED & SUBMITTED BY:

DATE:

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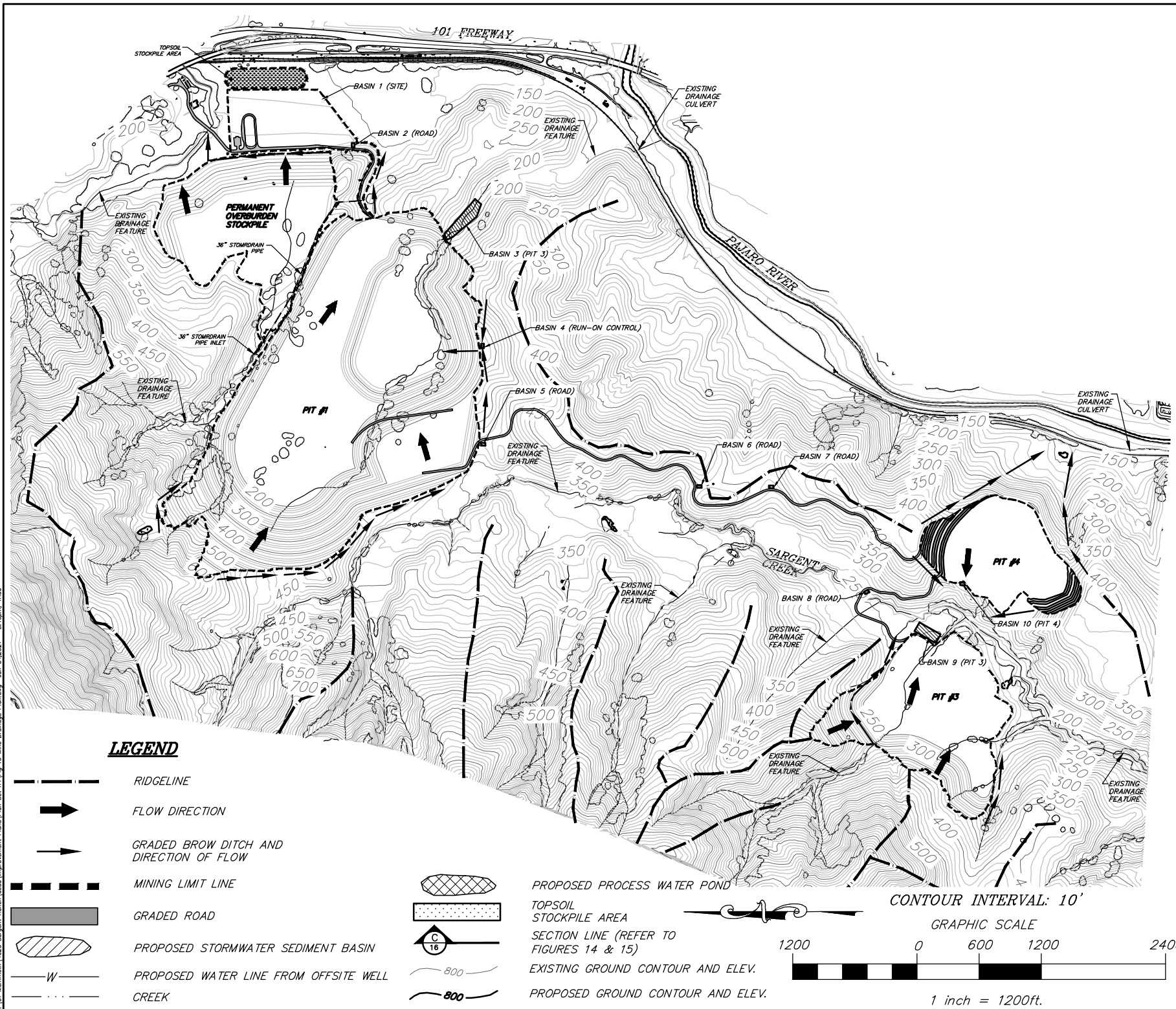
REVISIONS:	BY:

PREPARED FOR:
VERNE FREDMAN
 804 SAN ANTONIO RD
 PALO ALTO, CA 94303

SARGENT RANCH QUARRY
MINE DRAINAGE PLAN

DATE: 12/01/2020
 SCALE: AS SHOWN
 DRAWN: SCR
 JOB NO.: 01.4020
 DWG:

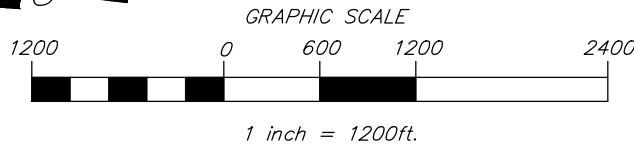
FIGURE 16



LEGEND

- RIDGELINE
- FLOW DIRECTION
- GRADED BROW DITCH AND DIRECTION OF FLOW
- MINING LIMIT LINE
- GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- SECTION LINE (REFER TO FIGURES 14 & 15)
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'



Z:\07 Mammoth\4020 Sargent Ranch Local Improvement Plans\Fig 16 Mine Drainage Plan.dwg Jan 04, 2021 - 5:10pm, triod

3.7 OPERATING CONDITIONS

3.7.1 Off-Street Parking

Parking for all customer and employee vehicles will be made available at the plant site. Parking is available nearby the office/scale house, as well as the maintenance shop as shown on Figure 8: Aggregate Plant Site Plan.

3.7.2 Access Roads

The quarry property will be accessed using Old Monterey Road. Access within the quarry work areas will be either on new temporary unpaved, compacted roads or on existing graded, unpaved ranch roads. At the end of Phase 2 mining, a new conveyor belt and maintenance road will be graded from the Phase 3 and 4 mining areas north to the plant site. The road is anticipated to cross Sargent Creek one time using a temporary bridge or arch culvert.

3.7.3 Dust Control

Water for dust control will be obtained from a new on-site well. A water truck will be used for wetting internal roads and the active mining areas to minimize dust consistent with BAAQMD regulatory standards. Spray nozzles in the process plant will minimize dust by wetting the aggregate at conveyor transfer points. Dust control would be achieved by regular watering in the processing plant and mining areas and on unpaved roads. In the mining area there would be regular watering of cut slopes by water trucks. Open working areas in any given pit in any phase would be limited to the smallest area necessary for mining, with topsoil and grass left in place in the areas to be mined in the future.

3.7.4 Grading

This Plan includes two grading configurations: one for mining and the other for reclamation. The Mine Grading Plans (Figures 9 through 15) are based on the recommended slope and bench configuration set forth in the quarry geologic reports prepared by Sierra Geotechnical Services Inc. (Appendix D). The average steepest mined slope inclinations between benches are two feet horizontal to one foot vertical (2:1) and benches are 10 feet wide for most areas. The height of each mined slope between the benches is 40 feet. All of these criteria are shown on the cross-sections on Figures 15 and 16. The reclamation slopes will have a gradient of 3:1 or flatter. In areas where oak tree seedlings are planted on benches, the slopes between benches will have an inclination of three foot horizontal to one foot vertical (3:1), with benches that are a width of one to three foot as needed for planting. The reclamation slope height between benches is 40 feet. These criteria are shown on Figures 21a and 21b: Reclamation Cross-Sections and Details. The final reclamation slope and bench configuration is designed to

result in safe, stable slopes that facilitate drainage, aesthetic enhancement, and revegetation.

3.7.5 Drainage and Sediment Control

There are two sets of drainage and sediment control programs in this Plan: one for mining and the other for reclamation. During mining, water will be directed to drain primarily into the mining pits. Drainage ditches will direct runoff to the sediment basins near the active mining pits and at the plant site. At the conclusion of mining, the process water pond will be removed and filled in. The remaining soil materials will be used to restore the pre-mining condition of a gentle sloping terrain to the greatest extent possible. The reclaimed slopes and benches will drain to the former quarry floor where the surface water will be allowed to dissipate as it did in its pre-mining condition.

Sediment control requires the task of proper maintenance of the drainage facilities, shown on Figure 16: Mine Drainage Plan. The Sediment Basins will be cleaned regularly to maintain proper function. Open drainage ditches over loose, erodible soil will be lined with crushed rock. Drainage ditches on the benches have a minimum lateral slope of four percent (4%) to ensure proper drainage. Energy dissipaters will be placed where drainage ditches flow into the basins and or the pit. Energy dissipaters will be placed in appropriate locations where over side drain culverts carry storm water or collector ditches flow downslope. Unpaved areas, subject to vehicular traffic within the operations area, shall be graded and compacted for positive drainage.

3.7.6 Fencing, Posting, and Security

A five-strand barbed wire fence located around the perimeter of the property may restrict access to the mining site. A lockable gate is/will be at the entrance to the quarry. Signs will be posted at the entry driveways to identify the site as private property and warn unauthorized persons to keep out.

3.7.7 Use of Explosives

No explosives will be used at the mining site.

3.7.8 Contaminant Control

Standard fuels and oils for mobile equipment will be utilized and stored on-site during active mining operations and reclamation activities. During weekly safety meetings, workers and relevant vendors will receive training in the safe handling of fuels and oils. These petroleum products will be stored in aboveground tanks and conform to the practices and requirements of the County's Aboveground Storage Tank (AST) program, as well as those established by the Regional Water Quality Control Board while reclamation actions occur.

Procedures of the Hazardous Materials Business Plan (HMBP) and the Storm Water Pollution Prevention Plan (SWPPP) will be implemented at the site to minimize the potential for spills and leaks from material handling and storage, along with minimizing exposure of significant materials to storm water and authorized non-storm water discharges. These procedures include installing secondary containment or using double-walled ASTS, conducting regular inspections, and training employees.

In addition, all oil and chemical vendors and operators of equipment will be properly trained and instructed to comply with the on-site speed limit and to exercise caution when driving near aboveground storage tanks and associated equipment. Fuel and oils will be delivered to the facility on an as-needed basis. Drivers will be instructed to respond to any emergency situation by shutting off the pump or closing the emergency shutoff valve at the delivery truck product compartment. In the event that a spill occurs, absorbent material will be used to prevent chemicals or oils from leaving the area. For larger spills, the on-site earthmoving equipment can be used to create a berm to contain the spill.

New and waste oil, antifreeze, and hydraulic fluid will be stored in ASTs and smaller containers at defined storage sites. Containers of hazardous materials will be delivered to this location by vendor trucks or employees and offloaded by forklift or by hand. A spill containment kit will be located on employee vehicles. A properly trained facility employee performs all internal transfer operations. Used batteries, antifreeze, hydraulic fluids, and waste oil will be properly removed from the site and recycled by vendors.

In the following section, recommended actions are included as potential conditions for the County to consider for the Sargent Quarry project. These proposed actions are meant to provide methods of compliance with SMARA, County regulations, and other regulatory agency requirements.

In order to comply with Federal, State, and local requirements for Industrial SWPPP's to minimize inadvertent contamination of groundwater during operations, fuel or other chemicals present on the mine site will be handled and stored using appropriate containment to prevent accidental spillage into open water bodies. An industrial SWPPP is Appendix F of this Reclamation Plan.

4 RECLAMATION PLAN

4.1 AREAS COVERED BY RECLAMATION

Reclamation work involves reclamation grading with earth fill buttresses against the excavated benches and slopes in the Phase 1, 2, 3, and 4 mining areas. These areas will be resoiled with topsoil and other soil materials and will be revegetated with hydro seeding, and planting of native trees. The final slopes of the reclaimed quarry vary from an elevation of 650 to 130 and the gradient will vary from 3:1 to flatter gradients. The quarry floors will be disked, leveled, re-soiled, and seeded. Quarry roads and some new internal unpaved access roads will be retained for continued general access to the site. Other unnecessary internal roads will be disked, leveled, and seeded.

4.2 ULTIMATE SITE CONDITION AFTER RECLAMATION (*PRC §2772(c)(7) and CCR §3502(b)(3)*)

The intent of the Reclamation Plan is to create a harmonious, integrated, and attractive landscape that blends both the texture and landform shapes of the reclaimed quarry into the adjacent natural landscape. Each quarry pit, once mined to the full depth as shown on Figures 9 through 15, will be configured as three large sloping depressions. The outward-facing fill slopes will vary in grade from 3:1 and flatter, much like the surrounding topography, and the areas planted with oak trees will have 1 to 3-foot-wide benches with 30-foot-high intervening slopes and a maximum gradient of 3:1. All of the reclamation slopes will have topographic variation to reduce the regular appearance of manufactured, engineered slopes and help to integrate the former quarry site into the surrounding landscape.

The selected reclamation planting palate will be composed of native and naturalized seed mixes and woody plants that are commonly found in the area. By revegetating with the same or similar plants that are growing in the area, the revegetated slopes will be visually compatible with the native landscape.

Reclamation of the disturbed project area shall also comply with CCR section 3703 [Performance Standards for Wildlife Habitat], subsections (a)-(c), including avoidance and mitigation for wetland habitat [at a minimum of 1:1 ratio] and habitat identified for rare, threatened and endangered species.

4.3 ALTERNATIVE FUTURE USES OF RECLAIMED LANDS

4.3.1 Possible Future Uses

All of the quarry area, measuring 298 acres and the additional 105 acres of the geotechnical setback areas, will remain suitable for future cattle ranching, agriculture, or any use permitted by the County General Plan and Zoning ordinance.

4.3.2 Preferred End Use

The preferred end use is restoring the property back to its prior use as a cattle range after successful revegetation of the disturbed areas pursuant to this Plan.

4.4 RECLAMATION PROCEDURES AND SEQUENCE

Reclamation work can be divided roughly into six categories having to do with re-grading, equipment and building removal, re-soiling, drainage, erosion control, and revegetation. Similar activities can occur at the same time; for example, the installation of an irrigation system along with the re-soiling and revegetation of reclaimed slopes and benches can be performed when mining of the slopes in each mining phase has been completed. Other areas or activities, such as equipment removal and internal haul roads, won't be reclaimed until mining of all phases is completed.

Grading includes construction of benched fill buttress over the excavated slopes; filling, compacting, and re-soiling of the quarry pits; ripping, disking, and re-soiling the quarry floor; and disking, contour grading, and re-soiling unnecessary internal roads. Equipment and building removal involves disassembling fixed structures; demolishing buildings; and removing movable structures, vehicles, and supplies (oil and fuel). Re-soiling work involves spreading topsoil over the reclaimed slopes and benches, the quarry floor, refilled quarry pits and pond, and re-graded roads. Drainage work includes construction of drainage ditches on the perimeter of the quarry, stockpiles, and processing area to direct storm water into the two permanent sediment basins. Drainage during the Phases will be guided to the bottom of the pits excavated during mining thru the use of interceptor ditches on the benches that flow into over side culverts. Revegetation work includes the installation of erosion-control measures (jute matting, erosion-control blankets, silt fences, hay bales, or coir wattles), as appropriate; and hydro-seeding and planting of oak tree seedling. Revegetation work may also include the installation of an irrigation system if it is deemed necessary during the Planting Test Plot program.

4.4.1 Equipment and Building Removal

During the end of Phase 4, the quarry equipment, including the processing plant, the excavation and loading vehicles, bone yard debris, the scale, and other quarry-associated equipment, will be removed from the site. Water tanks, fueling tanks, and the office may stay on-site after final reclamation to be used by the landowners for their cattle operations. The rock plant will be disassembled and the mobile items will be removed so they can be sold from on-site or taken to auction. The tanks and drums will be sold to recyclers or returned to the distributor. The bone yard debris will be recycled.

4.4.2 Reclaiming the Quarry Slopes and Benches

Stockpiled overburden and soil fines will be used to construct fill buttress slopes and benches over the excavated slopes. The new fill slopes and benches will be resoiled with 8 inches of topsoil. This activity will be done at the completion of each mining phase.

At the end of Phases 1 and 2 most of the conveyer belt will be removed. A portion will be left in place to move material from phases 3 and 4 to the plant site. After the conveyor belt is removed the culvert crossings in Sargent Creek will be removed and the areas impacted of Sargent Creek will be revegetated. The Sargent Creek will be restored to its natural condition. The Sargent Valley will continue to be used for cattle ranching, as it is currently. The access road running along the conveyor path to Phases 1 and 2 will be maintained while reclamation monitoring periods are ongoing. After reclamation has been deemed successful by the County, the access road may be used for cattle operations.

4.4.3 Reclaiming the Processing Area, Quarry Pit, and Roads

Reclamation of the pit, overburden, and processing areas will be the final phase of reclamation.

a) Reclaiming the Material Processing Area:

After all of the equipment and buildings have been removed, work can begin to prepare the rock processing area for reclamation. The process water will be back-filled and compacted. The area will be ripped to a depth of 2 feet to loosen the compacted soil. The stockpiled overburden in the northwest corner will be used to re-grade the processing and stockpile area to a uniform finish grade as shown on Figures 13 and 15: Final Reclamation Grading. Once ripped and re-graded, topsoil will be placed over the entire area and reseeded.

b) Re-soiling the Mining Areas

All the mining areas will be graded with side slopes at 3:1 or flatter using overburden from the stockpile area and compacted to the estimated final grades shown on Figures 17 and 18. The final grades will be based on the volume of remaining stockpiles of overburden and soil fines. Stockpiled topsoil from all phases of mining will be used in re-soiling the quarry pits. Topsoil and reseeded of the pit areas will be the final phase of reclamation. The topsoil and other soil materials will be amended, if the Test Plot monitoring program indicates an improved survival rate with the plantings grown in amended soils. A bulldozer will be used to spread topsoil. Topsoil will be laid over the ripped quarry pit to a depth of 6 inches as diagrammed on Figures 20 and 21: Mine Reclamation Cross Sections.

c) Internal Roads

New roads created for the Project will be ripped to a depth of 12 inches prior to adding topsoil to accommodate root growth. Topsoil will then be placed to a depth of 8 inches and the surfaces will be seeded. Roads established for ranch operations prior to approval of this Plan would remain after completion of mining and reclamation.

4.4.4 Reclamation of Mining Drainage Facilities

When mining operations are complete and the quarry slopes are revegetated, reclamation of the drainage facilities on the quarry floor will begin. The process water pond and mining pits will be filled to a level that can be achieved with the remaining supply of soil materials (overburden, soil fines, and topsoil). The soil materials used to backfill the pond and pit are the remaining balance of overburden and topsoil. The fill will be compacted to 90 percent density up to five feet below the surface and the upper five feet will be granular material with a layer of topsoil (the ground surface will be ripped prior to receiving the topsoil layer). Loaders will be used for transporting fill material to the basins, and bulldozers will place and compact fill. A motor grader will be used to shape the final surface area and to spread the topsoil layer as part of establishing the final quarry floor contours. Once reclamation grading is completed these areas will be revegetated.

4.4.5 Noxious Weed Removal Program

Various noxious weeds are disbursed by wind and birds, and readily reinvade disturbed areas such as a quarry where they compete with the newly planted native species. The biological survey of the site indicates that Yellow Star thistle (*Centaurea solstitialis*) and Italian thistle (*Carduus pycnocephalus*) are present on the site. These two noxious weeds, per SMARA, that are on the California Department of Food - Noxious Weeds List must be eradicated from the reclaimed site. The Noxious Weed Removal Program in this Reclamation Plan describes how these two weed species will be eradicated.

4.4.6 Revegetation of Disturbed Areas

Disturbed areas will be revegetated using two treatments: (1) hydro-seeding, (2) installing oak trees in the oak tree planting zones. The initial treatment involves hydro-seeding the reclaimed slopes and benches, the quarry floor, the reclaimed slopes, and benches that have a gradient of 4:1 or more (flatter). Since the site has diverse conditions, four different seed mixes have been designed as shown in Tables 5 to 7. The basic ingredients in all seed mixes will include: native/naturalized plant seed, fertilizer, fiber, rice or clean grain straw, and tackifier (binder). The fiber, rice or straw, and binder will create a layer on top of the seed to protect the seed from being scorched by the sun, being washed away by rain, or blown away by wind. The layer of rice or straw also helps to decrease raindrop impact on the ground surface, prevents runoff concentration, and

slows the velocity of runoff so that moisture can be retained in the soil. Hydro-seeding will be done during the months of October and November when the first winter rains are expected.

Specific attention will be given to the planting of the oak trees. The plants will be one-gallon or tube-stock- sized when planted consistent with the EIR's analysis and potential mitigation pursuant to CEQA. (PRC §21083.4.) The small-sized plant materials are used because they have a better record of rooting, adjusting to climatic conditions, and surviving.

4.4.7 Soil Amendments

Soil amendments may be used as part of the amending of soil to facilitate revegetation. Use of any soil amendments, if any, shall be determined by the success of the Test Plots using native soil.

For future plantings, additional soil samples will be taken from stockpiles of topsoil, accumulated fines, and any other new soil source to determine the appropriate nutrients that are needed to support revegetation.

4.4.8 Plant Selection

Species to be planted will consist of commercially available erosion-control native and naturalized plant species that have evidenced good success on disturbed soils and are consistent with vegetation used in the region. Baseline data for oak trees described in Appendix C was collected from the existing undisturbed site. The information that was collected was used to select the planting palette. The vegetative success criteria for the oak trees are based on the baseline data reported in Appendix C. The vegetative success criteria for all planting areas will include: coverage, density, and species-richness.

Plant materials match the native plants and habitat zones found in the surrounding hillsides and ridges. The habitat zones are described as: Non-Native/Naturalized Annual Grassland and Oak Woodland. The selected plant species associated with each habitat zone will be planted where each of these habitats currently are found. Planting density of oak trees in the Oak Woodland area will vary and appear naturalistic, reflecting the character of the surrounding native vegetation.

4.4.9 Tree Planting Specifications

One-gallon and tube-stock-sized native oak trees will be grown on-site or acquired from local commercial nursery stock. Planting locations are shown on the Revegetation Plan, (Figure 23). All tree plantings will be conducted between the months of October and February, preferably between October and December. Since hydro seeding and seeding will occur first, a lot of the preparation for planting will be done beforehand to avoid degradation of the seeded surface. Planting holes will be dug; the irrigation, if needed,

will be installed; and a marker stake will be posted in each planting hole before seeding. The trees will be planted randomly and in clusters to duplicate the oak tree massing in the surrounding hills (Figure 23). The trees will be planted into planting holes as detailed on Figures 22a and b. The planting holes will be dug with a shovel or similar tool to create a hole with sides and bottom approximately 12 inches greater in diameter and 12 to 18 inches deeper than the container. Plants will be set plumb in the middle of the planting holes. Each planting hole will be backfilled using local soil or potting soil (one part), mulch (one part), and if needed, soil amendments (one part). Organic fertilizer will be placed in each planting hole about 6 inches from the bottom of the planting hole. The planting medium will be tamped down around the plant so that the crown of the plant is at ground surface, and a shallow water basin will be formed around each tree. A three-inch layer of mulch will be placed in each watering basin to help conserve moisture. Plants will be thoroughly watered after planting.

Table 5 – Woody Plant Materials for Oak Woodlands

TREES		
Latin Name	Common Name	Plant Spacing
<i>Quercus agrifolia</i>	Coast Live Oak	-Combined goal of 20 trees/acre
<i>Quercus douglasii</i>	Blue Oak	-Some stands as the only tree species; other stands mixed with Coast Live Oaks -Combined goal of 20 trees/acre

4.4.10 Seeding Locations and Specifications

The four different seed mixes recommended by Pacific Coast Seed Inc. contain native grasses, herbaceous, and woody plant materials. The different seed mixes will be used to replicate the different existing site conditions found at the quarry and the surrounding landscape; including the Non-Native/Naturalized Annual grasslands on the flat valley areas, lower and upper slopes, Oak Woodland with annual grassland around the mid-elevation slopes. Plants that are more commonly found within these three plant communities at the site will be replanted in the same general area. The locations where these different seed mixes will be applied are shown on the Revegetation Plan (Figure 23). The seed mixes are described in Tables 5, 6, and 7.

Seeding is the most practical method to revegetate the reclaimed slopes while also providing erosion control. The rough surface of the graded slopes will help to catch and hold the seed; extra tackifier will be added to the seed mixture to help the mixture stick to the steeper slopes. Typically, the best germination rates on non-irrigated sites are obtained when seeding occurs during the fall immediately before the rains begin. Seeding in the fall months will ensure adequate moisture and will minimize the potential for hot summer temperatures to damage the seeds.

Hydro seeding will be used to revegetate the reclaimed slopes and benches. Hydro seeding should occur in the fall or early winter months when conditions are best for seed growth.

Table 6 – Hydroseed/Seed Mix for Grassland

Lbs/Acre	LATIN NAME ¹	COMMON NAME
0.50	<i>Achillea millefolium</i>	Yarrow
0.50	<i>Amsinckia menziesii</i>	Fiddleneck
12.0	<i>Bromus hordeaceus</i>	Soft Chess
1.00	<i>Clarkia purpurea</i>	Wine Cup Clarkia
8.00	<i>Elymus glaucus</i>	Blue Wildrye
2.00	<i>Lupinus nanus</i>	Sky Lupine
2.00	<i>Melica californica</i>	California Melic
4.00	<i>Nassella pulchra</i>	Purple Needlegrass
HYDROSEED SPECIFICATIONS FOR 3:1 SLOPES & BENCHES		
Step One:		
1,000 lbs/ac	Enviro Fiber	
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	

Table 7 – Hydroseed/Seed mix for Oak Woodland

Lbs/Acre	LATIN NAME ²	COMMON NAME
0.50	<i>Achillea millefolium</i>	Yarrow
0.50	<i>Amsinckia menziesii</i>	Fiddleneck
12.0	<i>Bromus hordeaceus</i>	Soft Chess
1.00	<i>Clarkia purpurea</i>	Wine Cup Clarkia
8.00	<i>Elymus glaucus</i>	Blue Wildrye
2.00	<i>Lupinus nanus</i>	Sky Lupine
2.00	<i>Melica californica</i>	California Melic
4.00	<i>Nassella pulchra</i>	Purple Needlegrass
HYDROSEED SPECIFICATIONS FOR 3:1 SLOPES & BENCHES³		
Step One:		
1,000 lbs/ac	Enviro Fiber	
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	

¹ The seeds are to be “Pure Live Seed,” and the pounds per acre reflects this.

² The seeds are to be “Pure Live Seed,” and the pounds per acre reflects this.

4.4.11 Irrigation

The need for an irrigation system for watering the oak seedlings will be determined by the Test Plot monitoring program. An irrigation system will be used if the quantified findings of the Test Plots monitoring program indicate that the oaks have a better survival and growth rate with supplemental watering. Should an irrigation system be required then well water will be pumped into tank(s) that then gravity feed into a drip irrigation system. Well water will be supplied by the new well. The well water will be directed to various storage tanks on the slopes above the Oak Woodland habitat zones as indicated on Figure 23: Revegetation Plan. Supply lines will be extended from the holding tanks and PVC pipes will be installed to each bench to supply the drip lines for each individual tree. The irrigation system will not be used to water the seeded areas; these areas will rely on natural rainfall.

The soil moisture level at each Test Plot with irrigated plants and at each Monitoring Plot (if used) with irrigated plants will be checked periodically throughout the first three years, after planting, by quarry personnel. Routine inspections will ensure that the plants are not over watered or under-watered thereby improving their survival rate. The first two years are critical for the survival of newly planted materials. These inspections and moisture levels will be recorded on a Watering Program Inspection Form. If installed, the irrigation system will continue to operate for 3 years after the initial planting. At that time, the plants should be sufficiently established to survive on their own.

Initially the Test Plots that are supposed to receive supplemental water will be watered by hand from a hose on the Water Truck. These plots will be watered and monitored according to the same schedule for the Monitoring Plots described above.

4.4.12 Test Plots, Monitoring Plots, Monitoring, and Inspections

Test Plots and Monitoring Plots will be used to monitor the success of the revegetation program. There will be a set of Test Plots and Monitoring Plots for each planting community at the site. The two plant communities include Non-Native/Naturalized Annual Grassland, and Oak Woodland.

The Test Plots will be installed as soon as possible after approval of this Plan because the information learned from these trial plantings will be used to refine the planting palette and methods, as needed, to ensure that the revegetation program is successful. The Test Plots will confirm the recommended use of unaltered soil materials (topsoil, overburden, and soil fines) and the use of water on woody plants versus no application of water on woody plants, as well as measuring the vigor and survival rate of the selected woody plants and seed mixes.

The Monitoring Plots will be installed when mining is completed at the end of each mining phase and after reclamation grading and when revegetation begins. The Monitoring Plots will be used to evaluate the success of the revegetation planting and ensure that the vegetative success criteria required by SMARA are achieved.

Monitoring Plots should meet the following criteria:

- Locations of Monitoring Plots should represent significant microclimates in terms of slope, aspect, and elevation
- Plot sizes should be sufficiently large to quantify success criteria

Test Plots should meet the following criteria:

- Allow evaluation of the different plant palettes presented on Table 5 to 7
- Plot sizes should be sufficiently large to be able to quantify success criteria Test plots should experience no disturbance for a minimum of 5 years after establishment
- Soil materials with topsoil should be comprised of the same materials that will be used during future reclamation (stockpiled topsoil, weathered materials or fines from processing and overburden, and soil testing to support native plants)
- Fill placement and planting preparation should follow guidelines for future reclamation presented in this Plan

The proposed locations and general design of the four Test Plots and Monitoring Plots are shown on Figure 24: Test Plot Plan, and Figure 8: Aggregate Plant Site Plan. The Test Plots will be located near the office which is the area that is most unlikely to be unaffected by quarry operations. There will be a Test Plot for each of the four plant communities; hence there will be a total of two Test Plots.

The Test Plots are intended to evaluate the following variables:

- Seed mixes and container plants for the planting communities listed in Tables 5 through 7.
- Soil materials with topsoil either used in “as is” condition, or amended
- Irrigation: for the container plantings, test for no irrigation versus temporary establishment of irrigation (2-3 years); seed-only areas will not have supplemental irrigation

There will be a Test Plot representing each revegetation plant community: Non-Native/Naturalized Annual Grassland and Oak Woodland, as shown on Figure 24. There will be a total of two conditions – amended or un-amended fill--evaluated for each Test Plot for the Non-Native/Naturalized Annual Grassland. There will be a total of four

conditions evaluated for each Oak Woodland Test Plot, including amended or un-amended fill, and irrigation versus no irrigation.

The six conditions include:

1. Seed over unamended fill, no irrigation
2. Seed over amended fill, no irrigation
3. Seed + container plants over un-amended fill, no irrigation
4. Seed + container plants over un-amended fill, with irrigation
5. Seed + container plants over amended fill, no irrigation
6. Seed + container plants over amended fill, with irrigation

During the seed-only conditions for Non-Native/Naturalized Annual Grasslands, per conditions numbers 1 and 2 above, the recommended size of each “subplot” is 25 feet by 25 feet. Therefore, the total size of the plot for these plant communities will be 3 times an area of 50 feet by 25 feet, plus an allowance for 4-foot aisles, for a total area of 4,698 square feet. For the Oak Woodland Test Plots that include condition numbers 3 through 6 above (container plants that supplement seed), the recommended size of each “subplot” is 50 feet by 50 feet.

Installation of Test Plots should occur during the first fall or winter following approval of the Mining and Reclamation Plan to take advantage of winter rains for germination and establishment. Irrigated plots should be located such that supplemental water will not inadvertently flow or otherwise migrate to non-irrigated plots. The Test Plots, being located near the office, will be readily accessible for ease of maintenance and monitoring (Figure 24). To minimize the likelihood of accidental damage to the Test Plots, they should be surrounded with welded wire, or similar fencing, at least 4 feet high and identified with signage.

Maintenance will be required for the irrigated subplots to inspect and repair, as needed, the drip irrigation system. Supplemental irrigation should extend two to three years after planting of woody plants in irrigated subplots.

Visual monitoring of Test Plots should be conducted monthly during the first year, quarterly the second year, and then semi-annually to evaluate and measure plant success and growth in the spring and fall. During the first two years, the Test Plots will be visually inspected for plant mortality and density. During the remaining monitoring period (3 years minimum), the Test Plots and treatment conditions for survival, density, species-richness, and cover will be measured and compared with established success criteria for the seeded areas and container plants. The success of the revegetation program demonstrated by the Test Plots will be evaluated using the success criteria. It is recommended that the Test Plot monitoring program last a minimum of 5 years, or longer, if the planting program requires adjustments.

Monitoring Plots will be used in each plant community on the reclaimed slopes and benches. The location of the proposed Monitoring Plots is shown on Figure 24. Each Monitoring Plot on the benches and quarry floor vary in size depending on the plant habitat. The Monitoring Plots will measure 2 feet by 50 feet in the grassland, habitats. The Monitoring Plots for the Oak Woodlands will be 2 feet by 100 feet and the area used to measure oak tree density will be a 100-foot diameter circular plot. The Monitoring Plots will be used to monitor the success of the reclamation program using the criteria, revegetation monitoring, and revegetation criteria.

4.4.13 Sequence of Reclamation Activities

Reclamation work is organized so that the most exposed man-made slopes are revegetated earliest. The sequence of each reclamation activity described below is designed so that previous work is not damaged.

1. Whenever a finished slope is completed, contour grading and re-soiling will follow immediately. Hydroseeding will be done and if required, the irrigation system will be installed and the area will subsequently be revegetated. Early revegetation of finished cut slopes will aid in the natural appearance of the quarry.
2. When mining is completed in any phase, installation of 3:1 fill slopes will be constructed. Hydroseeding and irrigation (if required) will be installed.
3. As reclamation of the site continues in each phase, the expansion of the irrigation system, if needed, should routinely occur immediately following grading and re-soiling, but before seeding and planting.
4. Seeding and planting of oak trees will commence on the uppermost benches and intervening slopes and work down to the lower elevations according to the Oak Tree Planting Plan.
5. Once mining is completed in the Phase 4 area, the mining equipment will be removed.
6. Final reclamation grading of Phase 4 will include using the remaining stockpiles of overburden to fill, compact, and re-soil the pit and process water basin; disk and contour-grade unnecessary internal roads, as well as rip, disk, and re-soil the quarry floor; and re-soil the reclamation slopes and benches.
7. Implementation of inspection and monitoring programs.
8. Implementation of post-reclamation maintenance.

4.5 RECLAMATION STANDARDS

4.5.1 Re-soiling, Backfilling, and Grading

All grading will comply with the applicable local codes and to the recommendations in Appendix D: Slope Stability Investigation. Grading procedures shown on Figures 9

through 16 show the mine grading concepts, and Figures 17 through 19 show the reclamation grading configurations. Backfill material from on-site stockpiles will be used for resource conservation, including placing salvaged overburden and topsoil over the areas to be revegetated, and to fill sediment basins and the pit (based on quantity of available material). The backfilling materials shall be suitable for revegetation and shall not contain any unsuitable materials such as organic materials, and rock or large lumps bigger than 6 inches in greatest dimension.

Soils from on-site stockpiles of topsoil, soil fines, and overburden will be used to re-soil the reclamation benches, slopes, and quarry floor. These soil materials used for re-soiling may or may not be amended; this will be determined by the outcome of the monitoring program of the Test Plots. The quarry pits will be backfilled with the clay materials (overburden) found at the site. The overburden materials will be used up to 5 feet below the ground surface and compacted to 90 percent relative compaction. The upper 5 feet will be granular material suitable to support plant growth and the surface will be re-soiled with a layer of topsoil.

Soil Salvage Operations (CCR §3711(a) and CCR §3711(c) [Performance Standards for Topsoil Salvage, Maintenance and Redistribution])

Action to be followed includes:

- SMR-1: Soil salvage operations will be phased and completed as access into each new surface mining area is needed. Topsoil and vegetation removal shall not precede surface mining activities by more than one year, unless a longer time period is approved by the lead agency. It is planned that soil will generally be placed on completed surfaces as it is concurrently removed from the next mining phase. Therefore, only limited areas of overburden and topsoil stockpiles will be needed. These areas would change as mining progresses. However, in one area, the overburden will remain in place and that is on the back side of the site at the topsoil stockpile area.

Topsoil Storage and Use (CCR §3711(d))

Actions to be followed include (for temporary stockpiles):

- SMR-2: Topsoil stockpiles will be protected from inadvertent destruction, used by flagged staking or other identification, will be of sufficient distance from areas under active mining or surface disturbance, or all of the above.

SMR-3: Stockpiles will not be compacted, in order to maintain oxygen availability to soil micro-organisms. Topsoil will not be stripped or replaced during the rainy season or when soil is saturated.

SMR-4: If weeds become a problem, they will be controlled with herbicides, physical removal (mechanical or manual), or both.

Redistribution of Topsoil; Establishment of a Growth Medium (CCR §3711(e))

SMR-5: Redistribution of topsoil will be accomplished to establish stable, uniform thickness consistent with the need to control slope-erosion and to facilitate drainage patterns. Native topsoil or a mixture of topsoil with other soil materials (i.e., soil fines and overburden) placed on reclaimed slopes, benches, and quarry floor will be applied at depths of 8 inches.

Manage Stockpiles to Facilitate Phased Reclamation (CCR §3704(c) [Performance Standards for Backfilling, Regrading, Slope Stability, and Recontoring])

Actions to be followed include:

SBR-1: As part of mining, topsoil and overburden material would be removed and separately stockpiled in several areas of the mining area for later use during reclamation. Stockpile locations will be limited to a maximum side slope of 2:1 to preserve slope stability and prevent erosion. Final reclaimed fill slopes, including permanent piles or dumps of mine waste rock and overburden, shall not exceed 2:1 except when site-specific geologic and engineering analysis demonstrate that the proposed final slope will have a minimum slope stability factor of safety that is suitable for the proposed end use, and successful revegetation. Stored topsoil will be marked in the field for conservation and replacement.

SBR-2: Topsoil will not be stripped when saturated or during the rainy winter season to minimize stockpile compaction and allow gas exchange between the atmosphere and micro-organisms in the soil.

SBR-3: Where erosion is evident, soil stockpiles will be protected from such loss over the winter rainy season through the use of berms, silt fencing, or coir wattles located at the base of the stockpiles, as well as external swales to direct drainage flows to the quarry pit or sediment basins. Topsoil stockpile left in place for more than one winter season will be seeded with a cover of annual grass (from the approved seed mix) if needed to prevent further soil loss.

Soils Analysis (CCR §3705(e) [Performance Standards for Revegetation] and CCR §3707(d) [Performance Standards for Prime Agricultural Land Reclamation])

Actions to be followed include:

- R-1: Soil materials, including native topsoil, overburden, and soil fines which are chemically unaltered, may be used to re-contour quarry slopes and other areas slated for revegetation, as shown on Figure 23: Revegetation Plan.
- R-2 Soil materials, including native topsoil, overburden, and soil fines may be amended per the Test Plot planting program. If it is found that soil amendments improve the success rate of the plants, then soil amendments will be used. The soil material for re-soiling will be tested at a soil laboratory for use with native plants. The type of amendments will be based on the outcome of the soil analysis of the on-site native plant soil materials for. These amended soils will be used to re-soil reclaimed slopes and other areas slated for revegetation as shown on Figure 23: Revegetation Plan.
- R-3 The selection of unaltered soil materials versus amended soil materials for use in revegetation planting will be determined by the outcome of the monitoring program of the Test Plots.

Fill Slopes, Stability, and Conformity with Surrounding Topography or End Use (CCR §3704(d)(e))

Fill would be limited to placement along the outward-facing slopes and will vary in grade from a maximum of 3:1 or flatter (See Figures 18a and b: Reclamation Cross-Sections and Details for locations).

Actions to be followed include:

- FS-1: Fill, comprised of topsoil, clay or overburden, and fines from materials processing will be placed along the outward-facing slopes of the Sargent Quarry and compacted according to Santa Clara County requirements and stability requirements, with a final slope not to exceed 3:1.
- FS-2 Overburden material unused during final contour-grading activities and not sold as engineered fill shall be disposed of by placing in the quarry pit floor near the completion of mining activities.

4.5.2 Slope Stabilization (CCR §3704(f))

Construction of excavated slopes and final reclamation slopes shown on Figures 10 and 17 is described in detail in the geotechnical report prepared by Sierra Geotechnical Services in Appendix D.

The slope stability analyses for the planned slopes are presented in Appendix D. At the completion of all mining operations, the quarry sidewalls (vertical cuts and benches) will consist of 2:1 slopes with 10-foot-wide benches every 40 vertical feet while at the conclusion of reclamation grading the final slopes will have a maximum gradient of 3:1.

In areas with oak tree seedlings there will be 3 foot-wide benches every 40 vertical feet. The grassland areas around the oak tree clusters will have 3:1 slopes with intermittent locations of slopes flatter than 3:1 to provide variation in the uniformity of the slopes, thus providing a more natural appearance to the reclaimed quarry slopes. The geotechnical analyses indicate that the factor of safety against gross instability of the overall slopes is at least 1.5. Drainage facilities, revegetation of the reclaimed slopes and benches, and erosion control measures will also serve to stabilize the slopes.

The recommended maximum bench heights and inclinations of cut slopes for the post-reclamation condition are described below:

Actions to be followed include:

Based on the results of field evaluation and geo-technical engineering analyses (Appendix D) the following conclusions apply to the design of the Reclamation Grading and Drainage Plans (Figures 17 and 18) regarding the stability of the post-reclamation slopes and benches.

- CS-1: The prominent joint sets mapped during field investigations have a low potential for creating wedge or planar failures which daylight in the assumed quarry slope cuts.
- CS-2: The stability of the slopes has been evaluated with the use of the Hoek-Brown Strength Criteria. The resulting Factors of Safety exceed the generally accepted 1.5.
- CS-3: The analysis is based on geologic mapping of the Slope Stability Study. As the planned slopes are excavated, additional discontinuities may become apparent which would warrant further analyses.
- CS-4: This Mining and Reclamation Plan is based on the Slope Stability Analysis attached as Appendix D; should the results from future investigations indicate a variance with the current findings, then the

Reclamation Plan shall be amended at that time to conform to those findings.

- CS-5: Benches should be constructed with a minimum 4 percent gradient toward the slope face to reduce the potential for erosion resulting from surface water flowing over the slope face. These benches may reduce hazards relating to landslides and rock-fall. Periodic clearing of debris collected on the benches may be required to maintain their effectiveness.
- CS-6: Mined benches should be constructed with a minimum 4 percent lateral slope to ensure proper drainage to the interceptor ditches on the benches that flow into drop inlets and subsequently flow either into over side drain culverts or lined side collector ditches, directing the water down to the quarry floor.

4.5.3 Building, Structure, and Equipment Removal (CCR §3709 [Performance Standards for Building, Structure and Equipment Removal])

All equipment, structures, and vehicles used in the mining operation will be removed when the mining operation ceases. The movable equipment (e.g., plant, office, and scale) and vehicles may be kept onsite by the landowner for use in the cattle operations or sold and moved offsite. The water well will be retained for the duration of the reclamation program as a source of water for the irrigation system. When mining ceases, the revegetation monitoring program will continue until all monitoring planting plots achieve the objectives of the monitoring program. If either the planting plot has achieved the vegetative success criteria or three years have passed since the last area was planted, the irrigation system, if used, will be turned off. The water wells will be retained for future use as potential water sources for the ranching operation.

4.5.4 Control of Contaminants

Contaminants and hazardous chemicals involved in the mining operation will include vehicle fueling and servicing (oils and lubricants) as described in Section 3.6.8. All vehicles refueling and servicing will take place at the maintenance shop area shown on Figure 8: Aggregate Plant Site Plan. The fueling tank and oil tanks will be set inside secondary containment structures to contain any leaks or spills. The *Hazardous Material Business Plan*, and *Spill Prevention Control Counter Measure Plan* for the quarry will describe how fuels and oil should be used and stored on-site as well as what to do during an emergency or when a spill occurs. Typically the County reviews these documents and also monitors the use of fuels and oils at the quarry. All residual fuels and oils will be removed from the site as part of reclamation.

4.5.5 Revegetation (CCR §3705)

The proposed revegetation is intended to stabilize areas of the mined-out quarry and blend it with the adjacent landscape and vegetation. Final revegetation is shown on Revegetation Plan (Figure 23).

4.5.6 Irrigation (CCR §3705(j))

It has not yet been determined if irrigation will be required to support the native oak tree plantings. The Test Plot monitoring program will determine if the oak trees will need supplemental irrigation.

4.5.7 Weed Abatement (CCR §3705(k))

Because of the local proximity to natural habitat areas, the Sargent Quarry has adopted established practices including the actions defined below.

Actions to be followed include:

- R-3 A program of invasive/exotic weed abatement will be implemented to manage the Italian thistle and Yellow star thistle during operations or reclamation.

4.5.8 Erosion and Sedimentation (CCR §3706(c)(d) [Performance Standards for Drainage, Diversion Structures, Waterways, and Erosion Control])

Erosion control facilities will be constructed as required; however, the grade of the mining area will evolve such that the majority of surface stormwater is maintained within the boundaries of the mining area. Temporary measures such as silt fences, berms, coir wattles, hay bales or similar means to deter erosion may be employed as necessary at locations of identified concern over the course of operations, depending upon the particular configuration of the grading work and roadways. Such measures are to be implemented in accordance with the State and Regional Water Quality Control Board and Santa Clara County requirements for Stormwater Pollution Prevention Plan (SWPPP).

Because mining and reclamation operations require on-going grading activities, sedimentation basins are used as the primary sediment control measures. If the soil erosion continues, vegetation will be generated using a seed/spraying technique.

Actions to be followed include:

- EC-1: Mining and reclamation operations employ the following erosion and sediment control measures (as necessary):
- Sedimentation basins.
 - Water truck usage and soil compaction via track walking.

- Diversion of run-on and run-off through the use of drainage facilities and appropriated erosion control devices such as silt fences, wattles, slope protection, or other sediment control devices.

EC-2: Preventative maintenance activities are performed as part of an approved SWPPP program and include the following:

- Cleaning of accumulated sediment, debris, and potential contaminants from the drainage facilities is conducted as needed before the start of the rainy seasons. In addition, this cleaning is done on an as-needed basis during the rainy season.
- Clearing of debris from drain inlets and drainage pipes.

4.5.9 Protection of On-Site and Downstream Beneficial Uses of Water









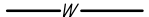


(CCR §3706(a))

Runoff from precipitation will generally drain into the quarry pit or sediment basins, with no stormwater within the Sargent Quarry limits being diverted off-site. Mining activities will not involve the placement of fill or dredged material in the waters of the United States. Actions in response to controlling drainage, siltation, and erosion (EC-1, above) will be effective in protecting downstream beneficial uses of surface water in accordance with the Porter-Cologne Water Quality Control Act, Water Code section 13000, *et seq.*; and the Federal Clean Water Act, 33 U.S.C. section 1251, *et seq.* (See also CCRs, section 3710(a) [Performance Standards for Stream Protection, Including Surface and Groundwater])

Z:\07 Mammoth 14220 Sargent Ranch Local Improvement Plans\Plan Set\RA\Fig 17 Phase 1 and 2 Final Reclamation.dwg Sun 04/20/21 5:18pm Triad

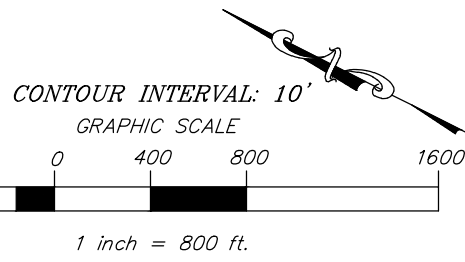


LEGEND

- | | | | |
|---|---------------------------------------|---|-----------------------------------|
|  | MINING LIMIT LINE |  | PROPOSED PROCESS WATER POND |
|  | PROPOSED GRADED ROAD |  | TOPSOIL STOCKPILE AREA |
|  | PROPOSED STORMWATER SEDIMENT BASIN |  | SECTION LINE |
|  | SLIDE REMEDIATION LIMIT LINE |  | EXISTING GROUND CONTOUR AND ELEV. |
|  | PROPOSED WATER LINE FROM OFFSITE WELL |  | PROPOSED GROUND CONTOUR AND ELEV. |
|  | CREEK | | |

NOTES:

1. PHASE 4 OVERBURDEN WILL BE USED TO RECLAIM PHASE 3 AND 4 AS SHOWN HEREON.
2. PHASE 4 AND A PORTION OF PHASE 1 TOPSOIL SHALL BE SPREAD 6" MIN. ACROSS ALL OF PHASE 3 AND 4.
3. REFER TO FIGURES 20-21 FOR MINE RECLAMATION CROSS SECTIONS.
4. FOR FULL SIZE PLAN REFER TO APPENDIX G.



PREPARED & SUBMITTED BY:

DATE:

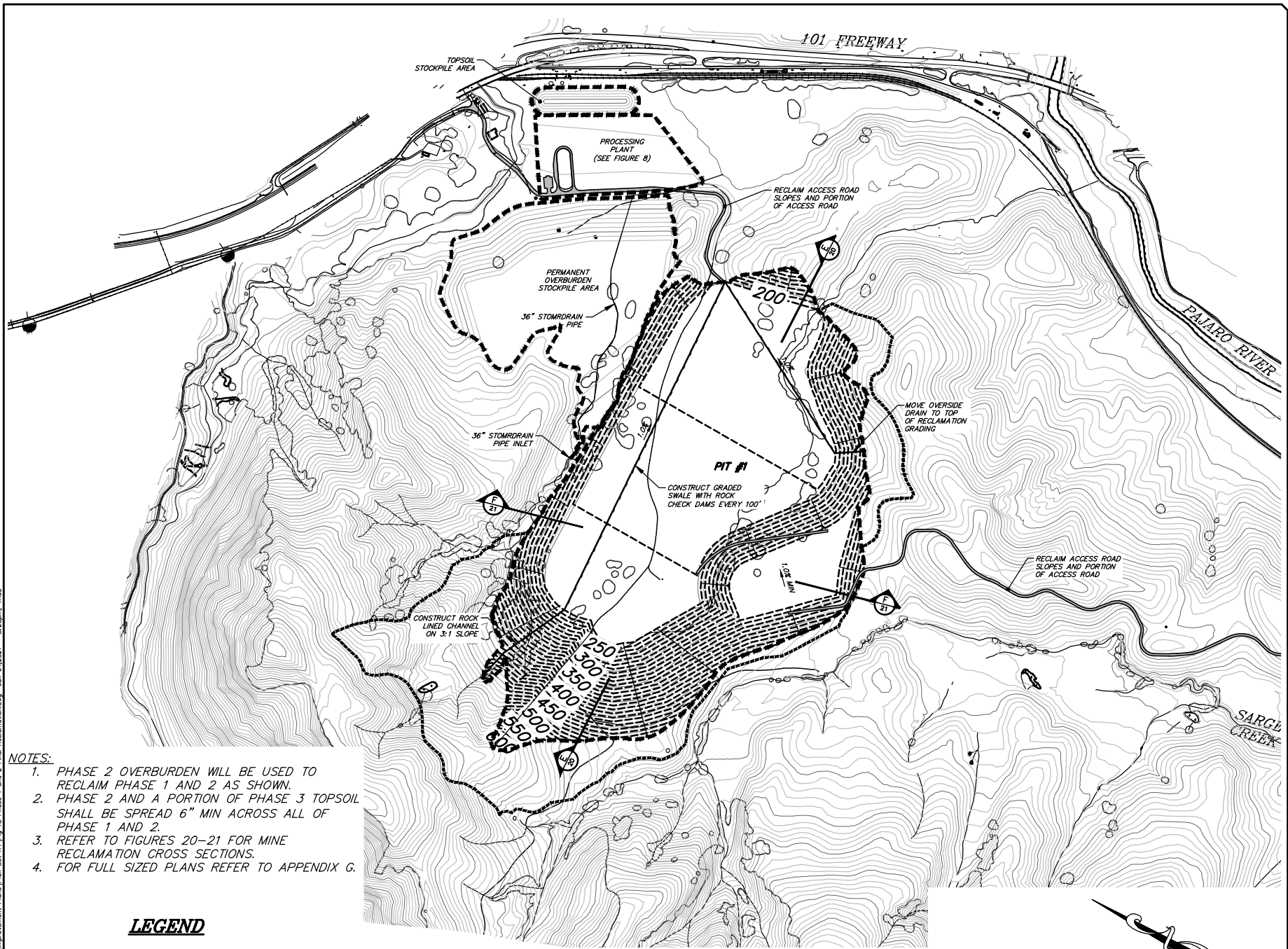
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SARGENT RANCH QUARRY
PHASE 3 AND 4 FINAL RECLAMATION

REVISIONS	BY:



- NOTES:**
1. PHASE 2 OVERBURDEN WILL BE USED TO RECLAIM PHASE 1 AND 2 AS SHOWN.
 2. PHASE 2 AND A PORTION OF PHASE 3 TOPSOIL SHALL BE SPREAD 6" MIN ACROSS ALL OF PHASE 1 AND 2.
 3. REFER TO FIGURES 20-21 FOR MINE RECLAMATION CROSS SECTIONS.
 4. FOR FULL SIZED PLANS REFER TO APPENDIX G.

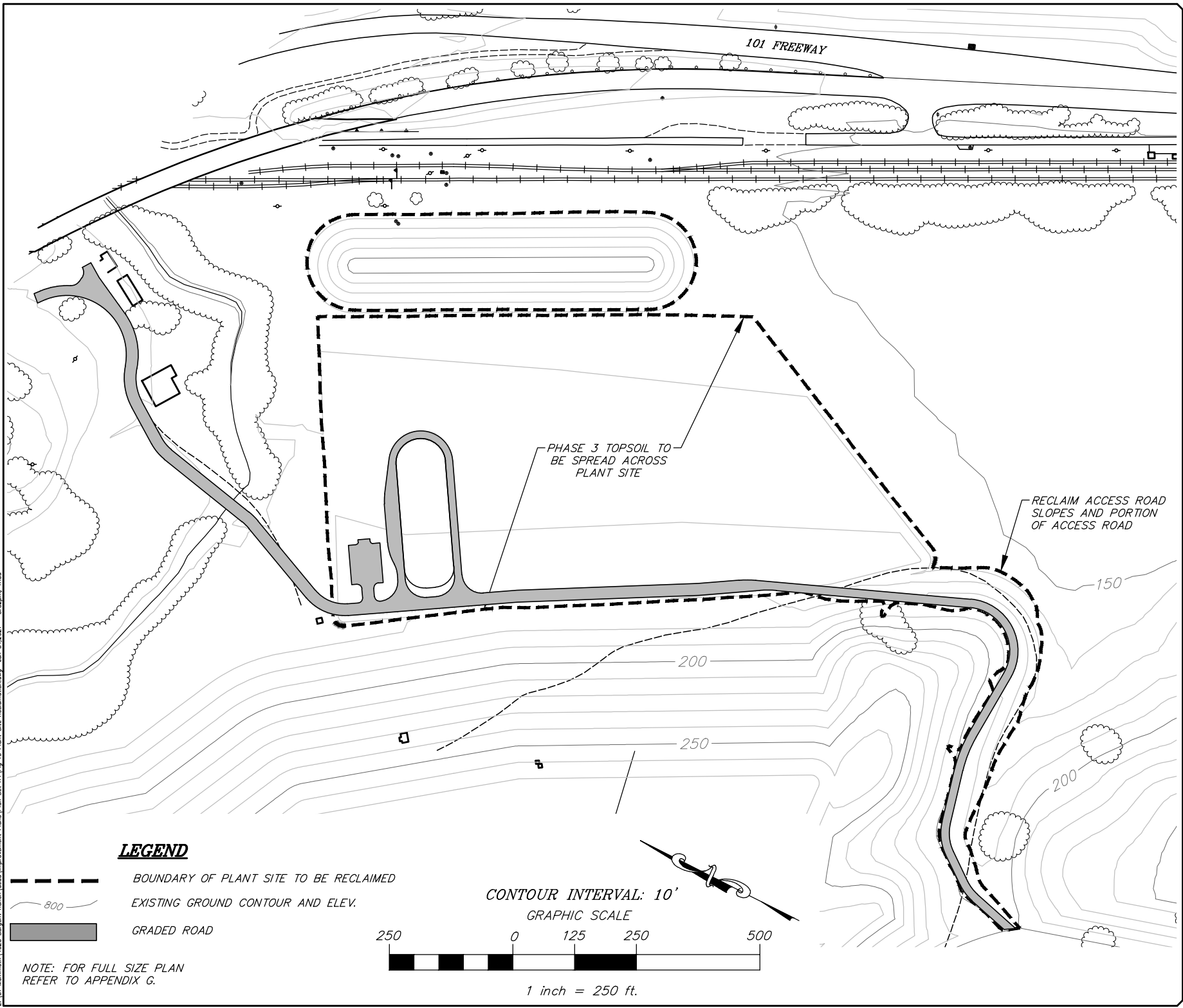
LEGEND

	MINING LIMIT LINE		PROPOSED PROCESS WATER POND
	PROPOSED GRADED ROAD		TOPSOIL STOCKPILE AREA
	PROPOSED STORMWATER SEDIMENT BASIN		SECTION LINE
	SLIDE REMEDIATION LIMIT LINE		EXISTING GROUND CONTOUR AND ELEV.
	PROPOSED WATER LINE FROM OFFSITE WELL		PROPOSED GROUND CONTOUR AND ELEV.
	CREEK		

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REVISIONS:	BY:

**SARGENT RANCH QUARRY
 AGGREGATE PLANT
 SITE RECLAMATION**



LEGEND

- BOUNDARY OF PLANT SITE TO BE RECLAIMED
- EXISTING GROUND CONTOUR AND ELEV.
- GRADED ROAD

CONTOUR INTERVAL: 10'

GRAPHIC SCALE



1 inch = 250 ft.

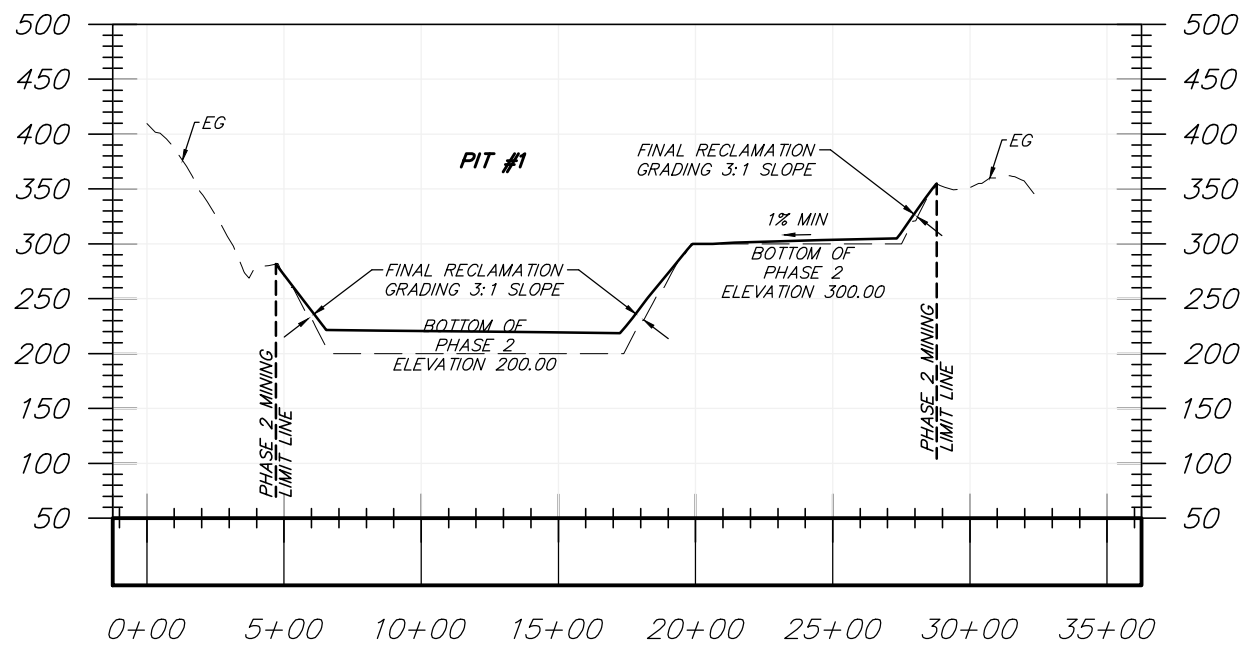
NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.

Z:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\04\Fig 19 Plant Site Reclamation.dwg - Jan 04, 2021 - 5:32pm, Triod

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SARGENT RANCH QUARRY

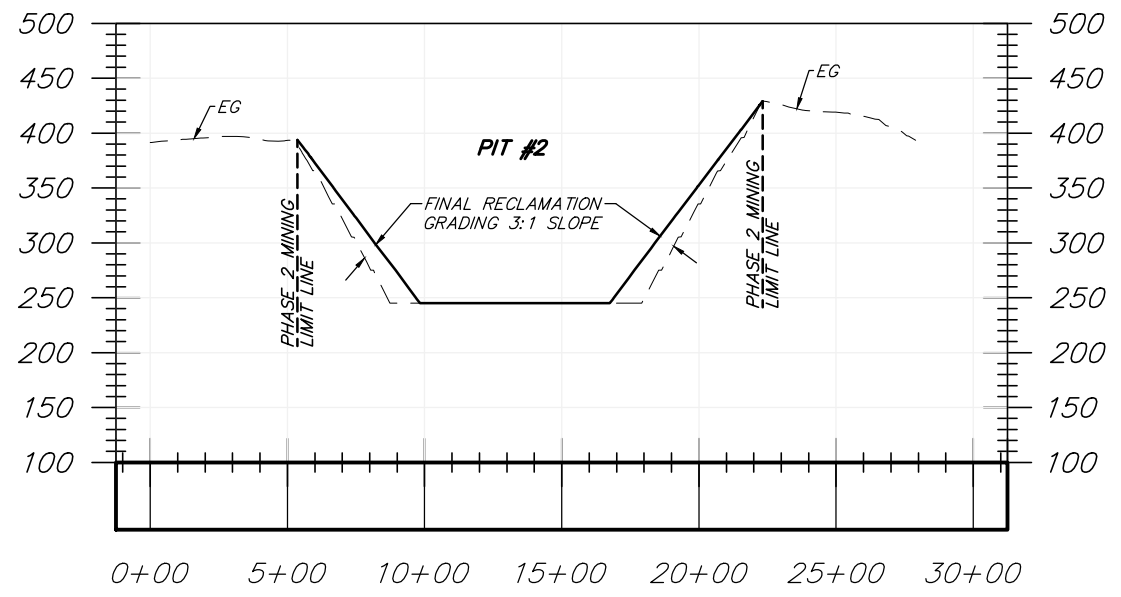
MINE RECLAMATION CROSS SECTIONS



SECTION F

 SCALE: HORIZ 1"=700'

 VERT 1"=125'



SECTION G

 SCALE: HORIZ 1"=700'

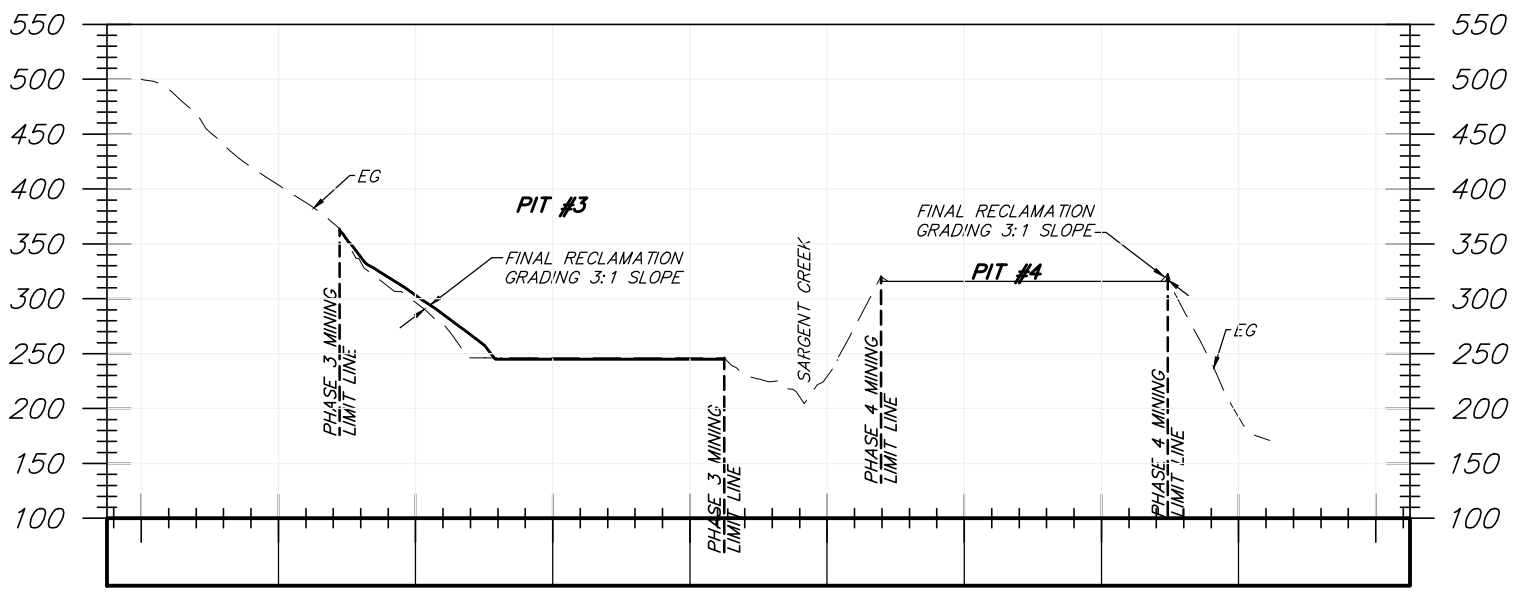
 VERT 1"=125'

Z:\01 Mammoth\4020 Sargent Ranch Local Improvement Plans\Plan Set\RA\Fig 20-22 Mine Reclamation Cross Sections.dwg Jan 04, 2021 - 5:48pm, Triod

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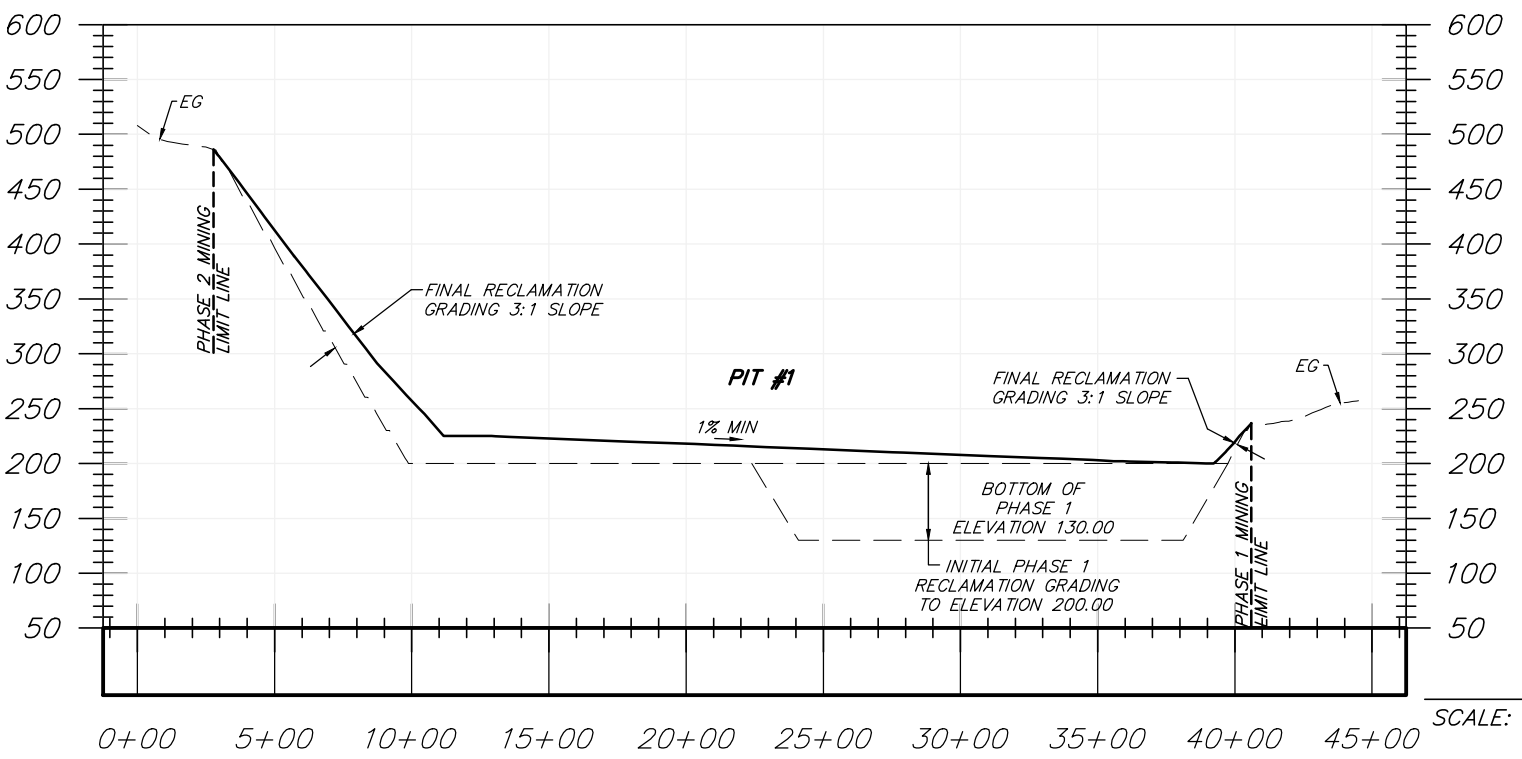
SARGENT RANCH QUARRY

MINE RECLAMATION CROSS SECTIONS



SECTION **D**

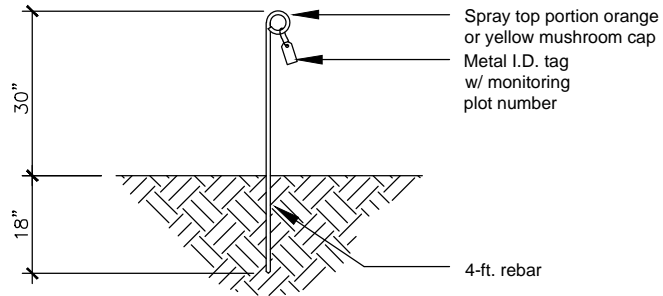
SCALE: HORIZ 1"=700
VERT 1"=125'



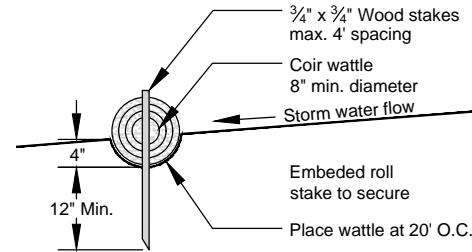
SECTION **E**

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VERT 1"=125'

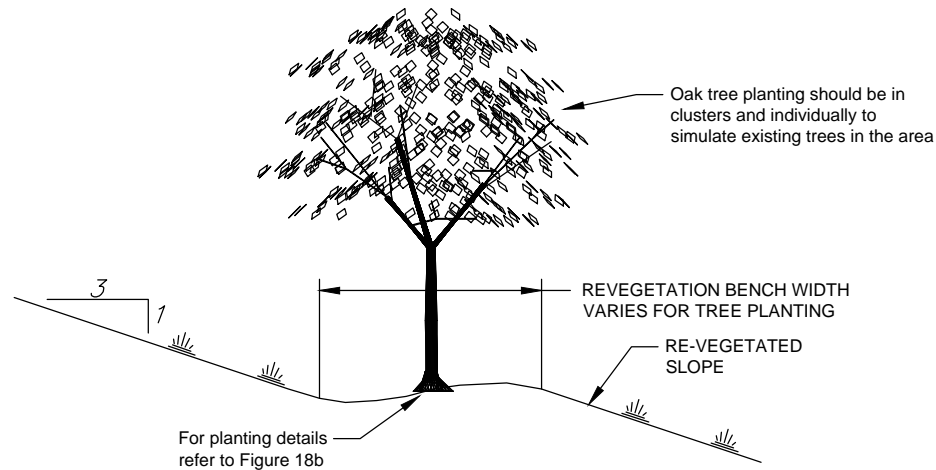
Z:\01 Mammoth 14020 Sargent Ranch Local Improvement Plans\Plan Set\04\Fig 20-22 Mine Reclamation Cross Sections.dwg Jan 04, 2021 - 5:58pm, Triad



**REBAR STAKING AT CORNERS
OF MONITORING PLOTS**
NO SCALE



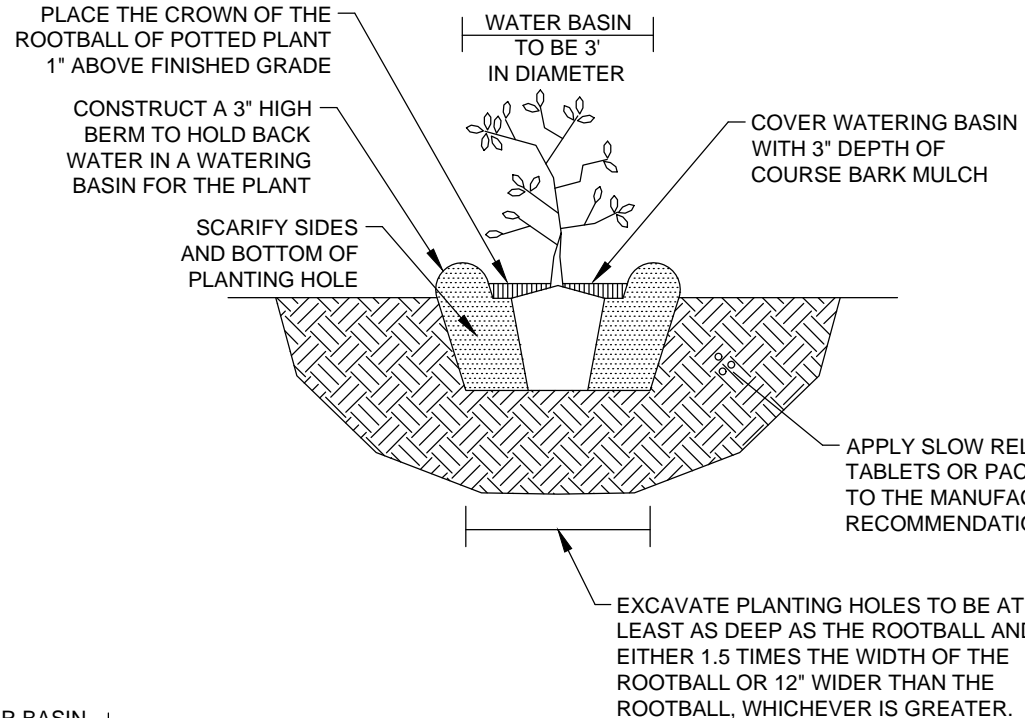
COIR WATTLE SILT BARRIER
NO SCALE



**TYPICAL BENCH RESTORATION
AND REVEGETATION DETAIL**
NO SCALE

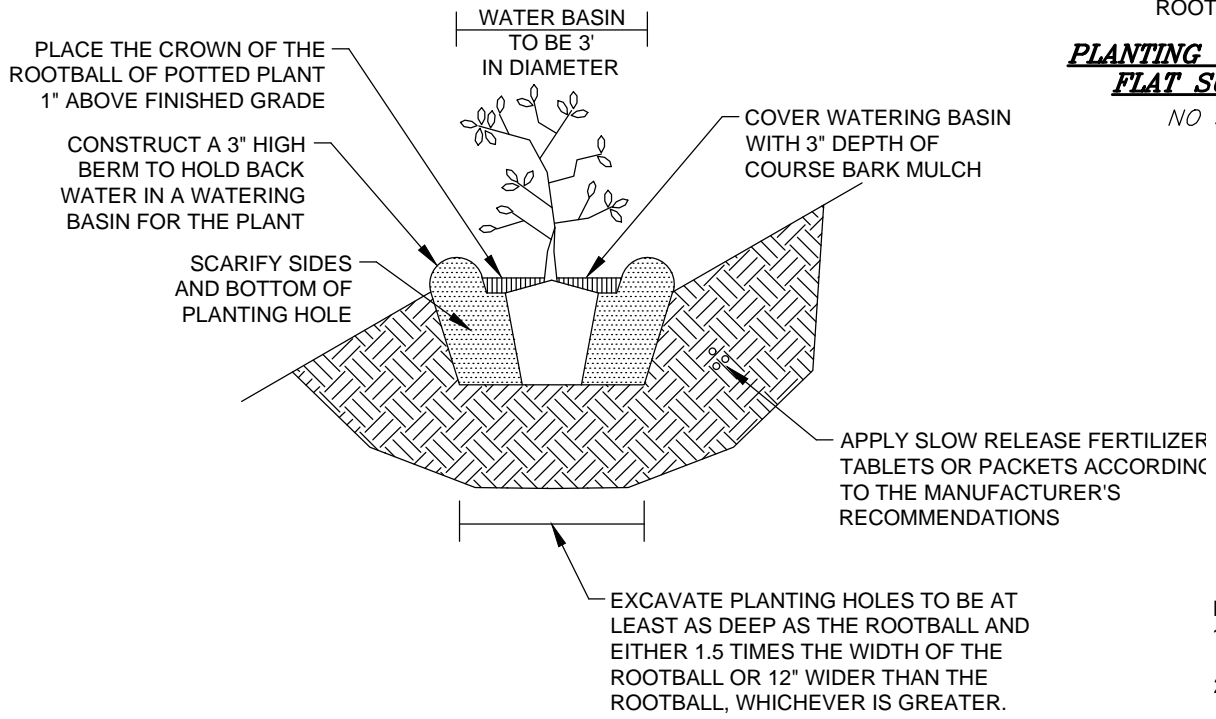
REVISIONS:	BY:

Z:\07 Mammoth Lakes\Local\Improvement Plans\Plan Set\K1\Fig 20--22 Mine Reclamation Cross Sections.dwg Dec 01, 2020 - 12:59pm mparsons



PLANTING DETAIL FOR FLAT SURFACES

NO SCALE



PLANTING DETAIL FOR SLOPES

NO SCALE

PLANTING NOTES:

1. TREES ARE FROM TUBE STOCK OR 1-GALLON SIZE CONTAINERS.
2. BACKFILL HOLE WITH 75% WATER-SATURATED, PULVERIZED NATIVE SOIL AND 25% ORGANIC AMENDMENT, AS REQUIRED BY LAB TESTS
3. WATER PLANTS IMMEDIATELY AFTER PLANTING.


triod/haines assoc
 civil engineering
 land surveying
 MAMMOTH LAKES
 BISHOP
 REDWOOD CITY
 SAN LUIS OBISPO
 PREPARED & SUBMITTED BY:

DATE:

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PREPARED FOR:

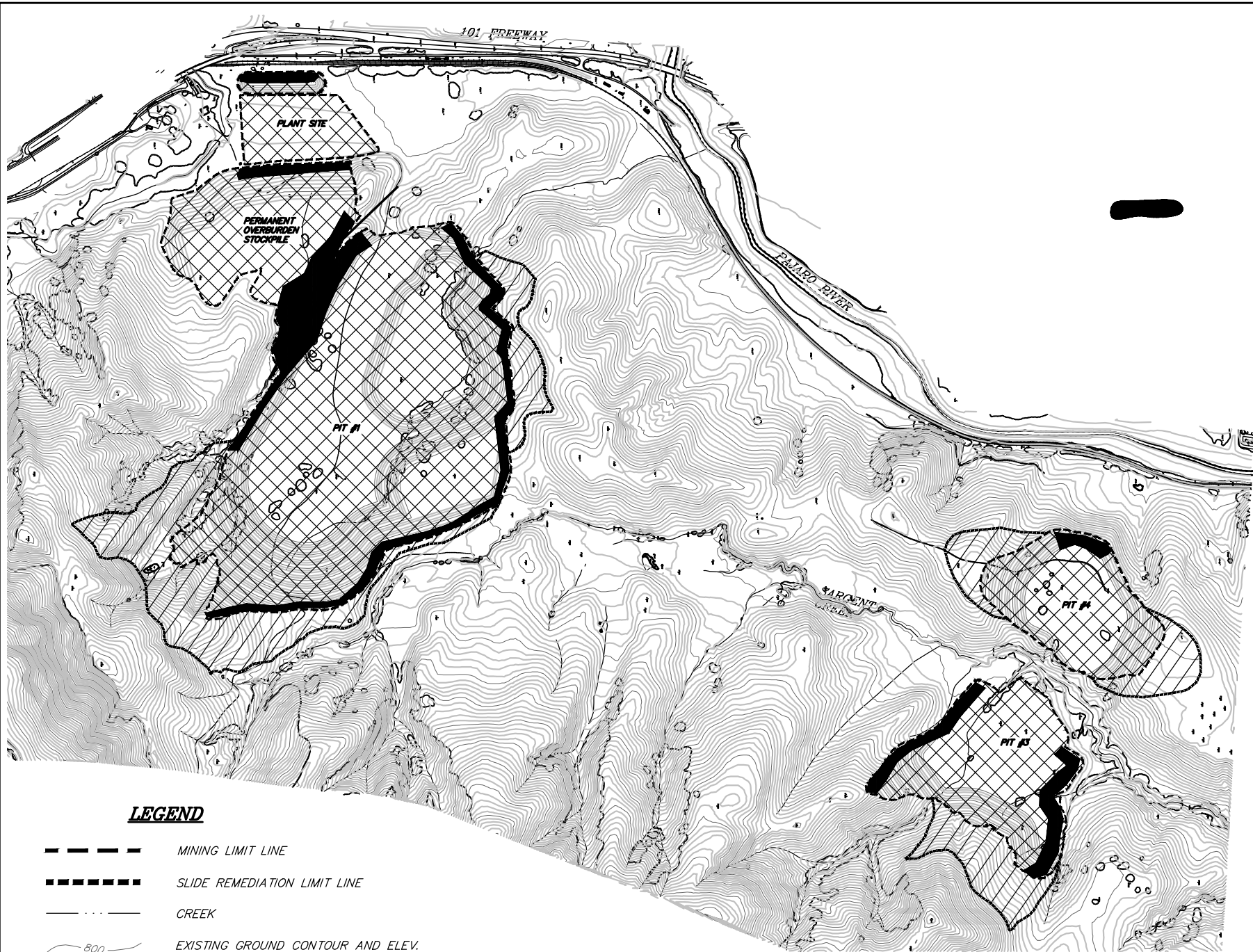
VERNE FREDMAN
 804 SAN ANTONIO RD
 PALO ALTO, CA 94303

SARGENT RANCH QUARRY

MINE RECLAMATION PLANTING DETAILS

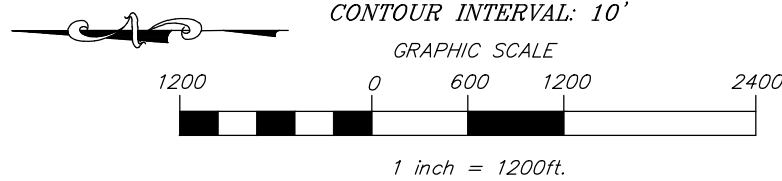
DATE: 12/01/2020
 SCALE: AS SHOWN
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 JOB NO.: 01.4020
 DWG: **FIGURE 22b**

Z:\07 Mammoth\4020 Sargent Ranch\Load\Improvement Plans\Plan Set\K1\Fig 23 Revegetation Plan.dwg Dec 01, 2020 - 1:03pm mpa/maw



LEGEND

- MINING LIMIT LINE
- SLIDE REMEDIATION LIMIT LINE
- CREEK
- EXISTING GROUND CONTOUR AND ELEV.
- AREA TO BE REVEGETATED
- ADDITIONAL AREA TO BE REVEGETATED IF EXCAVATED DUE TO SLIDE POTENTIAL



PREPARED & SUBMITTED BY:

DATE:

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SARGENT RANCH QUARRY
REVEGETATION PLAN

4.6 RECLAMATION MONITORING AND MAINTENANCE

Reclamation activities will be monitored to ensure that reclamation of the site is done in compliance with the approved Mining and Reclamation Plan. The monitoring program incorporates site-specific criteria to measure compliance. Criteria are grouped into five categories: grading/topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance.

4.6.1 Final Topography

Satisfactory completion of reclamation will occur when the configuration of the site complies with the Reclamation Grading and Drainage Plans (Figure 17 and 18) and the Reclamation Cross-sections (Figures 20 and 21) as described herein. Final reclaimed slopes will have varying gradients of 3:1 or flatter to replicate the existing undisturbed slopes and in the areas with oak tree plantings, there will be 3 foot-wide benches established at 40-foot intervals. Reclamation benches will be sloped a minimum of 4 percent to the rear (into the slope) and a minimum of 2 percent laterally for drainage. Interceptor ditches will be installed at the back of the bench which will flow either into (1) drop inlets that drain into overside drains that discharge onto energy dissipaters at the base of the slope or (2) either side collector ditches or lined ditches with energy dissipaters at the base of the slope. From the energy dissipaters at the base of the slope the water will either dissipate into the ground of the valley floor or be collected in drainage ditches that flow into the basin on the floor or into the reclaimed pit. The final valley floor will be graded to provide a 1 percent slope for sheet flow towards the drainage ditches and basin.

Following the completion of mining, the remaining soil materials, including overburden soil fines and top soils will be used (1) to fill and re-soil the quarry pit and process water pond, (2) for constructing the reclaimed fill buttress slopes and benches, and (3) for re-soiling the revegetated areas. Due to the unknown amount of overburden and soil fines available at the time of closure, this Plan allows for the use of the balance of the remaining soil materials to be used for re-soiling, and the subsequent remaining amount used to fill the pits and process water pond.

Fill placed into the pits, process water pond, and on the fill earth buttresses will be compacted up to 5 feet below the ground surface to at least a 90 percent density as determined by ASTM Test Designation D1557-78. The top 5 feet will be filled with predominantly granular material, which is conducive to plant growth, and the surface will receive a layer of topsoil. Satisfactory reclamation will occur when test results are presented demonstrating that compaction limits have been met.

4.6.2 Erosion, Sediment, and Dust Control

A water truck will be used for wetting down work areas while filling and compacting is underway; while the ground surface is being ripped or disked; and while topsoil is being spread onto the reclaimed slopes, benches, and valley floor. Drainage ditches in loose soil will be lined with rock to reduce soil erosion. The final reclamation slopes, benches, and valley floor will be revegetated to stabilize the ground surface. The operator will inspect revegetated slopes prior to September 1 each year for 5 consecutive years after mining. Jut matting, erosion control blankets, coir wattles, silt fences, and sediment traps, will be used to mitigate areas where runoff is concentrated, so as to reduce sediment levels in the runoff. Rill erosion will be repaired whenever rills are found. The repair will be achieved either by re-grading the area or by adding erosion control measures to reduce the concentration of water causing the erosion. Satisfactory reclamation will occur when the revegetation criteria have been met.

The two remaining sediment basins will be inspected annually while the operator is maintaining the site. The operator will continue to maintain the site until five years after mining ceases or two years after human intervention with planting, and after the planting success criteria are met, whichever is latest. After that time, the landowner will be in charge of maintaining the site. Once the landowner takes over the maintenance program, the inspection and maintenance of the basins will be reevaluated as appropriate, because it is anticipated that the site will become stabilized and that sediment will no longer be entering the drainage system.

4.6.3 Revegetation

Revegetation of the mining areas will be performed by the quarry operator. The reclamation specialist or a qualified biologist will evaluate the progress of revegetation and will recommend reseeding or replanting of any areas where vegetation has failed to achieve the vegetative success criteria 4 years after initial planting. A qualified landscape maintenance contractor with a current Qualified Applicators License (QAL) or trained quarry personnel will selectively remove targeted weeds using hand tools or managed grazing. If plants do poorly and there is excessive dieback from substandard planting techniques, inferior planting stock, or drought, the same species will be replaced. If a species does poorly in spite of favorable stock, technique, and weather conditions, a reclamation specialist, qualified botanist, or landscape architect will be consulted and the species will be replaced by a more successful species within its plant association.

Plant vitality, in the reclaimed areas, will be visually monitored semi-annually (twice a year) for a five-year period following plant installation. If it is necessary to replant due to plant mortality, the five-year monitoring schedule will start over again when the plants are replaced. Twenty Monitoring Plots and four Test Plots are shown on Figure 24 and Table 16. The Monitoring Plots will continue to be inspected until the planting

success criteria have been achieved and approval has been obtained from the County and the State Office of Mine Reclamation. The Test Plots will be monitored for 5 or more years until the planting palette and methods are confirmed and the planting success criteria are achieved.

Satisfactory reclamation of the valley floor, fill slopes, and benches will occur when the planting success criteria for plant density, coverage, and richness has been achieved in the Monitoring Plots. Vegetation diversity (species-richness) will result from the four different seed mixes with native and naturalized seed, specified in Tables 5 through 7, and from the installation of two native oak tree species specified in Table 5.

4.6.4 Irrigation Program

An irrigation system will be installed to assist in the revegetation effort if the Test Plot monitoring program determines that supplemental water improves the growth and survival rate of the oak tree seedlings. If an irrigation system is needed then the woody plants will be hand watered with a hose on a water truck for the first two years and then irrigated for the third year following installation to facilitate plant establishment. Plant irrigation will be discontinued at the end of the third year after planting or continued for an additional two years if replacement plants are installed. The objective is to meet the planting success criteria without ongoing irrigation. Once the irrigation system is shut off, the wells will be retained for future use in conjunction with rangeland and agricultural uses.

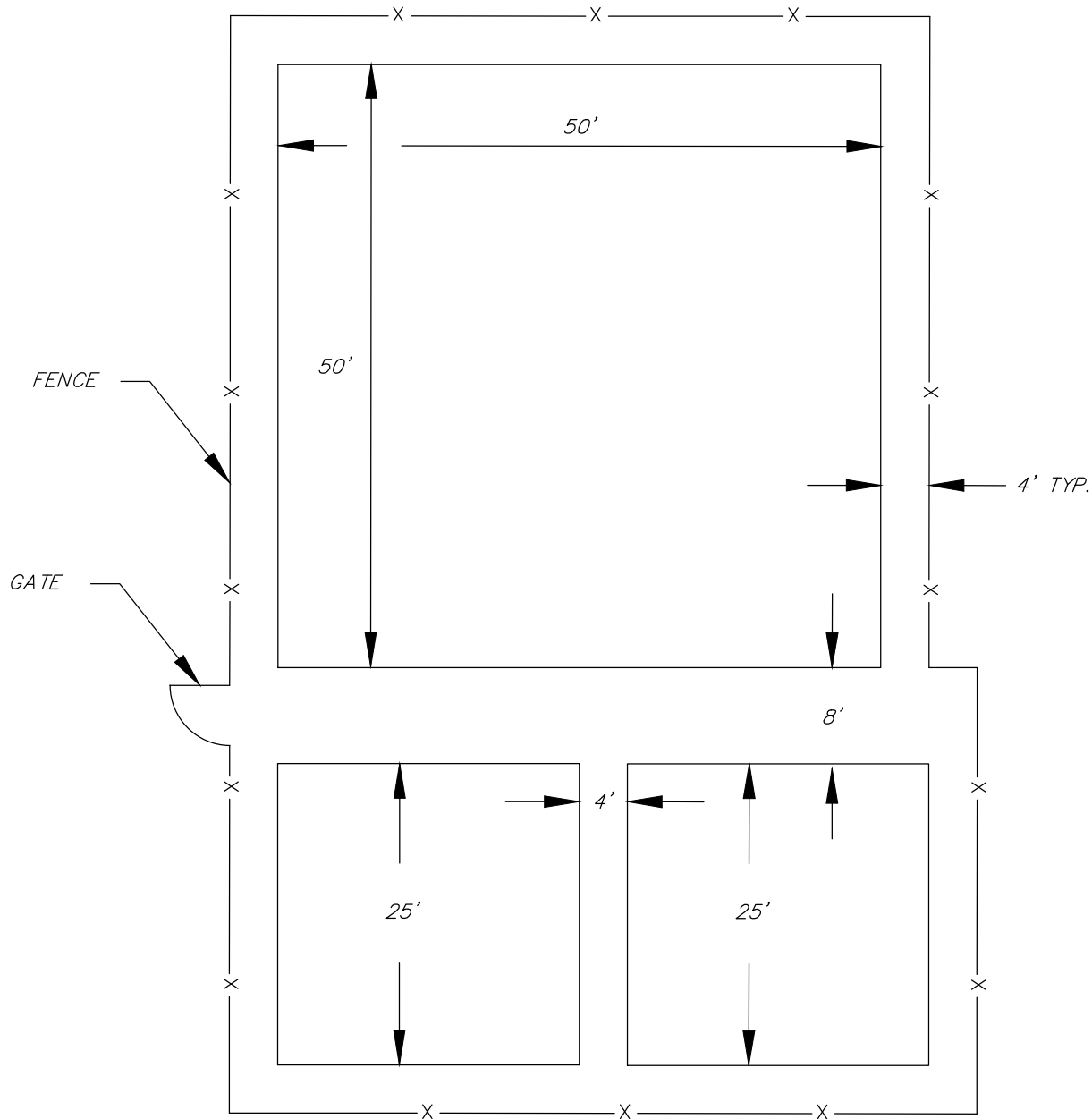
4.6.5 Ongoing Maintenance/Monitoring Period

As one mining phase is completed and another phase begins, the quarry operator will continue to monitor and maintain the previously completed mining and reclamation area. At the end of mining and reclamation of the Phase 4 mining area, the quarry operator will continue to maintain all of the reclaimed areas for either a five-year period after mining ceases or a two-year period after the last human involvement with plantings, and until the planting success criteria are satisfied--whichever occurs last. Should Phases 1, 2, and 3 achieve the vegetative success criteria while Phase 4 is still being mined or reclaimed, the operator may ask the County and the State to approve these areas as reclaimed. After completion of the quarry operator's monitoring period (post-mining), ongoing maintenance will be the responsibility of the landowner.

The final reclaimed fill benches and slopes, quarry floor, drainage facilities, and plantings will be inspected prior to October 1st each year of the five-year post-mining maintenance and monitoring period. New plantings will be visually inspected semi-annually (twice a year) between April and May, and November and December of each year for the first two years after planting. The planting Test Plots will be monitored for a minimum of five years or longer if the trial planting program is modified. The

Monitoring Plots, after the initial five-year period, will continue to be inspected every third year between April and May until they achieve the vegetative success criteria. Maintenance and repair work will be completed prior to November 1. The Maintenance/Monitoring Inspection Cycles are shown on Table 15 in Section 5.3. Conditions, covenants, and restrictions of any property sale during the five-year period, or anytime thereafter, will obligate the new owner to continue ongoing reclamation maintenance and monitoring.

Z:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\K1\Fig 24 Test Plot Designing Dec 01 2020 - 1:09pm.mpenkovsky



- NOTE:
1. REFER TO FIGURE 8 FOR LOCATION OF TEST PLOTS.
 2. FENCE AND GATE TO BE 4 FEET HIGH AND SHALL BE WELDED WIRE OR SIMILAR.
 3. FENCE PER SECTION 4.5.6.6 – TEST PLOTS, MONITOR PLOTS, MONITORING AND INSPECTION.

DATE:

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REVISIONS:	BY:

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SARGENT RANCH QUARRY
TEST PLOT PLAN

4.7 RECLAMATION COSTS AND GUARANTEE (*PRC §2770 and PRC §2773.1*)

The reclamation cost estimate will be updated annually as required by the Surface Mining and Reclamation Act. The cost estimate in this Plan assumes that all mining activities are completed as described in the list of assumptions below.

4.7.1 Reclamation Assumptions

This reclamation cost estimate is based on the anticipated disturbance to the site during the first year of operations. Reclamation of the activities during the first year of Phase 1 are described in the task tables from Tables 8 through 13 and summarized in Table 14. Costs are based on work being performed by outside contractors and include the following assumptions:

- Work on various reclamation tasks will be done simultaneously and to the maximum extent practicable.
- Operating capacities of equipment have been obtained from the Caterpillar Company estimate production reference manual.
- Equipment rental costs have been obtained from local equipment rental companies and from *Labor Surcharge and Equipment Rental Rates*, April 1, 2013 through March 31, 2014 by the State of California, Department of Transportation, and Division of Construction.
- Labor costs are current union scale and represent fully-loaded hourly rates. The source of these costs is from the *General Prevailing Wage Determination* made by the California Department of Industrial Relations.
- Construction of new basins is considered to be mining costs. Back filling of basins following mining is considered to be a reclamation cost.
- Mining equipment will be sold at the site and removed by the buyer.
- Any stockpiled aggregate material (sand, gravel, and overburden for fill) remaining at the completion of mining will either be sold or used as fill material.
- Stockpiled overburden and soil fines will be used for re-soiling and for backfilling the planting holes. These soil materials will be amended if the monitoring program for the Test Plots indicates that soil amendments improve the vegetative success rates of the plants.
- Construction of the cut and fill slopes, mid-slope benches, and drainage facilities are done as mining proceeds and are considered to be mining costs.
- The irrigation system, if required, will remain in place and will not be removed.

4.7.2 Financial Assurance

A Financial Assurance Mechanism will be obtained and made payable to the "Santa Clara County or the Department of Conservation" and will be provided to Santa Clara County. The total cost of Reclamation is estimated to be \$2,694,944. Each year the Financial Assurance Cost Estimate based upon the percentage of disturbance in the given year for reclamation will be updated and the amount of the financial assurance mechanism will be adjusted accordingly. As items of reclamation work are completed to the standards set forth in the approved Reclamation Plan and are acceptable to the County, the owner intends to retrieve the existing assurance and submit a new one with the face value reduced accordingly.

4.7.3 Financial Assurance Cost Estimate

Financial assurance estimates for the initiation of the operation are based on (1) an analysis of the physical activities necessary to implement the approved reclamation plan, (2) the lead agency's (or third party contract) unit costs for each of these activities, (3) the number of units of each of these activities, (4) an amount to cover contingency costs (not to exceed 10 percent of the above calculated reclamation cost) and actual lead agency administrative costs and (5) SMARA's costs for contingency, overhead and profit, mobility, and supervision.

Reclamation tasks are grouped into four categories of related work. Work in various categories will occur simultaneously but are listed separately in the following section.

- | | |
|----------------------|---|
| <u>Group 1 Tasks</u> | Group 1 tasks include equipment and building removal.
-- Remove heavy duty equipment
-- Remove buildings and structures |
| <u>Group 2 Tasks</u> | Group 2 tasks includes Grading
-- Fill placement against slopes to reduce slope angles to 3:1
and establish proper drainage |
| <u>Group 3 Tasks</u> | Group 3 tasks includes Revegetation
-- Manage topsoil stockpiles against erosion
-- Distribute topsoil
-- Seed and plant
-- Water plants (if required per Test Plot analysis) |
| <u>Group 4 Tasks</u> | Group 4 tasks includes Monitoring and Maintenance
-- Planting and seeding inspection
-- Maintenance and weeding
-- Data collection and reporting
-- Replanting contingency |

Table 8 - Reclamation Cost Estimate for Task 1: Structure and Equipment

1.0 PLANT STRUCTURES AND EQUIPMENT REMOVAL

TASK 1.1 - REMOVE SCALE, SCALEHOUSE, AND ALL CONCRETE FOOTINGS; REMOVE MOBILE PROCESSING EQUIPMENT FOR SALE

Method:

Remove office trailer. Remove crusher, screens, and conveyor system. Equipment could be sold, or salvaged. Since net value of equipment exceeds removal cost, no cost assumed. Disassemble equipment for sale or scrap. Break concrete and load to dispose off-site.

Miscellaneous Information:

N/A

A. Equipment List

Equipment	Quantity	\$/Hr	# of Hours	Cost (\$)
Cat Backhoe	1	\$38.74	80	\$3,099.20
Cat 436 Frontend Loader	1	\$38.74	80	\$3,099.20
Truck (4 axles)	1	\$72.13	80	\$5,770.40
Total Equipment Cost for this Task:				<u>\$11,968.80</u>

B. Labor List

Labor Category	Quantity	\$/Hour	# of Hours	Cost (\$)
Operating Engineer	2	\$50.75	80	\$8,120.00
Truck Driver	2	\$20.94	80	\$3,350.40
Laborer	4	\$36.15	80	\$11,568.00
Total Labor Cost for this Task:				<u>\$23,038.40</u>

C. Disposal

Structure/Equipment and Type	Volume (Tons)	Unit Cost Basis	Disposal Cost (\$)	Cost (\$)
Landfill Disposal Fee (Concrete)	40	36	\$0	\$1,440.00
Total Material Cost for this Task:				<u>\$1,440.00</u>

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: \$36,447.20

Table 9 - Reclamation Cost Estimate for Task 2: Reclamation Grading and Drainage

2.0 PRIMARY RECLAMATION ACTIVITIES

TASK 2.1 - GENERAL GRADING

Method:

Approximately 292 acres of level to gently sloping land may require rough grading and any stockpiled material leveled. This task includes regrading any overburden or topsoil stockpiles to a 3:1 finished slope. The area calculated for this task includes all of quarry reclamation property outside of pit area.

Miscellaneous Information:

Quarry areas previously disturbed by mining will be backfilled and graded to rough grades. Surfaces would be ripped, graded and prepared for revegetation. Approximately 240 acres) will be graded.

D8R Dozer with a 14' blade (2 ft overlap); Avg. Speed: 2.5 mph; 50 minute hour; Production Rate: .3 Acre/Hr.

A. Equipment List

Equipment	Quantity	\$/Hour	# of Hours	Cost (\$)
Caterpillar D8 Dozer	3	\$189.62	200	\$113,772.00
Scraper	2	\$192.34	200	\$76,936.00
Water Truck	1	\$57.83	200	\$11,566.00
Total Equipment Cost for this Task:				<u>\$202,274.00</u>

B. Labor List

Labor Category	Quantity	\$/Hour	# of Hours	Cost (\$)
Operating Engineer	6	\$50.75	200	\$60,900.00
Truck Driver	1	\$20.94	200	\$4,188.00
Total Labor Cost for this Task:				<u>\$65,088.00</u>

C. Materials List

Item	Quantity	\$/Unit	Cost (\$)
N/A			\$0.00
Total Material Cost for this Task:			<u>\$0.00</u>

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: \$267,362.00

Table 10 - Reclamation Cost Estimate for Task 3: Revegetation

3.0 REVEGETATION

TASK 3.1 - REVEGETATE DISTURBED SURFACES

Methods:

Broadcast seed mixes and hydroseed slopes (per reclamation over reclaimed area) over entire site (approximately 240 acres). Container Stock to be planted according to Reclamation Plan.

Miscellaneous Information:

Approximately 214 acres will be broadcast seeded with a one of four different seed mixes depending upon location. See Reclamation Plan for detailed locations. All areas will be hydrosseeded. Quote is inclusive of labor and materials. Or, alternatively assume ATV or tractor with seed spreader. Seed Path Width: 5 ft; Avg Speed: 3 mph; Production Rate: 1.25 acres/hr. Seed \$7.00/lb.

A. Equipment List

Equipment	Quantity	\$/Hour	# of Hours	Cost (\$)
ATV or Tractor with Broadcast Seeder	2	\$20.92	120	\$5,020.80
Total Equipment Cost for this Task:				<u>\$5,020.80</u>

B. Labor List

Labor Category	Quantity	\$/Hour	# of Hours	Cost (\$)
Truck Driver	2	\$20.94	120	\$5,025.60
Landscape Laborer	2	\$8.00	120	\$1,920.00
Total Labor Cost for this Task:				<u>\$6,945.60</u>

C. Materials List

Item	Quantity	\$/Acre	Cost (\$)
Broadcast seeding	120.0	\$1,500	\$180,000.00
Hydrosseeding	50.0	\$3,600	\$180,000.00
Container Stock(Oak Trees)	50.0	\$350	\$17,500.00
Total Material Cost for this Task:			<u>\$377,500.00</u>

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: \$389,466.40

Table 11 - Reclamation Cost Estimate for Task 4.1: Monitoring and Maintenance

4.0 MISCELLANEOUS COSTS

TASK 4.1 - MAINTAIN SEDIMENT PONDS AND ASSOCIATED DRAINAGE FACILITIES

Method:

Remove accumulated sediment.

Miscellaneous Information:

Maintain drainage ditches and sediment ponds for 2 years until regulation is established to control erosions. Haybales for first-year erosion control.

A. Equipment, Labor, and Materials

Item	Quantity	\$/Hour	# of Hours	Cost (\$)
Cat 330 Excavator w/ 2.9 cy bucket	1	\$141.54	40	\$5,661.60
Total Cost for this Task:				<u>\$5,661.60</u>

B. Labor List

Labor Category	Quantity	\$/Hour	# of Hours	Cost (\$)
Operating Engineer	1	\$50.75	40	\$2,030.00
Total Labor Cost for this Task:				<u>\$2,030.00</u>

C. Materials List

Item	Quantity	\$/Unit	Cost (\$)
Haybales	40	\$7	\$280.00
Total Material Cost for this Task:			<u>\$280.00</u>

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: \$7,971.60

Table 12 - Reclamation Cost Estimate for Task 4.2: Monitoring and Maintenance

TASK 4.2 - INVASIVE SPECIES PREVENTION AND WEED CONTROL**Method:**

Laborers to control non-native weeds if they inhibit revegetation planting. Manage invasive weeds during revegetation process. Targeted Cattle or sheep grazing will be the method used

Miscellaneous Information:

Assume 2.5 days weed control for 5-year revegetation period.

Labor: Landscape Maintenance Laborer, Truck Driver, Teamster, Group III

A. Equipment List

Equipment	Quantity	\$/Hour	# of Hours	Cost (\$)
Flatbed Truck (2-axle)	2	\$50.46	80	\$8,073.60
Total Equipment Cost for this Task:				<u>\$8,073.60</u>

B. Labor List

Labor Category	Quantity	\$/Hour	# of Hours	Cost (\$)
Landscape Labor	3	\$8.00	80	\$1,920.00
Truck Driver	1	\$20.94	80	\$1,675.20
Total Labor Cost for this Task:				<u>\$3,595.20</u>

C. Materials List

Item	Quantity (Gal)	\$/unit	Cost (\$)
			\$0.00
Total Material Cost for this Task:			<u>\$0.00</u>

D. Direct Cost for this Task Equipment Cost + Labor Cost + Materials Cost: \$11,668.80

Five Year Total \$58,344.00

Table 13 - Reclamation Cost Estimate for Task 5.0: Monitoring

5.0 MONITORING

TASK 5.1 - REVEGETATION SUCCESS AND GEOTECHNICAL MONITORING

Method:

Monitor for successful revegetation, slope stability, erosion control, final grading, and maintenance.

A. Monitoring - Supervision

Monitoring Task	\$/Visit	Visits/ Year	Monitoring Years	Cost (\$)
Geotechnical/Erosion Control Monitoring	\$8,000.00	1	5	\$40,000.00
Revegetation Monitoring(Biologist)	\$1,600.00	4	5	\$32,000.00
Total Monitoring Cost for this Task:				<u>\$72,000.00</u>

B. Monitoring - Crew

Year	Maintenan ce (1 crew/ day)	Visits/yr	Maintenance Costs	
1 (Installation)	\$1,800.00	12	\$21,600.00	
2 (Post-Installation)	\$1,800.00	12	\$21,600.00	
3	\$1,800.00	4	\$7,200.00	
4	\$1,800.00	4	\$7,200.00	
5	\$1,800.00	4	\$7,200.00	
Total Monitoring - Crew				<u>\$64,800.00</u>

B. Direct Cost for this Task

Total Monitoring Costs: \$136,800.00

Table 14 - Summary of Reclamation Costs

6.0 SUMMARY OF COST

Direct Costs:

All Plant Structures and Equipment Removal Costs	\$36,447.20
All Primary Reclamation Activities Costs	\$1,444,043.80
All Revegetation Costs	\$389,466.40
All Miscellaneous Costs	\$66,315.60
All Monitoring Costs	\$136,800.00
<i>Total of Direct Costs</i>	\$2,073,073.00

Indirect Costs:

Supervision (5% of Direct Costs)	\$103,653.65
Profit/Overhead (10%)	\$207,307.30
Contingencies (7%)	\$145,115.11
Mobilization (3%)	\$62,192.19
<i>Total of Indirect Costs</i>	\$518,268.25
<i>Total of Direct and Indirect Costs</i>	\$2,591,341.25

Lead Agency Administrative Cost (4% of Costs)	\$103,653.65
---	--------------

Total Estimated Cost of Reclamation: \$2,694,994.90

4.8 EFFECT OF RECLAMATION ON FUTURE MINING POTENTIAL

The reclamation actions described in the Mining and Reclamation Plan will not interfere with future mining potential at the site. The Sargent Quarry mineral deposit is known to have a vertical extent that exceeds beyond the depth of the design in this Plan. The current mine plan provides for resource extraction to a maximum depth of about 130 feet above sea level. This is the depth that material can be extracted based primarily on quarry geometrics and haul road requirements. Access to deeper reserves would require “lay back” of quarry walls which is not currently planned due to limits of the property and surface area required.

While current economics, equipment, and property configuration do not support mining at increased depth, these limitations may or may not apply in the future. The Reclamation Plan and designated end use as rangeland specified in this document would not compromise such additional future mining. No other conditions are foreseen that could reduce the viability of additional reserve extraction beyond the current operating constraints.

5 POST RECLAMATION MONITORING/MAINTENANCE PROGRAM

5.1 POST RECLAMATION MAINTENANCE SCHEDULE

Several procedures will be followed to ensure that reclamation of the site is successful and that the site is appropriately maintained. All maintenance inspections will be conducted during August and September each year; maintenance work will be completed by either October 1st or November 1st each year depending on the task. These annual maintenance inspections will be performed by quarry operator's personnel, and the inspections will be recorded onto the 19 reporting forms on Figures 22 through 40. These inspections will include repair of the irrigation system (if installed) on an as needed basis; erosion control work; fence repair; and sediment removal from ditches, drop inlets, process water pond, and sediment basins. The quarry operator will manage the maintenance program until 5 years after mining ceases or 2 years after human intervention for reclamation planting, and after the planting success criteria are met, whichever is last. After that, the responsibility to maintain the site is the duty of the landowner.

5.2 DRAINAGE AND SEDIMENT CONTROL

The fill buttress slopes and benches, drainage ditches, drop inlets, over-side drain pipes, culverts, and basins will be inspected annually until the quarry operators' maintenance program ends. The final maintenance program to be administered by the landowner should include annual inspection of the fill buttress slopes and benches, drainage ditches, drop inlets, culverts, and basins.

Areas of erosion will be treated by placing coir wattles onto the area to restrict the concentration of runoff and reduce sedimentation. Accumulated silts will be removed from the basins and drainage ditches to maintain capacity.

5.3 REVEGETATION MONITORING AND REVEGETATION CRITERIA

Revegetation consists of hydro-seeding and planting of trees, as shown on Figure 23: Revegetation Plan. At the start of mining the monitoring of Test Plots will begin. Findings will be used to modify the planting program as needed prior to the Post-Maintenance and Monitoring period. During the Post-Maintenance and Monitoring Period, revegetation monitoring will include both visual monitoring for a two-year period and then quantified monitoring for at least another 3 years of the 20 Monitoring Plots and four Test Plots until the revegetation plantings achieve the vegetative success criteria in Table 17. If more time is needed to achieve the criteria, then the Monitoring

Plots will continue to be inspected at varying intervals until the vegetative success criteria is achieved.

The visual monitoring inspections of the Test Plots and the Monitoring Plots will measure plant survival rates and these will be recorded on the Visual Planting Inspection Forms for each plot on Figures 25 through 28. The Monitoring Plots will be visually inspected semi-annually for the first two years after planting and the Test Plots will be visually inspected monthly the first year and quarterly the second year. After the two-year visual observation inspection period each Test Plot and Monitoring Plot will be subject to quantified monitoring inspections. The quantified monitoring inspections of both the Test Plots and the Monitoring Plots will occur semi-annually (twice yearly) and will use the following planting success criteria and reporting forms on Figures 25 through 28:

- Plant coverage
- Plant density
- Species-richness (diversity)

The planting success criteria for plant coverage, plant density, and species-richness has been identified and described for each plant community, including Non-Native Annual Grassland and Oak Woodland, and are summarized on Table 17.

The revegetation-monitoring program will evaluate the ongoing success and failures of the reclamation program based on the planting success criteria. Modifications will be made to the planting program, if necessary, to ensure that the planting success criteria are achieved. Most modifications to the planting program will be made based on the outcome of the Test Plots. The Revegetation Monitoring program will continue for 5 years after mining ceases; 2 years after all human intervention with planting has ended; and until all of the planting success criteria for all reclamation areas have been satisfied, whichever is last.

While ongoing revegetation efforts have indicated that the viability of plants can be determined within 2 years of their installation, it is anticipated that it will take a minimum of 5 years to achieve the planting success criteria. Failed plantings will be replaced, as needed, to meet the planting success criteria shown on Table 17. Revegetation experts will inspect the newly planted areas, Test Plots, and Monitoring Plots. The revegetation-monitoring program will include the following tasks:

Visual Inspections of Monitoring Plots and Test Plots (1 to 2 years): The newly planted areas, including 20 Monitoring Plots and four Test Plots and shown on Figure 24 will be visually inspected the first two years after planting to provide an overview of the planting program. The Test Plots will be inspected monthly the first year and then

quarterly the second year. The Monitoring Plots will be inspected semi-annually (twice/year). These visual inspections will measure the survival rate and dieback rate of woody plants and provide a general overview of vegetative coverage. Replanting will be required if there is less than 65% survival rate of the trees 2 years after planting. The Test Plot visual inspections will be recorded on the Visual Planting Inspection Forms; and the monitoring inspections of the Test Plots will be recorded on Figures 26 through 39. The visual inspections of the Monitoring Plots will be recorded on the Visual Planting Inspection Forms, and the monitoring inspections of the Monitoring Plots will be recorded. The visual inspections for the Monitoring Plots will examine each area of the quarry including: (1) reclaimed benches and slopes and (2) quarry floor as shown on Figure 24: Test Plot and Monitoring Plot Locations and Design. The semi-annual inspections for the Monitoring Plots will occur between April and May, and November and December each year.

Monitoring Plot (commences after Visual Inspection) and Test Plot Inspections: The 20 Monitoring Plots will be inspected semi-annually for the first three years after the Visual Inspection period (described above), and then once every third year until the planting success criteria have been achieved and approved by the County and the State Office of Mine Reclamation. Due to the time of planting and plant vitality, some Monitoring Plots may still need to be inspected during the last year of the five-year maintenance period and these quantified inspections will continue until the planting success criteria are achieved and approved by the County and the State Office of Mine Reclamation. After the two-year Visual Inspection period, the 3 Test Plots will be inspected semi-annually for 3 years between April and May and November and December, and then every other year as needed.

These quantified inspections will evaluate the planting success criteria of the Monitoring Plots and Test Plots identified on Table 16 and located on Figure 24: Test Plot and Monitoring Plot Locations and Design. Dead container plants shall be tallied annually and replaced as required to meet the success criteria. Additional desired native species established through natural recruitment also may be counted toward the criteria. These inspections will be recorded on the Revegetation Monitoring Plot Log for each planting habitat zone in the quarry including (1) Non-Native Annual Grassland and (2) Oak Woodland. These quantified inspections will occur semi-annually between April and May and November and December. Should a Monitoring Plot or Test Plot achieve the planting success criteria before the end of its designated inspection period, inspections may stop for that one plot or area since the planting criteria has been achieved.

The two inspections described above will be performed on a time schedule based on the year of planting. Table 15 presents a hypothetical schedule to illustrate how the inspection program will work over time.

The success criteria for revegetation areas will be measured using randomly placed Test Plots and Monitoring Plots. The location of each Test Plot will be well established by placing wire fencing around the plot. The Monitoring Plot transects will include a 2-foot-wide belt transect with a line-intercept transect down the centerline, oriented down the slope gradient. The belt transects beginning and end points will be demarcated with a 4-foot tall metal rebar set 12 inches into grade and capped with a yellow mushroom rebar cap. The rebar posts will be identified with embossed aluminum tags. The Monitoring Plots for annual grassland will be 2 feet by 50 feet transect. The transects for the Oak Woodlands will be 2 feet by 100 feet and the density of Oak Tree species will be counted using a 100-foot circular plot centered on the line intercept transect in the middle of the belt transect.

The use of rebar and GPS record will facilitate locating each transect and will also ensure that the information collected during each survey is for the exact same area (size) and location. Transect data will be analyzed to determine if the reclamation plantings are achieving the vegetative success criteria. The large number of transect Monitoring Plots in each plant community at the reclaimed quarry will provide an 80 percent confidence level in the data collected for the planting success criteria.

The quantifiable planting success criteria that will be used to evaluate the revegetation program are shown in Table 17.

Table 15 - Typical Monitoring Inspection Schedule⁴

MINING YEAR (est. 2022-2052)	PHASE				KEY
	1	2	3	4	
1	Tv	T	T	T	Tv Visual inspection of Test Plot during the 1 st two years after planting; Monthly the 1 st year & quarterly the 2 nd year.
2	Tv	T	T	T	
3	T•	T•	T•	T•	T• Monitoring Inspections of the Test Plots during years 3 through 5 after planting semi-annually; and then once every third year as needed until the criteria are achieved
4	T• Mv ⁵	T•	T•	T•	
5	T• Mv	T•	T•	T•	
6	M•				
7	T• M•	T•	T•	T•	
8	M•				Mv Visual inspections of the Monitoring Plots during years 3 through 5 after planting semi-annually; and then once every third year as needed until the criteria are achieved
9		T•	T•	T•	
10	* Mv ⁶				
11	Mv	T•	T•	T•	
12	* M•				
13	M•		T•	T•	M Monitoring Inspections of the Monitoring Plots during years 3 through 5 after planting- semi-annually; and then once every third year as needed until the planting success criteria are satisfied, and are approved by the County and State Office of Mine Reclamation.
14	* M•				
15			T•	T•	
16	*				
17			T•	T•	
18	*				* On-going inspections, only if revegetative success criteria was not achieved by the end of 5 years after planting. If replanting is required then the 5-year cycle repeats: 2 years visual inspections and 3 years monitoring. If vegetation needs more time to grow, because 5 years wasn't enough, then continue with inspections every 3rd year.
19			T•	T•	
20	*	Mv			
21		Mv	T•	T•	
22	*	M•			
23		M•	T•	T•	* Shaded rows with green indicate the approximate duration of mining during each mining phase.
24	*	M•			
25			T•	T•	
26	*				
27			T•	T•	
28	*				* Shaded rows with green indicate the approximate duration of mining during each mining phase.
29			T•	T•	
30	*				
Post-mining					
1			Mv	Mv	
2	*		Mv	Mv	
3			Mv	Mv	
4	*		Mv	Mv	
5			Mv	Mv	

⁴ This Table is meant to provide an example of the Inspection Schedule and does not represent the entire planning/inspection schedule nor the exact years that each mining phase will take.

⁵ Phase 1 will be reclaimed in two stages because the mining area on the ridge will be reclaimed as soon as mining is completed in this area; approximated 4 years after mining Phase 1 commences. The remaining portion of Phase 1 will be reclaimed at the beginning of Phase 2.

⁶ After the completion of all mining in Phase 1, the remainder of Phase 1 will be reclaimed.

Table 16 - Monitoring Plot & Test Plot Locations

PHASE	PLANTING PLOT	LOCATION	PLANT COMMUNITY
1	A1	Reclaimed Slope	Grassland
	A2	Reclaimed Slope	Grassland
	A3	Reclaimed Slope	Oak Trees
	A4	Reclaimed Bench	Oak Trees
2	B1	Reclaimed Slope	Grassland
	B2	Reclaimed Slope	Grassland
	B3	Reclaimed Bench	Oak Trees
	B4	Reclaimed Slope	Oak Trees
3	C1	Reclaimed Bench	Oak Trees
	C2	Reclaimed Slope	Oak Trees
	C3	Quarry Slope	Grassland
	C4	Quarry Slope	Grassland
4	C1	Reclaimed Bench	Oak Trees
	C2	Reclaimed Slope	Oak Trees
	C3	Quarry Slope	Grassland
	C4	Quarry Slope	Grassland
TEST PLOT ⁷	TA 1	By Office	Grassland
	TA 2	By Office	Oak Trees

⁷ The Test and Monitoring plots are shown are Figure 24.

Table 17 - Planting Success Criteria

GOAL BY MINIMUM OF 5 YEARS AFTER PLANTING			
SITE LOCATION	PLANT COVERAGE (percent)	PLANT DENSITY Forbs or native, or locally-naturalized plants (per transect)	SPECIES-RICHNESS Native or locally-naturalized plants (per transect)
Grassland: 3:1 or flatter fill slopes	60% ⁸	5 ⁹	2 ¹⁰
Grassland: Quarry floor	70% ¹¹	4 ¹²	3 ¹³
Oak Woodland w/Grassland: Fill slope (3:1 gradient or flatter)	50% ¹⁴	4 ¹⁵	4 ¹⁶
Badlands – fill slopes	40% ¹⁷	4 ¹⁸	2 ¹⁹

⁸ The plant coverage of new **grassland areas on the reclaimed 3:1 fill slopes** is expected to be 60 % coverage including the native and locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to the more difficult growing conditions.

⁹ The plant density of grassland areas is not a measurement used in determining planning success criteria; however the forbs in the seed mix (4) can be counted; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.

¹⁰ The species-richness of the grassland areas on the reclaimed 3:1 fill slopes is expected to be a little less than 50% of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe and woody plant volunteers can be counted. A lower species-richness count is expected on the cut slopes due to the harsher conditions: dry rocky surfaces and lack of soil.

¹¹ The plant coverage of the **grassland on the reclaimed quarry floor** is expected to be 70% from all native or locally naturalized plants.

¹² The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the forbs in the seed mix (4) can be counted; in addition to any other native or locally-naturalized forbe or woody plant. Lower plant density is anticipated due to more difficult growing conditions.

¹³ The species-richness of the grassland on the reclaimed quarry floor is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.

¹⁴ The plant coverage of the **Oak Woodland with grassland areas on fill slopes** with a gradient of 3:1 or flatter is expected to be 50 % coverage including the native & locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to more difficult growing conditions.

¹⁵ The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the plant density in the Oak Woodland with grassland on fill slopes considers the combination of the following assumptions: ½ of the tree species in the circular plot (4 out of 7); and any of the 4 forbs in the seed mix; and any other native or locally-naturalized forbe or woody plant can be counted.

¹⁶ The species-richness of the Oak Woodland with grassland areas is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture, and ½ of the tree species in the planting list; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.

¹⁷ The plant coverage of new **areas on the reclaimed slopes** is expected to be less than the existing cover of 50 %. The plant coverage will include native & locally-naturalized plants. Lower plant coverage is anticipated due to the more difficult growing conditions.

¹⁸ The plant density of on the reclaimed slopes is expected to include: 2 perennial shrubs per transect (½ of the perennial shrubs in the seed mix); and any of the 4 forbes in the seed mix; and any other native or locally-naturalized forbe or woody plant volunteer can be counted.

¹⁹ The species-richness on the reclaimed slopes is expected to be a little less ½ of the number of perennial plant species in the seed mixture (5); and include any other native or locally-naturalized forbe or woody plant that volunteers. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.

The transects for the Monitoring Plots and the area allocated for the Test Plots that will be used to measure the planting success criteria will vary in size. The Monitoring Plot transects will include a 2-foot-wide belt transect with a line-intercept transect down the centerline, oriented down the slope gradient. The Monitoring Plot transects for annual grassland, habitat will be 2 feet by 50 feet. The transect for Oak Woodland will be a 2 feet by 100 feet transect and will be used to count the Density of Oak Woodlands.

There will be two Monitoring Plots for the Oak Woodland and for the Annual Grassland plant community for a total of 2 planting Monitoring Plots. The proposed location and general design of the Test Plots is shown on Figure 24.

5.4 Plant Coverage

Plant coverage, meaning the vertical projection of the plant over the ground surface in each transect, varies in the different areas of the quarry. The criteria for vegetative coverage are shown in Table 17 above. The Monitoring Plots and Test Plots that will be used to measure vegetative coverage are identified in Table 16.

5.5 Plant Density

Plant density, meaning the number of individual plants or stems of each native or locally-naturalized plant in each transect or circular plot for Oak tree species that is rooted in a given reference area. The criteria for plant densities are shown in Table 17. The Monitoring Plots and Test Plots that will be used to measure plant density are identified in Table 16 and shown on Figure 24.

Areas with grasses, such as the seeded slopes, benches, and quarry floor are not included in these criteria because the plant density criteria *“are best used on shrub and trees and are almost impossible to use on grassland.”*²⁰ However, since there are some forbes in the seed mix, those plants will be counted as part of the plant density criteria.

5.6 Species Richness

Species – richness criteria, means the number of different plant species in each transect. The plant species included on the planting lists on Tables 3 and the seed mixes on Table 5 to 7 are representative of the surrounding natural plant communities. This calculation only includes native or locally-naturalized plants and does not include noxious weeds²¹. The species-richness criteria are shown on Table 17. All of the plants shown on Tables 5 to 7 are native plants. The Monitoring Plots and Test Plots that will be used to measure species-richness are identified in the Table 16.

²⁰ State Office of Mine Reclamation, Department of Conservation, and Quarterly Newsletter: SMARA Update, “Setting Revegetation Performance Standards”, and page 5, April-June 1997.

²¹ Noxious weeds defined by the California Department of Food and Agriculture, Appendix G

5.7 Revegetation Monitoring Log

Revegetation Monitoring Logs will be completed for each Monitoring Plot and Test Plot, Figures 26 to 33 identified on Table 16. The inspections of the Monitoring Plots will be conducted semi-annually between April and May, and November and December, for the first five years and then once every third year between April and May until the planting success criteria have been achieved. The inspections of the Test Plots will be conducted monthly the first year, quarterly the second year and semi-annually (between April and May, and November and December) for the remaining years, as needed. Each log will record the observations and measurements regarding plant coverage, plant density and species – richness as described above. If significant plant dieback has occurred, then adjustments will be made and additional plants will be planted, if needed to achieve the planting success criteria. The monitoring program will continue until the success criteria have been met. Should the revegetation monitoring program indicate that a certain plant species is failing, that plant species will be dropped from the planting list. The plant list will be modified by either adding another similar native plant (tree, forbe or perennial) or by planting more of a plant species already on the plant list that has survived and thrived.

5.8 Irrigation System

The irrigation system, if shown to be needed, will be inspected in March of each year prior to the end of the rainy season and before the dry season when the system is used more frequently. The inspector will check the pumps, tanks, valves, lines and emitters to be sure they are functioning and clear of debris and that the system does not have any leaks.

5.9 Site Security/Public Health & Safety (*CCR §3502(b)(2)*)

Sargent Quarry is private property; the designated end use is cattle ranching. Final slopes have been designed to achieve the slope stability criteria recommended in the Slope Stability Investigation report, Appendix D. The reclaimed slopes will have a maximum gradient of 3:1, which should pose no safety hazard to the public. A new three strand barb wire fence placed along the perimeter of the mining area will be inspected annually. Any breaks will be repaired in order to restrict unauthorized access. Future unauthorized exposure of the public to the site shall therefore not result in a public health or safety hazard.

5.10 Monitoring and Reporting Program

The State Surface Mining and Reclamation Act requires that Reclamation Plans include a Monitoring Program to ensure compliance with the Plan. The Monitoring Program uses the following specific criteria related to topography, revegetation, and sediment

and erosion control. The monitoring program will be conducted by the quarry operator to determine if the reclamation standards are being met during mining and for the five-year period after mining ceases.

5.11 Topography

Slopes and drainage features will be inspected and recorded on the Sediment and Erosion Control Report Form, Figures 35-37. These inspections will determine if any failures are evident and require repair.

5.12 Revegetation Success Criteria

Approximately one year after planting the revegetated areas that have less than 10 percent coverage will be reseeded. At the end of the second year after planting, the revegetated areas with exposed areas that have less than 20 percent plant coverage will be seeded. Two years after being planted the Oak trees should have a combined survival rate of 65 percent. Trees are considered to be "surviving" if they have sufficient foliage to sustain themselves. The newly planted areas will be visually inspected semi-annually for two years to evaluate the survival rate of the trees, and identify areas that require additional plants or reseeded. The newly planted Test Plots will be inspected monthly the first year and then quarterly, the second year to identify areas that require additional plants or reseeded. These visual inspections will be recorded on the Monitoring Plot and Test Plot-Visual Planting Inspection Forms. After the two year visual observation period quantified Monitoring Inspections, will be conducted for the Test Plots and Monitoring Plots. These monitoring inspections will quantify the planting success for each planting area based on the criteria described in Table 17. These quantified monitoring inspections will continue until the planting success criteria are achieved for each Test plot and Monitoring Plot and the quantified inspections have been approved by the County and the State Office of Mine Reclamation.

5.13 Sediment and Erosion Control

While mining continues and for five years after mining ceases, or when the planting success criteria in Section 6.030 are satisfied, whichever is last, the collector ditches, drop inlets, over-side drains, culverts, interceptor ditches, and basins will be inspected and cleaned out annually, or as needed, to ensure that they continue to function properly. The reclaimed fill slopes and benches covered with a mixture of soil materials including topsoil, overburden and soil fines will be inspected quarterly between April 15 and October 15 and monthly between October 15 and April 15 each year until mining ceases. Accumulated sediments in the drainage facilities shall be removed prior to the rainy season each year. All erosion controls will continue to be used and inspected each fall before the rainy season and until such time that the vegetative cover has become

established and the newly constructed slopes and benches are stable. These inspections will be recorded on the Sediment and Erosion Control Reporting Forms, Figures 35-37.

The Reclamation Specialist or a qualified SWPPP inspector (QISP) or Certified Professional in Erosion and Sediment Control (CPESC) will inspect the slopes and drainages for signs of significant erosion, and will make recommendations for erosion control measures as appropriate. Workers will make any repairs to the irrigation system if needed (including prompt repair of any broken piping, if applicable, to minimize erosion concerns), perform erosion control work, fence repair and remove sediment from ditches and ponds.

The mining site will be mined in four phases, as one phase is completed it will be reclaimed. The five-year maintenance and monitoring period may be different for each mining phase; since each Phase begins and ends at a different time period. At the end of the five-year maintenance and monitoring period for Phase three, if vegetation has properly established and sediment is no longer evident in site drainage for the whole mining area, then a closure report will be prepared and filed with the Santa Clara County and The Department of Conservation- Office of Mine Reclamation.

5.14 Noxious Weed Monitoring

The goal of the noxious weed removal program is to eradicate, over the life of the mining permit, those targeted noxious weed species that compete with the native and locally-naturalized plant species found at the quarry mining property. Targeted noxious weed species at this site include Italian thistle and Yellow star thistle. These two weeds shall be declining, and generally not in evidence and nowhere dominant at the end of the Maintenance and Monitoring Period²². Weed removal will commence in each mining Phase once mining in that area has begun. Ongoing weed removal will continue annually through the anticipated thirty years of this Plan and until the end of the post mining 5 year maintenance period or when the planting success criteria have been achieved, whichever is last.

After the initial startup effort to remove the noxious weeds, the ongoing program will be to identify the presence of the two noxious weed species during annual routine inspections of quarry property. The findings of these inspections will be recorded on the Annual Noxious Weed Control Inspection forms. This Form requires follow up action by requesting the removal date of the noxious weed species to be noted on the form.

²² Targeted noxious weeds include those weeds on the State Department of Food and Agriculture list in Appendix G.

5.15 Reporting

The site will be inspected according to the inspection cycle shown on Table 15. These inspections will be documented on the appropriate form:

- Monitoring Plot and Test Plot -Visual Planting Inspection Forms (year 1 and 2 after planting)
- Test Plot - Revegetation Monitoring Log (year 3-5 minimum),
- Monitoring Plot-Revegetation Monitoring Plot Log (year 3-5 minimum)
- Watering Program Inspection Form
- Sediment and Erosion Control Report Form
- Noxious Weed Control Inspection Form
- A letter report will be submitted to the County Planning Director by November 1 each year summarizing the inspection findings and any remedial action taken.

Table 18 – Maintenance and Monitoring Inspection Cycle

Inspection Tasks	Annual Inspection Cycle ²³	Semi-Annual Inspection Cycle ²⁴	5 Year Post-Mining Maintenance Inspection Cycle (Year) (+year, if needed)								Annually Until Cleaned Out	
			1	2	3	4	5	+6	+7	+8		
Sediment Basins No. 1 by process plant	X											
Sediment Basin no. 2 at base of Swanson Bluff	X											
Process Water Pond ²⁵	X											
Quarry Pit	X											
Fill Slopes	X	X ²⁶										
Fill Benches	X	X ²⁷										
Finished valley floor		X ²⁸										
Drainage & collector ditches, and Swales	X											
Drop Inlets	X											
Culverts, Overside Drain Pipes	X											
Erosion controls	X											
Irrigation system, if installed	X											
Fencing												
Seeding (Hydroseeded & Drill/Imprint Seeded)		X										
Trees		X										
Monitoring Plots		X ²⁹										
Test Plots		X ³⁰										
Noxious Weed Control	X ³¹											

²³ These annual inspections are recorded on either the Watering Program Inspection Form, Figure 34; and Sediment and Erosion Control Reporting form, Figures 35-37; unless otherwise noted.

²⁴ Reclaimed areas will be visually inspected semi-annually (twice a year) for two years after planting to observe for successes and failures, and evaluate the survival rate of the trees. These inspections will be recorded on Figures 25-27. Should an area require replanting the inspection cycle will start over with the semi-annual visual inspections for two years.

²⁵ The Process Water Pond will be filled in during reclamation hence it will not require maintenance during the 5 Year post Mining Maintenance period.

²⁶ This includes visually inspecting the reclaimed fill benches in Phase 3 in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

²⁷ This includes visually inspecting the final reclaimed quarry floor in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

²⁸ This includes visually inspecting the final valley floor in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

²⁹ Monitoring Plots will be visually inspected twice a year for the first two years after planting, Figures 25-27, and then quantified inspections will occur semi-annual (twice a year) until the 5th year after planting, then they will be inspected every third year and will continue until the planting success criteria has been met and approved by the County and the State Office of Mine Reclamation. Quantified inspections will be recorded on Figures 31-33.

³⁰ The Test Plots for each mining phase, will be visually inspected for two years after planting; monthly the first year and quarterly the second year Figure –25-27, and then the Test Plots will be inspected semi-annually for the next three years; and then every third year and until the planting success criteria has been met. Quantified inspections will be recorded on Figures 28-30.

³¹ Inspections for the noxious weed control program are recorded on Figure 38.

FIGURE 25: MONITORING PLOT & TEST PLOT VISUAL PLANTING INSPECTION FORM FOR NON-NATIVE/NATURALIZED ANNUAL GRASSLAND (YEAR 1 AND 2 AFTER PLANTING)

Inspector: _____

Date: _____

(Monitoring Plot: semi-annually; between April and May & November and December; and Test Plot: Year 1: monthly; and Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary): _____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
<u>Tree Shrub Species</u>	<u>Number Planted</u>	
▪ <u>Not applicable: none planted in Grassland Habitat</u>	0	
<u>Locally Naturalized Volunteers</u>	<u>Species Observed</u>	
Drill/Imprint Seeding, Hydroseed Mix	Approximate Coverage on Slope %	Approximate Coverage on Bench %
<i>Achillea millefolium</i> - Yarrow; <i>Amsinckia menziesii</i> - Fiddleneck; <i>Bromus hordeaceus</i> - Soft Chess; <i>Clarkia purpurea</i> - Wine Cup Clarkia; <i>Elymus glaucus</i> - Blue Wildrye; <i>Lupinus nanus</i> - Sky Lupine; <i>Melica californica</i> - California Melic; <i>Nassella pulchra</i> - Purple Needlegrass		

Plant dieback: Not Applicable because no woody container plants are planted in Grassland.

YEAR 1:

Plant coverage: _____ < 10% or _____ > 10% (if less than 10% at end of first year then replacement planting is required)

YEAR 2 (end of year):

Plant coverage: _____ < 20% or _____ > 20% (if less than 20% at end of second year then replacement planting is required)

FIGURE 26: MONITORING PLOT & TEST PLOT - VISUAL PLANTING INSPECTION FORM FOR OAK WOODLAND (YEAR 1 AND 2 AFTER PLANTING)

Inspector: _____

Date: _____

(Monitoring Plot: semi-annually; between April and May & November and December; Test Plot: Year 1: monthly; & Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary):

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Species	Number Planted	
▪ Coast Live Oak – <i>Quercus agrifolia</i>		
▪		
▪		
Locally Naturalized Volunteers	Species Observed	
Hydroseed Mix	Approximate Coverage on Slope %	Approximate Coverage on Bench %
<i>Achillea millefolium</i> - Yarrow; <i>Amsinckia menziesii</i> - Fiddleneck; <i>Bromus hordeaceus</i> - Soft Chess; <i>Clarkia purpurea</i> - Wine Cup Clarkia; <i>Elymus glaucus</i> - Blue Wildrye; <i>Lupinus nanus</i> - Sky Lupine; <i>Melica californica</i> - California Melic; <i>Nassella pulchra</i> - Purple Needlegrass		

Plant dieback: _____ yes or _____ no

If yes, does it require replacement (if less than 50-70% survival of trees and shrubs replacement planting is required)? _____ yes or _____ no

YEAR 1:

Plant coverage: _____ < 10% or _____ > 10% (if less than 10% at end of first year then replacement planting is required)

YEAR 2 (end of year):

Plant coverage: _____ < 20% or _____ > 20% (if less than 20% at end of second year then replacement planting is required)

FIGURE 27: MONITORING PLOT & TEST PLOT - VISUAL PLANTING INSPECTION FORM (YEAR 1 AND 2 AFTER PLANTING)

Inspector: _____

Date: _____

(Monitoring Plot: semi-annually; between April and May & November and December; Test Plot: Year 1: monthly; and Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary): _____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Shrub Species	Number Planted	
▪ Not applicable: none planted in Grassland Habitat	0	
Locally Naturalized Volunteers	Species Observed	
Hydroseed Mix	Approximate Coverage on Slope %	Approximate Coverage on Bench %
<i>Artemisia californica</i> - California Sage; <i>Avena fatua</i> - Wild Oats; <i>Baccharis pilularis</i> - Coyote Brush; <i>Bromus hordeaceus</i> - Soft Chess; <i>Eriogonum fasciculatum</i> - California Buckwheat; <i>Lotus scoparius</i> - California Broom; <i>Salvia mellifer</i> -, Black Sage		

YEAR 1:

Plant coverage: _____ < 10% or _____ > 10% (if less than 10% at end of first year then replacement planting is required)

YEAR 2 (end of year):

Plant coverage: _____ < 20% or _____ > 20% (if less than 20% at end of second year then replacement planting is required)

**FIGURE 28: TEST PLOT - REVEGETATION MONITORING LOG No. 1³² (3-5 YEARS AFTER PLANTING)
NON-NATIVE/NATURALIZED ANNUAL GRASSLAND**

Inspector: _____

Date: _____
(Test Plots: Semi Annually: between April May; and November and December each year 3 thru 5)

TEST PLOT Number/Area: _____

Date of Initial Planting: _____

HERBACEOUS PLANTS IN SEED MIX		
COMMON NAME	QUANT. PLANTED	NUMBER ALIVE/DEAD
HYRDOSEDED/SEEDED		
COMMON NAME	STATUS/COVERAGE	
<i>Achillea millefolium</i> - Yarrow; <i>Amsinckia menziesii</i> - Fiddleneck; <i>Bromus hordeaceus</i> - Soft Chess; <i>Clarkia purpurea</i> - Wine Cup Clarkia; <i>Elymus glaucus</i> - Blue Wildrye; <i>Lupinus nanus</i> - Sky Lupine; <i>Melica californica</i> - California Melic; <i>Nassella pulchra</i> - Purple Needlegrass		

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage – GRASSLAND: _____ (objective = 60-70% coverage)³³
2. Vegetative density – GRASSLAND: _____ (objective = 4-5 plants/transect)³⁴
(Not measured for Veg. Success Criteria, but Forbes & Woody Plant can be counted)
3. Vegetative species – GRASSLAND: _____ (objective = 2-3 plant species/transect)³⁵

Is replanting required: _____yes or _____no If yes, date replanted: _____

* Refer to Table 17.

³² This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24. The schedule for these inspections is shown on Table 15.

³³ Grassland Vegetative Cover for 3:1 fill slopes is 60%; cover for fill benches and Quarry Floor is 70%.

³⁴ Grassland Vegetative Density is 5 for fill slopes and benches and is 4 for Quarry Floor.

³⁵ Grassland Species Richness is 2 for fill slopes and 3 for fill benches and Quarry Floor.

FIGURE 29: TEST PLOT - REVEGETATION MONITORING LOG No. 2³⁶ (3-5 YEARS AFTER PLANTING) - OAK WOODLAND

Inspector: _____

Date: _____
 (Test Plots: Semi Annually: between April and May; and November and December year 3 thru 5)

Plot Number: _____

Date of Initial Planting: _____

TREES			
COMMON NAME	QUANT. PLANTED	NUMBER ALIVE/DEAD	Notes:
Coast Live Oak			
HYRDOSEEDDED/SEEDED			
<u>LATIN NAME - COMMON NAME</u>			<u>STATUS</u>
<i>Achillea millefolium</i> - Yarrow;			
<i>Amsinckia menziesii</i> - Fiddleneck;			
<i>Bromus hordeaceus</i> - Soft Chess;			
<i>Clarkia purpurea</i> - Wine Cup Clarkia;			
<i>Elymus glaucus</i> - Blue Wildrye;			
<i>Lupinus nanus</i> - Sky Lupine;			
<i>Melica californica</i> - California Melic;			
<i>Nassella pulchra</i> - Purple Needlegrass			
LOCALLY-NATURALIZED VOLUNTEERS			
Species Observed and Number (if appropriate)			

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____(objective = 50- 55 % coverage/transect)³⁷
2. Vegetative density: _____(objective = 4 plants/transect or circular plot)³⁸
3. Vegetative species – richness: _____(objective = 4-7 plant species/transect)³⁹

• Is replanting required: _____yes or _____ no If yes, date replanted: _____

* Refer to Table 17.

³⁶ This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24. The schedule for these inspections is shown on Table 15.

³⁷ Oak Woodland vegetative cover for fill slopes is 50% and for fill benches is 55%

³⁸ Oak Woodland vegetative density is 4 for fill slopes and benches

³⁹ Oak Woodland species richness criteria is 4 plants species on the fill slopes and 7 plant species on the fill benches

FIGURE 30: TEST PLOT - REVEGETATION MONITORING LOG No. 2⁴⁰ (3-5 YEARS AFTER PLANTING)

Inspector: _____

Date: _____

(Test Plots: Semi Annually: between April and May; and November and December each year 3 thru 5)

Plot Number: _____ Date of Initial Planting: _____

HYRDOSEEDED/SEEDED	
<u>LATIN NAME - COMMON NAME</u>	<u>STATUS</u>
<i>Artemisia californica</i> - California Sage;	
<i>Avena fatua</i> - Wild Oats;	
<i>Baccharis pilularis</i> - Coyote Brush;	
<i>Bromus hordeaceus</i> - Soft Chess;	
<i>Eriogonum fasciculatum</i> - California Buckwheat;	
<i>Lotus scoparius</i> - California Broom;	
<i>Salvia mellifer</i> -, Black Sage	
LOCALLY-NATURALIZED VOLUNTEERS	
Species Observed and Number (if appropriate)	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 40- 45%/transect)⁴¹
2. Vegetative density: _____ (objective = 4-5 plants/transect)⁴²
3. Vegetative species – richness: _____ (objective = 2 plant species/transect)⁴³

• Is replanting required: ____ yes or ____ no If yes, date replanted: _____

* Refer to Table 17.

⁴⁰ This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24.. The schedule for these inspections is shown on Table 15.

⁴¹ vegetative cover is 40% on fill slopes and 45% on fill benches

⁴² vegetative density is 4 plants on fill slopes and 5 plants of fill benches/ transect

⁴³ species richness is 2 plants species/transect

FIGURE 31: MONITORING PLOT - REVEGETATION MONITORING LOG No. 5⁴⁴ (3-5 YEARS AFTER PLANTING) - NON-NATIVE/NATURALIZED ANNUAL GRASSLAND

Inspector: _____

Date: _____
 (Monitoring Plots: Semi Annually: between April and May; & November and December each year 3 thru 5)

Monitoring Plot Number/Area: _____

Date of Initial Planting: _____

HERBACEOUS PLANTS IN SEED MIX		
COMMON NAME	QUANT. PLANTED	NUMBER ALIVE/DEAD
HYRDOSEEDED/SEEDED		
LATIN NAME - COMMON NAME	STATUS/COVERAGE	
<i>Achillea millefolium</i> - Yarrow; <i>Amsinckia menziesii</i> - Fiddleneck; <i>Bromus hordeaceus</i> - Soft Chess; <i>Clarkia purpurea</i> - Wine Cup Clarkia; <i>Elymus glaucus</i> - Blue Wildrye; <i>Lupinus nanus</i> - Sky Lupine; <i>Melica californica</i> - California Melic; <i>Nassella pulchra</i> - Purple Needlegrass		

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage – GRASSLAND: _____ (objective = 60-70% coverage)
2. Vegetative density – GRASSLAND: _____ (objective = 4-5 plants/transect)
 (Not measured for Veg. Success Criteria, but Forbes & Woody Plant can be counted)
3. Vegetative species – GRASSLAND: _____ (objective = 2-3 plant species/transect)

• Is replanting required: ____ yes or ____ no If yes, date replanted: _____

* Refer to Table 17.

⁴⁴ This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24. The schedule for these inspections is shown on Table 15.

FIGURE 32: MONITORING PLOT - REVEGETATION MONITORING LOG No. 6⁴⁵ (3-5 YEARS AFTER PLANTING) - OAK WOODLAND

Inspector: _____

Date: _____
 (Monitoring Plots: Semi Annually: between April and May; & November and December each year 3 thru 5)

Monitoring Plot Number: _____

Date of Initial Planting: _____

TREES			
COMMON NAME	QUANT. PLANTED	NUMBER ALIVE/DEAD	Notes:
Coast Live Oak			
Blue Oak			
HYRDOSEEDED/SEEDED			
COMMON NAME			STATUS
<i>Achillea millefolium</i> - Yarrow; <i>Amsinckia menziesii</i> - Fiddleneck; <i>Bromus hordeaceus</i> - Soft Chess; <i>Clarkia purpurea</i> - Wine Cup Clarkia; <i>Elymus glaucus</i> - Blue Wildrye; <i>Lupinus nanus</i> - Sky Lupine; <i>Melica californica</i> - California Melic; <i>Nassella pulchra</i> - Purple Needlegrass			
LOCALLY-NATURALIZED VOLUNTEERS			
Species Observed and Number (if appropriate)			

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 50- 55 % coverage/transect)⁴⁶
2. Vegetative density: _____ (objective = 4 plants/transect or circular plot)⁴⁷
3. Vegetative species – richness: _____ (objective = 4-7 plant species/transect)⁴⁸

• Is replanting required: ____ yes or ____ no If yes, date replanted: _____

* Refer to Table 17.

⁴⁵ This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24. The schedule for these inspections is shown on Table 15.

⁴⁶ Oak Woodland vegetative cover for fill slopes is 50% and for fill benches is 55%

⁴⁷ Oak Woodland vegetative density is 4 for fill slopes and benches

⁴⁸ Oak Woodland species richness criteria is 4 plants species on the fill slopes and 7 plant species on the fill benches

FIGURE 33: MONITORING PLOT - REVEGETATION MONITORING LOG No. 7⁴⁹ (3-5 YEARS AFTER PLANTING)

Inspector: _____

Date: _____
 (Monitoring Plots: Semi Annually: between April and May; & November and December year 3 thru 5)

Monitoring Plot Number: _____

Date of Initial Planting: _____

HYDROSEEDDED/ SEEDDED SHRUBS			
COMMON NAME	QUANT. PLANTED	NUMBER ALIVE/DEAD	Notes:
HYRDOSEEDDED/SEEDDED			
LATIN NAME - COMMON NAME			STATUS
<i>Artemisia californica</i> - California Sage; <i>Avena fatua</i> - Wild Oats; <i>Baccharis pilularis</i> - Coyote Brush; <i>Bromus hordeaceus</i> - Soft Chess; <i>Eriogonum fasciculatum</i> - California Buckwheat; <i>Lotus scoparius</i> - California Broom; <i>Salvia mellifer</i> -, Black Sage			
LOCALLY-NATURALIZED VOLUNTEERS			
Species Observed and Number (if appropriate)			

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 40- 45%/transect)⁵⁰
2. Vegetative density: _____ (objective = 4-5 plants/transect)⁵¹
3. Vegetative species – richness: _____ (objective = 2 plant species/transect)⁵²

• Is replanting required: ____ yes or ____ no If yes, date replanted: _____

* Refer to Table 17.

⁴⁹ This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 24. The schedule for these inspections is shown on Table 15.

⁵⁰ vegetative cover is 40% on fill slopes and 45% on fill benches

⁵¹ vegetative density is 4 plants on fill slopes and 5 plants of fill benches/ transect

⁵² species richness is 2 plants species/transect

FIGURE 34: WATERING PROGRAM INSPECTION FORM⁵³ (IF REQUIRED)

Inspector: _____

Inspection Date (varies, see "Inspection Period" below): _____

Day _____ and time _____ area last irrigated.
Inspection should be done 24-30 hours after irrigation.Test Plot: Grassland Oak WoodlandMining Phase: Phase 1 Phase 2 Phase 3Bench number: _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)

Date this bench was last planted: _____

(only complete if planted within last 2 years, except for Monitoring Plots which should be inspected until end of reclamation program)

- Inspection Period:** First year: twice a month during dry season and extended dry period in winter and once a month during wet season
- Second & Third year: one a month during dry season and extended dry period in winter each 6 weeks in wet season

INSPECT EVERY		SOIL MOISTURE LEVEL			
10th TREE	in Oak	(check one)			
Woodland					
10 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet
20 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet
30 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet
40 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet
50 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet
60 th tree		<input type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet	<input type="checkbox"/> Too Wet

Note: Refer to Section 4.4.11 in the Reclamation Plan for a description of this inspection.

⁵³ A Watering Program will be used if the Test Plot Monitoring Program indicates a need for supplemental watering, Irrigation water, if needed, will only be provided to the reclamation Oak Trees.

FIGURE 35: SEDIMENT AND EROSION CONTROL REPORT FORM - PHASE 1 AREA & QUARRY FLOOR

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found:

Processing Plant area: _____

- Mining Slope: _____
- Reclamation Slope: _____
- Bench Number _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- Intervening Slope between benches _____ and _____
- Quarry Pit : on _____ east side _____ west side _____ south side _____ north side
- Basin Name and (Number) _____
(Sediment Basin No. 1 - @ Process Plant, Sediment Basins No. 2- @ base of Swanson Bluff)
- Process Water Pond

Drainage Facilities:

- Drainage Ditch – needs sediment removed or repair
- Interceptor Ditch – needs sediment removed or repair (only during mining phases)
- Collection Ditch – needs sediment removed or repair (only during mining phases)
- Drop Inlets - needs sediment removed or repair (only during mining phases)
- Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining phases)
- Culvert – needs to be cleared of debris or repaired
- Basin – needs sediment removed or repairs
- Basin spillway – needs maintenance or repair
- Process Water Pond – needs maintenance or repair (only during mining phases)

Fill or Excavated Slopes:

- Slope – rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

- Bench - rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

- Access Road – needs repair
- Irrigation System – needs repair (if installed)
- Other: _____

Action required: _____

Corrective action (MUST be completed by November 1 each year); _____

Date action completed: _____

FIGURE 36: SEDIMENT AND EROSION CONTROL REPORT FORM- PHASE 2 AREA

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found:

- Mining Slope: _____
- Reclamation Slope: _____
- Bench Number: _____ (Count 1st bench at top of slope at #1 & down to the bottom of the slope)
- Intervening Slope between benches _____ and _____ on
- Quarry Pit: on _____ east side _____ west side _____ south side _____ north side

Drainage Facilities:

- Drainage Ditch – needs sediment removed or repaired
- Interceptor Ditch – needs sediment removed or repair (only during mining)
- Collection Ditch – needs sediment removed or repair (only during mining)
- Drop Inlets - needs sediment removed or repair (only during mining)
- Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining)
- Culvert – needs to be cleared of debris or repaired

Fill or Excavated Slopes:

- Slope – rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

- Bench - rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

- Access Road – needs repair
- Irrigation System – needs repair (if installed)
- Other: _____

Action required: _____

Corrective action (MUST be completed by November 1 each year); _____

Date action completed: _____

FIGURE 37: SEDIMENT AND EROSION CONTROL REPORT FORM - PHASE 3 AND 4 AREAS

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found: _____

- Mining Slope: _____
- Reclamation Slope: _____
- Bench Number _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- Intervening Slope between benches _____ and _____
- Quarry Pit on _____ east side _____ west side _____ south side _____ north side (check one)

Drainage Facilities:

- Drainage Ditch – needs sediment removed or repair
- Interceptor Ditch – needs sediment removed or repair
- Collection Ditch – needs sediment removed or repair (only during mining)
- Drop Inlets - needs sediment removed or repair (only during mining)
- Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining)
- Culvert – needs to be cleared of debris or repaired

Fill or Excavated Slopes:

- Slope – rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

- Bench - rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- Coir wattles – need replacement or repair
- Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

- Access Road – needs repair
- Irrigation System – needs repair (if installed)
- Other: _____

Action required: _____

Corrective action (MUST be completed by November 1 each year); _____

Date action completed: _____

FIGURE 38: ANNUAL NOXIOUS WEED CONTROL REPORTING FORM - PHASE 1 AND 2 AREAS AND QUARRY FLOOR

Inspector: _____

Date: _____ (before March 1st each year)

Location where noxious weeds were found:

- Quarry Floor/ Processing Plant Area
- Mining Slope: _____
- Reclamation Slope: _____
- Bench Number _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- Intervening Slope between benches _____ and _____
- Quarry Pit on _____ east side _____ west side _____ south side _____ north side (check one)
- Basin Number _____ (Sediment Basin No. 1 - @ Processing Plant; Sediment Basin No. 2-@ base of Swanson Bluff)
- Process Water Basin

Action required: The targeted noxious weeds, Italian Thistle (*Carduus pycnocephalus*) and Yellow Starthistle (*Centaurea solstitialis*) will be removed⁵⁴. Weed inspections will begin at the top of the west side and work down the benches and slopes to the quarry floor; and then commence at the top of the east side and work down the benches and slopes to the quarry floor; and then inspect the quarry floor, quarry pit and access roads. Depending on their location, the targeted noxious weed species will either be removed by hand or with managed grazing.

Action taken: _____

Date action completed: _____

⁵⁴ Other noxious weeds on the State Department of Food and Agriculture’s list in Appendix G will also be removed.

Table 19 - List of Owners of the Sargent Ranch

List of Owners of the Sargent Ranch
DACA GP
DACA SR Pt. Loma
DACA VI
DACA 2010L, L.P
Bradley D. Benson
Robert MacCulloch
Deborah S. Appleton
Discount Fabrics Profit Sharing Plan
Elizabeth A. Doerr-Black
Energy Research and Generation, Inc.
Eric B. Benson
Ethel M. Blake
Frederic Sylvester
Gunilla M. Rittenhouse
Gunther J. DeGroot and Kathryn E. DeGroot
Ian G. Koblick and Tonya A. Koblick
Mary Jameson
James Schreader
Jocelyn Sylvester Herail
Linda H. Kralik
Los Amigos V
Louis E. Rittenhouse
Mark D. Benson
Martin A. Parese
Paul Pagnini
Penny J. Kuykendall
Linda H. Kralik
Michael E. Pegler
Ricardo Pimienta
Richard Ehrenberger
Richard G. Williams
Ronald C. Blake and Cathryn M. Blake
Ronald P. Elvidge
Sherie Sylvester
Thomas W. Marckwardt and Ginger C. Marckwardt
Gary Jones
V. Lea Sasak
W. Richard Marz and Ruthanne E. Marz
William Mazzocco
William R. Smithousen and Marie Smithousen
Robin S Olvera

Table 20 – Estimated Disturbance Areas

Project Facility	Disturbance Area (acres)
Construction Activities	
Access Roads	3.51
Conveyor Belt and Maintenance Road	13.28
Processing Plant and Related Facilities (berm, creek crossing, stormwater basin, parking lot)	61.83
Mining Phases	
Mining Phase 1	90.57
Mining Phase 2	61.70
Mining Phase 3	25.39
Mining Phase 4	41.84
Geotechnical Setback Areas	105.1
Total	403.29

Table 21 - Tentative Schedule of Construction, Mining, and Reclamation Activities

Actions	Begin	Completed	Excavation Total (cy)	Product Total (cy)
Project Approvals and Permitting	n/a	March 2023		
Project Construction	March 2023	December 2023		
Phase 1: Mining	January 2024	January 2034	13,300,000	9,600,000
Reclamation	February 2034	February 2039		
Phase 2: Mining	February 2034	February 2047	16,300,000	11,900,000
Reclamation	March 2047	March 2053		
Extension of Conveyor to Phases 3 and 4	February 2053	Jul 2053		
Phase 3: Mining	March 2047	March 2052	3,600,000	2,565,000
Reclamation	March 2052	March 2057		
Phase 4: Mining	April 2052	April 2053	1,816,000	1,240,000
Reclamation	April 2053	April 2057		
Removal of Plant and Final Reclamation	May 2053	May 2058		

6 REFERENCES AND RESOURCES

REFERENCES

- Harden, D., 1998. California Geology. Upper Saddle River, NY: Prentice Hall, pp. 479.
- John, D., 1981. Structure and petrology of pelitic schist in the Fremont Peak pendant, northern Gabilan Range, California. Geological Society of America Bulletin, Part 1, v. 92, p.237-246.
- Norris, R.M., Webb, R.W., 1990. Geology of California. New York, NY: John Wiley and Sons, Inc., pp. 541.
- Caterpillar Performance Handbook*. Edition 28.
- State of California Business, Transportation and Housing Agency, Department of Transportation Division of Construction. *Labor Surcharge and Equipment Rental Rates (Updated)*. Effective April 1, 2013 through March 31, 2014.
- State of California, Division of Labor Statistics and Research. *General Prevailing Wage Determinations: 2008-1 Journeyman Determinations, Southern California Basic Trade Journeyman Rates*.
- State Mining and Geology Board. *Surface Mining and Reclamation Act Financial Assurance Guidelines*. July 23, 2004.
- United States Department of Agriculture, Natural Resources Conservation Service. 1998. *Soil Survey of Santa Clara County, California*.

7 APPENDICES

APPENDIX A
SITE LEGAL DESCRIPTION

Certificate of Compliance 2467 Acres North

Document No. 13064268

READ

POS3PAGE0001

13064268

FILED FOR RECORD AT REQUEST OF

NO FEE ^B

SCC

95 OCT 20 PM 3:20

OFFICIAL RECORDS SANTA CLARA COUNTY BRENDA DAVIS RECORDER

RECORDING REQUESTED BY: County of Santa Clara

RETURN TO: The Planning Office 7th Floor, East Wing 70 West Hedding Street San Jose, CA 95110

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6128-75-08-95CC

Date: October 20, 1995

Approved By:

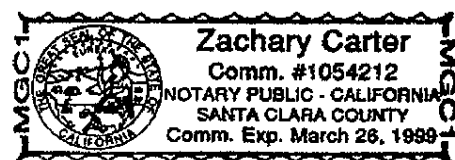
Michael M. Lopez Manager/Planning Office County of Santa Clara

State of California) County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter



P 0 5 3 PAGE 0002

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and described as follows:

BEING an irregular shaped parcel of land and a portion of that certain U.S. Patent Number 3632, recorded December 14, 1872, and more particularly described as follows:

All of that portion of Section Thirty Five (35), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian, and lying entirely within the boundary of Santa Clara County, as exists in 1995; and

All of that portion of Section Thirty Four (34), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian, and lying entirely within the boundary of Santa Clara County, as exists in 1995; and

All of that portion of land in Section Twenty Seven (27), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian, and lying entirely within the boundary of Santa Clara County, as exists in 1995, and lying Southerly of the Northerly line of that certain Lot 4, as shown upon the certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records; and

All of those portions of land in Sections Twenty Six (26) and Twenty Five (25), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian, and lying Southerly of the Northerly line of said Lot 4; and

All of those portions of land in Sections Thirty (30) and Twenty Nine (29), Township Eleven (11) South, Range Four (4) East, of the Mount Diablo Meridian, and lying Southerly of the Northerly line of said Lot 4; and

All of the West half of the West half of Section Thirty Two (32), Township (11) South, Range Four (4) East, of the Mount Diablo Meridian (W/2 W/2 Sec. 32, T.11 S., R.4 E.); and

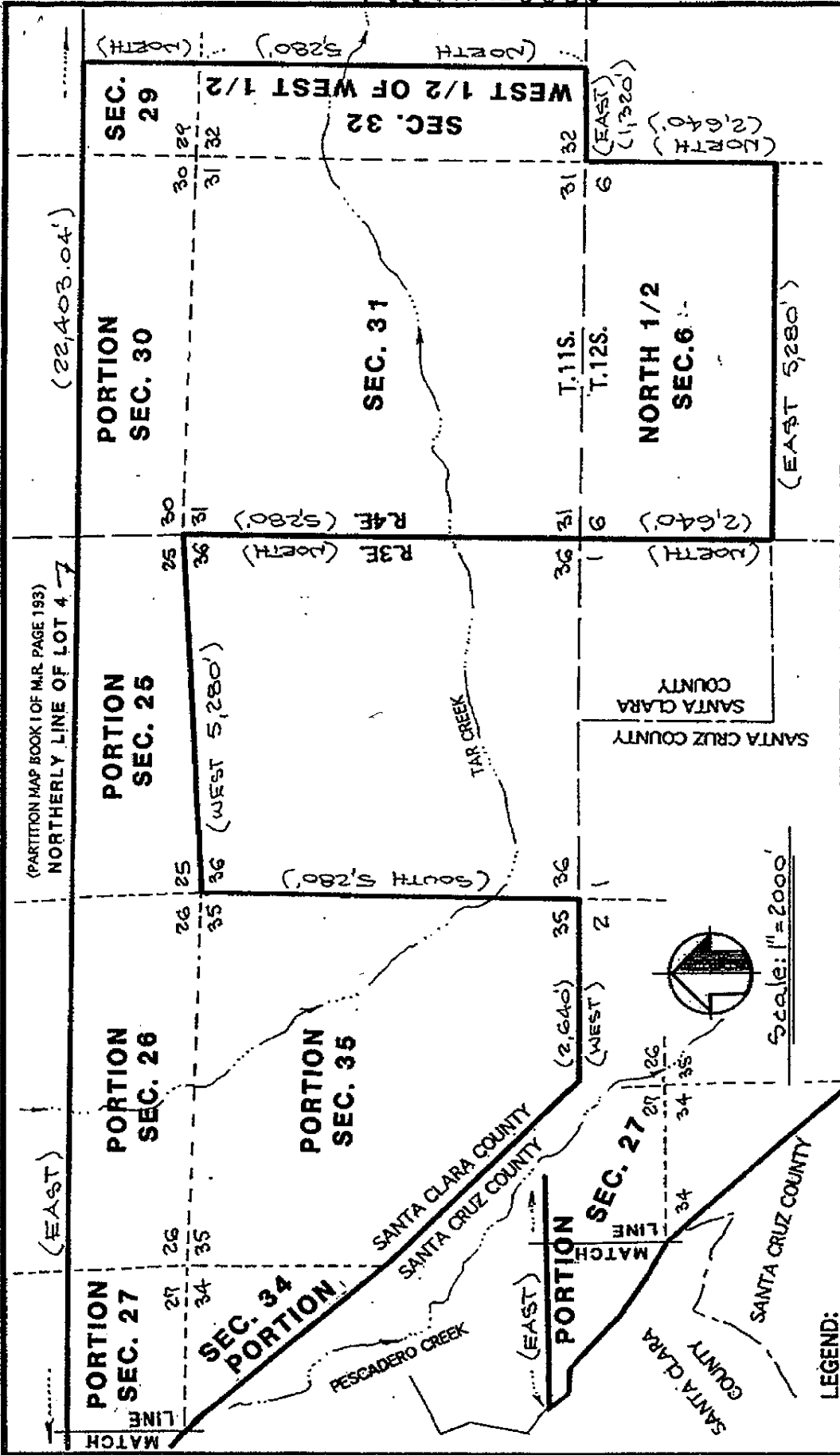
All of Section Thirty One (31), Township Eleven (11) South, Range Four (4) East, of the Mount Diablo Meridian (Sec. 31, T.11 S., R.4 E.); and

All of the North half of Section Six (6), Township Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian (N/2 Sec. 6, T.12 S., R.4 E.).

See Plat to Accompany Description

6128-75-08-95CC
West Side of State Route 101
Between Gilroy and Salinas

P 0 5 3 PAGE 0 0 0 3



PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN
 DATE: SEP 30, 95
 APPROVED BY: V.S./T.A.M.
 DRAWN BY: N.L.S.
 REVISED

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

DRAWING NUMBER
95936-P1

MASON-SULIC
 CIVIL & SURVEY CONSULTANTS, INC.
 2021 The Linnick, Suite 105, San Jose, CA 95128
 P.O. Box 850, San Jose, CA 95133
 Tel: 408/251-4773 Fax: 408/251-4997

- LEGEND:**
- P.O.B. = Point of Beginning
 - () = Record Data
 - = Property Line
 - - - = Township or Range Line
 - - - = SECTION LINE
 - 26 = SECTION NO.
 - - - = COUNTY LINE

Certificate of Compliance 320 Acres North

Document No. 13064269

READ

P053 PAGE 0004

13064269

FILED FOR RECORD
AT REQUEST OF

SCC

95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

NO FEE

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and show non Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6129-73-09-95CC

Date: October 20, 1995

Approved By:

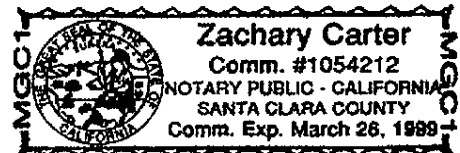
Michael M. Lopez
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On Ocyober 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter
Zachary Carter



P053 PAGE 0005

EXHIBIT A

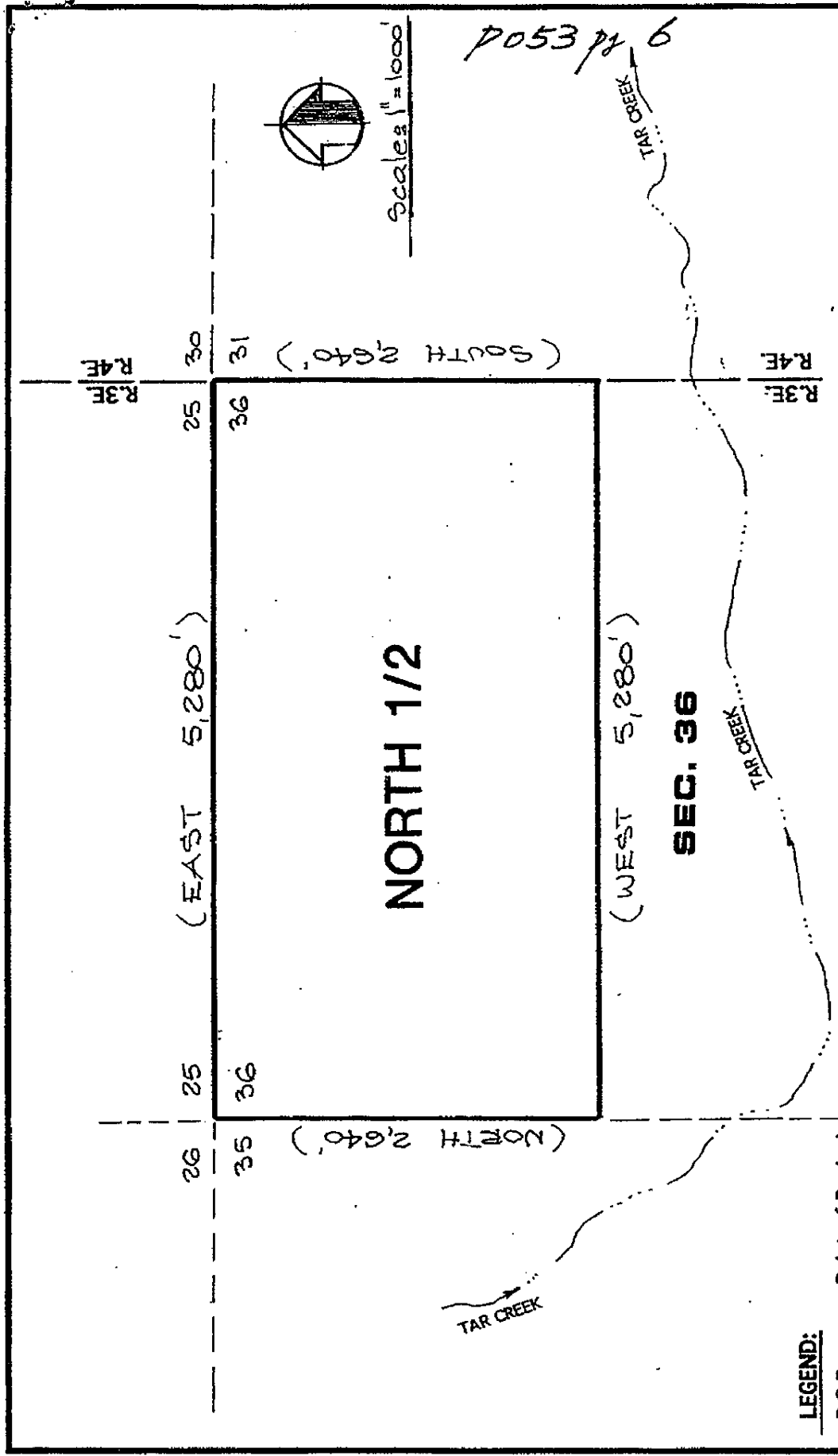
All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and described as follows:

BEING a rectangular shaped parcel of land as described in that certain U.S. Patent Number 5081, recorded June 10, 1875, and more particularly described as follows:

All of the North half of Section Thirty Six (36), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian (N/2 Sec. 36, T.11 S., R.3 E.).

See Plat to Accompany Description

6129-73-09-95CC
West Side of State Route 101
Between Gilroy and Salinas



PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN APPROVED BY: V.S./T.A.M. DRAWN BY N.L.S.

DATE: SEP 30, 95 REVISED

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

DRAWING NUMBER 95936-P2

MASON-SULIC
 CIVIL & DESIGN CONSULTANTS, INC.
 2021 The Alameda, Suite 805, San Jose, CA 95128
 P.O. Box 2540, San Jose, CA 95115
 TEL: 408/281-1715 FAX: 408/281-4747

- LEGEND:**
- P.O.B. = Point of Beginning
 - () = Record Data
 - = Property Line
 - = Township or Range Line
 - = SECTION LINE
 - 36 = SECTION No.

P053 PAGE 00116

Certificate of Compliance 320 Acres South

Document No. 13064270

READ

P053 PAGE 0007

NO FEE

13064270
FILED FOR RECORD
AT REQUEST OF

JCC

95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6130-73-08-95CC

Date: October 20, 1995

Approved By:

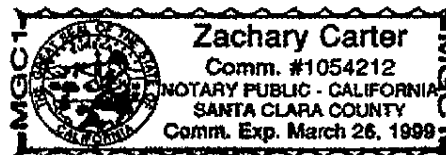
Michael M. Lopez
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter
Zachary Carter



P 0 5 3 PAGE 0 0 0 8

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and described as follows:

BEING a rectangular shaped parcel of land and all of that certain Lot 39 lying within the Juristac Grant 241 in Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian, as patented on November 13, 1871, and more particularly described as follows:

All of the South half of Section Thirty Six (36), Township Eleven (11) South, Range Three (3) East, of the Mount Diablo Meridian (S/2 Sec. 36, T.11 S., R.3 E.).

See Plat to Accompany Description

6130-73-08-95CC
West Side of State Route 101
Between Gilroy and Salinas

P 0 5 3 PAGE 0 0 0 9

p053 p4 9



Scale: 1" = 1000'

SEC. 36

(EAST 5,280')

SOUTH 1/2

(LOT 39)

(NORTH 2,640')

(SOUTH 2,640')

TAR CREEK

SANTA CLARA COUNTY

SANTA CRUZ COUNTY

SANTA CLARA COUNTY
SANTA CRUZ COUNTY

35 36

2 1

(WEST

5,280')

36

1 6

T.11S.

T.12S.

LEGEND:

P.O.B. = Point of Beginning

() = Record Data

— = Property Line

- - - = Township or Range Line

- - - - - = SECTION LINE

36 = SECTION No.

R 3F
R 4F

PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN

DATE: SEP. 30, 95

APPROVED BY:

N.S./T.A.M.

DRAWN BY N.L.S.

REVISED

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

DRAWING NUMBER
95936-P3

MASON-SULIC
CIVIL & SURVEY CONSULTANTS, INC.

281 The Woodlands, Suite 105, San Jose, CA 95128
P.O. Box 1828, San Jose, CA 95116
TEL: (408) 271-1113 FAX: (408) 271-0917

Certificate of Compliance 160 Acres

Document No. 13064271

READ

PO53 PAGE 0010

13064271
FILED FOR RECORD
AT REQUEST OF

3

NO FEE

JCC
95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.


Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6131-74-07-95CC

Date: October 20, 1995

Approved By:

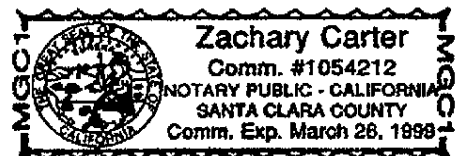

Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.


Zachary Carter



P 053 PAGE 0011

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and described as follows:

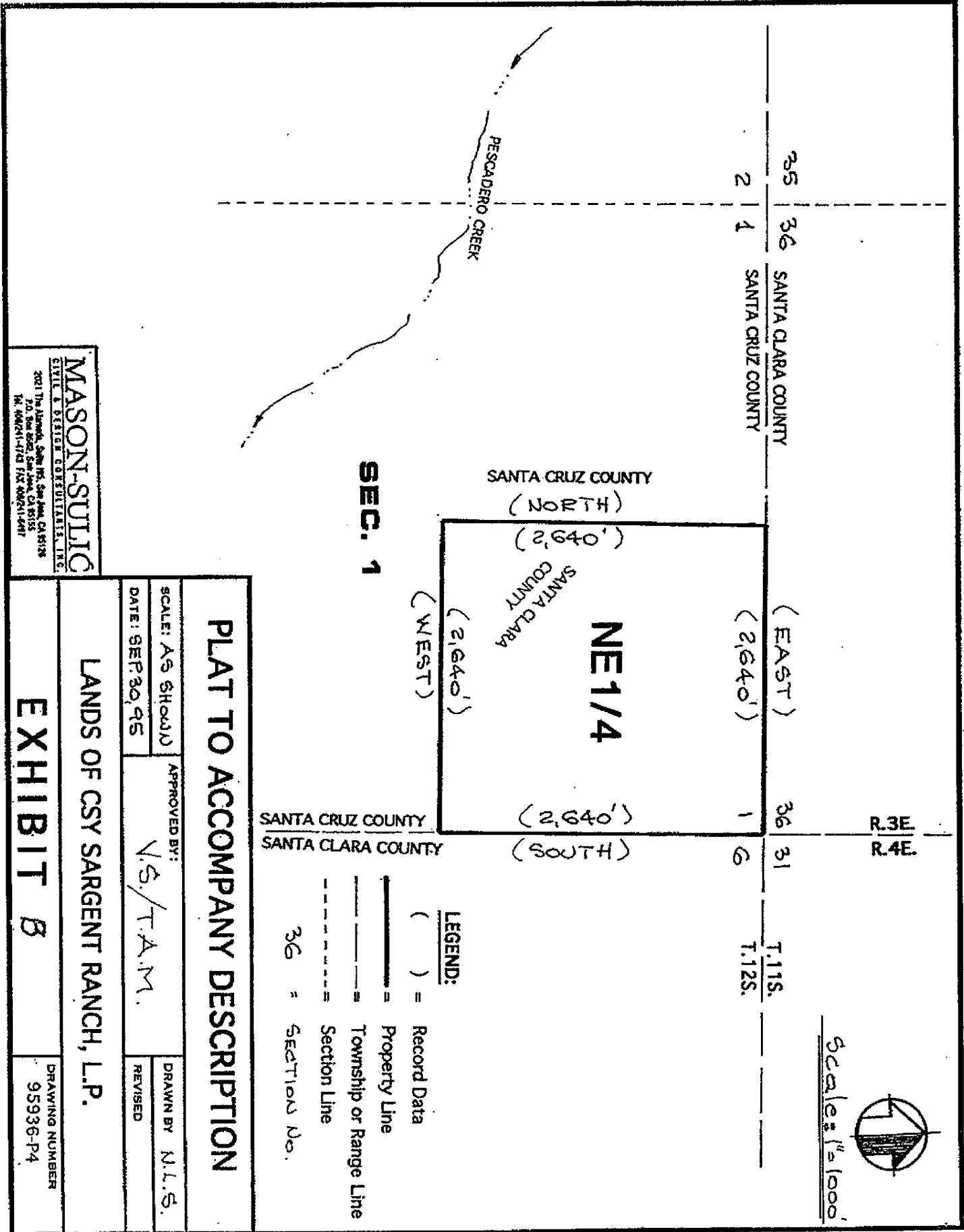
BEING a rectangular shaped parcel of land and a portion of that certain Lot 37 lying within the Juristac Grant 241 in Township Twelve (12) South, Range Three (3) East, of the Mount Diablo Meridian, as patented on November 13, 1871, and more particularly described as follows:

All of the Northeast Quarter of Section One (1), Township Twelve (12) South, Range Three (3) East, of the Mount Diablo Meridian (NE/4 Sec. 1, T.12 S., R.3 E.), and lying entirely within the boundary of Santa Clara County, as exists in 1995.

See Plat to Accompany Description

6131-74-07-95CC
West Side of State Route 101
Between Gilroy and Salinas

PO 53 PAGE 0012



MASON-SULLIVAN
 CIVIL & DESIGN CONSULTANTS, INC.
 2021 The Alameda, Suite 105, San Jose, CA 95131
 P.O. Box 8202, San Jose, CA 95155
 Tel: (408) 411-1743 Fax: (408) 411-6917

PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN

DATE: SEP. 30, 95

APPROVED BY: *V.S./T.A.M.*

DRAWN BY: N.L.S.

REVISSED:

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

DRAWING NUMBER: 95936-P4

SANTA CRUZ COUNTY
 SANTA CLARA COUNTY

LEGEND:

() = Record Data

— = Property Line

--- = Township or Range Line

- - - = Section Line

36 = SECTION No.

Scale: 1" = 1000'

Certificate of Compliance 360 Acres

Document No. 13064272

P053 PAGE 0013

13064272

NO FEE

FILED FOR RECORD
AT REQUEST OF

JCC

95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6132-77-09-95CC

Date: October 20, 1995

Approved By:

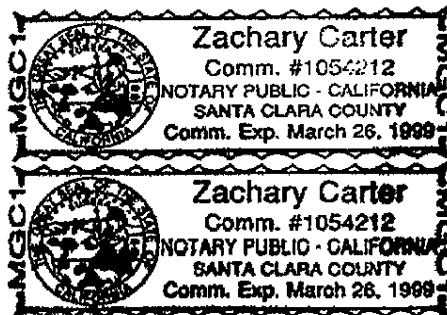
Michael M. Lopez
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter
Zachary Carter



P 0 5 3 PAGE 0 0 1 4

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of that certain Lot 41 lying within the Juristac Grant 241 in Township Eleven (11) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the East and lying Westerly of the Westerly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways; and also bounded on the East and lying Westerly of the Westerly property line of that 100 foot wide strip of land described in that certain Grant Deed from J.P. Sargent, et al, to Southern Pacific Railroad Company, A Corporation, recorded May 10, 1873 in Book 27 of Deeds at Pages 562, 565, and 567, Santa Clara County Official Records;

and also bounded on the South and lying Northerly of the Township Line common to Township Eleven (11) South and Township Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian;

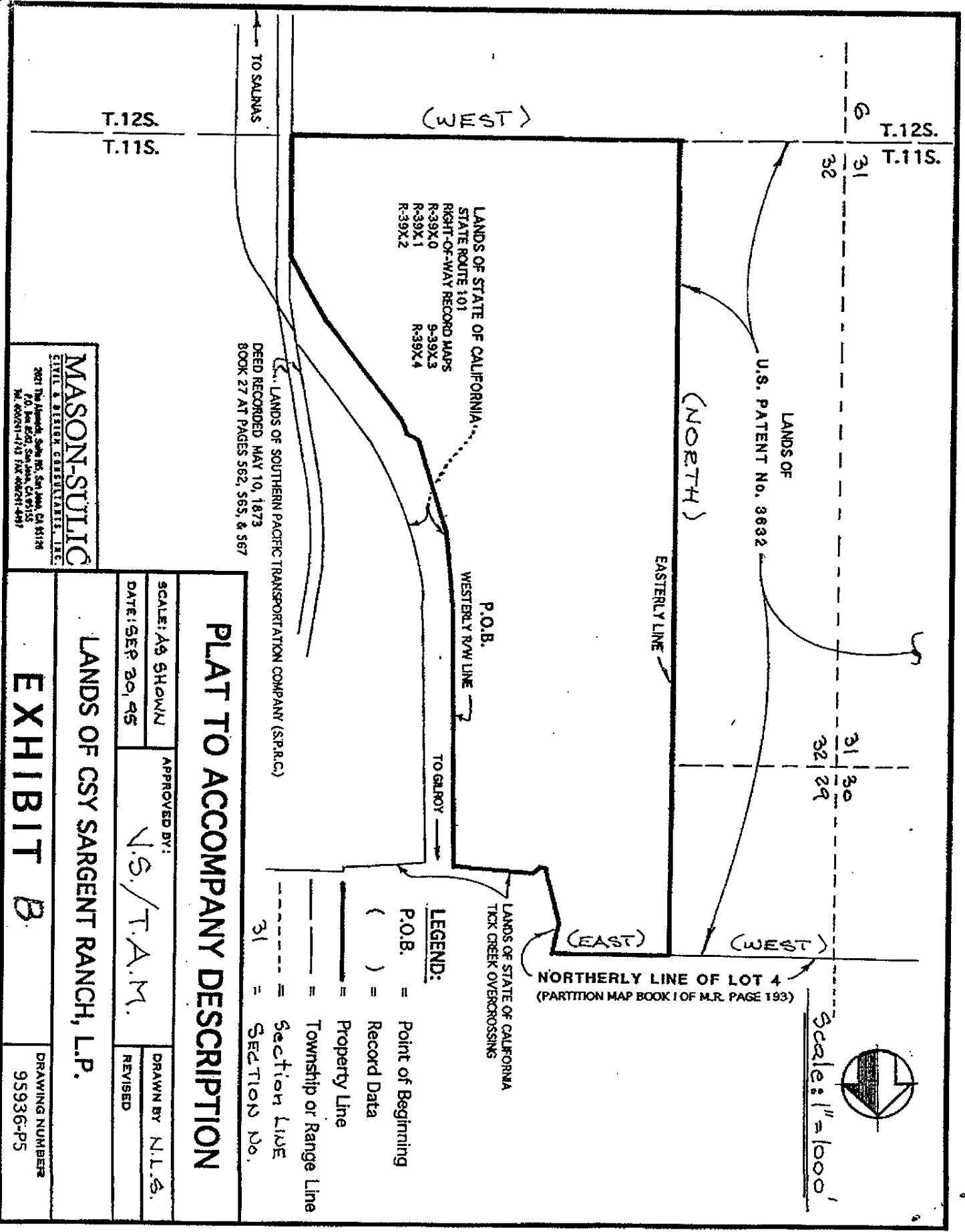
and also bounded on the West and lying Easterly of the Easterly line of lands as described in that certain U.S. Patent Number 3632, recorded December 14, 1872;

and also bounded on the North and lying Southerly of the Northerly line of that certain Lot 4, as shown upon the certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records; and also bounded on the North and lying Southerly of the Southerly Right-of-Way line of Tick Creek Overcrossing (Lands of State of California), as shown on said Right-of-Way Record Maps.

See Plat to Accompany Description

6132-77-09-95CC
West Side of State Route 101
West of Southern Pacific Railroad
Between Gilroy and Salinas

P053 PAGE 0015



T.12S.
T.11S.

T.12S.
T.11S.

LANDS OF STATE OF CALIFORNIA
 STATE ROUTE 101
 RIGHT-OF-WAY RECORD MAPS
 R-39X0 9-39X3
 R-39X1 R-39X4
 R-39X2

LANDS OF
 U.S. PATENT NO. 3632

DEED RECORDED MAY 10, 1873
 BOOK 27 AT PAGES 562, 565, & 567

LANDS OF SOUTHERN PACIFIC TRANSPORTATION COMPANY (S.P.R.C.)

P.O.B.

WESTERLY R/W LINE

TO GALROY

LANDS OF STATE OF CALIFORNIA
 TUCK CREEK OVERCROSSING

LEGEND:

- P.O.B. = Point of Beginning
- () = Record Data
- = Property Line
- = Township or Range Line
- = Section LINE
- 31 = SECTION NO.

NORTHERLY LINE OF LOT 4
 (PARTITION MAP BOOK 1 OF M.R. PAGE 193)

Scale: 1" = 1000'



MASON-SULLIVAN
 CIVIL & DESIGN CONSULTANTS, INC.

2021 The Alameda, Suite 205, San Jose, CA 95116
 P.O. Box 850, San Jose, CA 95115
 Tel: 408/291-4743 Fax: 408/291-4941

PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN
 DATE: SEP 30, 95
 APPROVED BY: J.S./T.A.M.
 DRAWN BY: N.L.S.
 REVISED

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

DRAWING NUMBER
 95936-P5

Certificate of Compliance 1396 Acres

Document No. 13064273

P053 PAGE 0016

13064273
FILED FOR RECORD
AT REQUEST OF

3

NO FEE

✓

SCC

95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

27

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: **CSY SARGENT RANCH, L.P.**

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6135-76-05-95CC

Date: October 20, 1995

Approved By: _____

Michael M. Lopez
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

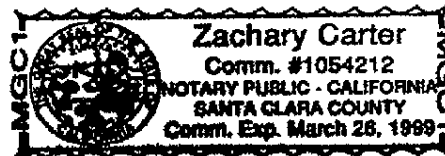
State of California)
County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter

Zachary Carter



P 053 PAGE 0017

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of that certain Lot 45 lying within the Juristac Grant 241 in Township Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the East, Southeast, and South and lying Westerly, Northwesterly, and Northerly of the Westerly and Northerly property line of that 100 foot wide strip of land described in that certain Grant Deed from J.P. Sargent, et al, to Southern Pacific Railroad Company, A Corporation, recorded May 10, 1873 in Book 27 of Deeds at Pages 562, 565, and 567, Santa Clara County Official Records;

and also bounded on the West and lying Easterly of the Range Line common to Range Three (3) East and Range Four (4) East, Township Twelve (12) South, of the Mount Diablo Meridian; said Range Line also being the common boundary line of Santa Clara County and Santa Cruz County, as exists in 1995;

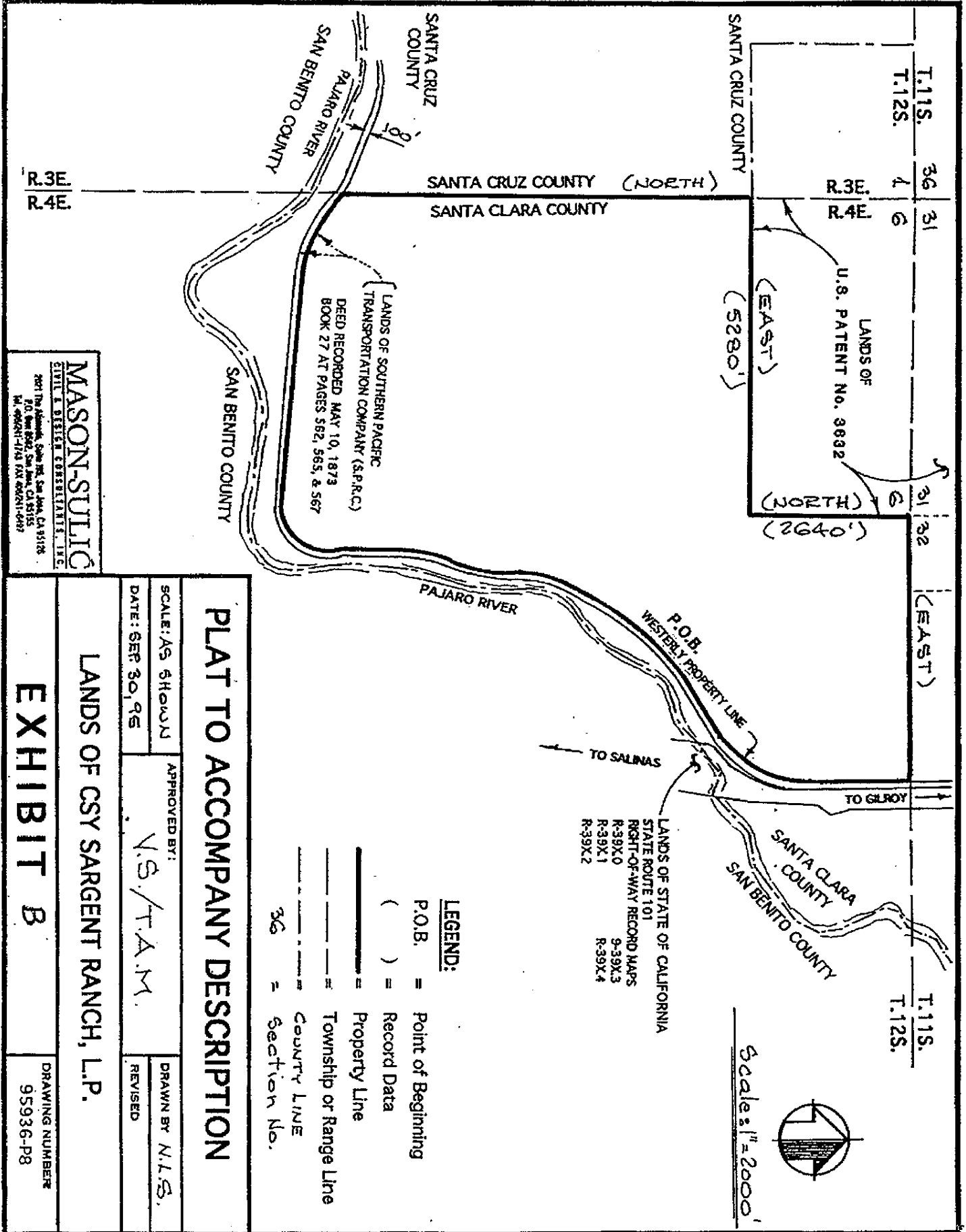
and also bounded on the North and West and lying Southerly and Easterly of the Southerly and Easterly line of lands as described in that certain U.S. Patent Number 3632, recorded December 14, 1872;

and also bounded on the North and lying Southerly of the Township Line common to Township Eleven (11) South and Township Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian.

See Plat to Accompany Description

6135-76-05-95CC
West Side of State Route 101
West of Southern Pacific Railroad
Between Gilroy and Salinas

053 PAGE 0018



LANDS OF U.S. PATENT NO. 3632

LANDS OF SOUTHERN PACIFIC TRANSPORTATION COMPANY (S.P.R.C.) DEED RECORDED MAY 10, 1873 BOOK 27 AT PAGES 562, 565, & 567

LANDS OF STATE OF CALIFORNIA STATE ROUTE 101 RIGHT-OF-WAY RECORD MAPS R-39X0 9-39X3 R-39X1 R-39X4 R-39X2

LEGEND:

- P.O.B. = Point of Beginning
- () = Record Data
- = Property Line
- = Township or Range Line
- = County Line
- 36 = Section No.

Scale: 1" = 2000'



PLAT TO ACCOMPANY DESCRIPTION

LANDS OF CSY SARGENT RANCH, L.P.

EXHIBIT B

SCALE: AS SHOWN APPROVED BY: N.S./T.A.M. DRAWN BY: N.L.S.

DATE: SEP 30, 95 REVISED

MASON-SULLIVAN

CIVIL & SURVEY CONSULTANTS, INC.
2007 The Alameda, Suite 102, San Jose, CA 95126
P.O. Box 8002, San Jose, CA 95133
Tel: 408-281-7143 Fax: 408-281-0893

Certificate of Compliance 108 Acres

Document No. 13064274

P053 PAGE 0019

13064274

NO FEE

FILED FOR RECORD
AT REQUEST OF

SCC

95 OCT 20 PM 3:21

OFFICIAL RECORDS
SANTA CLARA COUNTY
BRENDA DAVIS
RECORDER

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: The Planning Office
7th Floor, East Wing
70 West Hedding Street
San Jose, CA 95110

13064274

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103

CERTIFICATE OF COMPLIANCE

Lands of: CSY SARGENT RANCH, L.P.

Notice is hereby given pursuant to Section 66499.35 of the Government Code of the State of California that the real property described in Exhibit "A" and shown on Exhibit "B" attached hereto and made a part hereof, complies with the provisions of Division 2 of Title 7 of said Government Code, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any separate parcel as described herein shall not constitute a violation of said Division 2 of Title 7 or local ordinances.

Certificate of Compliance No: 6137-76-03-95CC

Date: October 20, 1995

Approved By:

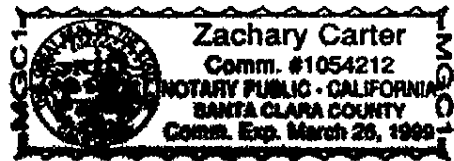
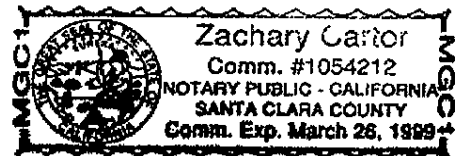
Michael M. Lopez
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On October 20, 1995, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter
Zachary Carter



P 0 5 3 PAGE 0 0 2 0

EXHIBIT A

All that certain real property situate in the Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of that certain Lot 45 lying within the Juristac Grant 241 in Township Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the East and lying Westerly of the Westerly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways;

and also bounded on the Northwest, West, and North and lying Southeasterly, Easterly, and Southerly of the Easterly and Southerly property line of that 100 foot wide strip of land described in that certain Grant Deed from J.P. Sargent, et al, to Southern Pacific Railroad Company, A Corporation, recorded May 10, 1873 in Book 27 of Deeds at Pages 562, 565, and 567, Santa Clara County Official Records;

and also bounded on the West and lying Easterly of the Range Line common to Range Three (3) East and Range Four (4) East, Township Twelve (12) South, of the Mount Diablo Meridian; said Range Line also being the common boundary line of Santa Clara County and Santa Cruz County, as exists in 1995;

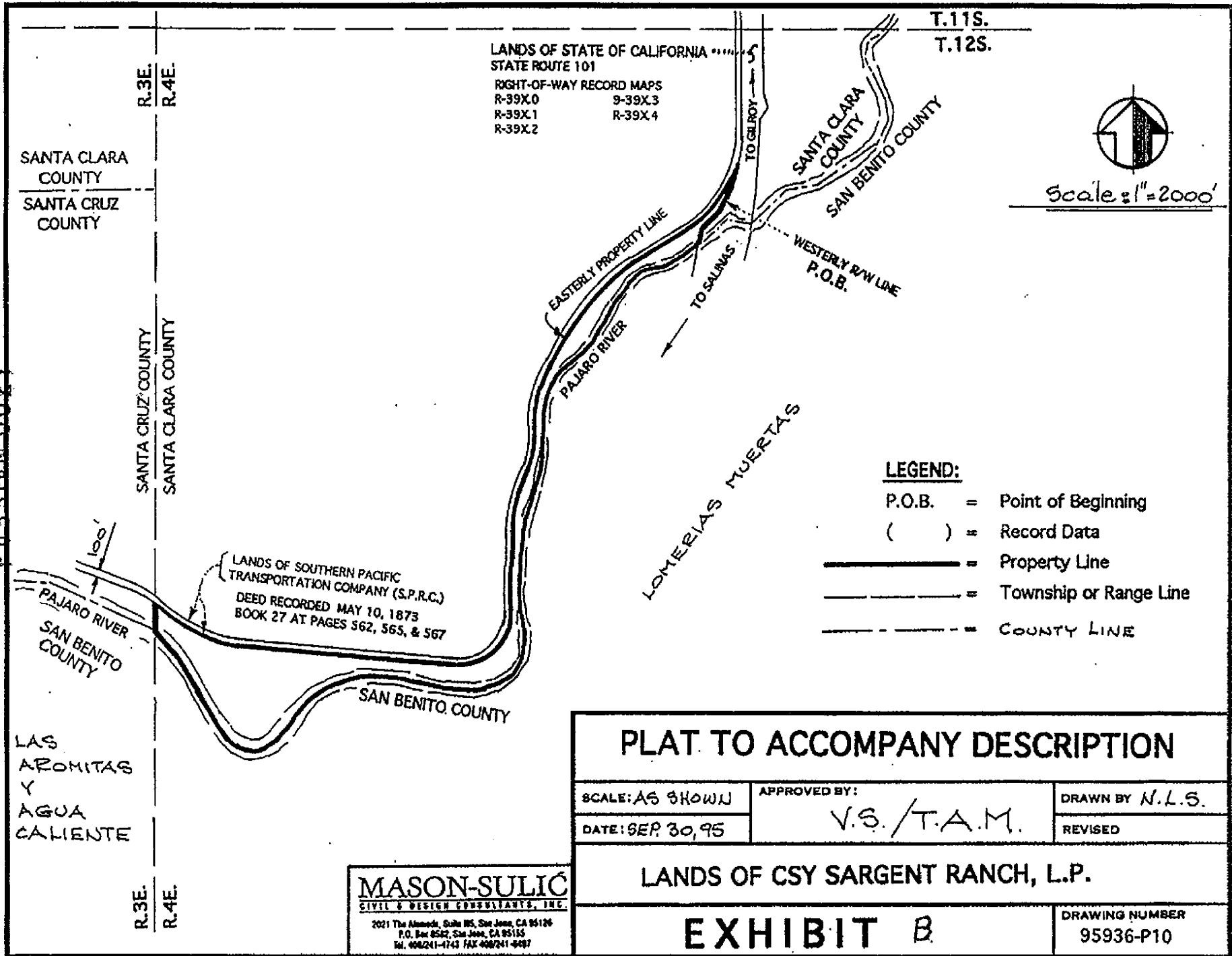
and also bounded on the South and East and lying Northerly and Westerly of the Southerly and Easterly line of that certain Lot 4, as shown upon the certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book 1 of Miscellaneous Records at Page 193, Santa Clara County Records; said Southerly and Easterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1995; said boundary line lying within the Pajaro River.

See Plat to Accompany Description

6137-76-03-95CC
West Side of State Route 101
East and South of Southern Pacific Railroad
Between Gilroy and Salinas

P 0 5 3 P A G E 0 0 2 1

P 0 5 3 P A G E 0 0 2 1



LANDS OF STATE OF CALIFORNIA
 STATE ROUTE 101
 RIGHT-OF-WAY RECORD MAPS
 R-39X.0 9-39X.3
 R-39X.1 R-39X.4
 R-39X.2

T.11S.
 T.12S.



Scale: 1" = 2000'

LEGEND:

- P.O.B. = Point of Beginning
- () = Record Data
- = Property Line
- = Township or Range Line
- = COUNTY LINE

LANDS OF SOUTHERN PACIFIC
 TRANSPORTATION COMPANY (S.P.R.C.)
 DEED RECORDED MAY 10, 1873
 BOOK 27 AT PAGES 562, 565, & 567

PLAT TO ACCOMPANY DESCRIPTION		
SCALE: AS SHOWN	APPROVED BY: <i>V.S. / T.A.M.</i>	DRAWN BY <i>N.L.S.</i>
DATE: <i>SEP 30, 95</i>		REVISED
LANDS OF CSY SARGENT RANCH, L.P.		
EXHIBIT B		DRAWING NUMBER 95936-P10

MASON-SULIC
 CIVIL & DESIGN CONSULTANTS, INC.
 2021 The Alameda, Suite 105, San Jose, CA 95126
 P.O. Box 8587, San Jose, CA 95135
 Tel. 408/241-4743 FAX 408/241-4487

SANTA CLARA COUNTY
 SANTA CRUZ COUNTY

R.3E.
 R.4E.

SANTA CRUZ COUNTY
 SANTA CLARA COUNTY

R.3E.
 R.4E.

LAS AROMITAS
 Y AGUA CALIENTE

EASTERLY PROPERTY LINE
 TO SALINAS

LOMERIAS MUERTAS

WESTERLY R/W LINE
 P.O.B.

SANTA CLARA COUNTY
 SAN BENITO COUNTY

SAN BENITO COUNTY

PAJARO RIVER
 SAN BENITO COUNTY

Certificate of Compliance

Document No. 14052603

DOCUMENT: 14052603

Titles: 1 / Pages: 5



Fees....* No Fees
Taxes...
Copies...
AMT PAID

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: Current Planning Office
East Wing, 7th Floor
70 West Hedding Street
San Jose, CA 95110

BRENDA DAVIS
SANTA CLARA COUNTY RECORDER
Recorded at the request of
County Agency

RDE # 005
2/12/1998
4:21 PM

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103.

CERTIFICATE OF COMPLIANCE
(Lot Line Adjustment; Santa Clara
County Ordinance Code Section C12-11)

Photographic image may be
poor due to condition of
original document.

Owner of Property Affected: CA Sun Holdings, Inc.

Notice is hereby given that the property described in Exhibit "A", "B", "C", and shown on Exhibit "D" attached hereto and made a part hereof, do not create a separate parcels but only adjusts the lot lines between existing parcels recorded in book K804 page 1990. The new parcel configurations resulting therefrom comply with the provisions of Division 2 of Title 7 of the Government Code of the State of California, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any parcel affected by this lot line adjustment shall not constitute a violation of the Subdivision Map Act or of local ordinance.

Certificate of Compliance No. 6133-78-08-97LA

Date: February 12, 1998

Approved by: *Carolyn T. Walsh*
Carolyn T. Walsh
Program Manager
County of Santa Clara

State of California)
County of Santa Clara)

On February 12, 1998, before me, Zachary Carter, the undersigned Notary Public, personally appeared Carolyn T. Walsh, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter
Zachary Carter

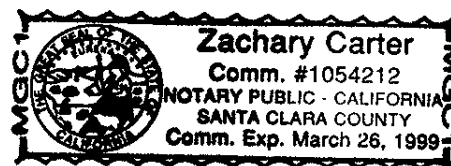


EXHIBIT A

LEGAL DESCRIPTION

Lands Of CA Sun Holdings, Inc.

LOT 1

After Lot Line Adjustment

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the West and lying entirely Easterly of the Easterly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways;

and also bounded on the North and lying entirely Southerly of the Southerly Right-of-Way line of Tick Creek Overcrossing (Lands of State of California), as shown on said Right-of-Way Record Maps; and also bounded on the North and lying entirely Southerly of the Northerly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records;

and also bounded on the East and lying entirely Westerly of the centerline of Carnadero Creek as shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993;

and also bounded on the East and lying entirely Westerly of the Easterly line of said Lot 4; said Easterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River;

and also bounded on the Southwest and lying entirely Northeasterly of the Southwesterly edge of a farm road as said farm road is shown on said United States Department of the Interior Geological Survey Map; and as said farm road existed in November 1997;

EXCEPTING THEREFROM that certain 100 foot wide strip of land described in that certain Grant Deed from J.P. Sargent, et al, to Southern Pacific Railroad Company, A Corporation, recorded May 10, 1873 in Book 27 of Deeds at Pages 562, 565, and 567, Santa Clara County Official Records.

See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

EXHIBIT B

LEGAL DESCRIPTION

Lands Of CA Sun Holdings, Inc.

LOT 2

After Lot Line Adjustment

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the West and lying entirely Easterly of the Easterly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways;

and also bounded on the Northeast and lying entirely Southwesterly of the Southwesterly edge of a farm road as said farm road is shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993; and as said farm road existed in November 1997;

and also bounded on the East and Southeast and lying entirely Westerly and Northwesterly of the Easterly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on the certain Partition Map recorded December 8, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records; said Easterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River.

See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

EXHIBIT C

LEGAL DESCRIPTION

Lands Of CA Sun Holdings, Inc.

LOT 3

After Lot Line Adjustment

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

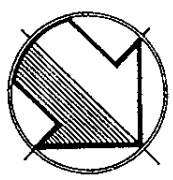
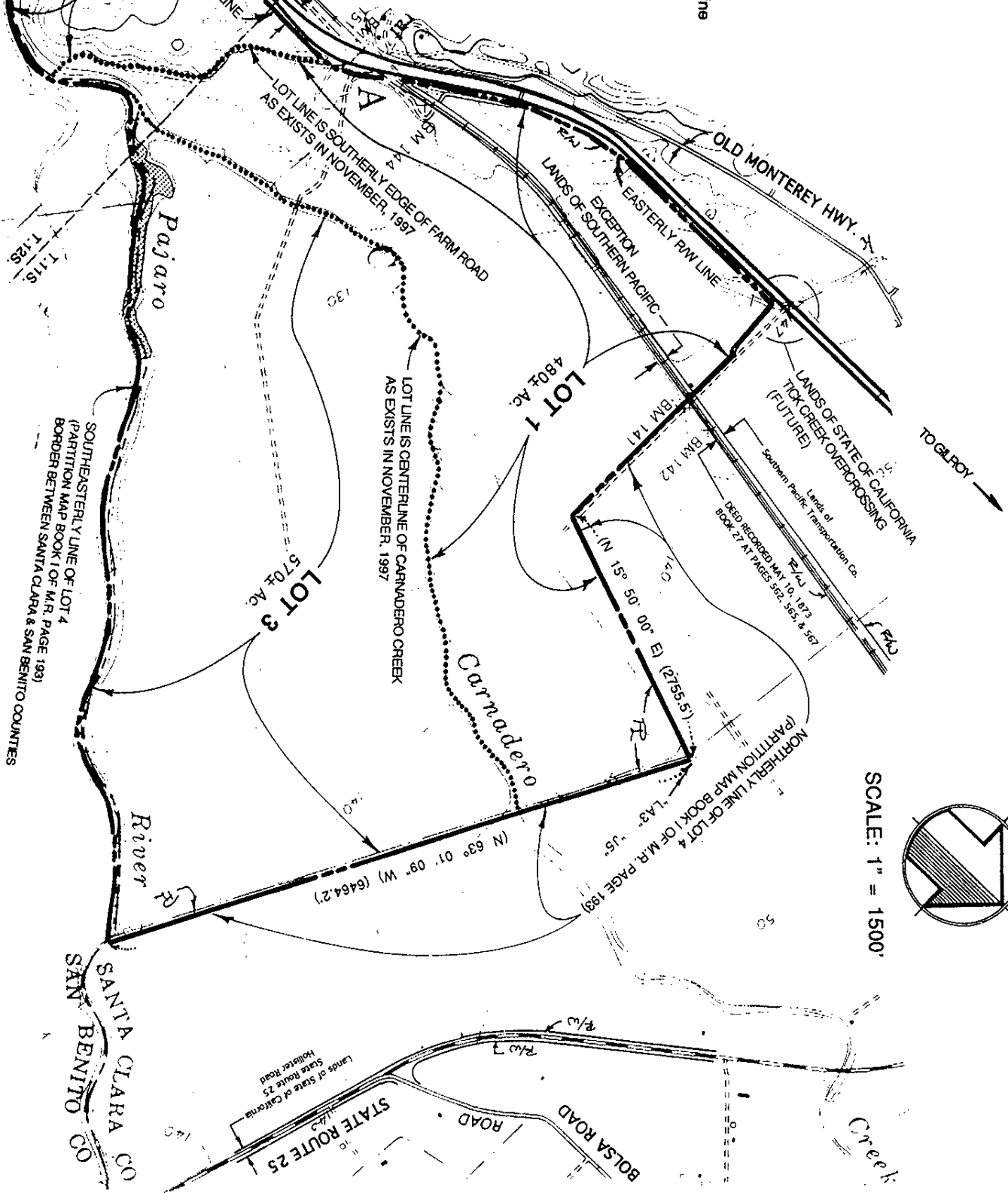
and bounded on the North and lying entirely Southerly of the Northerly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records;

and also bounded on the Southeast and lying entirely Northwesterly of the Southeasterly line of said Lot 4; said Southeasterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River;

and also bounded on the West and lying entirely Easterly of the centerline of Carnadero Creek as shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993.

See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

STERE LINE OF LOT 4
 IN MAP BOOK I OF M.R. PAGE 199



SCALE: 1" = 1500'

Photographic image may be poor due to condition of original document

PLAT TO ACCOMPANY DESCRIPTION

SCALE: AS SHOWN	APPROVED BY: <i>V.S./T.A.M.</i>	DRAWN BY N.L.S.
DATE: FEB. 12, 1998		REVISED

EXHIBIT "D"

Lands Of CA Sun Holdings, Inc.

MASON-SULIĆ
 CIVIL & DESIGN CONSULTANTS, INC.

STATE ROUTE 101 (from Gilroy to Salinas) SANTA CLARA COUNTY	DRAWING NUMBER 97205-D
--	---------------------------

2021 The Alameda, Suite 195, San Jose, CA 95126
 P.O. Box 8582, San Jose, CA 95155
 Tel. 408/241-4743 FAX 408/241-6497

Certificate of Compliance 120 Acres Lot 2

Document No. 14057454

14057454 Page 1

DOCUMENT: 14057454

Titles:1 / Pages: 5



Fees... * No Fees

Taxes...

Copies...

AMT PAID

RECORDING REQUESTED BY:
County of Santa Clara

RETURN TO: Current Planning Office
East Wing, 7th Floor
70 West Hedding Street
San Jose, CA 95110

BRENDA DAVIS
SANTA CLARA COUNTY RECORDER
Recorded at the request of
County Agency

RDE # 007
2/17/1998
4:06 PM

TO BE RECORDED WITHOUT FEE AS PER GOVERNMENT CODE 6103.

CERTIFICATE OF COMPLIANCE
(Lot Line Adjustment; Santa Clara
County Ordinance Code Section C12-11)

Owner of Property Affected: CSY Sargent Ranch, L.P.

Notice is hereby given that the property described in Exhibit "A", "B", "C", and shown on Exhibit "D" attached hereto and made a part hereof, do not create a separate parcels but only adjusts the lot lines between existing parcels recorded in book K804 page 1990. The new parcel configurations resulting therefrom comply with the provisions of Division 2 of Title 7 of the Government Code of the State of California, cited as the Subdivision Map Act, and all local ordinances enacted pursuant thereto.

Further, that as a result of this Certificate of Compliance, the sale, lease or financing of any parcel affected by this lot line adjustment shall not constitute a violation of the Subdivision Map Act or of local ordinance.

This Certificate of Compliance Voids the Certificate of Compliance recorded on Document #14052603.

Certificate of Compliance No. 6133-78-08-97LA

Date: February 17, 1998

Approved by:

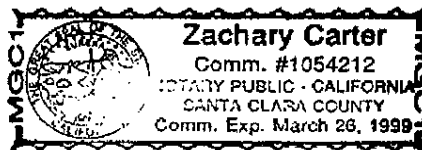
Michael M. Lopez
Manager/Planning Office
County of Santa Clara

State of California)
County of Santa Clara)

On February 17, 1998, before me, Zachary Carter, the undersigned Notary Public, personally appeared Michael M. Lopez, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Zachary Carter



4057454 Page 2

EXHIBIT A

LEGAL DESCRIPTION

Lands of CSY Sargent Ranch, L.P.

LOT 1

After Lot Line Adjustment

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the West and lying entirely Easterly of the Easterly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways;

and also bounded on the North and lying entirely Southerly of the Southerly Right-of-Way line of Tick Creek Overcrossing (Lands of State of California), as shown on said Right-of-Way Record Maps; and also bounded on the North and lying entirely Southerly of the Northerly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records;

and also bounded on the East and lying entirely Westerly of the centerline of Carnadero Creek as shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993;

and also bounded on the East and lying entirely Westerly of the Easterly line of said Lot 4; said Easterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River;

and also bounded on the Southwest and lying entirely Northeasterly of the Southwesterly edge of a farm road as said farm road is shown on said United States Department of the Interior Geological Survey Map; and as said farm road existed in November 1997;

EXCEPTING THEREFROM that certain 100 foot wide strip of land described in that certain Grant Deed from J.P. Sargent, et al, to Southern Pacific Railroad Company, A Corporation, recorded May 10, 1873 in Book 27 of Deeds at Pages 562, 565, and 567, Santa Clara County Official Records.

See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

County File No.: 6523-78-08-97LA
Lot Line Adjustment
State Route 101

MASON-SULIC, INC.
Job No. 97-205
February 12, 1998

14057454 Page 3

EXHIBIT B**LEGAL DESCRIPTION****Lands of CSY Sargent Ranch, L.P.****LOT 2****After Lot Line Adjustment**

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the West and lying entirely Easterly of the Easterly Right-of-Way line of State Route 101 (Lands of State of California), as shown on those certain Right-of-Way Record Maps R-39X.0 through R-39X.4, State of California, Department of Public Works, Division of Highways;

and also bounded on the Northeast and lying entirely Southwesterly of the Southwesterly edge of a farm road as said farm road is shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993; and as said farm road existed in November 1997;

and also bounded on the East and Southeast and lying entirely Westerly and Northwesterly of the Easterly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on the certain Partition Map recorded December 8, 1880 in Book I of Miscellaneous Records at Page 193, Santa Clara County Records; said Easterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River.

See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

County File No.: 6523-78-08-97LA
Lot Line Adjustment
State Route 101

MASON-SULIC, INC.
Job No. 97-205
February 12, 1998

L4057454 Page 4

EXHIBIT C**LEGAL DESCRIPTION****Lands of CSY Sargent Ranch, L.P.****LOT 3****After Lot Line Adjustment**

All that certain real property situate in an Unincorporated Area of the County of Santa Clara, State of California, and more particularly described as follows:

BEING an irregular shaped parcel of land and a portion of the Juristac Grant 241 in Townships Eleven (11) and Twelve (12) South, Range Four (4) East, of the Mount Diablo Meridian, as patented on November 13, 1871;

and bounded on the North and lying entirely Southerly of the Northerly line of that certain Lot 4, as shown upon that certain Map accompanying the Report of the Referees in an Action of Partition of James P. Sargent, et al, vs. Eugene Carlisle, et al, had in the Superior Court of the County of Santa Clara, Case Number 6014, and as shown on that certain Partition Map recorded December 18, 1880 in Book 1 of Miscellaneous Records at Page 193, Santa Clara County Records;

and also bounded on the Southeast and lying entirely Northwesterly of the Southeasterly line of said Lot 4; said Southeasterly line of Lot 4 also being the common boundary line of Santa Clara County and San Benito County, as exists in 1998; said boundary line lying within the Pajaro River;

and also bounded on the West and lying entirely Easterly of the centerline of Carnadero Creek as shown on that certain United States Department of the Interior Geological Survey Map entitled, "Chittenden Quadrangle California 7.5 Minute Series (Topographic)", revised 1993.

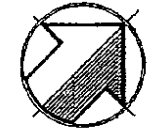
See Exhibit "D", Plat to Accompany Description attached hereto and made a part hereof.

County File No.: 6523-78-08-97LA
Lot Line Adjustment
State Route 101

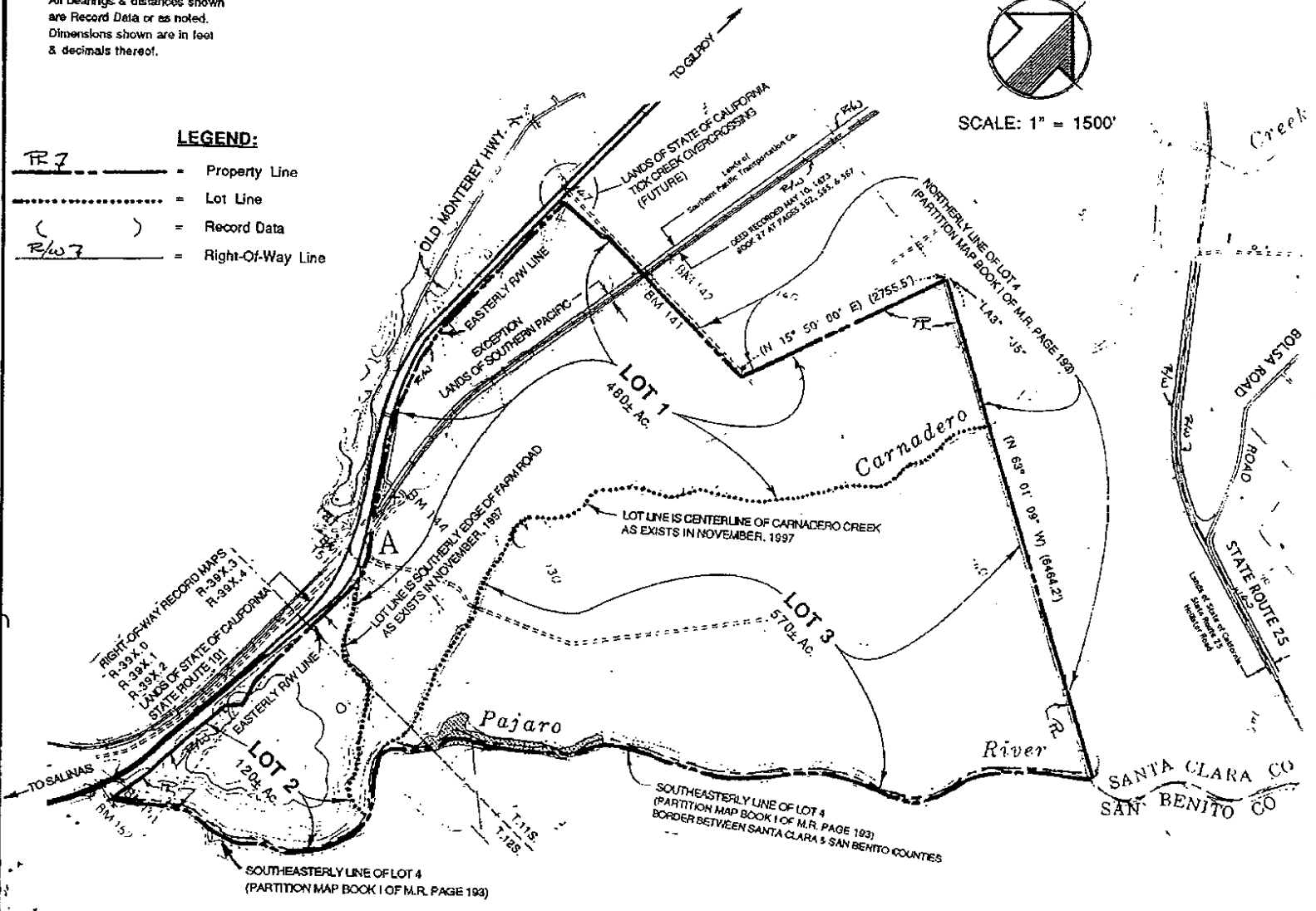
MASON-SULIC, INC.
Job No. 97-205
February 12, 1998

NOTES:
 All bearings & distances shown are Record Data or as noted. Dimensions shown are in feet & decimals thereof.

- LEGEND:**
- = Property Line
 - = Lot Line
 - = Record Data
 - = Right-Of-Way Line



SCALE: 1" = 1500'



PLAT TO ACCOMPANY DESCRIPTION		DRAWN BY M.L.S.	
		REVISED	
APPROVED BY:		V.S./T.A.M.	
DATE: FEB. 12, 1998			
Lands of CSY Sargent Ranch, L.P.			
STATE ROUTE 101 (from Gilroy to Salinas)		DRAWING NUMBER	
SANTA CLARA COUNTY		97205-D	

EXHIBIT "D"

MASON-SULIC
 CIVIL & DESIGN ENGINEER, P.E.
 2921 The Alameda, Suite 105, San Jose, CA 95126
 P.O. Box 5862, San Jose, CA 95158
 Tel: (408) 241-7142 Fax: (408) 241-4877

Santa Clara County Corrective Title

Document No. 22560409

RECORDING REQUESTED BY:

Chicago title

WHEN RECORDED MAIL TO:

Azure Vista Real Estate Services, Inc.
C/O Mr. Kim Kundrak
860 Cordova Street
San Diego, CA 92107-4222

DOCUMENT: 22560409



Pages: 11

Fees	55.00
Taxes	
Copies	
AMT PAID	55.00

REGINA ALCOMENDRAS
SANTA CLARA COUNTY RECORDER
Recorded at the request of
Recording Service

RDE # 024
4/04/2014
9:12 AM

T. S. NO. FPSRL-101/21204-161
ORDER NO. 126000183

The undersigned grantor declares:

The documentary transfer tax is \$ -0- . This deed is recorded to correct Trustee's Deed recorded on February 24, 2014 as Instrument No. 22525958, Santa Clara County official records.

Kelly Palmer

Declarant Kelly Palmer

CORRECTIVE TRUSTEE'S DEED

This deed is made and recorded to correct a clerical error in the Trustee's Deed dated February 18, 2014, executed by West State Foreclosures, LLC, as Trustee and recorded in the Santa Clara County Recorder's Office on February 24, 2014 as Instrument No. 22525958.

It was the intent of the Trustee to grant and convey but without covenant or warranty, express or implied those interests shown as Exhibit "A" of the recorded Trustee's Deed to include: Jocelyn Sylvester Herail, Trustee, Herail Family Trust, dated May 19, 1990, as to an undivided 2.000% interest; and,

To correct: Gunther J. DeGroot and Kathryn E. DeGroot, Trustees of the DeGroot Living Trust UA dated September 8, 1986, as to an undivided 1.2000% interest; and Gunther DeGroot and Kathryn DeGroot, Trustees of the DeGroot Charitable Remainder Trust, as to an undivided 1.0000% interest, All as Tenants-in-Common

Consequently, West State Foreclosures, LLC, (herein called Trustee) does hereby grant and convey but without covenant or warranty, express or implied to:

See EXHIBIT "A" attached hereto and made a part hereof (Herein called Grantee)

the real property in the County of Santa Clara, State of California, described as follows: See EXHIBIT "B" attached hereto and made a part hereof.

TRUSTEE'S DEED
T.S. FPSRL101/21204-161
Page Two

This conveyance is made pursuant to the authority and powers vested in said Trustee, as Trustee, or Successor Trustee, or Substituted Trustee, under that certain Deed of Trust executed by: Sargent Ranch, LLC, as Trustor, recorded on June 12, 2000, as Instrument No. 15277977 of Official Records in the office of the Recorder of Santa Clara County, California; and pursuant to the Notice of Default recorded on April 26, 2012, as Instrument No. 21640006 of Official Records of said County. Trustee having complied with all applicable statutory requirements of the State of California and performed all duties required by said Deed of Trust, including among other things, as applicable, the mailing of copies of notices or the publication of a copy of the Notice of Default or the personal delivery of the copy of the Notice of default or the posting of copies of the Notice of Sale or the publication of a copy thereof.

At the time and place fixed in the Notice of Trustee's Sale, said Trustee did sell said property above described at public auction on February 18, 2014 to said Grantee, being the highest bidder therefore, for \$ 15,000,000.00 cash, lawful money of the United States in full satisfaction of the indebtedness then secured by said Deed of Trust.

DATED: April 1, 2014

WEST STATE FORECLOSURES, LLC, Trustee

By: Kelly Whalen Palmer
Kelly Whalen Palmer, Foreclosure Officer
2400 Professional Drive, Suite 150
Roseville, CA 95661
(916) 791-2855

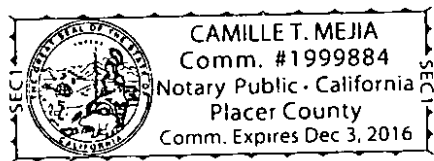
STATE OF CALIFORNIA }
COUNTY OF PLACER }

On April 2, 2014 before me, Camille T. Mejia, a Notary Public, personally appeared KELLY WHALEN PALMER who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal

[Signature]
Notary's Signature



T. S. No. FPSRL-101/21204-161

EXHIBIT "A"

Arthur Jeffrey Appleton, a single man, as to an undivided 0.7200% interest; and

Estate of John S. Appleton, as to an undivided 3.2000% interest; and

William R. Smithousen and Marie Smithousen, Trustee of the Smithousen Trust, UDT August 20, 1993, as to an undivided 0.3200% interest; and

Gunilla M. Rittenhouse, a married woman, as to an undivided 0.2400% interest; and

Louis E. Rittenhouse, Trustee of the Louis E. Rittenhouse Trust, dated 7/1/87, as to an undivided 1.6000% interest; and

Gunther J. DeGroot and Kathryn E. DeGroot, Trustees of the DeGroot Living Trust UA dated September 8, 1986, as to an undivided 1.2000% interest; and

Discount Fabrics Profit Sharing Plan, as to an undivided 1.3000% interest; and

ERG, Inc., Retirement Trust, Burton O. Benson, Trustee, as to an undivided 4.1000% interest; and

W. Richard Marz and Ruthanne E. Marz, husband and wife, joint tenants, as to an undivided 0.6000% interest; and

Russell A. Bowen and Vivien G. Bowen, Trustees of the Russell A. Bowen and Vivien G. Bowen Trust, dated January 4, 1990, as to an undivided 0.8000% interest; and

Russell A. Bowen and Vivien G. Bowen Charitable Remainder Unitrust dated 8/22/1990, as to an undivided 0.4000% interest; and

Thomas W. Marckwardt and Ginger C. Marckwardt, Trustees Marckwardt Trust dated February 15, 1994, as to an undivided 1.4000% interest; and

Paul Pagnini, Trustee, Pagnini Family Trust, dated 7/16/79, as to an undivided 2.0000% interest; and

Eric B. Benson, an unmarried man, as to an undivided 0.4800% interest; and

Martin A. Parese, Jr. and Laurie S. Parese, husband and wife as joint tenants, as to an undivided 0.4000% interest; and

Sherie Sylvester, Trustee of the Sherie Sylvester Trust, dated 5/2/94, as to an undivided 2.000% interest; and

Frederic Sylvester, Trustee of the Frederic and Elizabeth Sylvester Trust, dated May 19, 1990, as to an undivided 2.0000% interest; and

Jocelyn Sylvester Herail, Trustee, Herail Family Trust, dated May 19, 1990, as to an undivided 2.0000% interest; and

T.S. FPSRL-101/21204-161

EXHIBIT "A"

Page Two of Three

Mark D. Benson, an unmarried man, as to an undivided 0.4000% interest; and

Bradley D. Benson, an unmarried man, who acquired title under the CUTMA, as to an undivided 0.4000% interest; and

Herbert L. Sullivan and Victoria L. Sullivan, as Trustees of the Herbert L. Sullivan and Victoria L. Sullivan Revocable Living Trust, created on August 27, 1993, as to an undivided 1.2000% interest; and

V. Lea Sasak, a single person, as to an undivided 0.8000% interest; and

Ian G. Koblick and Tonya A. Koblick, Co-Trustees, U/A dated September 5, 1990, Ian G. Koblick Revocable Trust, as to an undivided 0.8000% interest; and

Los Amigos V, a partnership, as to an undivided 0.4000% interest; and

Cavalier Corp. Ltd., a Cayman Island Corporation, as to an undivided 2.0000% interest; and

Elizabeth A. Doerr-Black, as her sole and separate property, as to an undivided 0.3000% interest; and

Ethel M. Blake, Trustee of the Ethel M. Blake Trust of 1991, as to an undivided 0.3600% interest; and

Trust Company of America, FBO Gary Jones, Account No. 24363, as to an undivided 0.4400% interest; and

Albert J. Kralik and Linda H. Kralik, Trustees, UDT, March 9, 1990, as to an undivided 0.7000% interest; and

William Mazzocco, Trustee of the Mazzocco Family Trust, UAD 12/17/96, as to an undivided 0.4000% interest; and

Gunther DeGroot and Kathryn DeGroot, Trustees of the DeGroot Charitable Remainder Trust, as to an undivided 1.0000% interest; and

ERG, Ford Retirement Trust, Burton O. Benson, Trustee, as to an undivided 0.4000% interest; and

Richard Ehrenberger, a single man, as to an undivided 0.3080% interest; and

PENSCO Pension Services, Inc., FBO Penelope Kuykendall, as to an undivided 0.2920% interest; and

Enderley Limited, An Isle of Man Corporation, as to an undivided 3.0000% interest; and

T.S. FPSRL-101/21204-161
EXHIBIT "A"
Page Three of Three

Jim Schreader, a single man, as to an undivided 2.8000% interest; and

Ricardo Pimienta, a single man, as to an undivided 3.2000% interest; and

Trust Company of America, FBO Barbara L. Jones, Acct. #25360, as to an undivided 0.2600% interest; and

PENSCO Pension Services, Inc., FBO Michael E. Pegler, Acct. #PE-172, as to an undivided 1.6000% interest; and

Ronald C. Blake and Kathryn M. Blake, Trustees of the Blake Family Trust dated 12/3/1998, as to an undivided 1.0000% interest; and

Ronald P. Elvidge, a married man as his sole and separate property, as to an undivided 2.0000% interest; and

PENSCO Pension Services, FBO Albert J. Kralik, Acct. #KR081, as to an undivided 2.9000% interest; and

Michael E. Pegler and Janice L. Pegler, husband and wife, as to an undivided 0.4000% interest; and

Richard G. Williams, a married man, as his sole and separate property, as to an undivided 0.8000% interest; and

Debra Gewertz, a married woman as her sole and separate property, as to an undivided 0.4000% interest; and

Janet Post, as to an undivided 1.2000% interest; and

DACA 2010L, as to an undivided 12.6000% interest; and

Sargent Ranch Management Company, as to an undivided 32.8800% interest,

All as Tenants-in-Common

CHICAGO TITLE INSURANCE COMPANY

TRUSTEE SALE GUARANTEE

SCHEDULE A (Continued)

Your Ref: FPSRL-101/21204-161

Guarantee No. 126000183 - H03

EXHIBIT "B"

PARCEL ONE:

LOT 4 OF THE PARTITION OF THE RANCHO JURISTAC OR LA BREA BY ORDER OF THE SUPERIOR COURT IN THE COUNTY OF SANTA CLARA DATED DECEMBER 3, 1880, ALLOTTED TO JAMES P. SARGENT, BRADLEY V. SARGENT, ROSWELL C. SARGENT, AND JACOB L SARGENT, DELINEATED ON THE PARTITION MAP ATTACHED THERETO AND DESCRIBED AS FOLLOWS, IN THE PARTITION DECREE RECORDED DECEMBER 18, 1880 IN BOOK "1" OF MISCELLANEOUS RECORDS, PAGE 191, SANTA CLARA COUNTY RECORDS, VIZ:

BEGINNING AT A POINT IN THE CENTER OF THE CHANNEL OF PESCADERO CREEK UPON THE EASTERN BOUNDARY OF THE RANCHO SALSIPUEDES AS PATENTED BY THE UNITED STATES, FROM WHICH POINT A WITNESS POST 4 INCHES SQUARE PAINTED WHITE, MARKED W.P., STANDING ON THE LEFT OR EAST BANK OF SAID CREEK, BEARS EAST 44 LINKS, AND A LIVE OAK TREE 2 1/2 FEET DIAMETER, MARKED B.T.J., BEARS NORTH 24 1/2° EAST 42 LINKS, AND A LIVE OAK TREE 10 INCHES DIAMETER, MARKED B.T. 3., BEARS SOUTH 84° EAST 27 LINKS, THIS POINT BEING THE S.W. CORNER OF LOT NO.1 OF THIS SUBDIVISION; THENCE EAST 339.44 CHAINS TO A POST, MARKED S IN THE TRACK OF THE COUNTY ROAD LEADING FROM GILROY TO SAN JUAN ON THE WEST BOUNDARY OF LOT NO. 3 OF THIS SUBDIVISION, FROM WHICH A WITNESS POST 4 INCHES SQUARE, PAINTED WHITE, BEARS WEST 1.10 CHAINS; THENCE ALONG SAID ROAD, SOUTH 10° 20' WEST 6.80 CHAINS TO A POST MARKED S.C. 2; THENCE SOUTH 13° 20' EAST 3.33 CHAINS TO A POST MARKED S.C. 1, FROM WHICH A WITNESS POST 4 INCHES SQUARE, PAINTED WHITE, STANDING AT THE FENCE ON THE EAST SIDE OF SAID ROAD, BEARS EAST 56 LINKS; THENCE LEAVING SAID ROAD AND ALONG THE SOUTH LINE OF SAID LOT NO. 3, EAST 62.72 CHAINS TO A POST MARKED S.C. STANDING IN THE WILLOWS AT THE SOUTHEAST CORNER OF SAID LOT NO. 3; THENCE NORTH 15° 50' EAST 41.74 CHAINS, TO A POST MARKED 3. NO. 5. L.A. 3. AT A CORNER OF THE RANCHO JURISTAC AND THE RANCHO LAS ANIMAS AS PATENTED BY THE UNITED STATES; THENCE ALONG THE BOUNDARY OF SAID RANCHOS, SOUTH 63° 15' EAST 97 CHAINS TO THE CENTER OF THE PAJARO RIVER AT THE SOUTHEAST CORNER OF THE SAID RANCHO LAS ANIMAS; THENCE DOWN THE CHANNEL OF SAID RIVER FOLLOWING ITS MEANDERINGS, IT BEING THE BOUNDARY OF THE RANCHO JURISTAC AS PATENTED BY THE UNITED STATES, TO THE MOUTH OF THE PESCADERO CREEK; THENCE UP THE CENTER OF THE CHANNEL OF SAID CREEK, WHICH IS THE BOUNDARY OF THE RANCHO JURISTAC AS PATENTED BY THE UNITED STATES, TO THE SOUTHWEST CORNER THEREOF; THENCE LEAVING SAID CREEK, NORTH 4.75 CHAINS TO A POST AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 12 SOUTH, RANGE 3 EAST; THENCE WEST TO THE EAST LINE OF THE RANCHO SALSIPUEDES AS PATENTED; THENCE ALONG SAID LINE, NORTH 27° WEST TO A POST MARKED S ON THE WEST OR RIGHT BANK OF THE SAID PESCADERO CREEK, OPPOSITE THE TAR SPRINGS AND THE HOUSE FORMERLY OCCUPIED BY RILEY; THENCE INTO AND UP THE CHANNEL OF SAID PESCADERO CREEK, WHICH IS THE EASTERN BOUNDARY OF SAID RANCHO SALSIPUEDES, TO THE PLACE OF BEGINNING.

CONTAINING (APPROXIMATELY) 7,233.90 ACRES, THE SAME BEING DESIGNATED ON SAID MAP AS LOT NO. 4.

EXCEPTING THEREFROM THOSE PORTIONS THEREOF WITHIN THE AREA DESCRIBED AS A STRIP OF LAND ONE HUNDRED FEET WIDE LYING EQUALLY ON EACH SIDE OF THE LOCATED LINE OF THE PAJARO BRANCH OF THE SOUTHERN PACIFIC RAILROAD COMPANY RAILROAD, WHERE THE SAME IS LOCATED THROUGH THE JURISTAC RANCHO, SO CALLED, AND RUNNING ENTIRELY ACROSS SAID RANCHO, A DISTANCE OF 27,977 FEET AND CONTAINING AN AREA OF 64.22 ACRES, MORE OR LESS, TITLE TO WHICH WAS GRANTED BY J.P. SARGENT, R.C. SARGENT, J.S. SARGENT, AND B.V.

CHICAGO TITLE INSURANCE COMPANY

TRUSTEE SALE GUARANTEE

SCHEDULE A (Continued)

Your Ref: FPSRL-101/21204-161

EXHIBIT "B"

Guarantee No. 126000183 - H03

SARGENT TO THE SOUTHERN PACIFIC RAILROAD COMPANY BY DEEDS DATED OCTOBER 30, 1872 AND APRIL 9, 1873, RECORDED MAY 28, 1873 AND MAY 10, 1873, RESPECTIVELY, IN BOOK 27 OF DEEDS, PAGES 562 AND 565, SANTA CLARA COUNTY RECORDS.

ALSO EXCEPTING THEREFROM THOSE PORTIONS THEREOF WITHIN THE AREA DESCRIBED AS A STRIP OR TRACT OF LAND ONE HUNDRED FEET WIDE LYING EQUALLY ON EACH SIDE OF THE LOCATED LINE OF THE PAJARO BRANCH OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RAILROAD, WHERE THE SAME IS LOCATED ON THE NORTHERLY SIDE OF THE PAJARO RIVER, A DISTANCE OF 1,720 FEET AND CONTAINING AN AREA OF 3.94 ACRES, MORE OR LESS; ALSO SO MUCH LAND IN ADDITION TO THE FOREGOING AND LYING ON NORTHERLY SIDE OF THE SAME AS WILL INCLUDE ALL THE SLOPES AND SIDE CUTS ON THE HILL SIDES BE THE SAME MORE OR LESS, TITLE TO WHICH WAS GRANTED BY FERNANDO R. FARMAN TO THE SOUTHERN PACIFIC RAILROAD COMPANY BY DEED DATED DECEMBER 13, 1872, RECORDED FEBRUARY 1, 1873 IN BOOK 16 OF DEEDS, PAGE 483, SANTA CRUZ COUNTY RECORDS.

ALSO EXCEPTING THEREFROM THOSE PORTIONS THEREOF WITHIN THE AREA DESCRIBED AS A STRIP OF LAND 60 FEET IN WIDTH LYING EQUALLY ON EACH SIDE OF THE CENTER LINE OF A SPUR-TRACK AS NOW LOCATED HAVING ITS INITIAL POINT IN THE MAIN LINE OF THE RAILROAD TRACK OF THE PARTY OF THE SECOND PART BETWEEN SARGENT'S AND CHITTENDEN'S STATIONS AT ENGINEER'S STATION 308+24; RUNNING THENCE IN AN EASTERLY DIRECTION TO THE CENTER OF THE PAJARO RIVER, A TOTAL DISTANCE ACROSS THE LANDS OF THE PARTY OF THE FIRST PART OF 850 FEET, MORE OR LESS, AND CONTAINING 1.2 ACRES, MORE OR LESS, TITLE TO WHICH WAS GRANTED BY J. P. SARGENT TO THE SOUTHERN PACIFIC RAILROAD COMPANY BY DEED APRIL 30, 1896, RECORDED MAY 12, 1896 IN BOOK 191 OF DEEDS, PAGE 201, SANTA CLARA COUNTY RECORDS.

ALSO EXCEPTING THEREFROM THOSE EIGHT PARCELS OR PORTIONS THEREOF CONTAINING (IN THE AGGREGATE) 21.881 ACRES, MORE OR LESS, DESCRIBED IN THE GRANT BY AGNES C. SARGENT, ET AL, TO SOUTHERN PACIFIC RAILROAD COMPANY RECORDED JANUARY 13, 1931, IN BOOK 546, PAGE 489, OFFICIAL RECORDS OF SANTA CLARA COUNTY, AND IN BOOK 187, PAGE 264, OFFICIAL RECORDS OF SANTA CRUZ COUNTY, UPON THE TERMS THEREOF AND SUBJECT TO THE CONDITIONS AND RESERVATIONS SET FORTH THEREIN AND IN THE AGREEMENT MADE BY AND BETWEEN SAID PARTIES JULY 8, 1930, RECORDED JANUARY 13, 1931 IN BOOK 549, PAGE 249, OFFICIAL RECORDS OF SANTA CLARA COUNTY, AND JANUARY 20, 1931 IN BOOK 194, PAGE 59, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

ALSO EXCEPTING THEREFROM THOSE PORTIONS THEREOF DESCRIBED IN THE GRANTS TO THE STATE OF CALIFORNIA FOR STATE HIGHWAY AND/OR FREEWAY PURPOSES, UPON THE TERMS THEREOF AND SUBJECT TO CONDITIONS AND RESERVATIONS AS SET FORTH THEREIN, RECORDED JANUARY 9, 1941 IN BOOK 1018, PAGE 321; AND AUGUST 25, 1954, IN BOOK 2945, PAGE 644; AND IN BOOK 2946, PAGES 3 AND 11; AND OCTOBER 27, 1969 IN BOOK 8714, PAGES 694, 698, 702, AND 707, OFFICIAL RECORDS OF SANTA CLARA COUNTY.

ALSO EXCEPTING THEREFROM THOSE PORTIONS THEREOF DESCRIBED AS LOT 1 AND LOT 3 AFTER LOT LINE ADJUSTMENT IN THE CERTIFICATE OF COMPLIANCE NO. 6133-78-08-97LA, RECORDED FEBRUARY 12, 1998 AS DOCUMENT NO. 14052603 AND FEBRUARY 17, 1998 AS DOCUMENT NO. 14057454, OFFICIAL RECORDS OF SANTA CLARA COUNTY.

TOGETHER WITH NONEXCLUSIVE EASEMENTS APPURTENANT TO PORTIONS OF SAID PARCEL ONE FOR INGRESS, EGRESS, AND ACCESS TO AND FROM THE DOMINANT TENEMENT, AS DESCRIBED IN THE GRANTS OF EASEMENT BY CSY SARGENT RANCH, L.P. TO FIVESTAR COMMERCE, INC. AND SUN AND SONS LIMITED PARTNERSHIP, RECORDED MARCH 4, 1998 AS INSTRUMENT NO. 14080353 AND

CHICAGO TITLE INSURANCE COMPANY

TRUSTEE SALE GUARANTEE

SCHEDULE A (Continued)

Your Ref: FPSRL-101/21204-161

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14080354, OFFICIAL RECORDS OF SANTA CLARA COUNTY.

PARCEL TWO:

LAND DESCRIBED AS FOLLOWS IN THE DEED TO J.P. SARGENT BY HENRY C. PECKHAM, DATED NOVEMBER 22, 1886 AND RECORDED DECEMBER 3, 1886 IN BOOK 88 OF DEEDS, PAGE 3, SANTA CLARA COUNTY RECORDS, VIZ:

ALL OF LOTS 1 AND 2 AND THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 1 TOWNSHIP 12 SOUTH, RANGE 3 EAST, MOUNT DIABLO MERIDIAN.

CONTAINING (APPROXIMATELY) 90.55 ACRES BEING THE SAME LANDS CONVEYED TO SAID FIRST PARTY BY THE SOUTHERN PACIFIC RAILROAD COMPANY BY DEED DATED AUGUST 5, 1885 AND RECORDED IN THE COUNTY RECORDER'S OFFICE OF SAID SANTA CLARA COUNTY.

PARCEL THREE:

ALL OF LOTS 1, 2, AND 5, AND THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 12 SOUTH, RANGE 3 EAST, MOUNT DIABLO MERIDIAN.

CONTAINING 176.50 ACRES, MORE OR LESS.

ALSO LOTS 3, 4, AND 6 IN SECTION 12, TOWNSHIP 12 SOUTH, RANGE 3 EAST, MOUNT DIABLO MERIDIAN.

CONTAINING 97.81 ACRES, MORE OR LESS.

EXCEPTING THEREFROM THOSE PORTIONS THEREOF WITHIN THE AREA DESCRIBED AS A STRIP OF LAND ONE HUNDRED FEET WIDE LYING EQUALLY ON EACH SIDE OF THE LOCATED LINE OF THE PAJARO BRANCH OF THE SOUTHERN PACIFIC RAILROAD COMPANY RAILROAD, WHERE THE SAME IS LOCATED THROUGH THE LANDS CLAIMED AND OCCUPIED BY THE PARTY OF THE FIRST PART ON THE NORTHERLY SIDE OF THE PAJARO RIVER, A DISTANCE OF 1,720 FEET AND CONTAINING AN AREA OF 3.94 ACRES, TITLE TO WHICH WAS GRANTED BY FERNANDO R. FARMAN TO SOUTHERN PACIFIC RAILROAD COMPANY BY DEED DATED DECEMBER 13, 1872 AND RECORDED FEBRUARY 1, 1873 IN BOOK 16 OF DEEDS PAGE 483 AND RECOPIED IN BOOK 16 OF DEEDS AT PAGE 239, SANTA CRUZ COUNTY RECORDS.

PARCEL FOUR:

FIVE PARCELS OF LAND DESCRIBED AS FOLLOWS IN THE DEED BY SOUTHERN PACIFIC RAILROAD COMPANY TO AGNES C. SARGENT RECORDED JANUARY 9, 1931 BOOK 553, PAGE 63, OFFICIAL RECORDS OF SANTA CLAM COUNTY, VIZ:

PARCEL #1 COMMENCING AT A STAKE WHERE THE EASTERLY BOUNDARY LINE OF THE LAS AROMITAS Y AGUA CALIENTE RANCHO INTERSECTS THE CENTER LINE OF THE PAJARO RIVER, SAID POINT BEARS SOUTH 2° 22' 30" EAST, A DISTANCE OF 204.60 FEET FROM A LIVE OAK B.T.; THENCE NORTH 34' 50' 30" WEST ALONG SAID EASTERLY BOUNDARY LINE OF SAID RANCHO, A DISTANCE OF 360.70 FEET TO A POINT IN THE NORTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RIGHT OF WAY AS ACQUIRED BY DEED DATED OCTOBER 17, 1872. F.A. MACDOUGALL ET AL. TO THE SOUTHERN PACIFIC RAILROAD COMPANY, RECORDED JULY 23, 1873. IN BOOK 16 OF DEEDS, PAGE 697, RECORDS OF SANTA CRUZ COUNTY; THENCE IN AN EASTERLY DIRECTION ALONG

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SAID NORTHERLY RIGHT OF WAY LINE, ALONG THE ARC OF A CURVE CONCAVE TO THE RIGHT, HAVING A RADIUS OF 2341.9 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT BEARS NORTH 89° 26' 10" EAST) AN ARC DISTANCE OF 222.30 FEET TO A POINT; THENCE SOUTH 65° 07' 30" EAST, ALONG SAID NORTHERLY RIGHT OF WAY LINE (TANGENT TO LAST DESCRIBED CURVE AT THE LAST MENTIONED POINT) A DISTANCE OF 347.0 FEET TO A POINT; THENCE IN AN EASTERLY DIRECTION ALONG SAID NORTHERLY RIGHT OF WAY LINE ON THE ARC OF A CURVE CONCAVE TO THE LEFT, HAVING A RADIUS OF 1859.9 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT IS THE LAST DESCRIBED COURSE) AN ARC DISTANCE OF 113.6 FEET TO A POINT; THENCE NORTH 88° 37' 30" WEST (TANGENT TO LAST DESCRIBED CURVE AT THE LAST MENTIONED POINT) A DISTANCE OF 661.8 FEET TO A POINT IN SAID EASTERLY BOUNDARY LINE OF SAID RANCHO; THENCE NORTH 34° 50' 30" WEST ALONG SAID RANCHO LINE, A DISTANCE OF 34.3 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 0.253 ACRES, MORE OR LESS.

PARCEL #2 COMMENCING AT SAID STAKE WHERE THE EASTERLY BOUNDARY LINE OF THE LAS AROMITAS Y AGUA CALIENTE RANCHO INTERSECTS THE CENTER LINE OF THE PAJARO RIVER; THENCE NORTH 34° 50' 30" WEST ALONG SAID EASTERLY BOUNDARY LINE OF SAID RANCHO, A DISTANCE OF 326.40 FEET TO A POINT; THENCE SOUTH 88° 37' 30" EAST A DISTANCE OF 661.8 FEET TO A POINT IN THE NORTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RIGHT OF WAY AS ACQUIRED BY DEED DATED OCTOBER 17, 1872, F.A. MACDOUGALL ET AL TO THE SOUTHERN PACIFIC RAILROAD COMPANY, RECORDED JULY 23, 1873, IN BOOK 16 OF DEEDS, PAGE 697 RECORDS OF SANTA CRUZ COUNTY THENCE CONTINUING ALONG SAID NORTHERLY RIGHT OF WAY LINE IN AN EASTERLY DIRECTION ALONG THE ARC OF A CURVE CONCAVE TO THE LEFT, HAVING A RADIUS OF 1859.9 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT OF THE LAST DESCRIBED COURSE) AN ARC DISTANCE OF 89.3 FEET TO THE POINT OF BEGINNING OF PARCEL OF LAND TO BE DESCRIBED; THENCE CONTINUING ALONG SAID NORTHERLY RIGHT OF WAY LINE IN AN EASTERLY DIRECTION ON THE ARC OF A CURVE CONCAVE TO THE LEFT, HAVING A RADIUS OF 1859.9 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT BEARS NORTH 88° 37' 30" EAST AN ARC DISTANCE OF 241.30 FEET TO A POINT; THENCE NORTH 81° 11' 30" EAST ALONG SAID NORTHERLY RIGHT OF WAY LINE (TANGENT TO LAST DESCRIBED CURVE AT THE LAST MENTIONED POINT) A DISTANCE OF 51.0 FEET TO A POINT; THENCE IN AN EASTERLY DIRECTION ALONG SAID NORTHERLY RIGHT OF WAY LINE ON THE ARC OF A CURVE CONCAVE TO THE RIGHT HAVING A RADIUS OF 1278.1 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT IS THE LAST DESCRIBED COURSE) AN ARC DISTANCE OF 428.0 FEET TO A POINT IN THE BOUNDARY LINE BETWEEN THE COUNTY OF SANTA CRUZ AND THE COUNTY OF SANTA CLARA; THENCE SOUTH 37° 30' EAST ALONG SAID BOUNDARY LINE, A DISTANCE OF 25.4 FEET TO A POINT THENCE NORTH 87° 13' WEST, A DISTANCE OF 197.50 FEET TO A POINT; THENCE SOUTH 88° 37' 30" WEST, A DISTANCE OF 535.0 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA 0.342 ACRES, MORE OR LESS.

PARCEL "A" BEGINNING AT A POINT WHICH BEARS SOUTH 5° 51' 30" WEST A DISTANCE OF 13,736.2 FEET FROM A CONCRETE MONUMENT ON THE NORTHERLY LINE OF THE LANDS OF THE SARGENT ESTATE DISTANT 3.0 FEET WESTERLY MEASURED ALONG SAID NORTHERLY LINE FROM THE EASTERLY LINE OF THE COUNTY HIGHWAY BETWEEN GILROY AND SARGENT. SAID POINT BEING A POINT IN THE WESTERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RIGHT OF WAY ACQUIRED FROM J.P. SARGENT BY DEED DATED OCTOBER 30, 1872 AND RECORDED MAY 10, 1873 IN BOOK 27 OF DEEDS, PAGE 562, RECORDS OF SANTA CLARA COUNTY, DISTANT 50.0 FEET WESTERLY MEASURED AT RIGHT ANGLES FROM THE POINT KNOWN AS ENGINEERS STATION 271+43.3; THENCE SOUTH 7° 48' 15" WEST A DISTANCE OF 146.5 FEET TO A POINT; THENCE ON THE ARC

CHICAGO TITLE INSURANCE COMPANY

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OF A CURVE CONCAVE TO THE LEFT HAVING A RADIUS OF 1448.1 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT BEARS SOUTH 20' 02' 55" WEST) AN ARC DISTANCE OF 608.9 FEET TO A POINT (TANGENT TO LAST MENTIONED CURVE AT LAST MENTIONED POINT BEARS SOUTH 4° 04' 35" EAST); THENCE SOUTH 8° 04' 45" WEST A DISTANCE OF 146.5 FEET TO A POINT IN SAID WESTERLY RIGHT OF WAY LINE; THENCE ALONG SAID WESTERLY RIGHT OF WAY LINE NORTH 5° 44' 45" WEST A DISTANCE OF 100 FEET TO A POINT; THENCE CONTINUING ALONG SAID WESTERLY RIGHT OF WAY LINE ON THE ARC OF A CURVE CONCAVE TO THE RIGHT HAVING A RADIUS OF 1482.5 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT IS THE LAST MENTIONED COURSE) AN ARC DISTANCE OF 710.7 FEET TO A POINT; THENCE CONTINUING ALONG SAID WESTERLY RIGHT OF WAY LINE TANGENT TO LAST MENTIONED CURVE AT THE LAST MENTIONED POINT NORTH 21° 43' 15" EAST A DISTANCE OF 100 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 0.626 ACRES MORE OR LESS.

PARCEL "B" COMMENCING AT SAID STAKE WHERE THE EASTERLY BOUNDARY LINE OF THE LAS AROMITAS Y AGUA CALIENTE RANCHO INTERSECTS THE CENTER LINE OF THE PAJARO RIVER; THENCE NORTH 34° 50' 30" WEST ALONG SAID EASTERLY BOUNDARY LINE OF SAID RANCHO, A DISTANCE OF 111.5 FEET TO A POINT; THENCE NORTH 89° 45' 30" EAST, A DISTANCE OF 1342.5 FEET TO A POINT; THENCE SOUTH 79° 12' 45" EAST A DISTANCE OF 482.3 FEET TO A POINT IN THE SOUTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RIGHT OF WAY AS ACQUIRED FROM J.P. SARGENT BY DEED DATED OCTOBER 30, 1872, RECORDED MAY 10, 1873, IN BOOK 27 OF DEEDS, PAGE 562, RECORDS OF SANTA CLARA COUNTY, SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND TO BE DESCRIBED; THENCE SOUTH 79° 12' 45" EAST, A DISTANCE OF 256.2 FEET TO A POINT; THENCE SOUTH 70° 36" EAST A DISTANCE OF 450 FEET TO A POINT; THENCE SOUTH 68° 02' 30" EAST A DISTANCE OF 296.3 FEET TO A POINT; THENCE SOUTH 55° 37' 30" EAST A DISTANCE OF 954.2 FEET TO A POINT; THENCE ON THE ARC OF A CURVE CONCAVE TO THE LEFT HAVING A RADIUS OF 1482.5 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT IS THE LAST DESCRIBED COURSE) AN ARC DISTANCE OF 466.6 FEET TO A POINT IN SAID SOUTHERLY LINE OF SAID RIGHT OF WAY (TANGENT TO SAID CURVE AT LAST MENTIONED POINT BEARS SOUTH 73° 39' 30" EAST); THENCE ALONG SAID SOUTHERLY LINE OF SAID RIGHT OF WAY IN A NORTHWESTERLY DIRECTION ON THE ARC OF A CURVE CONCAVE TO THE RIGHT (TANGENT TO SAID CURVE AT LAST MENTIONED POINT BEARS SOUTH 73° 39' 30" EAST) HAVING A RADIUS OF 2914.8 FEET AN ARC DISTANCE OF 658.5 FEET TO A POINT; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE TANGENT TO LAST MENTIONED CURVE AT LAST MENTIONED POINT NORTH 60° 42' 30" WEST A DISTANCE OF 850 FEET TO A POINT; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE ON THE ARC OF CURVE CONCAVE TO THE LEFT HAVING A RADIUS OF 5679.6 FEET (TANGENT TO SAID CURVE AT THE LAST MENTIONED POINT IS THE LAST DESCRIBED COURSE) AN ARC DISTANCE OF 793.0 FEET TO A POINT; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE TANGENT TO LAST MENTIONED CURVE AT THE LAST MENTIONED POINT NORTH 68° 42' 30" WEST A DISTANCE OF 101.3 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 3.563 ACRES, MORE OR LESS.

PARCEL "C" COMMENCING AT SAID STAKE WHERE THE EASTERLY BOUNDARY LINE OF THE LAS AROMITAS Y AGUA CALIENTE RANCHO INTERSECTS THE CENTER LINE OF THE PAJARO RIVER; THENCE NORTH 34° 50' 30" WEST ALONG SAID EASTERLY BOUNDARY LINE OF SAID RANCHO, A DISTANCE OF 111.5 FEET TO A POINT; THENCE NORTH 89° 45' 30" EAST, A DISTANCE OF 1342.5 FEET TO A POINT; THENCE SOUTH 79° 12' 45" EAST A DISTANCE OF 165.7 FEET TO A POINT IN THE COUNTY LINE OF 1342.5 FEET TO A POINT; THENCE SOUTH 79° 12' 45" EAST A DISTANCE OF 165.7 FEET TO A POINT IN THE COUNTY LINE BETWEEN SANTA CRUZ AND SANTA CLARA COUNTIES; THENCE NORTH 37° 50' WEST ALONG SAID COUNTY LINE A DISTANCE OF 238.4

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FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND TO BE DESCRIBED; THENCE SOUTH 87° 13' EAST A DISTANCE OF 92.6 FEET TO A POINT IN THE NORTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S RIGHT OF WAY ; THENCE IN A NORTHWESTERLY DIRECTION ALONG SAID NORTHERLY RIGHT OF WAY LINE ON THE ARC OF A CURVE CONCAVE TO THE LEFT, CONCENTRIC WITH AND DISTANCE 50 FEET NORTHERLY MEASURED RADially FROM THE CENTERLINE OF THE SOUTHERN PACIFIC RAILROAD COMPANY'S ORIGINALLY LOCATED MAIN LINE TRACK, HAVING A RADIUS OF 1277.8 FEET (TANGENT TO SAID CURVE AT LAST MENTIONED POINT BEARS NORTH 74° 39' 15" WEST) AN ARC DISTANCE OF 110.8 FEET TO A POINT (TANGENT TO SAID CURVE AT THIS POINT BEARS NORTH 79° 37' 15" WEST; THENCE SOUTH 37° 30' EAST A DISTANCE OF 25.4 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 0.019 ACRES, MORE OR LESS.

APN: 841-36-013, 810-37-005, 810-37-006, 810-37-007, 810-37-008, 810-38-002, 810-38-009, 810-38-014, 810-38-015, 810-38-016, 810-38-017

ADDRESS: SAID PARCELS ARE ALL VACANT LAND

APPENDIX B
SANTA CLARA COUNTY MINING ORDINANCE

Any mining operation subsequent to January 1, 1976, shall obtain Planning Commission approval of a reclamation plan for the property that fulfills the requirements of Section 4.10.370, Part I, subsection J (Reclamation Standards) of this ordinance. Prior to such approval, reclamation plans shall be reviewed by the Planning Commission to assure substantial compliance with SMARA, State regulation and applicable County ordinances. (See Section 4.10.370, Part I, subsection (I)(5) regarding State review.)

1. The reclamation plan shall be filed with the County Department of Planning and Development, on a form provided by the County, by any person who owns, leases, or otherwise controls or operates on all, or any portion of any, mined lands, and who plans to conduct surface mining operations on the lands.

2. All documentation for the reclamation plan shall be submitted to the County at one time as a comprehensive package.

3. The reclamation plan shall substantially comply with the provisions of SMARA Section 2772 and State regulations Sections 3500 through 3505. Reclamation plans approved after January 15, 1993, reclamation plans for proposed new mining operations, and any amendments to previously approved reclamation plans, shall also substantially comply with the reclamation performance standards in State regulations, Sections 3700 through 3713.

4. An item of information or a document required pursuant to subsection (3) that has already been prepared as part of a permit application for the surface mining operation, or as part of an environmental document prepared for the project pursuant to Public Resources Code, Division 13 (commencing with section 21000), may be included in the reclamation plan by reference, if that item of information or that document is attached to the reclamation plan when the County submits the reclamation plan to the director of the Department of Conservation for review. To the extent that the information or document referenced in the reclamation plan is used to meet the requirements of subdivision 3, the information or document shall become part of the reclamation plan and shall be subject to all other requirements of this article.

G. Exemptions. No permit or reclamation plan shall be required by this ordinance for activities identified in SMARA Section 2714, provided that nothing shall exempt such activities from the requirements of the Santa Clara County Grading Ordinance, where applicable.

H. Definitions. The definitions contained in SMARA and the State regulations are incorporated by reference. In addition, as used in this ordinance the following words shall have the following definitions.

1. CEQA. The California Environmental Quality Act, State of California, as contained in the Public Resources Code Section 21000 et seq..188

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2. County. The County of Santa Clara, State of California. For purposes of SMARA, the County is the lead agency as defined in SMARA Section 2728, having the principal responsibility for approving reclamation plans, so long as the County retains jurisdiction over surface mining operations within Santa Clara County.

3. Director. The Director of the Santa Clara County Department of Planning and Development.

4. Financial Assurance. "Financial Assurance" means a monetary assurance that a surface mining operation will be reclaimed in accordance with an approved reclamation plan. The financial assurance may take the form of a surety bond, trust fund, irrevocable letter of credit, or other acceptable financial assurance mechanism as determined by both the

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County and the California Department of Conservation.5.OMR.The California Office of Mine Reclamation, a division of the Department of Conservation, State of California.6.On-Site Construction."On-Site Construction" means the activities described in SMARA Section 2714(b), including construction of buildings, roads, or other improvements including landscaping, excavations and grading required to prepare a site for construction of structures, landscaping or other land improvements, and which is beneficially modified by such construction, is not deemed to be a surface mining operation. Additionally, all required permits for the construction, landscaping, or related land improvements that do not qualify as surface mining operations must be obtained from the County in accordance with applicable provisions of state law and locally adopted plans and ordinances.7.SMARA.The Surface Mine and Reclamation Act, as set forth in the California Public Resources Code Section 2710 et seq., as amended.8.State Regulations.The SMARA Regulations as set forth in the California Code of Regulations, Title 14, Division 2, Chapter 8, Subchapter I, as amended.9.Vested Right.A "vested right" is the right to conduct a legal use of real property if that right existed lawfully before a zoning or other land use restriction became effective and the use is not in conformity with that restriction when it continues thereafter.1.Reclamation Plan Approval.Except as otherwise provided in this ordinance, no person shall conduct surface mining operations unless a reclamation plan has been reviewed by the State Department of Conservation and reviewed and approved by the Planning Commission, which approval can occur concurrently with the use permit.189

Santa Clara County Zoning Ordinance Chapter 4.10: Supplemental Use Regulations Rev: March 20201.Applications.Reclamation plans and modifications of such plans shall be submitted and processed in accordance with the procedures in County Zoning Ordinance, Chapter 5.20, Common Procedures.2.The Planning Commission must make the following findings before approving a reclamation plan or reclamation plan amendment:a.That reclamation plan, or reclamation plan amendment, substantially complies with SMARA Sections 2772 and 2773, and any other applicable provisions;b.That the reclamation plan, or reclamation plan amendment, substantially complies with applicable requirements of State regulations (Sections 3500-3505, and Sections 3700-3713);c.That the reclamation plan, or reclamation plan amendment, and potential use of reclaimed land pursuant to the plan are consistent with this ordinance and the County's General Plan and any applicable resource plan or elements.d.That the reclamation plan, or reclamation plan amendment, has been reviewed pursuant to CEQA and all significant adverse impacts from reclamation of the surface mining operations are mitigated to a level of insignificance, or a Statement of Overriding Considerations has been adopted pursuant to CEQA; and e.That the reclamation plan, or reclamation plan amendment, will restore the mined lands to a usable condition which is readily adaptable for alternative land uses.3.Amendment of Approved Reclamation Plan.Any person having an approved reclamation plan may file for an amendment of that reclamation plan.a.Minor reclamation plan amendments.The Zoning Administrator is the decision-making authority for minor reclamation plan amendments. The Zoning Administrator's decision may be appealed to the Planning Commission. The Planning Commission's decision may be appealed to the Board of Supervisors, and the Board of Supervisors' decision may be appealed to the State Mining and Geology Board if the issue is made appealable to the State by SMARA. Minor reclamation plan

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amendments include any of the following, provided that there is no expansion of the area from which mineral deposits are to be harvested:

- i. Modifications that involve minor changes, such as those that improve drainage, improve slope designs within the reclamation plan boundaries or improve re-vegetation success;

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- ii. Modifications that adjust the reclamation plan boundaries to incorporate areas disturbed prior to January 1, 1976 or existing components of the mining operation that were established in accordance with all other County requirements.
- iii. Approval of interim management plans for idle mines pursuant to subsection L of this section;
- iv. Other modifications that the Planning Director determines do not constitute a substantial deviation from the approved reclamation plan.

b. Major Reclamation Plan amendments. A major reclamation plan amendment is any reclamation plan amendment that does not meet the criteria for a minor reclamation plan amendment or constitutes a substantial deviation of the reclamation plan under SMARA. The Planning Commission is the decision-making body for major reclamation plan amendments. The Planning Commission's decision may be appealed to the Board of Supervisors, and thereafter to the State Mining and Geology Board if the issue is made appealable to the State by SMARA. A reclamation plan amendment shall not be approved unless it has been reviewed by the Department of Conservation and it complies with all applicable requirements of SMARA, the State regulations, and this ordinance.

4. Review and Approval. A reclamation plan or amendment shall not be approved unless the plan or amendment substantially complies with SMARA and this ordinance. Reclamation plans or amendments determined not to meet these requirements shall be returned to the operator within 60 days, after which the operator has 60 days to revise the plan or amendment to address the identified deficiencies and return the revised plan or amendment to the County Department of Planning and Development for review by the County and the Department of Conservation and approval by the County.

5. State Review. A new or amended reclamation plan shall not be approved until the County provides the State Department of Conservation with the information required by Public Resources Code Section 2774, subdivisions (c) and (d) as follows.

- a. Prior to approving a reclamation plan or amendment thereof, the County Planning Office shall submit the plan or amendment to the State Department of Conservation for review, along with all required documentation, and shall certify that the plan or amendment complies with the applicable requirements of SMARA, State regulations, and this ordinance. If the Department prepares written comments, the County Planning Office shall prepare a written response at least 30 days prior to approval of the plan or amendment describing the County's proposed response to any major issues raised by the Department. Where the 191

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County's proposed response is at variance with any comments raised by the Department, said written response shall address, in detail, why the County proposes not to adopt the Department's comments. Copies of any written comments received and responses prepared shall be forwarded to the operator. The County Planning Office shall send the Department its final response to the Department's comments within 30 days following its approval of the plan or amendment.

- b. Pursuant to Public Resources Code

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Section 2774, subdivision (d)(2), the County Planning Office shall give the State Department of Conservation at least 30 days' notice of the time, place, and date of any hearing at which a reclamation plan or amendment is scheduled to be approved. If no hearing is required, the County Planning Office shall provide 30 days' notice to the Department that it intends to approve the plan or amendment.

6. Recorded Notification of Reclamation Plan. Upon approval of the reclamation plan or reclamation plan amendment, the mine operator shall prepare and record a "Notice of Reclamation Plan Approval." The notice shall read: "Mining operations conducted on the hereinafter described real property are subject to a reclamation plan approved by the County of Santa Clara, a copy of which is on file with the County Department of Planning and Development."

J. Reclamation Standards. Compliance with State standards is required. Each new or substantially amended Reclamation Plan shall substantially comply with the minimum statewide performance standards, as amended, required by SMARA Section 2773(b), and identified in section 3700 et seq. of the State regulations, as applicable.

K. Financial Assurances Required.

1. Purpose. This Section is intended to ensure that reclamation will proceed in compliance with the approved Reclamation Plan, as it may be amended, through the maintenance of funds available to the County and the State that are adequate to reclaim the site in the event of a default by the operator.

2. Requirements, Forms, and Amount.

a. The operator shall post a financial assurance instrument or mechanism in a form authorized State Regulations section 3800 et seq. and the Financial Assurance Guidelines adopted by the State Mining and Geology Board.

b. Financial assurances shall be made payable to the County and to the Department of Conservation. (SMARA, section 2773.1(a)(4)).

c. The amount of the financial assurance to be posted with the County shall be equivalent to the estimated cost of reclamation of the site from its current condition in a manner consistent with the approved Reclamation 192

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Plan, plus an amount to ensure reclamation of the additional ground disturbance anticipated to occur in the following year. The financial assurance shall be based on a cost estimate prepared using the Financial Assurance Guidelines adopted by the State Mining and Geology Board. All financial assurances shall be approved by the Director, or his or her designee, and provided to the State Department of Conservation for review and comment pursuant to Public Resources Code section 2774, subdivisions (c) and (d).

d. The financial assurance amount shall be based on an estimate of "third-party" costs to reclaim the mined lands. These costs shall include direct costs for onsite reclamation activities, such as revegetation, grading, and equipment removal, and indirect costs, such as supervision, mobilization, profit and overhead, contingencies, and lead agency monitoring. The operator shall submit to the County for review and approval a reclamation cost estimate using the State Financial Assurance Guidelines or similar instrument.

L. Idle Mines and Interim Management Plans.

1. Timing, Content, Processing. Within 90 days of a surface mining operation becoming idle as defined in SMARA Section 2727.1, the operator shall submit for review and approval an interim management plan.

a. The interim management plan shall comply with all applicable requirements of SMARA, Section 2770(h), and shall provide measures the operator will implement to maintain the site in compliance with SMARA, including all conditions of the use permit and/or Reclamation Plan.

b. The interim management plan shall be processed

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as an amendment to the Reclamation Plan, in accordance with section 4.10.370, Part II, subsection (1)(3), and shall not be considered a project for the purposes of environmental review in compliance with the California Environmental Quality Act.c.The idle mine shall comply with the financial assurance requirements for reclamation specified in SMARA, Section 2773.1.2.Review and Decision.a.The Zoning Administrator shall be the review authority for an interim management plan associated with mining operation.b.An action by the Zoning Administrator on an interim management plan may be appealed pursuant to Section I, above.3.Time Limit, Extensions.The interim management plan shall remain in effect for a maximum of five years, at which time the County may renew the plan 193

Santa Clara County Zoning OrdinanceChapter 4.10: Supplemental Use RegulationsRev: March 2020for additional five-year periods at the expiration of each five-year period, require the surface mine operator to commence reclamation in compliance with the approved Reclamation Plan, or allow the surface mine operator to return to active mining operations.M.Inspections.1.Inspection Schedule.As a condition of approval for a use permit or reclamation plan, or both, the decision-making body may establish a schedule for periodic inspection of the site to evaluate continuing compliance with the permit and/or plan, consistent with subsection M.2.below. In establishing such a schedule, the decision-making body may require the owner or permittee to submit periodic reports prepared by an appropriate qualified professional that describe and analyze compliance with the permit and/or plan.2.Inspection.Pursuant to the requirements of state law (SMARA, § 2774), the Department shall cause each surface mining operation to be inspected not less than once in any calendar year, and within six months of the receipt of a surface mining operations report submitted pursuant to Public Resources Code Section 2207. The Department shall cause such an inspection to be conducted by a state-registered geologist, state-registered civil engineer, state-licensed architect, or state-registered forester, who is experienced in land reclamation and who has not been employed by the mining operation in anycapacity during the previous 12 months. The operator shall be solely responsible for the reasonable costs of the inspection.Part II: County RegulationsA.County Standards for Surface Mining Operations. The County has local land use authority regarding surface mining operations with the power to establishand enforce local regulations distinctfrom but consistent with SMARA and the State regulations. As to non-vested sites, the following standardconditions shall apply to allsites obtaining a use permit, unless the Planning Commission approvesa deviation from one or more of these standards, and subject to any requirements or limitations imposed by other regulatory agencies:1.Hours and Days of Operationa.The daily hours for the excavation, processing, and sales shall be between6:00A.M. and 8:00P.M. No commercial excavation shall be operated on Sundaysor the following holidays: New Year's Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day; however, the Planning Commission may permit or restrict operations to a different number of hours and days, where conditions warrant such permission or restriction.b.In cases of public emergency, these restrictions may be releasedby the Planning Director. In cases of a private emergency, reasonable and 194

Santa Clara County Zoning OrdinanceChapter 4.10: Supplemental Use RegulationsRev: March 2020necessary repairs to the equipment and limited operations required to restore

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normal operation maybe permitted by obtaining a temporary permit for periods up to and including 56 hours from the Planning Director. Such temporary permits for private emergency operations may be renewed by the Director for similar periodsbut not to exceed one week in total.2.Appearance. Surface mines shall be operated in a neat and orderly manner, free from junk, trash, or unnecessary debris. Buildings shall be maintained in a sound condition, in good repair and appearance. Weeds shall be cut as frequently as necessary to eliminate fire hazards. Salvageable equipment stored in a non-operating condition shall be suitably screened or garagedwhere normally visible from public view.3.Noise and Vibrationa.Noise and ground vibration shall be mitigated to a level of insignificance in the absence of an approved Statement of Overriding Considerations pursuant to CEQA. To achieve this, loading points shall not be located closer than 30 feet to any property line, unless otherwise permitted by the Planning Commission.b.Noise attenuation measures shall be installed where necessary to reduce noise levels in order to comply with noise standards of the County General Plan and noise ordinance.c.Use of explosives (blasting) in operations shall be noted on the permit application and subject to Planning Commission conditioning, and shall comply with the noise and vibration standards of the County Noise Ordinance.4.Traffic Safetya.The site shall provide adequate space for the parking, queuing and loading of trucks, as well as parking of employee vehicles to minimize the traffic problem to residents on neighboring streets.b.Internal haul roads shall be located away from property lines where reasonably practicable.c.Haul routes on public roads shall be specified in the use permit conditions. d.Number and location of access points shall be specified. Such entrance shall be subject to approval by the agency having jurisdiction.If required, acceleration and deceleration lanes shall be provided which meet County Department ofRoads and Airports Standards.e.A paved surface, or equivalent alternative, may be required where reasonably practicable for a distance of not less than 100 feet from right of 195

Santa Clara County Zoning OrdinanceChapter 4.10: Supplemental Use RegulationsRev: March 2020way line into the area of operation in order to minimize the deposit of dirt and gravel from trucks onto the public highway. During hauling operations, any spillage or materials on public roads shall be promptly and completely removed by quarry operators.5.Control of Dust. Surface mines shall be operated so as to limit dust and in compliance with all necessary permits from the Bay Area Air Quality Management District, San Francisco, California.6.Setbacks from Property Linesa.Cut Slope Setbacks.Cut slopes shall be no closer than 25 feet distant from any adjoining property line, except where adjoining property is being mined; nor 50 feet to any right-of-way of any public street, or official plan line or future width line of a public road.b.Ridgeline Setbacks. When surface mining occurs in a canyon area which abuts an urban area or the ridgeline is visible from the valley floor, the top of the uppermost cut area shall be as shown in an approved reclamation plan, or in the absence of an approved plan, not less than 50 feet from the top of the ridge existing prior toexcavation.7.Fencing and Postinga.It is the intent of this subsection that fencing will be required only for those portions of an excavation needing fencing for purposes of public safety; other portions may need posting only.Where excavation is authorized to proceed in stages, only the area excavated plus the area of the stage currently being excavated need be fenced. Adequate fencing shall be provided to exclude unauthorized dumping.b.The Planning Commission may require

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the enclosure of all or a portion of an excavation by an approved fence either along the property line or the periphery of the excavation where deemed necessary for public safety by the Planning Commission. Such fence shall not be closer than ten feet to the top edge of any cut slope. All fences shall have suitable gates at accessways. Gates to be securely locked during hours and days of non-operation. c. Fencing type shall be determined by the Planning Commission. d. Signs shall be conspicuously posted along the periphery of the property. The signs shall be posted in such a manner and at such intervals as will give reasonable notice to passersby of the matter contained in such notice by stating in letters not less than four (4) inches in height. WARNING: COMMERCIAL QUARRY ON THESE LANDS; 196

Santa Clara County Zoning Ordinance Chapter 4.10: Supplemental Use Regulations Rev: March 2020 Santa Clara County Use Permit No: _____ In addition, the signs shall be pictorial in the nature of information being disclosed for non-English readers. 8. Screening a. Screening shall be required for excavations in urbanized and scenic corridors or locations at the time of excavation so that the screening will provide a reasonable means of securing use and enjoyment of nearby properties. b. The screening by means of installation of berms, fences, plantings of suitable shrubs and trees. They shall be placed and maintained in order to minimize visibility from public view of cut slopes or mining operations and equipment. c. Such screening when required by the Planning Commission may be along the streets and exterior property lines or the perimeter of the visible portions of the site being operated. 9. Protection of Streams and Water-Bearing Aquifers a. Surface mining operations shall be conducted in a manner so as to keep adjacent streams, percolation ponds, or water bearing strata reasonably free from undesirable obstruction, silting, contamination, or pollution of any kind. The objective is to prevent discharges, which would result in higher concentrations of silt than existed in off-site water prior to mining operations. b. The removal of vegetation and overburden in advance of surface mining shall be kept to the minimum practicable. c. Stockpiles shall be managed to limit water and wind erosion. d. Permits: Applicants shall comply with those applicable requirements of federal, state, and local law, including any permit requirements administered by the U. S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Regional Water Quality Control Boards, State Department of Fish and Game, and local flood control and water distribution agencies regarding all matters which are within the jurisdiction of those agencies, including but not limited to: i. Excavation in the natural or artificially enlarged channel of any river, creek, stream or natural or artificial drainage channel when such excavation may result in the deposit of silt therein; 197

APPENDIX C
BIOLOGICAL BASELINE STUDIES



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

**BIOTIC EVALUATION
SARGENT RANCH QUARRY
SANTA CLARA COUNTY, CALIFORNIA**

By:

LIVE OAK ASSOCIATES, INC.

Rick Hopkins, Ph.D., Principal, Senior Ecologist
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March 12, 2015 (Revised September 28, 2016)

Project No. 662-08

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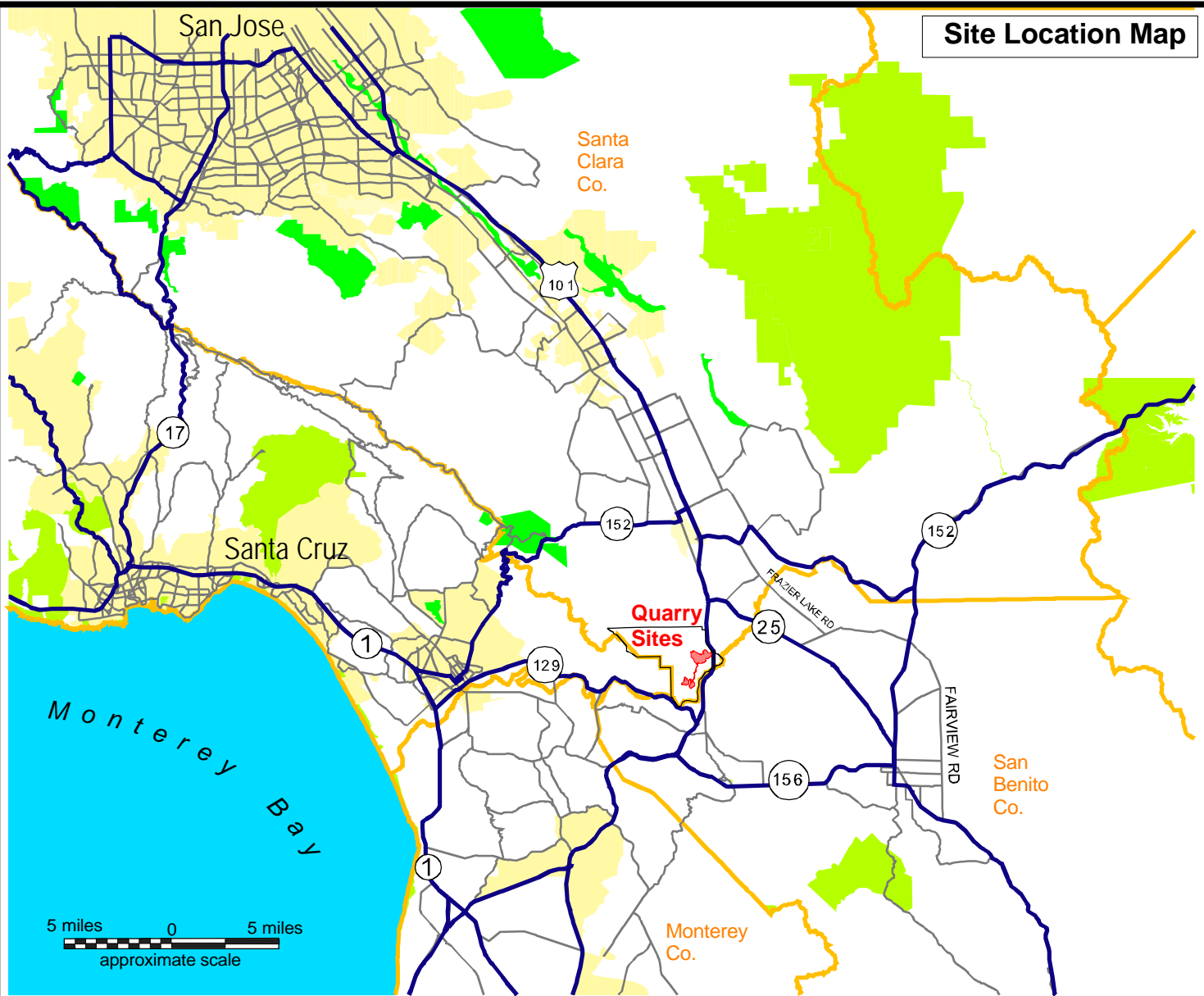
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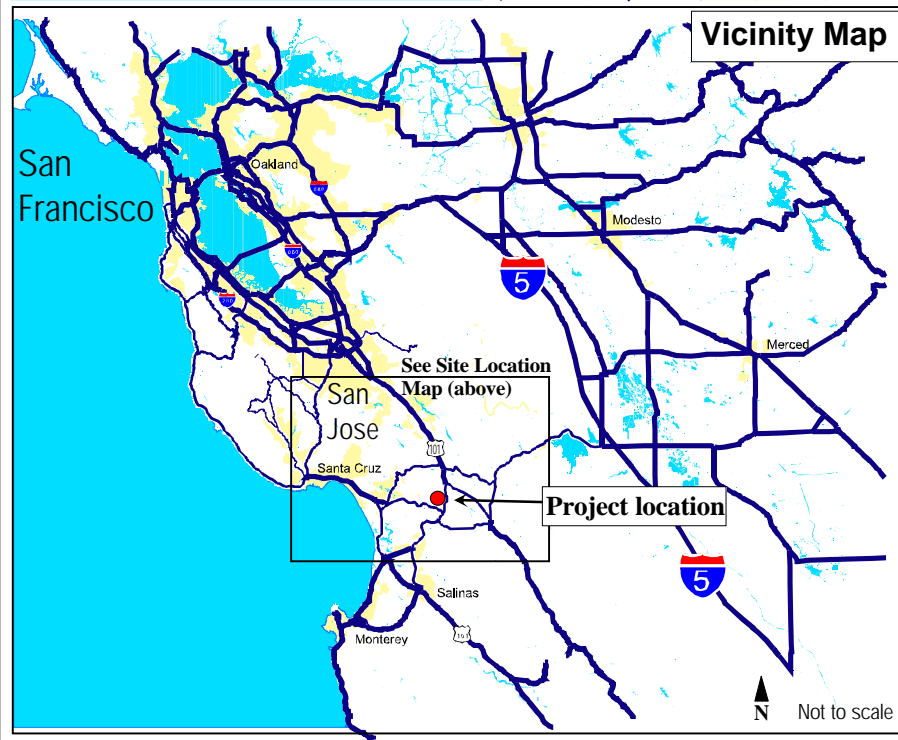
1.0 INTRODUCTION

Live Oak Associates, Inc. (LOA) has prepared the following report that describes the biological resources of an approximately 317-acre Sargent Ranch Quarry project site located on the greater Sargent Ranch property, south of the City of Gilroy, in Santa Clara County, California (Figure 1); and discusses potential impacts (based on significance criteria established in CEQA) to these resources resulting from the proposed quarry operation. Although the ranch itself encompasses over 6,400 acres, the focus of this effort was on the approximately 300 acres comprising the quarry project. The proposed quarry site is comprised of the processing plant, overburden stockpiles, and the four mining phase areas. The predominant habitat occurring within the footprints of the proposed quarry areas, hereafter referred to collectively as the “project site” or “study area”, is California annual grassland; however coast live oak woodlands, several ephemeral drainages, and dry-farmed hay fields also occur within the proposed quarry footprints. Sargent Ranch occurs adjacent to and west of Highway 101 approximately one mile south of the Highway 101 and Highway 25 interchange. The ranch is bound to the east by Highway 101; to the south by the Pajaro River; and to the west and north by privately-owned rangeland. The main quarry site is located centrally near the ranch’s eastern boundary and the other two smaller quarry sites are located in the southern portion of the ranch on either side of Sargent Creek. The ranch can be found on the Chittenden USGS 7.5 minute topographic quadrangle, at the intersection of Townships 11 and 12 North, and Ranges 3 and 4 East (Figure 2) on gently to steeply rolling foothills on the east side and at the southernmost extreme of the Santa Cruz Range. Elevations of the site range from a low of approximately 200 feet NGVD (National Geodetic Vertical Datum) in the northern portion of the main quarry site, to a high of approximately 500 feet NGVD in the southwestern portion of the main site. Elevations of the two smaller quarry areas range from about 200 feet to about 600 feet NGVD. The project site is currently used primarily for cattle grazing although dry-farmed oat hay fields occur on the eastern portion of the main quarry site.

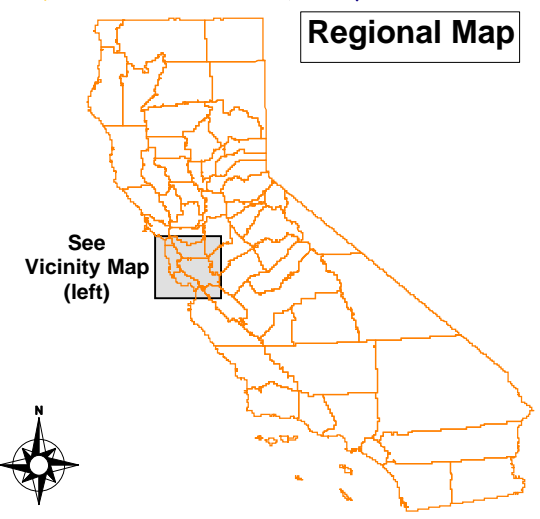
Site Location Map



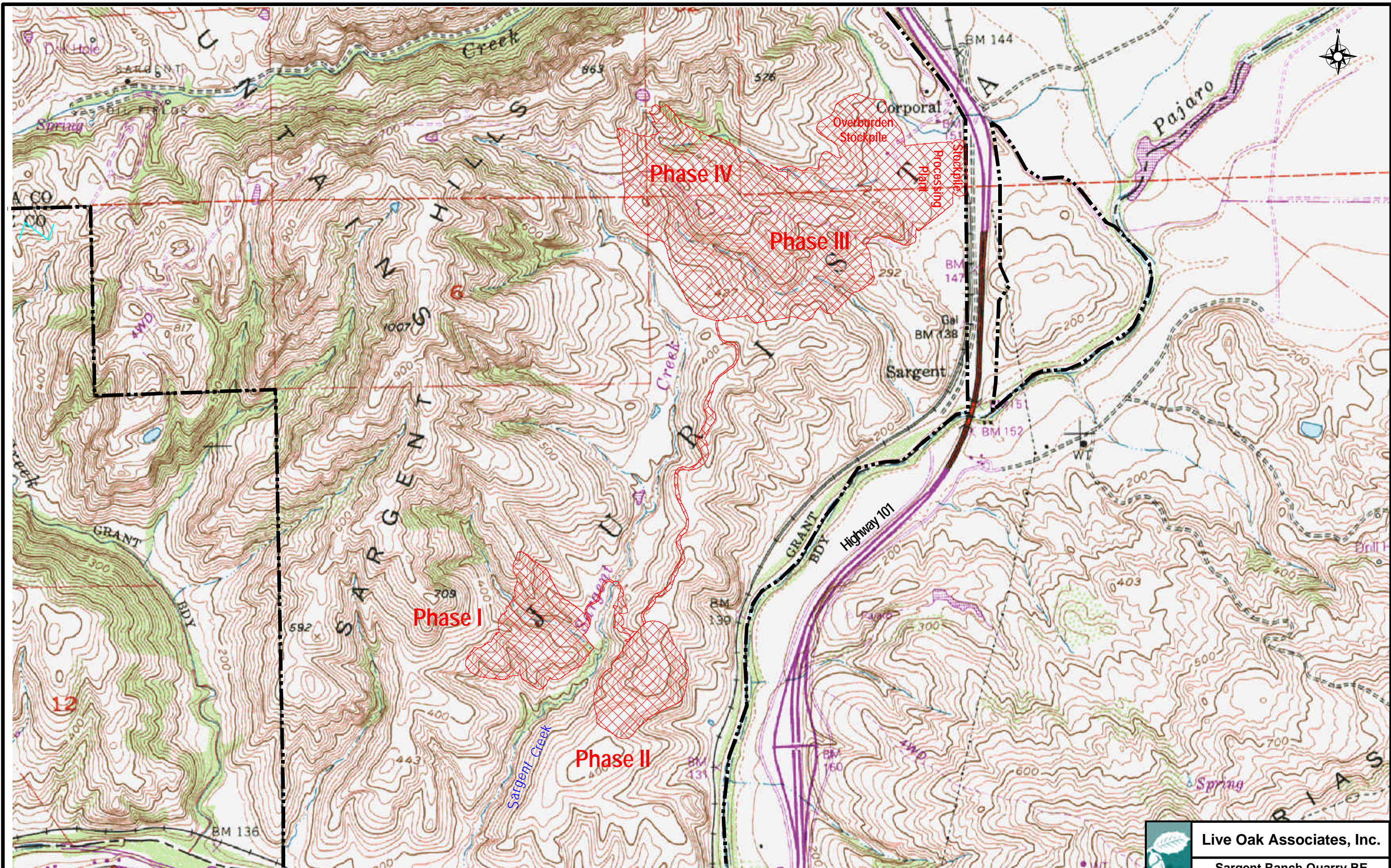
Vicinity Map



Regional Map

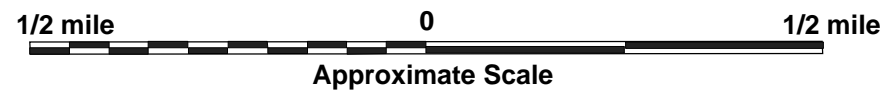



	Live Oak Associates, Inc.		
	Sargent Ranch Quarry BE Site / Vicinity Map		
Date	Project #	Figure #	
9/29/2016	662-08	1	



Sources:
U.S.G.S. Chittenden 7-1/2' Quadrangle

 Quarry Project Areas



	Live Oak Associates, Inc.		
	Sargent Ranch Quarry BE U.S.G.S. Quadrangle		
Date	Project #	Figure #	
9/28/2016	662-08	2	

This report analyzes potential impacts of future site development by the proposed Sargent Ranch Quarry mining operations on sensitive biotic resources, significant biotic habitats, regional fish and wildlife movement corridors, and existing local, state, and federal natural resource protection laws regulating land use. Provisions of the California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (CESA and FESA, respectively), California Fish and Wildlife Code, and California Water Code could greatly affect project costs, depending on the natural resources present on the site. The primary objectives of this report are as follows:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur on the site based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss biological resource issues specific to the site that could constrain future development; and
- Identify potential avoidance, minimization and mitigation options that could significantly reduce the magnitude of any likely impacts to biological resources associated with future site development.

Natural resource issues related to these state and federal laws have been identified in past planning studies conducted in the general project area, and it is reasonable to presume that such issues could be relevant to the subject parcels examined in this report. A number of state and federally listed animals, as well as other special status animal species (i.e., candidate species for listing and California species of special concern), have been documented within 20 miles of the project site. These species include state and/or federally listed species such as the California red-legged frog and California tiger salamander as well as California species of special concern including the burrowing owl. This report evaluates the site's suitability for these and other species.

CEQA is also concerned with project impact on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

Jurisdictional wetlands cannot be graded or filled without a Clean Water Act permit issued by the USACE. Furthermore, many seasonal wetlands occurring in the area support plant and animal species that have been listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). Such habitats supporting populations of federally listed animal species cannot be filled without a “take” permit issued by the USFWS.

CEQA is also concerned with a project’s impacts on riparian habitat, wildlife movement corridors, fish and wildlife habitat, and jurisdictional wetlands, as well as project compliance with special ordinances and state laws protecting regionally sensitive biotic resources, and approved habitat conservation plans. Therefore, this report addresses the relevance of each of these issues to eventual site development.

The impact analysis discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the study area as discussed in Section 2.0 of this report. The evaluation of resources of the site is largely based on survey work conducted on the site by Pacific North Western Biological (PNWB) during the period from June 2000 to May 2001 (PNWB 2001) and by LOA during the period from July 2004 through June 2014. However, other important sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2016); (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016); (3) current listings from Special Plants and Animals (CDFW 2016); (4) numerous planning documents and biological studies for projects in the area, some of which have been prepared by LOA; and (5) manuals and references related to plants and animals of the region.

A number of state and federally listed species, as well as other special status species (i.e., candidate species for listing and California Species of Special Concern) have been documented in the vicinity of the project site; and some of these species are known to occur on Sargent Ranch itself, based on surveys completed by PNWB and LOA. These include animals such as the steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), bald eagle (*Haliaeetus leucocephalus*), white-tailed kite (*Elanus leucurus*), prairie falcon (*Falco*

mexicanus), long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pursillus*), and American badger (*Taxidea taxus*); and plants such as saline clover (*Trifolium hydrophilum*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), and Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*). This report evaluates the quarry project site's suitability as habitat for these and other species; impacts that may occur to these resources as a result of the project; and, where potentially significant impacts are identified, includes mitigations to lessen such impacts on these resources to a less-than-significant level where possible.

1.1 Project Description

The following project description is based on a project description provided by Verne Freeman (Freeman Associates 2016).

The proposed project, Sargent Quarry, is a pit mining operation that would occur on approximately 317 acres of the existing Sargent Ranch. The operation would occur on portions of Assessor's Parcel Numbers 810-38-014, -017 and -018. It is estimated that this site contains approximately 40 million tons of sand and gravel aggregate and that the operation could have a lifespan of 50 years or more based on consumption rates. However, the operator is requesting a 30-year term on the Conditional Use Permit.

The primary market for products produced from the mine (sand and gravel, which can be used for concrete and asphalt production, and rock) will be contractors and public agencies in the Santa Clara, San Benito and Monterey County areas.

Of the Project site's 317 acres, approximately 238 acres comprise the area of proposed mining. The proposed processing plant site is located near Highway 101 and is roughly 14 acres in size. Reclamation activities would be conducted on mining phases that are completed. The remaining portions of the site would not be utilized for mining, processing, or reclamation activities and would be maintained in their current conditions. The following sections describe the mining plan, the processing plant facilities and proposed operations, and the proposed reclamation activities associated with the Project.

1.1.1 Mining Plan

Sand and gravel would be extracted from within the 238-acre mining area in four phases. Mining will be done in an open pit fashion with 2:1 side slopes with 10-foot benches every 30 vertical feet. Finished slopes will then be backfilled to 3:1 and revegetated. No underground mining will be necessary for this project. Mining is proposed to occur year-round. The total volume of material to be mined annually would be determined by the market demand. However, in the absence of other limitations, a maximum of 1,000,000 cubic yards of material would be mined in any single year.

The targeted materials to be mined are alluvial deposits of sand and gravel. Mined materials would be hauled to the proposed on-site aggregate processing plant for screening and limited crushing. The material would then be sold for a variety of construction-related uses. Waste materials (e.g., silts and clays) not suitable for construction or concrete uses would make up approximately 25 percent of the mined materials by volume. These materials would be separated and stockpiled in the two berms shown on Figures 10 thru 15 depending on the phase of mining.

1.1.2 Phase 1 and 2 Mining

Phases 1 and 2 are located in hills on both the east and west side of Sargent Creek. A conveyor belt will be used for transporting the aggregate and will be constructed along the west side of the Sargent Valley. A small access road will be constructed along the side of the conveyor belt for maintenance purposes. This alignment will run along the east side of the Sargent Valley and will stay above the valley floor and the creek and pond areas. Based on initial sales estimates, Phase 1 and 2 mining will last for approximately 10 to 15 years after operational start up. Material would be mined from the designated pit areas. The 1.6 mile long conveyor belt will be used to transport the material to the processing plant site. Phases 1 and 2 should be almost entirely hidden from view, shielded by a prominent ridgeline running along the east side of the Sargent Valley, and blocking views from Highway 101 and the rest of South County.

A berm will be constructed to serve as a visual shield to hide the processing area from drivers on Highway 101. The berm will be constructed with overburden from the Phase 1 area. Any topsoil will be stockpiled in a one separate location. Overburden or unsuitable materials from Phase 1 would be used to build the berm located to the east of the property boundary closest to

Highway 101. At its highest point the berm will be 50 feet high and will serve to shield the processing plant site and operations from view from Highway 101. The berm will be designed to be natural in appearance and blend in with the native landforms. Once the front berm is built, a back berm will be constructed with any additional overburden. During the period of Phase 1 and 2 mining (10-15 years), trees and other viewshed-blocking vegetation will have time to grow and mature in time for the later phases of mining that have more visual impacts.

Topsoil will be kept separately and stockpiled. The Phase 1 pit will be constructed with side slopes of 2/1 with 10-foot benches every 40 vertical feet, resulting in an overall angle of 2.3/1 for the temporary slope.

Roughly 8,600,000 cubic yards will be excavated during Phase 1 and 2. The highest elevation of mining in the Phase 1 mining area is 360 feet above mean sea level (AMSL). The bottom of the lowest pit elevation will be 245 feet AMSL resulting in a maximum excavation depth of 125 feet.

Overburden from the Phase 1 and Phase 2 excavations will be hauled to the plant site area and used to build the visual screening berm along Highway 101 and the balance deposited in the western stockpile area. The topsoil stockpile from Phase 1 and Phase 2 will be stockpiled separately. Complete reclamation of the Phase 1 mining and Phase 2 areas will occur after their excavations are completed. Some of the overburden from Phase 1 and Phase 2 will be used to reconstruct the excavated slopes to a 3:1 permanent slope. Once completed, Phase 1 and Phase 2 areas will be reclaimed completely.

1.1.3 Phase 3 Mining

Portions of Phase 3 mining may be visible from Highway 101. Phase 3 mining will begin approximately in the period from year 14 through year 16. By that time the landscaping on the front berm will have had time to grow in and will form a more effective shield from the view of drivers on the highway. Hills will be mined from west to east creating a disappearing hillside effect to further minimize visual impacts.

1.1.4 Phase 4 Mining

Material will be mined in a similar manner as Phase 1, from the west side of the hills to the east. Overburden and topsoil from Phase 2 will be used to reclaim portions of Phase 3. The westerly portion of Phase 4 will be excavated first starting at the highest elevation of 600 feet (AMSL) to a minimum pit level of 200 feet AMSL). Once this upper slope has been excavated, revegetation will be initiated to minimize the time that visible slopes do not blend in with the natural ones. Phase 4 will produce approximately 20 million cubic yards (36 million tons) from this portion of the mining site.

Overburden from Phase 4 mining will be placed in the Phase 3 pit and will also be used to reconstruct the Phase 3 slopes to 3:1.

Mining operations would occur year-round. Mining and processing plant operations would typically occur from 7:00 a.m. to 4:30 p.m., Monday through Saturday. Extended processing plant operational hours would also be permitted to allow mining operations to operate at night, providing the mine operator the flexibility to respond to market conditions, nighttime public works projects, and emergency or special circumstances. Maintenance of mobile equipment and deliveries (e.g., fuels) would occur during normal operating hours.

The number of employees at the Project site would fluctuate based on extraction rates and processing plant production rates. Up to 15 full-time employees would be needed for mining and operations at the project site.

1.1.5 Mining and Processing Methods

Sand and gravel would be mined using conventional equipment, including excavators and scrapers. Excavated material would be hauled by truck, scraper, or overland conveyor to the processing plant site. There the material would be sized, washed, and sorted into stockpiles. Some materials may also be crushed and sorted into stockpile via radial stacker and conveyers. Materials would be kept wet to minimize dust emissions. Sprinklers and water trucks would be used to control dust at multiple locations at the processing plant and on stockpiles.

1.1.6 Access and On-Site Circulation

Access to the site would be from Old Monterey road through the gated entrance. Access roads may be paved and would be maintained for Project operations. Trucks leaving the site traveling southbound would continue back along Old Monterey Road and then onto southbound Highway 101 via the stacking lane already in place. Trucks traveling northbound would travel under the Sargent undercrossing and onto northbound Highway 101 via a new acceleration lane installed by the quarry operator.

1.1.7 Vehicle Trips

The Project would generate vehicle trips associated with workers, materials transport and supplies that would be delivered to the site. Maximum daily one-way trips during a peak production day would be 910, while average daily one-way trips during a peak production day would be 341.

1.1.8 Drainage

During mining, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Stormwater in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain stormwater from the Project site from entering the creek.

1.1.9 Water Supply and Use

The daily and annual water consumption rates during a peak production year would be 86,300 and 17,260,000 gallons, respectively.

Aggregate processing would require water throughput of approximately 800 gallons per minute (384,000 gallons per day); however, 80 percent of the water would be recycled. Thus, 76,800 gallons would be pumped from the ground each day the plant is operating (up to approximately 200 days per year). A process water pond would be constructed within the processing plant site and would be used to retain water for reuse in aggregate processing.

The new onsite well will provide water for operations and dust control. A water truck would be used as needed to control dust on access roads and processing areas within the site. Approximately 86,300 gallons of water per day, or 17,260,000 gallons per year, would be used to control dust.

1.1.10 Utilities and Lighting

Existing electric power and telephone lines would be used for power needs for the Project or new service may be brought in to the site. Water will be obtained from a new on-site well, for both plant operations and drinking water for employees. A new private septic system will provide sanitary sewer facilities for the Project site. The septic system will be designed for a daily wastewater generation of 400 gallons per day. This is based on the Uniform Plumbing Code estimated wastewater generation of 25 gallons per day per employee.

Most mining will occur during the day and no lighting will be installed in the pit areas. Lights will be installed at the plant site, per MSHA regulations. Lighting may be on in the early morning and later evening hours during the winter months if production is required. Lighting will be contained to the plant site and will not create glare onto neighboring properties or Highway 101.

1.1.11 Equipment

Mining equipment includes scrapers, excavators, dozers, loaders, and dump haul trucks. Scrapers would be used to remove the surface material. Scrapers will collect material into their hoppers by lowering their blades as they traverse the site. When their hoppers are full, the scrapers would transport the material via the designated access routes from the mining area to the processing area located outside of the mining area. Scrapers, or a loader, would be used to place the material onto haul trucks for transport to the processing site.

Most equipment is diesel fueled, however natural gas powered equipment is now becoming available and may be purchased to lower overall greenhouse gas emissions and odors from the Project.

1.1.12 Noise

Sources of noise from the Project will be primarily the washing and screening plant and the construction equipment used for mining. There will be no blasting required for the mining and very little crushing done at the processing plant. The plant's main function is to separate the material by size using screens and to wash the material of its silts and clays. Rubber screens are used to minimize noise from the sizing operation and, in general, washing creates little noise. Noise from the back up horns and engines of the mining equipment does create noise that can carry. However, the nearest receptor for noise from the Project is a RV park more than a mile to the south and on the other side of a large hillside. Noise impacts will be studied as part of the project EIR.

1.1.13 Visual Impacts from the Project

Portions of the Project will be visible from both southbound and northbound Highway 101 at Sargent overcrossing. The visual impact to drivers can be seen for a few seconds while looking to the west from Highway 101. In order to minimize these impacts, two berms will be constructed to shield both the processing plant and the mining areas. The front berm will be built at the start of operations. This berm will be 50 feet high and serve to block both the views as well as dust and stormwater runoff from the Highway 101, Tar Creek undercrossing. The rear berm will serve to block the views into the mining area from Highway 101. Both these berms will serve as overburden stockpile areas and will be seeded to blend in with the surround natural landscape.

1.1.14 Dust Control

Water will be the primary means of dust control at the quarry. Two water trucks will be used to keep both exposed areas of mining and the plant areas wet to contain dust. Sprinklers will be used at the plant site to contain dust from stockpiles and processing equipment. The prevailing wind is from the west to the east, so the buffer hills between the mining areas and the eastern edge of the Sargent Ranch boundary may be impacted on windy days. Measures to control dust in addition to the use of water include keeping the mining areas limited to only the working area and using early revegetation to cover up previously mined areas. Use of dust palliatives may also be considered on haul roads and unpaved plant areas.

1.1.15 Conformance with the Santa Clara County HCP

To the greatest extent possible, the Project has been designed to conform to the standards outlined in the Santa Clara County Habitat Conservation Plan. 150-foot buffers have been maintained between the Project boundaries and the edge of Tar Creek. Unavoidable biological impacts are proposed to be mitigated by the dedication of a conservation easement area on the east side of the Sargent Valley. The Sargent Quarry project is not expected to be provided Take coverage from the HCP however, and will seek individual permits from the resource agencies for Take authority for the project impacts.

1.1.17 Slope Stability

Sierra Geotechnical Services performed a slope stability analysis that included recommendations for interim slopes of 2:1 with 10-foot benches every 30 vertical feet and 3:1 finished slopes upon reclamation of each mining phase. Recommendations have been included with the mine design.

1.1.18 Mining and Reclamation Plan

Reclamation of surface mines is required by SMARA (Surface Mining Area Recovery Act). SMARA requires mines to be reclaimed to a usable condition that is readily adaptable to a productive alternative land use and that creates no danger to public health or safety. Reclamation must be conducted consistent with the SMARA Article 9 Reclamation Standards (Title 14 California Code of Regulations [CCR] § 3700 et seq.) that contain specific performance requirements for various end uses (e.g., habitat, Prime Farmlands) and methods such as backfilling, revegetation, drainage, stream protection, topsoil salvage and tailing management. The Applicant prepared and will submit a proposed Reclamation Plan to the County.

Phase 1 and 2 Mining and Reclamation. An aggregate processing plant will be set up as well as an office, scale and maintenance buildings and an unpaved equipment parking area. A sediment basin will be constructed to receive all surface water from the areas disturbed by mining via drainage ditches and swales. The first phase of mining work typically starts with stripping away surface vegetation and removing the topsoil and overburden in separate layers and stockpiling them separately. Phases 1 and 2 are approximately 1.5 miles from the processing plant so an overland conveyor will be constructed to transport material from these areas to the plant.

Overburden will be used to construct the berm near the property boundary with Highway 101. As sand and gravel are excavated from Phase 1 and 2 slopes, it will be placed into the conveyor for transport to the plant. Temporary slopes and benches will be constructed as part of mining; the final slope configuration will be constructed during reclamation that will occur when mining operations are completed. Revegetation Test Plots will be set up at the beginning of Phase 1 and will be located in areas that will not be disturbed by mining activities.

Phase 3 Mining and Reclamation. Total excavation amounts in Phase 3 will be 13, 200,000 cubic yards. Phase 3 mining will begin by stripping away surface vegetation and removing topsoil and overburden in separate layers and stockpiling them separately. Overburden from the Phase 3 mining area will be stockpiled for later use in the rear berm area. As sand and gravel are excavated from Phase 3 area, it will be placed into a truck or onto a shorter conveyor run. Temporary slopes and benches will be constructed as part of mining; the final slope configuration will be constructed during final reclamation at the end of Phase 3.

Phase 4 Mining and Reclamation. Phase 4 will be the largest phase of the project with a total excavation of 16,300,000 cubic yards. Some of the overburden from Phase 4 will be used to construct the final slopes of Phase 3. The remainder of the Phase 4 overburden will be stockpiled and will be used to construct the final 3:1 slopes on both Phase 3 and the final reclamation of Phase 4.

Final Reclamation. When mining is completed in all Phases, then final reclamation of the quarry and plant site will commence. The stockpiled overburden and topsoil will be used to complete all final slopes for all phases and to refill the quarry floors. The remaining topsoil materials will be used to cap the quarry pits and to provide better soil for revegetation. Final elevations of the quarry pits will depend on the amount of fill material that is available. Benches no longer needed for protection of quarry workers will be removed and the slopes restored to a 3:1 overall slope. Contour grading will be used on quarried slopes to conform to the natural appearance of the surrounding landscape. A few benches will be retained in the areas for oak tree planting to provide stability for the trees to grow. The width of these remaining benches may be reduced to provide a more natural looking reclaimed area. The plant site will be reclaimed by removing all

equipment then re-grading the site and spreading the landscape berm out over the disturbed plant site area.

The final drainage ditches on the benches will be installed as these reclaimed slopes and benches are completed. Final reclamation work may include installation of an irrigation system to water the Oak tree seedlings. However, irrigation will only be installed if the Test Plot planting program determines that supplemental water improves the survival rate of the Oak Trees. All areas disturbed by mining will be revegetated after final reclamation grading which will include, hydroseeding the slopes with a gradient of 3:1 or more; drill or imprint seeding flatter slopes and benches, and planting oak tree masses in designated locations. The sediment basin will also be filled with the remaining soil material. The private driveway and internal access road will remain to provide access to the site. Other unnecessary haul roads and the quarry floor will be disked, graded to have positive drainage, resoiled and seeded.

Revegetation Performance Criteria. Revegetation performance would be measured in terms of percent cover and diversity. Planting, maintenance, and monitoring work would be directed toward achieving the following minimum success criteria by the end of the first 5 years:

For oak woodland/sage scrub plantings, at least 60 percent cover would exist, with at least four native species thriving. Invasive plant species would not be allowed to exceed 5 percent cover. Although minimum performance standards have been established only for the year 5 at each planting site, corrective action would be taken whenever the existing trend appears unlikely to produce the 5-year minimum criteria. Corrective action would take the form of replacing plants, installing additional biotechnical erosion control, and/or reseeding. If plant establishment is poor because of substandard planting techniques, inferior planting stock, or drought, the same species would be replaced. If a species does poorly in spite of favorable stock, technique, or weather conditions, plantings would be replaced by a more successful species within its plant association.

Financial Assurance. SMARA requires surface mining operators to obtain lead agency–approved financial assurances for the reclamation of mined lands. In the event of a default by the mine operator, financial assurance funds would be used by the County or the California Department of Conservation to reclaim the mine site. As a component of the Project, the

Applicant would be required to provide the financial assurance necessary to reclaim disturbed surfaces within the Project site should operations end early.

Reclamation of the Project would be covered by financial assurances in accordance with the requirements of SMARA. The financial assurance cost estimate and the proposed financial assurance mechanism must be submitted to the County no later than 60 days before project activities begin.

1.1.19 Environmental Protection Measures

The Applicant proposes to implement the measures discussed below as components of the Project.

Dust Control. To control dust associated with earthmoving activities, the following activities would be undertaken by the Operator:

- Active construction areas and access routes would be watered at least twice daily. Frequency would be based on the type of operation, soil, and wind exposure.
- Grading activities would be restricted during periods of high wind (over 25 miles per hour) as directed by the Monterey Bay Air Pollution Control District.
- Haul trucks would maintain at least 2 feet of freeboard.
- Inactive storage piles would be covered.
- Wheel washers would be installed at the entrance to the site.
- Access roads, parking areas and staging areas would be swept daily with water sweepers.
- A publicly visible sign would be posted specifying the telephone number and person to contact regarding dust complaints. This person would respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District will be posted on the sign.

Stockpile Erosion Management. The stockpiled material would be located in the processing area, or in locations shown as overburden stockpile locations. Stockpiles would be managed to minimize water and wind erosion.

Erosion Control Measures. Each season, before the winter rains, erosion control measures would be implemented to minimize erosion and vegetation loss during the winter rains. Inactive mining slopes, not yet in their final reclaimed grade, would be stabilized with erosion control seeding, as described above in the Reclamation Plan.

2.0 EXISTING CONDITIONS

The approximately 317-acre Sargent Ranch Quarry study area is located on the greater, approximately 6400-acre Sargent Ranch property, south of the City of Gilroy in Santa Clara County, California within foothills on the east side of the Santa Cruz Mountains. The proposed quarry site is comprised of quarry plant facilities, Phase 1 through Phase 4 mining areas, associated access roads, and a conveyer belt alignment that will move excavated materials from Phases 1 and 2 to the quarry plant site as described previously in the project description. Open rangeland borders the proposed project areas.

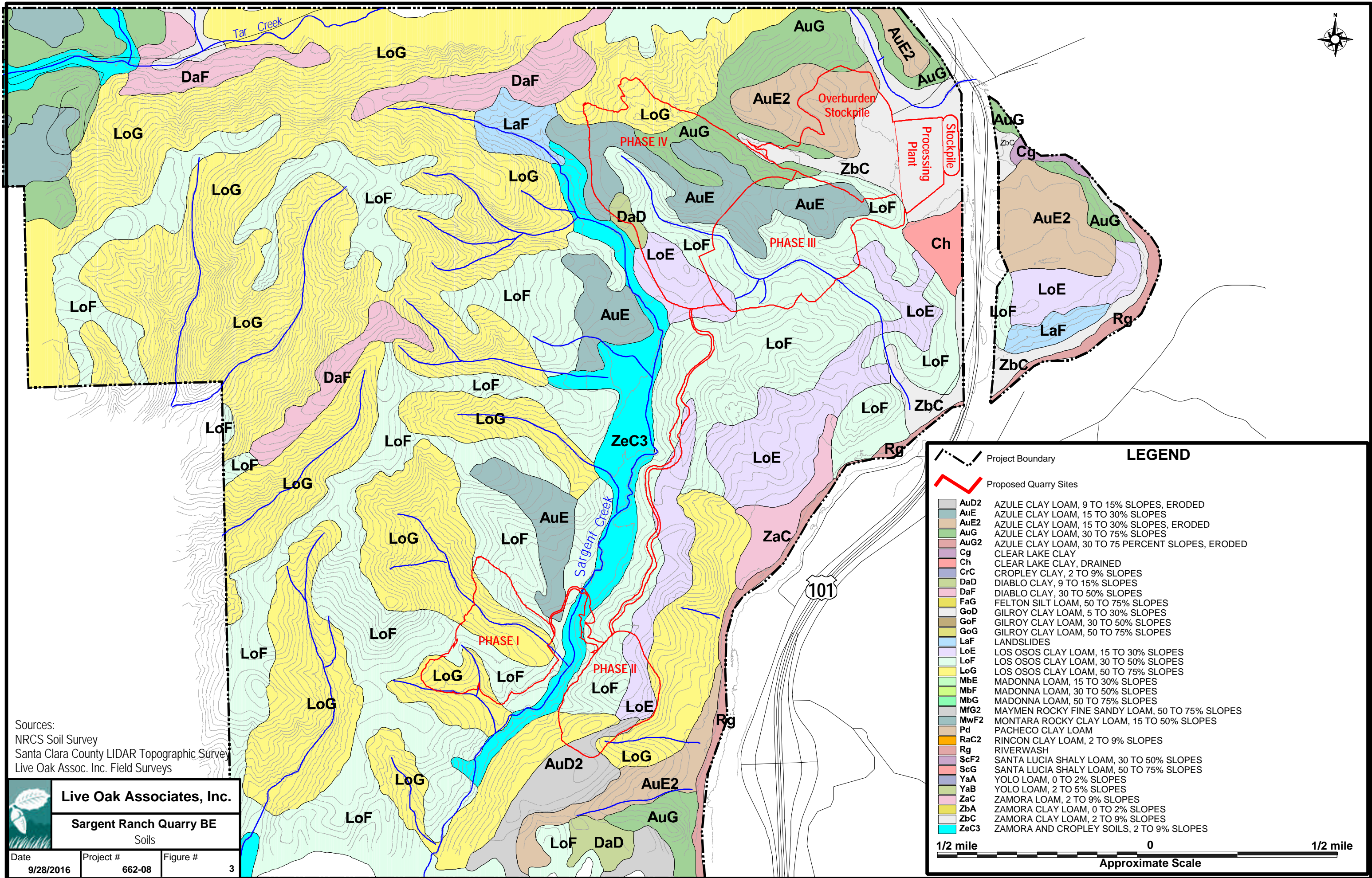
Elevations of the project site range from a high of approximately 600 feet National Geodetic Vertical Datum (NGVD) to a low of approximately 200 feet NGVD (Figure 2). Habitats of the project site are comprised primarily of California annual grassland; however, coast live oak woodland and dry-farmed hay fields also occur on the site. The primary use of the habitats of the quarry project site is cattle grazing. The habitats of the site are described in detail in Section 2.1 of this report.

Nine soil-mapping units have been identified on the site and these soils are described in greater detail in Table 1 and depicted in Figure 3. None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types of the quarry site are considered well-drained. None of the soils of the site is a serpentine or alkaline soil, therefore, they would not be expected to support special status plant species that are endemic to serpentine or alkaline soils.


Table 1. Descriptions of soil mapping units of the study area (USDA NRCS Web Soil Survey).

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0



<http://soils.usda.gov/technical/classification/osd/index.html> and
USDA Soil Conservation Service Soil Survey – Santa Clara County California



Sources:
 NRCS Soil Survey
 Santa Clara County LIDAR Topographic Survey
 Live Oak Assoc. Inc. Field Surveys

 Live Oak Associates, Inc.		
Sargent Ranch Quarry BE Soils		
Date	Project #	Figure #
9/28/2016	662-08	3

LEGEND

 Project Boundary
 Proposed Quarry Sites

AuD2	AZULE CLAY LOAM, 9 TO 15% SLOPES, ERODED
AuE	AZULE CLAY LOAM, 15 TO 30% SLOPES
AuE2	AZULE CLAY LOAM, 15 TO 30% SLOPES, ERODED
AuG	AZULE CLAY LOAM, 30 TO 75% SLOPES
AuG2	AZULE CLAY LOAM, 30 TO 75 PERCENT SLOPES, ERODED
Cg	CLEAR LAKE CLAY
Ch	CLEAR LAKE CLAY, DRAINED
CrC	CROPLEY CLAY, 2 TO 9% SLOPES
DaD	DIABLO CLAY, 9 TO 15% SLOPES
DaF	DIABLO CLAY, 30 TO 50% SLOPES
FaG	FELTON SILT LOAM, 50 TO 75% SLOPES
GoD	GILROY CLAY LOAM, 5 TO 30% SLOPES
GoF	GILROY CLAY LOAM, 30 TO 50% SLOPES
GoG	GILROY CLAY LOAM, 50 TO 75% SLOPES
LaF	LANDSLIDES
LoE	LOS OSOS CLAY LOAM, 15 TO 30% SLOPES
LoF	LOS OSOS CLAY LOAM, 30 TO 50% SLOPES
LoG	LOS OSOS CLAY LOAM, 50 TO 75% SLOPES
MbE	MADONNA LOAM, 15 TO 30% SLOPES
MbF	MADONNA LOAM, 30 TO 50% SLOPES
MbG	MADONNA LOAM, 50 TO 75% SLOPES
MfG2	MAYMEN ROCKY FINE SANDY LOAM, 50 TO 75% SLOPES
MwF2	MONTARA ROCKY CLAY LOAM, 15 TO 50% SLOPES
Pd	PACHECO CLAY LOAM
RaC2	RINCON CLAY LOAM, 2 TO 9% SLOPES
Rg	RIVERWASH
ScF2	SANTA LUCIA SHALY LOAM, 30 TO 50% SLOPES
ScG	SANTA LUCIA SHALY LOAM, 50 TO 75% SLOPES
YaA	YOLO LOAM, 0 TO 2% SLOPES
YaB	YOLO LOAM, 2 TO 5% SLOPES
ZaC	ZAMORA LOAM, 2 TO 9% SLOPES
ZbA	ZAMORA CLAY LOAM, 0 TO 2% SLOPES
ZbC	ZAMORA CLAY LOAM, 2 TO 9% SLOPES
ZeC3	ZAMORA AND CROPLEY SOILS, 2 TO 9% SLOPES

1/2 mile 0 1/2 mile
Approximate Scale

Annual precipitation in the general vicinity of the study area is 13-18 inches, most of which falls between the months of October and April. Virtually all precipitation falls in the form of rain. Storm water runoff readily infiltrates the soils of the site, but when field capacity has been reached, gravitational water drains into ephemeral drainages on the site and is eventually carried into the Pajaro River, which drains to Monterey Bay to the west of the site.

2.1 BIOTIC HABITATS/LAND USES









Four biotic habitats and one land use have been identified on the project site (Table 2, Figure 3); and these habitats and land uses have been named pursuant to land cover types defined in the Santa Clara Valley Habitat Conservation Plan (HCP) (ICF Int. 2012). More detailed habitat descriptions are provided below. For the purposes of this report, the natural terrestrial communities are identified as California annual grassland, coast live oak forest and woodland; mixed riparian woodland and forest; and the one land use is identified as grain, row Crop, hay and pasture. A drainage with a defined bed and bank occurs within the project site footprint within Phases 3 and 4, and additionally, the access road and conveyor belt for Phases 1 and 2 will require a crossing of Sargent Creek in the southern portion of the site, although the majority of the latter features will occur along the east side of Sargent Creek well outside of the riparian corridor. Lists of vascular plants observed on the greater 6400-acre Sargent Ranch property during LOA’s 2004 through 2014 surveys is provided in Appendix A; and a list of terrestrial vertebrates observed on the greater ranch property and/or potentially present on the study area, based on both PNWB and LOA surveys, has been provided in Appendix B.

Table 2: Habitats and Land Uses of the Project Site by Project Phase including Roads, Stockpile Areas, and Plant Site.






Habitats/Land Uses	Plant Site, Stockpiles, Access Roads and Phase 1 Acreages	Phase 2 Acreages	Phase 3 Acreages	Phase 4 Acreages	Total
California Annual Grassland	83.17	31.72	50.40	75.82	241.11
Coast Live Oak Forest and Woodland	7.12	0.00	11.37	14.75	33.24
Mixed Riparian Woodland and Forest	0.51	0.22	0.00	0.00	0.73
Grain, Row Crop, Hay and Pasture	22.65	0.0	0.00	0.00	22.65
Total	113.45	31.94	61.77	90.57	297.73
Creeks, Streams and Drainages	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Linear Feet of Channel	Total
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	1,617	0	3,005	1,736	6,358

LEGEND

Mitigation Area

- 398 Ac.  Mitigation Area Boundary
- 258.8 Ac.  California Annual Grassland
- 26.9 Ac.  Coast Live Oak Forest and Woodland
- 19.3 Ac.  Mixed Oak Woodland and Forest
- 46.1 Ac.  Northern coastal Scrub / Diablan Sage Scrub
- 45.8 Ac.  Northern Mixed Chaparral / Chamise Chaparral
- 1.0 Ac.  Seasonal Wetland
- 11,169 L.F.  Drainages with Defined Bed and Bank

Project Habitat Impact Summary

- 241.11 Ac.  California Annual Grassland
- 33.24 Ac.  Coast Live Oak Forest and Woodland
- 22.65 Ac.  Grain, Row-crop, Hay & Pasture, Disked / Short-term Fallowed
- 0.73 Ac.  Mixed Riparian Forest and Woodland
- 297.73 Ac. Total Habitat Impacts
- 6,358 L.F.  Drainages with Defined Bed and Bank

Individual Mining Sites and Roads

Phase 1, Stockpile Areas, Plant Site, & Access Roads

- 33.11 Ac. California Annual Grassland
- 7.12 Ac. Coast Live Oak Forest and Woodland
- 0.51 Ac. Mixed Riparian Forest and Woodland
- 22.65 Ac. Grain, Row-crop, Hay & Pasture, Disked / Short term Fallow
- 1,617 L.F. Drainages with Defined Bed and Bank

Phase 2

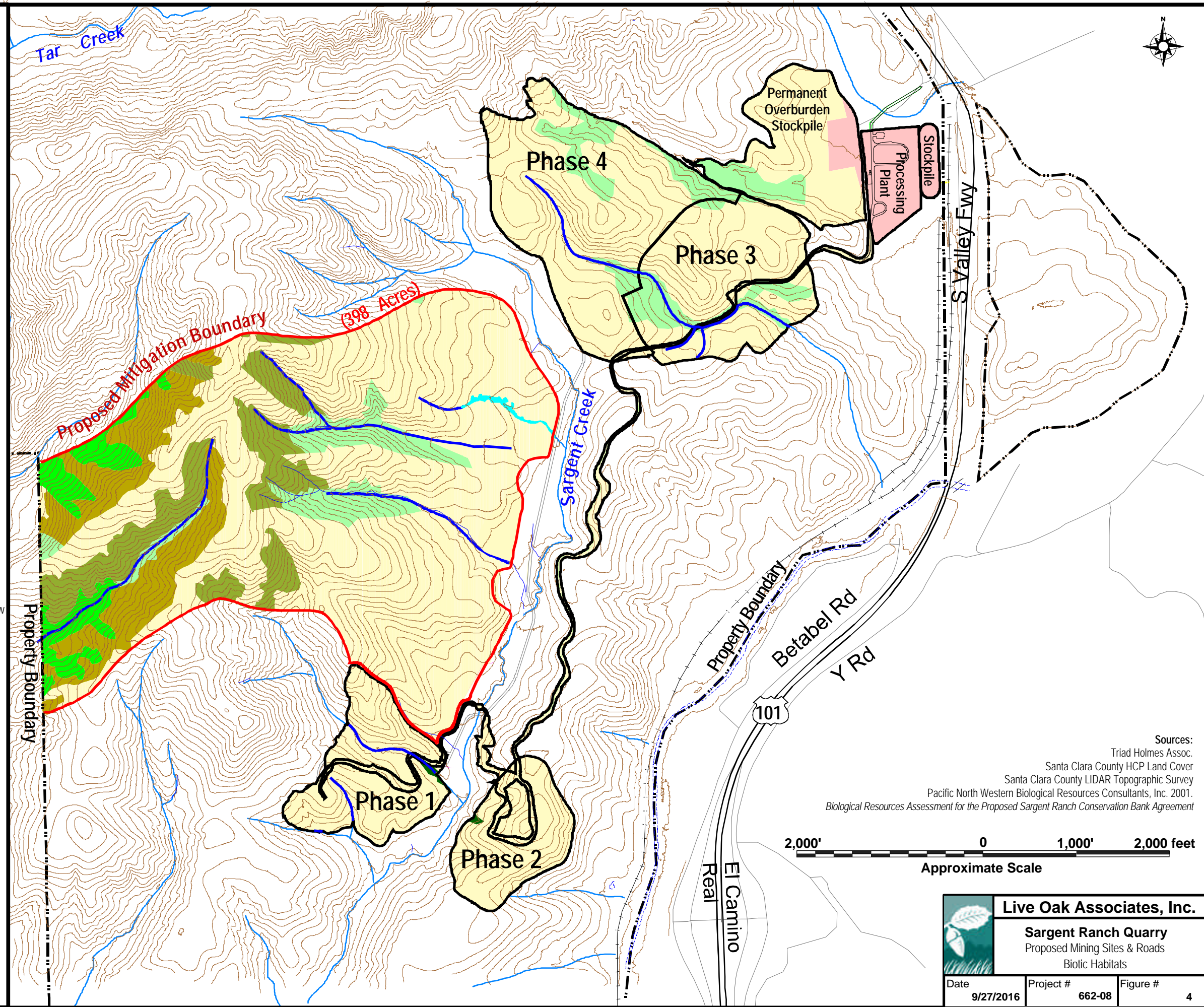
- 31.72 Ac. California Annual Grassland
- 0.22 Ac. Mixed Riparian Forest and Woodland

Phase 3

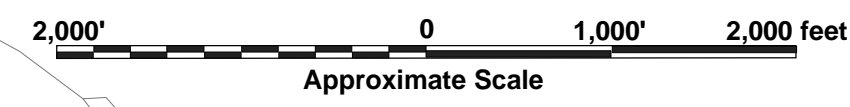
- 50.40 Ac. California Annual Grassland
- 11.37 Ac. Coast Live Oak Forest and Woodland
- 3,005 L.F. Drainages with Defined Bed and Bank


Phase 4

- 75.82 Ac. California Annual Grassland
- 14.75 Ac. Coast Live Oak Forest and Woodland
- 1,736 L.F. Drainages with Defined Bed and Bank



Sources:
 Triad Holmes Assoc.
 Santa Clara County HCP Land Cover
 Santa Clara County LIDAR Topographic Survey
 Pacific North Western Biological Resources Consultants, Inc. 2001.
 Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement



	Live Oak Associates, Inc.		
	Sargent Ranch Quarry Proposed Mining Sites & Roads Biotic Habitats		
Date	Project #	Figure #	
9/27/2016	662-08	4	

2.1.1 California Annual Grassland

California annual grassland habitat is the most prevalent habitat on the project site. Grasslands on the site are dominated by non-native grass species such as wild oats (*Avena barbata* and *A. fatua*), ripgut (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian rye grass (*Festuca perennis*); and weedy non-native forb species such as filarees (*Erodium* spp.), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), summer mustard (*Hirschfeldia incana*) and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow (*Achillea millefolium*), clarkia (*Clarkia* sp.), rattlesnake weed (*Daucus pusillus*), Pacific rye grass (*Elymus glaucus* ssp. *virescens*), lupines (*Lupinus* spp.), California melic (*Melica californica*), purple needle-grass (*Nassella pulchra*) and gray mules ears (*Wyethia helenioides*).

The grassland is expected to support a host of common grassland animal species. California tiger salamanders (*Ambystoma californiense*) are known to breed in stock ponds in the site's vicinity and may be expected to estivate in grasslands of the site. Reptilian species observed or expected to occur onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*), western rattlesnake (*Crotalis viridis*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*).

This habitat provides foraging habitat for a number of birds. Bird species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), great horned owl (*Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and the resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*), western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff

swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianus*). Other medium-sized and larger mammals that might also be expected to occur on the site but that have not been directly observed include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

2.1.2 Coast Live Oak Forest and Woodland

Oak woodlands dominated by coast live oak (*Quercus agrifolia*) occur within the site's Phase 3 and Phase 4 areas, as well as within the permanent overburden stockpile area in the northern portion of the site. This habitat type is primarily associated with an ephemeral drainage in the southern portion of Phases 3 and 4 and with a ravine in the southern portion of the overburden area. Coast live oak woodlands of the site generally have a relatively closed canopy and an understory that is either barren or covered by dense leaf litter, with very little herbaceous vegetation present.

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker (*Melanerpes formicivorus*), California quail, wild turkey, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Representative animal species of oak-dominated forests include arboreal salamander (*Aneides lugubris*), southern alligator lizard, common kingsnake, ringneck snake (*Diadophis punctatus*), western screech owl (*Otus kennicottii*), scrub jay, acorn woodpecker, western bluebird, opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.1.3 Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed

Dry-farmed oat hay fields occur in the footprint of the proposed plant area in the eastern portion of the main quarry site near Highway 101. Vegetation similar to that occurring in annual grasslands as described above was observed to grow along the disturbed edges of the fields. Wildlife using adjacent habitats would be expected to also use this habitat for foraging and movement activities.

2.1.4 Mixed Riparian Woodland and Forest, Ephemeral Drainages and Sargent Creek

Ephemeral drainages that would be considered HCP Category 2 streams occur on all four phases of the proposed quarry project except Phase 2. These drainages were mapped by LOA during a delineation effort that was conducted on the greater Sargent Ranch property in 2007 but which was never verified by USACE. A new delineation effort for the quarry project site will be conducted in fall 2016. For the most part, these ephemeral drainages were not observed to support wetland vegetation, but did exhibit a defined bed and bank and evidence of an Ordinary High Water mark on opposing banks, and, as such, would likely be considered jurisdictional by USACE, RWQCB and CDFW. Vegetation within ephemeral drainages of the site was observed to be generally similar to that found in the surrounding upland California annual grassland habitats and species utilizing drainages of the site would also be similar to those using grasslands of the site. These drainages would only have water present during and immediately after rainstorm events and therefore would not be a significant source of seasonal water for native plants and wildlife. These drainages would not likely provide habitat values in excess of those provided by surrounding upland habitats.

The alignment of the access road and conveyer belt that will be constructed for Phase 1, as currently planned, will be constructed on the east side of Sargent Creek, and will traverse the creek in one location in the southern portion of the site. Sargent Creek is an intermittent creek and is considered a Category 1 stream under the HCP. Sargent Creek does not support significant stands of woody riparian vegetation except at the very lowest reaches near the southern boundary of the greater Sargent Ranch property; however, discrete stands of red and arroyo willows (*Salix laevigata* and *S. lasiolepis*, respectively) and mulefat (*Baccharis salicifolia*) do occur at various locations along the middle and upper reaches of the creek, including at points where ephemeral drainages tie into Sargent Creek within Phase 1 and Phase 2 sites where a small amount of this habitat will be impacted by the project. While significant woody riparian vegetation is absent from most of the Sargent Creek corridor, the creek channel was observed to support herbaceous wetland vegetation throughout most of its reach on the Sargent Ranch property, including but not limited to, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), slough sedge (*Carex obnupta*), spike rush (*Eleocharis macrostachya*), and tall flat sedge (*Cyperus eragrostis*).

Amphibian species observed within Sargent Creek during LOA surveys included Pacific tree frogs (*Hyla regilla*), California red-legged frogs (*Rana draytonii*) and western toads (*Anaxyrus boreas*). California red-legged frogs are known to breed in stock ponds within the creek's watershed on the greater Sargent Ranch property. Although California tiger salamanders have not been observed within the Sargent Creek watershed during surveys, they are known to breed in stock ponds to the north of Tar Creek, and stock ponds within the Sargent Creek watershed appear to support appropriate hydrology to function as breeding habitat for this species. Although western pond turtles have never been documented in Sargent Creek or nearby stock ponds, potentially western pond turtles may occur in the creek during the wet season.

Avian species observed in Sargent Creek during LOA surveys foraging for amphibian and invertebrate prey during the wet season include great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and snowy egrets (*Egretta thula*).

The creek likely functions as an important movement corridor for several mammal species that have been observed within its vicinity during LOA surveys, including but not limited to, striped skunks, gray fox, bobcat, cougar, wild pig and black-tailed deer. The creek likely also provides an important seasonal supply of water for local wildlife.

2.2 MOVEMENT CORRIDORS

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches (Harris and Gallagher 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of

corridors. They believed, however, that connectivity questions make sense only in terms “of a particular focal species and landscape.” For example, volant (flying) species are less affected by barriers than small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be and are useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the City of San Jose.

The quality of habitat within the corridors is important: “better” habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply do to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in the project region may include California buckeye (*Aesculus californica*), dogwood (*Cornus* sp.), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus* sp.), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

- 1.) Wide ranging mammals can migrate and find mates;
- 2.) Plants can propagate within the corridor and beyond;
- 3.) Genetic integrity can be maintained;
- 4.) Animals can use the corridor in response to environmental changes or a catastrophic event;
- 5.) Individuals can recolonize areas where local extinctions have occurred.

A corridor is “wide enough” when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of “passage species” (those species who typically use a corridor for the express purpose of moving from one intact area to another) *and* “corridor dwellers” (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

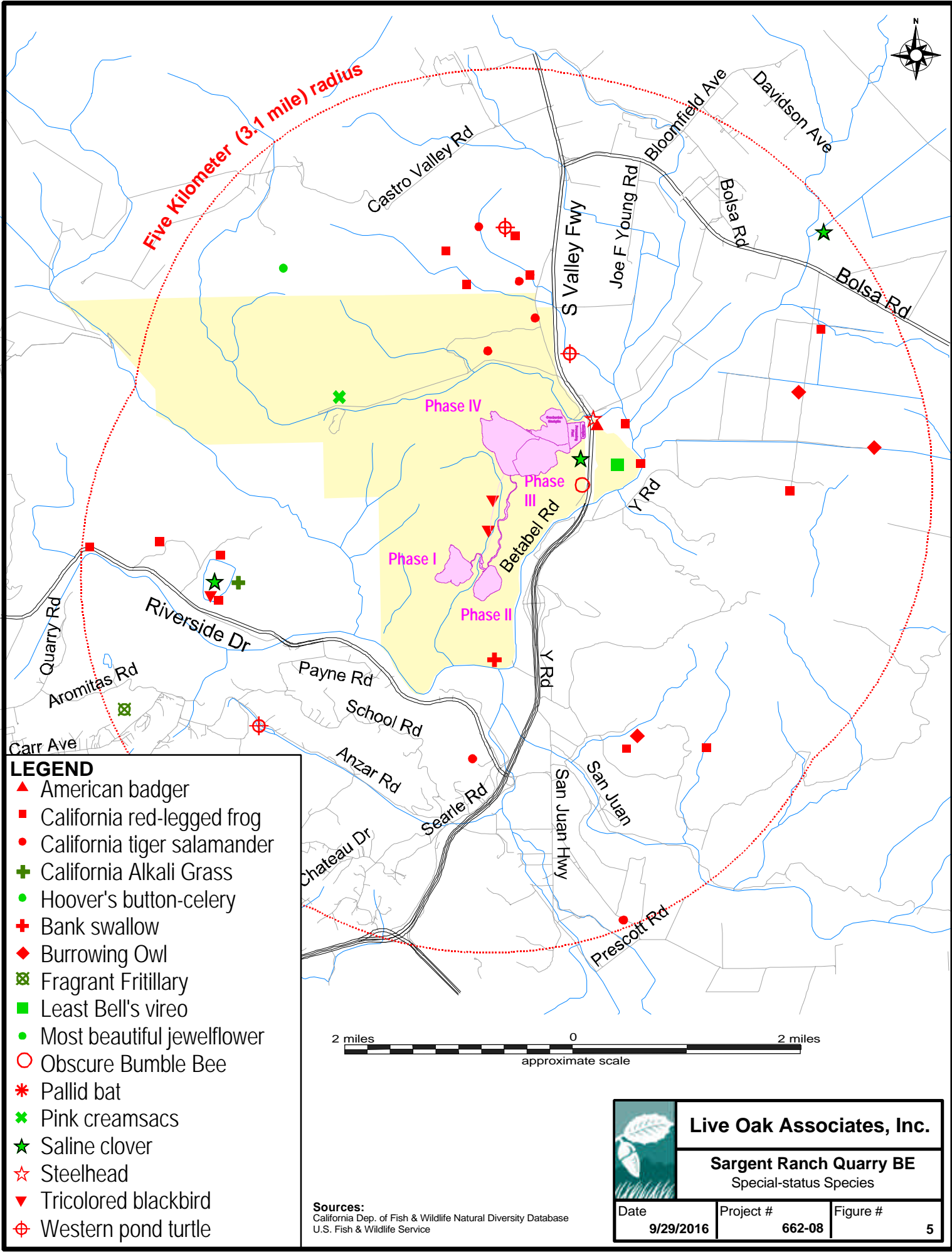
As noted in Section 2.1, a number of reptiles, birds, and mammals may use the project site as part of their home range and dispersal movements. Creeks and drainages are known to facilitate wildlife movement, and the two creek corridors that occur in proximity to portions of the project site, i.e. Sargent Creek and Tar Creek, likely provide important movement habitat for many native wildlife species travelling north-south and east-west, respectively. Ephemeral drainages occurring within the footprints of the project, however, generally support vegetation that is undifferentiated from surrounding upland grassland habitats and are not likely to function as anything but marginal movement corridors due to lack of significant woody vegetation cover.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

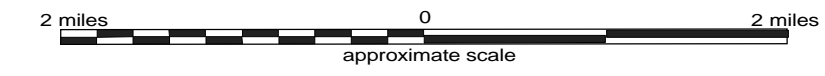
Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as “candidates” for such listing. Still others have been designated as “species of special concern” by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or

endangered (CNPS 2016). Collectively, these plants and animals are referred to as “special status species.”


A number of special status plants and animals occur in the vicinity of the site (Figure 5). These species and their potential to occur in the study area are listed in Table 2 on the following pages. Sources of information for this table included *California’s Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2016), *Endangered and Threatened Wildlife and Plants* (USFWS 2016), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2016), and *The California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016). This information was used to evaluate the potential for special status plant and animal species to occur onsite. Figure 5 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDDB) within a three mile radius of the site. It is important to note that the CNDDDB is a volunteer database; therefore, it may not contain all known or gray literature records.



- LEGEND**
- ▲ American badger
 - California red-legged frog
 - California tiger salamander
 - ✚ California Alkali Grass
 - Hoover's button-celery
 - ✚ Bank swallow
 - ◆ Burrowing Owl
 - ☒ Fragrant Fritillary
 - Least Bell's vireo
 - Most beautiful jewelflower
 - Obscure Bumble Bee
 - * Pallid bat
 - ✚ Pink creamsacs
 - ★ Saline clover
 - ☆ Steelhead
 - ▼ Tricolored blackbird
 - ⊕ Western pond turtle



Sources:
 California Dep. of Fish & Wildlife Natural Diversity Database
 U.S. Fish & Wildlife Service

	Live Oak Associates, Inc.		
	Sargent Ranch Quarry BE Special-status Species		
Date 9/29/2016	Project # 662-08	Figure # 5	

A search of published accounts for all relevant special status plant and animal species was conducted for the Chittenden USGS 7.5" quadrangle in which the project site occurs and for the eight surrounding quadrangles (Gilroy, Gilroy Hot Springs, San Felipe, Hollister, San Juan Bautista, Prunedale, Watsonville East and Mount Madonna) using the California Natural Diversity Data Base (CNDDDB) Rarefind 5 (CDFW 2016). All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (Table 3).

Special status species with potential to occur on the project site itself or in the immediate surrounding vicinity are discussed further below.

Table 3: Special status species that could occur in the project vicinity

PLANTS (adapted from CDFW 2016 and CNPS 2016)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Monterey Spineflower (<i>Chorizanthe pungens</i> var. <i>pungens</i>)	FT, CRPR 1B	<u>Habitat:</u> Occurs in sandy soils within chaparral, cismontane woodland, coastal dunes, coastal scrub and valley and foothill grassland. <u>Elevation:</u> 3-450 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. Habitat is absent from the site. Species is not known to occur within Santa Clara County.
Robust Spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs in sandy or gravelly soils within cismontane woodland, coastal dunes, and coastal scrub. <u>Elevation:</u> 3-300 meters. <u>Blooms:</u> Annual herb; April-September.	Absent. Habitat is absent from the site.
Seaside Bird's-beak (<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>)	CE, CRPR 1B	<u>Habitat:</u> Occurs in often disturbed sandy soils of closed-cone coniferous forests, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub. <u>Elevation:</u> 0-425 meters. <u>Blooms:</u> Annual herb; April-October.	Absent. Habitat is absent from the site.
Santa Clara Valley dudleya (<i>Dudleya abramsii</i> ssp. <i>setchellii</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs within cismontane woodland and valley and foothill grasslands on rocky serpentine soils. <u>Elevation:</u> 60-455 meters. <u>Blooms:</u> Perennial herb; April-October.	Absent. Serpentine soils required by this species are absent from the study area.
Showy Rancheria clover (<i>Trifolium ameonum</i>)	FE, CRPR 1B	<u>Habitat:</u> Occurs in coastal bluff scrub, valley and foothill grassland (sometimes on serpentine). <u>Elevation:</u> 5-415 meters. <u>Blooms:</u> Annual herb; April-June.	Unlikely. Marginal habitat for this species occurs within grassland habitats of the study area; however, the only observance in the vicinity of the study area dates back to 1903 and serpentine soils on which it is sometimes found, while present on the 6300-acre ranch property, are absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

**PLANTS (adapted from CDFW 2016 and CNPS 2016)
Other special status plants listed by the CDFW and CNPS**

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Anderson's manzanita (<i>Arctostaphylos andersonii</i>)	CRPR 1B	<u>Habitat:</u> Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. <u>Elevation:</u> 60-730 meters. <u>Blooms:</u> Evergreen shrub; November–May.	Absent. Manzanita species are absent from the project site.
Hooker's manzanita (<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>)	CRPR 1B	<u>Habitat:</u> Occurs in sandy soils, sandy shales or on sandstone outcrops within closed-cone coniferous forest, chaparral, cismontane woodland, and sandy coastal scrub. <u>Elevation:</u> 85-536 meters. <u>Blooms:</u> Evergreen shrub; January–June.	Absent. Manzanita species are absent from the project site. Species is only known from Monterey County.
Pajaro manzanita (<i>Arctostaphylos pajaroensis</i>)	CRPR 1B	<u>Habitat:</u> Occurs in sandy soils within chaparral. <u>Elevation:</u> 30-760 meters. <u>Blooms:</u> Evergreen shrub; December-March.	Absent. Manzanita species are absent from the project site. Species is only known from Monterey County.
Kings Mountain manzanita (<i>Arctostaphylos regismontana</i>)	CRPR 1B	<u>Habitat:</u> Occurs on granitic or sandstone outcrops within broadleaved upland forest, chaparral, and north coast coniferous forest. <u>Elevation:</u> 305-730 meters. <u>Blooms:</u> Evergreen shrub; January-April.	Absent. Manzanita species are absent from the project site.
Anderson's manzanita (<i>Arctostaphylos andersonii</i>)	CRPR 1B	<u>Habitat:</u> Occurs in openings and at edges of broadleaved upland forest, chaparral, and North Coast coniferous forest. <u>Elevation:</u> 60-730 meters. <u>Blooms:</u> Evergreen shrub; November–May.	Absent. Manzanita species are absent from the project site.
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	CRPR 1B	<u>Habitat:</u> Occurs on alkaline soils within playas, valley and foothill grasslands and in vernal pools <u>Elevation:</u> 1-60 meters <u>Blooms:</u> Annual herb; March-June	Unlikely. Soils of the site are not particularly alkaline, and vernal pools are absent from the project site.
San Joaquin spearscale (<i>Atriplex joaquiniana</i>)	CRPR 1B	<u>Habitat:</u> Occurs in seasonal alkali wetlands or alkali sink scrub within chenopod scrub and grassland habitats. <u>Elevation:</u> 1-835 meters <u>Blooms:</u> Annual herb; April-October	Absent. Habitat is absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

**PLANTS (adapted from CDFW 2016 and CNPS 2016)
Other special status plants listed by the CDFW and CNPS**

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Big-scale balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	CRPR 1B	<u>Habitat:</u> Chaparral, cismontane woodlands, and valley and foothill grasslands (sometimes on serpentine) <u>Elevation:</u> 90-1400 meters <u>Blooms:</u> Perennial herb; March-June	Unlikely. Grasslands of the site are not serpentine and provide marginal habitat for this species.
Round-leaved filaree (<i>California macrophylla</i>)	CRPR 1B	<u>Habitat:</u> Occurs on clay soils within cismontane woodlands and valley and foothill grasslands. <u>Elevation:</u> 15-1200 meters. <u>Blooms:</u> Annual herb; March-May.	Possible. Grasslands of the site provide potential habitat for this species.
Chaparral harebell (<i>Campanula exigua</i>)	CRPR 1B	<u>Habitat:</u> Rocky chaparral, often on serpentine <u>Elevation:</u> 275-1250 meters <u>Blooms:</u> Annual herb; May-June	Absent. Habitat is absent from the site
Pink creamsacs (<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within chaparral, cismontane woodland, meadows and seeps, and valley and foothill grasslands. <u>Elevation:</u> 20- 900 meters. <u>Blooms:</u> Annual herb; April-June.	Unlikely. This species was documented on Sargent Ranch in 1992 and CNDDDB shows the location of the occurrence to the north of Tar Creek within a seep spring in non-serpentine grasslands. As this species is considered serpentine endemic, it appears that the location in CNDDDB may have been misrepresented and that possibly the population was further north within serpentine grasslands. Grasslands of the project site are not serpentine and would provide marginal habitat for this species.
Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>)	CRPR 1B	<u>Habitat:</u> Occurs on alkaline soils within valley and foothill grasslands. <u>Elevation:</u> 1-230 meters <u>Blooms:</u> Annual herb; May-November.	Possible. Marginal habitat for this species occurs within grasslands of the project site.
Eastwood's goldenbush (<i>Ericameria fasciculata</i>)	CRPR 1B	<u>Habitat:</u> Occurs in sandy openings within closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub. <u>Elevation:</u> 30-275 meters. <u>Blooms:</u> Evergreen shrub; July-October.	Absent. Habitat is absent from the project site. Species only known from Monterey County.
Hoover's button-celery (<i>Eryngium aristulatum</i> var. <i>hooveri</i>)	CRPR 1B	<u>Habitat:</u> Occurs in vernal pools. <u>Elevation:</u> 3-45 meters <u>Blooms:</u> Annual/perennial herb; July	Absent. Vernal pools are absent from the project site.

Table 2: Special status species that could occur in the project vicinity.

**PLANTS (adapted from CDFW 2016 and CNPS 2016)
Other special status plants listed by the CDFW and CNPS**

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Fragrant fritillary (<i>Fritillaria liliacea</i>)	CRPR 1B	<u>Habitat:</u> Occurs on clay soils within coastal prairie, and scrub, and valley and foothill grasslands, often on serpentine. <u>Elevation:</u> 3-410 meters <u>Blooms:</u> Bulbiferous; February-April	Unlikely. Species usually occurs in serpentine soils which are absent from the site; therefore, grasslands of the site would be considered marginal for this species.
Loma Prieta hoita (<i>Hoita strobilina</i>)	CRPR 1B	<u>Habitat:</u> Occurs in grassland, chaparral, cismontane woodland, riparian woodland, often on serpentine. <u>Elevation:</u> 30-860 meters. <u>Blooms:</u> May-October.	Unlikely. Serpentine soils are absent from the study area and only two occurrences known from the vicinity were last observed in 1918 and 1922. However, coast live oak woodlands and grasslands of the site provide marginal habitat.
Legenere (<i>Legenere limosa</i>)	CRPR 1B	<u>Habitat:</u> Occurs in vernal pools. <u>Elevation:</u> 1-880 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. Vernal pools are absent from the study area.
Smooth lessingia (<i>Lessingia micradenia</i> ssp. <i>glabrata</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within grassland and chaparral. <u>Elevation:</u> 120-420 meters. <u>Blooms:</u> Annual herb; July-November.	Absent. Serpentine soils required by this species are absent from the study area.
Indian Valley bush mallow (<i>Malacothamnus aboriginum</i>)	CRPR 1B	<u>Habitat:</u> Occurs on rocky or granitic soils often in burned areas in chaparral and foothill woodland. <u>Elevation:</u> 150-1700 meters. <u>Blooms:</u> Evergreen shrub; April-October.	Absent. Rocky and granitic soils are absent from the study area; and this evergreen shrub would have been identifiable surveys conducted on the site if it were present.
Arcuate bush mallow (<i>Malacothamnus arcuatus</i>)	CRPR 1B	<u>Habitat:</u> Occurs on gravelly soils within chaparral. <u>Elevation:</u> 15-355 meters <u>Blooms:</u> Evergreen shrub; April-September	Absent. Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable surveys conducted on the site if it were present.
Hall's bush mallow (<i>Malacothamnus hallii</i>)	CRPR 1B	<u>Habitat:</u> Occurs within chaparral and coastal scrub <u>Elevation:</u> 10-760 meters <u>Blooms:</u> Evergreen shrub; May-October	Absent. Habitat for this species is absent from the study area; and this evergreen shrub would have been identifiable during surveys conducted on the site if it were present.
Woodland woollythreads (<i>Monolopia gracilens</i>)	CRPR 1B	<u>Habitat:</u> Occurs on serpentine soils within broadleaved upland forests, chaparral, cismontane woodland, North Coast coniferous forests, and valley and foothill grasslands <u>Elevation:</u> 10-1200 meters <u>Blooms:</u> Annual herb; February-July	Absent. Serpentine soils required by this species are absent from the study area.

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2016 and CNPS 2016)
Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Santa Cruz Mountains beardtongue (<i>Penstemon rattanii</i> var. <i>kleei</i>)	CRPR 1B	<u>Habitat:</u> Occurs in chaparral, lower montane coniferous forest, and north coast coniferous forest. <u>Elevation:</u> 400-1100 meters. <u>Blooms:</u> Perennial herb; May-June.	Absent. Habitat for this species is absent from the study area.
Hairless popcorn-Flower (<i>Plagiobothrys glaber</i>)	CNPS 1A	<u>Habitat:</u> Alkaline meadows and seeps and coastal salt marshes and swamps <u>Elevation:</u> 15-180 meters <u>Blooms:</u> Annual herb; March-May	Absent. Habitat for this species is absent from the study area.
Pine rose (<i>Rosa pinetorum</i>)	CRPR 1B	<u>Habitat:</u> Occurs in closed-cone coniferous forest. <u>Elevation:</u> 2-300 meters. <u>Blooms:</u> Perennial shrub; May-July.	Absent. Habitat for this species is absent from the study area.
Most beautiful jewel-flower (<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>)	CRPR 1B	<u>Habitat:</u> Serpentine chaparral, cismontane woodlands, and valley and foothill grasslands <u>Elevation:</u> 110-1000 meters <u>Blooms:</u> Annual herb; March-October	Absent. Serpentine soils required by this species are absent from the study area.
Saline clover (<i>Trifolium hydrophilum</i>)	CRPR 1B	<u>Habitat:</u> Marshes and swamps, mesic and alkaline areas of valley and foothill grasslands, and vernal pools. <u>Elevation:</u> 0-300 meters. <u>Blooms:</u> Annual herb; April-June.	Absent. This species was documented on the ranch within wetlands to the southeast of the Phase 3 and Phase 4 quarry areas; however, the project site does not provide habitat for this species.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2016 and USFWS 2016)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Steelhead (<i>Oncorhynchus mykiss</i>)	FT	Migrate up fresh water rivers or streams in the spring and spend the remainder of the time in the ocean.	Absent. Suitable habitat is absent from the quarry site; although steelhead have been known to occur in Tar Creek located within 200 feet north of the quarry site.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2016 and USFWS 2016)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults estivate in grassland habitats adjacent to the breeding sites.	Present. This species is known to occur on Sargent Ranch in the immediate vicinity of the quarry project site and the project site provides suitable estivation habitat for this species. This species is presumed to estivate on the site; however, known breeding habitat is absent on the project site.
California red-legged frog (<i>Rana aurora draytonii</i>)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation.	Present. This species has been documented at numerous locations within riparian and stock pond habitats in the Sargent Creek watershed in close proximity to the project; and within the Tar Creek watershed located north of the overburden and plant sites. Although the project site does not support breeding habitat for this species, potentially this species may use upland habitats of the project site during foraging and migration movements.
Bald eagle (<i>Haliaeetus luecocephalus</i>)	SE	Nests and roosts near water bodies with consistent fish supply (eagle's main food source). Builds nests in tall trees or on cliffs.	Possible. Nesting habitat is absent from the site; however, this species has been observed roosting on the ranch in the vicinity of Tar Creek and may occur rarely on the project site to forage.
Bank swallow (<i>Riparia riparia</i>)	CT	Colonial nester on vertical cliffs and banks near riparian or coastal habitats. Requires sandy soils to excavate nest holes.	Possible. This species has been documented foraging on the ranch and potential nesting habitat occurs along Sargent Creek, so this species may forage over the project site.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE, CE	Occurs in southern California during the breeding season March, migrates out of the state July through September. Dense brush, mesquite, or cottonwood-willow forests in riparian areas.	Unlikely. The last sighting of this species near the site was in 1932 and the site itself lacks potential nesting habitat for this species; although, potential habitat occurs off-site along the upper reaches of Sargent and along Tar Creek near the Phase 4, overburden and plant site areas.
Tricolored blackbird (<i>Agelaius tricolor</i>)	CE	Breeds near fresh water in dense emergent vegetation.	Unlikely. There are two CNDDDB occurrences of this species on Sargent Ranch, nesting in emergent vegetation of stock ponds adjacent to Sargent Creek from 1980 and 1989; however, this species was not observed on the ranch by either PNWB or LOA during surveys and the quarry project site provides no breeding habitat for this species, and only very marginal foraging habitat for this species.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFG 2016 and USFWS 2016)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	CT (Candidate)	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Found in all habitats except sub-alpine and alpine.	Possible. Suitable roosting habitat is absent from the project site; however, this species may forage over the site.

Table 3: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)

California Species of Special Concern and Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Foothill yellow-legged frog (<i>Rana boylei</i>)	CSC	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	Absent. Suitable habitat is absent from the site and its immediate vicinity, and this species has never been documented on the greater Sargent Ranch property despite numerous herpetological surveys.
Western spadefoot (<i>Spea hammondi</i>)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	Unlikely. PNWB biologists tentatively identified this species by vocalization on the greater Sargent Ranch property during 2000-2001 surveys, however, the quarry project site appears to provide no breeding habitat for this species, and they have never been directly observed in the project site vicinity during many surveys for CTS and CRLF.
Western pond turtle (<i>Emys marmorata</i>)	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	Possible. Potential habitat for this species occurs during the wet season within Sargent Creek in the vicinity of the Phase 1 and 2, and it may occasionally use upland habitats of the site in proximity to the creek; however, there are no documented occurrences of turtles in the immediate project vicinity.
Coast horned lizard (<i>Phrynosoma blainvillii</i>)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	Unlikely. Habitat is marginal on the quarry site for this species as open sandy areas are absent, and this species has never been observed on Sargent Ranch or documented in CNDDDB within a three-mile radius.

Table 3: Special status species that could occur in the project vicinity.

**ANIMALS (adapted from CDFW 2016 and USFWS 2016)
California Species of Special Concern and Protected Species**

Common and scientific names	Status	General habitat description	*Occurrence in the study area
White-tailed kite (nesting) <i>(Elanus leucurus)</i>	CP	Open grasslands and agricultural areas throughout central California.	Possible. Suitable breeding habitat exists on the site for this species within oak woodland habitat, and grasslands and agricultural areas on the project site provide suitable foraging habitat.
Peregrine Falcon <i>(Falco peregrinus anatum)</i>	CP	Requires cliffs for nesting and forages in a variety of habitats.	Possible. PNWB observed falcons foraging over Sargent Ranch during 2000 and 2001 surveys and the project site provides potential foraging habitat for this species; however, nesting habitat is absent from the project site.
Golden eagle (nesting & nonbreeding/wintering) <i>(Aquila chrysaetos)</i>	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Present. Woodlands on the project site provide only marginal nesting habitat for this species; however, golden eagles have been observed on numerous occasions foraging over the ranch and are presumed to forage on the project site on a regular basis.
Northern Harrier <i>(Circus cyaneus)</i>	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Present. This species has been observed foraging over grasslands of the site and potential nesting habitat occurs adjacent to Sargent Creek.
Short-eared Owl <i>(Asio flammeus)</i>	CSC	Occurs in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	Possible. The site supports both suitable breeding and foraging habitat for this species
Long-eared Owl <i>(Asio otus)</i>	CSC	Found throughout California mainly in open woodlands, and riparian areas with adjacent grasslands for foraging.	Possible. The site supports both suitable breeding and foraging habitat for this species.
Burrowing Owl <i>(Athene cunicularia)</i>	CSC	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Possible. Burrowing owls have been observed nesting, foraging and roosting on the greater Sargent Ranch property and the project site itself provides good potential breeding, roosting and foraging habitat for this species.
Yellow-breasted Chat <i>(Icteria virens)</i>	CSC	Found mainly in dense brush of open canopy riparian corridors or along ponds.	Unlikely. Although this species was documented on the greater Sargent Ranch property by PNWB; the project site provides only marginal nesting habitat for this species in riparian woodlands near Phase 1 and Phase 2, although it may rarely forage on the site.
Black Swift (nesting) <i>(Cypseloides niger)</i>	CSC	Nests on cliffs near the ocean or other aquatic habitat. Forages for insects over a variety of habitats.	Possible. Nesting habitat is absent on the site, but this species may forage over the site.

Table 3: Special status species that could occur in the project vicinity.

**ANIMALS (adapted from CDFW 2016 and USFWS 2016)
California Species of Special Concern and Protected Species**

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Vaux's Swift (nesting) (<i>Chaetura vauxi</i>)	CSC	Nests in coniferous and deciduous forests and forages for insects over a variety of habitats.	Possible. Nesting habitat is absent from the site, but this species may forage over the site.
Olive-sided Flycatcher (nesting) (<i>Contopus cooperi</i>)	CSC	Frequents coniferous forests, especially with tall standing dead trees. They prefer spruce, fir, balsam, pine, or mixed woodlands near edges and clearings, wooded streams, swamps, bogs, edges of lakes or rivers.	Unlikely. Olive-sided flycatchers have been observed on Sargent Ranch during surveys by PNWB and LOA; but breeding and foraging habitat on the project site is marginal for this species.
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Possible. The site supports both suitable breeding and foraging habitat for the loggerhead shrike.
Western Red Bat (<i>Lasiurus blossevillii</i>)	CSC	Roosts primarily in trees in a wide variety of habitats; prefers a mosaic of habitats including open areas for foraging.	Possible. Trees on the site provide potential roosting habitat and the site provides potential foraging habitat for this species.
Pallid Bat (<i>Antrozous pallidus</i>)	CSC	Most common on dry, open habitats with rocks for roosting. May also use large hollows of trees in addition to caves for roosting.	Possible. The site offers suitable foraging habitat for this species. Roosting habitat may be available in woodlands that support large cavernous hollows.
California Mastiff Bat (<i>Eumops perotis californicus</i>)	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	Possible. Suitable foraging habitat occurs on the site, but roosting habitat is absent.
San Francisco Dusky-footed Woodrat (<i>Neotoma fuscipes annectens</i>)	CSC	Found in hardwood forests, oak riparian and shrub habitats.	Unlikely. Oak woodlands on the Phase 3 and 4 quarry sites and overburden stockpile areas, as well as the small amount of riparian habitat on the Phase 1 and 2 areas provides marginal habitat for this species; however, no woodrat nests have ever been observed on Sargent Ranch by PNWB or LOA biologists.
Ringtail (<i>Bassariscus astutus</i>)	CP	Occurs mainly in riparian and heavily wooded habitats near water.	Unlikely. Although oak and/or riparian woodlands occur on all phases of the project, these woodlands would provide only marginal habitat for this species, although it may occur in riparian habitat of Tar Creek and rarely occur on areas of the site in proximity to Tar Creek.
American Badger (<i>Taxidea taxus</i>)	CSC	Occurs in grasslands, and open areas of scrubland and forests with friable soils that are uncultivated.	Likely. Grasslands of the project site provide suitable habitat for this species and it is known to occur on the greater Sargent Ranch property.

Present: Species observed on the sites at time of field surveys or during recent past.

Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.

Possible: Species not observed on the sites, but it could occur there from time to time.

Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.

Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
		CSC	California Species of Special Concern
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

Most of the special status plant and animal species listed in Table 3 are either absent or may occur rarely or occasionally onsite and sufficient information exists to evaluate the potential impacts the project may or may not have on them. However, a number of other special status species have been documented on Sargent Ranch in the immediate vicinity of the project site and are assumed present or are considered likely or possibly to occur on the site. A few of these latter species warrant further discussion and include the California tiger salamander (CTS), California red-legged frog (CRLF), burrowing owl (BUOW), and American badger.

California Tiger Salamander (*Ambystoma californiense*). Federal Listing Status: Threatened; State Listing Status: Threatened.

Life History and Ecology. The California tiger salamander (CTS) is a large terrestrial salamander, with adults attaining a total length of over 8 inches (203 millimeters) [Stebbins 1951]. Dorsally, the background color appears to be jet black, and normally with an overlain pattern of white or yellow spots, or bars (Stebbins 1985; Petranka 1998). Adult California tiger salamanders breed from late November through February, following the onset of winter rains (Storer 1925; Barry and Shaffer 1994). Both males and females travel up to 1 mile (1.6 km) or more during nocturnal breeding migrations from subterranean refuge, or aestivation, sites (i.e., small mammal burrows) to egg deposition sites in long-lasting, rain-filled vernal pools (Twitty 1941; Loredó et al. 1961; Andersen 1968; Austin and Shaffer 1992).

Embryos of California tiger salamanders hatch in approximately 14-28 days after being laid and the resulting gilled, aquatic larvae [0.41-0.43 inches (10.5-11 mm) in length] require a minimum of about 10-12 weeks to complete development through metamorphosis (Storer 1925; Twitty 1941). Following metamorphosis (normally from early May through July), juveniles emigrate en

masse at night into small mammal burrows or deep cracks in the soil, which they use as refugia during the hot summer and fall months (Shaffer et al. 1993; Loredó et al. 1996).

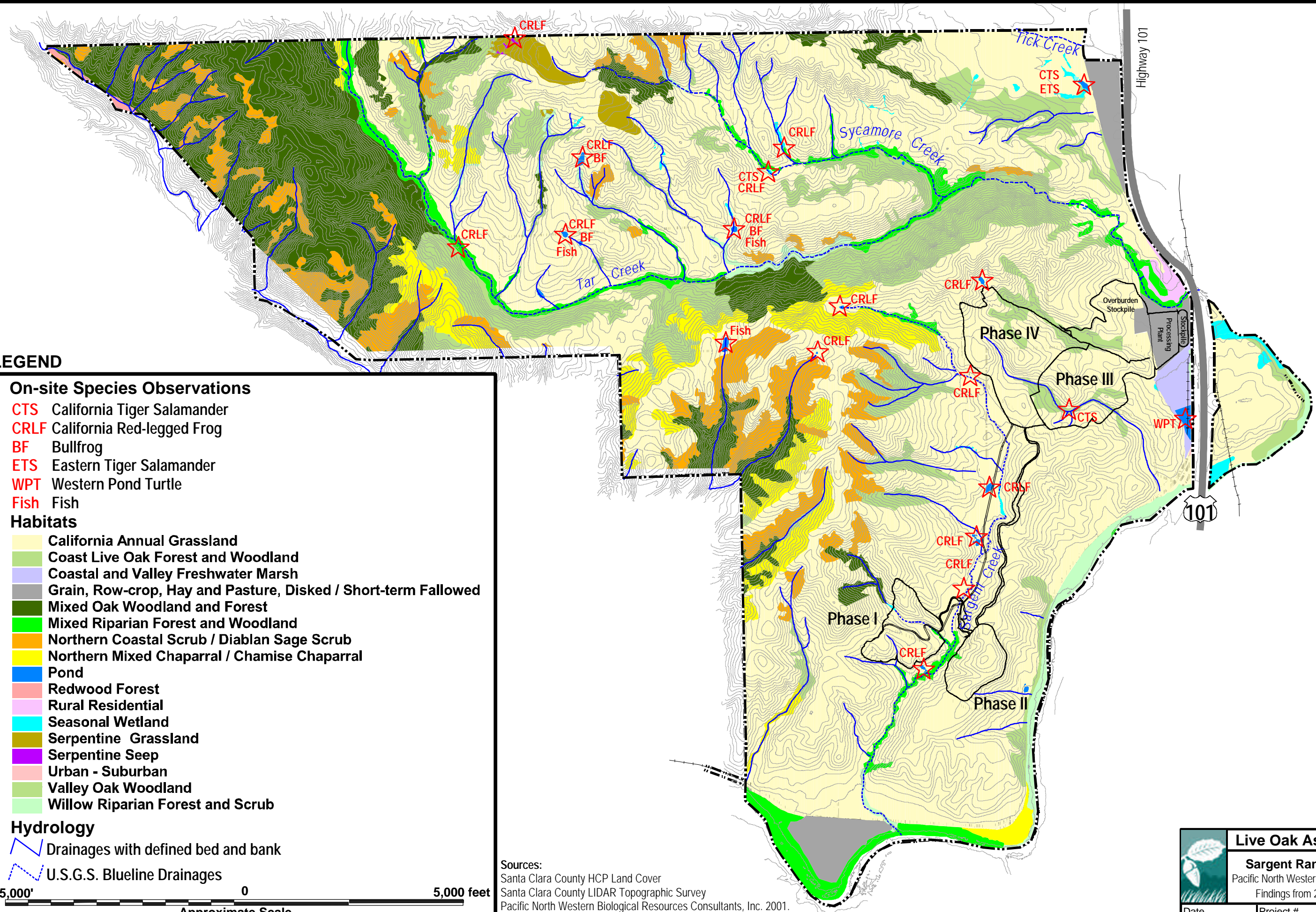
Anecdotal evidence indicates that salamanders have a high degree of site fidelity to their breeding ponds and also to the small mammal burrows they use for refugia (Shaffer et al. 1993). Sites used for reproduction are typically natural pools that fill with rainwater and artificial stock ponds; however, salamanders have also been observed to breed in springs, wells, artificial reservoirs, quarry ponds, man-made canals, and rarely, in the slack waters of oxbows in small- to medium-sized streams. Such sites may, or may not contain dense amounts of aquatic and streamside vegetation. The highest numbers of larvae appear to occur in aquatic habitats that are largely devoid of any vegetation and contain very turbid water. Salamanders may also turn up in certain man-made structures (e.g. wet basements, wells, swimming pools, underground pipes, and septic tank drains), sometimes many years after their local breeding site has been destroyed by urbanization (Storer 1925; Pickwell 1947).

Juvenile and adult salamanders typically use the burrows of California ground squirrels and pocket gophers as underground refugia (Storer 1925; Jennings and Hayes 1994; Jennings 1996; Loredó et al. 1996) but may use a variety of burrows including cracks within the soil that may extend up to 15 feet (4.6 m) deep from the soil surface (Jennings, unpub. data). Juvenile and adult salamanders are especially common in situations where piles of concrete, rock, or other rubble are mixed with dirt and are located near breeding sites (Jennings, unpub. data). Findings from the limited research on the species suggest that 95% of a CTS population estives within 2,000 feet of a breeding pond and that 99% of the breeding population estives within 0.7 miles of a breeding pond; however, the USFWS considers suitable habitat within 1.3 miles of a known breeding pool to constitute potential upland habitat for the salamander.

Occurrence on the Site. PNWB confirmed the presence of breeding populations of CTS in three locations on Sargent Ranch during their 2000-2001 surveys (Figure 6). These include the pond/seasonal wetland complex in the very northeastern corner of the ranch near Tick Creek. The latter location was also confirmed to support introduced eastern tiger salamanders (*Ambystoma tigrinum*) and hybrids of the two species (confirmed via genetic analysis by UC Davis). The other two observances were within a pond adjacent to Sycamore Creek, a tributary

of Tar Creek, and an isolated drainage in the western portion of the ranch near the Phase 3 and 4 quarry areas. CTS in the latter two locations appeared to be non-hybrid populations. Although the project site supports no breeding habitat for this species, based on the USFWS' 1.3 mile radius for estivation habitat, it appears the vast majority of grasslands of the ranch could be considered estivation habitat for this species, including grasslands of the project site; therefore, it is assumed that CTS estivate on the project site.

Potential CTS predators were found in other stock ponds of the ranch, including blue gill (*Lepomis macrochirus*) and bullfrogs (*Lithobates catesbiana*), and this may be why CTS do not occur in these other ponds, although many, in years of normal and above-normal rainfall, would appear to support a suitable hydrologic regime to provide breeding habitat for this species.



LEGEND

On-site Species Observations

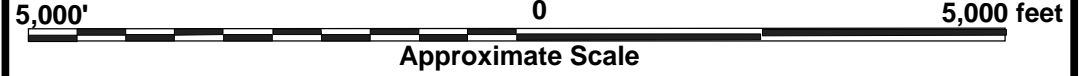
- CTS** California Tiger Salamander
- CRLF** California Red-legged Frog
- BF** Bullfrog
- ETS** Eastern Tiger Salamander
- WPT** Western Pond Turtle
- Fish** Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages



Sources:
 Santa Clara County HCP Land Cover
 Santa Clara County LIDAR Topographic Survey
 Pacific North Western Biological Resources Consultants, Inc. 2001.
 Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

	Live Oak Associates, Inc.		
	Sargent Ranch Quarry BE Pacific North Western Special Status Species Findings from 2000-2001 Surveys		
Date	Project #	Figure #	
8/28/2016	662-08	6	

During the January 2014 site visit to confirm existing conditions on the ranch, ponds were completely dry or almost completely dry due to two years of drought conditions in the region. While it is highly unlikely that CTS breeding would have occurred over the past two years, per Dr. Jennings, the drought may benefit CTS by killing off fish and knocking down bullfrog populations, and therefore make these other ponds more suitable for CTS breeding habitat in the future (although bullfrogs would be expected to recolonize these ponds rather rapidly).

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.

Life History. The California red-legged frog (CRLF) is the largest native frog in California, with adults attaining a length of 3.4-5.4 inches (85-138 mm) snout-to-vent length (SVL) (Jennings and Hayes 1994). On the dorsal surface, the background color varies from brown to gray to reddish-brown, normally with some dark mottling peppered around spots with light-colored centers (Stebbins 1985). The distribution of reddish pigment is highly variable, but is usually restricted to the groin and undersurfaces of the thighs, legs, and feet (Jennings and Hayes 1994). This red coloration is not diagnostic for species identification. Two distinctive, prominent folds of skin (“dorsolateral folds”), run in a complete line from the rear of the eyes to the groin. The groin has a distinctly mottled pattern of black on a light-colored background. Juvenile frogs range from 1.5-3.4 inches (40-84 mm) SVL and have the same coloration as adults except that the dorsolateral folds are normally yellow or orange colored (Stebbins 1985). This coloration is distinct even at a distance. Larval frogs range from 0.6-3.1 inches (14-80 mm).

Adult California red-legged frogs have been observed breeding from late November through early May after the onset of warm rains (Storer 1925, Jennings and Hayes 1994). Male frogs typically attract females by emitting low short calls in small mobile groups of 3-7 individuals (Jennings and Hayes 1994). Females move toward the calling groups and amplex a male. Following amplexus, the females move to chosen oviposition sites where they attach an egg mass of 2,000-6,000 moderate-sized (2.0-2.8 mm diameter) eggs to an emergent vegetation brace such as tule stalks, grasses, or willow roots located just below the water surface (Storer 1925, Livezey and Wright 1947). Once laid, the egg mass will swell with water for about 24 hours, finally reaching the size of a softball. Males usually remain at the breeding sites for several

weeks after reproduction before moving to foraging habitats, while females immediately remove to foraging habitats.

California red-legged frog embryos hatch about 6-14 days following fertilization. The resulting larvae (8.8-10.3 mm) require 14-28 weeks to reach metamorphosis, which usually occurs between July and September, although there are scattered observations of overwintering larvae in perennial ponds such as at the arboretum at Golden Gate Park in San Francisco (Jennings, pers. obs). Tadpoles generally metamorphose at 65-85 mm total length (Storer 1925) and the newly emerged juvenile frogs are generally 25-30 mm SVL. Larvae are thought to graze on algae, but they are rarely observed in the field because they spend most of their time concealed in submergent vegetation, algal mats or detritus (Jennings and Hayes 1994). Post-metamorphic frogs grow rapidly feeding on a wide variety of invertebrates.

Males typically reach sexual maturity at 2 years and females at 3 years; however, frogs of both sexes may reach sexual maturity in a single year if resources are sufficient (Jennings, unpub. data). Conversely, frogs may take 3-4 years to reach maturity during extended periods of drought (Jennings and Hayes 1994). Based on limited field data, California red-legged frogs appear to live up to 10 years in the wild (Jennings, unpub. data). Adult frogs apparently eat a wide variety of animal prey including invertebrates, small fishes, frogs, and small mammals.

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historic range. Larvae, juveniles, and adult frogs have been collected from natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits (containing water), and large reservoirs (Jennings 1988). The key to the presence of frogs in these habitats is the presence of perennial (or near perennial) water and the general lack of introduced aquatic predators such as largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and bluegill (*L. macrochirus*), crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), and bullfrogs (*Rana catesbeiana*).

The habitats observed to contain the largest densities of red-legged frogs are associated with deep-water pools (27 inches [>0.7 meters] deep) with stands of overhanging willows (*Salix* spp.)

and an intermixed fringe of cattails (*Typha* spp.), tule (*Scirpus* spp.), or sedges (*Carex* sp.) (Hayes and Jennings 1988). However, California red-legged frogs have also been observed to inhabit stock ponds, sewage treatment ponds, and artificial (e.g., concrete) pools completely devoid of vegetation (Storer 1925; Jennings, *pers. comm.*). Continued survival of frogs in all aquatic habitats seems to be based on the continued presence of ponds, springs, or pools that are disjunct from perennial streams. Such habitats provide the continued basis for successful reproduction and recruitment year after year into nearby drainages that may lose frog populations due to stochastic events such as extreme flooding or droughts. Juvenile frogs are often observed sunning themselves during the day in the warm, surface-water layer associated with floating and submerged vegetation (Hayes and Tennant 1986). Adult frogs are largely nocturnal and are known to sit on stream banks or on the low-hanging limbs of willow trees over pools of water where they can detect small mammal prey (Hayes and Tennant 1986; Jennings and Hayes 1994). Adult red-legged frogs will move within the riparian zone from well-vegetated areas to pools of water to hydrate during periods of time when many of the streams are dry except for isolated pools (Rathbun et al. 1993). During wet periods (especially in the winter and early spring months), red-legged frogs can move long distances (e.g., 1 mile) between aquatic habitats, often over areas that are considered to be unsuitable for frogs (e.g., roads, open fields, croplands, etc.). Such activities can result in frogs ending up in isolated aquatic habitats well away from the nearest known frog populations.

Occurrence on the Site. CRLF have been confirmed to be present in ponds and tributaries of the Tick Creek, Tar Creek, Sycamore Creek, Pescadero Creek and Sargent Creek watersheds of the greater Sargent ranch property during PNWB's 2000 and 2001 surveys and LOA's 2004 and 2005 surveys (Figure 6). During surveys in January 2014 to confirm existing conditions on the ranch; LOA Associate Herpetologist Dr. Mark Jennings confirmed that even with two years of drought conditions, and despite most of the creeks and ponds of the site being completely or nearly dry, refugia for CRLF and other amphibians was present on the site within still persistent ponds in the Tar Creek drainage and also potentially within stock troughs. Similar to the situation for CTS, the drought conditions may have even temporarily favored CRLF by killing off CRLF predators within ponds of the site, such as non-native bullfrogs and non-native fish

species; although, again, bullfrogs would be expected to eventually re-colonize these ponds as previously discussed.

Although no CRLF have been directly observed on the project site, and the project site provides no suitable breeding habitat for this species, they have been found in numerous locations throughout the Sargent Creek and Tar Creek watersheds in the immediate vicinity of the project site, and individual frogs may occasionally forage on or move through the project site from time to time.

Western Pond Turtle (*Actinemys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The western pond turtle is the only native aquatic, freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with 1) basking sites such as rocks and logs, 2) dense stands of submergent or emergent vegetation, 3) abundant aquatic invertebrate resources, 4) suitable nearby nesting sites, and 5) the lack of native and exotic predators (Bury 1972; Jennings and Hayes 1994; Bury and Holland, in press). This species can move along streams up to 3.1 miles (5 kilometers) in a short period of time, and they can tolerate at least 7 days without water (Jennings and Hayes 1994; Bury and Holland, in press).

Occurrence on the Site. The only observance of pond turtles on the greater ranch property was by PNWB biologists in a pond along the eastern boundary of the property near Highway 101, approximately 1500 feet southeast of the Phase 4 quarry site. This occurrence is not recorded in the CNDDB. There are only three other occurrences recorded in CNDDB within a three-mile radius: one mile north of Sargent Ranch, approximately 0.5 miles southeast of the ranch, and on just the other side of Highway 101 from the northeastern boundary of the ranch. Pond turtles have never been observed on the project site or in the Sargent or Tar Creek watersheds adjacent to the project site, although in wet years, these would appear to provide habitat for the species. However, the vast majority of the project site, outside of the potential Sargent Creek crossing for the Phase 1 and 2 access road, does not support habitat for this species, although turtles may rarely occur in these areas during movements between suitable aquatic habitats.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Concern.

The burrowing owl is considered a California species of special concern. This decision was based on the fact that the burrowing owl's population levels were decreasing due to habitat destruction, roadside nesting (vulnerability to human interference) and indirectly as a result of ground squirrel poisoning.

The burrowing owl is a small, long-legged, semi-fossorial bird that averages a height of 9.5 inches, has an average wingspan of 23 inches, and weighs an average of 5.25 ounces. Burrowing owls are unique, as they are the only owl that regularly lives and breeds in underground nests. In California, these birds typically occur in the Central and Imperial Valleys, primarily utilizing ground squirrel burrows (or the burrows of other animals, e.g., badgers, prairie dogs and kangaroo rats) found in grasslands, open shrub lands, deserts, and to a lesser extent, grazing and agricultural lands. Burrowing owls in this region are typically found in lower elevations, and have strong site fidelity. Pairs have been known to return to the same area year after year, and some pairs are known to utilize the same burrow as the previous year.

Life History. Burrowing owls feed on various small mammals including deer mice, voles, and rats. They also prey on various invertebrates including crickets, beetles, grasshoppers, spiders, centipedes, scorpions and crayfish. Peak hunting periods occur around dusk and dawn.

The breeding season for the burrowing owl runs from February to August, with a peak between April and July. Clutch size varies from six to 12 eggs, with an average of seven to nine eggs. Females generally produce only one clutch per year. The female incubates the eggs for a month, while the male provides her food. The male continues to provide food during the brooding period. The young remain in their burrow for approximately two weeks after hatching, and become fully independent of their parents between eight to ten weeks of age. Burrowing owls are a fairly short-lived species, with an average life expectancy of 4.8 years. The oldest known wild burrowing owl was eight years and eight months old at the time of its death.

Burrowing owls are subject to predation by larger mammals (e.g., feral cats, bobcats, fox and coyotes). They are also susceptible to anthropogenic effects such as collisions with automobiles, and destruction or disruption of their nests, especially during the breeding season. The

burrowing owl may also be affected by ground squirrel eradication efforts. Burrowing owl numbers have been in decline over the past 30 to 40 years, in California. The decline in numbers is due mainly to habitat destruction by way of development and agricultural practices.

Occurrence on the Site. A burrowing owl was observed on the site during PNWB surveys immediately to the north of the wetland/pond complex near Tick Creek in the northeastern portion of the greater Sargent Ranch property although the owl was confirmed to be gone from that area by the nesting season. The prior resident rancher also reports seeing burrowing owls during the summer perched on serpentine rock outcrops in the northern portion of the ranch. Since this latter area does not support ground squirrel burrows, it is likely the owls were only foraging, and not roosting or nesting, in this location. However, burrowing owls were observed nesting on the site in 2015 to be nesting in fields on the northern portion of the greater Sargent Ranch property (pers. comm. Verne Freeman), and the grasslands of the project site would appear to provide good potential breeding habitat for this species.

American Badger (*Taxidea taxus*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The American badger is considered a California species of special concern. This decision was based on the fact that the badger's population levels were decreasing, mainly as a result of the conversion of open grassland habitats to agriculture and urban uses, trapping for fur, poisoning, and indirect poisoning as a result of consuming poisoned rodents. Rodents are the main food source for the badger.

The American badger measures 520 to 875 mm (20 to 34 inches) from head to tail, with the tail making up only about 1/5 of this length. Badgers weigh between 4 and 12 kg (approximately 9 to 26 pounds). The badger has a flattened body with short, stocky legs, and feet with strong claws that are up to 4-inches long. The fur on the back and flanks of the badger varies from brownish gray to a reddish color, with a buff colored underside. The face of the badger is distinct with several black patches on either side of its long snout. A white dorsal stripe extends back over the head from the nose. In northern populations, the dorsal stripe ends near the shoulders, while in southern populations it continues over the back to the rump. Male badgers are significantly larger than the females (Kurta, 1995; Long, 1999). Badgers are primarily solitary,

coming together only for breeding purposes. Badgers are generally found throughout California's arid grasslands and scrublands with friable soils from sea level to 12,000 feet, except in the northern North Coast area (Grinnell et al, 1937). Badgers are primarily nocturnal and are rarely seen during the day.

Life History. The main food source for badgers is ground squirrels and pocket gophers; however, they also are known to feed on a variety of other small- to medium-sized mammals including deer mice, voles, and rats; on plant roots; on reptiles and their eggs; and on birds and their eggs. Badgers are opportunistic foragers and their food sources shift seasonally with availability.

Badgers generally breed in late summer or early fall, experiencing a delayed implantation. Although the badger female is technically pregnant for seven months, actual gestation takes 6 weeks. Most cubs (pups or kits) are born in March or April and litter size ranges from 1 to 5 with an average of 3 (Long 1973). Females can breed as young as 4 to 6 months of age; however, their first litter usually occurs after one year of age. Males do not usually breed until after their second year. Badger cubs are born blind, furred and helpless (ibid). Their eyes open between 4 and 6 weeks of age, and they are nursed for approximately 2 months. After 2 months of age the mother starts supplementing their diet with solid food, usually small rodents. Most young disperse shortly after weaning, while some remain in their natal area until the next breeding season. They may roam up to 100 km (62 miles) to find their own home range. The average life of badgers in the wild is between 8 and 12 years.

The home range size for badgers varies by sex, season and prey base, with males having larger home ranges than females. One study indicated males had an average home range of 2,100 acres, while one radio collared female had a home range of 1,790 acres in summer, 131 acres in fall, and only 5 acres during the winter (Sargeant and Warner 1972). Another study indicated a home range size between 667 and 1,550 acres for both sexes (Lindzey 1978).

Badgers often hunt for prey by digging into fossorial mammal burrows. Coyotes have been known to follow badgers to take advantage of an easy meal as rodents are flushed from their burrows. Badgers may enlarge hunting burrows for sleeping and protection from weather. During the summer months, they dig new resting burrows nearly every day; these burrows are

usually only a few feet deep. Their natal dens are more permanent and may be as much as 30 feet long and 10 feet deep (Banfield 1974).

Badgers are ferocious animals and have few natural predators, though they can be preyed upon by bear (*Ursus americanus*), bobcat, and cougar. As discussed above, the main threat to badgers comes from anthropogenic effects.

Occurrence on the site. Habitat is present on the project site and this species has been observed on the ranch during PNWB surveys and by the resident rancher.

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.4 of this report for additional information.

A wetland delineation was conducted on the entire Santa Clara County portion of the greater Sargent Ranch property in 2005 which included the project site. Per the delineation, ephemeral drainage channels with a defined bed and bank and evidence of an Ordinary High Water mark were found to occur on all phases of the project site except Phase 2. None of these ephemeral drainages supported wetland or riparian vegetation in 2005; however, they may be considered jurisdictional by USACE and RWQCB to the extent of the Ordinary High Water (OHW) mark on opposing banks and may also be considered jurisdictional by CDFW to the top of bank. Sargent Creek, an intermittent creek, which will be crossed by the access road and conveyor belt alignment for Phase 1 and 2 would also be considered jurisdictional by USACE and RWQCB to the extent of the OHWM and by CDFW to the top of bank. No other potential waters of the U.S. or state were identified on the project site during site surveys. The 2005 delineation was never submitted to and verified by USACE; therefore, the extent to which the USACE may claim jurisdiction over hydrologic features on the project site could not be fully determined at the time this report was prepared. As the prior delineation field survey is now 10 years old, it may also

not reflect existing conditions with regard to jurisdictional waters on the site and a new delineation is warranted, which will be completed in the fall of 2016.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. could potentially replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to *Guide to the California Environmental Quality Act*, “Significant effect on the environment” is interpreted as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered “significant” if they will:

- have a substantial adverse effect, the directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site;
- reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a “mandatory findings of significance” if “the project has the potential to subsequently degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal “endangered species” legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status.” Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the “take” of a

listed species. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Wildlife Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Wildlife Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

3.2.4 The Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or

sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

3.2.5 Bats

Section 2000 and 4150 of the California Fish and Wildlife Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering”.

3.2.6 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” (hereafter referred to as “jurisdictional waters”) subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System

(NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife (CDFW) has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

3.2.7 Santa Clara County Tree Ordinance

Santa Clara County has relevant ordinances in the Municipal Code under Division C16 “Tree Preservation and Removal”.

“it shall be unlawful for any person to remove any protected tree on any private or public property in designated areas of the County without having first obtained an administrative permit [(a) through (e) below] from the County Planning Office or an encroachment permit [(f) below] from the Department of Roads and Airports.”

“A protected tree shall consist of any of the following:

(a) Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the County:

- (1) Parcels zoned "Hillsides" (three acres or less);
- (2) Parcels within a "-d" (Design Review) combining zoning district;
- (3) Parcels within the Los Gatos Hillside Specific Plan Area.

(b) Any tree within the "-h1" Historic Preservation zoning district for New Almaden having a main trunk or stem measuring six inches or more in diameter (18.8 inches or greater in circumference) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 12 inches in diameter (37.7 inches in circumference) of all trunks at 4.5 feet above ground. For parcels having a base zoning district of "HS, Hillside" within the "-h1" combining zoning district, this provision supersedes C16-3(a)(1).

(c) Any heritage tree, as that term is defined in Section C16-2.

(d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division.

(e) Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision.

(f) On any property owned or leased by the County, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceeds 20 feet in height.

(g) Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.”

3.2.8 Heritage Trees in Santa Clara County

Under Municipal Code Section C16-12, a Heritage Tree is defined as:

“Any tree which, because of its history, girth, height, species, or other unique quality, has been recommended by the Historical Heritage Commission (HHC) and found by the Board of Supervisors to have a special significance to the community shall be designated a heritage tree. Such trees shall be listed individually on the heritage resource inventory, adopted by resolution of the Board of Supervisors. Such resolution may be amended as necessary to add or delete trees from the inventory.”

A permit is required for the removal of Heritage Trees.

3.2.9 The Santa Clara Valley Habitat Conservation Plan

Six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill) along with two wildlife agencies, the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, prepared and adopted the multi-species Santa Clara Valley Habitat Conservation Plan (SCVHP) which primarily covers southern Santa Clara County, as well as the City of San Jose with the exception of the bayland areas. The SCVHP addresses listed species

and species that are likely to become listed during the plan's 50-year permit term. The eighteen covered species include nine plants and nine animals. The animal species covered include, but are not limited to, the California tiger salamander, California red-legged frog, western pond turtle, and western burrowing owl. Most of the nine plant species covered are species that are endemic to serpentine soils. The SCVHP requires that the agencies comment on reportable interim projects and recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives and not preclude important conservation planning options or connectivity between areas of high habitat value. Funding sources for the SCVHP include development fees based on land cover types (natural, agricultural or small vacant sites surrounded by urban development). Additional fees are charged based on the occurrence of certain sensitive habitat types such as serpentine grasslands, streams, ponds and wetlands.

It should be noted that only certain development activities are covered by the SCVHP; and covered activities do not include the development of quarries. However, the quarry has been designed to be consistent with SCVHP goals and conditions.

3.2.9.1 SCVHP Development Fees

Chapter 9 of the SCVHP identifies fees that may be required by development projects for their development area (considered the project site plus a 50-foot buffer) based on the Fee Zone(s) within which the development area occurs, along with additional Nitrogen Deposition Fees and specialty fees for sensitive habitats such as wetlands and streams. The current (20164) SCVHP development fee schedule is provided below.

SCVHP 2016 Development Fees	
Fee Zones	Fees
Fee Zone A (Ranchlands and Natural Lands)	\$19,159 per acre
Fee Zone B (Agricultural and Valley Floor Lands)	\$13,283 per acre
Fee Zone C (Small Vacant Sites Under 10 Acres)	\$4,853 per acre
Nitrogen Deposition Fees and Specialty Fees	Fees
Nitrogen Deposition	\$4.47 per new daily vehicle trip or \$44.69 per new single-family residential unit

SCVHP 2016 Development Fees	
Fee Zones	Fees
Willow Riparian Forest and Mixed Riparian	\$151,739 per acre
Central California Sycamore Woodland	\$277,156 per acre
Freshwater Marsh	\$186,074 per acre
Seasonal Wetland	\$407,119 per acre
Pond	\$166,523 per acre
Streams	\$638 per linear foot
Serpentine	\$62,346 per acre
Burrowing Owl	\$54,781 per acre

3.2.9.2 Land in Lieu of Fees

The SCVHP provides for the option of protecting conservation lands in lieu of fees. Land in lieu of fees may include lands coordinated with the County Parks, Open Space Authority, or other organization. Wetland fees cannot be waived, however, restoration or creation, management, and monitoring of onsite wetlands, streams, ponds, or riparian for mitigation may replace some or all wetland fees for a site if approved by the Implementing Entity. Land in lieu of fee must be approved by the Implementing Entity for the Santa Clara Valley Habitat Conservation Plan, CDFW and USFWS. If approved, land in lieu of fee will become part of the Reserve System under the SCVHP once success criteria have been met (for restoration projects). Off-site conservation lands in lieu of fee may be acceptable if both the Implementing Entity and the Wildlife Agencies (CDFW and USFWS) approve the proposed conservation lands. It is important to note that land in lieu of fees only off-sets costs related to land fees, and does not include an off-set for management fees. The Implementing Entity has approved a Draft Resolution identifying which fees are offset by ‘land in lieu of fee’ and which fees cannot be offset by dedication of land. Fees that are offset include land cover, serpentine, burrowing owl, and/or temporary impact fees. Fees that cannot be offset include land management or monitoring, plan preparation, endowment, wetland, nitrogen deposition, and/or “any non-development fee charge including, but not limited to, administrative charges, processing, and evaluation charges, and other charges such as the Participating Special Entity (PSE) charge. The

dollar total of fees that cannot be offset (Land Management or monitoring, Plan Preparation and Endowment) is approximately 35 percent of a site's total land cover fees.

3.2.9.3 Conditions on Covered Activities

The SCVHCP sets forth twenty conditions for covered activities under the SCVHCP.

Potentially applicable conditions for this project can be found in Chapter 6 of the SCVHCP (Appendix D) and are listed below:

- **Condition 1 (page 6-7). Avoid Direct Impacts on Legally Protected Plant and Wildlife Species-** Condition 1 instructs developers to avoid direct impacts on legally protected plant and wildlife species, including federally endangered Contra Costa goldfields and fully protected wildlife species including the golden eagle, bald eagle, American peregrine falcon, southern bald eagle, white-tailed kite, California condor, and ring-tailed cat. Several of these species have either been documented on the Sargent Ranch property and likely to occur on or forage over the project site, or they have not been observed, but the project site provides potential habitat for them (golden eagle, bald eagle, American peregrine falcon, white-tailed kite). Condition 1 also protects bird species and their nests that are protected under the Migratory Bird Treaty Act (MBTA); additionally, golden eagles and bald eagles are protected under the Bald and Golden Eagle Protection Act. Additionally, page 6-94 and Table 6-8 identify required surveys for breeding habitat of select covered wildlife species; of the species noted, the project will likely be required to conduct species-specific surveys for the western burrowing owl.
- **Condition 2 (page 6-9). Incorporate Urban-Reserve System Interface Design Requirements-** Condition 2 provides design requirements for the urban-reserve system interface. Some of the design requirements included in Condition 2 are installing non-permeable fences between urban and reserve areas, fencing public roads that run adjacent to reserve areas, minimizing the length of shared boundaries between urban and reserve areas, outdoor lighting limitations, and landscaping requirements.
- **Condition 3 (page 6-12). Maintain Hydrologic Conditions and Protect Water Quality-** Condition 3 applies to all projects. This condition identifies avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality during construction and operation. A complete list of aquatic avoidance and minimization measures can be found in Table 6-2 of the plan.
- **Condition 4 (page 6-14). Avoidance and Minimization for In-Stream Projects-** Condition 4 minimizes impacts on riparian and aquatic habitat through appropriate design requirements and construction practices and provides avoidance and minimization measures for in-stream projects that may impact stream morphology, aquatic and riparian habitat, flow conditions, covered species, natural communities, and wildlife movement.

- **Condition 5 (page 6-18). Avoidance and Minimization Measures for In-Stream Operations and Maintenance-** Condition 5 provides avoidance and minimization measures for in-stream operations and maintenance activities, which includes, but is not limited to trail, bridge, road, and culvert maintenance, bank stabilization, removal of debris, and vegetation management.

Avoidance and minimization measures for Conditions 3-5 can be located in Table 6-2 of the SCVHP; these measures relate to stormwater runoff, in-stream channel and floodplain impacts, vegetation control and/or maintenance, materials a project should and should not use, landscaping and revegetation, free-span bridges at stream crossings, culverts, trails, levees, erosion control, and construction requirements and timing.

- **Condition 6 (Page 6-21) Design and Construction Requirements for Covered Transportation Projects.** Condition 6 provides requirements for rural development design, construction, and post-construction. Types of projects that Condition 6 includes highway projects, mass transit projects, roadway projects and interchange upgrades, road safety and operational improvements, and dirt road construction.
- **Condition 7 (page 6-28) Rural Development Design and Construction Requirements.** Condition 7 provides requirements for development design and construction of new development outside of the urban service area including requirements relating to site hydrology, vineyards, private rural roads, vegetation management, soils, and lighting.
- **Condition 8 (page 6-35) Implement Avoidance and Minimization Measures for Rural Road Maintenance.** Condition 8 provides requirements for rural roads, road median, and barrier maintenance including requirements regarding riparian setbacks, erosion measures, herbicide and pesticide use, seasonal restrictions, mower cleaning, revegetation, ground-disturbing road maintenance, and flow lines.
- **Condition 9 (page 6-37) Prepare and Implement a Recreation Plan.** Condition 9 requires providing public access to all reserve lands owned by a public entity; each reserve land must provide a recreation plan.
- **Condition 10 (page 6-42) Fuel Buffer.** Condition 10 provides requirements for fuel buffers between 30 and 100 feet of structures. Requirements include measures relating to fuel buffers near structures and on reserve lands; the most notable measure is the requirement for nesting bird surveys prior to any fuel buffer maintenance during the nesting season.
- **Condition 11 (page 6-44) Stream and Riparian Setbacks.** Condition 11 provides requirements for stream and riparian setbacks; as the development area is outside the Urban Service Area, stream setbacks measured from the top of the stream bank should be 35 to 250 feet depending on the category rating of the stream and the slope class. Setbacks for Category 1 streams with 0-30% slopes should be at least 150 feet, and with >30% slopes should be at least 200 feet. Category 2 streams should have a setback of 35 feet.

- **Condition 12 (page 6-56) Wetland and Pond Avoidance and Minimization.** Condition 12 provides measures to protect wetlands and ponds, including planning actions, design, and construction actions. The project would complete a wetland delineation to confirm the distribution and condition of the wetlands onsite.
- **Condition 13 (page 6-58) Serpentine and Associated Covered Species Avoidance and Minimization.** Condition 13 requires surveys for special status plants and the Bay checkerspot butterfly as well as its larval host plant in areas that support serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. Fees apply for impacts to serpentine habitat.
- **Condition 14 (page 6-60) Valley Oak and Blue Oak Woodland Avoidance and Minimization.** Condition 14 provides requirements for project planning and project construction, including avoidance of large oaks, guidance on irrigation near oak trees, and a buffer around the root protection zone, roads and pathways within 25 feet of the dripline of an oak tree, trenching, and pruning activities.
- **Condition 15 (page 6-62) Western Burrowing Owl.** Condition 15 requires preconstruction surveys for burrowing owls in appropriate habitat prior to construction activities, provides avoidance measures for owls and nests in the breeding season and owls in the non-breeding season, and requirements for construction monitoring.
- **Condition 16 (page 6-68) Least Bell's Vireo.** Condition 16 requires preconstruction surveys in appropriate habitat for the least Bell's vireo prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 17 (page 6-69) Tricolored Blackbird.** Condition 17 requires preconstruction surveys in appropriate habitat for the tricolored blackbird prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 18 (page 6-71) San Joaquin Kit Fox.** Condition 18 requires preconstruction surveys in appropriate habitat for the San Joaquin kit fox prior to construction activities, and provides avoidance and construction monitoring measures.
- **Condition 19 (page 6-74) Plant Salvage when Impacts are Unavoidable.** Condition 19 provides salvage guidance and requirements for covered plants.
- **Condition 20 (page 6-76) Avoid and Minimize Impacts to Covered Plant Occurrences.** Condition 20 provides requirements for preconstruction surveys for appropriate covered plants (per habitat).

3.2.9.4 SCVHP Biological Goals, Objectives, and Conservation Actions

Tables 5-1a, b, c, and d of the SCVHCP provides information about the biological goals, objectives, and conservation actions of the SCVHCP including landscape level goals (Table 5-

1a), natural community level goals (Table 5-1b), wildlife goals (Table 5-1c), and plant goals (Table 5-1d) (ICF International 2012).

3.3 ENVIRONMENTAL IMPACT/MITIGATION

The potential impacts to sensitive biological resources resulting from the development of the quarry, and mitigations that would be required to lessen these impacts to a less-than-significant level are discussed further below.

3.3.1 Conflict with an Adopted Habitat Conservation Plan

Potential Impact. The project site is within the area covered by the Santa Clara Valley Habitat Conservation Plan (SCVHP) (ICF 2012) as already discussed above; however, quarry projects are not considered covered activities under the SCVHP, and therefore the project will not be subject to the fees and conditions of the SCVHP directly. Nonetheless, we have used the SCVHP as a framework for our evaluation and mitigation of biological impacts, and have ensured that mitigations are consistent with the goals and objectives of the SCVHP. A more detailed discussion of the SCVHP including all conditions on covered activities is provided in **Section 3.2.9** of this report, above. The SCVHP requires the payment of development fees based on land cover types within the development area for covered activities. For projects occurring outside the SCVHP's Urban Service Area (USA), the development area includes the project footprint plus a 50-foot buffer for permanent impacts. Per the SCVHCP Geobrowser, the approximately 300-acre project site primarily consists of lands considered to be Zone A Lands (Ranchlands and Natural Lands) and the current 2016 fees for Zone A lands are \$19,159 per acre. Additionally, the project site supports drainages that would be considered Category 2 streams under the SCVHP; and the access road for Phase 1 will traverse Sargent Creek, which is considered a Category 1 stream; and the plant site and overburden areas occur in proximity to Tar Creek, also considered a Category 1 stream. The SCVHP requires that projects be set-back 35 feet from Category 2 streams and 150 feet from Category 1 streams to avoid stream specialty fees. The current 2016 specialty fees for these stream habitats are \$638 per linear foot.

In lieu of the payment of some or all development fees, the SCVHP Entity may accept "land in-lieu" in exchange for development fees and specialty fees for impacts to all land cover types with the exception of wetland specialty fees. The decision to accept land-in-lieu is currently

negotiated on a case by case basis with the SCVHCP Entity. In addition to the payment of fees or provision of “land in lieu”; the project would be required to comply with SCVHCP conditions that are applicable to the project.

Mitigation. Although the project would not be considered a covered activity under the SCVHP and is not subject to the fees and conditions of the plan, aspects of the project have been designed to be consistent with the goals and objectives of the plan. For instance, the project includes minimum 150 foot setbacks from Tar Creek and Sargent Creek, with the exception of the Phase 1 road crossing of Tar Creek. In situations where the project will result in a significant impact on biological resources, mitigations are provided further on in this section, such as the establishment of a conservation easement and pre-construction surveys that would be consistent with requirements and conditions of the SCVHP.

3.3.2 Potential Impacts to California Tiger Salamander Habitat and Individuals

Potential Impact. The presence of the California tiger salamander (CTS) on the Sargent Ranch property is well-documented. Grasslands occurring within all four phases of the project provide suitable estivation habitat for this species and it is assumed to estivate in these habitats on the site; therefore, the project would result in the loss of estivation habitat and in harm or mortality to individual CTS estivating on the site during project implementation. Additionally, although CTS have not been confirmed to breed in ponds on the west side of Sargent Creek to the north of the Phase 1 site, these ponds appear to support a suitable hydrologic regime to function as breeding habitat for this species, and the project could result in harm or mortality to individual CTS during movements through the project site between breeding and estivation habitats during project implementation. The direct loss of estivation habitat and the loss of individual CTS during project development and implementation would be considered a significant impact under CEQA. Mitigations are provided below to reduce these impacts to a less-than-significant impact.

Mitigation. These measures would reduce impacts to CTS to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHP.

The primary approach to mitigate impacts to CTS would be based upon 1) avoidance of wetland and other aquatic resources to the maximum extent possible, 2) implementation of minimization

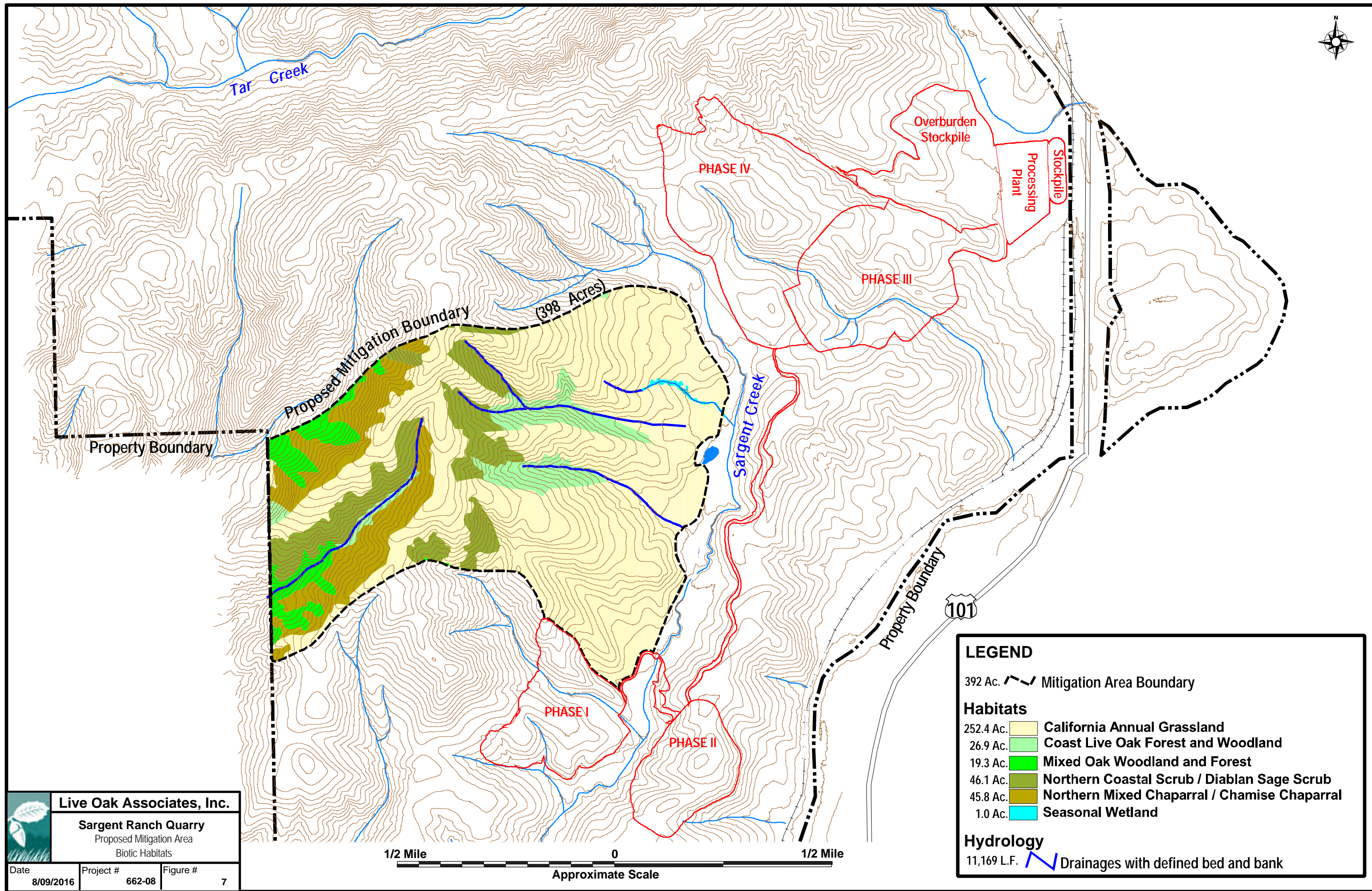
measures, 3) compensation for impacts to suitable upland and aquatic habitats via the preservation of open space lands that contain similar or higher quality suitable upland and aquatic habitats.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CTS, the project has been designed in ways that generally avoid direct impacts to riparian and aquatic habitats, and immediately adjacent upland habitats. For instance, no seasonal wetlands or ponds providing potential breeding habitat for this species will be directly impacted, and the project includes setbacks from aquatic resources of the site including a minimum 150 foot setback from Tar Creek and Sargent Creek (with the exception of the Sargent Creek access road crossing). However, the avoidance of CTS estivation habitat will not be possible while meeting project objectives.

Minimization. The project will be designed, built, and operated in ways that minimize both direct and indirect impacts to CTS. Implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any construction related to the development of the quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist will train all construction personnel regarding habitat sensitivity, identification of special status species potentially occurring on the site, and required practices.
- Pre-construction surveys will be conducted to ensure that CTS are absent from the construction area. If CTS are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CTS from moving into these areas.
- A biological monitor will be present onsite during particular times of construction to ensure no CTS are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CTS during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Compensation. The applicant has identified lands on the Sargent Ranch property for preservation and dedication to the SCVHP Habitat Agency or other public or private land conservation entity to mitigate for a loss of habitat for special status species on the project site. These conservation lands provide similar or higher quality habitat values for CTS, CRLF and other special status species that may be impacted by the project, including being immediately adjacent to 1.2 acres of ponds and 1.0 acres of seasonal wetlands that provide known breeding habitat for CRLF, and provides potentially suitable breeding habitat for CTS, adjacent to and on the west of Sargent Creek; and a mosaic of other habitats including approximately 260 acres of grasslands that provide estivation habitat for CTS, almost 46 acres of coast live oak forest and mixed oak forest, and approximately 90 acres of scrub and chaparral habitats. Additionally, more than 11,000 linear feet of ephemeral drainages occur on the conservation lands that would be considered Category 2 streams under the HCP. These lands have over one mile of frontage along Sargent Creek, an important north-south corridor for native wildlife, and links open space lands to the west and east, therefore should continue to facilitate movement of wildlife across upland habitats from east to west. Lands that are proposed for preservation are depicted in Figure 7 and habitats present within the proposed conservation easement area, along with acreages, are detailed in Table 4. In addition, the project proponent will define and provide for a financial mechanism such as a non-wasting endowment that funds the management of the preserved lands into perpetuity.



LEGEND

392 Ac. Mitigation Area Boundary

Habitats

- 252.4 Ac. California Annual Grassland
- 26.9 Ac. Coast Live Oak Forest and Woodland
- 19.3 Ac. Mixed Oak Woodland and Forest
- 46.1 Ac. Northern Coastal Scrub / Diablan Sage Scrub
- 45.8 Ac. Northern Mixed Chaparral / Chamise Chaparral
- 1.0 Ac. Seasonal Wetland

Hydrology

11,169 L.F. Drainages with defined bed and bank

Live Oak Associates, Inc.

Sargent Ranch Quarry
Proposed Mitigation Area
Biotic Habitats

Date	Project #	Figure #
8/09/2016	662-08	7

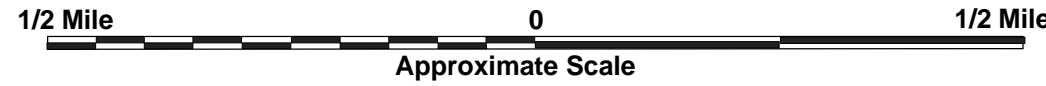


Table 4. Habitats of the Conservation Easement Area

Habitats	Acreages	Value
California Annual Grassland	258.8	California tiger salamander estivation habitat; potential burrowing owl habitat; American badger habitat; foraging habitat for many special status birds.
Coast Live Oak Forest and Woodland	26.9	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Mixed Oak Woodland and Forest	19.3	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Coastal Scrub/Diablan Sage Scrub	46.1	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Northern Mixed Chaparral/Chamise Chaparral	45.8	Nesting, roosting, and foraging habitat for many common and special-status birds and other animals.
Seasonal Wetland	1.0	Known CRLF breeding habitat; potential CTS breeding habitat. Seasonal source of drinking water for many common and special-status animals. USACE and RWQCB jurisdictional habitat.
Total	397.9	
Creeks, Streams and Drainages	Linear Feet of Channel	Value
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	11,169	Potential CDFW, USACE and RWQCB jurisdictional habitat.

Regulatory issues. In addition to mitigating for project impacts to CTS under CEQA, the applicant would need to comply with provisions of the federal and state Endangered Species Acts and would need to seek take authorization from both the USFWS and CDFW for project-related losses as required by law. To obtain a federal take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation through the USACE) or through the HCP process (i.e., Section 10 consultation).

3.3.3 Potential Impacts to California Red-Legged Frog Habitat and Individuals

Potential Impact. The presence of CRLF has been confirmed throughout the greater Sargent Ranch property in close proximity to the proposed quarry sites. Indirect impacts to these sensitive habitats could include impacts to water quality and disturbance as a result of noise; and could also result in harm or mortality to individual frogs as a result of vehicle traffic. The project would also result in the direct loss of suitable upland habitat for this species in the form of grassland and woodland habitat; and could result in harm or mortality to individual CRLF should they occur in these habitats during project implementation. Additionally, as indicated above,

riparian habitats associated with Sargent and Tar Creeks occur in proximity, i.e. within 200 feet, of project footprints. These riparian habitats likely provide foraging and movement habitat for CRLF. Direct and indirect impacts to CRLF breeding, foraging and movement habitat, as well as harm or mortality to individual CRLF, would be considered a significant impact under CEQA.

Mitigation. Implementation of the following mitigation measures would reduce impacts to CRLF to a less-than-significant level.

The primary approach to mitigate impacts to CRLF would be based upon 1) avoidance of riparian and aquatic resources of the site to the maximum extent possible, 2) implementation of minimization measures, 3) compensation for impacts to suitable upland and aquatic habitats via the preservation of open space lands that contain higher quality suitable upland and aquatic habitats.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CRLF, the project should be designed in ways that avoid impacts to riparian and aquatic habitats, and their immediately adjacent upland habitats, to the maximum extent practicable. Except for the Phase 1 and Phase 2 access road which will traverse Sargent Creek in one location in the southern portion of the site, the project as currently designed avoids direct impacts to riparian resources of the site; and the project avoids indirect impacts to such habitat via a minimum of a 150 foot setback from Sargent and Tar Creeks.

Minimization. The project should be designed, built, and operated in ways that minimize both direct and indirect impacts to the CRLF. Implementation of the following measures, partially summarized below and described more fully in Appendix C, should be taken during any construction of quarry facilities and roads occurring within 100 feet of any riparian or aquatic resource.

- Prior to the start of construction, a qualified biologist approved should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that CRLF are absent from the construction area. If CRLF are present, they should be relocated by a qualified biologist.

- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CRLF from moving into these areas.
- A biological monitor should be present onsite during particular times of construction to ensure no CRLF are harmed, injured, or killed during project buildout.
- To minimize harm or mortality to individual CRLF during migration movements, a maximum speed limit of 10 mph for vehicle traffic on quarry access roads should be enforced during project operation, and to the extent possible, quarry activities should be confined to daylight hours.

Compensation. Compensation measures included in Mitigation Measure 3.3.2 for CTS would also compensate for a loss of suitable habitat for CRLF.

Regulatory issues. In addition to mitigation for potential project impacts to CRLF under CEQA, the applicant would need to comply with provisions of the federal Endangered Species Act and would need to seek take authorization from the USFWS for project-related losses as required by law. To obtain a take permit, consultation with the U.S. Fish and Wildlife Service would need to be initiated either through a federal nexus (i.e., Section 7 consultation, usually through the USACE or the Bureau of Land Management) or through the HCP process (i.e., Section 10 consultation).

3.3.4 Potential Impacts to Western Pond Turtles

Potential Impact. Western pond turtles (WPT) have been documented in the pond approximately 1500 feet southeast of Phase 4 of the project. Although there are no known occurrences of WPT within Sargent or Tar Creeks, in wet years, both of these creeks may provide foraging and movement habitat for this species. Although the project has been designed to be set back 150 feet from these aquatic resources, the access road for Phase 1 will require construction of a crossing over Sargent Creek. Should this work commence during the dry season when Sargent Creek is dry, then it would not be expected that turtles would be in or near Sargent Creek; however, any activities within 150 feet of the creek during the wet season when the creek is inundated could result in harm or mortality to individual western pond turtles should they be present, and this may be considered a significant impact under CEQA.

Mitigation Measure 3.3.4. Implementation of the following measures would reduce impacts to WPT to a less-than-significant level.

Avoidance, minimization and compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF, respectively, would also reduce impacts to individual WPT to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHP.

3.3.5 Potential Impacts to Burrowing Owls

Impact. Burrowing owls have been observed foraging on the greater Sargent Ranch property; however, no nesting activity has ever been observed. The project site provides potential foraging, roosting, and nesting habitat for this species. Project activities could result in a loss of habitat for this species and in impacts to individual owls should they nest or roost on the site and this would be considered a potentially significant impact. Construction activities that adversely affect the nesting success of BUOW or result in mortality of individual owls that are nesting or roosting on the site would constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

Mitigation Measure 3.3.5. Implementation of the following measures would reduce impacts to BUOW habitat and to individual BUOW to a less-than-significant level. These measures would also be consistent with the goals and objectives of the SCVHCP.

- Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of BUOW foraging, roosting and nesting habitat.
- The following additional measures have been taken from SCVHP Condition 15 to ensure that individual BUOW are not harmed or killed as a result of project activities, and to ensure that the project is consistent with the goals and objectives of the SCVHP, which considers the burrowing owl a “no take” species:

***SCVHP Condition 15.** Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity. To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or*

begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

Should the pre-construction survey determine the presence of burrowing owls on the site during the pre-construction surveys, then the following avoidance measures will be implemented as per Condition 15 of the SCVHP:

Avoidance During the Breeding Season. *If evidence of western burrowing owls is found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the project proponent develops an avoidance, minimization, and monitoring plan that will be reviewed by the Implementing Entity and the Wildlife Agencies prior to project construction based on the following criteria.*

- *The Implementing Entity and the Wildlife Agencies approves of the avoidance and minimization plan provided by the project applicant.*
- *A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).*
- *The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.*
- *If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.*

Avoidance During the Non-Breeding Season. *During the non-breeding season (September 1–January 31), the project proponent will establish a 250-foot non-disturbance buffer*

around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites.

- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.
- If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

Construction Monitoring. Based on the avoidance, minimization, and monitoring plan developed (as required in the above section), during construction, the non-disturbance buffer zones will be established and maintained if applicable. A qualified biologist will monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

Passive Relocation. Passive relocation would not be allowed under the Plan until the positive growth trend described in Section 5.4.6 is achieved. Once this occurs, passive owl relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other measures described in this condition do not allow work to continue. Passive relocation would only be proposed if the burrow needed to be removed, or had the potential of collapsing (e.g., from construction activities), as a result of the covered activity.

If passive relocation is eventually allowed, a qualified biologist can passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools. During excavation an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trapping owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies during Plan implementation.

Exceptions to Passive Relocation Prohibition. Due to the relatively low numbers of burrowing owls in the study area, it is not expected that the prohibition of passive relocation will result in project delays. However, it is possible that a covered activity could not proceed

due to avoidance measures for burrowing owl in this condition if owls continually persist on a site where avoidance is not feasible. In such cases, a project proponent may apply for an exception based on the following process. For this condition, the term exception means an allowance to conduct passive relocation of burrowing owls during the non-breeding season only when this activity is not otherwise allowed. This exception process is necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, other portions of this condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the condition.

The measures above designed to ensure no harm or mortality occur to individual BUOW would be applicable to each new phase of the project. Full implementation of the measures identified above would mitigate impacts to the burrowing owl to a less-than-significant level.

3.3.6 Disturbance to Nesting Raptors and Nesting Migratory Birds

Potential Impact. Habitats within the footprints of the proposed quarry project provide nesting and/or foraging habitat for a number of special status and migratory birds, including raptors. Additionally, there are known occurrences of special status birds such as tri-colored blackbird in very close proximity to the site, although the site itself lacks suitable nesting habitat for this species. Project activities including noise, ground disturbance and vegetation removal that commence during the nesting season (February 1 through August 31) could result in adult birds within the project site and its immediate vicinity abandoning their nests and result in mortality to their unfledged young. This would constitute a violation of state and federal law and would be considered a significant impact under CEQA.

Mitigation Measure. Implementation of the following mitigation measures would reduce impacts to nesting birds to a less-than-significant level.

To the maximum extent practicable, trees and other vegetation planned for removal should be removed during the non-breeding season (September 1 through January 31). If it is not possible to avoid tree or vegetation removal or other disturbances during the breeding season (February 1 through August 31), then a qualified biologist will conduct a pre-construction survey for tree- and ground-nesting raptors and migratory birds in all potential nesting habitat within the construction footprint and within 250 ft. of the footprint. This survey should be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early

part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the later part of the breeding season (May through August). If nesting raptors or migratory birds are detected on the site during the survey, a suitable construction-free buffer will be established around all active nests. The precise dimension of the buffer (up to 250 ft.) would be determined by the qualified biologist at that time and may vary depending on location and species. Buffers will remain in place for the duration of the breeding season or until it has been confirmed by the qualified biologist that all chicks have fledged and are independent of their parents. Pre-construction surveys during the non-breeding season are not necessary (with the exception of burrowing owls, see *Impact 3.3.5*, above), as adult birds would be expected to abandon their roosts during project implementation activities and therefore, would not be expected to be harmed or killed.

Implementation of the above measures would be applicable to all four phases of the project and would mitigate impacts to nesting raptors and other birds to a less-than-significant level.

3.3.7 Potential Impacts to American Badgers

Impact. Badgers have been documented on the greater Sargent Ranch property by both PNWB and by the resident rancher. Although badgers and their dens have not been documented on the quarry project site, grasslands of the project site provide potential foraging, denning and breeding habitat for this species, and the loss of such habitat for this species may be considered a significant impact under CEQA. Additionally, should badgers occur on the site during project implementation, this may result in harm or mortality to individual badgers, and this would also be considered a significant adverse impact under CEQA.

Mitigation. Implementation of the following mitigation measures would reduce impacts to the American badger to a less-than-significant level.

Avoidance. Pre-construction surveys that will be conducted for burrowing owls will also be used to determine the presence or absence of badgers in the development footprint, as well as within 300 feet of development.

If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 ft. (or distance

specified by the resource agencies, i.e., CDFW) will be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present on the site during project development activities to ensure the buffer is adequate to avoid direct impact to individuals or den abandonment. The monitor would be necessary on the site until it is determined that young are of an independent age and project development activities would not harm individual badgers.

Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.

Pre-construction surveys and avoidance measures to ensure that badgers are not harmed or killed would be applicable to all project phases.

Compensation. Compensation measures included in Mitigation Measures 3.3.2 and 3.3.3 for CTS and CRLF would also compensate for the loss of American badger foraging and denning habitat on the project site.

The above mitigation measures will lessen potential impacts to badgers to a less-than-significant level.

3.3.9 Potential Impact to Special Status Plant Species

Potential Impact. Of the special status plant species potentially occurring in the region (Table 3, Figure 5), most are considered absent from the site due to a lack of suitable habitat such as serpentine grasslands, wetlands, or vernal pools. It should be noted that there is a documented occurrence in the CNDDDB of one of these species, i.e. saline clover (CRPR 1B) occurring in wetlands of the greater ranch property; however, habitat for this species is absent on the project site due to a lack of wetland or vernal pool habitats within the project boundary. Six other special status plant species are considered unlikely to occur on the project site because habitat is marginal on the site for these species and/or because the species has not been observed in the region for many decades. The latter species include showy Rancheria clover (FE, CRPR 1B), alkali milk-vetch (CRPR 1B), fragrant fritillary (CRPR 1B), Loma Prieta hoita (CRPR 1B), big-scale balsamroot (CRPR 1B), and pink creamsacs (CRPR 1B). As with saline clover, it should be noted that there is a CNDDDB-documented occurrence of pink creamsacs on the greater Sargent

Ranch property outside of the project site; however, the project site provides marginal habitat for these species due to the absence of serpentine soils on which this species typically occurs. The grasslands of the site provide suitable potential habitat for two special status plant species, both annual species, and these species include round-leaved filaree (CRPR 1B) (annual species; blooms March-May) and Congdon's tarplant (CRPR 1B) (annual species; blooms May-November); and appropriately timed botanical surveys in grassland habitats that will be impacted by the project would need to be conducted to rule out their presence on the site. Three botanical surveys (March, May and late September-early October) conducted within the grassland habitats of the site would be sufficient to confirm the absence of these species on the site. Should these species occur on the project site, impacts to populations as a result of the project would need to be evaluated by a qualified botanist or plant ecologist to determine whether impacts would be considered significant. If the project would result in the loss of a significant portion of the regional population of these species, impacts may be considered significant under CEQA.

Mitigation. Should the botanical surveys confirm that special status plants are absent from the site, then no mitigation would be required. If populations of these species are present, and if it is determined by a qualified botanist or plant ecologist that project impacts to these species are significant under CEQA, then the following mitigations will be implemented which will reduce impacts to a less-than-significant level.

Avoidance. In consultation with a botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriate sized buffer) to these species.

Compensation. If the project cannot be designed to avoid significant impacts to special status plant populations, then the following compensatory measures will be implemented.

Onsite Preservation. The onsite conservation easement area should be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the conservation easement, it should be determined by a qualified botanist or plant ecologist whether these populations to be preserved would adequately compensate, or partially compensate, for lost populations on the project site. If this is the case, then a

Management Plan for populations occurring on the conservation easement shall be developed as part of the greater long-term management plan for the conservation easement as required under Mitigation Measure 3.3.2, above.

Development of a Site Restoration Plan. If the project cannot be designed to avoid significant impacts to special status plants (as discussed above) and the easement area does not support adequate populations of the impacted species to compensate for project impacts, then a Site Restoration Plan must be developed for the significantly impacted species by a qualified botanist or plant ecologist and approved by the County prior to the start of project development. The objective of this mitigation measure would be to replace the special status plants and habitat lost during project implementation. The proposed restoration program should be monitored for a period of five years from the date of site grading. The restoration plan should contain at a minimum the following:

- Identification of appropriate locations on the conservation easement area as determined by the botanist or plant ecologist (i.e., areas with suitable soils, aspect, hydrology, etc.) to restore lost plant populations.
- A description of the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can best be established by collecting seeds of onsite plants prior to project implementation and then directly seeding into suitable habitat on the conservation easement.
- A timetable for implementation of the restoration plan.
- A monitoring plan and performance criteria.
- A description of remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- A description of site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

Off-site Mitigation. If an onsite restoration plan is not feasible, mitigation for impacted special status plant species could be accommodated through restoration or preservation at an off-site location. Any off-site restoration plan would be subject to the same minimum requirements as indicated above for an onsite restoration plan.

If off-site preservation is the mitigation alternative chosen, then the mitigation site must be confirmed to support populations of the impacted species and must be established as a conservation easement to be preserved in perpetuity. A qualified botanist or plant ecologist should prepare a Preservation Plan for the site containing, at a minimum, the following elements:

- A monitoring plan and performance criteria for the preserved plant population.
- A description of remedial measures to be performed in the event that performance criteria are not met.
- A description of maintenance activities to be conducted on the site including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife.

The project proponent will be responsible for funding the development and implementation of any onsite or off-site Preservation Plan.

3.3.10 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Potential Impact. A wetland delineation was conducted on the Sargent Ranch property, including the quarry project site, in 2004 by LOA; however, the delineation was never submitted to USACE for verification. Although areas meeting the criteria of jurisdictional wetlands appear to be absent from the project site based on findings of the 2004 delineation, several ephemeral drainages occur on the site which have a defined bed and bank and evidence of an Ordinary High Water (OHW) mark. These drainages may be considered jurisdictional by both USACE and RWQCB to the extent of the OHW mark on opposing banks; and the CDFW may also consider the ephemeral drainages jurisdictional to the top of the bank. Additionally, the Sargent Creek crossing for Phase 1 may result in impacts to jurisdictional waters of the U.S. and State depending on the ultimate design of the crossing. A preliminary estimate, based on the 2004 delineation, is that approximately 6300 linear feet of such ephemeral drainages would be

impacted by the proposed project, with the majority, i.e. approximately 3,000 linear feet, being impacted as a result of Phase 3 of the project, followed by Phase 4 at approximately 1700 linear feet, Phase 1 at approximately 1600 linear feet. These ephemeral drainages were not observed to support woody riparian vegetation or wetland vegetation during the 2004 delineation effort and in most cases the vegetation present within drainages was undifferentiated from that of surrounding upland habitats. These features appear to only carry water during or directly after large storm events. Therefore, these drainages do not appear to provide biological functions and values in excess of similar surrounding upland habitats; however, most if not all of these features are likely to be considered jurisdictional by the USACE, RWQCB and/or CDFW and their loss would be considered significant under CEQA. The limit of jurisdiction of the USACE and RWQCB would be the Ordinary High Water (OHW) mark on opposing banks. Based on the 2004 delineation effort, most of the ephemeral drainages of the site are narrow, with an average width of OHW of approximately two feet; therefore, the total acreage of potential impact to USACE and RWQCB jurisdiction would be estimated at 0.29 acre. The limit of jurisdiction of the CDFW would be the bed and bank; therefore, with an average channel width of about six feet, the estimated total of areas of CDFW jurisdiction within impacted ephemeral drainages would be estimated at 0.88 acre. It should be noted that the delineation planned for the fall of 2016 will provide more accurate estimates impacts to jurisdictional waters based on existing conditions on the site.

In addition to the direct impacts to ephemeral drainages, the construction of the access road for Phase 1 of the project will likely result in minor impacts to Sargent Creek as a result of the single creek crossing. It is assumed that these impacts will be less than 0.01 acre of areas under the jurisdiction of USACE and RWQCB and less than 0.1 acres of areas under the jurisdiction of CDFW, although specific bridge detail plans have not been provided. Therefore, in total, impacts to USACE and RWQCB from all phases of the project are estimated at 0.30 acres and impacts to CDFW jurisdiction are estimated at 0.98 acre.

The loss of Waters of the U.S. and State would be considered a significant impact under CEQA. The following mitigations are designed to reduce these impacts to a less-than-significant level.

Mitigation. The project proponent should implement avoidance, minimization, and/or compensation measures to reduce impacts to jurisdictional waters and riparian habitats to a less-than-significant level.

Avoidance. The preferred method of mitigation would be avoidance of all waters of the U.S. and State by designing the project so that it avoids the placement of fill within potentially-jurisdictional waters. As the last wetland delineation was prepared over 10 years ago and was never verified by USACE, and, as it is likely site conditions have changed since that delineation effort, a formal wetland delineation should be prepared for the project site and the conservation easement area, and the delineation should be submitted to USACE for verification so that the extent of jurisdictional waters that will be both impacted and preserved can be determined.

Based on the 2004 delineation, the project has been designed to avoid direct and indirect impacts to the most sensitive aquatic features on the Sargent Ranch property by ensuring that they have avoided jurisdictional wetlands and other aquatic features that support important habitat for special status species as well as avoiding Sargent Creek and Tar Creek with a minimum 150 foot setback, both of which are considered Category 1 streams by the SCVHP. However, the project cannot avoid impacts to all ephemeral drainage channels and still meet project objectives.

Minimization. Because full avoidance is not possible, actions should be taken to minimize impacts to aquatic and riparian habitats. Measures taken during construction activities should include placing construction fencing around any aquatic features or riparian areas to be preserved that occur within 100 feet of project construction activities to ensure that these activities do not inadvertently impact sensitive habitats. Sargent Creek access road crossings shall be designed to minimize impacts to the most sensitive aquatic habitats, such as through the use of clear-span structures, and in such a way to ensure that they do not result in barriers to wildlife that use the Sargent Creek corridor.

As part of project build-out, all proposed lighting should be designed to avoid light and glare impacts to the riparian corridor. Light sources should not be visible from riparian areas and should not illuminate riparian areas or cause glare on the opposite side of the creek. Additionally, proposed development activities should be designed and situated to avoid the loss of trees within the riparian area of Sargent Creek to the maximum extent practicable.

Preservation. The project includes the preservation of an estimated 11,000 linear feet of ephemeral drainages (including an approximately 0.50 acres of OHW channel under the jurisdiction of the USACE and RWQCB, and approximately 1.5 acres of channel under the jurisdiction of CDFW); and 1.0 acres of seasonal wetlands, within a conservation easement. The ponds and wetlands preserved would also be likely to be considered jurisdictional by USACE and RWQCB.

Compensation. In addition to the preservation of ephemeral channel habitat and other aquatic habitat as discussed above, the project will compensate for a loss of ephemeral channel habitat and a small amount of riparian habitat along Sargent Creek riparian through onsite creation of similar or higher quality habitat within the conservation easement area or via the purchase of mitigation credits, or some combination of these two approaches, at a minimum of a 1:1 replacement-to-loss ratio for “in kind” habitat or minimum 1:1 replacement-to-loss ratio for different but higher quality habitat (such as the onsite creation of wetland habitat or the purchase of wetland habitat credits).

Should habitat be created onsite, an onsite habitat mitigation and monitoring plan (HMMP) would need to be developed. At a minimum, the HMMP will:

- Define the location of all restoration/creation activities;
- Provide evidence of a suitable water budget to support any created aquatic and riparian habitats;
- Identify the species, amount, and location of plants to be installed in the created habitats;
- Identify the time of year for planting and method for supplemental watering during the establishment period;
- Identify the monitoring period. This should be not less than 5 years.
- Define success criteria that will be required for restoration efforts to be deemed a success;
- Identify adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include, but are not limited to, measures to address colonization by invasive species, unexpected lack of water, and excessive foraging of installed plants by native wildlife;
- Define management and maintenance activities (weeding of invasive plants, providing for supplemental water, repair of water delivery systems, etc.); and

- Provide for surety in funding the monitoring and ensuring that the created aquatic and riparian habitats fall within lands to be preserved and managed into perpetuity.

Regulatory issues. The applicant will also need to comply with all state and federal regulations related to construction work that will impact aquatic habitats occurring on the site. The applicant will be required to obtain a Section 404 Clean Water Act permit from the USACE (because of the extent of the impact, i.e. more than 300 linear feet of jurisdictional channel, an Individual Section 404 permit will be required), Section 401 Water Quality Certification from the RWQCB, and Section 1600 Streambed Alteration Agreement from the CDFW prior to initiating any impacts within these habitats.

These minimization and compensation measures will reduce impacts to waters of the U.S. and state and to sensitive riparian habitats to a less-than-significant level.

3.3.11 Potential Impacts to Western Red Bat, Pallid Bat, and Other Special Status and Non-special Status Roosting Bats

Potential Impact. A number of special status and non-special status bat species may roost and/or forage on the project site. Oak trees of the site provide potential roosting habitat for foliage- and cavity-roosting bats including special status bats such as the western red bat and pallid bat, and several other non-special status bat species. The project site provides suitable foraging habitat, but no suitable roosting habitat for other special status bats such as Townsend's big-eared bat and California mastiff bats. While the loss of foraging and roosting habitat for bat species would be considered a less than significant impact of the project due to availability of such habitat regionally, tree removal could result in the loss of individual special status bats or the loss of maternal colonies of either special status or non-special status bat species, and this would be considered a significant impact of the project.

Mitigation. A qualified biologist shall conduct a habitat assessment in the woodland habitat of the site for bats prior to any activities that will result in the removal of trees from the project site. Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/ or maternity habitat for special status bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e. September through mid-October and

March through mid-April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, limbs and branches will be removed by a tree cutter using chainsaws only. Limbs with cavities, crevices or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.

3.3.12 Potential Impacts to Special Status Animal Species

Impact. In addition to CTS, CRLF, WPT, BUOW, American badger and the special status bat species already discussed above, the project site provides potential habitat for several other special status animals that occur, or once occurred, in the project region (Table 3, Figure 5).

The site provides potential foraging and nesting habitat for eight special status bird species, including four raptor species: bank swallow, loggerhead shrike, black swift, Vaux's swift, white-tailed kite, northern harrier, short-eared owl and long-eared owl. Additionally, although nesting habitat is absent or extremely marginal on the site for these species, the site provides potential foraging habitat for another three special status raptor species: bald eagle, peregrine falcon, and golden eagle. All of these latter species have been observed in the past to be present on the greater Sargent Ranch property. Bald eagles have apparently been observed roosting on the Sargent Ranch property near Tar Creek during winter months by PNWB biologists; however, this species has not been observed on the ranch since LOA began surveys in 2004. Peregrine falcons were observed foraging on the site by PNWB biologists and while potential nesting habitat is absent from the quarry project area, suitable potential nesting habitat does occur on the greater Sargent Ranch property for this species. Golden eagles were observed on numerous occasions to forage over the grasslands of the ranch by both PNWB and LOA biologists and are assumed to be regular foragers on the quarry project site; however, no nesting activity has ever been observed on the ranch despite numerous various biological surveys of the site, many of which occurred during the nesting season.

While breeding habitat for the tri-colored blackbird is absent from within the quarry footprints, as previously discussed, there are two documented occurrences in the CNDDDB of tri-colored blackbirds within ponds on the west side of Sargent Creek. These latter occurrences date back to

1980 and 1989. This species was never observed during surveys conducted by PNWB and LOA, and it seems unlikely the species still occurs there, although the ponds were observed to still support potential nesting habitat for this species in the form of emergent vegetation such as cattails. If the species does still occur on the ranch property, the project site would provide marginal foraging habitat for this species, and it would be unlikely to forage there.

All other special status species known to occur in the project region are considered absent from or unlikely to occur on the project site or its immediate vicinity due to the lack of suitable habitat.

The loss of breeding, roosting and foraging habitat for special status animals would be a less-than-significant impact of the project as this habitat would remain regionally abundant. Approximately 400 acres of similar habitat would also be preserved within the conservation easement area on the site.

Mitigation. None warranted.

3.3.13 Loss of Habitat for Non-special Status Native Wildlife

Potential Impact. The habitats of the proposed quarry site are likely to comprise only a portion of most native wildlife's entire home range or territory. As such, some species may disperse through the site, but most wildlife presently using the site do so as part of their normal movements for foraging, mating, and caring for young. Wildlife species presently occupying the site would be displaced or lost from the proposed development areas.

Mining of the site will occur in four phases, with the last two phases probably not occurring until 25 or more years into the future, and continuing to provide habitat for native wildlife in the interim. As new quarry phases are mined, past phases will be reclaimed and revegetated to be returned to a state as closely as possible reflecting their pre-project state. The greatest impacts to habitat will occur as a result of Phase 4. This phase of the project will result in impacts to a total of approximately 90 acres, including annual grasslands, oak woodlands, and hay fields, and also directly impact approximately 1700 linear feet of ephemeral drainages that primarily support herbaceous upland vegetation undifferentiated from surrounding upland habitats. Phase 4 of the

project will not impact, either directly or indirectly, any sensitive riparian habitats or wetland habitats, as no such habitats occur within 150 of the Phase 4 project. Incrementally, over the span of many decades, the quarry project will impact a total of approximately 300 acres of grasslands, woodlands, and agricultural land. Additionally, a small amount of riparian habitat associated with Sargent Creek as a result of the Phase 1 access road crossing will be impacted.

Annual grasslands and oak woodlands do provide important habitat for many native species; however, these habitats are still abundant regionally and a total of approximately 400 acres will be preserved in-perpetuity on the conservation easement. As habitat for native wildlife, this preserved open space is of higher quality than the area proposed for development because it is composed of a mosaic of different habitats including grasslands, woodlands, chaparral/scrub habitats, and seasonal wetlands, and more than 11,000 linear feet of ephemeral drainages. Additionally, the conservation easement will preserve linkages between undeveloped lands occurring to the east and west of the easement, and the eastern boundary, more than a mile in length, is adjacent to Sargent Creek, a riparian corridor which connects open space areas occurring to the north and south as well.

Impacts to native wildlife due to the loss of habitat resulting from the proposed project are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.14 Interference with the Movement of Native Wildlife

Potential Impacts. The quarry project is unlikely to result in a significant impact to the movements of native wildlife. Although some native wildlife would be expected to move through habitats within the quarry footprints, the project will be set back by 150 or more from the most important movement corridors within the project vicinity, i.e. Tar Creek and Sargent Creek, with the exception of crossings of Sargent Creek for access to Phase 1 of the project. Wildlife currently moving through the habitats of the quarry site to access open space lands to the east and west will be able to use the conservation easement area to continue to do so, or the Tar Creek corridor to the north of the quarry site. Open space lands and the Sargent Creek corridor remain available to the west of the quarry area that will continue to provide linkage between open space areas to the south and north of the project.

Therefore, impacts to wildlife movements are considered less-than-significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.15 Conflict with Local Policies or Ordinances

Potential Impact. There are two County policies or ordinances that the project will need to abide by are the Santa Clara County Tree Ordinance and Heritage Trees in Santa Clara County Ordinance. The applicant will be responsible for conforming to these two ordinance requirements and applying for any necessary permits for removal of ordinance or heritage trees.

Mitigation. None warranted.

3.3.16 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Potential Impact. The development of quarry facilities and on-going quarry operations will require grading, excavation, and vegetation removal, thereby resulting in the project site becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek/river beds, canals, and adjacent wetlands.

To avoid or minimize sedimentation to offsite waters the quarry will be set back a minimum of 100 feet from any aquatic features. During the development of quarry facilities, including roads, the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs), develop a SWPPP per State Water Quality Control Board Stormwater Permit, and conform with Santa Clara County's stormwater and grading requirements. If the applicant abides by the above requirements and obtains the required permits prior to starting the project, impacts to downstream waters from erosion and polluted stormwater runoff will be reduced to a less than significant level.

During project operation phase, runoff from quarry work areas would drain by sheet flow into drainage swales along the perimeter of the work area. Storm drainage from the site would be conveyed to settling ponds. Storm water in the settling pond would ultimately percolate on-site or be reused for plant operations. Swales will buffer the overburden stockpiles and the plant area from Tar Creek to the west, and contain storm water from entering the creek

Mitigation. Practices incorporated into the project description, as well as minimum setback requirements, will ensure that runoff from the quarry does not enter into creeks in the vicinity of the project. During the development of quarry facilities, the applicant must comply with the provisions of a County grading permit, including standard erosion control measures that employ best management practices (BMPs). Projects involving the grading of large tracts of land must also be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board. Compliance with the above permits should result in no impact to water quality in seasonal creeks, reservoirs, and downstream waters from the proposed project.

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APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the approximately 6300-acre Sargent Ranch study area during the surveys conducted by Live Oak Associates on July 30, August 3 and 4, 2004; June 9 and 10, July 13, 20, 21, and 27, and October 6, 2005; March 28 and 29, 2007; May 29-31, 2007; August 1, 2007; and September 24, 2007. All plants have been named according to *The Jepson Manual* (Hickman 1993). The U.S. Fish and Wildlife Service indicator status of each plant has been shown following its common name. Many, although not all, of these species may also be reasonably expected to occur on the Sargent Ranch Quarry project site.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 +/- - Higher/lower end of category
 NR - No review
 NA - No agreement
 NI - No investigation

ACERACEAE – MAPLE FAMILY

<i>Acer macrophyllum</i>	Big-leaf Maple	FAC
<i>Acer negundo</i>	Boxelder	FACW

ANACARDIACEAE – SUMAC FAMILY

<i>Schinus molle</i>	Peruvian Pepper Tree	UPL
<i>Toxicodendron diversilobum</i>	Poison Oak	UPL

APIACEAE – CARROT FAMILY

<i>Anthriscus caucalis</i>	Bur-chervil	UPL
<i>Berula erecta</i>	Cut-leaved Water Parsnip	OBL
<i>Conium maculatum</i>	Poison Hemlock	FACW
<i>Daucus pusillus</i>	Rattlesnakeweed	UPL
<i>Eryngium vaseyi</i>	Coyote Thistle	OBL
<i>Foeniculum vulgare</i>	Fennel	FACU
<i>Heracleum lanatum</i>	Cow Parsnip	FACU
<i>Hydrocotyle ranunculoides</i>	Marsh Pennywort	OBL
<i>Lomatium</i> sp.	Lomatium	-
<i>Oenanthe sarmentosa</i>	Water Parsley	OBL
<i>Osmorhiza chilensis</i>	Sweet-cicely	UPL
<i>Perideridia kelloggii</i>	Kellogg's Yampah	UPL
<i>Sanicula bipinnata</i>	Poison Sanicle	UPL
<i>Sanicula bipinnatifida</i>	Purple Sanicle	UPL
<i>Sanicula crassicaulis</i>	Snakeroot	UPL
<i>Sanicula laciniata</i>	Coast Sanicle	UPL
<i>Torilis arvensis</i>	Field Hedge Parsley	UPL
<i>Torilis nodosa</i>	Knotted Hedge Parsley	UPL

APOCYNACEAE – DOGBANE FAMILY

<i>Vinca major</i>	Periwinkle	UPL
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ASCLEPIADACEAE – MILKWEED FAMILY

<i>Asclepias fascicularis</i>	Narrow-leaved Milkweed	FAC
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ASTERACEAE - SUNFLOWER FAMILY

<i>Achillea millefolium</i>	Common Yarrow	FACU
<i>Achyraea mollis</i>	Blow Wives	UPL
<i>Agoseris grandiflora</i>	California Dandelion	UPL
<i>Agoseris heterophylla</i>	Annual Mountain Dandelion	UPL
<i>Ambrosia psilostachya</i>	Western Ragweed	
<i>Anaphalis margaritacea</i>	Pearly Everlasting	
<i>Anthemis cotula</i>	Mayweed	FACU
<i>Artemisia californica</i>	California Sagebrush	UPL
<i>Artemisia douglasiana</i>	Mugwort	FACW
<i>Baccharis pilularis</i>	Coyote Brush	UPL
<i>Baccharis salicifolia</i>	Mule's Fat	FACW-
<i>Carduus pycnocephalus</i>	Italian Thistle	UPL
<i>Centaurea calcitrapa</i>	Purple Star-thistle	UPL
<i>Centaurea solstitialis</i>	Yellow Star-thistle	UPL
<i>Chamomilla suaveolens</i>	Pineapple Weed	FACU
<i>Cichorium intybus</i>	Chicory	UPL
<i>Cirsium vulgare</i>	Bull Thistle	FACU
<i>Conyza canadensis</i>	Canadian Horseweed	FAC
<i>Cotula coronopifolia</i>	Brass Buttons	FACW+
<i>Erechtites glomerata</i>	Cut-leaved Fireweed	UPL
<i>Erigeron philadelphicus</i>	Philadelphia Daisy	
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	UPL
<i>Filago gallica</i>	Narrow-leaved Filago	UPL
<i>Gnaphalium californicum</i>	California Everlasting	UPL
<i>Gnaphalium luteo-album</i>	Cudweed	FACW-
<i>Gnaphalium purpureum</i>	Purple Cudweed	UPL
<i>Grindelia camporum</i>	Great Valley Gumplant	FACU
<i>Helenium puberulum</i>	Rosilla	FACW
<i>Hemizonia congesta ssp. congesta</i>	Hayfield Tarweed	UPL
<i>Hemizonia congesta ssp. luzulifolia</i>	Hayfield Tarweed	UPL
<i>Hemizonia pungens ssp. pungens</i>	Common Spikeweed	FAC
<i>Hesperis sparsiflora</i>	Erect Hesperis	UPL
<i>Hypochaeris glabra</i>	Smooth Cat's Ear	UPL
<i>Hypochaeris radicata</i>	Rough Cat's Ear	UPL
<i>Iva axillaris ssp. robustior</i>	Poverty weed	FAC
<i>Lactuca saligna</i>	Willow Lettuce	NI
<i>Lactuca serriola</i>	Prickly Lettuce	FAC
<i>Lagophylla ramosissima ssp. ramosissima</i>	Common Hareleaf	UPL
<i>Lasthenia californica</i>	Goldfields	UPL

<i>Layia platyglossa</i>	Tidy Tips	UPL
<i>Lessingia filaginifolia</i>	Common Lessingia	UPL
<i>Madia gracilis</i>	Slender Tarweed	UPL
<i>Microseris douglasii</i>	Douglas Microseris	UPL
<i>Picris echioides</i>	Bristly Ox Tongue	FAC*
<i>Senecio vulgaris</i>	Common Groundsel	NI
<i>Silybum marianum</i>	Milk Thistle	UPL
<i>Solidago californica</i>	California Goldenrod	UPL
<i>Sonchus asper</i>	Prickly Sow-thistle	FAC
<i>Sonchus oleraceus</i>	Common Sow-thistle	NI
<i>Taraxacum officinale</i>	Common Dandelion	FACU
<i>Tragopogon porrifolius</i>	Tragopogon	UPL
<i>Uropappus lindleyi</i>	Silverpuffs	UPL
<i>Wyethia glabra</i>	Mules-ears	UPL
<i>Wyethia helenioides</i>	Gray Mules Ears	UPL
<i>Xanthium spinosum</i>	Spiny Cocklebur	FAC+
<i>Xanthium strumarium</i>	Common Cocklebur	FAC+

AZOLLACEAE - MOSQUITO FERN FAMILY

<i>Azolla filiculoides</i>	Fern-Like Azolla	OBL
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BETULACEAE – BIRCH FAMILY

<i>Alnus rhombifolia</i>	White Alder	FACW
<i>Alnus rubra</i>	Red Alder	FACW
<i>Corylus cornuta var. californica</i>	Hazelnut	NI

BLECHNACEAE - DEER FERN FAMILY

<i>Woodwardia fimbriata</i>	Chain Fern	FACW+
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BORAGINACEAE – BORAGE FAMILY

<i>Amsinckia menziesii var. intermedia</i>	Fiddleneck	UPL
<i>Cynoglossum grande</i>	Hound's Tongue	UPL
<i>Heliotropium curassivicum</i>	Alkali Heliotrope	OBL
<i>Plagiobothrys canescens</i>	Valley Popcorn Flower	UPL
<i>Plagiobothrys nothoflavus</i>	Rusty Popcorn Flower	FACU

BRASSICACEAE – MUSTARD FAMILY

<i>Brassica nigra</i>	Black Mustard	UPL
<i>Capsella bursa-pastoris</i>	Cardamine californica	
<i>Milkmaids</i>		UPL
<i>Cardamine oligosperma</i>	Bitter Cress	FACW
<i>Cardaria draba</i>	Hoary Cress	UPL
<i>Hirschfeldia incana</i>	Summer Mustard	UPL
<i>Lepidium campestre</i>	Lepidium latifolium	
<i>Broad-leaved Peppergrass</i>		FACW
<i>Lepidium nitidum</i>	Common Peppergrass	FACW
<i>Lepidium oxycarpum</i>	Sharp-podded Peppergrass	OBL

<i>Lepidium strictum</i>	Wayside Peppergrass	UPL
<i>Raphanus sativus</i>	Wild Radish	UPL
<i>Rorippa curvisiliqua</i>	Western Yellow Cress	OBL
<i>Rorippa nasturtium-aquaticum</i>	Watercress	OBL
<i>Sisymbrium officinale</i>	Hedge Mustard	UPL
CAPRIFOLIACEAE – HONEYSUCKLE FAMILY		
<i>Lonicera hispidula</i>	Hairy Honeysuckle	UPL
<i>Sambucus mexicana</i>	Blue Elderberry	FAC
<i>Symphoricarpos albus var. laevigatus</i>	Snowberry	FACU
CARYOPHYLLACEAE – PINK FAMILY		
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	UPL
<i>Silene gallica</i>	Windmill Pink	
<i>Spergularia marina</i>	Salt-marsh Sand Spurry	OBL
<i>Spergularia rubra</i>	Red Sand-spurrey	FAC-
<i>Stellaria media</i>	Common Chickweed	FACU
CHENOPODIACEAE – GOOSEFOOT FAMILY		
<i>Atriplex triangularis</i>	Spear Scale	FACW
<i>Chenopodium californicum</i>	California Goosefoot	UPL
<i>Salsola tragus</i>	Russian-thistle	FACU
CONVOLVULACEAE – MORNING GLORY FAMILY		
<i>Calystegia occidentalis</i>	Western Morning-glory	UPL
<i>Calystegia subacaulis</i>	Hill Morning-glory	UPL
<i>Convolvulus arvensis</i>	Field Bindweed	UPL
<i>Cressa truxillensis</i>	Alkali Weed	FACW
CORNACEAE – DOGWOOD FAMILY		
<i>Cornus glabrata</i>	Brown Dogwood	FACW
CRASSULACEAE – STONECROP FAMILY		
<i>Crassula connata</i>	Pygmyweed	FAC
CUCURBITACEAE – GOURD FAMILY		
<i>Marah fabaceus</i>	California Man-Root	UPL
CYPERACEAE – SEDGE FAMILY		
<i>Carex dudleyi</i>	Dudley's Sedge	FACW
<i>Carex obnupta</i>	Slough Sedge	OBL
<i>Carex serratodens</i>	Bifid Sedge	FACW
<i>Cyperus eragrostis</i>	Umbrella Sedge	FACW
<i>Eleocharis macrostachya</i>	Spikerush	OBL
<i>Scirpus acutus</i>	Common Tule	OBL
<i>Scirpus americanus</i>	Three Square	OBL
<i>Scirpus cernuus</i>	Low Club Rush	OBL

DENNSTAEDTIACEAE – BRACKEN FAMILY

<i>Pteridium aquilinum</i>	Western Bracken Fern	FACU
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DIPSACEAE – TEASEL FAMILY

<i>Dipsacus fullonum</i>	Wild Teasel	NI
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DRYOPTERIDACEAE – WOOD FERN FAMILY

<i>Athyrium felix-femina</i>	Western Lady Fern	FAC
<i>Dryopteris arguta</i>	Wood Fern	UPL
<i>Polystichum munitum</i>	Western Sword Fern	UPL

EQUISETACEAE – HORSETAIL FAMILY

<i>Equisetum arvense</i>	Common Horsetail	FAC
<i>Equisetum laevigatum</i>	Smooth Scouring Rush	FACW
<i>Equisetum telmateia ssp. braunii</i>	Giant Horsetail	OBL

ERICACEAE – HEATH FAMILY

<i>Arbutus menziesii</i>	Madrone	UPL
<i>Arctostaphylos tomentosa</i>	Woolly-leaf Manzanita	UPL

EUPHORBIACEAE – SPURGE FAMILY

<i>Eremocarpus setigerus</i>	Doveweed	UPL
<i>Euphorbia crenulata</i>	Chinese Caps	UPL

FABACEAE – LEGUME FAMILY

<i>Astragalus gambelianus</i>	Gamble's Milk-vetch	UPL
<i>Lotus corniculatus</i>	Bird's Foot Trefoil	FAC
<i>Lotus purshianus</i>	Spanish Lotus	UPL
<i>Lotus scoparius</i>	California Broom, Deer Weed	UPL
<i>Lotus wrangelianus</i>	California Lotus	UPL
<i>Lupinus adsurgens</i>	Silky Lupine	UPL
<i>Lupinus albifrons</i>	Silver Bush Lupine	UPL
<i>Lupinus bicolor</i>	Miniature Lupine	UPL
<i>Lupinus nanus</i>	Sky Lupine	UPL
<i>Lupinus succulentus</i>	Arroyo Lupine	UPL
<i>Medicago polymorpha</i>	Bur Clover	FACU-
<i>Melilotus alba</i>	White Sweetclover	FACU+
<i>Melilotus indica</i>	Yellow Sweetclover	FAC
<i>Rupertia physodes</i>	California-tea	UPL
<i>Trifolium angustifolium</i>	Narrow-leaved clover	UPL
<i>Trifolium albopurpureum</i>	Indian Clover	UPL
<i>Trifolium bifidum</i>	Notch-leaved Clover	UPL
<i>Trifolium ciliolatum</i>	Tree Clover	UPL
<i>Trifolium dubium</i>	Little Hop Clover	FACU
<i>Trifolium fucatum</i>	Bull Clover	FAC
<i>Trifolium gracilentum var. gracilentum</i>	Pinpoint Clover	UPL
<i>Trifolium hirtum</i>	Rose Clover	UPL

<i>Trifolium incarnatum</i>	Crimson Clover	UPL
<i>Trifolium microcephalum</i>	Small-head Clover	FACU
<i>Trifolium microdon</i>	Valpariaso Clover	UPL
<i>Trifolium subterraneum</i>	Subterraneum Clover	UPL
<i>Trifolium wildenovii</i>	Tomcat Clover	UPL
<i>Trifolium wormskioldii</i>	Cow Clover	FACW
<i>Vicia sativa</i>	Spring Vetch	FACU
<i>Vicia villosa</i>	Hairy Vetch	UPL

FAGACEAE – OAK FAMILY

<i>Quercus agrifolia</i>	Coast Live Oak	UPL
<i>Quercus douglassii</i>	Blue Oak	UPL
<i>Quercus lobata</i>	Valley Oak	UPL

GERANIACEAE – GERANIUM FAMILY

<i>Erodium botrys</i>	Long-beaked Filaree	UPL
<i>Erodium cicutarium</i>	Redstem Filaree	UPL
<i>Geranium dissectum</i>	Cut-Leaved Geranium	UPL
<i>Geranium molle</i>	Dove's Foot Geranium	UPL

GROSSULARIACEAE – GOOSEBERRY FAMILY

<i>Ribes californicum</i> var. <i>californicum</i>	Hillside Gooseberry	UPL
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	Pinkflower Currant	UPL

HIPPOCASTANACEAE – BUCKEYE FAMILY

<i>Aesculus californica</i>	California Buckeye	UPL
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HYROPHYLLACEAE – WATERLEAF FAMILY

<i>Nemophila menziesii</i> ssp. <i>menziesii</i>	Baby Blue-eyes	UPL
<i>Pholistima auritum</i> var. <i>auritum</i>	Fiesta Flower	UPL

IRIDACEAE – IRIS FAMILY

<i>Iris douglasiana</i>	Douglas Iris	UPL
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	FAC

JUGLANDACEAE – WALNUT FAMILY

<i>Juglans hindsii</i>	California Black Walnut	FAC
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JUNCACEAE – RUSH FAMILY

<i>Juncus balticus</i>	Baltic Rush	OBL
<i>Juncus bufonius</i>	Toad Rush	FACW-
<i>Juncus effuses</i> var. <i>pacificus</i>	Pacific Bog Rush	OBL
<i>Juncus mexicanus</i>	Mexican Rush	FACW
<i>Juncus occidentalis</i>	Western Rush	FACW
<i>Juncus patens</i>	Common Rush	FAC
<i>Juncus xiphioides</i>	Iris-leaf Juncus	FACW+
<i>Luzula comosa</i>	Wood Rush	NI

LAMIACEAE – MINT FAMILY

<i>Lepichinia calycina</i>	Pitcher Sage	UPL
<i>Marrubium vulgare</i>	Horehound	FAC
<i>Mentha pulegium</i>	Pennyroyal	OBL
<i>Pogogyne serpylloides</i>	Thyme-leaved Pogogyne	FACW
<i>Salvia mellifera</i>	Black Sage	UPL
<i>Stachys ajugoides</i> var. <i>rigida</i>	Rigid Hedge Nettle	OBL
<i>Stachys bullata</i>	Wood Mint	UPL
<i>Stachys pycnantha</i>	Short-spiked Hedge Nettle	FACW
<i>Trichostemma lanceolatum</i>	Vinegar Weed	UPL

LAURACEAE – LAUREL FAMILY

<i>Umbellularia californica</i>	California Bay	FAC
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LEMNACEAE – DUCKWEED FAMILY

<i>Lemna gibba</i>	Inflated Duckweed	OBL
<i>Lemna minor</i>	Duckweed	OBL

LILIACEAE – LILY FAMILY

<i>Brodiaea elegans</i>	Harvest Brodiaea	UPL
<i>Calochortus luteus</i>	Yellow Mariposa Lily	UPL
<i>Calochortus venustus</i>	Mariposa Lily	UPL
<i>Chlorogalum pomeridianum</i>	Soap Plant	UPL
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	UPL
<i>Muilla maritima</i>	Common Muilla	UPL
<i>Trillium chloropetalum</i>	Giant Trillium	UPL
<i>Triteleia laxa</i>		

LINACEAE – FLAX FAMILY

<i>Linum bienne</i>	Narrowleaf Flax	UPL
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LYTHRACEAE – LOOSESTRIFE FAMILY

<i>Lythrum hyssopifolia</i>	Hyssop Loosestrife	FACW
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MALVACEAE – MALLOW FAMILY

<i>Malva neglecta</i>	Common Mallow, Cheeses	UPL
<i>Malvella leprosa</i>	Alkali Mallow	FAC
<i>Sidalcea diploscypha</i>	Fringed Sidalcea	
<i>Sidalcea malvaeflora</i> ssp. <i>laciniata</i>	Checker Bloom, Wild Hollyhock	UPL

MYRTACEAE – MYRTLE FAMILY

<i>Eucalyptus globulus</i>	Blue Gum	UPL
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OLEACEAE – OLIVE FAMILY

<i>Fraxinus dipetala</i>	California Ash	UPL
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ONAGRACEAE – EVENING PRIMROSE FAMILY

<i>Camissonia ovata</i>	Sun Cup	UPL
<i>Clarkia rubicunda</i>	Farewell-To-Spring	UPL
<i>Clarkia sp.</i>	Clarkia	
<i>Clarkia unguiculata</i>	Elegant Fairyfan	UPL
<i>Epilobium brachycarpum</i>	Willow Herb	UPL
<i>Epilobium canum</i>	California Fuschia	UPL
<i>Epilobium ciliatum ssp. ciliatum</i>	California Willowherb	FACW
<i>Epilobium minutum</i>	Minute Willowherb	UPL
<i>Epilobium ciliatum</i>	Willow Herb	FACW
<i>Ludwigia peploides</i>	Yellow Water Weed	OBL
<i>Oenothera elata ssp. hookeri</i>	Hooker's Evening Primrose	

OXALIDACEAE – OXALIS FAMILY

<i>Oxalis corniculata</i>	Creeping Wood-sorrel	FACU
<i>Oxalis pes-caprae</i>	Bermuda Buttercup	UPL

PAPAVERACEAE – POPPY FAMILY

<i>Eschscholzia californica</i>	California Poppy	UPL
<i>Platystemon californicus</i>	Cream Cups	UPL

PLANTAGINACEAE – PLANTAGO FAMILY

<i>Plantago lanceolata</i>	English Plantain	FAC
<i>Plantago major</i>	Common Plantain	FACW-

PLATANACEAE – SYCAMORE FAMILY

<i>Platanus racemosa</i>	Western Sycamore	FACW
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POACEAE - GRASS FAMILY

<i>Agrostis viridis</i>	Water Bent Grass	OBL
<i>Arundo donax</i>	Giant Reed	FACW
<i>Avena barbata</i>	Slender Wild Oats	UPL
<i>Avena sativa</i>	Cultivated Oat	UPL
<i>Briza minor</i>	Little Quaking Grass	FACW-
<i>Bromus carinatus</i>	California Brome	UPL
<i>Bromus diandrus</i>	Rippgut	UPL
<i>Bromus hordeaceus</i>	Soft Chess	FACU
<i>Bromus madritensis</i>	Red Brome	NI
<i>Crypsis schoenoides</i>	Swamp Grass	OBL
<i>Crypsis vaginiflora</i>	Prickle-grass	
<i>Cynosurus echinatus</i>	Hedgehog Dogtail	UPL
<i>Danthonia californica</i>	California Oatgrass	FACW
<i>Distichlis spicata</i>	Saltgrass	FACW
<i>Echinochloa crus-galli</i>	Barnyard Grass	FACW
<i>Elymus elymoides</i>	Squirrel tail	FACU-
<i>Elymus glaucus</i>	Blue Wildrye	FACU
<i>Gastridium ventricosum</i>	Nit Grass	FACU

<i>Hordeum brachyanthurum</i>	California Barley	FACW
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean Barley	FAC
<i>Hordeum murinum ssp. leporinum</i>	Barnyard Barley	NI
<i>Lamarkia aurea</i>	Goldentop	UPL
<i>Leymus triticoides</i>	Creeping Wildrye	FAC+
<i>Lolium multiflorum</i>	Ryegrass	FAC
<i>Lolium perenne</i>	Perennial Rye	FAC
<i>Melica torreyana</i>	Melic Grass	UPL
<i>Nassella cernua</i>	Nodding Needle Grass	
<i>Nassella pulchra</i>	Purple Needle Grass	UPL
<i>Paspalum distichum</i>	Knotgrass	OBL
<i>Phalaris aquatica</i>	Harding Grass	FAC+
<i>Poa annua</i>	Annual Bluegrass	FACW-
<i>Poa secunda</i>	Oneside Blue Grass	UPL
<i>Polypogon monspeliensis</i>	Annual Beardgrass	FACW
<i>Vulpia bromoides</i>	Six-week Fescue	FACW
<i>Vulpia microstachys</i>	Pacific Fescue	UPL

POLEMONIACEAE – PHLOX FAMILY

<i>Navarretia</i> sp.	Navarretia	
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POLYGONACEAE - BUCKWHEAT FAMILY

<i>Eriogonum nudum var. nudum</i>	Naked-stemmed Buckwheat	UPL
<i>Polygonum amphibium var. emersum</i>	Swamp Knotweed	OBL
<i>Polygonum arenastrum</i>	Common Knotweed	FAC
<i>Polygonum hydropiperoides</i>	Water-pepper	OBL
<i>Polygonum persicaria</i>	Lady's Thumb	FACW
<i>Pterostegia drymarioides</i>	Pterostigia	UPL
<i>Rumex acetosella</i>	Sheep Sorrel	FAC_
<i>Rumex crispus</i>	Curly Dock	FACW
<i>Rumex pulcher</i>	Fiddle Dock	FAC+
<i>Rumex salicifolius</i>	Willow Dock	OBL

POLYPODIACEAE – POLYPLODY FAMILY

<i>Polypodium californicum</i>	California Polypody	UPL
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PORTULACACEAE – PURSLANE FAMILY

<i>Calandrinia ciliata</i>	Red Maids	FACU
<i>Claytonia gypsophiloides</i>	Coast Claytonia	UPL
<i>Claytonia parviflora ssp. parviflora</i>	Small-leaved Claytonia	UPL
<i>Claytonia perfoliata ssp. perfoliata</i>	Miner's Lettuce	FAC
<i>Portulaca oleracea</i>	Common Purslane	FAC

POTAMOGETONACEAE - PONDWEED FAMILY

<i>Potamogeton nodosus</i>	Long-leaved Pondweed	OBL
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PRIMULACEAE – PRIMROSE FAMILY

<i>Anagallis arvensis</i>	Scarlet Pimpernel	FAC
<i>Dodecatheon hendersonii</i>	Mosquito Bills	UPL
<i>Trientalis latifolia</i>	Star Flower	UPL

PTERIDACEAE – BRAKE FAMILY

<i>Adiantum jordanii</i>	Maidenhair Fern	UPL
<i>Pellaea andromedaefolia</i>	Coffee Fern	UPL
<i>Pentagramma triangularis</i>	Gold-back Fern	UPL

RANUNCULACEAE – BUTTERCUP FAMILY

<i>Clematis ligusticifolia</i>	Virgin’s Bower	FAC
<i>Myosurus minimus</i>	Common Mousetail	OBL
<i>Ranunculus californicus</i>	California Buttercup	FAC

RHAMNACEAE – BUCKTHORN FAMILY

<i>Rhamnus californica</i>	California Coffeeberry	UPL
<i>Rhamnus crocea</i>	Redberry	UPL

ROSACEAE – ROSE FAMILY

<i>Acaena pinnatifida var. californica</i>	California Acaena	UPL
<i>Adenostema fasciculatum</i>	Chamise	FAC
<i>Aphanes occidentalis</i>	Lady’s Mantle	UPL
<i>Fragaria vesca</i>	Wood Strawberry	UPL
<i>Heteromeles arbutifolia</i>	Toyon	UPL
<i>Holodiscus discolor</i>	Creambush	UPL
<i>Horkelia californica ssp. frondosa</i>	Leafy Horkelia	UPL
<i>Oemlaria cerasiformis</i>	Oso Berry	UPL
<i>Prunus cerasifera</i>	Cherry Plum	UPL
<i>Rosa californica</i>	California Rose	FAC+
<i>Rubus discolor</i>	Himalayan Blackberry	FACW
<i>Rubus ursinus</i>	California Blackberry	FACW

RUBIACEAE – MADDER FAMILY

<i>Galium aparine</i>	Goosegrass	FACU
<i>Galium parisiense</i>	Wall Bedstraw	FACU
<i>Galium porrigens</i>	Climbing Bedstraw	UPL
<i>Sherardia arvensis</i>	Field Madder	UPL

SALICACEAE – WILLOW FAMILY

<i>Populus balsamifera ssp. tricarpa</i>	Black Cottonwood	FACW
<i>Populus fremontii</i>	Fremont’s Cottonwood	FACW
<i>Salix exigua</i>	Narrowleaf Willow	OBL
<i>Salix laevigata</i>	Red Willow	FACW
<i>Salix lasiolepis</i>	Arroyo Willow	FACW
<i>Salix lucida ssp. lasiandra</i>	Yellow Willow	OBL

SAXIFRAGACEAE – SAXIFRAGE FAMILY

<i>Lithophragma affine</i>	Woodland Star	UPL
<i>Saxifraga californica</i>	California Saxifrage	UPL

SCROPHULARIACEAE – SNAPDRAGON FAMILY

<i>Castilleja affinis ssp. affinis</i>	Indian Paintbrush	UPL
<i>Castilleja exserta</i>	Pink Owl's Clover	UPL
<i>Castilleja foliolosa</i>	Woolly Indian Paint-brush	UPL
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	UPL
<i>Mimulus guttatus</i>	Common Monkeyflower	OBL
<i>Scrophularia californica</i>	Beeplant	FAC
<i>Tryphysaria pusilla</i>	Little Owl's Clover	UPL
<i>Veronica anagallis-aquatica</i>	Water speedwell	OBL

SOLANACEAE – NIGHTSHADE FAMILY

<i>Solanum nigrum</i>	Black Nightshade	FACU
<i>Solanum umbelliferum</i>	Blue Witch	UPL

TAXODIACEAE – BALD CYPRESS FAMILY

<i>Sequoia sempervirens</i>	Coast Redwood	UPL
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TYPHACEAE – CATTAIL FAMILY

<i>Typha angustifolia</i>	Narrow-leaved Cattail	OBL
<i>Typha latifolia</i>	Broad-leaved Cattail	OBL

URTICACEAE – NETTLE FAMILY

<i>Urtica dioica ssp. holosericea</i>	Stinging Nettle	FACW
<i>Urtica urens</i>	Dwarf Nettle	UPL

VERBANACEAE – VERBANE FAMILY

<i>Phyla nodiflora</i>	Garden Lippia	FACW
<i>Verbena lasiostachy var. scabrida</i>	Robust Verbena	FAC-

VIOLACEAE – VIOLET FAMILY

<i>Viola pedunculata</i>	Johnny Jump-up	UPL
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VISCACEAE – MISTLETOE FAMILY

<i>Phoradendron villosum</i>	Oak Mistletoe	UPL
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APPENDIX B
TERRESTRIAL VERTEBRATE SPECIES THAT OCCUR, OR POTENTIALLY
OCCUR, ON THE STUDY AREA

The species listed below are those that have been observed on the greater 6300 acre Sargent Ranch property during surveys conducted by LOA and PNWB (denoted by an asterisk), or would be reasonably expected to occur on Sargent Ranch although not directly observed. Many, although not all, of these species may reasonably be expected to use the habitats of the quarry project site. The list was not intended to include birds that are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely and predictably use the site during some or all of the year.

CLASS: ACTINOPTERYGII

ORDER: SALMONIFORMES (Salmonids)

FAMILY: SOLMONIDAE

Steelhead (*Onchorynchis mykiss irideus*)*

CLASS: AMPHIBIA

ORDER: CAUDATA (SALAMANDERS)

FAMILY: AMBYSTOMATIDAE (MOLE SALAMANDERS AND RELATIVES)

California Tiger Salamander (*Ambystoma californiense*)*

FAMILY: SALAMANDRIDAE (NEWT)

California Newt (*Taricha torosa*)*

FAMILY: PLETHODONTIDAE (LUNGLESS SALAMANDERS)

Ensatina (*Ensatina eschscholtzii*)

Black-bellied Salamander (*Batrachoseps nigriventris*)

Pacific Slender Salamander (*Batrachoseps pacificus*)

Arboreal Salamander (*Aneides lugubris*)*

ORDER: ANURA (FROGS AND TOADS)

FAMILY: BUFONIDAE (TRUE TOADS)

Western Toad (*Bufo boreas*)*

FAMILY: HYLIDAE (TREEFROGS AND RELATIVES)

Pacific Chorus Frog (*Pseudacris regilla*)*

FAMILY: RANIDAE (TRUE FROGS)

Bullfrog (*Rana catesbeiana*)*

California Red-legged Frog (*Rana draytonii*)*

CLASS: REPTILIA

ORDER: TESTUDINES (TURTLES)

FAMILY: EMYDIDAE (BOX AND WATER TURTLES)

Western Pond Turtle (*Emys marmorata*)*

ORDER: SQUAMATA (LIZARDS AND SNAKES)

SUBORDER: SAURIA (LIZARDS)

FAMILY: PHRYNOSOMATIDAE

Western Fence Lizard (*Sceloporus occidentalis*)*

FAMILY: SCINCIDAE (SKINKS)

Gilbert Skink (*Eumeces gilberti*)

FAMILY: ANGUIDAE (ALLIGATOR LIZARDS AND RELATIVES)

Southern Alligator Lizard (*Elgaria multicarinata*)*

SUBORDER: SERPENTES (SNAKES)

FAMILY: BOIDAE (BOAS)

Rubber Boa (*Charina bottae*)

FAMILY: COLUBRIDAE (COLUBRIDS)

Racer (*Coluber constrictor*)*

Gopher Snake (*Pituophis melanoleucus*)*

Common Kingsnake (*Lampropeltis getulus*)

Common Garter Snake (*Thamnophis sirtalis*)

Western Aquatic Garter Snake (*Thamnophis couchi*)*

FAMILY: VIPERIDAE

Western Rattlesnake (*Crotalus viridis*)*

CLASS: AVES

ORDER: CICONIIFORMES (HERONS, STORKS, IBISES, AND RELATIVES)

FAMILY: PODICIPEDIDAE

Pied-billed Grebe (*Podilymbus podiceps*)*

FAMILY: ARDEIDAE (HERONS AND BITTERNs)

GREAT BLUE HERON (*ARDEA HERODIAS*)*

BLACK-CROWNED NIGHT HERON (*NYCTICORAX NYCTICORAX*)

GREAT EGRET (*ARDEA ALBA*)*

SNOWY EGRET (*EGRETTA THULA*)*

FAMILY: CATHARTIDAE (AMERICAN VULTURES)

Turkey Vulture (*Cathartes aura*)*

California Condor (*Gymnogyps californianus*)

ORDER: ANSERIFORMES (SCREAMERS, DUCKS AND RELATIVES)

FAMILY: ANATIDAE (SWANS, GEESE AND DUCKS)

MALLARD (*ANAS PLATYRHYNCHOS*)*

CANADA GOOSE (*BRANTA CANADENSIS*)*

WOOD DUCK (*AIX SPONSA*)*

ORDER: FALCONIFORMES (VULTURES, HAWKS, AND FALCONS)

FAMILY: ACCIPITRIDAE (HAWKS, OLD WORLD VULTURES, AND HARRIERS)

White-tailed Kite (*Elanus caeruleus*)*
Bald Eagle (*Haliaeetus leucocephalus*)*
Northern Harrier (*Circus cyaneus*)*
Sharp-shinned Hawk (*Accipiter striatus*)*
Cooper's Hawk (*Accipiter cooperi*)*
Northern Goshawk (*Accipiter gentilis*)
Red-shouldered Hawk (*Buteo lineatus*)*
Red-tailed Hawk (*Buteo jamaicensis*)*
Ferruginous Hawk (*Buteo regalis*)*
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)*

FAMILY: FALCONIDAE (CARACARAS AND FALCONS)

American Kestrel (*Falco sparverius*)*
Merlin (*Falco columbarius*)*
Peregrine Falcon (*Falco peregrinus*)*
Prairie Falcon (*Falco mexicanus*)*

ORDER: GALLIFORMES (Megapodes, Curassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (QUAILS, PHEASANTS AND RELATIVES)

Wild Turkey (*Meleagris gallopavo*)*

FAMILY: ODONTOPHORIDAE (NEW WORLD QUAIL)

California Quail (*Callipepla californica*)*

FAMILY: LARIDAE (GULLS AND TERNS)

California Gull (*Larus californicus*)

ORDER: CHARADRIIDAE (SHOREBIRDS, GULLS AND RELATIVES)

FAMILY: CHARADRIIDAE (PLOVERS AND RELATIVES)

KILLDEER (*CHARADRIUS VOCIFEROUS*)*

ORDER: COLUMBIFORMES (PIGEONS AND DOVES)

FAMILY: COLUMBIDAE (PIGEONS AND DOVES)

Rock Dove (*Columba livia*)*
Band-tailed Pigeon (*Columba fasciata*)*
Mourning Dove (*Zenaida macroura*)*
Eurasian Collared-dove (*Streptopelia decaocto*)*

ORDER: STRIGIFORMES (OWLS)

FAMILY: TYTONIDAE (BARN OWLS)

Common Barn Owl (*Tyto alba*)*

FAMILY: STRIGIDAE (TYPICAL OWLS)

Short-eared Owl (*Asio flammeus*)
Great Horned Owl (*Bubo virginianus*)*
Northern Saw-whet Owl (*Aegolius acadicus*)*
Burrowing Owl (*Athene cunicularia*)*

Long-eared Owl (*Asio otus*)
Western Screech Owl (*Megascops kennicottii*)*

ORDER: CAPRIMULGIFORMES (GOATSUCKERS AND RELATIVES)

FAMILY: CAPRIMULGIDAE (GOATSUCKERS)
Common Nighthawk (*Chordeiles minor*)

ORDER: APODIFORMES (SWIFTS AND HUMMINGBIRDS)

FAMILY: TROCHILIDAE (HUMMINGBIRDS)
Anna's Hummingbird (*Calypte anna*)*
Rufous Hummingbird (*Selasphorus rufus*)*
Allen's Hummingbird (*Selasphorus sasin*)*

ORDER: CORACIIFORMES (KINGFISHERS AND RELATIVES)

FAMILY: ALCEDINIDAE (KINGFISHERS)
BELTED KINGFISHER (*CERYLE ALCYON*)*

ORDER: PICIFORMES (WOODPECKERS AND RELATIVES)

FAMILY: PICIDAE (WOODPECKERS AND WRYNECKS)
Acorn Woodpecker (*Melanerpes formicivorus*)*
Red-breasted Sapsucker (*Sphyrapicus ruber*)*
Northern Flicker (*Colaptes auratus*)*
Hairy Woodpecker (*Picoides villosus*)*
Nuttall's Woodpecker (*Picoides nuttallii*)*
Downy Woodpecker (*Picoides pubescens*)*

ORDER: PASSERIFORMES (PERCHING BIRDS)

FAMILY: TYRANNIDAE (TYRANT FLYCATCHERS)
Olive-sided Flycatcher (*Contopus borealis*)*
Western Wood-Pewee (*Contopus sordidulus*)
Dusky Flycatcher (*Empidonax oberholseri*)
Pacific Slope Flycatcher (*Empidonax difficilis*)*
Black Phoebe (*Sayornis nigricans*)*
Say's Phoebe (*Sayornis saya*)*
Ash-throated Flycatcher (*Myiarchus cinerascens*)*
Western Kingbird (*Tyrannus verticalis*)*

FAMILY: LANIIDAE (SHRIKES)
Loggerhead Shrike (*Lanius ludovicianus*)*

FAMILY: VIREONIDAE (TYPICAL VIREOS)
Cassin's Vireo (*Vireo cassinii*)
Hutton's Vireo (*Vireo huttoni*)*

FAMILY: CORVIDAE (JAYS, MAGPIES, AND CROWS)
Scrub Jay (*Aphelocoma coerulescens*)*
Yellow-billed magpie (*Pica nuttalli*)*
American Crow (*Corvus brachyrhynchos*)*

Common Raven (*Corvus corax*)*

FAMILY: ALAUDIDAE (LARKS)

Horned Lark (*Eremophila alpestris*)*

FAMILY: HIRUNDINIDAE (SWALLOWS)

Tree Swallow (*Tachycineta bicolor*)*

Violet-green Swallow (*Tachycineta thalassina*)*

Cliff Swallow (*Hirundo pyrrhonota*)

Barn Swallow (*Hirundo rustica*)

Bank Swallow (*Riparia riparia*)*

FAMILY: PARIDAE (TITMICE)

Oak Titmouse (*Parus inornatus*)*

Chestnut-backed chickadee (*Parus rufescens*)*

FAMILY: AEGITHALIDAE (BUSHTIT)

Bushtit (*Psaltriparus minimus*)*

FAMILY: SITTIDAE (NUTHATCHES)

White-breasted Nuthatch (*Sitta carolinensis*)*

FAMILY: TROGLODYTIDAE (WRENS)

Bewick's Wren (*Thryomanes bewickii*)*

House Wren (*Troglodytes aedon*)

FAMILY: REGULIDAE (KINGLETS)

Golden-crowned Kinglet (*Regulus regulus*)*

Ruby-crowned Kinglet (*Regulus calendula*)*

FAMILY: TURDIDAE (THRUSHES)

Western Bluebird (*Sialia currucoides*)*

Hermit Thrush (*Catharus guttatus*)*

American Robin (*Turdus migratorius*)*

Varied Thrush (*Ixoreus naevius*)

FAMILY: TIMALIIDAE (BABBLERS)

Wrentit (*Chamaea fasciata*)*

FAMILY: MIMIDAE (MOCKINGBIRDS AND THRASHERS)

Northern Mockingbird (*Mimus polyglottos*)*

California Thrasher (*Toxostoma redivivum*)*

FAMILY: STURNIDAE (STARLINGS)

European Starling (*Sturnus vulgaris*)*

FAMILY: MOTACILLIDAE (WAGTAILS AND PIPITS)

American Pipit (*Anthus rubescens*)*

FAMILY: BOMBYCILLIDAE (WAXWINGS)

Cedar Waxwing (*Bombycilla cedrorum*)

FAMILY: PTILOGONATIDAE (SILKY FLYCATCHERS)

Phainopepla (*Phainopepla nitens*)

FAMILY: PARULIDAE (WOOD WARBLERS AND RELATIVES)

California Yellow Warbler (*Dendroica petechia brewsteri*)

Yellow-rumped Warbler (*Dendroica coronata*)*

Townsend's Warbler (*Dendroica townsendi*)*

Wilson's Warbler (*Wilsonia pusilla*)*

Orange-crowned Warbler (*Vermivora celata*)*

Common Yellowthroat (*Geothlypis trichas*)*

FAMILY: EMBERIZIDAE (EMBERIZINES)

Spotted towhee (*Pipilo maculatus*)*

California towhee (*Pipilo crissalis*)*

Rufous-crowned Sparrow (*Aimophila ruficeps*)

Chipping Sparrow (*Spizella passerina*)*

Black-chinned Sparrow (*Spizella atrogularis*)

Savannah Sparrow (*Passerculus sandwichensis*)

Song Sparrow (*Melospiza melodia*)*

Lincoln's Sparrow (*Melospiza lincolni*)*

Golden-crowned Sparrow (*Zonotrichia atricapilla*)*

Dark-eyed Junco (*Junco hyemalis*)*

Lark Sparrow (*Chondestes grammacus*)*

Sage Sparrow (*Amphispiza belli*)*

Grasshopper Sparrow (*Ammodramus savannarum*)*

FAMILY: CARDINALIDAE (CARDINALS, GROSBEAKS AND ALLIES)

Black-headed Grosbeak (*Pheucticus melanocephalus*)*

Lazuli Bunting (*Passerina amoena*)*

FAMILY: ICTERIDAE (BLACKBIRDS, ORIOLES AND ALLIES)

Red-winged Blackbird (*Agelaius phoeniceus*)*

Western Meadowlark (*Sturnella neglecta*)*

Brewer's Blackbird (*Euphagus cyanocephalus*)*

Brown-headed Cowbird (*Molothrus ater*)*

Bullocks oriole (*Icterus bullockii*)*

FAMILY: FRINGILLIDAE (FINCHES)

Purple Finch (*Carpodacus purpureus*)*

House Finch (*Carpodacus mexicanus*)*

Lesser Goldfinch (*Carduelis psaltria*)*

American Goldfinch (*Carduelis tristis*)*

FAMILY: PASSERIDAE (OLD WORLD SPARROWS)

House Sparrow (*Passer domesticus*)*

CLASS: MAMMALIA

ORDER: DIDELPHIMORPHIA (MARSUPIALS)

FAMILY: DIDELPHIDAE (OPOSSUMS)

Virginia Opossum (*Didelphis virginiana*)*

ORDER: INSECTIVORA (SHREWS AND MOLES)

FAMILY: SORICIDAE (SHREWS)

Ornate Shrew (*Sorex ornatus*)

Trowbridge's Shrew (*Sorex trowbridgii*)

FAMILY: TALPIDAE (MOLES)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (BATS)

FAMILY: VESPERTILIONIDAE (VESPERTILIONID BATS)

Little Brown Myotis (*Myotis lucifugus*)

California Myotis (*Myotis californicus*)

Western Pipistrelle (*Pipistrellus hesperus*)

Big Brown Bat (*Eptesicus fuscus*)

Townsend's Big-eared Bat (*Plecotus townsendii*)

Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (FREE-TAILED BAT)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

Western Mastiff Bay (*Eumops perotis*)

ORDER: LAGOMORPHA (RABBITS, HARES, AND PIKAS)

FAMILY: LEPORIDAE (RABBITS AND HARES)

Desert Cottontail (*Sylvilagus audubonii*)

Black-tailed Hare (*Lepus californicus*)*

Brush Rabbit (*Sylvilagus bachmani*)*

ORDER: RODENTIA (SQUIRRELS, RATS, MICE, AND RELATIVES)

FAMILY: SCIURIDAE (SQUIRRELS, CHIPMUNKS, AND MARMOTS)

California Ground Squirrel (*Spermophilus beecheyi*)*

Western Gray Squirrel (*Sciurus griseus*)

FAMILY: GEOMYIDAE (POCKET GOPHERS)

Botta's Pocket Gopher (*Thomomys bottae*)*

FAMILY: HETEROMYIDAE (POCKET MICE AND KANGAROO RATS)

California Pocket Mouse (*Perognathus californicus*)*

FAMILY: MURIDAE (MICE, RATS AND VOLES)

Western Harvest Mouse (*Reithrodontomys megalotis*)*

California Mouse (*Peromyscus californicus*)*

Deer Mouse (*Peromyscus maniculatus*)*

California Vole (*Microtus californicus*)*

ORDER: CARNIVORA (CARNIVORES)

FAMILY: CANIDAE (FOXES, WOLVES, AND RELATIVES)

Coyote (*Canis latrans*)*

Red Fox (*Vulpes vulpes*)

Gray Fox (*Urocyon cinereoargenteus*)*

Domestic Dog (*Canis familiaris*)*

FAMILY: PROCYONIDAE (RACCOONS AND RELATIVES)

Raccoon (*Procyon lotor*)*

Ringtail (*Bassariscus astutus*)

FAMILY: MUSTELIDAE (WEASELS, BADGERS, AND RELATIVES)

American Badger (*Taxidea taxus*)*

FAMILY: MEPHITIDAE (SKUNKS)

Striped Skunk (*Mephitis mephitis*)*

FAMILY: FELIDAE (CATS)

Feral Cat (*Felis catus*)

Cougar (*Puma concolor*)*

Bobcat (*Lynx rufus*)*

ORDER: PERISSODACTYLA (HORSES, TAPIRS, AND RELATIVES)

FAMILY: EQUIDAE (HORSES)

Domestic Horse (*Equus caballus*)*

ORDER: ARTIODACTYLA (EVEN-TOED UNGULATES)

FAMILY: SUIDAE (PIGS)

Wild Pig (*Sus Scrofa*)*

FAMILY: CERVIDAE (DEER, ELK, AND RELATIVES)

Black-tailed Deer (*Odocoileus hemionus columbiana*)*

FAMILY: BOVIDAE (SHEEP, GOATS AND RELATIVES)

Domestic Cattle (*Bos Taurus*)

APPENDIX C: MINIMIZATION MEASURES FOR CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

The following measures will minimize direct and indirect impacts to California red-legged frogs and California tiger salamanders.

- Prior to the start of construction, a qualified biologist will train all project staff regarding habitat sensitivity, identification of special status species, and required practices. The training shall include the general measures that are being implemented to conserve these species as they relate to the project, the penalties for non-compliance, and the boundaries of the project area. A fact sheet or other supporting materials containing this information should be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.
- A qualified biologist will survey the project site prior to, and be present to monitor, construction activities during any initial ground disturbance or vegetation clearing or other periods during construction, as necessary. The biologist will capture and relocate any California red-legged frogs and California tiger salamanders that are discovered during the surveys or construction monitoring. Any individuals that are captured should be held for the minimum amount of time necessary to release them to suitable habitat outside of the work area.
- A qualified biologist will stake and flag exclusion zones around all known locations of CRLF and CTS breeding and upland refugia areas in the construction zone. These areas will be avoided during construction activities to the maximum extent practicable. All construction areas will be flagged, and all activity will be confined to these areas.
- If a CRLF or CTS is encountered during construction work, activities will cease until the animal is removed and relocated by a qualified biologist.
- Construction activities should be limited to the period from May 1 through October 31.
- Permanent and temporary construction disturbances and other types of project-related disturbances to CRLF or CTS habitat shall be minimized to the maximum extent practicable and confined to the project site. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, designated cross-country routes, and other designated areas. These areas also should be included in preconstruction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects. Sensitive habitat areas shall be delineated with high visibility flagging or fencing to prevent encroachment of construction personnel and equipment into any sensitive areas during project work activities. At no time shall equipment or personnel be allowed to adversely affect areas outside the project site without authorization from the Service.

- Because dusk and dawn are often the times when CRLF and CTS are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour before sunrise.
- No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the project site to avoid harassment, killing, or injuring of CRLF or CTS.
- A representative shall be appointed by the applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a CRLF or CTS or who finds a dead, injured or entrapped individual. The representative shall be identified during the tailgate/training session. The representative's name and telephone number shall be provided to the Service prior to the initiation of ground disturbance activities.
- Tightly woven fiber netting or similar material shall be used for erosion control or other purposes at the project site to ensure that CRLF and CTS do not get trapped.
- A litter control program shall be instituted at the entire project site. All construction personnel should ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers should be removed from the project area at the end of each working day.

APPENDIX D
SLOPE STABILITY INVESTIGATION



GEOTECHNICAL • GEOLOGY • HYDROGEOLOGY • MATERIALS TESTING • INSPECTION

Freeman Associates LLC
994 San Antonio Road
Palo Alto CA 94303

January 20th, 2015

Attention: Mr. Verne Freeman

Subject: **GEOLOGIC HAZARDS ASSESSMENT AND PRELIMINARY SLOPE STABILITY EVALUATION**
Sargent Ranch Quarry Site
Sargent, Santa Clara County, California

Reference: **PROPOSAL FOR GEOTECHNICAL SERVICES**
Sargent Ranch Quarry Slope Stability and Geotechnical Constraints Evaluation, by SGSI, dated September 8, 2014

Dear Mr. Freeman:

We have prepared this preliminary geologic hazards assessment study and reclamation slope stability report for the proposed Sargent Ranch Quarry Site. The purpose of this study was to provide a preliminary evaluation of the onsite geologic and geotechnical conditions and their potential effect on the proposed project. The proposed four phase project includes the development of open pit for the production of construction aggregates. Subsurface exploration of the site was not included in this evaluation.

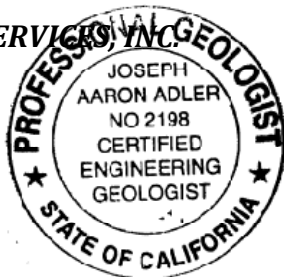
This report presents our findings, conclusions, and recommendations for preliminary quarry slope stability and potential site geologic hazards as they affect the proposed project.

We appreciate the opportunity to be of service to you. Should you have any questions regarding this report, please do not hesitate to contact us.

Respectfully,

SIERRA GEOTECHNICAL SERVICES, INC.

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CEG 2198 (exp 3/31/2015)



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**GEOLOGIC HAZARDS ASSESSMENT AND PRELIMINARY SLOPE
STABILITY EVALUATION
FOR
SARGENT RANCH QUARRY SITE
SARGENT, CALIFORNIA**



**JANUARY 20, 2015
PROJECT NO. 3.31274**

Prepared By:

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1.0 PURPOSE AND SCOPE OF SERVICES

Sierra Geotechnical Services Inc. is pleased to present this preliminary report which includes an evaluation of geologic hazards and preliminary slope stability for mining and reclamation at the proposed Sargent Ranch quarry site. It is our understanding that the project will include extraction of roughly 38 million cubic yards of material, for use in construction aggregates, in four phases over an approximate 30 year period.

Our scope of work consisted of:

- Compilation and Review of Available Data – including available published and unpublished data concerning site geology and seismic setting.
- Site Reconnaissance and Mapping and Surface Sampling from Previous Borings – reconnaissance of site, field geologic mapping, and limited sampling of previous borings for laboratory analysis.
- Data Analysis and Preliminary Slope Stability Evaluation.
- Review of the Preliminary Excavation Plan – review of the preliminary site and reclamation plan developed by Triad Holmes Associates.
- Preparation of this written report presenting the results of our findings, conclusions, recommendations, and preliminary construction considerations for the proposed development.

This study included a limited analysis of the site conditions which was based upon our field mapping, knowledge of the site, and a limited collection of site soils for laboratory testing. This report should be used for preliminary planning purposes only. Further investigation is warranted to adequately address the geometry of the subsurface geology and provide final recommendations for stability of slope cuts as well as reclamation.

2.0 SITE DESCRIPTION AND PROPOSED PROJECT

The project site is located to the west of Highway 101, approximately 6 miles south of Gilroy, in Sargent, Santa Clara County, California (36.9169°;-121.5647°). The approximate location of the project site is depicted on the Regional and Vicinity Maps, Figures 1 and 2, respectively.

Site topography consists of gently rolling to moderately steep hillsides with moderate to well incised drainages. Relief at the project site ranges from approximately 800 feet mean sea level (MSL) along the higher ridge crests to less than 150 feet MSL along the eastern portions of site. Average overall slope angles are typically around 15° in the proposed development areas. Vegetation includes a light to moderate growth of grasses, shrubs, and some riparian habitat in drainage areas. The site is bisected by the south-flowing Sargent Creek which was dry at the time of our reconnaissance. There are currently no structures in the proposed development areas.

The proposed project will consist of surface mining excavations, overburden stockpiling, crushing and processing facilities, access roads, administrative offices and equipment storage areas. Disturbance is estimated at approximately 200 acres. The mining quarries will be excavated in four phases. Phases 1 and 2 as well as the Plant and office sites are located at the northern end of the property. Phases 3 and 4 are to be located to the south.

We anticipate operations will take place over an approximate 30 year time interval. The proposed mine limits as well as the processing plant site and stockpile areas are shown on the attached proposed Excavation and Reclamation Plan drawings prepared by Triad/Holmes Associates, and the site Geologic Map, Appendix A and Figure 3, respectively.

The applicant proposes to mine the site for aggregates as open pit, to bottom elevations and cubic yardage as follows in the below Table I.

TABLE I

Phase	Bottom of Quarry and Total Cut (ft/yds³)
Phase 1	130' / 10.6 mil yds ³
Phase 2	200' / 19.7 mil yds ³
Phase 3	250' / 5.24 mil yds ³
Phase 4	245' / 2.32 mil yds ³

3.0 PREVIOUS WORK

SGS was not able to locate any previous geotechnical investigations or slope stability analyses for the site. Some information on the site soils was provided, however that data was for “proofing” of the aggregate resource and not geotechnical in nature. Brief descriptions of the previous work follow.

3.1 Seismic Survey

SGS was provided results of an electrical resistivity seismic survey that included 9 lines located across the project site. Locations of the seismic lines are shown on Figure 3. The seismic profiles are shown in Appendix B. The surveys were done to potentially identify conglomeratic and/or rock rich zones across the site. The conglomeritic and/or highly clastic and sandy areas are interpreted as the red and yellow colors in the profiles. Blue presumably denotes surficial soils as well as silts and clays.

3.2 Borings

SGS was provided with logs of three borings (SRB07-1, SRB07-2, and SRB07-3) drilled in 2007. The location of the borings is shown on Figure 3. Logs of the borings are included in Appendix C. In-situ soil samples were not obtained during drilling. All borings were located in the north area of the site in the vicinity of future Phases 1 and 2.

SRB07-1 contained interbedded granular deposits along with fine silts and clay to approximately 270 feet below grade (bg) (220 feet MSL). From 270 to 360 feet bg (130 feet MSL) the deposit was predominantly clay.

SRB07-2 contained interbedded granular deposits along with fine silts and clay to approximately 250 feet bg (112 feet MSL). Perched water was noted at the bottom of the excavation at approximately 233 feet bg (129 feet MSL).

SRB07-3 contained shallow interbedded granular deposits (0-45 feet bg) overlying predominately silty clay to clay, to approximately 150 feet bg (120' MSL).

4.0 **FIELD EXPLORATION**

SGSI performed a field reconnaissance/mapping study in October 2014 which consisted of geologic observations, mapping of surface expressed geologic features such as joints, contacts, faults, bedding attitudes etc., and limited surface sampling of soil materials from previous borings for laboratory testing. Results of the field mapping are included on Figure 3. Geotechnical laboratory testing of soil samples for preliminary characterization included Atterberg limits, gradation, shear strength, and LA Abrasion. Results of the laboratory testing are included in Appendix D.

5.0 **GEOLOGY**

Regional Geologic Setting: The site area is located in the southern portion of Santa Clara County within the Chittenden 7.5 minute quadrangle. The area includes the Sierra Azul fault-bounded structural block which is generally composed of west-facing, tightly folded and overturned sequences of marine Mesozoic through early Tertiary strata. The strata are disrupted by northwest-trending, northeast-vergent reverse faults with unknown components of right-lateral slip separating Eocene and Miocene strata, probably related to tight folding within the block. (Graymer, 1997).

The timing and mode of deformation of the Sierra Azul block are partially constrained by structural relations along the northwest segment of the Sargent fault. Most northeast vergent thrusting along the Sargent fault probably occurred in the middle Miocene (between about 18 and 10 Ma) based on the ages of rocks juxtaposed along the faults, kinematic indicators, and the radiometric ages and paragenesis of hydrothermal adularia deposited in veins in the fault zones (McLaughlin and others, 1996; McLaughlin and others, 1999). Since 10 Ma, the Sargent fault has been reactivated as an oblique, right-lateral, strike-slip fault associated with the modern San Andreas Fault system. Apatite fission track ages (Bürgmann and others, 1994) and fault and fold reconstructions (McLaughlin and others, 1999) suggest 3 to 4 km of unroofing of the Sierra Azul block along the Berrocal, Shannon, and Monte Vista faults of the New Almaden block since about 5 Ma. All of these oblique-reverse faults root toward the San Andreas Fault.

Site Geology: Per the Geologic Map of Monterey 30'x 60' Quadrangle, and the Map of the Southernmost Geology of Santa Clara County (Figures 4 and 5), Tertiary marine and nonmarine sediments are prevalent throughout the site. The marine and non-marine units, denoted as TCSM and TCSN respectively, were mapped by Dibble and Brabb

(1978) as Pliocene age and included as part of the Etchegoin Formation. The Etchegoin consists of siltstone, sandstone, conglomerate. The sediments making up these rocks were deposited in shallow-marine, marginal marine and non-marine environments.

Geologic deposits more specifically consist of conglomerate, sandstone, and siltstones (Graymer, 1997). The sediments contain inter-bedded pebble and cobble conglomerates; coarse- to fine-grained lithic, mica-lithic, and quartz-lithic sandstones; and brown siltstone and silty claystones. Clasts in the conglomerate are well rounded to subrounded, and contain: greenstone, greywacke, white weathered siliceous mudstone, laminated chert, red chert and metachert, laminated fine-grained white quartz sandstone, and serpentinite.

The majority of the deposits are northeast striking and dip from roughly 30 to 45 degrees to the southeast except near anticlinal and synclinal axis and the Sargent Fault zone (Graymer, 1997). The geologic conditions we observed during our reconnaissance are consistent with those represented in the literature. SGS measured some attitudes where exposed, and these verified with those noted. Figures 3 and 5 include bedding attitudes of the deposits on the site.

The site geologic units encountered during our study included the marine and non-marine units noted above, as well as Topsoil/Colluvium and Alluvium. A brief description of the units follows.

5.1 Topsoil/Colluvium (Unmapped)

Modern unconsolidated topsoil/colluvial materials were observed outside of the drainages along the slope faces, and atop the ridges. These deposits appeared to be comprised of clayey to silty sands with gravels.

5.2 Alluvium (Map Symbol - Qal)

Modern unconsolidated alluvial deposits were observed along Sargent Creek and its tributary drainages. These deposits appeared to be comprised of a poorly-sorted mixture of cobbles, gravels, sand, silt and clays. We expect these deposits to range from a few inches thick in the upper reaches of the watershed areas where erosion

has cut the channels, to multiple feet thick where the channels widen and deepen as they approach the flatter terrain of the Pajaro River Valley.

6.0 GROUNDWATER

Groundwater was not encountered in the drainages though several springs with minor to moderate seepage and ponding were noted throughout the northern portion of the site. Spring development was likely influenced by fault activity. Further, groundwater was recorded in boring log SRB07-2 at 112 feet MSL (Appendix C). Static groundwater therefore is likely near 100' MSL and may not be a factor as the bottom of the pit excavations are somewhat higher (approximately 150 - 250 feet MSL). Zones of seepage from springs though could impact the stability of the cut slopes. Further analysis is required.

It must be noted though that depth to groundwater data for the site area is limited. Groundwater levels will fluctuate as a direct result variable topography, sediment permeability, proximity to faults, and precipitation variances. More information is therefore needed to definitively determine any impacts water may have on the excavations.

7.0 LANDSLIDES

Based on a review of the County of Santa Clara Landslide Hazard Zone Map, the site is located in an area prone to landsliding (Figure 6). Landslides were observed in the field during our reconnaissance/mapping. Several surficial to moderately deep seated (backscarps of up to 40 feet in height) sized landslides were mapped in multiple areas across the property (Appendix F). These landslides appear to be relatively recent, and are identified on the basis of geomorphic features such as eroded scarps and irregular topography (Figure 3). The majority of the slides appear to be surficial and originate at the contact with the Topsoil/Colluvium and the underlying tertiary deposits along the sideslopes of incised drainages. In a few areas however, the landslides did extend below the surficial deposits into the underlying bedrock. Closer examination of the back scarps revealed that the slides appeared to originate along fault planes and fractures in the underlying deposits. The possibility also exists that the failure planes may have occurred along the interbedded silts and clays which occur at depth throughout the site. Some of the deeper slides noted near future Phases 1, 2 and 4 appear to follow the direction of bedding in these areas.

The presence of landslides could be problematic for the final slope angles associated with the quarry excavations as well as the final reclamation. Further analyses including a subsurface investigation borings is needed to determine the nature and extent of the slides and their potential impacts on the proposed slopes.

8.0 FAULTING

The project site area is located in an extremely tectonically active area between the San Andreas Fault located approximately 2 miles to the south, and the Sargent fault which runs through the northern portion of the site (Figures 7). Per the Santa Clara County Fault Rupture Hazard Zone Map (Figure 8), the northern portion of the property is located in a fault rupture hazard zone. These faults have the potential for generating strong ground motions and surface rupture at the project area.

8.1 The Sargent Fault Zone (Southeastern Section)

The Sargent fault zone is located in an extremely complex contractional system of generally northeastward-vergent thrust and reverse faults bounding the eastern side of the Santa Cruz Mountains (Schwartz and others, 1990; McLaughlin and others, 1997). This thrust system has been described by McLaughlin and others (1997) as an eastward-propagating, half-flower structure which roots toward the larger San Andreas fault zone. The Sargent fault zone extends from its complex junction with the San Andreas fault near Lake Elsman southeast through the Santa Cruz Mountains, crosses the Pajaro River floodplain and extends near the northeastern front of the Lomerias Muertas and Flint Hills. The mapped surface traces end a few kilometers east of Hollister and it is not known if the fault extends farther south-southeast to join the Calaveras fault zone.

The Sargent fault has evidence of Holocene offset along much of its length (McLaughlin, 1974, Hart, 1988). Previous estimates of fault movement inferred from geomorphic expression are right-lateral reverse-oblique with the southwest side up.

Zinn et al (1995) excavated two trenches across the fault in Holocene sediments underlying the flood plain of the Pajaro River, north of Lomerias Muertas. The exposed fault dips 70 degrees to the northeast, and displays down to the northeast,

normal separation, although slickensides on the fault surface indicate a primarily horizontal slip vector. Nolan and others (1995) reported a preliminary recurrence interval of 1200-1300 years. They interpreted four events in the past 5,940 years, indicating an average recurrence interval of about 1,485 years. The most recent event is estimated at 2,940 year before present (Nolan et al., 1995).

8.2 The San Andreas Fault Zone (Santa Cruz Mountain Section):

The 1,100-km-long San Andreas Fault zone is the principal element of the San Andreas Fault system, a network of faults with predominantly dextral strike-slip displacement that collectively accommodates the majority of relative N-S motion between the North American and Pacific plates. In the vicinity of the project site the Santa Cruz Mountains section of the San Andreas Fault extends from the vicinity of Black Mountain in the northern Santa Cruz Mountains southeast to just south of San Juan Bautista. The northern boundary is marked by an approximately 0.6 mi (1-km-wide), left-compressional bend near Black Mountain. The southern boundary with the creeping section is taken as the approximate southern termination of surface fault rupture associated with the 1906 San Francisco earthquake (Lawson, 1908; Thatcher and others, 1997).

The Santa Cruz Mountains section is delineated by geomorphic features characteristic of Holocene dextral offset such as dextrally deflected and offset drainages, linear drainages, sidehill benches, closed depressions, aligned benches, linear scarps, linear troughs, aligned saddles, and linear vegetation contrasts (Sarna-Wojcicki and others, 1975; Bryant and others, 1981; Bryant, 1991). Surface traces of the fault locally are complex and distributive and/or concealed by massive landslide deposits (Sarna-Wojcicki and others, 1975; Bryant, 1991). Faulted late Holocene and historic alluvial and colluvial deposits range in age from 3198 cal yrs BP to 155 cal yrs BP (Schwartz and others, 1998).

9.0 GROUND MOTION

Site coordinates of latitude 36.9121°; -121.5651° were acquired using the computer program **Google Earth**. Severe ground shaking is most likely to occur during an earthquake on one of the regional active faults in the area. Site seismic design criteria were determined based on the site latitude and longitude, with an assumed V_{s30} (average shear velocity down 30 meters) of 500 m/sec, using the public domain

computer software, United States Geological Survey Hazard Calculator (NSHMP_HazardApp.jar). According to the Probabilistic Uniform Hazard Response Spectra the probabilistic ground motion values at the Site includes a Peak Ground Acceleration (PGA) of 1.40g (5-percent-damped), defined as the ground motion that has a 10-percent probability of exceedance in 50 years (475 yr return period), and a PGA of 2.23g (5-percent-damped), defined as the ground motion that has a 2-percent probability of exceedance in 50 years (2,475 yr return period). The listed PGA values are considered high.

10.0 SECONDARY EARTHQUAKE EFFECTS

Secondary effects that can be associated with severe ground shaking following a relatively large earthquake include shallow ground rupture, soil lurching, liquefaction, seiches, landslides, lateral spreading, and dynamic settlement. These secondary effects of seismic shaking are discussed in the following sections.

10.1 Ground Rupture

Ground surface rupture results when the movement along a fault is sufficient to cause a gap or break along the upper edge of the fault zone on the surface. Our review of available geologic literature indicated that the Sargent Fault transects the northern portion of the site. Ground rupture could occur along the main trace of the fault (Figures 7 and 8) as well as any faults that are antithetic to the main trace itself. Base on our review of the Civil drawings, the processing Plant, offices and associated facilities are located in very close proximity to the hazard zone. Further investigation as to the extent of faulting in this area is warranted. The Plant et al may need to be relocated.

10.2 Soil Lurching

Soil lurching refers to the rolling motion on the ground surface by the passage of seismic surface waves. Effects of this nature are likely to be most severe where the thickness of soft sediments under loads exists. In general, the potential for lurching at the site is likely low based on site geology. However, lurching could occur near the lower elevation areas of the site, notably near where the plant is and

overburden stockpile areas are presently proposed. Thickness and nature of soils in the vicinity of these structures should be evaluated prior to construction.

10.3 Liquefaction

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils and nonplastic silts that are saturated by a relatively shallow groundwater table are susceptible to liquefaction. Based on a review of the Santa Clara County Liquefaction Hazard Zone Map (Figure 9), the proposed improvements are not located in a liquefaction hazard area. The nearest liquefaction hazard areas are located to the south and east along the Pajaro River alignment.

10.4 Lateral Spreading

Lateral spreading refers to landslides that form on gentle slopes as a result of seismic activity and have a fluid like movement. It differs from slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface.

The overall susceptibility to earthquake-induced lateral spread is considered to be generally low for the majority of the site area - quarries et al. - with exception of those low lying areas near the Pajaro River.

11.0 PRELIMINARY SLOPE STABILITY

Using the average orientations of the bedding sets as a basis for evaluating preliminary structural control of slope stability is reasonable at this preliminary level, given the currently available structural data. Further subsurface investigation to determine the nature and orientation of the subsurface geological conditions will be required in order to provide a comprehensive slope stability analysis.

11.1 Preliminary Design for Mining Slopes

The lithology as well as the highly sheared and deformed character of the sediments near the faults, will affect the overall mass strength of the bedrock materials creating localized conditions susceptible to potential slope instabilities.

Discontinuities – such as shear zones, faults, bedding planes – serve as potential planes of weakness which are potentially susceptible to slope instability given adverse orientations with respect to the quarry cutslopes. Based on our site visit and review of the limited site geologic documents our opinion regarding slope stability and pit design are as follows:

- Structural mapping data indicates the presence of faults, joints, and bedding dipping up to 45° predominantly to the southeast.
- For planning purposes the quarry slopes should be excavated no steeper than 2:1(H:V) slope. This should accommodate for the measured attitudes as well as global stability with respect to expected seismic accelerations during a design level earthquake.
- All slopes will be single benched and benches shall be no greater than 30 feet tall and not less than 20 feet wide.
- Additional geologic data will be necessary to confirm these values. Once additional subsurface geologic data is collected and analyzed the height and layback maybe adjusted accordingly.
- Raveling of slope materials can be anticipated, but can mitigated by staging and temporary safety measures. Berms and fencing can be used to reduce pedestrian access. Waste pile buttress fills or backfill can be used to contain and or mitigate surficial and/or minor translational failures.

11.2 Out of Pit Overburden and Topsoil Stockpile Slopes

The proposed overburden and topsoil stockpiles and slopes shall be no less than 2:1 (H:V). The material will be a combination of cobbles, sands, silt, and clay, with a low expansion potential and low plasticity. We assume that minimal compactive effort will be using in placing the stockpile. Based upon the nature of the material we expect the slopes will be globally stable at the proposed 2:1.

Based upon a review of the site civil drawings, stockpiles from Phases 1 and 2 are anticipated to be in close proximity to their respective open pits. The stockpiles will impose surcharge loads onto the underlying soils and therefore the stability of the underlying deposits may be affected. For planning purposes the stockpiles should be relocated away from the the free face of the pit excavations to a distance of at

least 3x the height of the piles. Once additional geotechnical data is collected and analyzed the final setback of these slopes maybe adjusted accordingly.

Localized erosion and small scale failures are likely unless “inactive” slopes are vegetated or otherwise protected. In addition, a drainage catchment ditch shall be maintained at the toe of the stockpile to prevent direct discharge of sheet flow or debris into the mine pit.

11.3 Reclamation Slopes

Final reclamation of the pits will include backfill with soils roughly equal to the quantity of stockpiles, and cut backs of slope benches so that overall slopes range from approximately 2.5:1 to 3:1 (H:V). The proposed configuration of the reclamation slopes is shown on the Excavation Plans in Appendix A. Based upon our preliminary assessment of the site conditions and the site end use being agricultural and grazing, 2.5:1 to 3:1 (H:V) are considered reasonable configurations. Additional geologic data may be necessary to confirm these values.

On the basis of preliminary data and our professional judgment, we conclude that the factor of safety for mining slopes as set forth above will equal 1.3 in the static condition. Once additional subsurface geologic data is collected and analyzed the height and final orientation of the slope maybe adjusted accordingly.

12.0 CONCLUSIONS

Based on our preliminary review, pit walls will be grossly stable against major failures and seismic accelerations at slope angles of 2:1 (H:V), but we recommend that additional subsurface data is collected to confirm this interpretation. Wastepile slopes are also expected to be globally stable at the proposed 2:1 orientation. Inactive slopes should be protected against erosion. Reclamation slopes will be grossly stable at 2.5:1 to 3:1 (H:V) and suitable for the currently proposed post mining use of the site.

13.0 RECOMMENDATIONS FOR ADDITIONAL WORK

The recommendations contained within this report are considered preliminary and based upon limited geologic and geotechnical data. Though we deem them to be adequate and conservative for planning and pit design, additional geotechnical evaluation should be conducted to confirm or modify our recommendations. Future work may include:

- Additional geotechnical borings and test pits to further define the geologic orientations of the subsurface deposits, the depth and origination of the landslides observed, and the site faulting, all of which may have an effect on the slope stability.
- Determine soils shear strengths and other properties.
- Perform a slope stability analysis using geotechnical software coupled with laboratory test values derived from acquired soil samples.
- Final project plans for extraction and reclamation should be reviewed by our office prior to construction, so that construction is in accordance with the conclusions and recommendations of this report.

14.0 LIMITATIONS

This document has been prepared for the sole use and benefit of our client. The conclusions of this document pertain only to the site(s) investigated. It should be understood that the consulting provided and the contents of this document may not be perfect. Any errors or omissions noted by any party reviewing this document and/or any other geologic or geotechnical aspects of the project should be reported to this office in a timely fashion. The client is the only party intended by this office to directly receive this advice. Unauthorized use of or reliance on this document constitutes an agreement to defend and indemnify Sierra Geotechnical Services Incorporated from and against any liability, which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Sierra Geotechnical Services Incorporated.

Conclusions presented herein are based upon the evaluation of technical information gathered, experience, and professional judgment. Other consultants could arrive at different conclusions and recommendations. Final decisions on matters presented are the responsibility of the client and/or the governing agencies. No warranties in any respect are made as to the performance of the project.

Please also note that our evaluation was limited to assessment of the geologic aspects of the project, and did not include evaluation of structural issues, environmental concerns or the presence of hazardous materials. Our study did not have the benefit of the performance of subsurface exploration across the site area.

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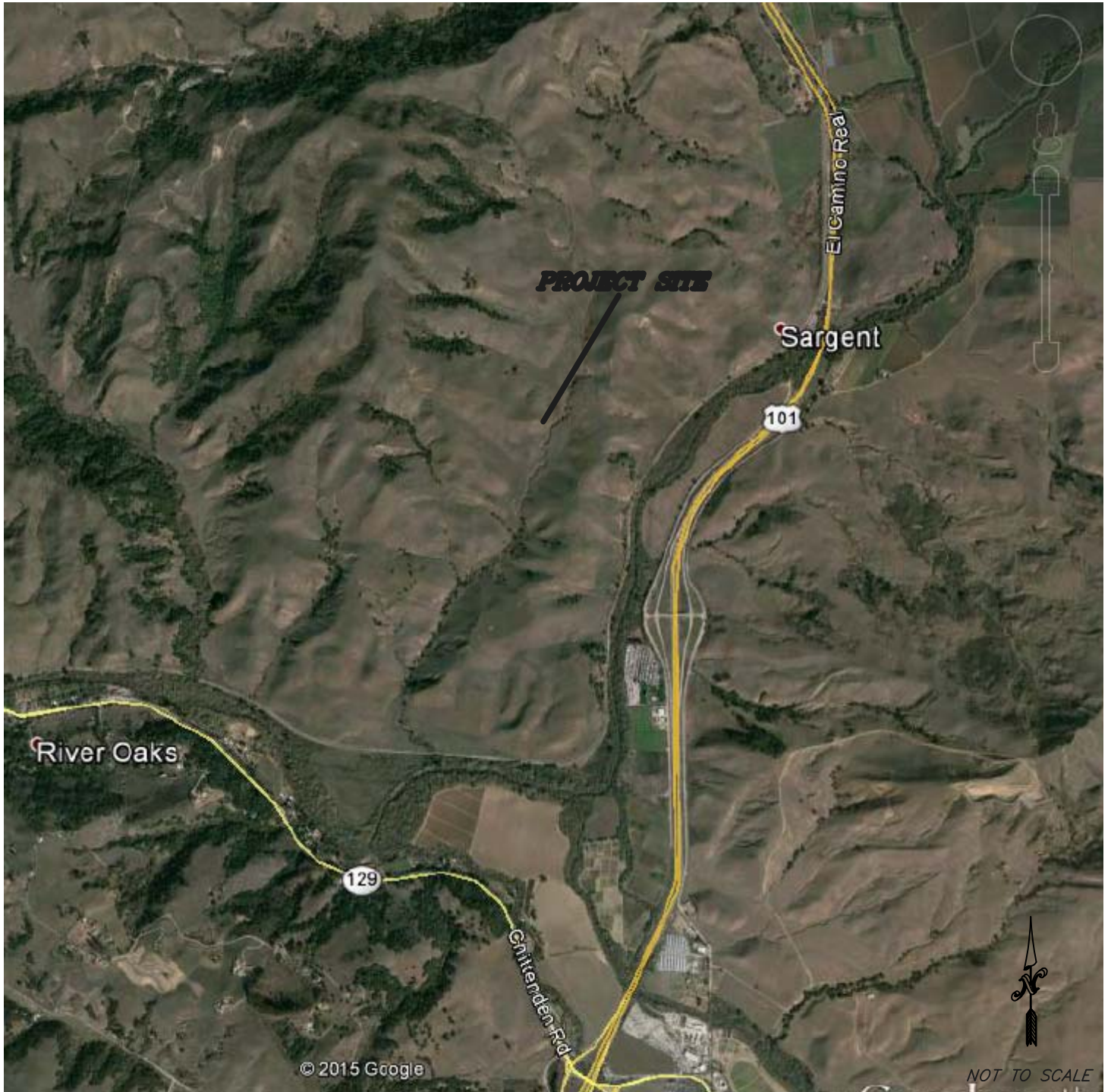
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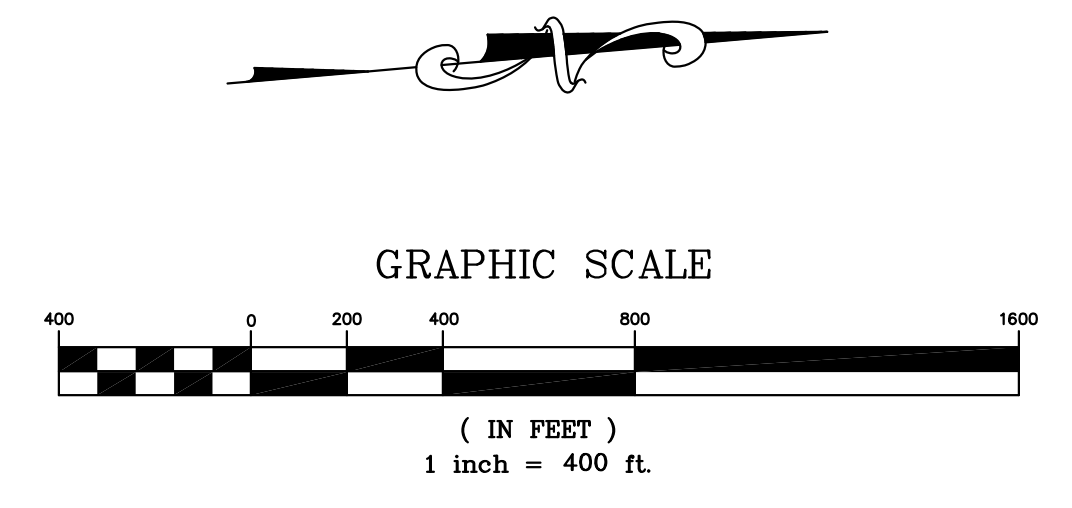
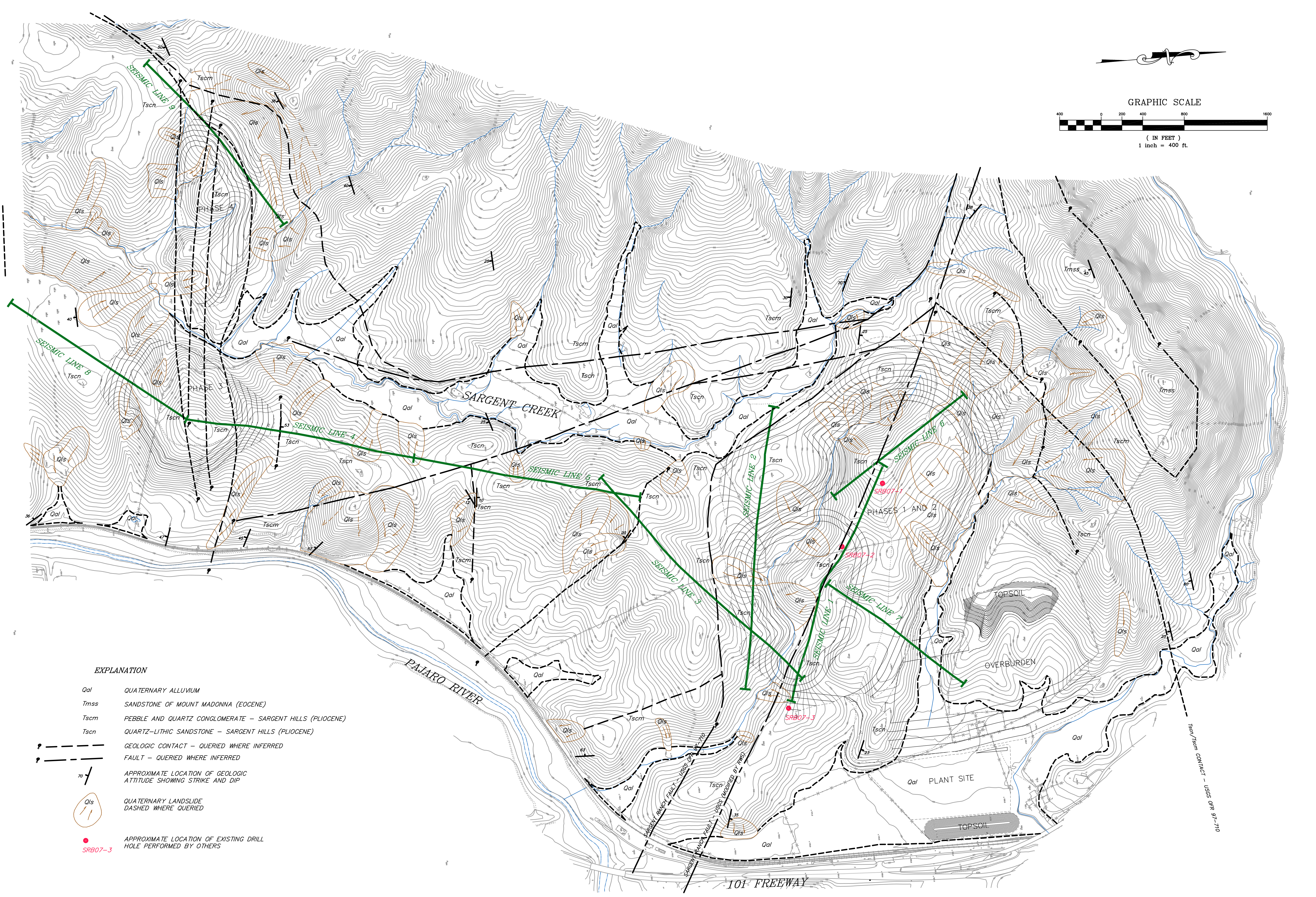
PROJECT:	<i>REGIONAL MAP SARGENT RANCH</i>	
COORD:	<i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING:	<i>FIGURE 1.DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.:	<i>3.31274</i>	FIGURE: <i>FIGURE 1</i>



COURTESY OF GOOGLE EARTH

SIERRA GEOTECHNICAL SERVICES INC.
SGSI

PROJECT:	<i>VICINITY MAP SARGENT RANCH</i>	
COORD:	<i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING:	<i>FIGURE 2.DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.:	<i>3.31274</i>	FIGURE: <i>FIGURE 2</i>



- EXPLANATION**
- Qal QUATERNARY ALLUVIUM
 - Tmss SANDSTONE OF MOUNT MADONNA (EOCENE)
 - Tscm PEBBLE AND QUARTZ CONGLOMERATE - SARGENT HILLS (PLIOCENE)
 - Tsch QUARTZ-LITHIC SANDSTONE - SARGENT HILLS (PLIOCENE)
 - GEOLOGIC CONTACT - QUERIED WHERE INFERRED
 - FAULT - QUERIED WHERE INFERRED
 - APPROXIMATE LOCATION OF GEOLOGIC ATTITUDE SHOWING STRIKE AND DIP
 - QUATERNARY LANDSLIDE
DASHED WHERE QUERIED
 - APPROXIMATE LOCATION OF EXISTING DRILL HOLE PERFORMED BY OTHERS
SRB07-3

SARGENT RANCH
 GEOLOGIC MAP
 SARGENT RANCH LLC

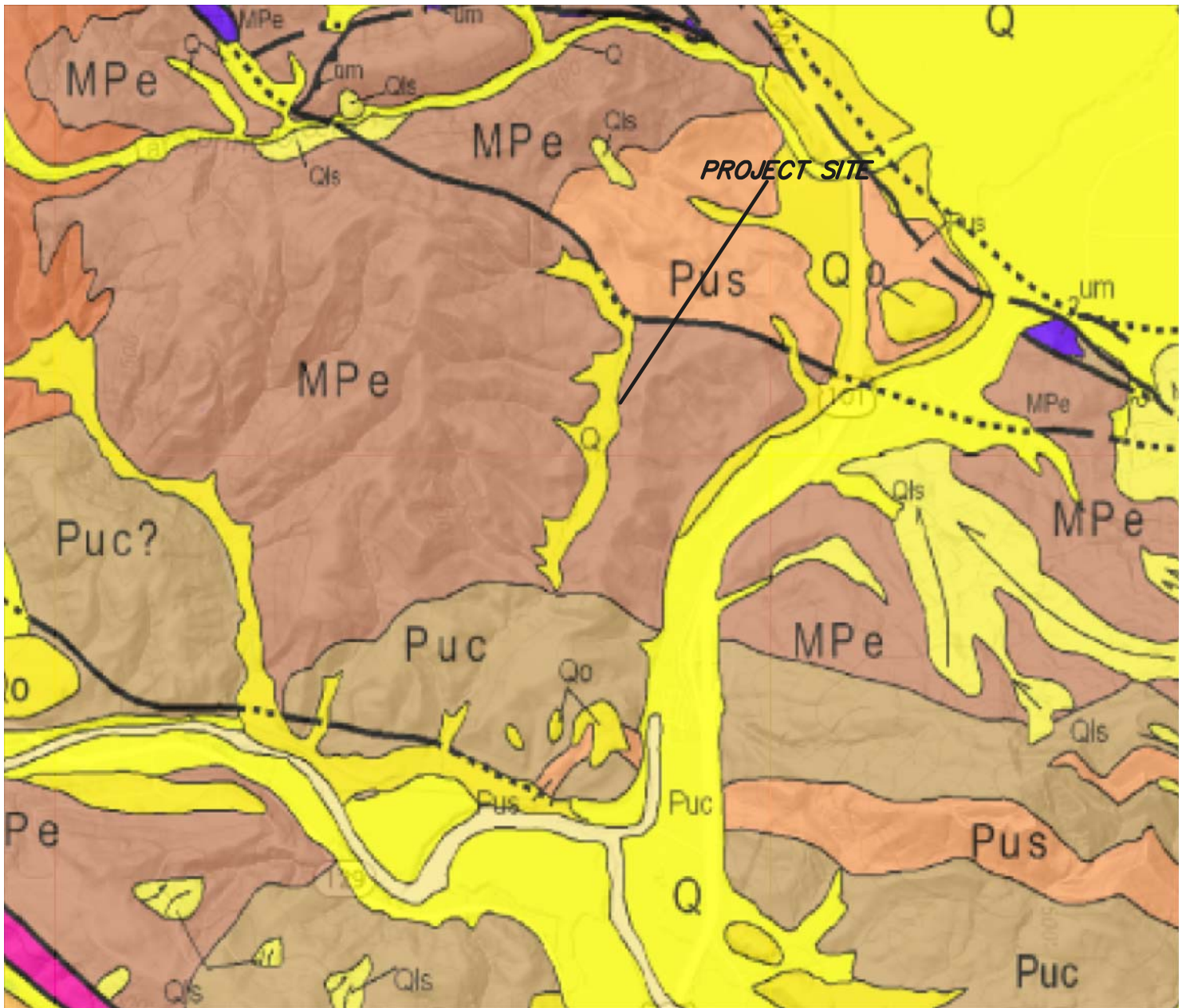
SIERRA GEOTECHNICAL SERVICES, INC.
 GEOTECHNICAL • GEOLOGY • FOUNDATIONS • ENVIRONMENTAL • MATERIALS

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DATE: 12/10/2014
 SCALE: 1"=400'
 DRAWN: DD
 JOB NO.: 3.31274
 DWG: GEOLOGY.DWG
 SHEET: FIGURE 3
 OF 1 SHEETS

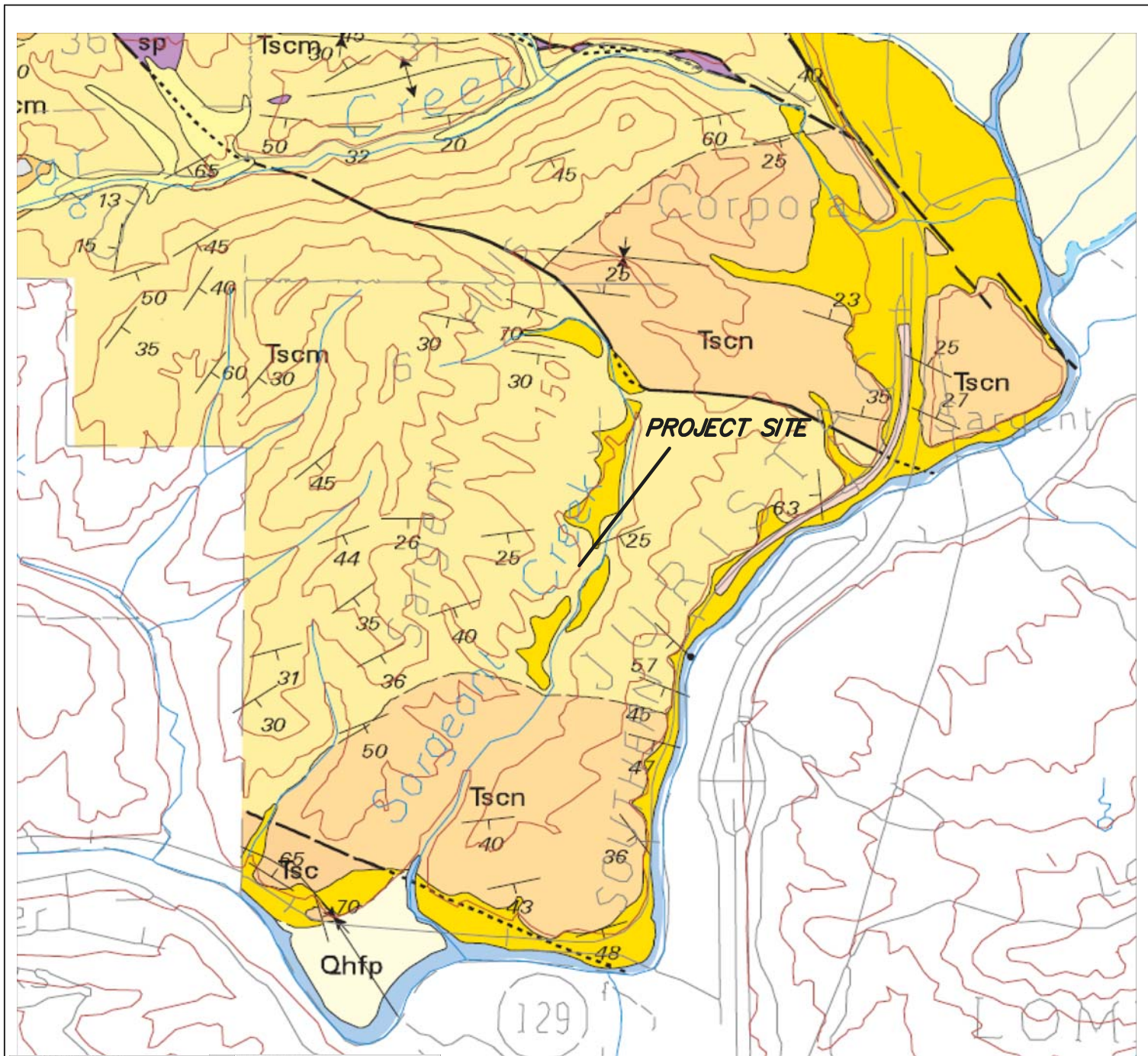


Puc	Unnamed Pliocene continental mudstone
Ppu	Purisima Formation
QTf	Plio-Pleistocene fluvial deposits
Pus	Unnamed Pliocene Continental sandstone
Ppr	Pancho Rico Formation
QTI	Plio-Pleistocene lacustrine deposits
Pv	Pliocene Basaltic rocks (Coyote Volcanics)
MPe	Etchegoin Formation



NOT TO SCALE

PROJECT: <i>PORTION - GEOLOGIC MAP OF THE MONTEREY 30' X 60' QUADRANGLE SARGENT RANCH</i>	
COORD: <i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING: <i>FIGURE .DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.: <i>3.31274</i>	FIGURE: <i>FIGURE 4</i>

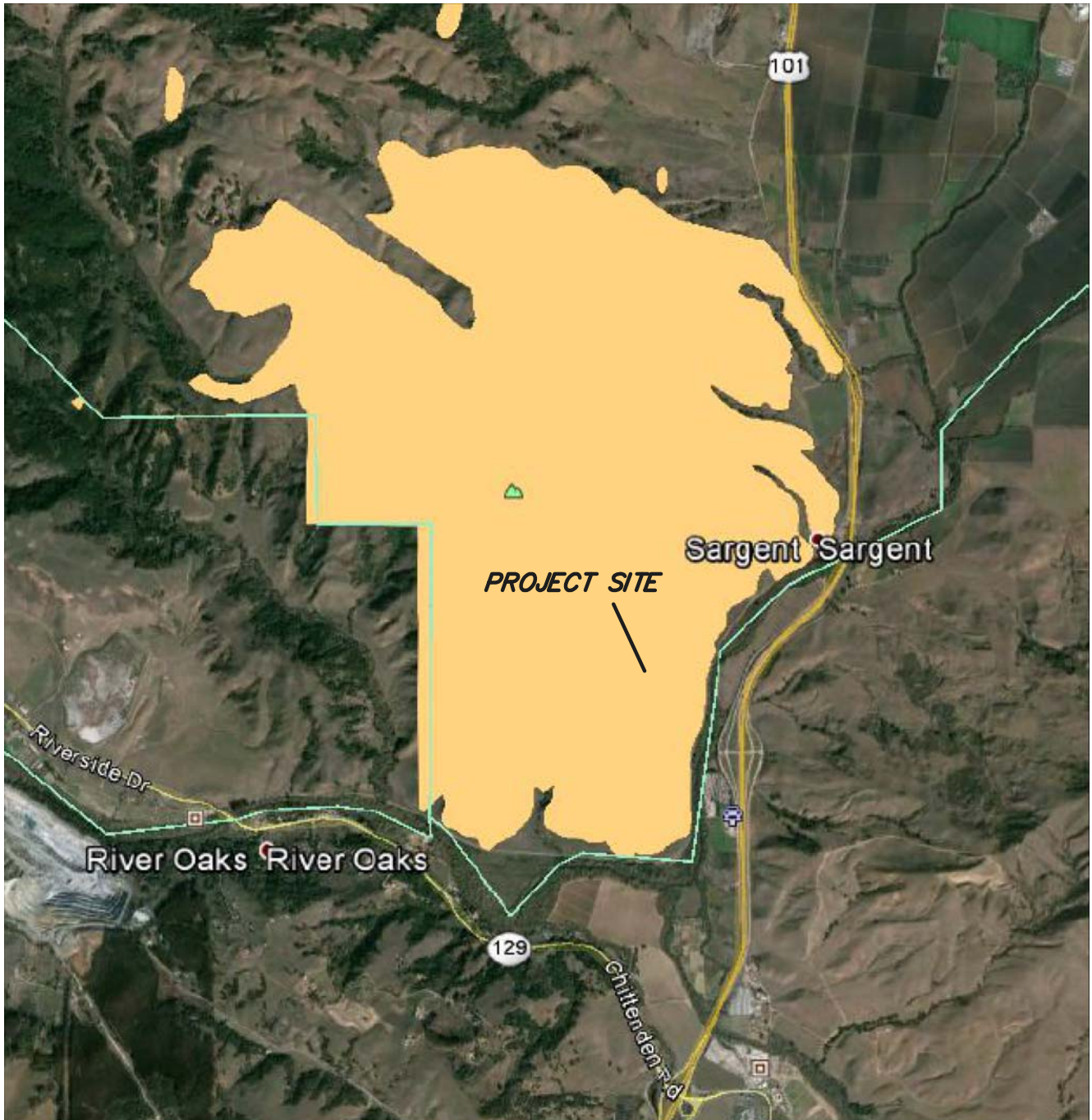


SURFICIAL DEPOSITS		SIERRA AZUL BLOCK	
af - Artificial fill (Historic)	Tsc - Conglomerate, sandstone, and siltstone of Sargent Hill (Pliocene)	MAP SYMBOLS --- Contact --- Contact, approximately located --- Contact, inferred --- Contact, concealed --- Fault --- Fault, approximately located --- Fault, inferred --- Fault, concealed --- Fault, concealed and uncertain --- Fold axis --- Fold axis, inferred --- Fold axis, concealed --- Strike and dip of bedding --- Strike and dip of overturned bedding --- Strike of vertical bedding --- Flat bedding --- Strike and dip of bedding, top direction known --- Strike and dip of overturned bedding, top direction known --- Approximate strike and dip of bedding and foliation --- Strike of vertical bedding and foliation --- Strike and dip of foliation --- Strike of vertical foliation --- Anticline --- Syncline	
alf - Artificial levee fill (Historic)	Tscm - Marine sediments		
Qhsc - Artificial stream channels (Historic)	Tscm - Non-marine sediments		
Qhsc - Stream channel deposits (Holocene)	Tps - Siliceous shale and sandstone of Mount Pajaro (Oligocene and/or Miocene)		
Qhl - Natural levee deposits (Holocene)	Tmss - Sandstone of Mount Madonna (Eocene)		
Qhfp - Floodplain deposits (Holocene)	Tws - Shale of Whitehurst Road (Paleocene and/or Eocene)		
Qhb - Floodbasin deposits (Holocene)			
Qhaf - Alluvial fan and fluvial deposits (Holocene)			
Qls - Landslide deposits (Pleistocene and/or Holocene)			
Qpaf - Alluvial fan and fluvial deposits (Pleistocene)			
Qpatf - Alluvial terrace deposits (Pleistocene)			
Qpof - Older alluvial fan deposits (Pleistocene)			



NOT TO SCALE

PROJECT: GEOLOGIC MAP FROM GRAYMER, 1997 SARGENT RANCH	
COORD: 36.9169; -121.5647	DATE: 1/2015
DRAWING: FIGURE 5.DWG	DRAWN BY: JAA
JOB NO.: 3.31274	FIGURE: FIGURE 5



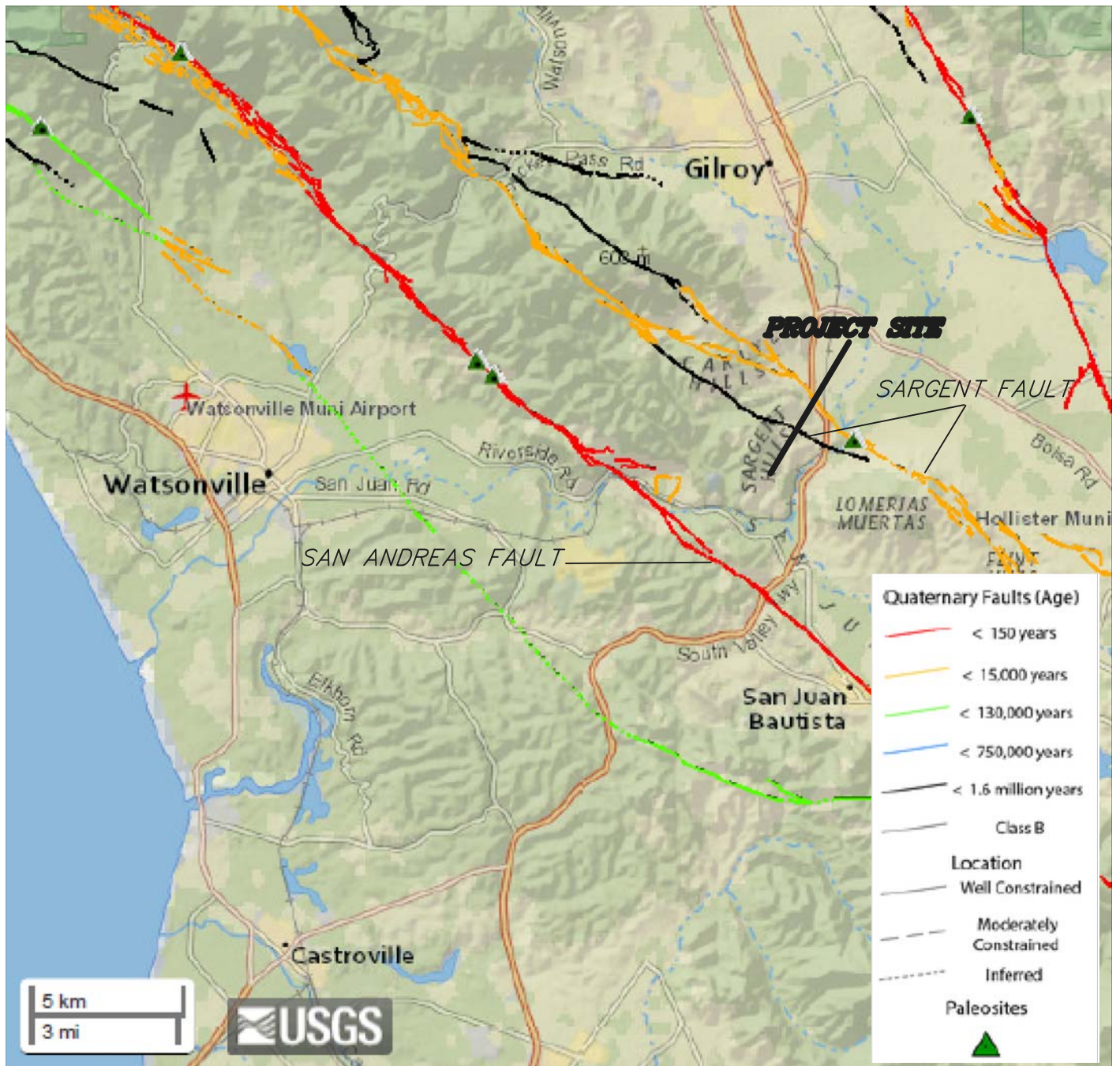
LEGEND

 *LANDSLIDE HAZARD ZONE*



NOT TO SCALE

PROJECT: <i>COUNTY OF SANTA CLARA LANDSLIDE HAZARD MAP SARGENT RANCH</i>	
COORD: <i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING: <i>FIGURE .DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.: <i>3.31274</i>	FIGURE: <i>FIGURE 6</i>



NOT TO SCALE

PROJECT:	<i>REGIONAL FAULT MAP SARGENT RANCH</i>	
COORD:	<i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING:	<i>FIGURE 7.DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.:	<i>3.31274</i>	FIGURE: <i>FIGURE 7</i>



LEGEND



FAULT RUPTURE HAZARD ZONE

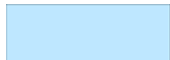


NOT TO SCALE

PROJECT: <i>COUNTY OF SANTA CLARA FAULT RUPTURE HAZARD ZONE MAP SARGENT RANCH</i>	
COORD: <i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING: <i>FIGURE 8.DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.: <i>3.31274</i>	FIGURE: <i>FIGURE 8</i>



LEGEND



LIQUEFACTION HAZARD ZONE



NOT TO SCALE

PROJECT: <i>COUNTY OF SANTA CLARA LIQUEFACTION HAZARD ZONE MAP SARGENT RANCH</i>	
COORD: <i>36.9169; -121.5647</i>	DATE: <i>1/2015</i>
DRAWING: <i>FIGURE 9.DWG</i>	DRAWN BY: <i>JAA</i>
JOB NO.: <i>3.31274</i>	FIGURE: <i>FIGURE 9</i>

APPENDIX A

PROPOSED EXCAVATION AND RECLAMATION PLANS



triad/holmes assoc.
civil engineering
and surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

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REVISIONS: BY:

NO.	DESCRIPTION	DATE	BY

PREPARED FOR:

VERN FREEMAN
894 SAN ANTONIO RD
PALO ALTO, CA 94303

SARGENT RANCH QUARRY
AGGREGATE PLANT
SITE PLAN

DATE: 08/13/2014

SCALE: AS SHOWN

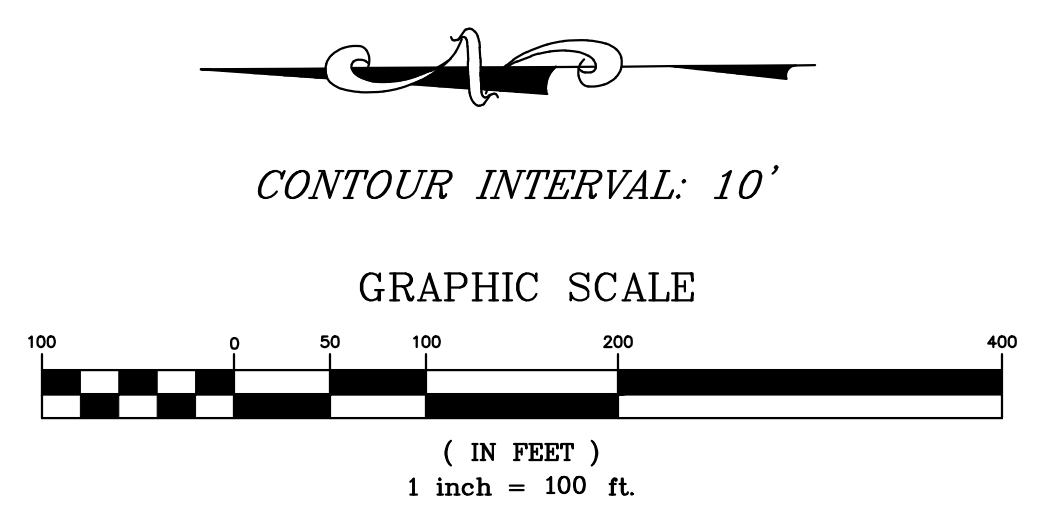
DRAWN: SR

JOB NO: 01.4020

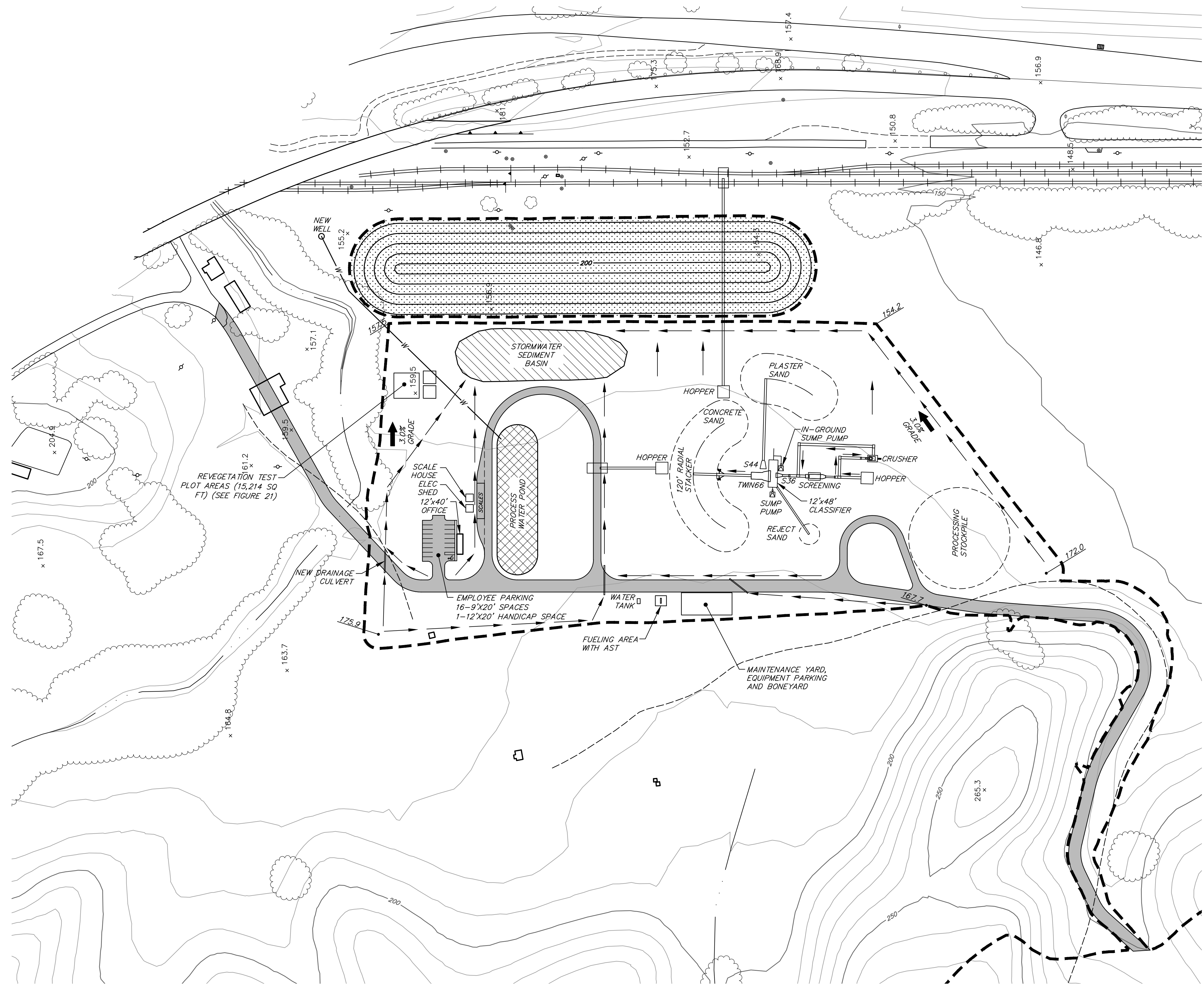
DWG: FIGURE 8

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- PROPOSED WATER LINE FROM OFFSITE WELL
- PROPOSED PROCESS WATER POND
- FLOW DIRECTION
- GRADED BROW DITCH AND DIRECTION OF FLOW
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.
- TOPSOIL STOCKPILE AREA
- CREEK
- VEGETATION



K:\01 Mammoth 4020 Sargent Ranch Local Improvement Plans\Plan Set P2\Fig 8 Plant Site Cad2014.dwg Jan 06, 2015 - 10:34am, arc



REVISIONS:	BY:

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VERN FREEMAN
894 SAN ANTONIO RD
PALO ALTO, CA 94303

SARGENT RANCH QUARRY

AREA 1 GRADING AND PHASING PLAN

DATE: 08/13/2014
SCALE: AS SHOWN
DRAWN: SR
JOB NO: 01.4020
DWG: **FIGURE 9**

LEGEND

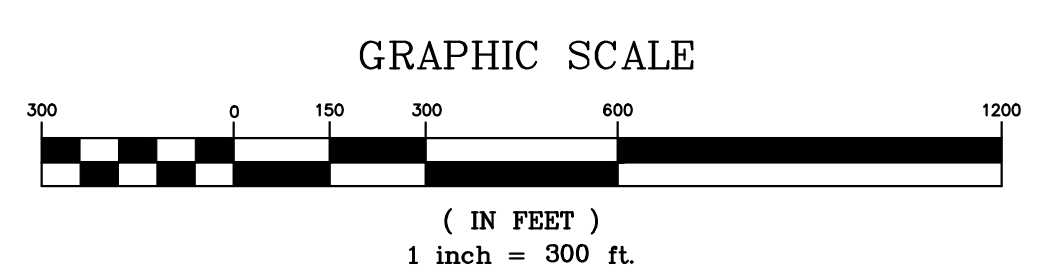
- MINING LIMIT LINE
- ▬ PROPOSED GRADED ROAD WIDTH AS SHOWN
- ▨ PROPOSED STORMWATER SEDIMENT BASIN
- W— PROPOSED WATER LINE FROM OFFSITE WELL
- ▧ PROPOSED PROCESS WATER POND
- 200 EXISTING GROUND CONTOUR AND ELEV.
- 200 PROPOSED GROUND CONTOUR AND ELEV.
- ▤ TOPSOIL STOCKPILE AREA
- CREEK
- VEGETATION
- ▲ SECTION LINE

QUARRY EXCAVATION ESTIMATED QUANTITIES

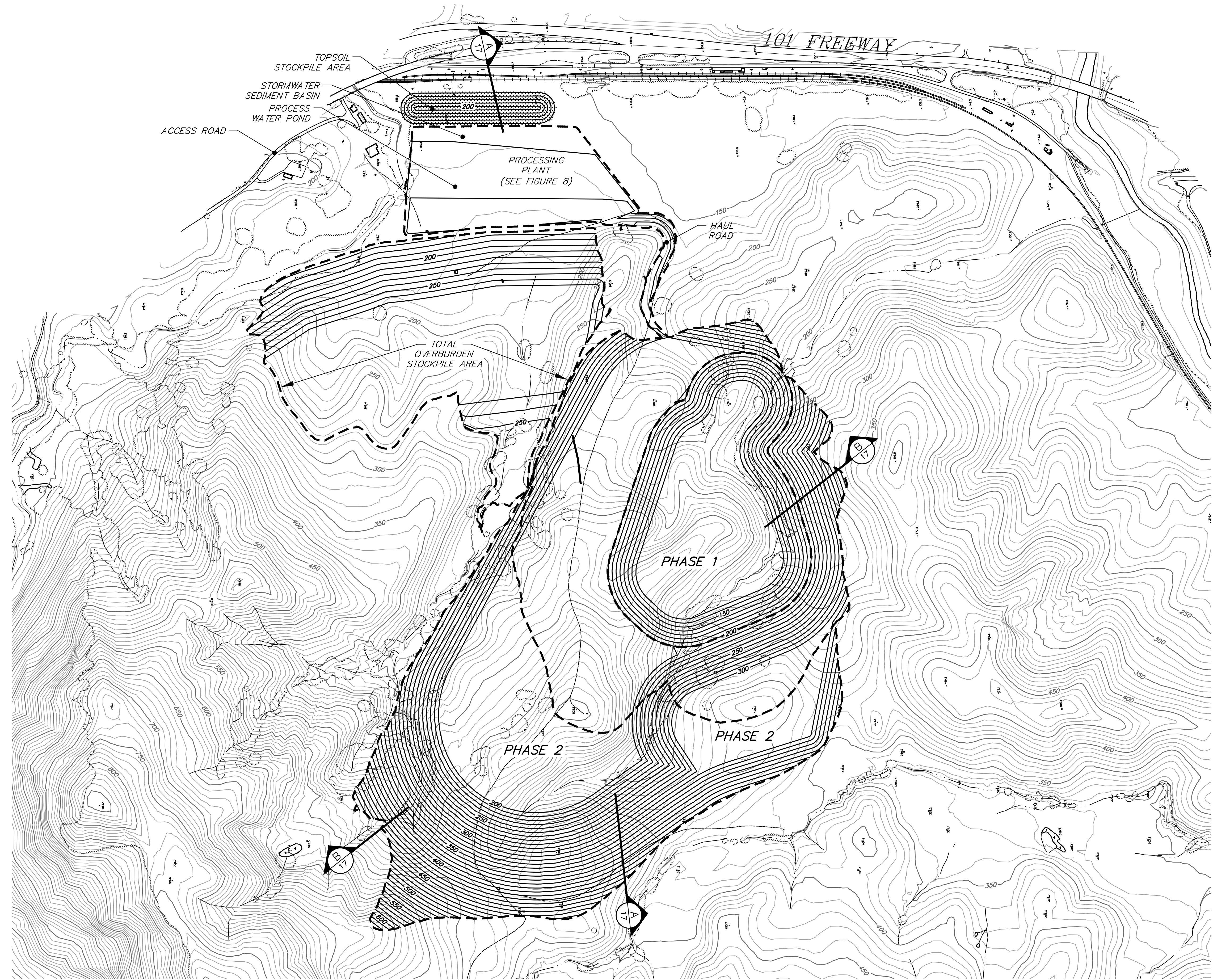
TOTAL VOLUME	CY
TOTAL PRODUCT	X-- -- TONS
PHASE 1 TOTAL VOLUME	10,600,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	330,000 CY
PHASE 1 OVERBURDEN	2,650,000 CY
PHASE 1 PRODUCT	7,620,000 CY
PLANT SITE AND PHASE 1 HAUL ROAD FILL	110,000 CY
PHASE 2 TOTAL VOLUME	19,700,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	CY
PHASE 2 OVERBURDEN	5,000,000 CY
PHASE 2 PRODUCT	14,700,000 CY
PHASE 3 TOTAL VOLUME	5,240,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	104,000 CY
PHASE 3 OVERBURDEN	1,500,000 CY
PHASE 3 GOOD MATERIAL	3,636,000 CY
PHASE 4 TOTAL VOLUME	2,320,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	88,000 CY
PHASE 4 OVERBURDEN	696,000 CY
PHASE 4 GOOD MATERIAL	1,536,000 CY

- NOTES:**
- REFER TO FIGURES 17 AND 18 FOR MINE CROSS SECTIONS.
 - FIGURES 11-15 PROVIDE MORE DETAILED INFORMATION BY MINE PHASE.

CONTOUR INTERVAL: 10'



K:\01_Mammoth\4020 Sargent Ranch Local Improvement Plans\Plan Set R2\Fig 9 Area 1 Phasing Plan_Cad2014.dwg Jan 06, 2015 - 10:43am. srf

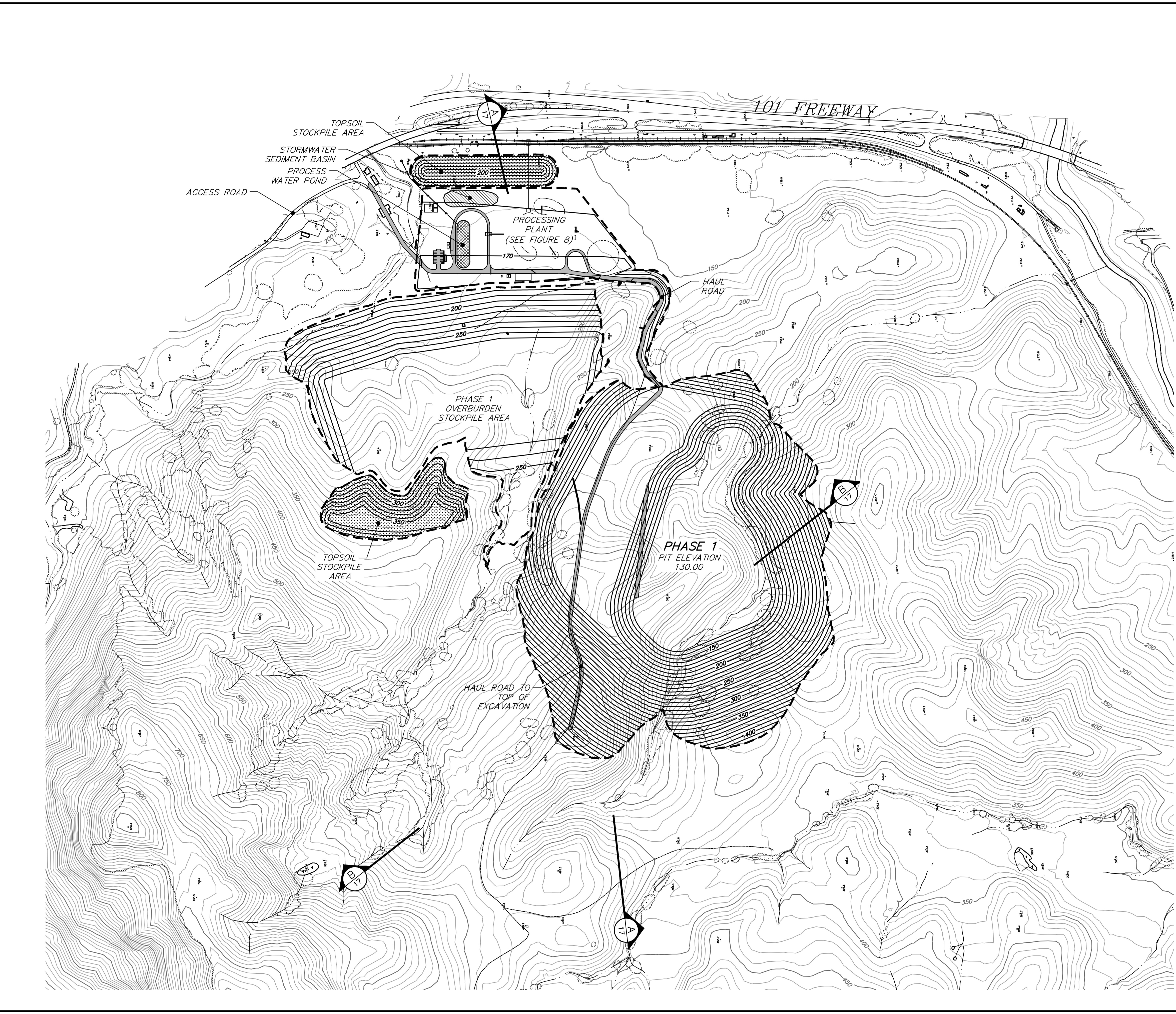


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PALO ALTO, CA 94303

SARGENT RANCH QUARRY
PHASE 1 EXCAVATION PLAN

DATE: 08/13/2014
SCALE: AS SHOWN
DRAWN: SR
JOB NO: 01.4020
DWG: **FIGURE 11**

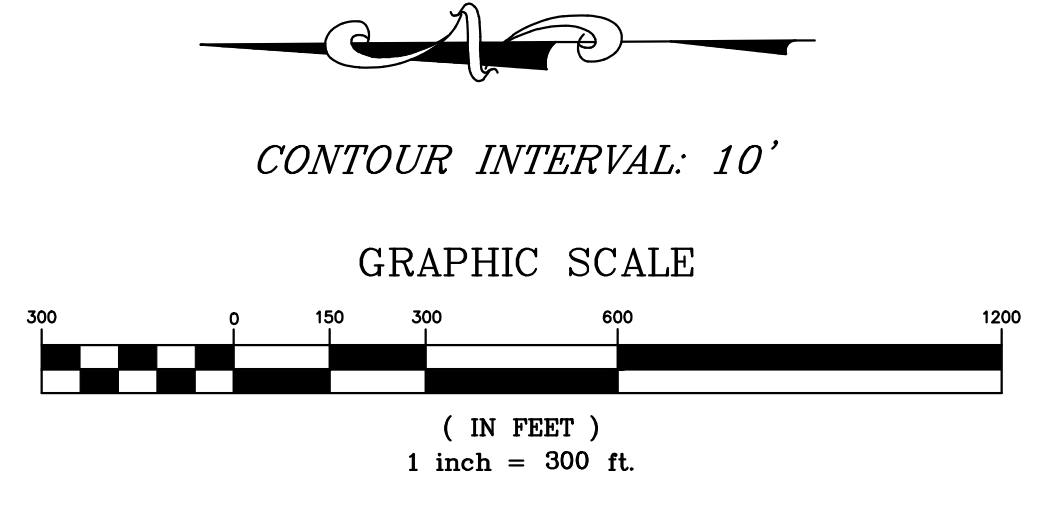


- LEGEND**
- MINING LIMIT LINE
 - PROPOSED GRADED ROAD WIDTH AS SHOWN
 - PROPOSED STORMWATER SEDIMENT BASIN
 - PROPOSED WATER LINE FROM OFFSITE WELL
 - PROPOSED PROCESS WATER POND
 - EXISTING GROUND CONTOUR AND ELEV.
 - PROPOSED GROUND CONTOUR AND ELEV.
 - TOPSOIL STOCKPILE AREA
 - CREEK
 - VEGETATION
 - SECTION LINE
 - PROCESSING PLANT

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 1 TOTAL VOLUME	13,300,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	330,000 CY
PHASE 1 OVERBURDEN	3,325,000 CY
PHASE 1 PRODUCT	9,645,000 CY
PLANT SITE AND PHASE 1 HAUL ROAD FILL	110,000 CY

- NOTES:**
- OVERBURDEN IN PHASE 1 WILL BE STOCKPILED AS SHOWN HEREON AND WILL BE PERMANENT.
 - TOP SOIL FROM PHASE 1 WILL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING.
 - TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 - REFER TO FIGURES 19 & 20 FOR MINE CROSS SECTIONS.



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 PALO ALTO, CA 94303

SARGENT RANCH QUARRY

PHASE 2 EXCAVATION PLAN AND

PHASE 1 RECLAMATION

DATE: 08/13/2014

 SCALE: AS SHOWN













 DRAWN: SR

 JOB NO: 01.4020

 DWG:

FIGURE 12

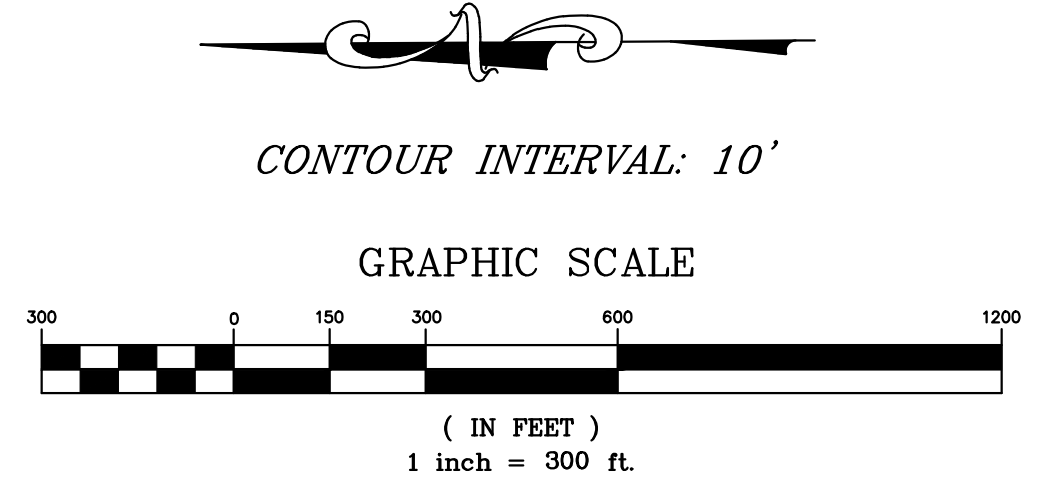
LEGEND

-  MINING LIMIT LINE
-  PROPOSED GRADED ROAD WIDTH AS SHOWN
-  PROPOSED STORMWATER SEDIMENT BASIN
-  PROPOSED WATER LINE FROM OFFSITE WELL
-  PROPOSED PROCESS WATER POND
-  EXISTING GROUND CONTOUR AND ELEV.
-  PROPOSED GROUND CONTOUR AND ELEV.
-  TOPSOIL STOCKPILE AREA
-  CREEK
-  VEGETATION
-  SECTION LINE
-  PROCESSING PLANT

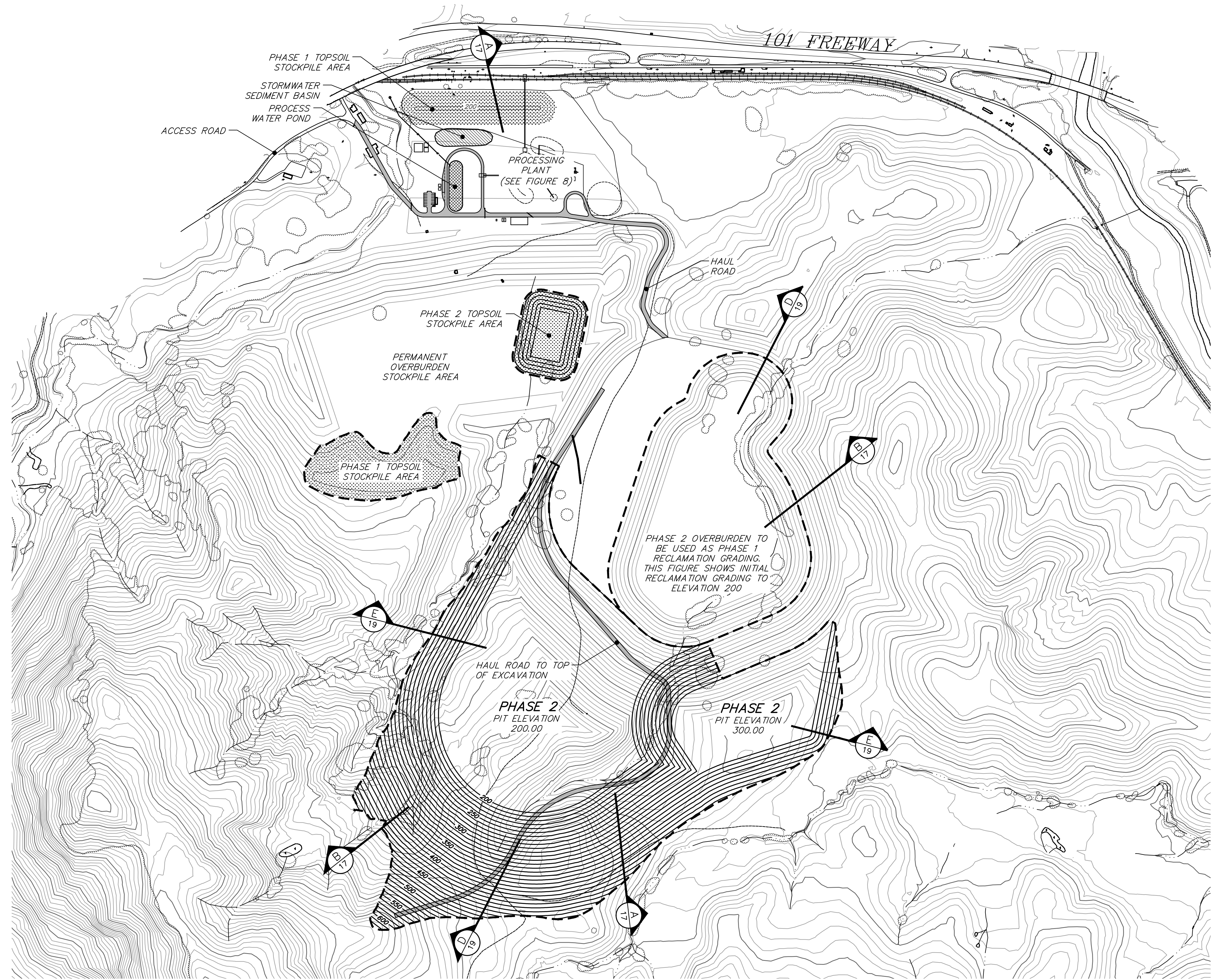
QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 2 TOTAL VOLUME	16,800,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	225,000 CY
PHASE 2 OVERBURDEN	4,200,000 CY
PHASE 2 PRODUCT	12,375,000 CY
AMOUNT OF PHASE 2 OVERBURDEN USED FOR INITIAL PHASE 1 RECLAMATION	CY
AMOUNT OF TOP SOIL TO RECLAIM PHASE 1 OVERBURDEN STOCKPILE (6" DEEP)	37,000 CY

- NOTES:**
1. OVERBURDEN IN PHASE 2 WILL BE USED TO RECLAIM PHASE 1.
 2. TOP SOIL FROM PHASE 2 WILL BE SPREAD ACROSS PHASE 1 OVERBURDEN STOCKPILE.
 3. ADDITIONAL TOPSOIL WILL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING.
 4. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 5. REFER TO FIGURES 17 & 18 FOR MINE CROSS SECTIONS.
 6. REFER TO FIGURES 19-21 FOR MINE RECLAMATION CROSS SECTIONS.

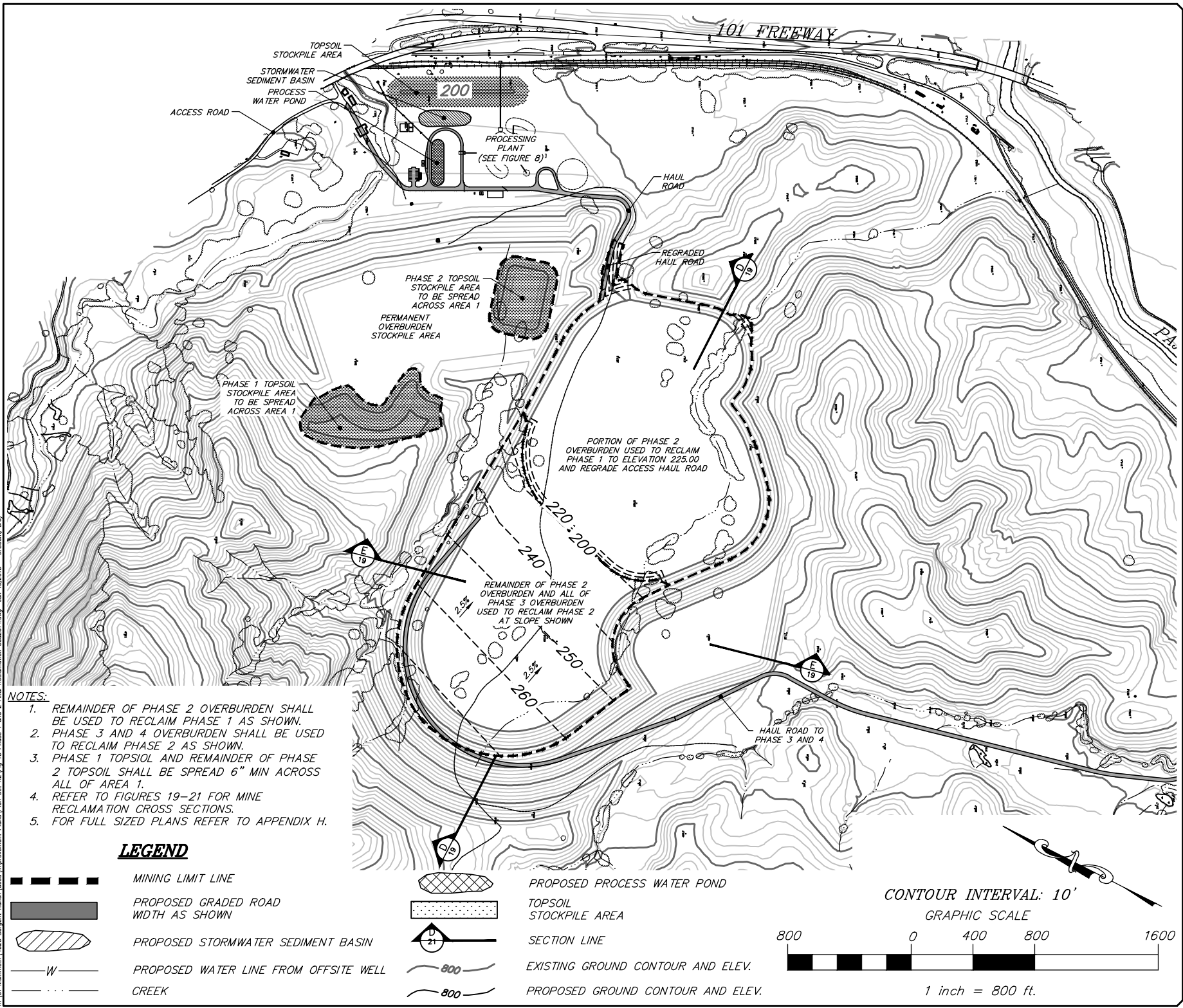


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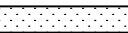


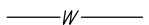



NO.	DATE	BY	DESCRIPTION

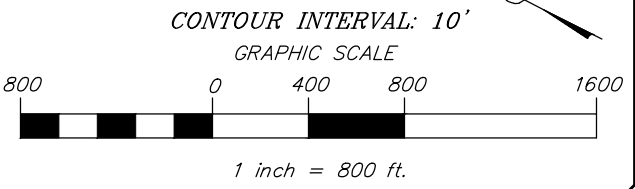
SARGENT RANCH QUARRY
PHASE 1 AND 2 FINAL RECLAMATION



- NOTES:**
1. REMAINDER OF PHASE 2 OVERBURDEN SHALL BE USED TO RECLAIM PHASE 1 AS SHOWN.
 2. PHASE 3 AND 4 OVERBURDEN SHALL BE USED TO RECLAIM PHASE 2 AS SHOWN.
 3. PHASE 1 TOPSOIL AND REMAINDER OF PHASE 2 TOPSOIL SHALL BE SPREAD 6" MIN ACROSS ALL OF AREA 1.
 4. REFER TO FIGURES 19-21 FOR MINE RECLAMATION CROSS SECTIONS.
 5. FOR FULL SIZED PLANS REFER TO APPENDIX H.

LEGEND

- | | | | |
|---|---------------------------------------|---|-----------------------------------|
|  | MINING LIMIT LINE |  | PROPOSED PROCESS WATER POND |
|  | PROPOSED GRADED ROAD WIDTH AS SHOWN |  | TOPSOIL STOCKPILE AREA |
|  | PROPOSED STORMWATER SEDIMENT BASIN |  | SECTION LINE |
|  | PROPOSED WATER LINE FROM OFFSITE WELL |  | EXISTING GROUND CONTOUR AND ELEV. |
|  | CREEK |  | PROPOSED GROUND CONTOUR AND ELEV. |

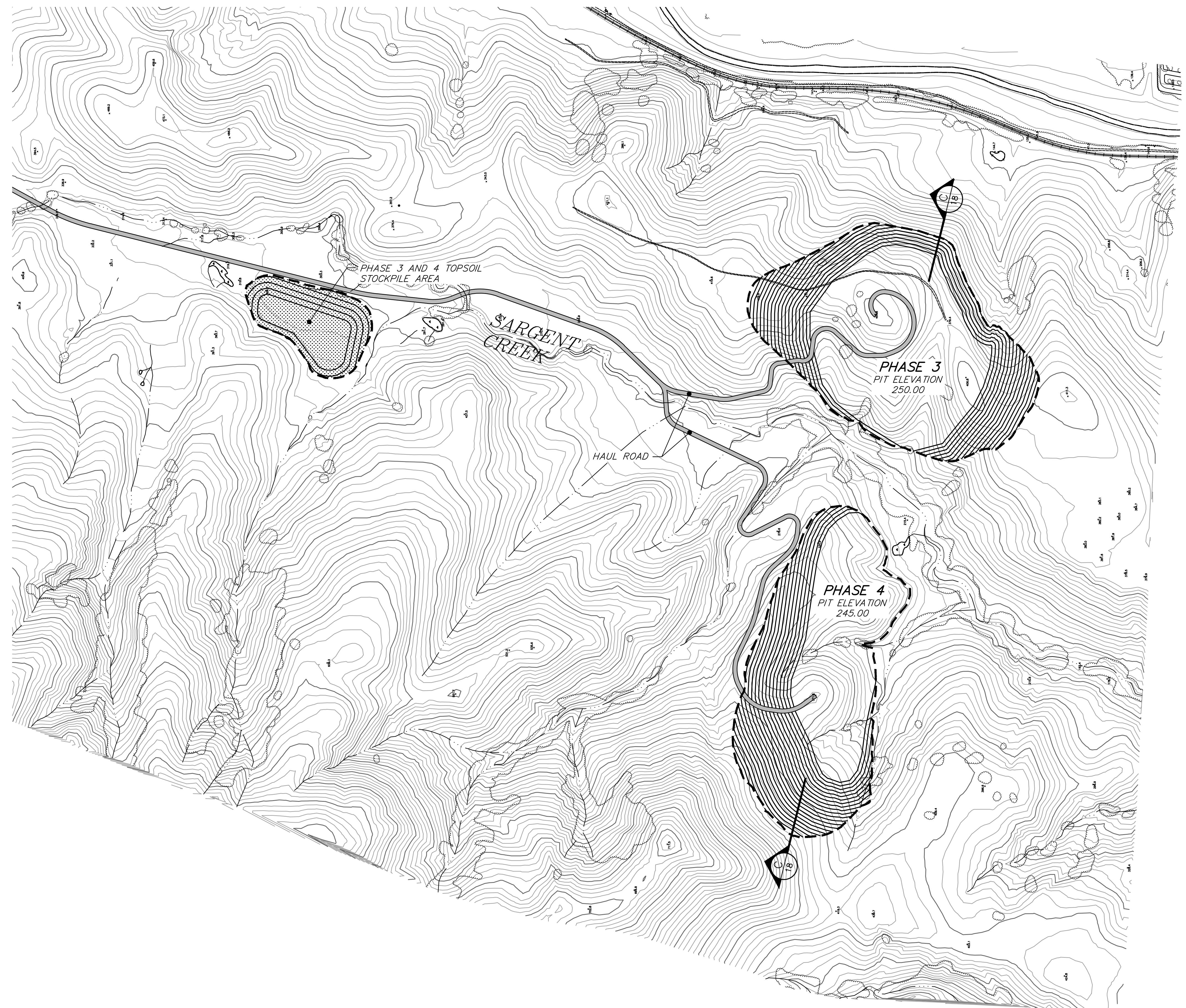









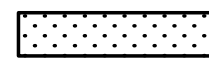




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REVISIONS:	BY:

SARGENT RANCH QUARRY

PHASE 4 AND 5 EXCAVATION PLAN

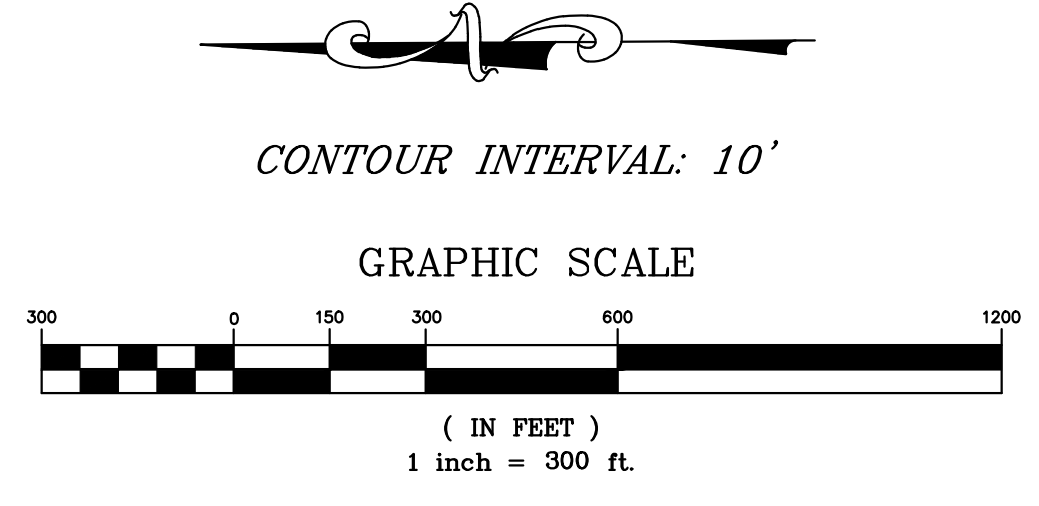


- LEGEND**
-  MINING LIMIT LINE
 -  PROPOSED GRADED ROAD WIDTH AS SHOWN
 -  PROPOSED STORMWATER SEDIMENT BASIN
 -  PROPOSED WATER LINE FROM OFFSITE WELL
 -  PROPOSED PROCESS WATER POND
 -  EXISTING GROUND CONTOUR AND ELEV.
 -  PROPOSED GROUND CONTOUR AND ELEV.
 -  TOPSOIL STOCKPILE AREA
 -  CREEK
 -  VEGETATION
 -  SECTION LINE
 -  PROCESSING PLANT

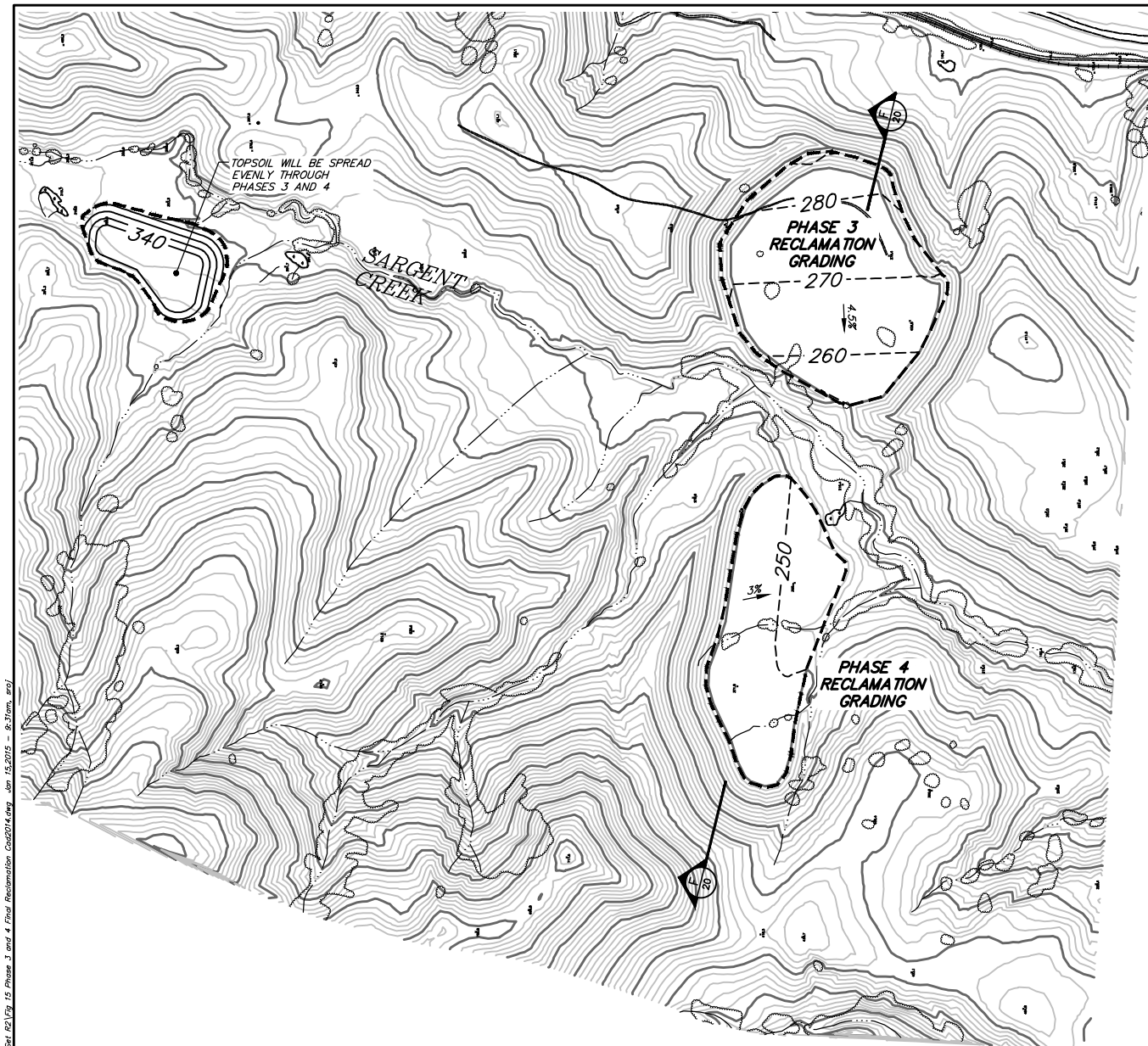
QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 3 TOTAL VOLUME	5,240,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	104,000 CY
PHASE 3 OVERBURDEN	1,500,000 CY
PHASE 3 PRODUCT	3,636,000 CY
PHASE 4 TOTAL VOLUME	2,320,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	88,000 CY
PHASE 4 OVERBURDEN	696,000 CY
PHASE 4 PRODUCT	1,536,000 CY

- NOTES:**
1. OVERBURDEN IN PHASE 3 WILL BE USED TO RECLAIM PHASE 2.
 2. TOP SOIL FROM PHASE 3 WILL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING.
 3. OVERBURDEN IN PHASE 4 WILL BE USED TO RECLAIM PHASE 3.
 4. TOP SOIL FROM PHASE 4 WILL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING.
 5. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
 6. REFER TO FIGURES 17 & 18 FOR MINE CROSS SECTIONS.



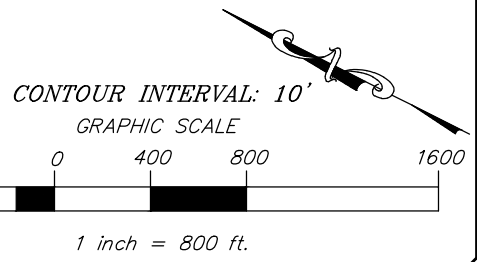
K:\01_Mammoth\4020 Sargent Ranch Local Improvement Plans\Plan Set P2\Fig 14 Phase 3 and 4 Plan Cad2014.dwg Jan 06, 2015 - 10:40am, sro/



LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- PROPOSED WATER LINE FROM OFFSITE WELL
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- SECTION LINE
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.

- NOTES:**
1. REFER TO FIGURES 19-21 FOR MINE RECLAMATION CROSS SECTIONS.
 2. FOR FULL SIZE PLAN REFER TO APPENDIX H.



K:\07 Mammoth\4020 Sargent Ranch Local Improvement Plans Set 102\Fig 15 Phase 3 and 4 Final Reclamation Grad2014.dwg Jan 15, 2015 - 9:31am, wcl

PREPARED & SUBMITTED BY:

DATE:

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PREPARED FOR:

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 PALO ALTO, CA 94303

SARGENT RANCH QUARRY
PHASE 3 QAND 4 FINAL RECLAMATION

PREPARED & SUBMITTED BY:

DATE:

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 PALO ALTO, CA 94303

SARGENT RANCH QUARRY

MINE CROSS SECTIONS

DATE: 08/13/2014

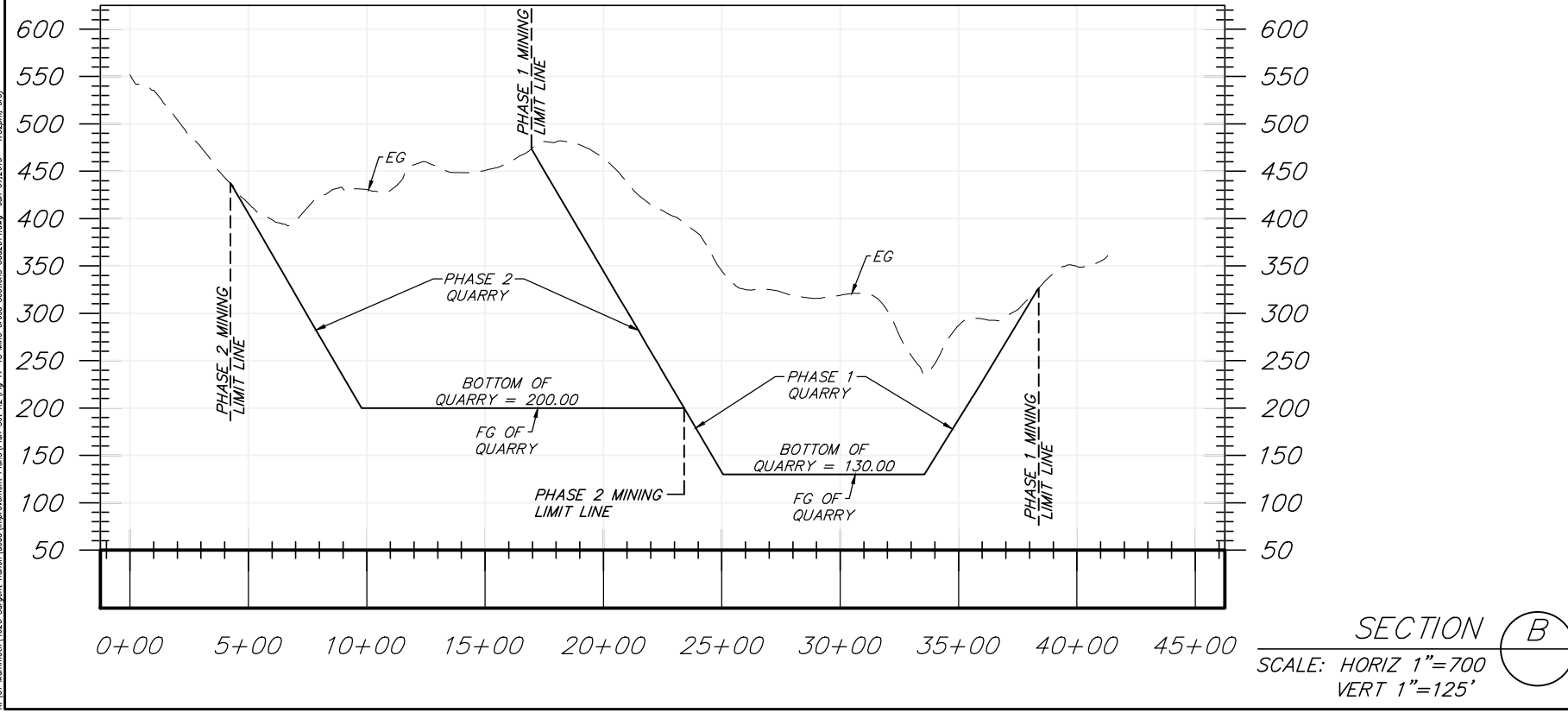
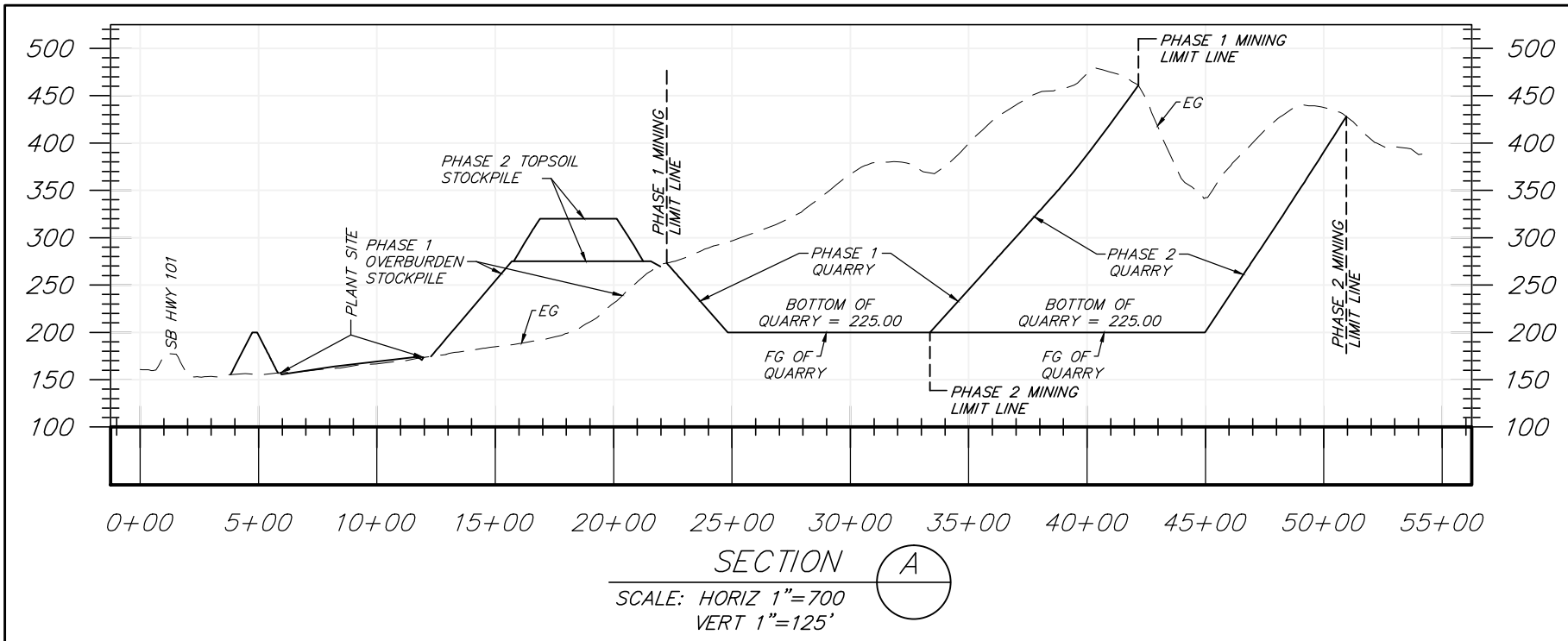
 SCALE: AS SHOWN

 DRAWN: SCR

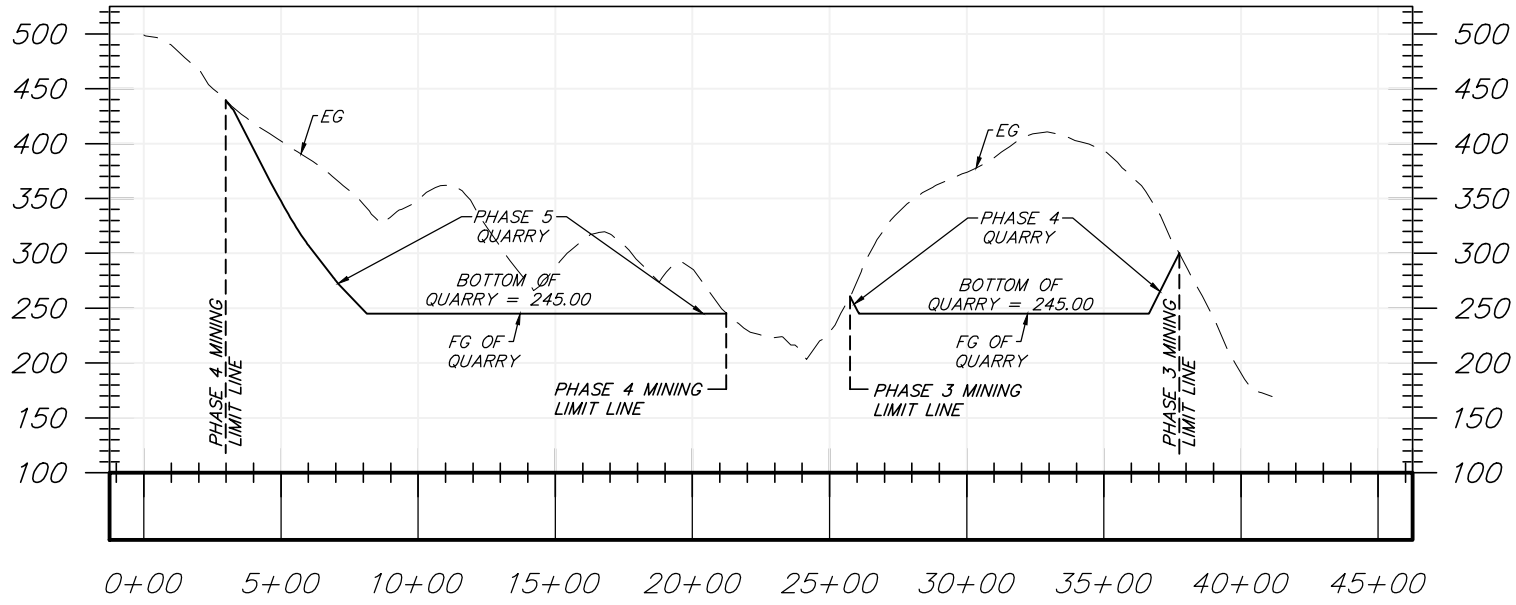
 JOB NO.: 01.4020

 DWG:

FIGURE 17



K:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\Fig 17-18 Mine Cross Sections\02014.dwg Jan 07,2015 1:52pm.ery



SECTION C

 SCALE: HORIZ 1"=700'

 VERT 1"=125'

FILTER FABRIC MATERIAL 60"

 WIDE ROLLS. USE STAPLES

 OR WIRE RINGS TO ATTACH

 FABRIC TO WIRE

 2"x2" 14 GA WIRE

 FABRIC OR EQ.

 FOLD & SET FILTER

 FABRIC INTO SOIL

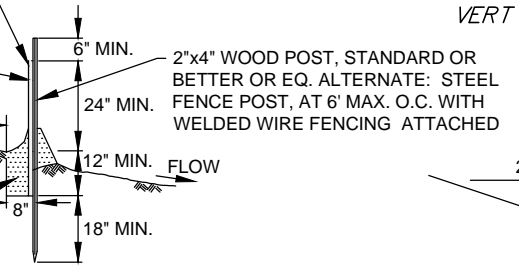
 BACKFILL AND COMPACT

 THE EXCAVATED SOIL IN

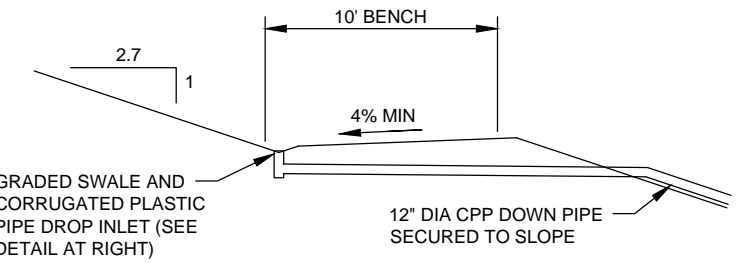
 8"x12" TRENCH AND ON

 BOTH SIDES OF FILTER

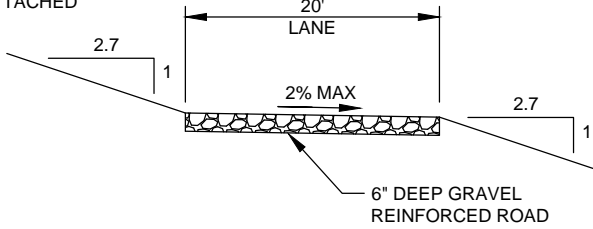
 FABRIC



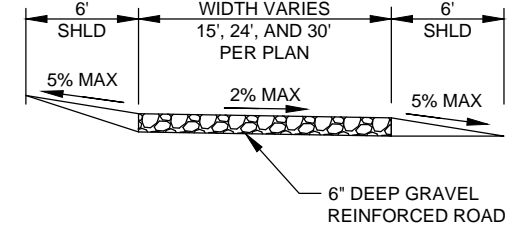
FILTER FENCE
 NO SCALE



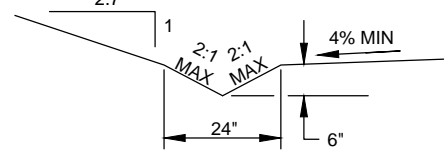
TYPICAL QUARRY SLOPE BENCHING
AND DRAINAGE DETAIL
 NO SCALE



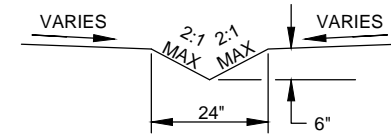
TYPICAL SECTION
MINE ROAD
 NO SCALE



TYPICAL SECTION
ENTRANCE LOOP ROAD
 NO SCALE



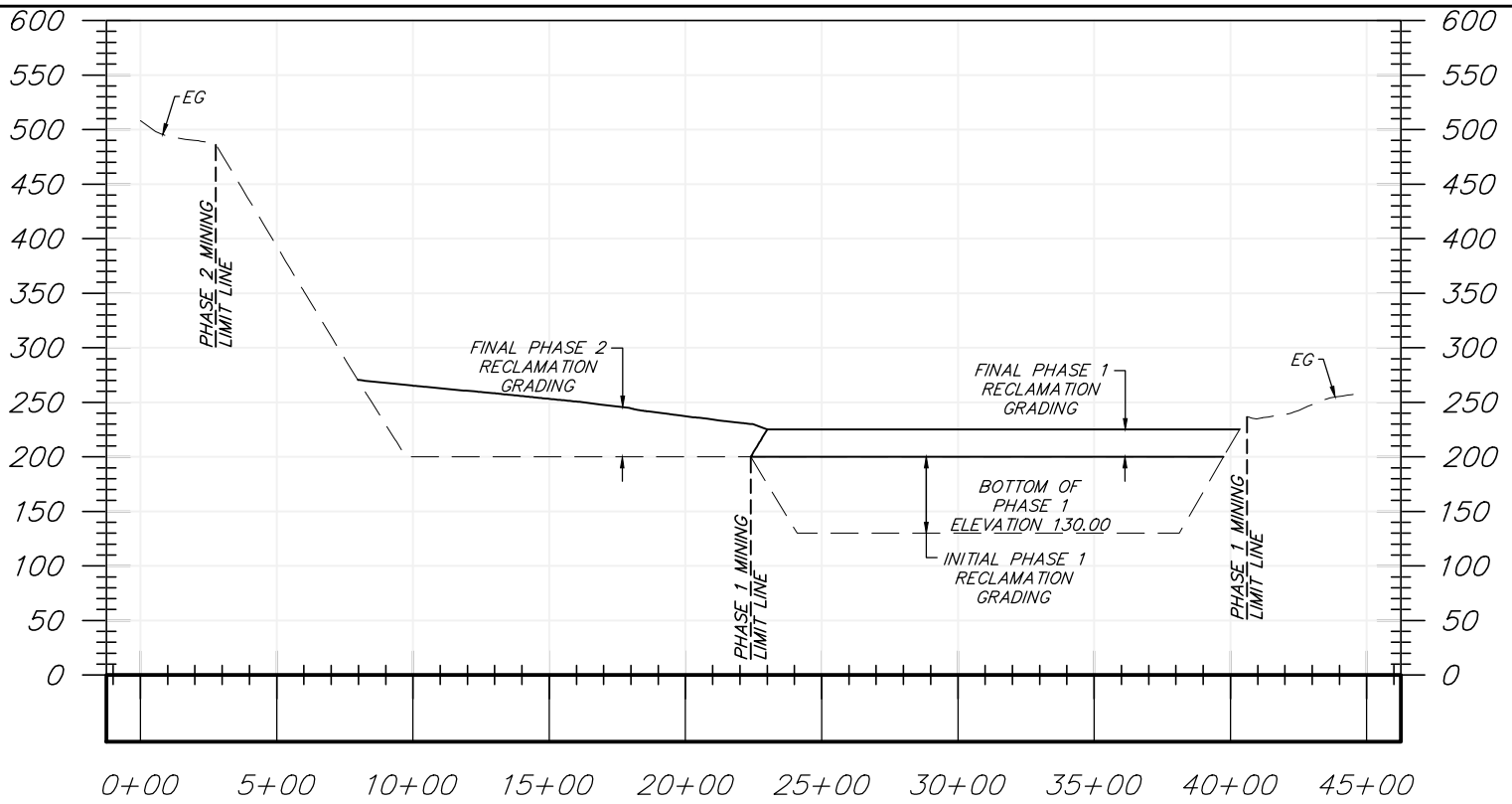
GRADED SWALE
AT SLOPE BENCHING
 NO SCALE



GRADED DRAINAGE
SWALE
 NO SCALE

REVISIONS:	BY:

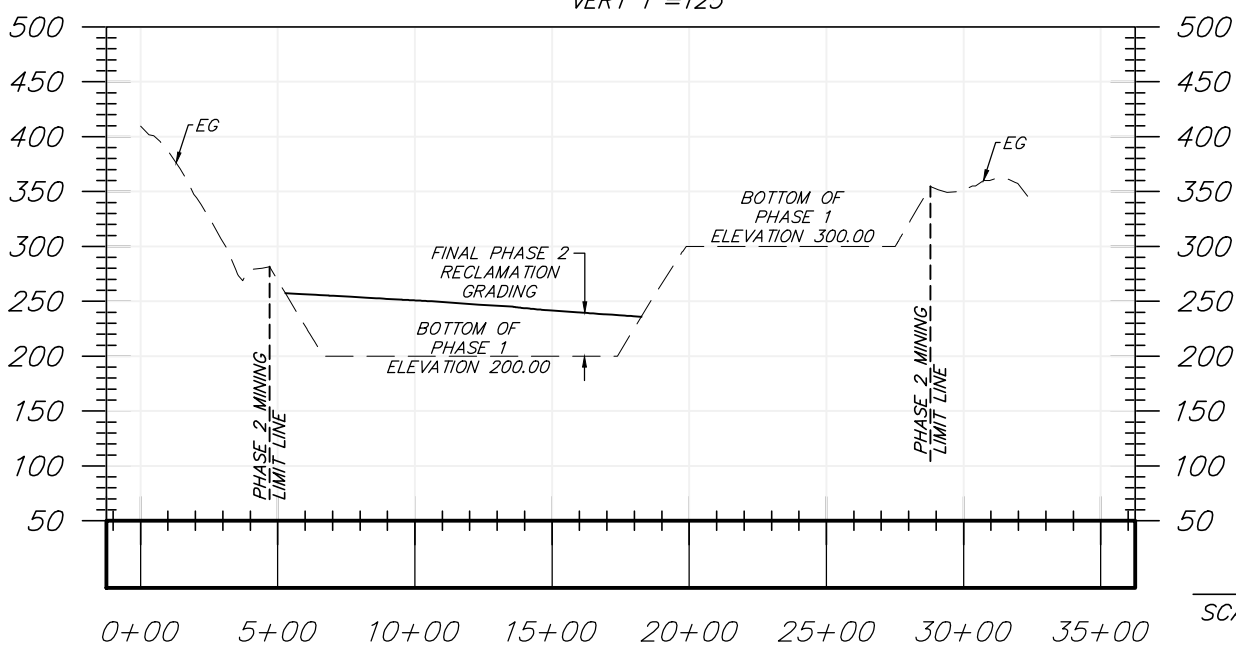
SARGENT RANCH QUARRY
MINE RECLAMATION CROSS SECTIONS



SECTION D

 SCALE: HORIZ 1"=700

 VERT 1"=125'



SECTION E

 SCALE: HORIZ 1"=700

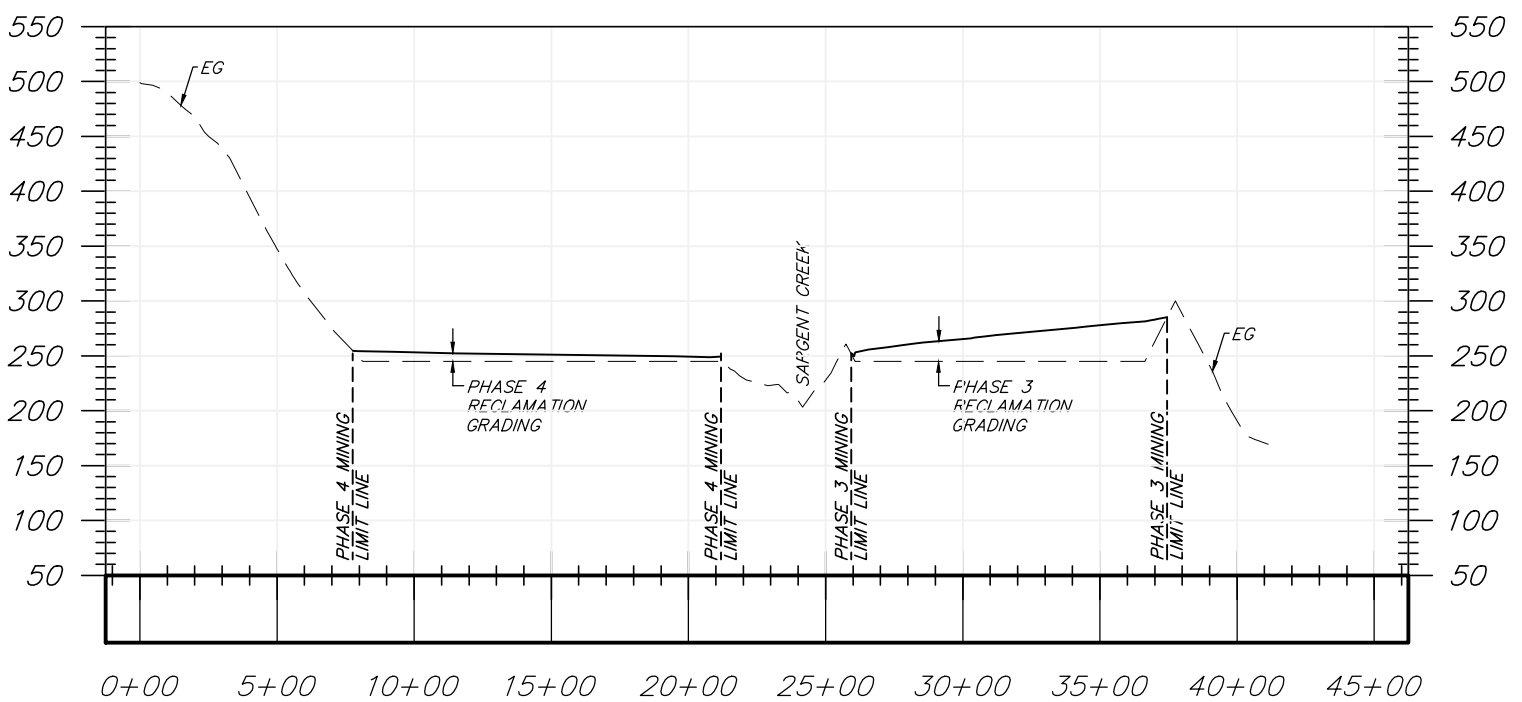
 VERT 1"=125'

K:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\02\Fig 19-21 Mine Reclamation Cross Sections\02D14.dwg Jan 15, 2015 - 9:32am, wjd

REVISIONS:	BY:

SARGENT RANCH QUARRY

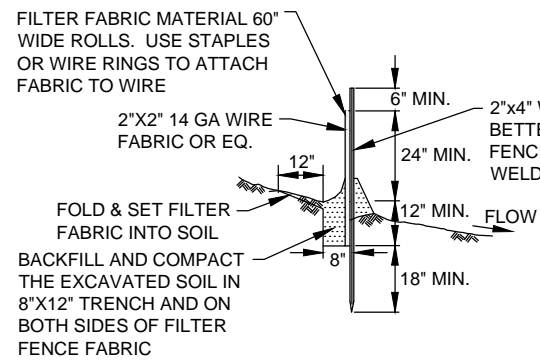
MINE RECLAMATION CROSS SECTIONS



SECTION F

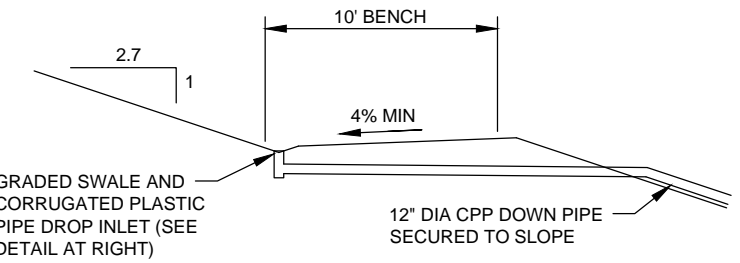
 SCALE: HORIZ 1"=700

 VERT 1"=125'



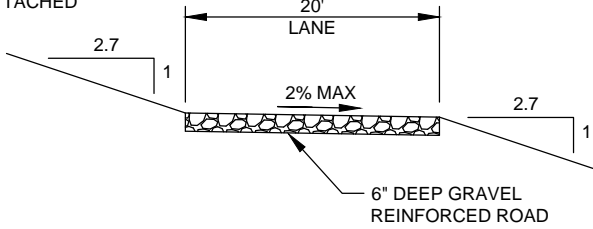
FILTER FENCE

 NO SCALE



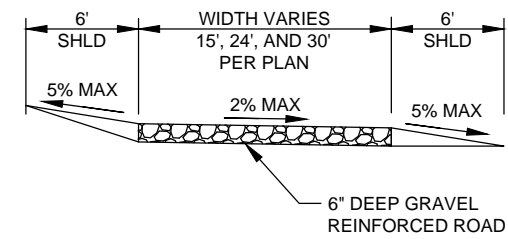
TYPICAL QUARRY SLOPE BENCHING AND DRAINAGE DETAIL

 NO SCALE



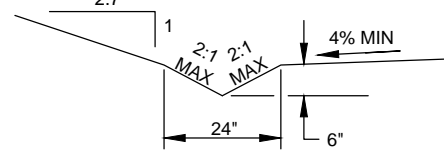
TYPICAL SECTION MINE ROAD

 NO SCALE



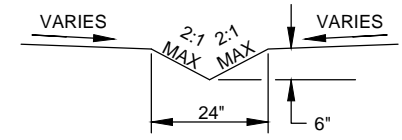
TYPICAL SECTION ENTRANCE LOOP ROAD

 NO SCALE



GRADED SWALE AT SLOPE BENCHING

 NO SCALE



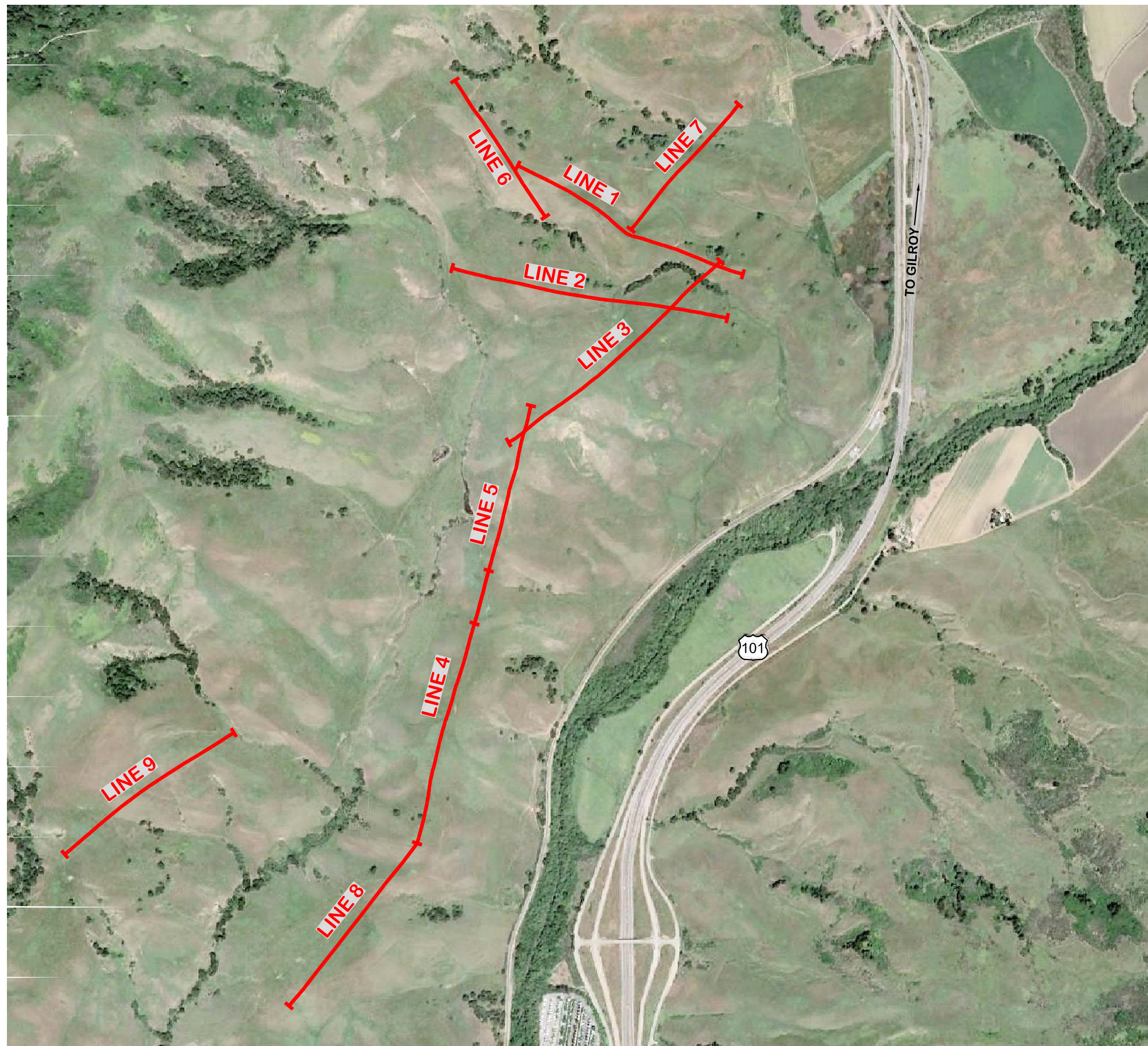
GRADED DRAINAGE SWALE

 NO SCALE

K:\07 Mammoth\4020 Sargent Ranch\Local\Improvement Plans\Plan Set\02\Fig 19-21 Mine Reclamation Cross Sections\Coord714.dwg Jan 15, 2015 - 9:32am, wjg

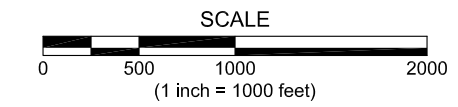
APPENDIX B

ELECTRICAL RESISTIVITY SEISMIC SURVEY




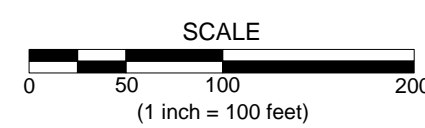
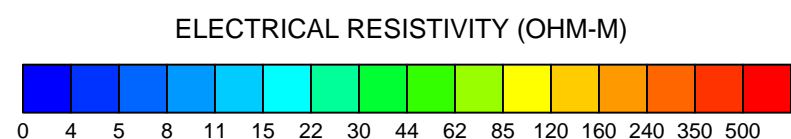
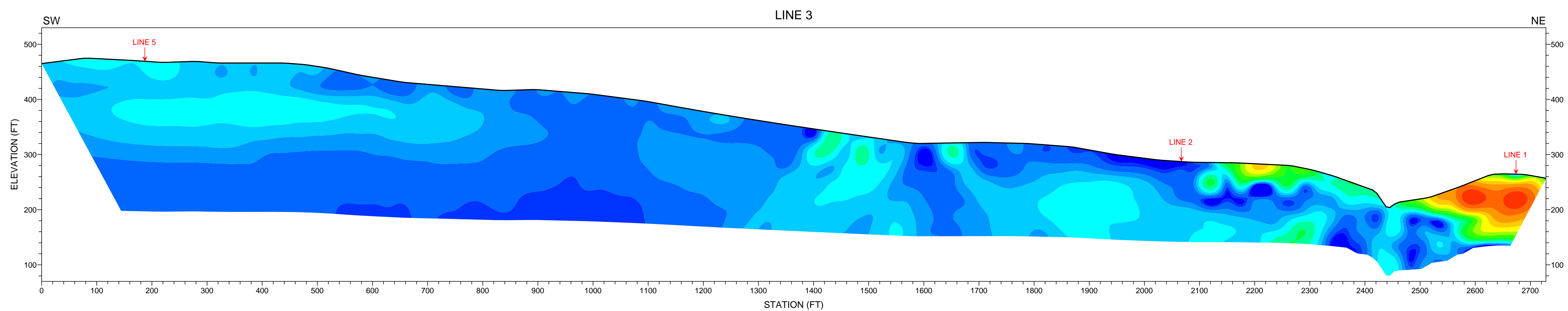
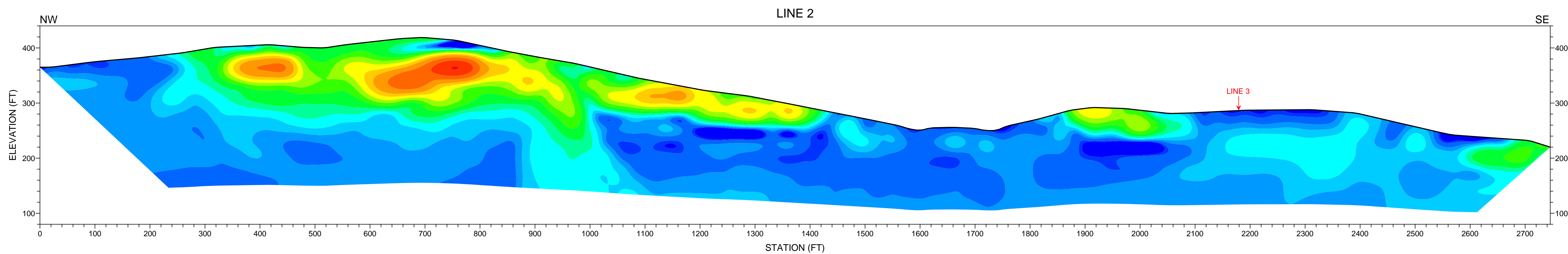
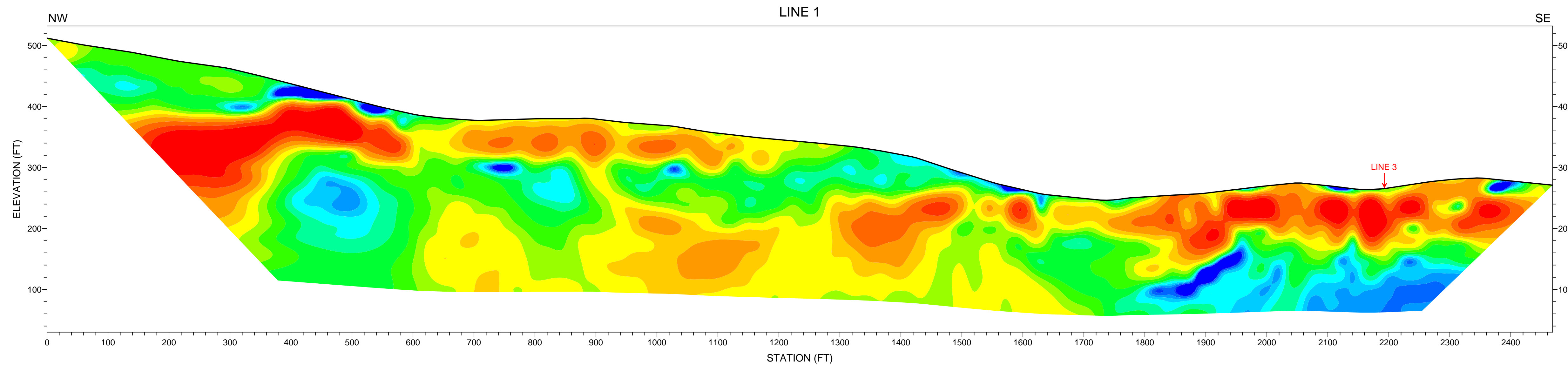
VICINITY MAP

DRAFT




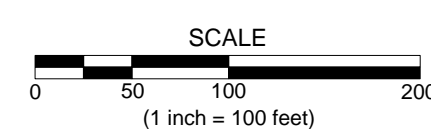
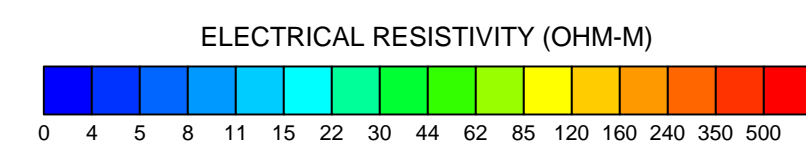
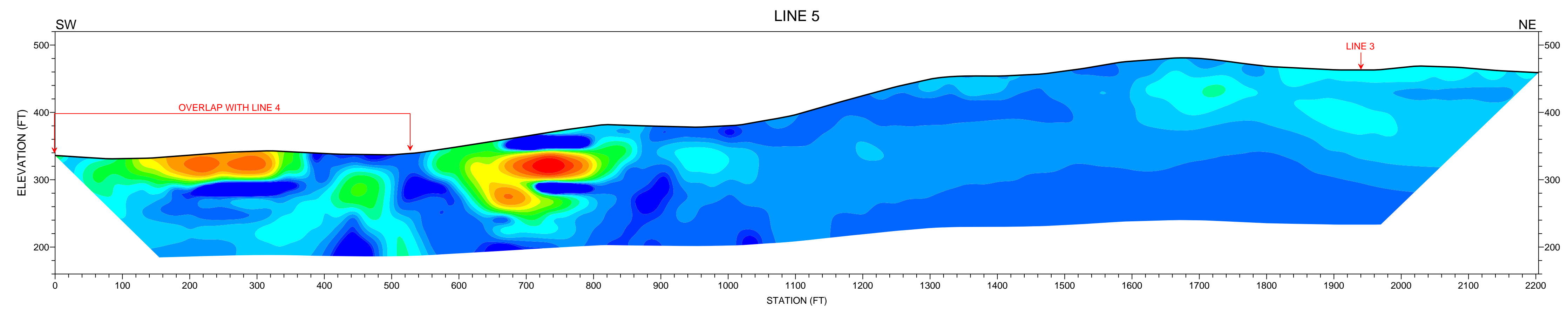
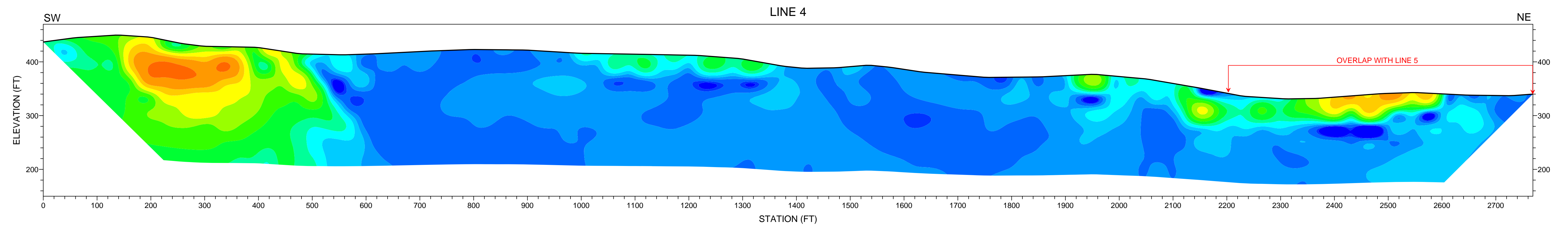
LEGEND	
	ELECTRICAL RESISTIVITY LINE

	SITE LOCATION MAP ELECTRICAL RESISTIVITY SURVEY SARGENT RANCH	
	LOCATION: GILROY, CALIFORNIA	
	CLIENT: FREEMAN ASSOCIATES, LLC.	
	NORCAL GEOPHYSICAL CONSULTANTS INC.	
JOB #: 13-1037.03	DRAWN BY: G.RANDALL	APPROVED BY: DJK
DATE: OCT. 2013		
		PLATE 1




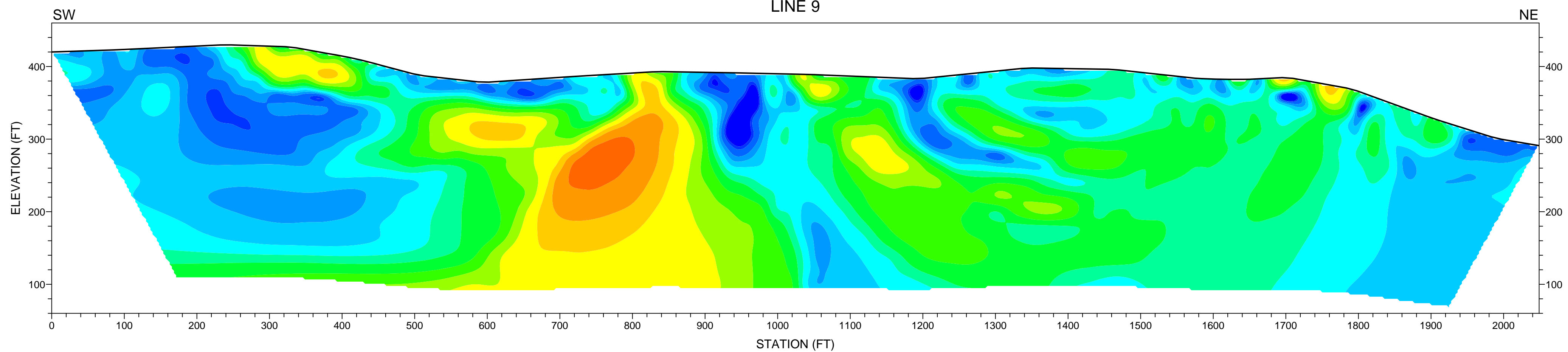
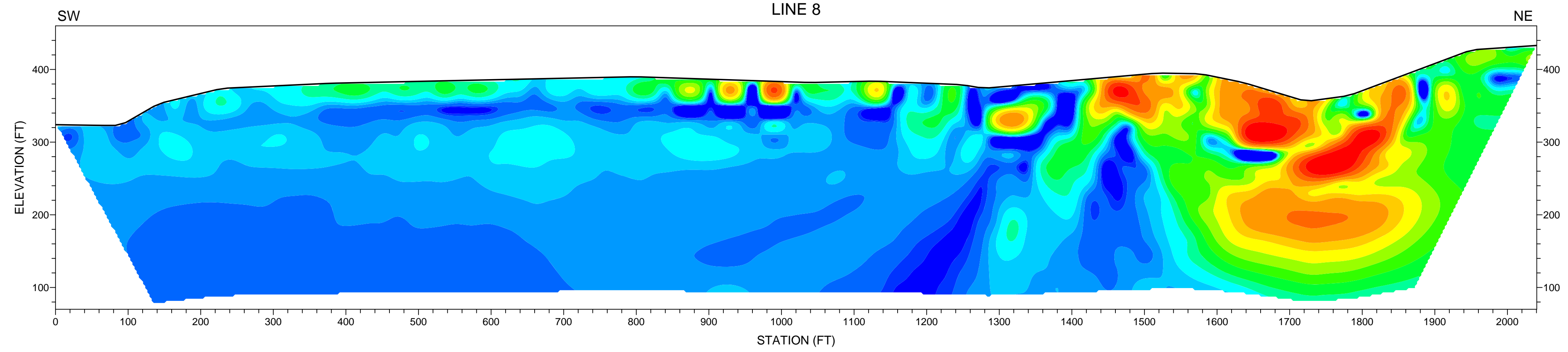
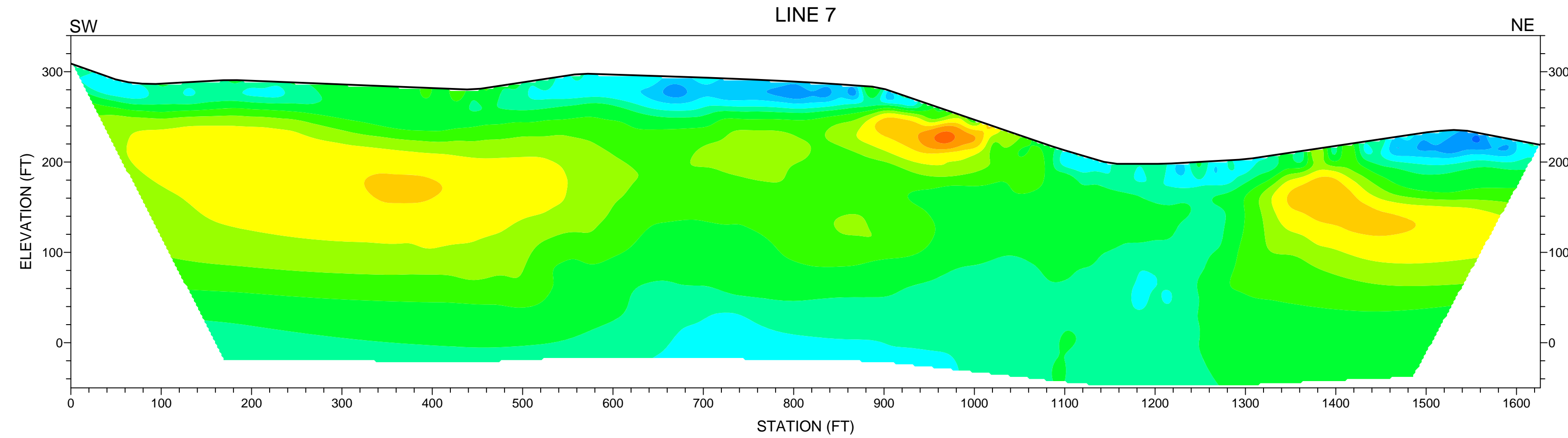
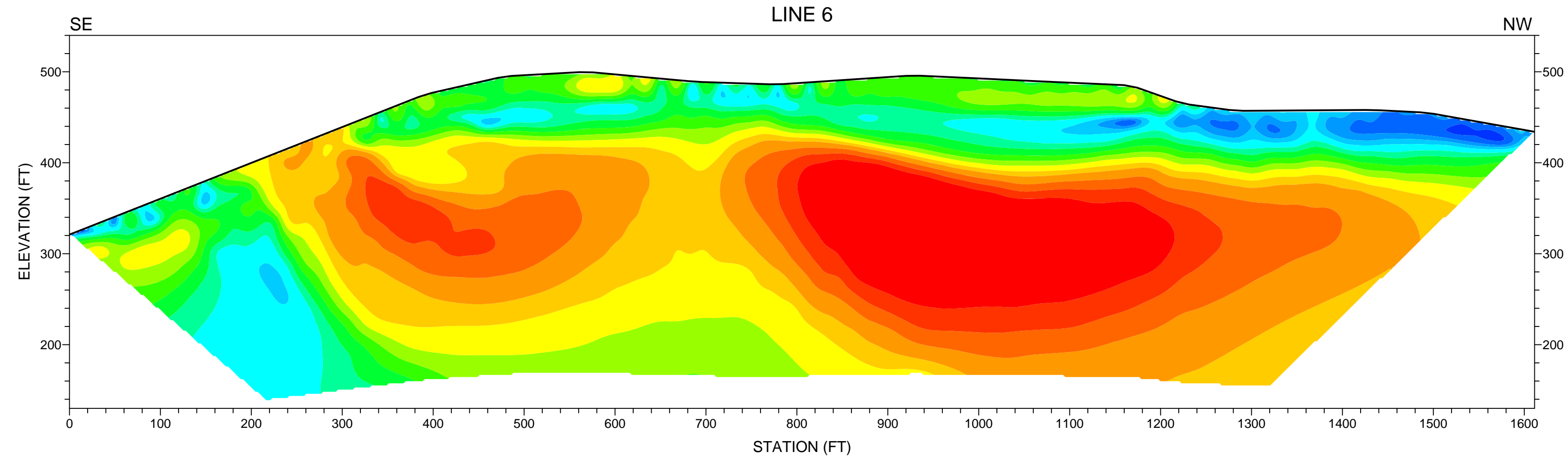
DRAFT

	ELECTRICAL RESISTIVITY PROFILES LINES 1 - 3 SARGENT RANCH	
	LOCATION: GILROY, CALIFORNIA CLIENT: FREEMAN ASSOCIATES, LLC.	
JOB #: 13-1037.03 DATE: SEP. 2013	NORCAL GEOPHYSICAL CONSULTANTS, INC. DRAWN BY: G. RANDALL APPROVED BY: DJK	PLATE 2

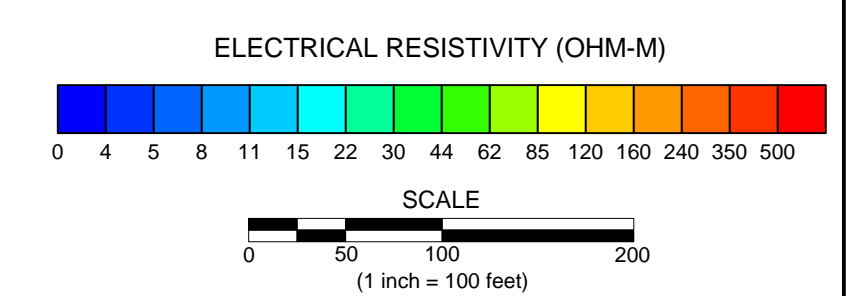


DRAFT

	ELECTRICAL RESISTIVITY PROFILES LINES 4 - 5 SARGENT RANCH	
	LOCATION: GILROY, CALIFORNIA	
JOB #: 13-1037.03	CLIENT: FREEMAN ASSOCIATES, LLC.	
DATE: SEP. 2013	DRAWN BY: G. RANDALL	APPROVED BY: DJK
		PLATE 3



DRAFT



	ELECTRICAL RESISTIVITY PROFILES		PLATE 4
	LINES 6 - 9		
SARGENT RANCH			
LOCATION: GILROY, CALIFORNIA			
CLIENT: FREEMAN ASSOCIATES, LLC.			
JOB #: 13-1037.03	NORCAL GEOPHYSICAL CONSULTANTS, INC.		
DATE: OCT. 2013	DRAWN BY: G. RANDALL	APPROVED BY: DJK	

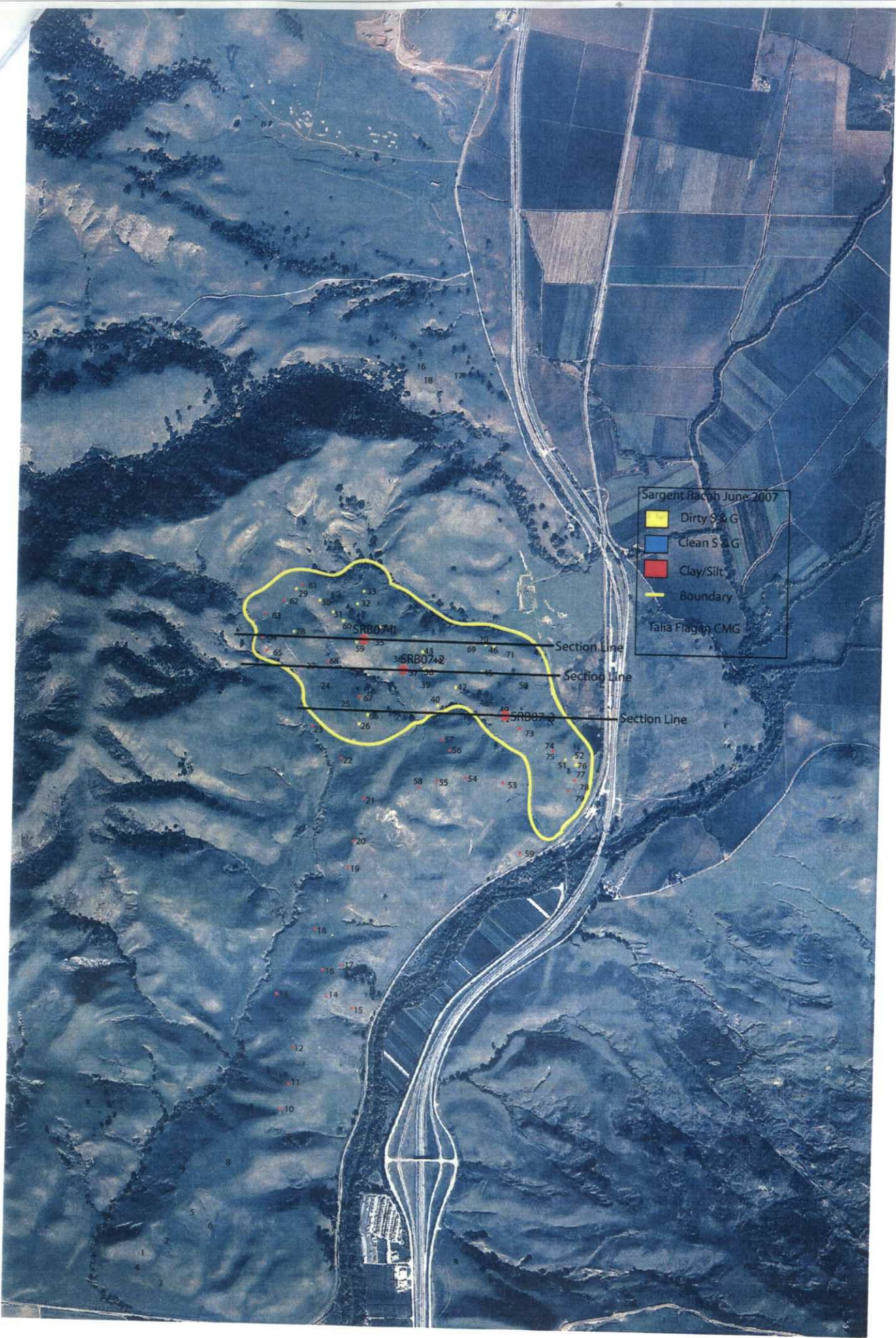
APPENDIX C

PREVIOUS EXPLORATORY BORING LOGS

Sargent Basin June 2007

- Dirty S & G
- Clean S & G
- Clay/Silt
- Boundary

Talia Flagan CMG



SAND AND GRAVEL LOG

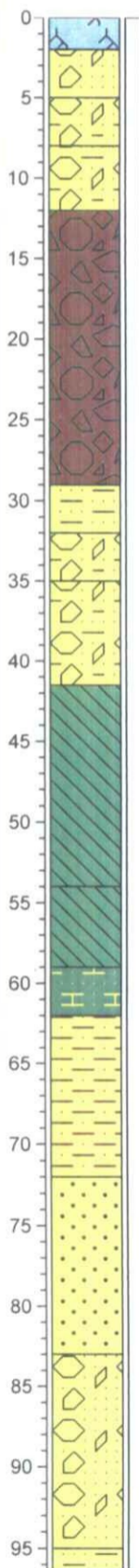
PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-1 **GEOLOGIST:** TMF **DATE:** 06/6/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628215 **NORTHING:** 4087578 **ELEVATION:** 490'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"

HOLE INFORMATION: **TOTAL DEPTH:** 360' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
-------------	-------------	-----------------	-----------	------	------------------------	--



0	(0) OB	5	(2) silty sand with 20% 1x4, angular, well graded	10	(5) clayey sand and 1x4, clay clasts and coating on rock	15	(8) clayey/silty sand, medium grained, 10% rock	20	(12) dirty sand and gravel, 30% rock, sub rounded, dirty	25	30	(29) silty sand, red	35	(32) silty sand and rock, 30-40% gravel, fine sand	40	(35) clayey silty sand, coarser, 30% rock	45	(42) clay	50	55	(54) blue gray clay	60	(59) silty clay	65	(62) silt	70	75	(72) clean sand, well graded, angular no rock	80	85	(83) clean coarse sand with pea gravel and 1x4 30-50%	90	95	(95) silty sand, some rock
---	--------	---	---	----	--	----	---	----	--	----	----	----------------------	----	--	----	---	----	-----------	----	----	---------------------	----	-----------------	----	-----------	----	----	---	----	----	---	----	----	----------------------------



SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-1 **GEOLOGIST:** TMF **DATE:** 06/6/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628215 **NORTHING:** 4087578 **ELEVATION:** 490'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"

HOLE INFORMATION: **TOTAL DEPTH:** 360' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
-------------	-------------	-----------------	-----------	------	------------------------	--

100					(98) clean sand and some rock, <10%	
105						
110						
115						
120					(116) gravel with silt coating little sand	
125					(120) rock, little fines, hard, angular, 1" pieces, blue, crystalline?	
130						
135					(130) clay, very hard, some supported gravel	
140						
145					(140) sandy clay	
150					(145) clay coated pea gravel and little sand, gravel is angular, clay is very hard	
155					(152) silty clay	
160					(153) silty sand with rock, pea gravel and 1x4, dirty silt coated	
165					(154) dirty sand and gravel but with 2" sub rounded cobbles of very hard rock	
170					(163) silty clay with minor entrapped gravel, dark brown	
175					(171) reddish silty sand	
180					(172) reddish brown clay	
185					(173) fine red silty sand	
190					(176) grayish silty clay	
					(177) red silt	
					(180) blue clay	
					(187) reddish silty sand	



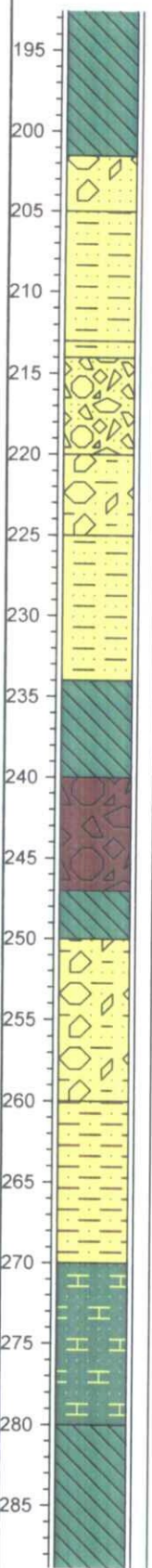
SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-1 **GEOLOGIST:** TMF **DATE:** 06/6/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628215 **NORTHING:** 4087578 **ELEVATION:** 490'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"
HOLE INFORMATION: **TOTAL DEPTH:** 360' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
-------------	-------------	-----------------	-----------	------	------------------------	--



195	(191) gray silt and clay, hard	
200	(202) black sand and gravel	
205	(205) silty black sand	
210	(213) brown silt	
215	(214) silt and gravel, hard, dark blue/gray, 90% rock, hard and angular	
220	(220) silt and gravel, dirty, angular	
225	(225) clean silty sand no rock, well graded, sub rounded	
230		
235	(234) clay with silt, blue gray and tan	
240	(240) dirty silty sand and gravel, hard dark blue, angular	
245		
250	(247) blue gray clay	
255	(250) dark blue silt, about 256 started to coarsen up with more sand and <10% pea gravel, some silt cemented sand clasts	
260	(260) blue silt with occasional coarse layers, 265 silty clay clasts	
265		
270	(270) silty clay, getting harder	
275		
280	(280) blue clay	using water
285		

SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-1 **GEOLOGIST:** TMF **DATE:** 06/6/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628215 **NORTHING:** 4087578 **ELEVATION:** 490'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"

HOLE INFORMATION: **TOTAL DEPTH:** 360' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
290	[Graphic Log Column]				(290) blue clay	
295					(300) blue clay	
300					(310) blue clay	
305					(320) clay	
310					(330) clay	
315					(335) clay supported rock fragments, all sizes including sand, chert, metaseds, greenish clay	
320					(340) same except more clay and small layer of all gravel, angular, basalt?	
325					(350) clay	
330						
335						
340						
345						
350						
355						
360						



SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-2 **GEOLOGIST:** TMF **DATE:** 06/09/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628421 **NORTHING:** 4087463 **ELEVATION:** 362'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"

HOLE INFORMATION: **TOTAL DEPTH:** 250' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
0					(0) topsoil	
5					(2) silt and gravel, 1x4	
10					(6) dirty sand and gravel, mostly pea gravel some 1/2" rock	
15					(12) clean sand and gravel, some clay coating on rock	
20					(17) more coarse sand less rock only pea gravel orangish gold in color	
25						
30					(30) same	
35						
40					(40) same	
45					(45) dirty sand and gravel, more gravel, some silty clay clasts, rock is hard and sub rounded and breaks on angular clasts	
50						
55						
60					(60) dirty sand and gravel	
65					(62) clay with sand and gravel	
70					(65) silty sand and gravel with clay clasts	
75					(75) clay with silty sand	
80					(79) clayey sand and gravel	
85					(82) blue clay	
90					(86) silt	
95						
100					(96) blue silty clay	
105					(102) brown clay using water more silty	
110						

SAND AND GRAVEL LOG

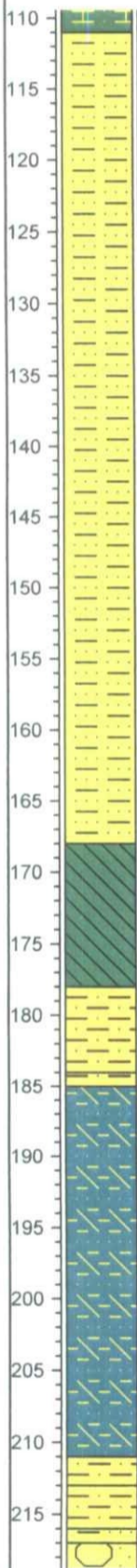
PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-2 **GEOLOGIST:** TMF **DATE:** 06/09/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628421 **NORTHING:** 4087463 **ELEVATION:** 362'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"

HOLE INFORMATION: **TOTAL DEPTH:** 250' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
-------------	-------------	-----------------	-----------	------	------------------------	--



(111) silty sand, cemented clasts of sand and pea gravel that are silty coated

(168) blue silty clay, hard, comes out in fragments

(178) black silt some cemented

(184) blue silt and gravel

(185) blue clayey silt brown, silty sand layers

(211) blue silt

(213) brown silt

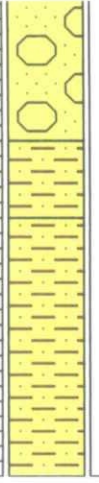
(216) silty sand

SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-2 **GEOLOGIST:** TMF **DATE:** 06/09/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628421 **NORTHING:** 4087463 **ELEVATION:** 362'

DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"
HOLE INFORMATION: **TOTAL DEPTH:** 250' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
220 225 230 235 240 245 250					<div style="border: 1px solid black; padding: 2px;">(217) silty sand and pea gravel</div> <div style="border: 1px solid black; padding: 2px;">(228) blue silt</div> <div style="border: 1px solid black; padding: 2px;">(233) brown silty sand, perched water</div>	



SAND AND GRAVEL LOG

PROJECT NAME: Sargent Ranch **HOLE #:** SRB07-3 **GEOLOGIST:** TMF **DATE:** 06/12/2007

LOCATION: **BRANCH:** Monterey Bay **PROJECT CONTACT:** Kashawagi **STATE:** CA **COUNTY:** Santa Clara **SECTION:**
UTM ZONE: 10 **DATUM:** NAD83 **EASTING:** 628902 **NORTHING:** 4087279 **ELEVATION:** 270'
DRILLING INFORMATION: **CONTRACTOR:** Great West Drilling **DRILLER:** Benson **DRILL RIG TYPE:** Becker
DRILLING METHOD: Air Hammer **HOLE SIZE [OD/ID]:** 6"/4"
HOLE INFORMATION: **TOTAL DEPTH:** 150' **ANGLE:** -90 **BEARING:**
PLUG TYPE: N/A **DEPTH:** N/A **WATER LEVEL DEPTH:** N/A

Depth (ft.)	Graphic Log	Sample Interval	Sample ID	USCS	Lithologic Description	Field Notes (Testing Data, Other Observations)
-------------	-------------	-----------------	-----------	------	------------------------	--

0					(0) OB	
5					(4) sand and rock, clay clasts	
10					(12) silty sand	
15					(18) coarse sand with fines	
20					(23) sand and <10% rock	
25					(23) sand and <10% rock	
30					(23) sand and <10% rock	
35					(23) sand and <10% rock	
40					(23) sand and <10% rock	
45					(46) blue clay	
50					(46) blue clay	
55					(46) blue clay	
60					(46) blue clay	
65					(46) blue clay	
70					(70) silty sand	
75					(70) silty sand	
80					(77) hard clay	
85					(77) hard clay	
90					(77) hard clay	
95					(77) hard clay	
100					(77) hard clay	
105					(104) silty clay	
110					(104) silty clay	
115					(104) silty clay	
120					(118) clay	
125					(118) clay	
130					(118) clay	
135					(118) clay	
140					(118) clay	
145					(118) clay	
150					(118) clay	



APPENDIX D

LABORATORY TESTING

Laboratory tests were performed on the representative test samples to provide a basis for development of design parameters. Soil materials were visually classified in the field according to the Unified Soil Classification System (USCS). Laboratory tests were performed in general accordance with the American Society of Testing and Materials (ASTM) procedures. The results of our laboratory testing are presented herein. USCS classifications are presented on the boring logs (Appendix A). Selected samples were tested for the following parameters:

Gradation Analysis

Gradation analysis tests were performed on a selected representative soil sample in general accordance with ASTM D 422. These test results were utilized in evaluating the soil classifications in accordance with the USCS.

Atterberg Limits

Tests were performed on a selected representative fine-grained soil sample to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D 4318. These test results were utilized to evaluate the soil classification in accordance with USCS.

Direct Shear Test

A remolded direct shear test was performed in general accordance with ASTM D 3080 to evaluate the shear strength characteristics of the selected materials.

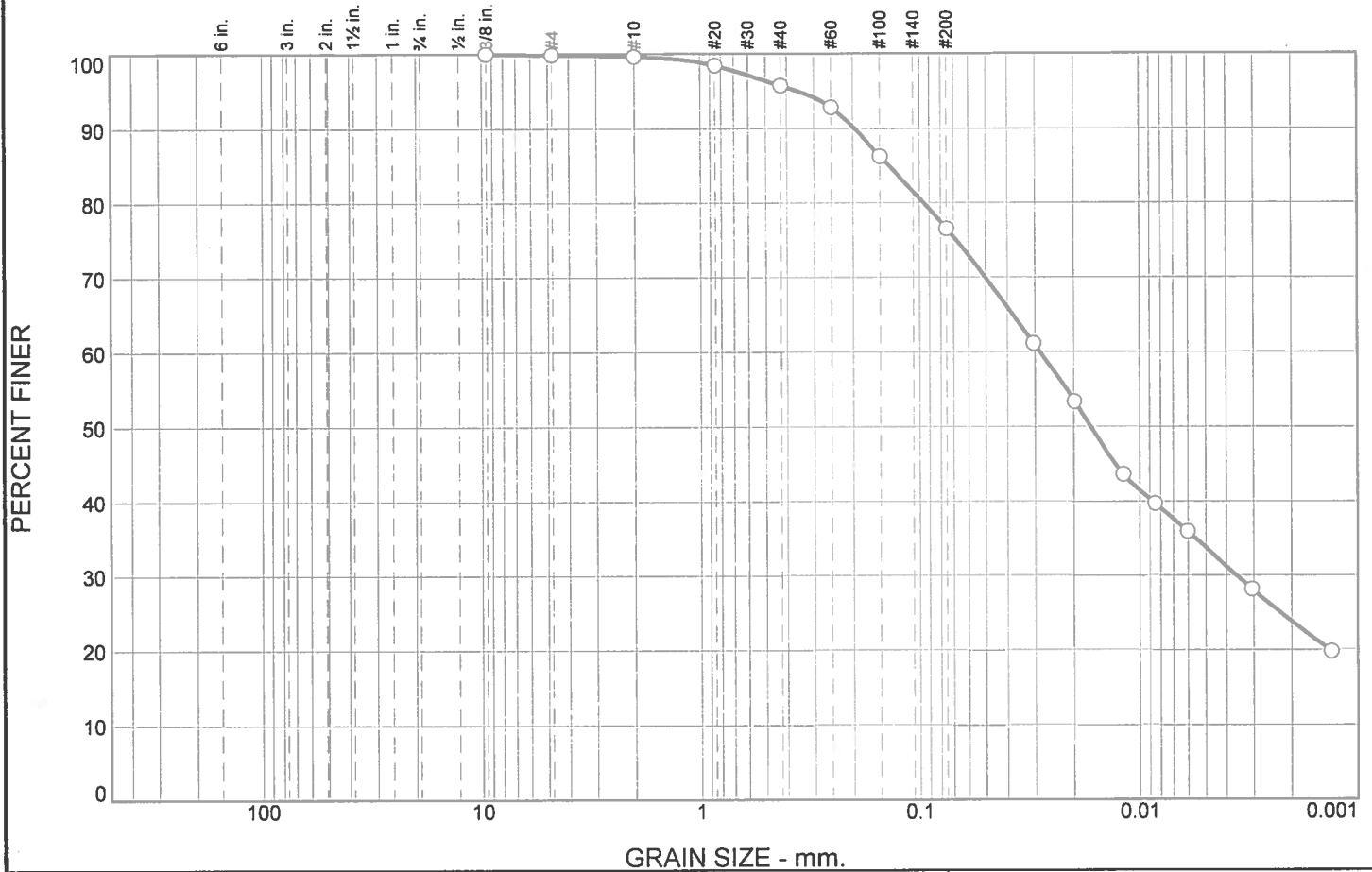
LA Abrasion

A resistance to degradation of small-size coarse aggregate by abrasion and impact test in the Los Angeles machine was performed in accordance with ASTM C131.

Proctor Density Tests

The maximum dry density and optimum moisture content of selected representative soil samples were evaluated using the Modified Proctor method in general accordance with ASTM D 1557.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	3.9	19.3	42.7	33.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375"	100.0		
#4	99.9		
#10	99.7		
#20	98.5		
#40	95.8		
#60	92.8		
#100	86.2		
#200	76.5		
0.0303 mm.	61.1		
0.0198 mm.	53.3		
0.0118 mm.	43.6		
0.0085 mm.	39.7		
0.0060 mm.	35.9		
0.0030 mm.	28.1		
0.0013 mm.	19.8		

Soil Description

Gray clay (CL)

Atterberg Limits

PL= 15 LL= 34 PI= 19

Coefficients

D₈₅= 0.1375 D₆₀= 0.0285 D₅₀= 0.0168
D₃₀= 0.0036 D₁₅= D₁₀=
C_u= C_c=

Classification

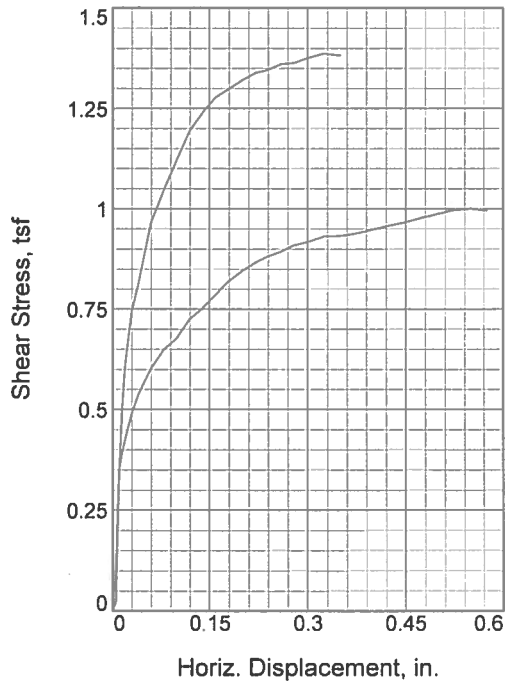
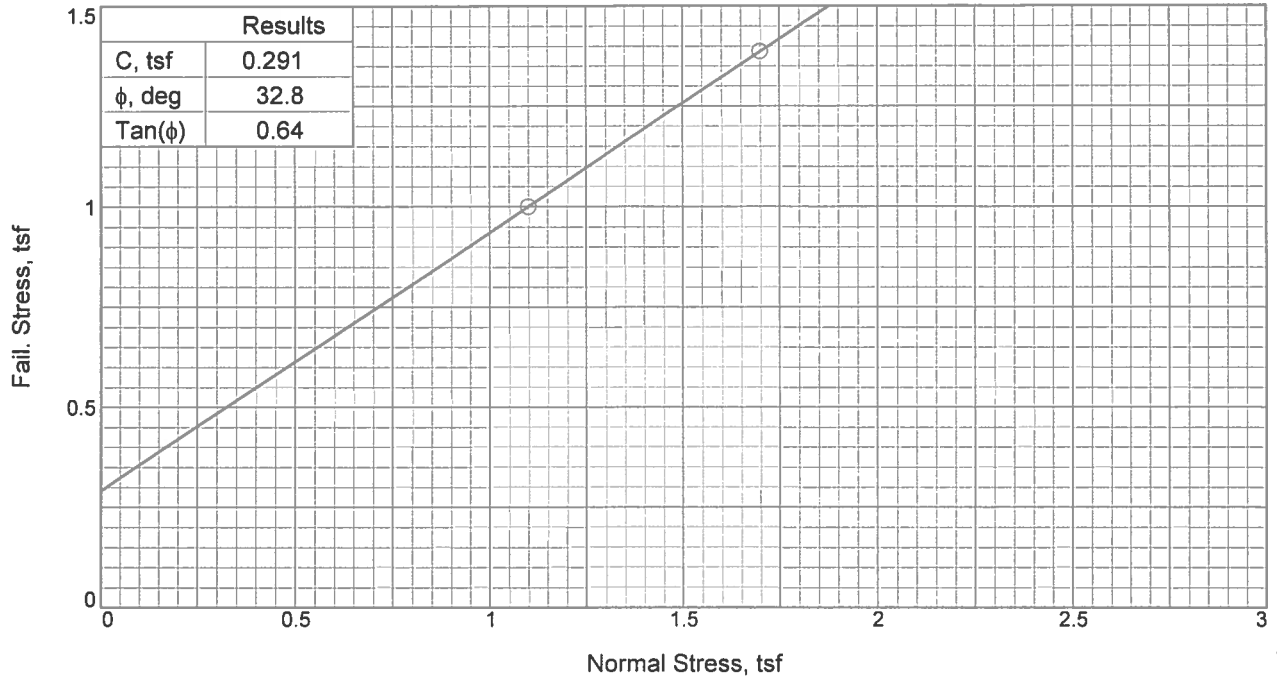
USCS= CL AASHTO= A-6(12)

Remarks

* (no specification provided)

Sample No.: 14-286 Source of Sample: Sargent Ranch Job #3.31274 Date: 11-18-14
Location: Elev./Depth:

PEZONELLA ASSOCIATES, INC. Reno, Nevada	Client: Sierra Geotechnical Services Inc. Project: Sierra Geotechnical Services Misc. Laboratory Testing Project No: 4437.071
Plate	



Sample No.	1	2	3	
Initial	Water Content, %	N/A	13.0	13.6
	Dry Density, pcf	N/A	96.2	95.2
	Saturation, %	N/A	47.9	48.8
	Void Ratio	N/A	0.7189	0.7369
	Diameter, in.		2.42	2.42
	Height, in.		1.00	1.00
At Test	Water Content, %	N/A	24.2	23.1
	Dry Density, pcf		96.2	95.2
	Saturation, %		89.2	83.2
	Void Ratio		0.7189	0.7369
	Diameter, in.		2.42	2.42
	Height, in.		1.00	1.00
Normal Stress, tsf	0.800	1.100	1.700	
Fail. Stress, tsf		1.000	1.387	
Displacement, in.		0.55	0.33	
Ult. Stress, tsf				
Displacement, in.				
Strain rate, in./min.	0.05	0.02	0.02	

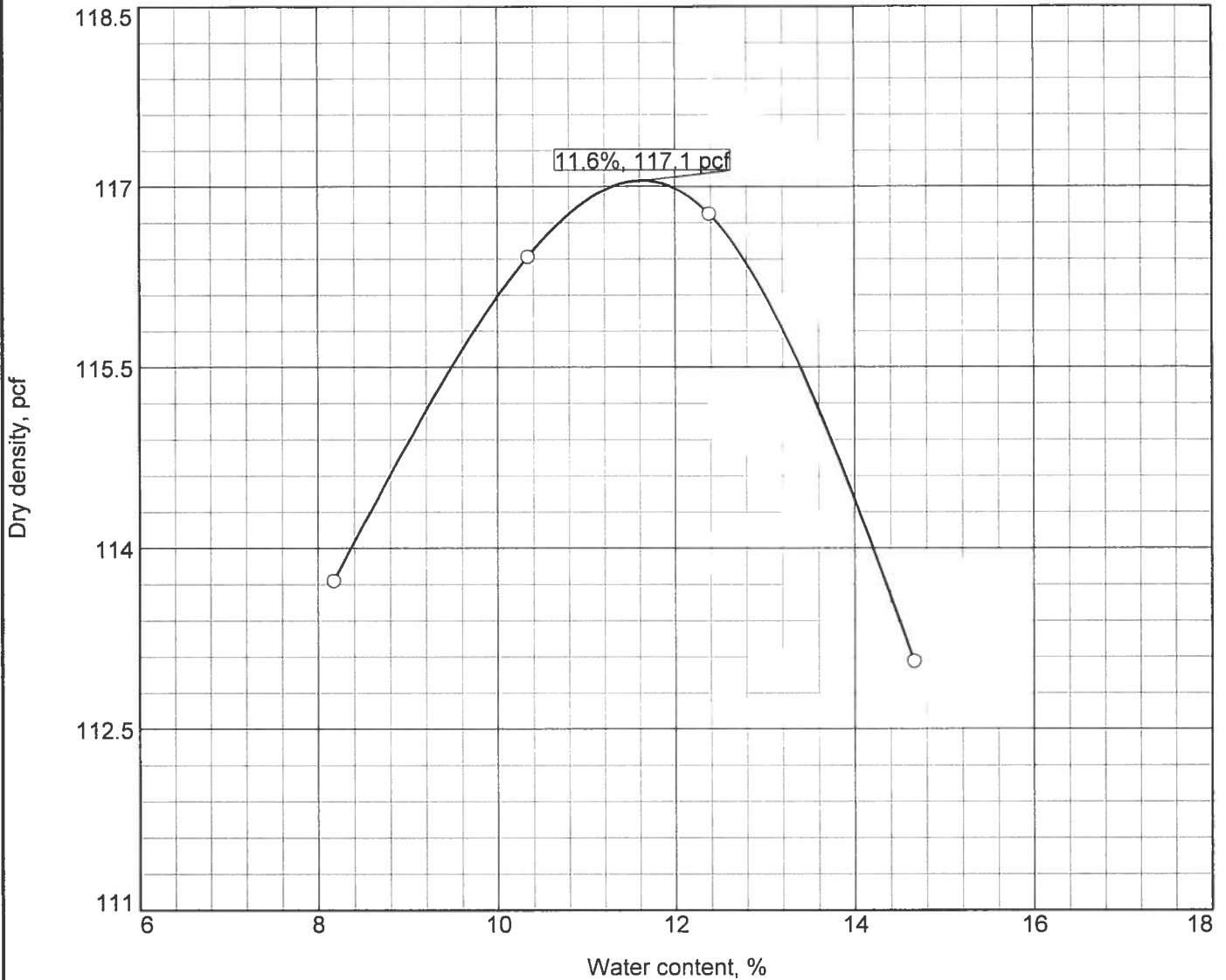
Sample Type:
Description: Gray clay (CL)
 LL= 34 PL= 15 PI= 19
Specific Gravity=
Remarks:

Client: Sierra Geotechnical Services Inc.
Project: Sierra Geotechnical Services
 Misc. Laboratory Testing
Source of Sample: Sargent Ranch Job #3.31274
Sample Number: 14-286
Proj. No.: 4437.071 **Date Sampled:** 11-18-14

DIRECT SHEAR TEST REPORT
PEZONELLA ASSOCIATES, INC.

Plate _____

COMPACTION TEST REPORT

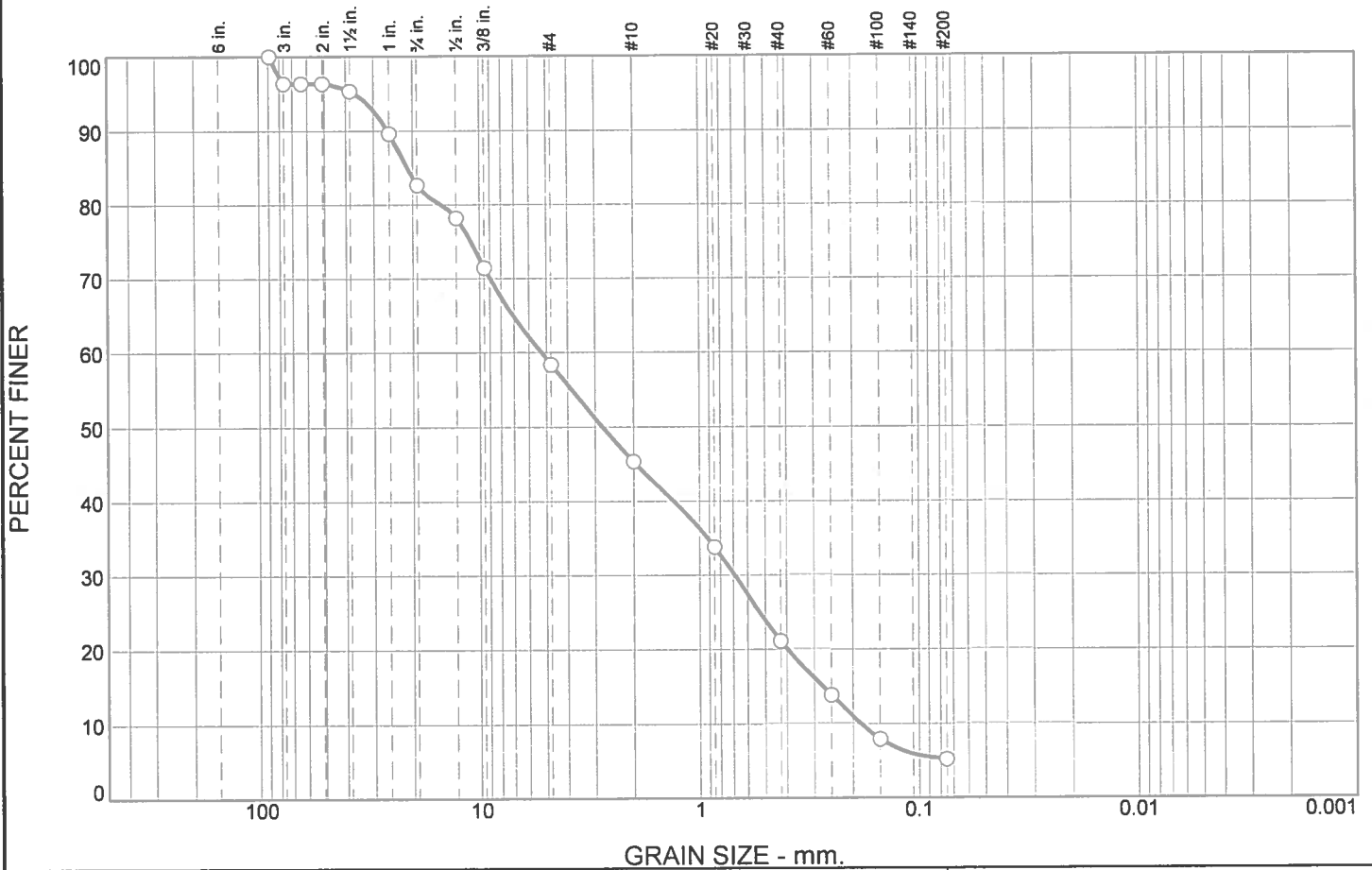


Test specification: ASTM D 1557-02 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(12)			34	19	0.1	76.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 117.1 pcf Optimum moisture = 11.6 %	Gray clay (CL)
Project No. 4437.071 Client: Sierra Geotechnical Services Inc. Project: Sierra Geotechnical Services Misc. Laboratory Testing Date: ○ Sample Source: Sargent Ranch Job #3.31274 Sample No.: 14-286	Remarks:
PEZONELLA ASSOCIATES, INC. Reno, Nevada	
	Plate

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
3.6	13.8	24.2	13.1	24.2	15.9	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.5"	100.0		
3"	96.4		
2.5"	96.4		
2"	96.4		
1.5"	95.3		
1"	89.6		
.75"	82.6		
.5"	78.2		
.375"	71.4		
#4	58.4		
#10	45.3		
#20	33.8		
#40	21.1		
#60	13.9		
#100	7.9		
#200	5.2		

Soil Description

Brown sand (SP-SM) with gravel and cobbles

Atterberg Limits

PL= LL= PI=

Coefficients

D₈₅= 21.2346 D₆₀= 5.2752 D₅₀= 2.7787
D₃₀= 0.6893 D₁₅= 0.2735 D₁₀= 0.1838
C_u= 28.70 C_c= 0.49

Classification

USCS= AASHTO=

Remarks

L.A. Abrasion test results = 25.3% loss

* (no specification provided)

Sample No.: 14-287
Location:

Source of Sample: Sargent Ranch Job #3.31274

Date: 11-18-14
Elev./Depth:

**PEZONELLA
ASSOCIATES, INC.
Reno, Nevada**

Client: Sierra Geotechnical Services Inc.
Project: Sierra Geotechnical Services
Misc. Laboratory Testing
Project No: 4437.071

Plate

APPENDIX E

STANDARD OF CARE IN QUARRY SLOPE DEVELOPMENT

General: Slope design for open pit mines and quarries includes consideration of both mining economics (the steepness and overall stability of the slopes) and operating safety (particularly mitigation of wedge failures, rockfall and slide hazards). Design factors related to safety must be of paramount importance, whether for permanent or temporary slopes, and slope designs must be implemented to meet the current standard of care in the mining industry for operating safely below slopes. This standard includes incorporating effective catch benches into pit slopes.

The minimum standard of care for safety in development of mine slopes is defined by Federal regulations that are enforced by Mine Safety and Health Administration (MSHA), or by equivalent State agencies using State regulations that can be no less stringent than Federal regulations. In addition, operating practices and slope designs to enhance operator safety are often developed at the corporate level, and these may be supplemented at the Operating level based on site conditions at individual pits.

Mine slope stability requirements are regulated by Title 30 of the Code of Federal Regulations, Section 56.3130. This Section requires that mining methods shall maintain slope stability in places where persons work or travel in performing their assigned tasks, and that bench configurations be based on the type of equipment used for scaling.

MSHA provides interpretation guidelines for ground control. These indicate that MSHA requires that a bench adequate to retain rockfall must be maintained above work or travel areas. Where there is not an effective catch bench above a work or travel area, other measures must be taken to protect the miners, such as berming off or ceasing mining in the affected area.

Benching Practices

Operating safety is generally enhanced by implementing the following practices: Thorough bench face scaling to reduce risks of raveling using equipment that can safely reach the top of the bench to scale loose rock/soil; Inspection and monitoring program to ensure that conditions are safe below existing slopes; Geological documentation and geotechnical evaluation program to ensure that the conditions assumed for the slope and bench design are met in the field; Operator awareness training to train operators in safe practices, and to educate operators regarding potential hazards.

Mining a single bench configuration provides flexibility in enabling operations to be restricted in the area of bench toes, but it does not eliminate all need for operations, access, and mapping in areas that can be subject to significant slope hazards. Developing stable bench faces and controlling hazards with effective catch benches is therefore important even for single bench operations.

Testing and Observation

The recommendations provided in this report are based on the assumption that SGS will be retained as the Geotechnical Engineer of Record for the project. It is important to maintain continuity of geotechnical interpretation and confirm field conditions encountered are similar to those anticipated during design. In accordance with the CBC testing and observation services by the Geotechnical Engineer of Record are required to verify construction has been performed in accordance with this report, approved plans and specifications. If we are not retained for these services, we cannot assume any responsibility for other's interpretations of our recommendations or the future performance of the project.

Erosion Control

We expect the majority of surface runoff to readily infiltrate the exposed final cut faces and the intervening benches. Locally, cemented zones may limit infiltration, but we do not expect high volumes of concentrated runoff. We recommend the intervening benches be out-sloped 2% to avoid concentrated flow and consequent erosion of the benches. Disturbed slopes adjacent to the excavation should be protected from erosion by planting native vegetation, or other appropriate means.

APPENDIX F

SITE PHOTOGRAPHS



Photo 1 – Sargent Ranch. View to the Northwest up the alignment of Sargent Creek. Note spring development middle left of photo.



Photo 2 – Sargent Ranch. View to the southwest.

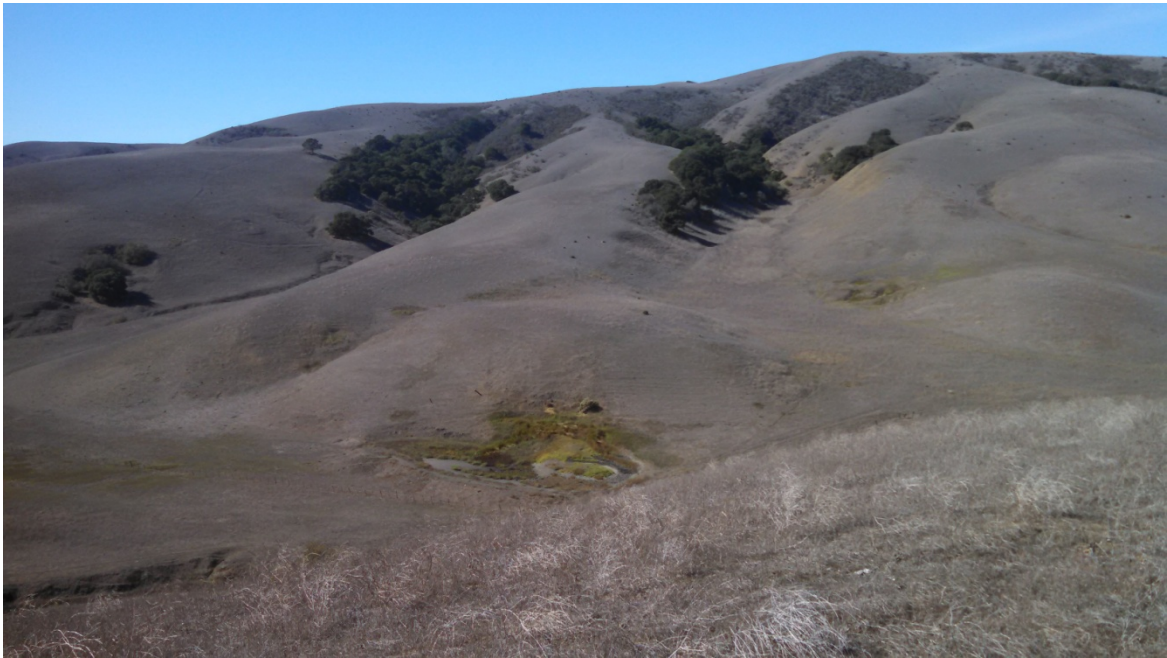


Photo 3 – View to the west from north central area of property just south of Phase 2. Note typical spring development.



Photo 4 – Moderate size landslide along south facing slope. View is to the northeast. Note how slide extends below surficial soils.



Photo 5 – Close up view of landslide scarp. View is to the northeast.



Photo 6 – Typical site soils in situ.



Photo 7 – Boring spoils.

APPENDIX E
CULTURAL RESOURCES REPORT

CONFIDENTIAL INFORMATION -
Do Not Distribute to Public

APPENDIX F
SWPPP



INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Sargent Quarry
SANTA CLARA COUNTY, CALIFORNIA

*Prepared for compliance with Section A of the National Pollutant
Discharge Elimination System (NPDES) General Permit
for storm water discharges associated with
Industrial Activity Water Control Order: 2014-0057-DWG*

Prepared for:
Sargent Ranch Management Company LLC
San Diego, CA
Contact: Howard Justus
619-220-8900

Prepared by:
Triad Holmes Associates
P.O. Box 1570
549 Old Mammoth Road, Suite 202
Mammoth Lakes, CA 93546

September 2016

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1.0 FACILITY INFORMATION & CERTIFICATION

Facility Name: Sargent Quarry

Facility Location: Approximately 5 miles south of the town of Gilroy off Highway 101 in Santa Clara County, CA

Facility Telephone: 619-220-8900

Responsible Party For SWPPP: Howard Justus

Primary Operations: Construction Sand and Gravel – SIC code No. 1442

Hours of Operation: Monday through Saturday from 7:00 am to 4:30 pm

Size of Facility: 292 acres

WDID No.:

NPDES Permit No.: CAS000001 General Permit – Industrial Permit

Certification:

Preparer:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: _____

Name/Title: _____

2.0 SITE MAPS

(IGP – Section X.E)

Figure 1: Location Map

Figure 2: Facility Site Plan and Drainage Patterns

Figure 3: Plant Site and Drainage Patterns

Figure 4: Potential Pollutants and BMP: Mining Sites and Access Road

Figure 5: Potential Pollutants and BMP: Plant Site



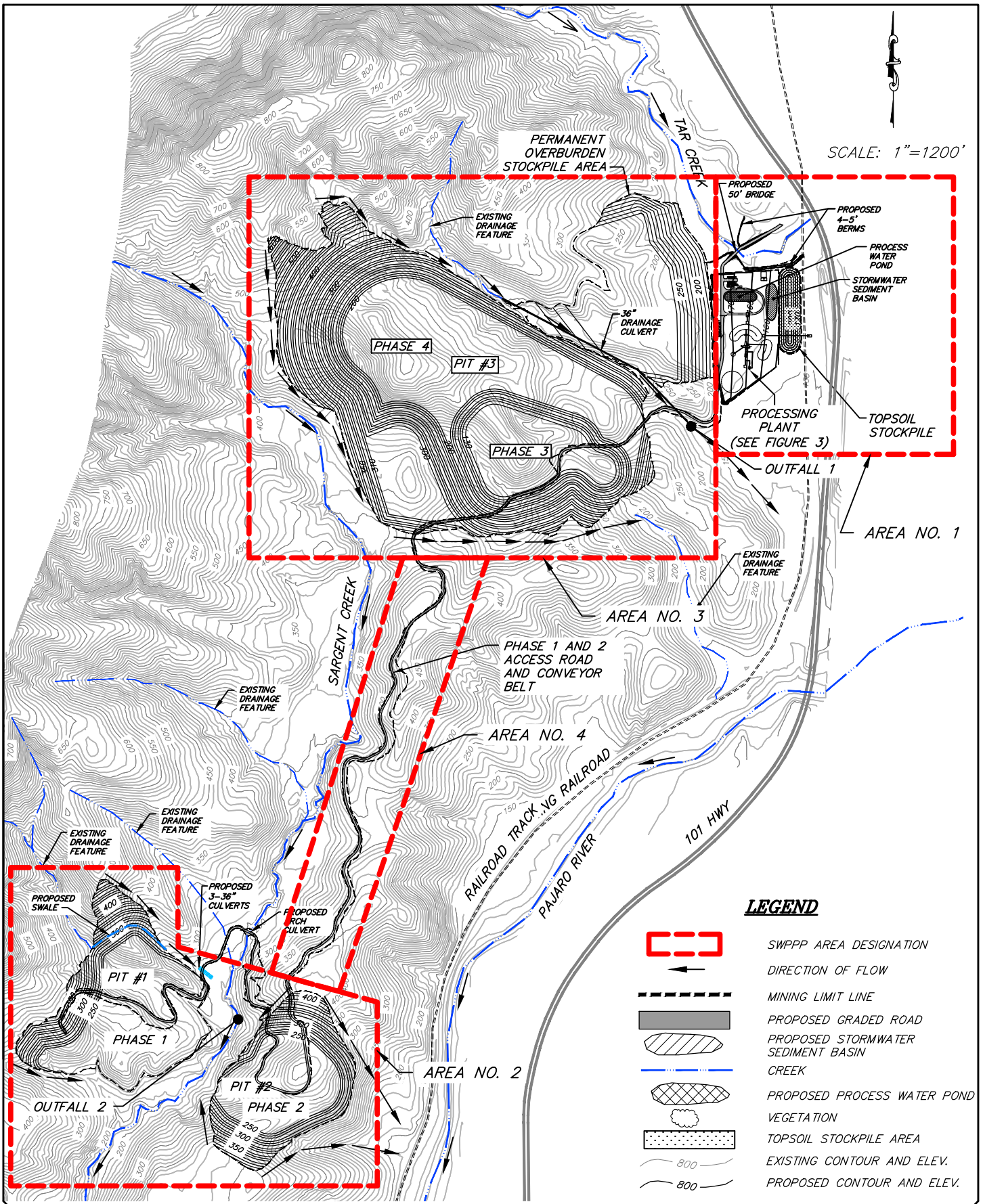
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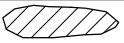






SARGENT RANCH QUARRY, SANTA CLARA COUNTY
INDUSTRIAL SWPPP
FIGURE 1 – LOCATION MAP



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LEGEND

-  SWPPP AREA DESIGNATION
-  DIRECTION OF FLOW
-  MINING LIMIT LINE
-  PROPOSED GRADED ROAD
-  PROPOSED STORMWATER SEDIMENT BASIN
-  CREEK
-  PROPOSED PROCESS WATER POND
-  VEGETATION
-  TOPSOIL STOCKPILE AREA
-  EXISTING CONTOUR AND ELEV.
-  PROPOSED CONTOUR AND ELEV.

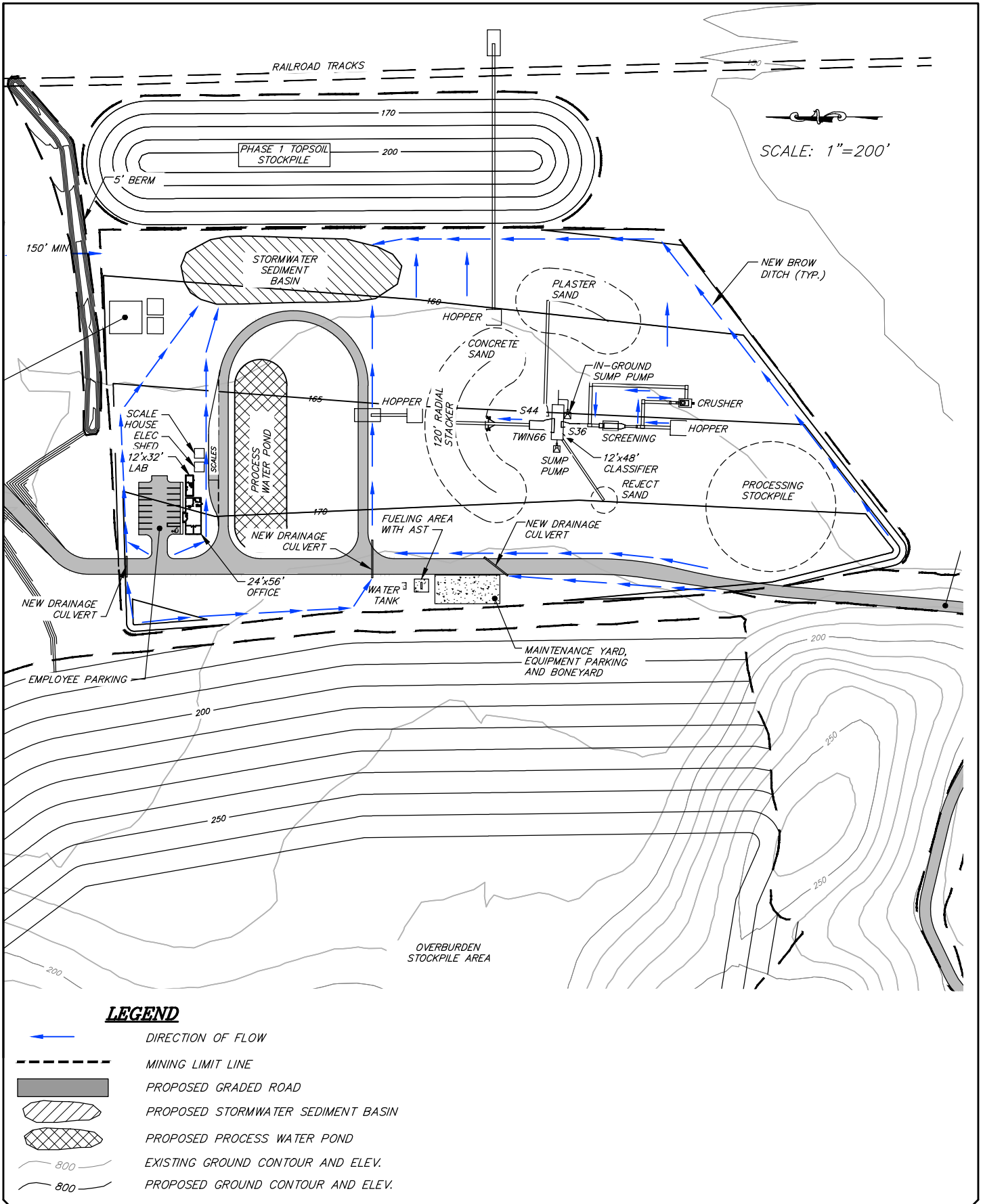
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08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY

INDUSTRIAL SWPPP

FIGURE 2 – FACILITY SITE PLAN AND DRAINAGE PATTERNS



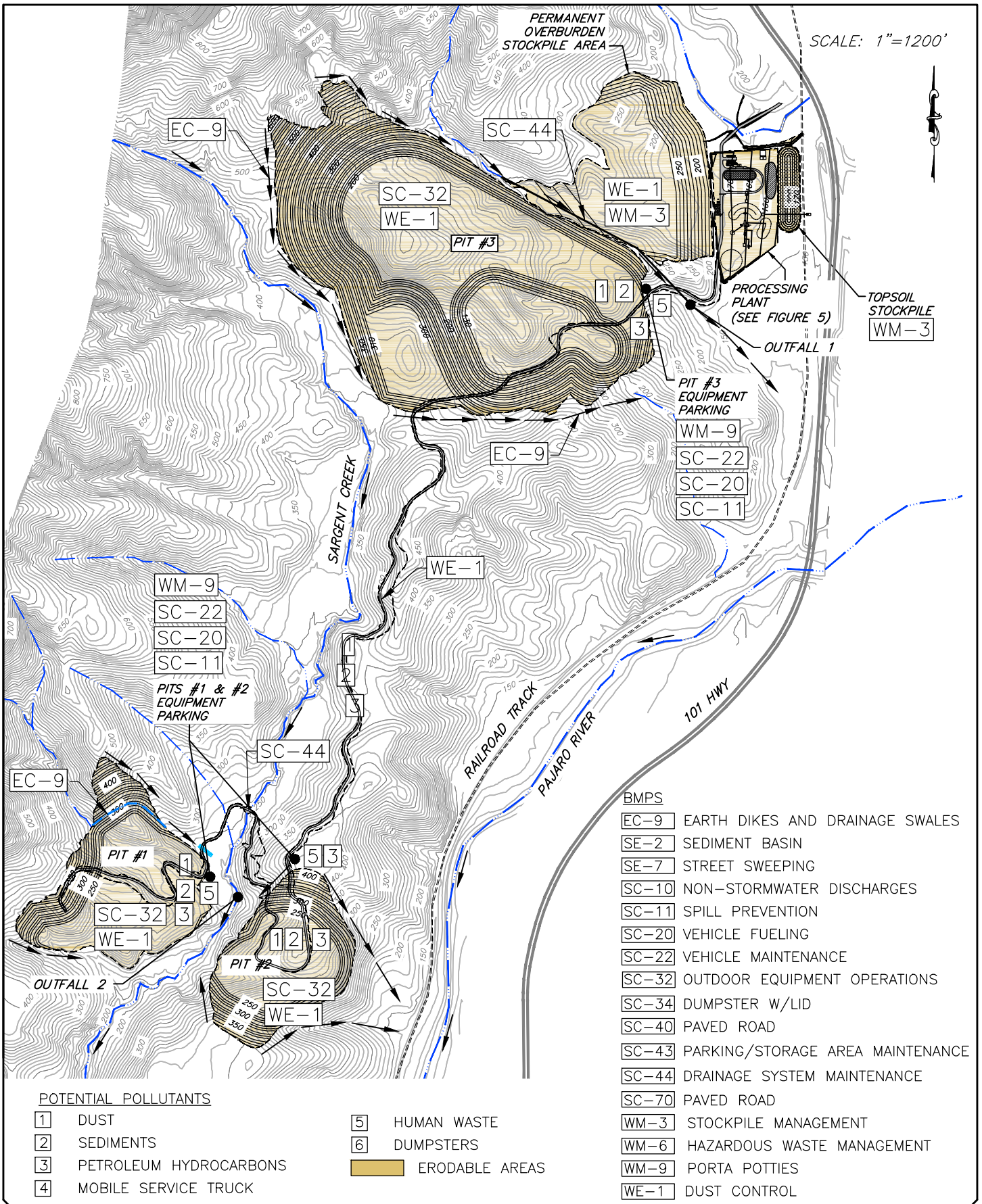


DATE:
08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY
INDUSTRIAL SWPPP
FIGURE 3 – PLANT SITE AND DRAINAGE PATTERNS



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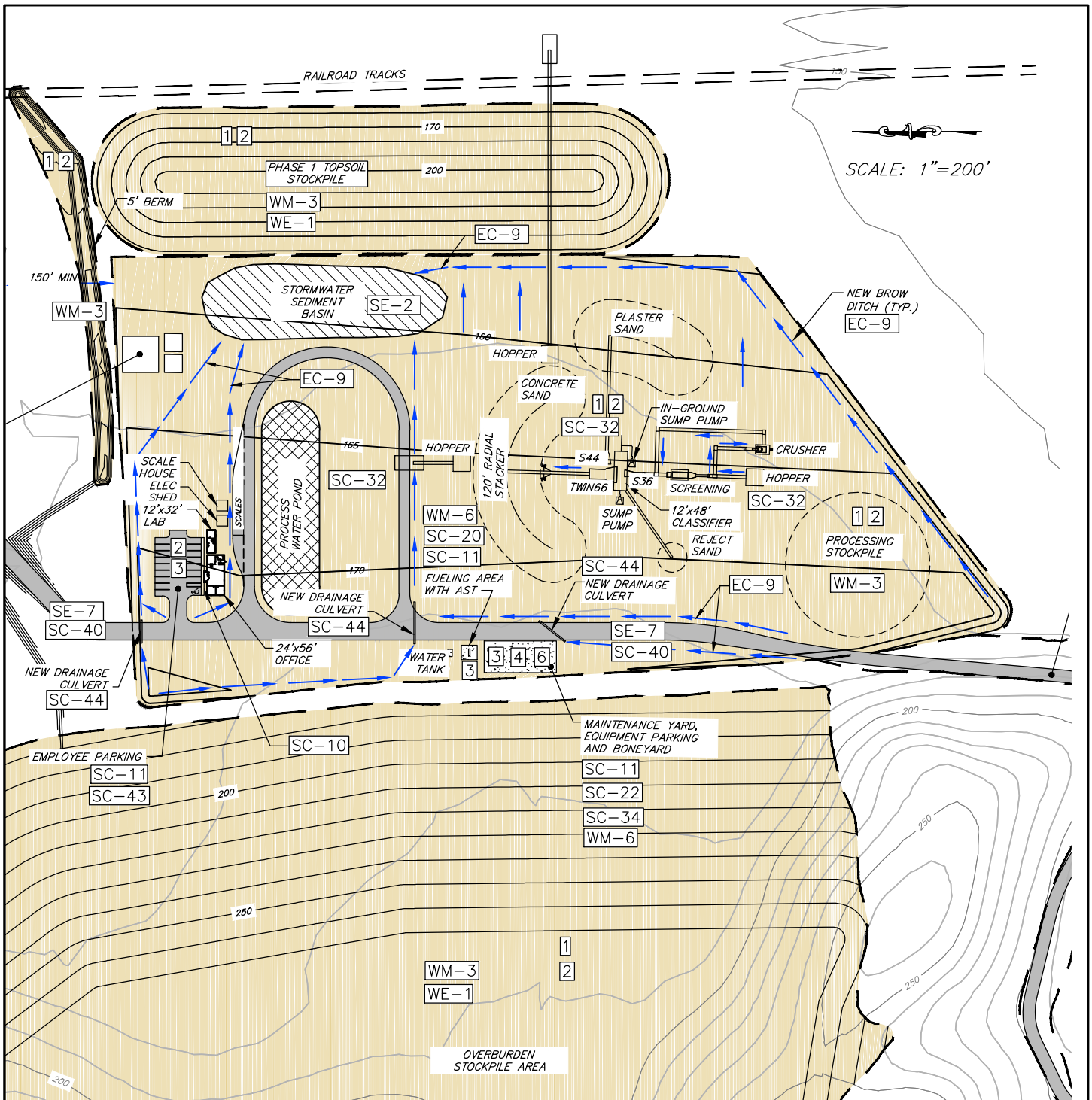
DATE:
08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY

INDUSTRIAL SWPPP

FIGURE 4 – POTENTIAL POLLUTANTS AND BMP: MINING SITES AND ACCESS ROAD





SCALE: 1"=200'

BMPs

- EC-9 DRAINAGE SWALES
- SE-2 SEDIMENT BASIN
- SE-7 STREET SWEEPING
- SC-10 NON-STORMWATER DISCHARGES
- SC-11 SPILL PREVENTION
- SC-20 VEHICLE FUELING
- SC-22 VEHICLE MAINTENANCE
- SC-32 OUTDOOR EQUIPMENT OPERATIONS

SC-34 DUMPSTER W/LID

- SC-40 PAVED ROAD
- SC-43 PARKING/STORAGE AREA MAINTENANCE
- SC-44 DRAINAGE SYSTEM MAINTENANCE
- SC-70 PAVED ROAD
- WM-3 STOCKPILE MANAGEMENT
- WM-6 HAZARDOUS WASTE MANAGEMENT
- WM-9 PORTA POTTIES
- WE-1 DUST CONTROL

POTENTIAL POLLUTANTS

- 1 DUST
- 2 SEDIMENTS
- 3 PETROLEUM HYDROCARBONS
- 4 MOBILE SERVICE TRUCK
- 5 HUMAN WASTE
- 6 DUMPSTERS
- ERODABLE AREAS

DATE:
08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY

INDUSTRIAL SWPPP

FIGURE 5 – POTENTIAL POLLUTANTS AND BMP: PLANT SITE



3.0 INTRODUCTION

(IGP Section X.D.2)

This document is a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP has been prepared to comply with Section X.A of the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Industrial Activities (General Permit), adopted by the California State Water Resources Control Board on April 1, 2014 and effective on July 1, 2015. The Industrial General Permit (IGP) implements regulations established by the US Environmental Protection Agency on November 16, 1990 requiring listed industries to obtain NPDES Permits for discharging storm water from their facilities to surface waters. The Federal regulations were established pursuant to Section 402(p) of the Federal Clean Water Act, added by 1987 amendments. The SWPPP is available for public review, pursuant to Section 308(b) of the Federal Clean Water Act. References to the specific sections of the Industrial General Permit (IGP) regulations are provided throughout this SWPPP.

The SWPPP is intended to achieve two purposes: 1) to identify and evaluate sources of pollutions associated with industrial activities that could affect the quality of storm water discharged and authorized non-stormwater discharged from a facility; and 2) to identify and implement site-specific Best Management Practices (BMPs) that the facility is committed to implement to minimize or prevent discharge of pollutants associated with industrial activities that may be in stormwater. Topics addressed in the SWPPP include elimination of non-storm water discharges, pollutant sources and associated BMPs, storm water management, sedimentation and erosion control practices, preventative maintenance and good housekeeping practices, spill prevention and response, inspections, record keeping, and employee training.

The SWPPP is meant to be an active, living document supporting development of BMPs, the monitoring of storm water runoff, and elimination of non-permitted discharges. It encourages timely responses and requires inspection documentation and notifications. The specific parameters which must be measured for different SIC subsectors are listed where appropriate. Consideration of receiving water limitations and Subchapter N effluent guidelines is included. Directions in sampling methodology and examples of employee awareness training are included.

While this SWPPP may assist the user in complying with storm water quality regulations. Completion of this SWPPP and implementation of the presented measures will not in of itself ensure full compliance with Federal, California and local laws, regulations, and ordinances. The burden of comprehensive compliance rests solely with the owner and operator of each facility. Federal, State and local regulations are constantly changing. Future updating and compliance are the sole responsibility of the operator.

4.0 FACILITY DESCRIPTION

(IGP – Section X.F and X.G.1 & G.2)

This SWPPP is prepared for Sargent Quarry – a pit mining operation that would occur on approximately 292 acres of Sargent Ranch. The Project site is approximately 5 miles south of the town of Gilroy, California, on Highway 101 and is accessed off of Old Monterey Road. (Refer to Figure 1). The project site has a land use designation of “Agricultural Ranchlands” and is surrounded by agricultural and ranching lands to the north, south, and west. Hwy 101 bounds the site on the east.

The quarry will operated year round Monday through Saturday from 7:30 am to 4:30 pm and employ 15 full time employees. Extended processing plant operational hours would also be permitted. These temporary hours would allow operations, on occasion, to operate at night, providing the mine operator the flexibility to respond to market conditions, nighttime public works projects, and emergency or special circumstances.

4.1 Primary Operations & Facilities (IGP- Section X.F & X.G.1.a, b)

Of the Project site’s 292 acres, approximately 214 acres comprise the area of proposed mining. The proposed processing plant site is located near Highway 101 and is roughly 14 acres in size. Sand and gravel would be extracted from within the 214-acre area in four Phases. Mining will be done in an open pit fashion with 2:1 side slopes with 10-foot benches every 30 vertical feet. Finishes slopes will then be backfilled to 3:1 and revegetated. No underground mining will be necessary for this project. A maximum of 1,000,000 cubic yards of material would be mined in any single year.

Mining operations and associated facilities shown on the SWPPP Site Plans, Figures 2 and 3. Sand and gravel would be mined using conventional equipment, including excavators and scrapers. Excavated material would be hauled by truck, scraper, or overland conveyor to the processing plant site. Figure 3 illustrates the proposed layout of the processing plant site. There the material would be sized, washed, and sorted. Some materials may also be crushed and sorted into stockpile via radial stacker and conveyers. Materials would be kept wet to minimize dust emissions. Sprinklers would be used to control dust at multiple locations at the processing plant and on stockpiles. Waste materials (e.g., silts and clays) not suitable for construction or concrete uses would make up approximately 25 percent of the mined materials by volume. These materials would be separated and stockpiled in the two berms depending on the phase of mining.

4.2 Buildings & Structures

On-site buildings and structures will be located on the processing plant site. Structures will include module office trailer with toilet facilities, rock and sand processing equipment and structures, electric shed, lab building, scale, and aboveground fuel tanks in a sealed concrete containment structure. (See Figures 3). Porta potties will be located at the mining sites and will be moved as necessary as the quarry is being developed.

4.3 Shipping, Receiving & Loading Procedures (IGP – Section X.g.1.b)

The finished products are sold and loaded onto customer’s trucks to minimize run-on. During loading into customer’s trucks the material is wetted down to reduce dust.

4.4 Natural Features

The plant collects all of its storm water run-off in a graded brow ditch that runs around the perimeter of the plant. The stormwater is conveyed to the stormwater sediment basin as shown in Figure 3. Storm water in the sediment basin would ultimately percolate on-site or be reused for plant operations.

Two major creeks, Tar Creek and Sargent Creek, and other smaller drainages affect the mining areas and access to the site. Tar Creek runs just west to east, north of the project site and outlets under Hwy 101 just north of the plant site. Sargent Creek runs north to south and bisect the southern portion of the mining site where the first two phases of mining operation will take place. Refer to Figure 3 for the location of the creeks.

All major drainages that contribute concentrated flows to the mining areas will be diverted via swales and culverts around the mining pits and converge with the historic drainage patterns downstream of the mining pits. Arch culverts and bridges will be utilized for access road crossings with the creeks and drainage swales.

4.5 Description of Significant Industrial Materials (IGP – Section X.F.)

Industrial Materials present on the facility that may contribute pollutants to storm water runoff include:

- Rock, gravel, sand, silt, and/or clay
- Petroleum products (fuel, oil, grease)
- Antifreeze
- Batteries
- Diesel
- Waste Oil
- Solvents (new and/or spent)
- Chemicals in Porta Potties

4.5.1 Description of Activities

Table 1: Contributing Activity Areas to Site Runoff identifies the primary activity areas contributing to site runoff. The activity areas include the scale/ office building, processing plant, stockpiles of processed, outgoing rock and sand, and porta potties at the mining sites. The activities in each area are described in more detail in the table below.

4.5.2 Equipment Parking and Servicing (IGP – Section X.G.1.b)

Equipment is parked on a paved surface on the west side of the plant. Heavy earthmoving equipment is parked at the active mining areas. Drip pans are used while vehicles are being serviced either inside or outside. A mobile field truck is used to refuel the heavy earth moving vehicles/equipment and conduct minor service if needed. The mobile field truck has a spill kit that includes absorbent pads. The spill kit is also located at the scale house at the processing plant.

The spill kits in the above locations include the following items:

- 1 - 13/4 lb. Super sorbent shaker carton
- 15 - 3"x 4' Haz socks
- 2 - Pairs of P.V.C. gloves
- 2 - Disposable suits w/hoods and boots
- 100 - Univ. green sorbent pads
- 2 - Pairs of goggles
- 8 - Disposable bags w/ties
- 1 - Roll of caution tape
- 1 - 20 lbs. Cob fractions
- 1 - Respirator
- 1 - Emergency Response Guide Book

1 - 30 gal. blue poly drum

The operator of the mobile field truck, as well as the Foremen are trained to work with chemicals, petroleum, antifreeze, batteries and hazardous waste products. They are specifically trained in spill prevention, spill clean-up, and preventative maintenance.

4.6 Dust & Particulate Generating Activities (IGP- Section X.G.1.c)

Some industrial activities generate dust or particulates. The particulates which may be deposited within the facility boundary are identified below, under Section 8.0 *Potential Pollutants in Storm Water Discharge*. The quantity of dust and particulates that may settle within the facility is highly dependent upon various emission control devices, production and ambient conditions.

Water will be the primary means of dust control at the quarry. Two water trucks will be used to keep both exposed areas of mining and the plant areas wet to contain dust. The prevailing wind is from the west to the east, so the buffer hills between the mining areas and the eastern edge of the Sargent Ranch boundary may be impacted on windy days. Measures to control dust in addition to the use of water include keeping the mining areas limited to only the working area and using early revegetation to cover up previously mined areas. Use of dust palliatives may also be considered on haul roads and unpaved plant areas.

4.7 Storm Water Drainage Facilities

4.7.1 Processing Plant

Refer to drainage facilities in Figure 3. Storm water runoff from the approximately 14 acre plant site sheet flows into a brow ditch that runs along the perimeter of the site. Culverts will be installed under the access road to convey the storm water from the west side of the road to the plant site. All storm water will be collected in a sediment basin where it will be allowed to filter and percolate into the ground.

Plant site is located just north of the downstream end of Tar Creek. The 100-year flood limits of Tar Creek extend approximately 350' south into the plant site. To mitigate the flood limits at the plant site, a 5' high berm is proposed along the northern boundary of the plant as shown in Figures 2 and 3. Another 4' high berm is proposed on the north side of Tar Creek to channel the flows under a 50' long bridge and bring the plant access road above the flood plain.

4.7.2 Pit #1 and Access Road

Pit #1 is located at the southern portion of the mining site. Major drainage totaling 75 ac is tributary to the northwest portion of Pit #1. This flow will be diverted into a 12' wide, 2' deep swale running along several benches on the northern side of Pit #1. Refer to Figure 2 for swale location. The proposed swale is allowed to outlet into an existing natural drainage swale on the east side of the Pit. The flow will continue under the access road via 3-36" culverts and outlet into Sargent Creek, as in historic conditions.

Access Road to Pit# 1 and #2 crosses Sargent Creek as shown in Figure 2. A low profile culvert with 23' span and 8' rise will be installed at that location. Crossing will be armored with grouted rip-rap or concrete to allow for save overflow conditions.

4.7.3 Pit #3

Pit #3 is located west of the plant site and will be excavated during Phases 3 and 4 of the mining project. There is a significant drainage that will be disturbed during the Pit #3 excavation. The concentrated flow is proposed to be conveyed via a 36" culvert located between Pit #3 and Overburden Stockpile, as shown in Figure 2. The culvert will extend further southeast under the access road and outlet at the natural drainage depression, as in historic conditions.

Detailed description of the storm water drainage facilities located within each area of the site is provided in Section 8.0, Potential Pollutants Sources & BMPs.

4.8 Potential Pollutants in Storm Water Discharge (IGP- Section X.G.1& X.G.1.d)

Potential pollutants that may be present in storm water discharged from this facility may include those associated with benches, excavated slopes, overburden stockpiles, stockpiles of crushed rock and sand products, paved and unpaved roads, the processing plants as well as those associated with the operation of equipment and its maintenance, repair, storage and refueling.

These potential pollutants include:

- Sediment
- Petroleum hydrocarbons
- Oil and grease
- Solvents
- Anti-freeze
- Batteries
- Waste Oil

Other specific pollutants that may be present and incorporated in the General Permit include:

- Human waste
- Disinfectants from Chemical Toilets

The potential for spills or leaks could occur where equipment is parked and also where equipment is serviced. However, the likelihood for a spill or leak is minimal because only minor service is performed onsite and all products are stored in secondary containers. The Foremen are trained to prevent spills and how to cleanup spills, and leaks. Spill kits are available in all service areas. In addition, the mobile truck operator is trained to clean up spills and to stop leaks and the truck carries a Spill Clean-Up Kit.

**TABLE 1
CONTRIBUTING ACTIVITY AREAS TO SITE RUNOFF**

Area No.	Description	Drainage Route(S) & Outfall	Activities That May Contribute Pollutants	Potential Pollutant(S)
<i>Quarry-Related Contributing Activities</i>				
1	Plant Site (7% impervious)	<ul style="list-style-type: none"> ▪ Stormwater sheet flows west to east across the plant to on-site Sediment Basin ▪ Brow ditch collects the stormwater and conveys it to on-site Sediment Pond ▪ Culverts convey the stormwater under the paved access road to brow ditches ▪ On site Sediment Basin collect the runoff from the Plant Site 	<ul style="list-style-type: none"> • Vehicle and equipment parking • Bone yard (storage of misc. parts w/out fuel/oil) • Diesel Fueling Area • Stockpiling (processed material and topsoil) • Rock and Sand processing 	<ul style="list-style-type: none"> • Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste
2	Pits 1 and 2 (0% impervious)	<ul style="list-style-type: none"> • Swales around Pit 1 convey stormwater to Sargent Creek • Swale following benches through Pit 1 conveys stormwater to 3-36" culverts under access road and outlet to Sargent Creek • Swales around Pit 2 convey stormwater to Sargent Creek northwest of Pit 2 and to Pajaro River southeast of Pit 2 	<ul style="list-style-type: none"> • Rock extraction • Sand extraction • Vehicle and equipment parking • Diesel Fueling Area • Stockpiling • Porta Potty 	<ul style="list-style-type: none"> • Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste • Disinfectants from Chemical Toilets
3	Pits 3 (0% impervious)	<ul style="list-style-type: none"> • Swale around west side of Pit 3 conveys stormwater to Sargent Creek • Swale around south side of Pit 3 conveys stormwater to natural drainage feature and outlets to Pajaro River • Swale around north side of Pit 3 conveys stormwater to 36" culvert that outlets to natural drainage feature and eventually reaches Pajaro River 	<ul style="list-style-type: none"> • Rock extraction • Sand extraction • Vehicle and equipment parking • Diesel Fueling Area • Stockpiling • Porta Potty 	<ul style="list-style-type: none"> • Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste • Disinfectants from Chemical Toilets
4	Access Road to Pits 1 and 2	Runoff sheet flows across the access road to Sargent Creek	<ul style="list-style-type: none"> • Vehicle movement on the access road 	<ul style="list-style-type: none"> • Sediment • Petroleum hydrocarbons • Oil and grease • Diesel

- See Figures 2 and 3, for site locations and see Figures 4 and 5 for potential pollutants.

5.0 NON-STORM WATER DISCHARGES

(IGP- Section X.G.1.e)

5.1 Identification of Non-Storm Water Discharges

Non-stormwater sources at the plant site include:

- Fire Hydrants Flushing
- Drinking fountain water
- Water Sources (well water) related to the rock and sand processing operations
- Water Sources (well water) related to the maintenance and testing of potable water systems
- Atmospheric condensates including refrigeration and air conditioning
- Water truck for dust control

Non-storm water discharges are not anticipated at the plant site. The rock and sand processing operations will utilize water from the new well proposed for the project. A process water pond will be constructed within the processing plant site to be used to retain water for re-use in aggregate processing.

Water used for fire hydrant flushing, maintenance and testing of potable water systems will also be conveyed to the process water pond to be re-cycled in aggregate processing.

Non-stormwater sources at the mining site and access road include water trucks for dust control.

6.0 LIST OF SIGNIFICANT INDUSTRIAL MATERIALS

(IGP – Section X.G.2.a & X.H.4 & 5)

This section identifies significant materials that will be stored at the facility that may have potential to contaminate stormwater. Figures 4 and 5 show the location of the processing areas and the materials storage and potential pollutants. In addition, the processing plant shall keep a Hazardous Materials Business Plan that would provide detailed information on potential contaminants.

TABLE 2 LIST OF SIGNIFICANT INDUSTRIAL MATERIALS (IGP – Section X.G.2.a & X.H.4 & 5)		
Significant Material	Location where the Materials are Stored, Handled, Received, or Shipped	Significant Quantities Regularly Present At Facility
Rock	Extracted from Pits 1, 2, and 3 during 4 Phases of mining	Not anticipated to be stored
Sand	Extracted from Pits 1, 2, and 3 during 4 Phases of mining	Not anticipated to be stored
Unprocessed Product Stockpile	Southwest corner of processing plant (Figure 3)	Typically about 20,000 tons
Processed Product Stockpiles	Southeast corner and center of the processing plant (Figure 3)	Not anticipated to be stockpiled
Diesel	Above ground fuel tank at Plant site. On Service Truck and Mobile Field Truck. Also in small generators on equipment at Plant Site and by Scale/Office. (Figures 4 and 5)	5,000 gal at Plant Site 1,500 gal. Tank on Mobile Truck, Generator at Plant Site 80 gal. generator by Office/Scale
Anti-Freeze	RV Trucking & Quarry Tractor Shop, Mobile Field Truck, Figures 3a & 4a	1,500 gal. on Service Truck,
Chemicals in porta potties	2 Porta Potties to be located at the actively mining site	Porta Potties shall be serviced at least once a week. Each porta potty contains approximately 50 gallons.
Oils	Mobile Field Truck	200 gallons total in four 50 gal. drums on Mobile Field Truck
Waste Oil	Mobile Field Truck	200 gal. on Mobile Field Truck
Grease	Mobile Field Truck	400 lbs drum on Mobile Field Truck

NOTE: All tanks shall be in secondary containers or doubled walled. Amounts are approximate.

7.0 POTENTIAL POLLUTANT SOURCES & BMPS

(IGP – Section X.G.2.a & X.H.4 & 5)

The ultimate goal of the storm water program as developed from Section 402 (p) of the Federal Clean Water Act and refined by California's Industrial NPDES General Permit is to reduce pollutants contained in storm water discharges to U.S. surface waters and waterways. The emphasis of this program is to promote the concept of reducing and preventing pollution at the source, before it can cause environmental problems.

The employment and ongoing development of Best Management Practices (BMPs) provided a practical, cost sensitive approach to improving quality of discharged water. The rule of thumb that "eighty percent of the good can be accomplished with the first twenty percent of effort" is paramount. After assessment of potential pollutants BMPs are selected and employed, results are monitored and as time goes on BMPs may be further enhanced. While the ultimate goal remains the same, the iterative nature of employing BMPs, monitoring, reevaluating and enhancing BMP effort allows the systematic attainment of the goal without undue resource burden.

There are other Federal and State programs that either directly or indirectly regulates the discharge of storm water and process water from industrial sites. This SWPPP does not address those requirements exhaustively. Rather, when information is available it should be considered and addressed in conjunction with the facility's storm water program.

Site and activity specific potential pollutants have been identified. Quantification of pollutant loads discharged offers a measure of the significance. Industry wide studies by the US EPA, industry sponsored storm water sampling programs and each facility operator's intimate knowledge of his site and operation may be used to identify effective BMPs to reduce storm water pollution. The assessment of potential pollutants considers suggested pollutants; providing an "order of magnitude" quantification and leads to the development of suggested BMPs. Where BMPs are employed they are indicated with implementation status. This SWPPP addresses the basic needs of recycled: concrete and asphalt related SIC and suggests appropriate BMPs.

A narrative description of activities, potential pollutants and pollutant sources, and best management practices for each area of the Quarry operation are provided below. **Table 4, Potential Sources of Pollutants and Associated BMPs for Quarry Activities**, follows, providing additional detail on each potential pollutant source. Figures 4 and 5 indicates the location of the Potential Pollutants discussed in this section and identified as the "source number" in Table 4.

7.1 Potential Pollutant Sources (IGP Section X.G.1)

7.1.1 Processing Plant

Narrative and Assessment:

Processing Plant, shown on Figure 3 and 5, is the northeastern portion of the site. Aggregate processing equipment, conveyor belt system, earth moving equipment, boneyard, and fueling and maintenance areas are located on the southern portion of the plant. Paved AC parking, office building, scale house, electric shed, and lab building are situated in the northwest corner of the plan. A 5,000 above ground fuel tank in secondary containment will be located at the fueling area. Topsoil stockpile surrounds the plant site on the east. Storm water sediment basin and process water pond are located in the northern portion of the site.

Potential Pollutant Sources

- Unprocessed stockpiles
- Processing area
- Vehicle and equipment parking
- Minor maintenance area
- Fueling area
- Access road
- Erodible surface
- Topsoil stockpile

Potential Pollutants

- Dust from processing activities and equipment
- Sediments from rock and sand processing plants, topsoil and material stockpiles, and haul roads
- Petroleum hydrocarbons (lubricants, oil and grease), solvents and antifreeze may be present from processing equipment, and earth moving vehicles
- Diesel

Storm Water

Refer to drainage facilities in Figure 3. Storm water runoff from the plant site will sheet flow into a brow ditch that runs along the perimeter of the site. Culverts will be installed under the access road to convey the storm water from the west side of the road to the plant site. All storm water will be collected in a sediment basin where it will be allowed to filter and percolate into the ground.

Plant site is located just north of the downstream end of Tar Creek. The 100-year flood limits of Tar Creek extend approximately 350' south into the plant site. To mitigate the flood limits at the plant site, a 5' high berm is proposed along the northern boundary of the plant as shown in Figures 2 and 3. Another 4' high berm is proposed on the north side of Tar Creek to channel the flows under a 50' long bridge and bring the plant access road above the flood plain.

Best Management Practices

Best Management Practices to address potential pollutants and sources in the plant area include numerous actions and procedures including:

1. Installation of drainage facilities, such as brow ditches, culverts, and sediment basin;
2. Restriction of activities during wet weather;
3. Complying with air quality permit regulations;
4. Use of water truck to spray unpaved and paved roads and parking areas, as well as stockpiles
5. Use of foggers on processing equipment;
6. Detention of runoff in sediment basin
7. Routine inspections and maintenance of drainage facilities;
8. Routine inspection of equipment;
9. Limited handling of aggregate materials;
10. Loaded material is compacted to be below the running board; many newer trucks have automated covers; and drivers are encouraged to tarp truck bed before departure;
11. Vehicle and equipment parking areas, parked or unpaved are regularly inspected;
12. Leaks promptly cleaned up;
13. Spill clean-up materials are accessible; such as, spill kits, wattles, and absorbent materials;
14. All equipment requiring major rebuilding are repaired off site;

15. All equipment requiring routine maintenance is serviced using proper procedures;
16. Aboveground fuel tanks are placed in secondary containments and regularly inspected; any accumulated rain water is disposed of appropriately, and auto shutoffs are used to prevent overfilling and spillage;
17. Hazardous materials are clearly labeled, and containers are routinely inspected and placed in secondary containers.
18. Hazardous materials are secured to prevent unauthorized access, and are maintained in accordance with applicable federal, state and local regulations and codes.
19. Hazardous materials inventory is kept to a minimum, where possible. Material safety data sheets are kept onsite and inventory is minimized where possible.
20. Hazardous waste materials (waste oils, lubricants, solvents) are stored in accordance with applicable federal, state and local regulations and codes. The containers are clearly labeled, placed in secondary containers, routinely inspected, and stored inside in a secure location until they are recycled. Spill cleanup materials (rags, absorbents, and empty drums) are stored and accessible;
21. Dumpsters with lids are monitored and emptied promptly;
22. Procedures are established to ensure draining of engine fluids is done without spillage, and clean up materials are nearby such as: spill kits which include: super sorbent shaker carton, haz socks, pairs of P.V.C. gloves, disposable suits w/hoods and boots, univ. Green sorbent pads, pairs of goggles, disposable bags w/ties, roll of caution tape, 20 lbs. Cob fractions, respirator, emergency response guide book all stored in a 30 gal. Blue poly drum
23. Air compressors are located above drip pans and seals are regularly inspected and maintained;
24. Batteries are stored inside, near cleanup materials, and they are routinely recycled;
25. Company vehicle brakes (pickup trucks) are only serviced off-site;
26. Boneyard is limited to surplus components and parts; nothing with fuel, oil and grease. In the winter the steel racks will be covered with a tarp.

For more detail on the pollutant sources described for the plant site, see source numbers 1-9 in Table 4, below.

7.1.2 Mining Pits

Narrative and Assessment

There are three mining pits that will be developed over four phases, as shown on Figure 2. The mining pits will contain vehicles and equipment parking areas, excavation area, and porta potties.

Potential pollutant sources

- Vehicle and equipment parking and fueling
- Access roads
- Portable toilets
- Erodible surface

Potential Pollutants

Potential pollutants in this area include:

- Petroleum hydrocarbons (lubricants, diesel, oil and grease),
- Exposed soil surfaces from an unpaved haul roads
- Dust from excavation, unpaved haul road, and earth moving equipment,
- Sediments from exposed soil surfaces from excavation areas and activities, and unpaved haul roads

- Mobile Field Truck carrying diesel, oil, waste oil, coolant and antifreeze
- Human waste and disinfectants from portable chemical toilet

Stormwater tributary to Pit #1 will be diverted into a 12' wide, 2' deep swale running along several benches on the northern side of Pit #1. Refer to Figure 2 for swale location. The proposed swale is allowed to outlet into an existing natural drainage swale on the east side of the Pit. The flow will continue under the access road via 3-36" culverts and outlet into Sargent Creek, as in historic conditions.

There is a significant drainage that will be disturbed during the Pit #3 excavation. The concentrated flow is proposed to be conveyed via a 36" culvert located between Pit #3 and Overburden Stockpile, as shown in Figure 2. The culvert will extend further southeast under the access road and outlet at the natural drainage depression, as in historic conditions.

Best Management Practices

Best Management Practices to address potential pollutants and sources at the mining pits include

1. Installation of drainage facilities, such as drainage swales and culverts;
2. Restriction of activities during wet weather;
3. Routine inspection and maintenance of drainage facilities;
4. Routine inspections and maintenance of equipment areas;
5. Complying with air quality permit regulations;
6. Limited handling of aggregate materials;
7. Use of water truck to spray unpaved roads and parking areas;
8. Portable chemical toilet is regularly maintained and is situated in an area away from vehicular traffic and environmentally sensitive areas.
9. Vehicles and equipment service areas are sloped to drain;
10. All heavy earth moving quarry equipment requiring major rebuilding are repaired offsite;
11. All heavy earth moving quarry equipment requiring routine maintenance is serviced by the Mobile Field Truck which follows good housekeeping practices and BMPs; including carrying absorbents, absorbent pads and drip pans.
12. Mobile Field Truck is emptied daily
13. Loaded material is compacted to be below the running board; many newer trucks have automated covers; and drivers are encouraged to tarp bed;
14. Routine inspection of roads and parking areas;
15. Leaks from vehicles will be promptly repaired; and drip pans and absorbent materials used, as needed, temporarily until leakage is repaired;
16. Spill cleanup materials (super sorbent shaker carton, haz socks, pairs of P.V.C. gloves, disposable suits w/hoods and boots, univ. Green sorbent pads, pairs of goggles, disposable bags w/ties, roll of caution tape, 20 lbs. Cob fractions, respirator, emergency response guide book all stored in a 30 gal. Blue poly drum) are stored at Mobile Fuel Truck
17. Spill kits are available at all service areas

For more detail on the pollutant sources described in mining pits areas, see source numbers 10-12 in Table 4 below.

7.1.3 Access Road

Narrative and Assessment

The access road to mining pits #1 and 2 will be constructed during the first phase of quarry development. The access road will remain unpaved.

Potential pollutants

- Dust from unpaved roads
- Sediments
- Petroleum hydrocarbons (hydraulic fluids, oil and grease), solvents, and antifreeze may be present from the vehicles

Access Road crosses Sargent Creek as shown in Figure 2. A low profile culvert with 23' span and 8' rise will be installed at that location. Crossing will be armored with grouted rip-rap or concrete to allow for save overflow conditions.

Best Management Practices

Best Management Practices to address potential pollutants and sources from the access road include:

1. Installation and expansion, as needed, of drainage facilities;
2. Routine inspections and maintenance of drainage;
3. Restriction of activities during wet weather;
4. Complying with air quality permit;
5. Routine inspection of access road
6. Use of water truck to spray unpaved road and parking areas, and stockpiles;
7. Vehicles leaks are promptly cleaned up;
- 8.

For more detail on the pollutant sources, see source number 13 in Table 4, below.

7.2 Industrial Processes (IGP Section X.G.1.a)

Sargent Quarry will have one processing plant for rock and sand excavated on-site. The material will be sized, washed, and sorted into stockpiles. Some materials may also be crushed and sorted into stockpile via radial stacker and conveyers. The rock plant is expected to process maximum 8,000 CY of material per day.

The equipment at the plant site is fueled at the fueling station. The mobile equipment at the mining sites is fueled by a Mobile Field Truck. Care is exercised to avoid spillage. If spills do occur, the site shall have adequate supply of spill kits available, consisting of absorptive blankets and rolls that can be placed around and on the spill to absorb any materials that have been spilled. Used blankets shall be properly disposed of.

7.3 Material Handling and Storage (IGP Section X.G.1.b)

Stockpiled materials are transferred from stockpiles to customer trucks by front end loaders.

7.4 Dust and Particulate Generating Activities (IGP Section X.G.1.c)

Some industrial activities generate dust or particulates. Material handling equipment (i.e. conveyors, crushers, screen, and mobile equipment) may be sources of fugitive dust. The quantity of dust and particulates that may settle within the facility is highly dependent upon various emission control devices, production and ambient conditions.

Water will be the primary means of dust control at the quarry. Two water trucks will be used to keep both exposed areas of mining and the plant areas wet to contain dust. The prevailing wind is from the west to the east, so the buffer hills between the mining areas and the eastern edge of the Sargent Ranch boundary may be impacted on windy days. Measures to control dust in addition to the use of water include keeping

the mining areas limited to only the working area and using early revegetation to cover up previously mined areas. Use of dust palliatives may also be considered on haul roads and unpaved plant areas.

7.5 Significant Spills and Leaks (IGP Section X.G.1.d)

There have been **no significant spills** or leaks of toxic or hazardous pollutants, within the last 5 years, into storm water according to facility records and personnel. A spill or leak would include toxic chemicals on US EPA Form R (40 CFR 372), and oil or substances in excess of reportable quantities (40 CFR 110, 112, 117, or 302). Spills and leaks are to be addressed immediately as discussed in the BMP section 8. Any significant spills or leaks of toxic or hazardous pollutants will be documented in a report that will include the spill/leak location, characteristics and approximate quantity of the material spilled/leaked; approximate quantity discharged, description of clean-up methods, description of any materials remaining onsite with potential for discharge, and preventative measures to ensure spill/leaks do not reoccur. This Report will be submitted to SMARTS and any other regulatory agency, as required.

7.4 Erodible Surfaces (IGP Section X.G.1.f)

The surface of the operation areas is unpaved; however, because it is treated with an aggregate cover and compacted by the daily operation of heavy earth moving equipment traveling across it the likelihood for it to erode is minimal. The stockpiles and excavated slopes have the potential to erode. However, measures are taken to reduce erosion and sedimentation by implementing numerous measures such as:

- Diverting surface water away from the stockpiles and tops of cut slopes
- Tarping all topsoil stockpiles during the rainy season
- Installing wattles around the base of topsoil stockpiles, if evidence of erosion
- Re-grading and compacting areas with deep and wide erosion rills

7.5 Best Management Practices (BMPs) (IGP – Section X.H, & X.H.1.a,b, c, & d)

7.5.1 Minimum BMP (X.H.1)

The following minimum BMPs shall be implemented and maintained on site:

a. Good Housekeeping (X.H.a)

Good housekeeping consists of practical procedures to maintain a clean and orderly facility.

- Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly
- Minimize or prevent material tracking through regular sweeping
- Minimize dust generated from industrial materials or activities & comply with Air Permit
- Cover all stored industrial materials that can be readily mobilized by contact with storm water, when possible
- Keep all dumpsters under cover or fit with a lid that will remain closed when not in use
- Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with storm water
- Prevent disposal of any industrial materials into the storm water conveyance system
- Minimize storm water discharges from non-industrial areas
- Minimize authorized NSWDS from non-industrial areas (e.g., potable water, etc.) that contact industrial areas of the facility
- Installation and expansion, as needed, of drainage facilities, such as drainage ditches, concrete lined swales, culverts, drop inlets, curbs and earth berms
- Pads, roads and working areas are sloped to drain toward drainage ditches and drop inlets

b. Preventive Maintenance (X.H.b)

Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, pipes, etc.) as well as other facility equipment and systems.

- Establish an appropriate schedule for maintenance of identified equipment and drainage facilities
- Inspect and clean drainage ditches and sediment traps, as needed, after every major rainstorm and when the depth of soil/gravel/rock accumulation reaches 60% of the sump depth.
- Inspect all equipment and vehicles during monthly site inspections for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and vehicles out of service or prevent leaks from spilling on the ground until repaired.
- Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the discharge of pollutants.
- Vehicle and equipment parking areas, parked or unpaved are regularly swept and inspected

c. Spill Response (*X.H.c*)

This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

- Establish procedures and/or controls to minimize spills and leaks
- Develop and implement spill and leak response procedures to prevent industrial materials from discharging through the storm water conveyance system. Spilled or leaked industrial materials shall be cleaned promptly and disposed of properly
- Identify and describe all necessary and appropriate spill and leak response equipment, location(s) of spill and leak response equipment, and spill or leak response equipment maintenance procedures
- Spill clean-up materials being spill kits, wattles, and absorbent materials are accessible at the Mobile Field Truck and the Office/Scale House.
- Identify and train appropriate spill and leak response personnel.

d. Material Handling and Waste Management (*X.H.d*)

- Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event
- Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with storm water
- Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use
- Divert run-on and storm water generated from within the facility away from all stockpiled materials
- Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures
- Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes
- All heavy earth moving equipment requiring major rebuilding are repaired offsite;
- All heavy earth moving equipment requiring routine maintenance is serviced by the Mobile Field Truck which follows Good Housekeeping Practices and BMPs and carries Spill Kit;
- Portable chemical toilets shall be regularly maintained and are generally situated in areas away from vehicular traffic and drainage facilities
- Use of foggers on processing equipment
- Boneyard is limited to surplus parts and nothing with fuel, oil and grease. In addition, the steel racks will be covered with a tarp in the rainy winter months.

- e. Erosion and Sediment Controls (*X.H.e*)
 - Activities shall be restricted during wet weather
 - Installation and expansion, as needed, of drainage facilities, such as drainage ditches, swales, culverts, drop inlets, and earth berms
 - Use of water truck to spray unpaved and paved roads and parking areas, as well as stockpiles
 - Use of foggers on processing equipment;
 - Drop inlets, at certain locations, are surrounded by sand bags to facilitate settlement of sediments (if drop inlets are installed)
 - Drop inlets inserts, at certain DIs, to remove sediments and oil & grease (if drop inlets are installed)
 - Loaded material is compacted to be below the running board; many newer trucks have automated covers; and drivers are encouraged to tarp truck bed before departure;

- f. Employee Training (*X.H.f*)
 - Ensure that all team members implementing the various compliance activities of this General Permit are properly trained to implement the requirements of this General Permit, including but not limited to: BMP implementation, BMP effectiveness evaluations, visual observations and monitoring activities. If a Discharger enters Level 1 status, appropriate team members shall be trained by a QISP
 - Prepare or acquire appropriate training manuals or training materials
 - Identify which personnel need to be trained, their responsibilities, and the type of training they shall receive;
 - Provide a training schedule
 - Maintain documentation of all completed training classes and the personnel that received training in the SWPPP

- g. Quality Assurance and Record Keeping (*X.H.g*)
 - Operations Manager shall ensure that appropriate staff implements all elements of the SWPPP, including the Monitoring Implementation Plan
 - All BMP inspections shall be recorded on the appropriate inspection form: Pre-Season Drainage Facility/BMP Inspection Form and Wet Season BMP Weekly Inspection Form, included in Appendix C.
 - Maintain the BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five (5) years

7.5.2 Advanced Best Management Practices (IGP – Section X.H.2 & X.H.2.a &b)

Advanced BMPs will be utilized at Sargent Quarry when and if it is found that the existing minimum BMPS and Good Housekeeping practices are not sufficient enough to reduce the potential pollutants in the storm water discharges.

The advanced BMPs might include:

- a) Exposure minimization BMPs
- b) Stormwater containment and discharge reduction BMPs
- c) Treatment control BMPs
- d) Other advanced BMPs

Selected advanced BMPs for this SWPPP include:

- a. Sediment Basin at the plant site to contain stormwater runoff and remove oil and grease pollutants from storm water.

7.5.3 Temporary Suspension of Industrial Activities (X.H.3)

For facilities that plan to temporarily suspend industrial activities for ten (10) or more consecutive calendar days during a reporting year, the Discharger may also suspend monitoring if it is infeasible to conduct monitoring while industrial activities are suspended (e.g., the facility is not staffed, or the facility is remote or inaccessible) and the facility has been stabilized. The Discharger shall include in the SWPPP the BMPs necessary to achieve compliance with this General Permit during the temporary suspension of the industrial activity. Once all necessary BMPs have been implemented to stabilize the facility, the Discharger is not required to:

- a. Perform monthly visual observations (Section XI.A.1.a.); or
- b. Perform sampling and analysis (Section XI.B.) if it is infeasible to do so (e.g. facility is remotely located).

The Discharger shall upload via SMARTS (7) seven calendar days prior to the planned temporary suspension of industrial activities:

- a. SWPPP revisions specifically addressing the facility stabilization BMPs
- b. The justification for why monitoring is infeasible at the facility during the period of temporary suspension of industrial activities
- c. The date the facility is fully stabilized for temporary suspension of industrial activities; and
- d. The projected date that industrial activities will resume at the facility. Upon resumption of industrial activities at the facility, the Discharger shall, via SMARTS, confirm and/or update the date the facility’s industrial activities have resumed. At this time, the Discharger is required to resume all compliance activities under this General Permit. The Regional Water Boards may review the submitted information pertaining to the temporary suspension of industrial activities. Upon review, the Regional Water Board may request revisions or reject the Discharger’s request to temporarily suspend monitoring.

7.5.4 BMP Description (X.H.4)

The following BMPs are proposed for this site (refer to Appendix K):

EC-9	Earth Dikes and Drainage Swales
SC-10	Non-Stormwater Discharges
SC-11	Spill Prevention
SC-20	Vehicle Fueling
SC-22	Vehicle Maintenance
SC-32	Outdoor Equipment Operations
SC-34	Dumpsters with Lids
SC-40	Paved Road
SC-43	Parking/Storage Area Maintenance
SC-44	Drainage System Maintenance
SC-70	Paved Road
SE-2	Sediment Basin
SE-7	Street Sweeping
WE-1	Wind Erosion Control
WM-3	Stockpile Management
WM-6	Hazardous Waste Management
WM-9	Portable Toilet

7.5.5 Best Management Practices: Schedule

All BMP shall be inspected on a monthly basis. These inspections shall be recorded on the appropriate inspection form:

- Monthly Visual Inspection Form - 1
- Monthly Visual Inspection Form -2: Routing Maintenance
- Monthly Visual Inspection Form – 3: Erosion Controls

In addition, prior to the rainy season (October 1st) the following BMPs will be inspected and cleaned out as needed; including drainage ditches/swales, culverts, and sediment basin. Also, after each major storm event the storm drainage facilities; including drainage ditches/swales, culverts, and sediment basin shall be inspected and cleaned as needed. These inspections will ensure that these drainage facilities are working properly and are not in disrepair which would impact their efficacy.

The recommended BMPs will be implemented within the timeframe indicated below:

<u>BMPs</u>	<u>Implementation</u>
Good Housekeeping	Daily
Preventive Maintenance	Daily
Spill Response	As needed
Material Handling and Waste Management	Daily
Storm Drainage system inspection and maintenance	Annually (Sep 1 st – Oct 1 st) & Weekly during the wet season (Oct 1 st – May 30 th) & after each major rain events
Inspect all equipment and vehicles for leaking fluids	Daily
Street Sweeping	Daily, multiple times as needed
Vehicle Fueling	Daily, as needed
Vehicle Maintenance	As needed
Non-Storm Water Discharge	On-going
Employee Training	On-going

7.5.6 BMP Summary Table (X.H.5)

For more detail on the pollutant sources for the quarry operation and the associated industrial activity, pollutants and BMPs being implemented see Table 3, below.

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
1 Plant Site	Aggregate Product Stockpiles	Sediment PH	Year Round On-going	Run-off treated in sediment basin (SE-2)	Remove sediment from runoff
			Year Round On-going	Drainage features constructed to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff
			Year Round Daily as Needed	Water Truck to maintain pile moisture	Help control amount of air borne dust particles
			Year Round	Reduce spillage	Limited handling of loose rock material to reduce amount of sediments in runoff
2 Plant Site	Aggregate Processing	Sediments PH Petroleum hydrocarbons	Year Round On-going	Run-off treated in sediment basin (SE-2)	Reduce amount of sediments in runoff
			Year Round On-going	Drainage features constructed and sized to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff.
			As Needed	Excess lubrication leaked from bearings from heavy equipment is limited by use of drip, spill kits, and routine maintenance (SC-11)	Immediate on-site maintenance as well as the use of drip pans and absorbents will limit amount of pollutants that could potential contaminate storm water
			Year Round As Needed	Foggers are used at all source locations (i.e. screens) on processing plants	Reduce amount of pollutants that could contaminate storm water. Reduce amount of air borne particulates
			Year Round Daily	Process equipment and area cleanup is routine	Reduce sediments and other potential contaminants
			As Needed	Water Truck to maintain moisture on unpaved roads and material piles	Help control amount of air borne dust particles
			Year Round Daily	Conform to air quality permit	Reduce emissions and stay current with standards
			Year Round	Limit handling of materials	Reduce the amount of sediments, and dust particulates and emissions from equipment.
			As Needed	Drip pans used where feasible (SC-11)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water
			Year Round Daily	Equipment regularly inspected (SC-11)	Prevent spillage of potential pollutants
			As Needed	Leaks repaired or liquids drained (SC-11)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water
			Year Round On-going	Know source and document delivery	Avoid delivery of contaminated materials

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
3 Plant Site	Aggregate Handling	Sediment	Daily As Needed	Limit handling of materials	Reduce the amount of sediments, and dust particulates and emissions from equipment
			Daily As Needed	Surplus storage minimized	Reduce amount of spare part storage to reduce risk for equipment failure and contamination
			Daily As Needed	Vehicle/equipment maintenance performed in designated location (SC-22)	Reduce exposure to storm water and ease of cleanup of spills
4 Plant Site	Vehicle/ Equipment Maintain. Boneyard	Petroleum Hydrocarbons, Sulfuric Acid, Lead, Oil, Grease, Anti-freeze, solvents	Daily As Needed	Outdoor maintenance areas are paved	Facilitates cleanup of spills, eliminates contamination of ground surface, and reduce exposure to storm water
			On-going Daily	Clearly labeled drums and containers placed in convenient locations. (WM-6)	Eliminate contact with storm water
			Year Round	No Oil changes are done outside during the rain. (SC-32)	Eliminates contact with storm water
			Daily As Needed	Waste receptacles monitored and arrangements for pickups made promptly. (WM-6)	Eliminate contact with storm water
			As Needed	Waste oil, waste anti-freeze, spent solvents, filters and batteries are recycled. (WM-6)	Eliminate contact with storm water
			On-going, As Needed	Procedures established to ensure draining of engine fluids and transfer to waste containers without spillage. Drip pans placed under vehicles/equipment when draining fluids and transferred to waste containers without spillage. (SC-11, WM-4, WM-6)	Eliminate contact with storm water and contamination of ground surface
			Year Round	Employees instructed on proper cleanup procedures for minor spills. (WM-4)	Ensures proper cleanup of spills
			Year Round	Area equipped with spill kits to cleanup spills and empty drums (SC-11)	Facilitate proper cleanup of spills
			Year round	Proper Security measures implanted to prevent vandalism	
			Daily	Drip pan under compressors. (SC-11)	Eliminates contact with storm water and contamination of ground surface
Daily	Seals regularly inspected and maintained. (SC-11, WM-4)	Prevent spillage of potential pollutants			

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
5 Plant Site	Aboveground Storage Tanks and Fueling area	Petroleum hydrocarbons	Year round On-going	Storage tank fueling has auto shut off to prevent overfilling. (SC-11, WM-4)	Prevents accidental spills
			Year round On-going	Vehicle fueling area is paved. (SC-11, WM-4)	Prevents contamination of ground surface, and facilitate cleanup of spills
			Year round, On-going	Sign posted to instruct employees that all fuel spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor	Promotes awareness; and ensures proper cleanup
			Year round, On-going	Sign posted to instruct employees to not leave filling hose unattended during fueling	Preventing accidental spills
			Year round, On-going	Spill cleanup equipment clearly labeled and stored near fuel pumps in the main shop area. (SC-11, WM-4)	Facilitate cleanup of spills
			Year round, On-going	Proper security measures implemented to prevent vandalism	Eliminate spillage during vandalism
			Year round, On-going	All hazardous material containers clearly labeled. (WM-6)	Promote awareness; and ensures proper cleanup
			Year round, On-going	All hazardous materials containers closed. (WM-6)	Avoid contact with storm water
6 Plant Site	Hazardous Materials Storage Area: Lube oil, solvent, batteries, antifreeze	Petroleum hydrocarbons, solvents, acids, bases antifreeze, heavy metals, pesticides	Year round On-going	Flammable materials stored inside designated flammable cabinets. (WM-6)	Prevent accidental fires; ensure proper handling; keep materials under control
			Year round On-going	Hazardous materials stored in designated areas only. (WM-6)	Limited area where potential pollutants could be released.
			Year round On-going	Hazardous material storage areas secured to prevent unauthorized access. (WM-6)	Keep material in controlled area
			Year round On-going	Hazardous material storage maintained in accordance with Federal, State, and local regulations and codes. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going, Daily	Container conditions are routinely inspected and resolved. (WM-6)	Keep material under control
			Year round On-going, As Needed	Leaking or deteriorated containers placed in new containers. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going	Hazardous materials kept indoors or undercover. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going	Material safety data sheets kept at facility for all hazardous materials	Promote awareness
			Year round On-going	Hazardous materials inventory minimized where practical. (WM-6)	Reduce the potential impacts from unnecessary storage of materials
			Year round As Needed	Secondary containment and storage tank covered to prevent rain contact. (WM-6)	Keep material under control and out of contact with storm water

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Year round On-going As Needed	Sign posted to instruct employees that all hazardous material spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor	Promote awareness
			Year round, On-going	Spill cleanup equipment (ie. spill kits, drums and rags) stored where accessible. (SC-11, WM-4)	Facilitate cleanup of spills
			Year round, On-going	Proper security measures implemented to prevent vandalism	Eliminate spillage during vandalism
			Year round, On-going	All hazardous waste containers clearly labeled. (WM-6)	Promote awareness
			Year round, On-going	All hazardous waste containers closed. (WM-6)	Keep materials from contact with storm water
7 Plant Site	Hazardous Materials Waste storage (examples; used oil filters, drain/waste oil)	Petroleum Hydrocarbons, Solvents, Acids, Bases, Antifreez, Heavy Metals, Pesticides	Year round, On-going	Hazardous waste stored in designated areas only. (WM-6)	Limited area where potential pollutants could be released and facilitates cleanup
			Year round, On-going	Hazardous waste storage secured to prevent unauthorized access	Keep material in controlled area
			Year round, On-going	Hazardous waste storage maintained in accordance with applicable Federal, State, and local regulations and codes	Keep material under control and out of contact with storm water
			Year round, On-going, Daily	Routine inspections of containers and area. (WM-6)	Keep material under control
			Year round, On-going, As Needed	Leaking or deteriorated containers placed in new containers. (WM-6)	Keep materials from contact with storm water
			Year round, On-going, As Needed	Remove and dispose of properly all hazardous wastes in accordance with applicable regulations. (WM-6)	Keep materials from contact with storm water
			Year round, On-going	Signs posted to identify storage areas	Promote awareness, Keep material under control
			Year round, On-going	Hazardous waste kept mostly indoors or undercover. (WM-6)	Keep material out of contact with storm water or keeps material contained
			Year round, On-going	Secondary containment and storage tank covered to prevent rain contact. (WM-6)	Keep material under control and out of contact with storm water
			Year round, On-going, As Needed	Accumulated rain water in the containment area disposed of in accordance with local, State and Federal regulations if any evidence of contamination were detected in or on the water. (WM-6)	Keep material under control and out of contact with storm water
			Year round, On-going	Spill cleanup equipment (rags) clearly labeled and stored where accessible. (SC-11, WM-4)	Facilitate cleanup of spills

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Year round On-going	Proper security measures (locked gate) implemented to prevent vandalism.	Eliminate spills during vandalism
			Year round As Needed	Used oil filters are drained and stored in approved container. (WM-6)	Eliminate contact with storm water
8 Plant Site	Dumpster with lib	Non-Hazardous Waste	Year round On-going	Dumpster with lid used to keep out rain water and prevent debris from blowing away. (SC-34)	Eliminate contact with storm water
9 Plant Site	Paved Vehicle Parking	Petroleum Hydrocarbons, Iron, Oil & Grease, Anti-freeze, Sediment	Year Round, Daily	Vehicle/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Year Round On-going	Storm water is directed into a Sediment Basin. (SE-3)	Reduces sediments in storm water
			Year Round Daily As Needed	Leaks from vehicle promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
			Year Round, Daily As Needed	Drip pans and absorbent materials used temporarily to collect leakage until repaired. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
10 Mining Pits	Unpaved vehicle/equipment parking	Petroleum Hydrocarbons Oil Grease Anti-freeze Sediment	Daily	Vehicles/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Daily, As Needed	Leaks from vehicles/equipment promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
			Daily, As Needed	Drip pans used temporarily to collect leakage until repaired. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water
			Year Round Daily Use as Needed	Water Truck	Help control amount of air borne dust particles
			Daily As Needed	All quarry heavy earthmoving equipment is maintained by the Mobile Field Truck which follows BMPs: drip pans, spill kits, empty drum, auto-shut off valve for fuel pump, alarm overflow preventer; & company policies. (SC-11, WM-4)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water. Facilitate proper cleanup of spills.

**TABLE 3
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
11 Mining Pits	Portable Chemical Toilets (Porta Potty)	Human waste and disinfectants (toilet chemicals)	Daily As Needed	Regularly maintained and pumped out at regular intervals. (WM-9)	Reduce the risk of the portable toilet from overflowing
			Year Round On-going	Placed in areas away from high vehicular traffic areas and environmentally sensitive areas. (WM-9)	Reduce the risk of the portable chemical toilet from being knocked over
12 Mining Pits	Mining Pits #1, 2, and 3	Sediment	As Needed	Drainage features constructed to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff
			Year Round On-going	Employ fugitive emission air quality controls	Reduce emissions
			Daily As Needed	Process equipment and area cleanup is routine	Reduce sediments and other potential contaminants
			Year Round On-going	Conform to air quality permit	Reduce emissions and stay current with standards
13 Access Road to Pits #1 and #2	Unpaved Road	Sediment, Petroleum hydrocarbons pH	Year Round, Daily Use, as Needed	Water Truck	Help control amount of air borne dust particles
			Daily	Vehicles/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Daily, As Needed	Leaks from vehicles/equipment promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.

8.0 FACILITY-WIDE BMPS, PREVENTIVE MAINTENANCE ACTIVITIES, & GOOD HOUSEKEEPING PRACTICES

(IGP – Section X)

Facility-wide BMPs are those practices that are not pollutant source specific, and that assist in preventing and/or minimizing pollutants in storm water runoff. The facility-wide BMPs for Sargent Quarry are indicated below.

8.1 Employee Education

All employees are instructed in the SWPPP (at MSHA safety training tailgate topics) and their individual responsibilities in preventing the discharge of pollutants to storm water. The Employee Education program is described in detail in *Section 15.0, Employee Training Program* of this SWPPP.

8.2 Scheduled Sweeping

Scheduled sweeping of all paved areas at the quarry will be performed using an appropriate type of sweeper. Sweeping will occur 3 to 4 times daily or more often if needed.

8.3 Preventive Maintenance Activities (IGP- Section X.H.1.b)

Routine use and observation of processing equipment occurs on a daily basis, and maintenance on the equipment and processing plants is performed when needed. Small routine preventive maintenance is performed using a Mobile Field Truck as needed. All major servicing is conducted offsite. Maintenance personnel and the mobile truck operator perform their duties using BMPs to prevent leaks and other accidental releases from equipment and containers. Examples of preventive maintenance performed at this facility are listed below:

- Check seals on all equipment containing petroleum hydrocarbons or other pollutants, and replace as necessary.
- Check seal on all containers holding petroleum hydrocarbons, and replace as necessary.
- Check seal on gasoline or diesel fueling nozzle, and replace as necessary.
- Check accuracy of gauges that indicated liquid levels in storage tanks.
- Clear drainage channels of debris before rainy season and after heavy rains.
- Schedule and pump out secondary containments that are outside (i.e. fueling station) before and after rainy season, and at other times as necessary, and dispose of waste properly.
- Schedule and clean out sediment ponds, sediment traps, storm water storage tanks, swales and concrete box with check dams, inlet protection drain guards, and drop inlets before and after rainy season, and at other times as necessary, and dispose of sediments properly
- Periodically remove sediment from sediment ponds, sediment traps, stormwater storage tanks,
- Drainage ditches, swales, drop inlet and their protection drain guard to maintain capacity. Cover topsoil stockpiles with tarps during rainy season
- Place wattle around edge of topsoil, as needed, and replace when needed
- Inspect sand bags or wattles at selected drop inlets and replace when needed
- Maintain adequate supply of flocculants at drainage facilities, as appropriate. Repair and improve erosion control measures before beginning of each rainy season. Repair and improve erosion control measures before beginning of each rainy season, October 1st.

8.4 Good Housekeeping Practices (IGP- Section X.H.1.a)

Good housekeeping practices are measures that maintain a clean and orderly working environment. These measures include immediately cleaning up spilled materials, regularly sweeping paved areas or using vacuum trucks, and depositing waste in designated receptacles. Employees are responsible for maintaining their work areas. Supervisors are responsible for ensuring that work areas are orderly.

The employee training program is described in *Section 15.0, Employee Training Program* of this SWPPP. The training program is intended to increase employee awareness of how their daily work activities and work areas can contribute pollutants to storm water discharges, and to suggest ways that their work habits could be modified to reduce the amounts of pollutants that are eventually washed away in storm water.

9.0 SPILL PREVENTION & RESPONSE

(IGP – Section X.1.c)

Materials stored and used at the facility could cause significant water quality impacts if accidentally released. Spilled materials could possibly be discharged to surface water (Sargent Creek and Pajaro River). Spills could also cause soil and groundwater contamination. Measures have been implemented to minimize the possibility of spills. In addition, spill response procedures have been established for this facility. The spill prevention and response measures implemented by this facility are indicated below, in Table 4, Spill Prevention and Response Measures.

- The facility has a Spill Prevention Control and Countermeasure Plan (SPCCC) that is in conformance with Title 40, Code of Federal Regulations, Part 112 (40CFR112).
- Petroleum storage and prevention of releases also falls under the California Aboveground Petroleum Storage Act (APSA) as amended through 1995 or later, based upon the facility being subject to 40 CFR 112. Based on APSA petroleum aboveground storage tanks (ASTs) are registered with the State; periodic inspections are conducted to assure compliance with 40CFR112, an Annual Tank Facility Statement is filed and annual fees paid to the Santa Clara County, Hazardous Materials Compliance Division.

The size criteria for inclusion of a facility with ASTs containing oil products under 40 CFR 112 is:

- Have a total aggregate aboveground storage tank (AST) capacity which exceeds 1,320 gallons.
- Underground storage that exceed 42,000 gallons.
- Tier I Facility: If facilities with 10,000 gallons or less and a single AST with a capacity less than 5,000 gallons; and with not having a discharge to navigable waters over 1,000 gallons subject to the rule in the last three years prior to Plan certification; nor 2 discharges of oil to navigable waters each exceeding 42 gallons within any 12 month period: THEN they will qualify as a Tier I Qualified Facility and the operator can prepare a self-certified SPCC.
- Tier II Facility: If facilities with 10,000 gallons or less, and with a single AST with a capacity that is greater than 5,000 gallons; and with not having a discharge to navigable waters over 1,000 gallons subject to the rule in the last three years prior to Plan certification; nor 2 discharges of oil to navigable waters each exceeding 42 gallons within any 12 month period: THEN they will qualify as a Tier II Qualified Facility and the operator can prepare a self-certified SPCC.
- Facilities with an aggregate of over 10,000 gallons of aboveground oil storage must have a full Spill Prevention Control and Countermeasure Plan (SPCC plan).
- Spill Prevention Kit at the Plant Site includes: Super sorbent shaker carton , Haz socks, P.V.C. gloves, Disposable suits w/hoods and boots, Univ. green sorbent pads, Goggles, Disposable bags with ties, Roll of caution tape, Cob fractions, Respirator, and Emergency Response Guide Book stored in a 30 gal. blue poly drum.
- Spill Prevention Kit on the Mobile Field Truck includes rags, absorbent blankets and rolls as well as an empty drum
- The Quarry Operations Manager is responsible for overseeing spill and leak clean up.

TABLE 4
SPILL PREVENTION & RESPONSE MEASURES
(IGP – Section X.1.c)

Spill Prevention And Response Measure	Description
Hazardous Materials Business Plan	A Hazardous Materials Business Plan pursuant to Chapter 6.95 of the California Health and Safety Code has been or is being prepared for this facility. The plan will contain a hazardous materials inventory and emergency response procedures.
Spill Prevention Control and Countermeasure Plan	The Spill Prevention Control and Countermeasure Plan, pursuant to Section 311 of the Federal Clean Water Act specifies appropriate containment for aboveground tanks and effective spill prevention procedures.
Secondary Containment	Aboveground tanks and other containers of products or waste have secondary containment and are inspected daily. Spilled material in the containment is promptly cleaned up and disposed of properly.
Employee Training	Employees who work with chemical and petroleum materials are trained in the proper use, handling, storage, and disposal practices. Employees are also trained in proper spill response procedures.
Spill Containment and Cleanup Equipment	A supply of spill containment and cleanup equipment is kept onsite for prompt responses. Available equipment includes: personal protective equipment (rubber gloves, goggles, disposable suits/ hoods & boots), spill kit with clean up materials and absorbent materials, and empty UN-approved 55-gallon drum.
Regular Inspections of Hazardous Materials and Wastes Storage Areas	Employees who regularly work with chemical and petroleum products and wastes are instructed to inspect storage areas regularly and to initiate corrective measures, if needed.
Locate hazardous materials storage locations away from storm drain inlets and drainage ways	Chemical and petroleum material storage areas are located away from storm drain inlets or other storm water drainage ways to minimize the possibility that spills would be discharged into the storm drainage system.
Notification procedures in case of spill emergency	Employees are instructed to notify the facility manager, as soon as practical, of any spills. The facility manager will notify agencies listed in the emergency response plan, as required.
List of contractors to assist in spill response	A list of names and phone numbers of the nearest emergency response contractors have been compiled and are available in the facility office, each processing plant, maintenance shop and RV Trucking. The plant manager is authorized to retain the services of contractors to contain and cleanup spills.
Material Safety Data Sheets (MSDS)	MSDSs of the hazardous materials present at the facility are kept at the Truck Shop, RV Trucking Service Area and at the Environmental & Safety Manager's offices. All MSDSs are kept current.

10.0 SEDIMENT & EROSION CONTROL PRACTICES

(IGP- Section X.G.1.f & X.H.1.d & X.H.e)

Erosion could cause large amounts of sediment to be discharged in storm water. Areas with erodible surfaces at the Facility, if any, are identified on Figure 4 and 5. The following Table 5, Sedimentation & Erosion Control Measures identifies the measures implemented at the quarry.

TABLE 5	
SEDIMENTATION & EROSION CONTROL MEASURES	
(IGP- Section X.G.1.f & X.H.1.e)	
Erosion Control Measure	Description
Management of storm water at the facility	Activities are restricted during wet weather. Throughout the site, storm water is directed into drainage ditches and culverts to minimize the volume of water that may be exposed to industrial activity. Topsoil stockpiles are covered with tarps in the rainy season. Sediment basin retains the diverted.
Placement of obstacles to intercept run-off from steep terrain	Straw bales, wattles, and/or rip rap may be used to intercept run-off from steep terrain and prevent high water velocities that could cause erosion.
Protection of drainage ditches	In areas with steep slopes or high volume of water check dams may be placed into the earth drainage ditches. In additions energy dissipating rip-rap and other devices prevent erosion.
Protection of discharge points	Storm water discharge points are constructed with energy dissipating discharge aprons made out of concrete structures, and/or rocks used as energy dissipaters.
Sediment Basin Culvert	Culverts under roadways or through embankments, Sediment Basin are sized to accommodate a 24 hour - 100-year storms and aligned to minimize abrupt changes in direction in the flow path.
Slope of Plant Site sloped to drain	Plant Site floor area is sloped to drain toward Sediment Basin
Wind Controls: - Water truck - Foggers - Truck Loading	During hours of operation the stockpiles and unpaved roads are sprayed with water by the water truck to control for dust. In addition, there are foggers at key points on the portable processing plants to wet down the product. Loaded material is compacted to be below the running board; many newer trucks have automated covers; and drivers are encouraged to tarp truck bed before departure
Treatment of unpaved road and storage areas.	Aggregate surface course is applied to the top of unpaved area to protect the surface from erosion
Paved road and parking areas around Office & Scale House and paved exit and entrance to Quarry operation	Paved access roads and paved parking areas direct storm water into Sediment Basin
Filtration/settling of sediments from stormwater in drainage ways	Fiber rolls or wattles are places around the base of the topsoil recycle stockpile to manage sediments, during rainy season as needed. Topsoil stockpiles are tarped during the rainy season. Sediment Basin captures plant site runoff.
Tracking Control	Routine sweeping and/or vacuuming will be performed on paved roads to collect accumulated dirt on the interior roads and entry/exit route.

11.0 MATERIALS HANDLING AND WASTE MANAGEMENT

(IGP-Section X.H.1.d)

Materials handling and waste could contribute potential pollutants to storm water. To address this, the following good housekeeping practices will be implemented, as needed:

- Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event;
- Contain all stored non-solid industrial materials or wastes (eg, particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;
- Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use, if feasible.
- Divert run-on and storm water generated from within the facility away from all stockpiled materials, when feasible
- Clean all spills of industrial materials or wastes that occur during handling
- Observe/clean any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes

12.0 INSPECTIONS

(IGP-Section X.G.2.a)

12.1 Monitoring Implementation Program – Storm Water Inspections

Inspections are performed to ensure that Best Management Practices are being implemented and to identify conditions that may allow potential pollutants to be discharged with storm water. All inspections are recorded on forms provided in this SWPPP, and are reviewed by the person responsible for SWPPP implementation. When conditions are identified that require corrective action, the follow-up action is also recorded.

The inspections that will be performed are listed below, in Table 6, Storm Water Monitoring Inspections. For more information on how to complete the inspections, as well as copies of all inspection forms see Appendices B and C of this SWPPP.

TABLE 6 DESCRIPTIONS OF STORM WATER MONITORING INSPECTIONS (IGP – Section G.2.a & X.H.1.d)		
Type Of Inspection	Description	Frequency
Annual Comprehensive Facility Compliance Evaluation	All areas of the industrial activities will be inspected to identify areas contributing pollutants to storm water. Evaluate effectiveness of BMPs and modify or add new ones as necessary. Review SWPPP for accuracy and up-date as needed. This inspection will coincide with preparation of the annual report.	Annually in June; Submit to SWRCB by July 15 each year
Monthly Visual Observation	Facility Visual Observation: All storm water discharge points and drainage ditches and drainage areas will be visually inspected for evidence of dry weather discharge; including approved non-storm water discharges. Visual observation shall be made of industrial activity areas, equipment and storage areas and all potential sources of industrial pollutants. If found, the source(s) and corrective measures will be identified, as appropriate.	Monthly
	Routine Inspection: The entire facility will be visually inspected to evaluate all hazardous material and waste areas, parking and equipment storage areas, aggregate storage and processing areas, and other areas with Industrial Materials and containing the potential pollutant sources identified in Tables 3 and 4. The inspection will include an assessment of whether good house-keeping practices and preventative maintenance activities are being performed; and if the BMPs are functioning properly.	
	Erosion Control Inspection: Erosion potential of slopes, drainage channels, and unpaved areas at the facility should be assessed. Repairs and maintenance should be completed and additional erosion control measures should be implemented prior to the rainy season.	
Storm Water Sampling & Analysis	Obtain Storm water sampling kit from approved Laboratory to analyze for: Total Suspended Solids, Oil & Grease, Nitrates and Nitrites as N, and Iron. Collect storm water samples after rainfall results in discharge for at least one drainage area, and the rain is preceded by 48 hours with no discharge from any drainage area. Samples may be collected: a) within 4 hours of discharge during hours of operation; or b) when facility opens and discharge had commenced 12 hours earlier (during the night before).	At least twice between Jan. 1 – June 30 and at least twice between July 1 and December 31
Ph Field Test	Required of rock crushing, and sand & gravel-operations as they are a Sub-chapter N facility with Federal effluent limitations guidelines. Measure Ph in field using a calibrated portable instrument of pH that can take a reading within 15 minutes. Record pH results onto Chain of Custody form and on Ph Field Test Sampling Form in Appendix C. Take a photo of the test results: i.e. the meter reader.	When storm water samples are collected
Sampling Event Visual Observation	The 6 sediment Ponds, 4 sediment traps, 2 storm water storage tanks, and numerous drop inlets as well as storm water discharge points (Outfalls #1 thru 4) and drainage ditches will be visually inspected for evidence of pollutant discharge. If found, the source(s) and corrective measures will be identified, as appropriate. The Sampling Event Visual Observation Inspection should be performed when storm water samples are collected and the Storm Water Sampling	When storm water samples are collected

	form is completed.	
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PH Meter Instructions

Obtain a portable calibrated PH meter with a wide range that will take a reading within 15 minutes Turn on meter by pressing and holding the on/mode button until the LCD lights up. Submerge the electrode in the storm water PH valvue will be adjusted by the meter until the stability symbol appears. Press the SET>HOLD button to freeze measurement for recording reading. Once measurement is complete turn off PH meter pressing the on/MODE button.

The PH meter should be calibrated every day it is used. The meter comes with a set of buffer solutions in packages. A two point calibration is recommended using the 7.01 PH buffer solution package. You put the meter into calibration mode and stick the probe end into a buffer and the meter recognizes the PH of tht buffer. Take reading until first calibration point is accepted. Finish calibrating by placing the probe in the PH 4.01 buffer solution package until LCD displays OK 2 messages, then the meter will automatically switch to measure mode.. Calibration is completed and measurements can be taken. Put the probe in the storm water smaple collected and the PH and temperature is read by the meter.

Notification

The Plant Maintenance and Quarry Forman are responsible for supervising containment and cleanup activities in the processing area of the quarry; and the RV Trucking Shop Foreman is responsible for supervising containment and cleanup activities at the RV Trucking service area. Each Foreman is also responsible for supervising containment and cleanup activities in and around their respective shop, maintenance and fueling areas. Both Foremen will assign properly trained personnel to contain and cleanup in the respective service areas.

In the unlikely event that discharged material reaches State water, of if there is a possibility that storm water could convey discharged material to State waters, the Environmental and Safety Manager shall immediately notify the following agencies, and if he is not available then either the Truck Shop Foreman or the RV Trucking Shop Foreman will contact these agencies:

<i>Central Coast Regional Water Quality Control Board:</i>	<i>805-549-3147</i>
<i>California Department of Fish and Game:</i>	<i>707-944-5500</i>
<i>Santa Clara County Department of Environmental Health:</i>	<i>408-918-3400</i>

13.0 REPORTING REQUIREMENTS

(IGP Section XI & XII)

13.1 Annual Comprehensive Facility Compliance Evaluation (IGP Section XV)

The facility operator shall conduct one comprehensive site compliance evaluation in each reporting period (July 1 through June 30). The SWPPP shall be revised as appropriate and the revisions implemented within 90 days of the evaluation and submitted to SMARTs. Changes to the SWPPP shall be recorded on the SWPPP Amendment form in Appendix H. A copy of the Annual Comprehensive Facility Compliance Evaluation Form is attached as Appendix C of this SWPPP.

At minimum the Annual Comprehensive Facility Compliance Evaluation shall include:

- A review of all sampling, visual observation, and inspection records conducted during the previous reporting year;
- An inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the storm water conveyance system;
- An inspection of all drainage areas previously identified as having no exposure to industrial activities and materials (IGP - Section XVII)
- An inspection of equipment needed to implement the BMPs;
- An inspection of any BMPs;
- A review and effectiveness assessment of all BMPs for each area of industrial activity and associated potential pollutant sources to determine if the BMPs are properly designed, implemented, and are effective in reducing and preventing pollutants in industrial storm water discharges and authorized NSWDS; and,
- An assessment of any other factors (IGP- Section XVI.B)

13.2 Monitoring Implementation Plan (IGP – Section X.I)

The facility operator shall implement the Monitoring Implementation Plan (MIP) by conducting the storm water monitoring inspections and documenting the inspections on the following six forms:

1. Monthly Visual Inspection Form 1,
2. Monthly Visual Inspection Form 2: Routine Inspection,
3. Monthly Visual Inspection Form 3: Erosion Control,
4. Storm Water Sampling Form,
5. Sampling Event Visual Observation,
6. pH Field Test Sampling Form,

Copies of the storm water monitoring inspection forms are attached as Appendix C of this SWPPP. Instructions for the Monitoring Implementation Plan (MIP) with descriptions for each inspection are attached as Appendix B of this SWPPP.

13.3 Reporting of Monitoring Results

Monitoring results shall be transmitted electronically to the San Francisco Bay Region Water Control Board using the SMARTS program. Storm water test results must be submitted within 30 days of receipt from the Laboratory, as described in Appendices B of this SWPPP.

13.4 Additional Reporting Parameters for Storm Water (IGP – Section XI.B.6.c-g & Appendix 3)

Besides the standard 3 stormwater sampling tests required by the IGP for Total Suspended Solids (TSS), Oil & Grease (O&G), and Ph there may be other parameters that need to be tested for including: 1) for impaired water bodies identified by Clean Water Act Section 303(d); for Total Maximum Daily Loads (TMDLs) to be identified by the State Water Resources Control Board; and 3) Sub-Chapter N Facilities

1. Impaired Water Bodies: Should the site discharge to a receiving water body that has been determined by the Water Board to be ‘impaired’ per the Clean Water Act Section 303(d). The

Water Board developed a 303(d) list of impairments are sourced from the most current 2010 Integrated Report. The Board has made a copy of the 303(d) list on their website and indicated with black text the impairments for which Industrial Storm Water Dischargers in a 303(d) impaired watershed are required to analyze for additional parameters, if applicable, because these parameters are more likely to be associated with industrial storm water. The text in red text are the parameters that Industrial Storm Water Dischargers are not required to analyze for because they typically are not associated with industrial storm water. This list, as an Excel spreadsheet, is available on the Industrial Storm Water program pages of the State Water Resources Control Board's website (<http://www.waterboards.ca.gov/>).

After testing for and establishing that the facility:

- a) Does not contribute to the impairment of the receiving water body because the pollutant is not present at the facility, the Discharger will not be required to test for these additional parameters; unless changes at the facility indicate a need to. The Discharger must retained documentation of the lab test showing no impact to the impaired bodies parameters with the SWPPP at the facility.
- b) May discharge a listed pollutant but it will not cause or contribute to an exceedance of a water quality standard. This is demonstrated if: (1) the discharge complies with water quality standard at the point of discharge, or (2) if there are sufficient remaining waste load allocations in an approved TMDL and the discharge is controlled at least as stringently as similar discharges subject to that TMDL.

2. TMDLs: Another requirement that won't come into effect until July 1, 2016 is testing for TMDLs.

The State Water Board will incorporate TMDL-specific permit requirements into the IGP after a notice and public comment period and subsequent approval for adoption in this IGP.

Dischargers are not required to take any additional actions to comply with TMDLs until the State Water Board reopens this Industrial General Permit (IGP) and includes TMDL-specific permit requirements.

After Testing for and establishing that the facility:

- a) May discharge of any listed pollutant but it will not cause or contribute to an exceedance of a water quality standard. This is demonstrated if: (1) the discharge complies with water quality standard at the point of discharge, or (2) if there are sufficient remaining waste load allocations in an approved TMDL and the discharge is controlled at least as stringently as similar discharges subject to that TMDL

3. Sub-Chapter N: The Industrial General Permit requires Dischargers subject to Subchapter N Federal Effluent Limitation Guidelines (ELGs) to test for certain parameters using approved test methods. Industrial storm water discharges from facilities in eleven industrial sectors (SIC codes) and the parameters they must test for are identified in the Industrial General Permit, Attachment F. Most commonly this SWPPP addresses industries with the following SICs and testing requirements:

SIC - 144X : Sand and Gravel, Crushed Stone:	parameter N+N and Ph
SIC – 327X: Concrete, or ready Mix Concrete:	parameter Fe and Ph

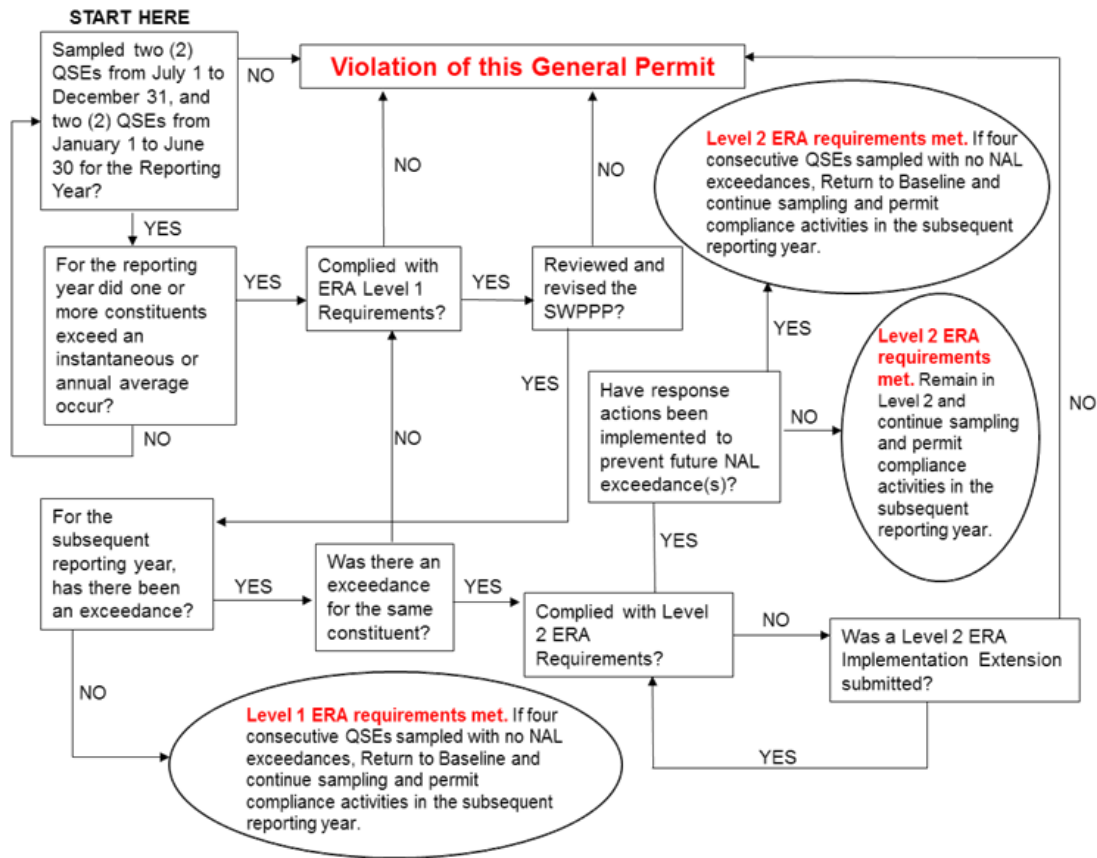
13.5 Exceedance Response Actions (ERAs) (IGP Section XII)

13.5.1 NALs and NAL Exceedances

The Discharger shall perform sampling, analysis and reporting in accordance with the requirements of this Industrial General Permit (IGP) and shall compare the results to the two types of NAL values in Appendix I to determine whether either type of NAL has been exceeded for each applicable parameter. The two types of potential NAL exceedances are as follows:

1. Annual NAL exceedance: The Discharger shall determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data). The Discharger shall compare the average concentration for each parameter to the corresponding annual NAL values in the Table in Appendix I. An annual NAL exceedance occurs when the average of all the analytical results for a parameter from samples taken within a reporting year exceeds the annual NAL value for that parameter listed in Appendix I; and,
2. Instantaneous maximum NAL exceedance: The Discharger shall compare all sampling and analytical results from each distinct sample (individual or combined as authorized) to the corresponding instantaneous maximum NAL values in Appendix I. An instantaneous maximum NAL exceedance occurs when two (2) or more analytical results from samples taken for any single parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G) or are outside of the instantaneous maximum NAL range for pH.

The process for having storm water tests that do or do not trigger an Annual NAL exceedance or an Instantaneous maximum NAL exceedance is best describe by the following table from the IGP – Fact Sheet, page 45, and copied below.



13.6 Status Level

There are three status levels in the new Industrial General Permit: Baseline, Level 1 and Level 2. The reason for moving up to a different level is described below:

1. *Baseline Status*

At the beginning of a Discharger's NOI Coverage, all Dischargers have Baseline status for all parameters.

2. *Level 1 Status*

A Discharger's Baseline status for any given parameter shall change to Level 1 status if sampling results indicate an NAL exceedance for that same parameter.

Level 1 status will commence on July 1 following the reporting year during which the exceedance(s) occurred.²⁰

i. Level 1 ERA Evaluation

1. By October 1 following commencement of Level 1 status for any parameter with sampling results indicating an NAL exceedance, the Discharger shall:
2. Complete an evaluation, with the assistance of a QISP, of the industrial pollutant sources at the facility that are or may be related to the NAL exceedance(s); and,
3. Identify in the evaluation the corresponding BMPs in the SWPPP and any additional BMPs and SWPPP revisions necessary to prevent future NAL exceedances and to comply with the requirements of this General Permit. Although the evaluation may focus on the drainage areas where the NAL exceedance(s) occurred, all drainage areas shall be evaluated.

ii. Level 1 ERA Report

1. Based upon the above evaluation, the Discharger shall, as soon as practicable but no later than January 1 following commencement of Level 1 status :
 - a. Revise the SWPPP as necessary and implement any additional BMPs identified in the evaluation;
 - b. Certify and submit via SMARTS a Level 1 ERA Report prepared by a QISP that includes the following:
 - 1) A summary of the Level 1 ERA Evaluation ; and,
 - 2) A detailed description of the SWPPP revisions and any additional BMPs for each parameter that exceeded an NAL.
 - c. Certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address).
2. A Discharger's Level 1 status for a parameter will return to Baseline status once a Level 1 ERA report has been completed, all identified additional BMPs have been implemented, and results from four (4) consecutive QSEs that were sampled subsequent to BMP implementation indicate no additional NAL exceedances for that parameter.

iii. NAL Exceedances Prior to Implementation of Level 1 Status BMPs.

Prior to the implementation of an additional BMP identified in the Level 1 ERA Evaluation or October 1, whichever comes first, sampling results for any parameter(s) being addressed by that additional BMP will not be included in the calculations of annual average or instantaneous NAL exceedances in SMARTS

3. *Level 2 Status*

A Discharger's Level 1 status for any given parameter shall change to Level 2 status if sampling results indicate an NAL exceedance for that same parameter while the Discharger is in Level 1.

Level 2 status will commence on July 1 following the reporting year during which the NAL exceedance(s) occurred.²¹

i. Level 2 ERA Action Plan

1. Dischargers with Level 2 status shall certify and submit via SMARTS a Level 2 ERA Action Plan prepared by a QISP that addresses each new Level 2 NAL exceedance by January 1 following the reporting year during which the NAL exceedance(s) occurred. For each new Level 2 NAL exceedance, the Level 2 Action Plan will identify which of the demonstrations in subsection ii.a – c below the Discharger has selected to perform. A new Level 2 NAL exceedance is any Level 2 NAL exceedance for:
 - a. a new parameter in any drainage area, or
 - b. the same parameter that is being addressed in an existing Level 2 ERA Action Plan in a different drainage area.
2. The Discharger shall certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address) if this information has changed since previous certifications.
3. The Level 2 ERA Action Plan shall at a minimum address the drainage areas with corresponding Level 2 NAL exceedances.
4. The Discharger shall certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address) if this information has changed since previous certifications.
5. The Level 2 ERA Action Plan shall at a minimum address the drainage areas with corresponding Level 2 NAL exceedances.
6. All elements of the Level 2 ERA Action Plan shall be implemented as soon as practicable and completed no later than 1 year after submitting the Level 2 ERA Action Plan.
7. The Level 2 ERA Action Plan shall include a schedule and a detailed description of the tasks required to complete the Discharger's selected demonstration(s) as described below in Section ii.a through c.

ii. Level 2 ERA Technical Report

On January 1 of the reporting year following the submittal of the Level 2 ERA Action Plan, a Discharger with Level 2 status shall certify and submit a Level 2 ERA Technical Report prepared by a QISP that includes one or more of the following demonstrations:

1. Industrial Activity BMPs Demonstration

This shall include the following requirements, as applicable:

- a. Shall include a description of the industrial pollutant sources and corresponding industrial pollutants that are or may be related to the NAL exceedance(s);
- b. Shall include an evaluation of all pollutant sources associated with industrial activity that are or may be related to the NAL exceedance(s);
- c. Where all of the Discharger's implemented BMPs, including additional BMPs identified in the Level 2 ERA Action Plan, achieve compliance with the effluent limitations of this General Permit and are expected to eliminate future NAL exceedance(s), the Discharger shall provide a description and analysis of all implemented BMPs;
- d. In cases where all of the Discharger's implemented BMPs, including

additional BMPs identified in the Level 2 ERA Action Plan, achieve compliance with the effluent limitations of this General Permit but are not expected to eliminate future NAL exceedance(s), the Discharger shall provide, in addition to a description and analysis of all implemented BMPs:

- 1) An evaluation of any additional BMPs that would reduce or prevent NAL exceedances;
 - 2) Estimated costs of the additional BMPs evaluated; and,
 - 3) An analysis describing the basis for the selection of BMPs implemented in lieu of the additional BMPs evaluated but not implemented.
- e. The description and analysis of BMPs required in subsection 2.1.d above shall specifically address the drainage areas where the NAL exceedance(s) responsible for the Discharger's Level 2 status occurred, although any additional Level 2 ERA Action Plan BMPs may be implemented for all drainage areas; and,
- f. If an alternative design storm standard for treatment control BMPs (in lieu of the design storm standard for treatment control BMPs in Section X.H.6 in this Industrial General Permit) will achieve compliance with the effluent limitations of this General Permit, the Discharger shall provide an analysis describing the basis for the selection of the alternative design storm standard.

2. Non-Industrial Pollutant Source Demonstration

This shall include:

- a. A statement that the Discharger has determined that the exceedance of the NAL is attributable solely to the presence of non-industrial pollutant sources. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance.) The sources shall be identified as either run-on from adjacent properties, aerial deposition from man-made sources, or as generated by on-site non-industrial sources;
- b. A statement that the Discharger has identified and evaluated all potential pollutant sources that may have commingled with storm water associated with the Discharger's industrial activity and may be contributing to the NAL exceedance;
- c. A description of any on-site industrial pollutant sources and corresponding industrial pollutants that are contributing to the NAL exceedance;
- d. An assessment of the relative contributions of the pollutant from (1) storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition and (2) the storm water associated with the Discharger's industrial activity;
- e. A summary of all existing BMPs for that parameter; and,
- f. An evaluation of all on-site/off-site analytical monitoring data demonstrating that the NAL exceedances are caused by pollutants in storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition.

3. Natural Background Pollutant Source Demonstration

This shall include:

- a. A statement that the Discharger has determined that the NAL exceedance is attributable solely to the presence of the pollutant in the natural background that has not been disturbed by industrial activities. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance);
- b. A summary of all data previously collected by the Discharger, or other identified data collectors, that describes the levels of natural background pollutants in the storm water discharge;
- c. A summary of any research and published literature that relates the pollutants evaluated at the facility as part of the Natural Background Source Demonstration;
- d. Map showing the reference site location in relation to facility along with available land cover information;
- e. Reference site and test site elevation;
- f. Available geology and soil information for reference and test sites;
- g. Photographs showing site vegetation;
- h. Site reconnaissance survey data regarding presence of roads, outfalls, or other human-made structures; and,
- i. Records from relevant state or federal agencies indicating no known mining, forestry, or other human activities upstream of the proposed reference site.

iii. Level 2 ERA Technical Report Submittal

1. The Discharger shall certify and submit via SMARTS the Level 2 ERA Technical Report.
2. The State Water Board and Regional Boards (Water Boards) may review the submitted Level 2 ERA Technical Reports. Upon review of a Level 2 ERA Technical Report, the Water Boards may reject the Level 2 ERA Technical Report and direct the Discharger to take further action(s) to comply with this General Permit.
3. Dischargers with Level 2 status who have submitted the Level 2 ERA Technical Report are only required to annually update the Level 2 ERA Technical Report based upon additional NAL exceedances of the same parameter and same drainage area (if the original Level 2 ERA Technical Report contained an Industrial Activity BMP Demonstration and the implemented BMPs were expected to eliminate future NAL exceedances, facility operational changes, pollutant source(s) changes, and/or information that becomes available via compliance activities (monthly visual observations, sampling results, annual evaluation, etc.). The Level 2 ERA Technical Report shall be prepared by a QISP and be certified and submitted via SMARTS by the Discharger with each Annual Report. If there are no changes prompting an update of the Level 2 ERA Technical Report, as specified above, the Discharger will provide this certification in the Annual Report that there have been no changes warranting re-submittal of the Level 2 ERA Technical Report.
4. Dischargers are not precluded from submitting a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status if information is available to adequately prepare the report and perform the demonstrations

described above. A Discharger who chooses to submit a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status will automatically be placed in Level 2 in accordance to the Level 2 ERA schedule.

iv. Eligibility for Returning to Baseline Status

1. Dischargers with Level 2 status who submit an Industrial Activity BMPs Demonstration in accordance with subsection ii.1.a.through c above and have implemented BMPs to prevent future NAL exceedance(s) for the Level 2 parameter(s) shall return to baseline status for that parameter, if results from four (4) subsequent consecutive QSEs sampled indicate no additional NAL exceedance(s) for that parameter(s). If future NAL exceedances occur for the same parameter(s), the Discharger's Baseline status will return to Level 2 status on July 1 in the subsequent reporting year during which the NAL exceedance(s) occurred. These Dischargers shall update the Level 2 ERA Technical Report as required above in Section 3.iii.3.
2. Dischargers are ineligible to return to baseline status if they submit any of the following:
 - a. A industrial activity BMP demonstration in accordance with subsection ii.1.d above;
 - b. An non-industrial pollutant source demonstration; or,
 - c. A natural background pollutant source demonstration.

v. Level 2 ERA Implementation Extension

1. Dischargers that need additional time to submit the Level 2 ERA Technical Report shall be automatically granted a single time extension for up to six (6) months upon submitting the following items into SMARTS, as applicable:
 - a. Reasons for the time extension;
 - b. A revised Level 2 ERA Action Plan including a schedule and a detailed description of the necessary tasks still to be performed to complete the Level 2 ERA Technical Report; and
 - c. A description of any additional temporary BMPs that will be implemented while permanent BMPs are being constructed.
2. The Regional Water Boards will review Level 2 ERA Implementation Extensions for completeness and adequacy. Requests for extensions that total more than six (6) months are not granted unless approved in writing by the Water Boards. The Water Boards may (1) reject or revise the time allowed to complete Level 2 ERA Implementation Extensions,(2) identify additional tasks necessary to complete the Level 2 ERA Technical Report, and/or (3) require the Discharger to implement additional temporary BMPs

²⁰ For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status once those results have been reported

²¹ For all sampling results reported before June 30th of the preceding reporting year. If sampler results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status upon the date those results have been reported into SMARTS.

Revisions

The SWPPP will be revised to reflect recent changes. All changes to the SWPPP must be certified and submitted via SMARTS. If the changes have significant revision(s) the revised SWPPP must be submitted

within 30 days. However, when SWPPP revisions are not significant, it is required that they are submitted to SMARTs once every three months in the reporting year. It is up to the operator to determine what is significant or not. The SWRCB gave these examples of SWPPP revisions that are not considered significant: topographical fixes or minor clarifications. All changes to the SWPPP will be recorded on the SWPPP Amendment Form, Appendix H.

14.0 RECORD KEEPING

(IGP-Section X.H.1.g)

Records shall be kept onsite of all storm water related compliance activities for a minimum of five years. The materials that will be retained to document compliance with the NPDES storm water General Permit consist of the following:

- Copy of General Permit
- Copy of Notice of Intent
- SWPPP and future revisions
- All inspection forms related to storm water and BMPs
- Records of preventative maintenance activities related to storm water discharges
- Records of storm water monitoring for the Monitoring Implementation Plan (MIP)
- Annual reports submitted to the San Francisco Bay Regional Water Quality Control Board
- Records of spills and cleanup activities
- Employee training records, including course sign-in rosters
- Correspondences with regulatory agencies regarding storm water discharge
- Other materials that may be relevant to General Permit compliance

15.0 EMPLOYEE TRAINING PROGRAM

(IGP-Section: X.H.f.i-v)

15.1 Employee Training

The NPDES Industrial General Permit (IGP) requires that the SWPPP include training of personnel who are responsible for implementing activities identified in the SWPPP, conducting inspections, sampling and visual observations and managing storm water. The operator must establish a *Pollution Prevention Team* responsible for implementing the Industrial General Permit requirements: SWPPP, monitoring and BMPs. The operator must also assign a Qualified Industrial Stormwater Practitioner (QISP) who can assist with the IGP training requirements to train the appropriate team members. In addition, a QISP is required by the IGP to oversee the tasks required when a facility reaches Level 1 and Level 2.

This section details the spill response, good housekeeping and material handling procedures and actions necessary to implement all BMPs identified in the SWPPP. An Employee Training Manual is included in Appendix E.

Awareness and knowledge of storm water pollution is a key element of the SWPPP. All employees working in the active work area receive storm water training. The Quarry Operations Manager will review the SWPPP annually and report any changes to Freeman Associates and/or Triad/Holmes Associates for needed updates. However, any significant changes to the SWPPP and recent lab work will be reported immediately so that these changes can be submitted to SMARTs within 30 days. All training will be documented with a sign-in sheet, and a refresher course will be given annually. New employees go through an orientation about Company policies, safety procedures, and an on-site training at their specific work area.

The training includes:

- Information about NPDES permit requirements and potential penalties for violations;
- Instruction on storm water conveyance systems used at the site;
- Review of the sources of potential pollutants at the site; and the effects these pollutants can have on the receiving surface waters.
- Review of the BMPs used at the site and each employee's individual responsibilities for maintaining the effectiveness of the BMPs.
- Review of the updated SWPPP;

15.2 Training for Qualified Industrial Stormwater Practitioner (QISP)

The Industrial General Permit requires the use of a Qualified Industrial Stormwater Practitioner (QISP). The QISP is a person who has completed a State Water Board-sponsored or approved QISP training course, and has registered as a QISP via SMARTS. The State Water Board may require a competency exam.

The QISP will train the Pollution Prevention team members at the facility to perform their activities required by the IGP. When a Discharge rises to Level 1 status the QISP shall assist the discharger with: 1) an evaluation of the industrial pollutant sources that are or maybe related to exceedance of NALs and identify appropriate BMPs; and 2) completing the Level 1 status to get back to Baseline Level. When a Discharger rises to Level 2 status the QISP shall assist the discharger with completing the Level 2 status Exceedance Response Action (ERA) requirements.

15.3 Pollution Prevention Team (IGP Section X.D.1)

The Industrial General Permit requires identification of a team for Pollution Prevention. The duties of the Pollution Prevention Team (PPT) vary as shown in Table 7 below. Should a PPT member not be available to perform his/her duties then an alternative will be appointed to assume the missing PPT members duties. The alternative PPT member will be determined by the Quarry Operations Manager.

TABLE 7 POLLUTION PREVENTION TEAM	
Position	Duties And Activities
Quarry Operations Manager	Legally Responsible Person, SWPPP certification, implementation and monitoring, logistics
Project Engineer	Assistant for SWPPP implementation and monitoring, logistics
Alternates: Foremen	Assistant for SWPPP implementation and monitoring, logistics
Triad/Holmes Associates Consultant, QISP	SWPPP development/implementation, training, monitoring & reporting review, QISP

15.4 Staff training for Spill Prevention and Response

The spill prevention and response training for quarry staff who work with chemicals, petroleum and hazardous waste products shall include training on the items below.

- Inspecting storage areas to ensure that hazardous materials containers are in good condition;
- Looking for stains and drips from equipment; sheen on puddles or oil-stained soil; locating the source of such contamination and taking corrective actions;
- Transferring contents of leaky containers to new containers or packing them safely in larger containers (checking the MSDS for materials compatibility);
- Keeping a spill kit available, and maintaining supplies of absorbent materials, neutralizing agents, drums or trash cans, brooms, and shovels where significant amounts of materials are used in the hazardous materials storage areas, service areas and fueling areas; and
- Methods for cleaning up minor spills (generally, less than one gallon); and to notify Quarry Operations Manager of all spills, and to recognize conditions that require the assistance of emergency response agencies or contractors.
- Never washing down a spill with water.

15.5 Staff training for Good Housekeeping (IGP-Section X.H.1.a)

The SWPPP employee training program is intended to increase employee awareness of how their daily work activities and work areas contribute pollutants to storm water discharges, and to suggest ways that their work habits could be modified to reduce the amount of pollutants that could wash away in storm water.

15.6 Staff training on preventative Maintenance

Designated employees are instructed on preventative maintenance and the frequency in which they should be performed. These tasks shall include:

- Monthly and after major rain storm inspect all sediment ponds and sediment traps, drop inlets, metal storage tanks, concrete check dams, drainage ditches and swales to see if they are functioning properly;
- Monthly and after major rain storm clean-out sediment ponds, sediment traps, metal storage tanks and drop inlets prior, if needed to maintain maximum capacity and dispose of sediments properly.

15.7 Staff training for Materials Handling Procedures

The employee training for materials handling procedures shall include:

- Checking all fuel pumps and dispensing systems for leaks;
- Always staying next to the mobile fuel truck when fueling equipment or vehicles;

- Only allowing properly trained staff to handle hazardous materials; and
- Making sure that containers are compatible with the items stored.

15.8 Storm Water Inspections, Collection and Reporting

A designated employee shall be trained to perform the inspections of storm water conveyances, discharge points (aka Outfalls), and sources of potential pollutants at specified frequencies to identify potential discharges of contaminated run-off.

16.0 ANNUAL REPORTS

(IGP Sections XV & XVI)

16.1 Annual Report to Central Coast Regional Water Quality Control Board

Triad/Holmes Associates will assist the Legally Responsible Person, Sargent Quarry with the preparation and submittal of the annual report via SMARTS before July 15th each year. A copy of the annual report should be placed into this section. Triad Holmes Associates also maintain copies of these reports.

Section 16a
2016 – 2017 Storm Water Annual Report

Section 16b
20176 – 2018 Storm Water Annual Report

Section 16c
2018 – 2019 Storm Water Annual Report

Section 16d
2019 – 2020 Storm Water Annual Report

Section 16
2020 – 2021 Storm Water Annual Report

Maintain past 5 years of Annual Reports in this section.

17.0 NOTICE OF INTENT (NOI)

The Notice of Intent (NOI) for Sargent Quarry will be filed electronically with the State Water Resources Control Board using Storm Water Multiple Application and Report Tracking System (SMARTS).

APPENDICES

Appendix A: Glossary of Terms

Appendix B: Instructions for Conducting Inspections & Completing Forms

Appendix C: Inspection Forms

Appendix D: Stormwater Training Sign-In Sheet

Appendix E: Employee Training Manual

**Appendix F: General Permit for Storm Water Discharge Associated with Industrial Activities
(Order No. 2014-00570 DWQ)**

Appendix G: Permit Registration Documents

Appendix H: SWPPP Amendment Form

Appendix I: IGP – Table 2: Parameter NAL Values, Test Methods, and Reporting Units

Appendix J: List of Significant Spills and Leaks

Appendix K: BMPs

Appendix L: SWPPP Compliance Checklist

Appendix A: Glossary of Terms

GLOSSARY

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

Adoption Date April 1, 2014

Aerial Deposition

Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and time of year. Sources of airborne particulates include but are not limited to: dust, emissions from industrial processes, combustion products from the burning of wood and coal, combustion products associated with motor vehicle or non-road engine exhausts, and reactions to gases in the atmosphere. Deposition is the act of these materials being added to a landform.

Beneficial Uses

As defined in the California Water Code, beneficial uses of the waters of the state that may be protected against quality degradation, include but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Best Available Technology Economically Achievable (BAT)

As defined by United States Environmental Protection Agency (U.S. EPA), BAT is a technology-based standard established by the Clean Water Act (CWA) as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Best Conventional Pollutant Control Technology (BCT)

As defined by U.S. EPA, BCT is a technology-based standard for the discharge from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended sediment (TSS), fecal coliform, PH, oil and grease.

Best Professional Judgment (BPJ)

The method used by permit writers to develop technology-based NPDES permits conditions on a case-by-case basis using all reasonably available and relevant data

Best Management Practices (BMPs)

Scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Chain of Custody

Form used to track sample handling as samples progress from sample collection to the laboratory. The chain of custody is also used to track the resulting analytical data from the laboratory to the client. Chain of custody forms can be obtained from an analytical laboratory upon request.

Debris

Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste.

Detected Not Quantifiable

A sample result that is between the Method Detection Limit (MDL) and the Minimum Level (ML).

Discharger

A person, company, agency, or other entity that is the operator of the industrial facility covered by this General Permit.

Drainage Area

The area of land that drains water, sediment, pollutants, and dissolved materials to a common discharge location.

Effective Date

The date, set by the State Water Resources Control Board (State Water Board), when at least one or more of the General Permit requirements take effect and the previous permit expires. This General Permit requires most of the requirements (such as SMART's submittals, minimum BMPs, sampling and analysis requirements) to take effect on July 15, 2015.

Effluent

Any discharge of water either to the receiving water or beyond the property boundary controlled by the Discharger.

Effluent Limitation

Any numeric or narrative restriction imposed on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the United States, waters of the contiguous zone, or the ocean.

Erosion

The process by which soil particles are detached and transported by the actions of wind, water or gravity.

Erosion Control BMPs

Vegetation, such as grasses and wildflowers, and other materials, such as straw, fiber, stabilizing emulsion, protective blankets, etc., placed to stabilize areas of disturbed soils, reduce loss of soil due to the action of water or wind, and prevent water pollution.

Facility

A collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.

Field Measurements

Testing procedures performed in the field with portable field-testing kits or meters.

Good Housekeeping BMPs

BMPs designed to reduce or eliminate the addition of pollutants through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

Industrial Materials

Includes, but is not limited to: raw materials, recyclable materials, intermediate products, final products, by product, waste products, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge and that are used, handled, stored, or disposed in relation to a facility's industrial activity.

Method Detection Limit

The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

Minimum Level

The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Monitoring Implementation Plan

Planning document included in the Storm Water Pollution Prevention Plan (SWPPP). Dischargers are required to record information on the implementation of the monitoring requirements in this General Permit. The MIP should include relevant information on: the Monthly Visual Observation schedule, Sampling Parameters, Representative Sampling Reduction, Sample Frequency Reduction, and Qualified Combined Samples.

Monitoring Requirements

Includes sampling and analysis activities as well as visual observations.

Natural Background

Pollutants including substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from previous activity at a facility, or pollutants in run-on from neighboring sources which are not naturally occurring.

New Discharge(r)

A facility from which there is a discharge, that did not commence the discharge at a particular site prior to August 13, 1979, which is not a new source as defined in 40 Code of Federal Regulations 122.29, and which has never received a finally effective NPDES permit for discharges at that site. See 40 Code of Federal Regulations 122.2.

Numeric Action Level (NAL) Exceedance

Annual NAL exceedance - the Discharger shall determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data) and compare this to the corresponding Annual NAL values in Table 2. For Dischargers using composite sampling or flow measurement in accordance with standard practices, the average concentrations shall be calculated in accordance with the U.S. EPA Guidance Manual for the Monitoring and Reporting Requirements of the NPDES Multi-Sector Storm Water

General Permit.¹ An annual NAL exceedance occurs when the average of all the analytical results for a parameter from samples taken within a reporting year exceeds an annual NAL value for that parameter listed in Table 2 (or is outside the NAL PH range);

Instantaneous maximum NAL exceedance - the Discharger shall compare all sampling and analytical results from each distinct sample (individual or composite) to the corresponding Instantaneous maximum NAL values in Table 2. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G), or are outside of the instantaneous maximum NAL range (for PH).

Non Detect

Sample result is less than Method Detection Limit; Analyte being tested cannot be detected by the equipment or method.

¹ U.S. EPA. NPDES Storm Water Sampling Guidance Document. <<http://www.epa.gov/npdes/pubs/owm0093.pdf>>. [as of July 3, 2013]

Non-Storm Water Discharges (NSWDs)

Discharges that do not originate from precipitation events. Including but not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

Numeric Action Level (NAL)

Pollutant concentration levels used to evaluate if best management practices are effective and if additional measures are necessary to control pollutants. NALs are not effluent limits. The exceedance of an NAL is not a permit violation.

Operator

In the context of storm water associated with industrial activity, any party associated with an industrial facility that meets either of the following two criteria:

The party has operational control over the industrial SWPPP and SWPPP specifications, including the ability to make modifications to those plans and specifications

The party has day-to-day operational control of activities at the facility which are necessary to ensure compliance with a SWPPP for the facility or other permit conditions (e.g., authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

PH

Unit universally used to express the intensity of the acid or alkaline condition of a water sample. The PH of natural waters tends to range between 6.0 and 9.0, with neutral being 7.0.

Plastic Materials

Plastic Materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site.

Qualified Industrial Storm Water Practitioner (QISP)

Only required once a Discharger reaches Level 1 status, a QISP is the individual assigned to ensure compliance with this General Permit or to assist New Dischargers with determining coverage eligibility for discharges to an impaired water body. A QISP's responsibilities include implementing the SWPPP, performing the Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation), assisting in the preparation of Annual Reports, performing ERAs, and training appropriate Pollution Prevention Team members. The individual must take the appropriate state approved or sponsored training to be qualified. Dischargers shall ensure that the designated QISP is geographically located in an area where they will be able to adequately perform the permit requirements at all of the facilities they represent.

Qualifying Storm Event (QSE)

A precipitation event that:

Produces a discharge for at least one drainage area; and
Is preceded by 48 hours with no discharge from any drainage area.

Regional Water Board

Includes the Executive Officer and delegated Regional Water Board staff.

Runoff Control BMPs

Measures used to divert run-on from offsite and runoff within the site.

Run-on

Discharges that originate offsite and flow onto the property of a separate facility or property or, discharges that originate onsite from areas not related to industrial activities and flow onto areas on the property with industrial activity.

Scheduled Facility Operating Hours

The time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

Sediment

Solid particulate matter, both mineral and organic, that is in suspension, is being transported, or has been moved from its origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Sedimentation

Process of deposition of suspended matter carried by water, wastewater, or other liquids that flow by gravity. Control of sedimentation is accomplished by reducing the velocity of the liquid below the point at which it can transport the suspended material.

Sediment Control BMPs

Practices that trap soil particles after they have been eroded by rain, flowing water, or wind. Includes those practices that intercept and slow or detain the flow of storm water to allow sediment to settle and be trapped (i.e., silt fence, sediment basin, fiber rolls, etc.).

Sheet Flow

Flow of water that occurs overland in areas where there are no defined channels and where the water spreads out over a large area at a uniform depth.

Source

Any facility or building, property, road, or area that causes or contributes to pollutants in storm water.

Storm Water

Storm water runoff, snowmelt runoff, and storm water surface runoff and drainage.

Storm Water Discharge Associated With Industrial Activity

The discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

The term does not include discharges from facilities or activities excluded from the NPDES program. The term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials; manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 C.F.R. section 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 C.F.R. section 122.

Material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term

excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph) include those facilities designated under 40 C.F.R. section 122.26(a)(1)(v).

Structural Controls

Any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution.

Total Suspended Solids (TSS)

The measure of the suspended solids in a water sample including inorganic substances such as soil particles, organic substances such as algae, aquatic plant/animal waste, and particles related to industrial/sewage waste, etc. The TSS test measures the concentration of suspended solids in water by measuring the dry weight of a solid material contained in a known volume of a sub-sample of a collected water sample.

Results are reported in mg/L.

Toxicity

The adverse response(s) of organisms to chemicals or physical agents ranging from mortality to physiological responses, such as impaired reproduction or growth anomalies.

Trade Secret

Information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (1) derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Turbidity

The cloudiness of water quantified by the degree to which light traveling through a water column is scattered by the suspended organic and inorganic particles it contains. The turbidity test is reported in Nephelometric Turbidity Units (NTU) or Jackson Turbidity Units (JTU).

Waters of the United States

Generally refers to surface waters, as defined for the purposes of the federal Clean Water Act.

Water Quality Objectives

Defined in the California Water Code as limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Water Quality Standards

Consists of beneficial uses, water quality objectives to protect those uses, an antidegradation policy, and policies for implementation. Water quality standards are established in Regional Water Quality Control Plans (Basin Plans) and statewide Water Quality Control Plans. U.S. EPA has also adopted water quality criteria (the same as objectives) for California in the National Toxics Rule and California Toxics Rule.

ACRONYM LIST

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

ASBS	Areas of Special Biological Significance
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BPT	Best Practicable Control Technology Currently Available
CBPELSG	California Board for Professional Engineers, Land Surveyors and Geologists
DWQ	Division of Water Quality
ELGs	Effluent Limitations Guidelines and New Source Performance Standards
ERA	Exceedance Response Action
MS4	Municipal Separate Storm Sewer System
MSGP	Multi Sector General Permit
NAL	Numeric Action Level
NAICS	North American Industrial Classification System
NEC	No Exposure Certification
NEL	Numeric Effluent Limitation
NOI	Notice of Intent
NONA	Notice of Non Applicability
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NSWD	Non Storm Water Discharges
O&G	Oil and Grease
PRDs	Permit Registration Documents
QA/QC	Quality Assurance/Quality Control
QISP	Qualified Industrial Storm water Practitioner
QSE	Qualifying Storm Event
SIC	Standard Industrial Classification
SMARTS	Storm Water Multiple Application and Report Tracking System
SWPPP	Storm Water Pollution Prevention Plan
TBEL	Technology Based Effluent Limitation
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	United States Environmental Protection Agency

WDID Waste Discharge Identification Number
WQBEL Water Quality Based Effluent Limitation

Appendix B: Monitoring Implementation Plan

MONITORING IMPLEMENTATION PLAN

INSTRUCTIONS FOR CONDUCTING MONTHLY INSPECTIONS & COMPLETING FORMS

This packet contains all of the inspection forms for the Monitoring Implementation Plan. A schedule of inspections for each month is provided as well as simplified instructions for each type of inspection. The completed forms shall be removed in June of each year and submitted to Freeman Associates who will use the completed forms to enter the data into the State Water Resources Control Boards SMARTs website for preparation of the Annual Report that is due each July 15th.

The Pollution Prevention Team members who will conduct the monitoring inspections will include:

POLLUTION PREVENTION TEAM	
POSITION	DUTIES AND ACTIVITIES
Quarry Operations Manager	Legally Responsible Person, SWPPP certification, implementation and monitoring
Project Engineer	Assistant for SWPPP implementation and monitoring, logistics
Alternate: Forman	Assistant for SWPPP implementation and monitoring, logistics
Freeman Associates, Consultant	SWPPP development/implementation, Training, Monitoring & Reporting
Triad Holmes, Consultant, QISP	SWPPP development/implementation, Training, Monitoring & Reporting, QISP

Contents:

SECTION 1: Schedule

SECTION 2: Simplified Instructions

- Annual Comprehensive Facility Compliance Evaluation
- Monthly Visual Observation
- Monthly Visual Observation - Routine Inspection
- Monthly Visual Observation - Erosion Control Inspection
- Storm Water Sampling Instructions
- Ph Field Sampling Test
- Sampling Event Visual Observation

SECTION 3: Monthly Inspections and Forms (July to December and January to June)

SECTION 4: Outfall Location Description and Map

SECTION 5: SAMPLE: Chain of Custody

Section 1
SCHEDULE FOR COMPLETING SWPPP FORMS

Rain Season	Annual Comprehensive Facility Compliance Evaluation	Monthly Visual Observation	Monthly Visual Observation Routine Inspection	Monthly Visual Observation Erosion Control Inspection	Storm Water Sampling	Ph Field Sampling Test	Sampling Event Visual Observation
July		X	X	X	**	***	***
August		X	X	X	**	***	***
September		X	X	X	**	***	***
October		X	X	X	**	***	***
November		X	X	X	**	***	***
December		X	X	X	**	***	***
January		X	X	X	**	***	***
February		X	X	X	**	***	***
March		X	X	X	**	***	***
April		X	X	X	**	***	***
May		X	X	X	**	***	***
June	X ¹	X	X	X	**	***	***

NOTES:

** **Storm water samples** must be collected and tested twice during the time period between July 1 and December 31 each year, and twice between January 1 and June 30 each year. The storm water should be collected when there has not been any discharge at any Outfall for the prior 48 hours. Then after it rains and produces a discharge for at least one drainage area the storm water can be collected. The storm water samples shall be collected within the first four (4) hours of discharge during hours of operation. However, if a storm event occurs during unscheduled facility operating hours (e.g. during the weekend or night) and produces discharge during the 12 hours preceding the scheduled facility operating hours, the Dischargers is still responsible for obtaining samples within the first 4 hours of opening from the Outfalls that are discharging.

*** These inspections and tests shall be conducted at the same time that storm water samples are collected

¹ While the entire SWPPP is evaluated annually, the SWPPP must be updated routinely after there are changes. Should the Annual Evaluation identify changes that are necessary these revisions shall be made within 90 days of the Annual Evaluation. Significant changes made to the SWPPP must be up-dated and submitted to SMARTs within 30 days of the change. For minor changes the SWPPP must be up-dated and submitted to SMARTS once every quarter (3 months).

KEY DATES and TIME PERIODS

Calendar Dates:

- **July 1st, 2015** submit to SMARTs all PDRs
- **July 1st** is when discharger with exceedances will move up a Level; or if corrective measures and BMPs prevented an NAL for four consecutive storm water samples after having to move up a Level, than discharger shall return to Baseline Level (exceptions if submitted pollutant source demonstration reports)
- **July 15th** Annual Report due via SMARTs
- **October 1st:** following commencement of Level 1 status must:
 - complete a Level 1 ERA Evaluation of Industrial Pollutant sources that might contribute to NAL exceedance
 - Identify corresponding BMPs that should mitigate the pollutant and identify any additional BMPs and SWPPP revisions necessary to prevent future NAL exceedances
- **January 1st** or earlier discharger must revise SWPPP and implement BMPS identified in the Level 1 ERA Evaluation; and certify and submit to SMARTs
- **January 1st** or before a Level 2 ERA Action Plan must be certified and submitted to SMARTs
- **January 1st** following submittal of the Level 2 ERA Action Plan, a Level 2 ERA Technical Report shall be submitted including one or more demonstration reports

Other Due dates:

- Revision made to SWPPP in Annual Report must be implemented within 90 days
- Storm Water lab tests must be submitted via SMARTs within 30 days or receipt of the tests
- Significant changes to SWPPP must be reported to SMARTs within 30 days
- Minor changes to SWPPP must be reported to SMARTs each quarter
- Level 2 ERA Action Plan elements must be implemented as soon as practicable and completed no later than 1 year after submitted to SMARTs
- For all sampling results reported before June 30th of the preceding reporting year. If sampler results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status upon the date those results have been reported into SMARTS.

Section 2
SIMPLIFIED INSTRUCTIONS FOR EACH INSPECTION

ANNUAL COMPREHENSIVE FACILITY COMPLIANCE EVALUATION Sargent Creek Quarry

A. WHEN TO CONDUCT THE REVIEW (IGP – Sections XV & XVI.A)

- 1) The Annual Evaluation will be performed by a SWPPP Pollution Prevention team member in June of each year. The operation's Annual Report must be submitted via SMARTS to the Regional Water Board by July 15th each year.
- 2) The Annual Evaluation shall not be fewer than eight (8) months, or more than sixteen (16) months after the previous Annual Evaluation. If it is then the discharger must explain why

B. PURPOSE

To identify areas at the facility which are contributing pollutants to the industrial storm water discharge; and to evaluate if measures to reduce or prevent pollutants are adequate and properly implanted, and to determine whether additional control measures are needed.

C. ANNUAL REPORT SUBMITAL (IGP – Section XVI.B)

- 1) A Compliance Checklist that indicates whether a Discharger complies with, and has addressed all applicable requirements of this General Permit, Appendix L.
- 2) An explanation for any non-compliance of requirements within the reporting year, as indicated in the Compliance Checklist;
- 3) An identification, including page numbers and/or sections, of all revisions made to the SWPPP within the reporting year; and
- 4) The date(s) of the Annual Evaluation.

D. COMPLETING THE FORM

- 1) Fill in the date and provide the name and title of the responsible SWPPP Pollution Prevention team member reviewing the SWPPP and preparing this Annual Evaluation.
- 3) On the first page of the form, review relevant documents and visually inspect the site to complete the seven (7) items on this page.
- 4) On the first page of the form, describe in the third column any changes in site conditions and/or storm water management practices impacting the SWPPP that corresponds with each item in the first column. Record the location of the changed pages in the fourth column and add the date that the SWPPP was modified in the last column.

Example of Changes:

- a) Minor change: Adding or deleting a check mark from a Table, the changes can be marked and dated on the existing page of the SWPPP. Minor changes include but are not limited to: typographical fixes or minor clarifications. Minor changes to the SWPPP must be reported to the Regional Water Board via SMARTS every 3 months.
 - b) Significant change: Revision of SWPPP Site Map such as a change in the facility layout (e.g., new building, change in storage locations, boundary change, new structural BMP, etc.) will result in replacement of the SWPPP Map and any text pages with changes. The date of the change should be written on new page. Old page (replaced page) should be kept in the permanent records file; and dated when it was superseded. Significant changes to the SWPPP must be reported to the Regional Water Board via SMARTS within 30 days of the significant revision(s).
- 3) On the second page of the form, the SWPPP Elements are in the first column. Review these sections in the SWPPP to complete this page. In the second column check yes if there were no changes. In the 3rd column describe changes made to the SWPPP to reflect changes made at the site or to BMP's that were added or modified. In the fourth column note the page numbers in the SWPPP where these changes were made. In the last column write the date the SWPPP was modified.
 - 4) The responsible Pollution Prevention Team (PPT) member must review and sign the forms, and ensure that the SWPPP has been revised as needed.
 - 6) The Annual Comprehensive Facility Compliance Evaluation Forms should be kept with the SWPPP Binder for five years.

E. CHANGES TO THE SWPPP (IGP- Section XV)

If the Annual Comprehensive Facility Compliance Evaluation Form indicates that changes must be made to the SWPPP, these changes must be made and implemented and submitted to SMARTs within 90 days. These changes should also be recorded on the SWPPP Amendment Form, Appendix H.

F. RECORDS:

The Monthly Visual Inspection - Routine Maintenance Form should be kept for five years with the SWPPP Binder.

* SWPPP - Storm Water Pollution Prevention Plan

MONTHLY VISUAL OBSERVATION INSPECTION FORM 1 SITE INSPECTION

A. WHEN AND WHO TO CONDUCT VISUAL OBSERVATIONS

1. Each month, all year.
2. Trained Pollution Prevention Team members should visually inspect each area of the site, the drainage system and the storm water outfall/discharge location(s), and then complete the form

B. COMPLETING THE FORM

1. The Pollution Prevention Team (PPT) member should sign and date the form
2. The PPT shall visually inspect the site and observe for Unauthorized Non-Storm Water Discharges and *Authorized* Non-Storm Water Discharges at each area of the site indicated in the first column
3. If water is being discharged it should be indicated in the last two columns for the appropriate site area.
4. This form shall be placed in the SWPPP Binder and kept for a minimum of five years.

**MONTHLY VISUAL OBSERVATION INSPECTION
FORM 2
ROUTINE MAINTENANCE**

A. WHEN TO CONDUCT THE INSPECTION

1. The inspection should be conducted monthly at the same time as the Visual Observation Inspection – Form 1.

B. COMPLETING THE FORM

1. Fill in the date and provide the name of the inspector.
2. Add or delete check marks to the third column for the potential source of pollutants that may be found on the site that are indicated on Columns 1 and 2.
3. Inspect all areas which are checked/identified by the third column. In the fourth column record whether there is any evidence of spills/leaks, or "poor housekeeping", or an ineffective BMP. If the answer is yes, describe the situation and required corrective actions in the last column.
4. The responsible Pollution Prevention Team (PPT) member must review and sign the form at the bottom. The responsible PPT member must ensure that any corrective actions have been implemented.
5. The Monthly Visual Inspection - Routine Maintenance Form should be kept for five years with the SWPPP Binder.

**MONTHLY VISUAL OBSERVATION INSPECTION
FORM 3
EROSION CONTROL INSPECTION**

A. WHEN TO CONDUCT THE INSPECTION

1. The inspection should be conducted monthly at the same time as the Visual Observation Inspection – Form 1.
2. Inspect all areas prone to erosion as identified in column one. Indicate in the second column if there is any evidence of erosion. If there is evidence of erosion, indicate in the third column if the erosion control measures are functioning properly.
3. If erosion is identified in the second column and the erosion control measures are not functioning properly, then in the fourth column describe the condition and what the necessary corrective actions might be.
4. The responsible Pollution Prevention Team (PPT) member shall review the Monthly Visual Observation Inspection - Erosion Control Form and identify what corrective actions are required, and indicate the date that they were completed. The responsible PPT member should sign and date the Inspection Form on the last page.
5. The Monthly Visual Observation Inspection - Erosion Control Form should be kept with the SWPPP Binder for five years.

STORM WATER SAMPLING AND ANALYSIS INSTRUCTIONS

A. WHEN TO COLLECT WATER SAMPLE

1. Collect water samples during the first storm that generates discharge after a minimum of 48 hours without any discharges at any Outfall of the facility. Storm water samples must be collected two times between January 1st and June 30th, and two times between July 1st and December 31st.
2. Take samples either:
 - a) within 4 hours after discharge began during hours of operation

OR

 - b) if discharge began during 12 hours when facility was closed, storm water samples must be collected within 4 hours after operation opens.
3. Samples should be taken during scheduled operating hours (including normal office hours, delivery or loading of raw materials or products, quarry processing).

B. SAMPLING EQUIPMENT FROM THE LABORATORY

1. Be sure to always have the necessary storm water sampling bottles. Order them from the laboratory to arrange to pick up: **ACCUTEST Laboratories: (408) 588-0200.**
2. The 8 storm water sampling tests that you will be conducting include:
 - **TSS** (Total Suspended Solids)
 - **O+G** (Oil and Grease)
 - **N+N as N** (Nitrate & Nitrite as N)
 - **Fe** (Iron, total)
3. Go to the lab to pick up the storm water sampling bottles and a **Chain of Custody Form:** **ACCUTEST Laboratories**
2105 Lundy Avenue
San Jose, CA 95131
4. **The sampling bottles and Chain of Custody form should be kept in a cooler**, either supplied by the lab or you. You should also have some “blue ice” available in the office freezer to put into the cooler after you collect the storm water samples.

5. You should have a pair of **latex gloves** to protect your hands from the preservatives in some of the bottles, and also to prevent contamination of the bottles and the storm water from your hands.

C. PREPARING FOR WATER SAMPLES

1. **Monitor weather reports** when rainfall is anticipated, prepare for water sampling by taking out sampling equipment.
2. Monitor each Outfall to confirm that none of them are discharging. Storm water samples are only collected if there has been 48 hours of no discharge at any of the outfalls and then with a rain event one of the Outfalls begins to discharge and samples are collected within 4 hours; or discharge began 12 hours previously when the operation was closed, and samples should be collected within 4 hours of opening.
3. **Fill out labels** on water sample bottles with a permanent marker pen. Write on the label: the facility's name, Outfall Number; and date and time the samples were collected. (Do this before the water samples are taken).
4. **Fill out Chain of Custody** form just before or just after the water samples have been taken.
 - a) Copy the information from the attached SAMPLE Chain of Custody form onto your Chain of Custody form; be sure to write the analyses:
 - **TSS, O&G, N+N as N, and Fe**
5. Monitor the Outfall for discharge and then collect samples within 4 hours from the time discharge commences; or 4 hours after opening if discharge began 12 hours before when operation was closed.

When you are ready to collect samples you should:

- 1) Write the time on the Storm Water Sampling & Analysis Form where it says "Time Discharge Began"; and where it says "Time of Sample Collection"
- 2) Water samples should be collected within 4 hours after discharge began or if discharge began 12 hours before the operation opened, then samples should be collected within four hours of opening business.

D. TAKING WATER SAMPLES:

(to be done by a responsible Pollution Prevention team member)

1. Collect the water sample within 4 hours after discharge began during hours of operation; or if discharge began 12 hours before the operation opened, then samples should be collected within four hours of business opening.
2. Record time and date rain began on the **Storm Water Sampling & Analysis Form.**

3. **Caution:**
 - a. do not open sample bottles until you are ready to use them;
 - b. do not touch the rim of the bottles or caps with your hands;
 - c. do not put the top of the bottle on the ground or into your pocket; put it in a clean and safe place such as a clean plastic bag;
 - d. do not get acid on you from the small glass bottles;
 - e. keep bottle caps clean.

4. **Collecting the water samples:**
 - a. Put on latex gloves;
 - b. Use the large plastic sample bottle from the lab to collect the water samples; or collect it directly in the different containers from the lab. (only collect water samples in the containers from the laboratory; otherwise you may contaminate the samples)
 - c. Collect water directly into larger plastic bottle from the middle of the water column (avoid collecting surface water or water from the bottom).
 - d. Carefully pour water from the plastic bottle into the sampling bottles with preservatives. Fill to just below the rim; be careful not to overfill or spill because these bottles have acid in them. Replace the bottle cap.
 - e. Repeat steps b and c to refill any other plastic bottles to the rim. Replace bottle cap.
 - f. Immediately put all of the sample bottles into a cooler with Blue Ice making sure that the sample bottles are secure and won't fall over. Samples should be kept as close to 4 degrees Celsius (39 degrees Fahrenheit) as possible until arriving to the laboratory. Do not freeze samples.
 - g. Immediately take to the laboratory.

5. **Measuring PH using the calibrated portable PH meter:**
 - a. PH test should be obtained within 15 minutes of the storm water tests.
 - b. Follow manufacturer's instructions for operation and maintenance of the meter.
 - c. See instructions at the Field PH Test Sampling instructions.

E. GETTING WATER SAMPLES TO THE LABORATORY

1. Take Water Samples to the laboratory drop off yourself.
 - a. Deliver the water sample cooler as soon as possible

Accutest Laboratories 2105 Lundy Avenue San Jose, CA
between 8:00 A.M. to 6:00 P.M., Monday through Friday

- b. Fill out Chain of Custody form and have laboratory sign it. You should take the pink copy for your file.

- c. Tell the Laboratory that you are testing for storm water and that the analysis should be done in accordance with [40 Code of Federal Regulations part 136](#).

F. PREPARING FOR THE SECOND WATER SAMPLE

1. While you are at the lab pick up the next set of storm water sampling bottles. You'll need storm water sampling bottles for: TSS, O+G, N+N as N, and Fe.

OR

2. Call ACCUTEST Laboratories at (408) 588-0200 and tell them who you are and that you will be coming in to pick up another Water Sampling Kit to test Storm Water. Go to lab and get the test kit well before your second sample should be collected.

G. OTHER FORMS AND TASKS TO PERFORM AT THIS TIME

1. Fill out the: SAMPLING EVENT VISUAL OBSERVATION FORM
2. Keep all of the completed forms and chain of custody for at least five (5) years.

REMINDER

1. Take Field Ph test at same time as water sample and enter the results onto the Chain of Custody and onto the Field Ph Test Sampling form.
2. Dischargers are required to report to the Water Board any sampling data collected more frequently than required in the Industrial General Permit (Section XXI.J.2)

SAMPLING EVENT VISUAL OBSERVATION FORM

A. WHEN TO CONDUCT THE INSPECTION

1. The inspection should be performed when storm water samples are collected. Storm water samples should be collected twice between January 1st to June 30th and twice between July 1st and December 31st.
2. The observation should be conducted during dry weather.

B. PURPOSE OF NON-STORM WATER DISCHARGE VISUAL OBSERVATION

The purpose of this inspection is to ensure that non-storm water discharge does not occur; exceptions are "authorized" non-storm water discharges such as springs and groundwater or even delayed stormwater runoff. These authorized non-storm water discharges should be kept away from industrial activity and potential pollutants, where feasible. If a discharge is observed it must be noted and described on the supplemental form.

C. COMPLETING THE FORM

- 1) Fill in the date and time of the inspection. Also provide the name of the person conducting the inspection and describe the weather conditions at the time of the inspection.
- 2) Observe each outfall and indicate in the Non-Storm Water Discharge Visual Observation Form if water is being discharged.
- 3) If water is being discharged, then complete the "Supplemental Form". Prepare a separate Supplemental Form for each outfall where discharge has been observed. Note the physical characteristics of the water and identify the potential sources of water on the form, and measure and note on the form the pH of the discharge.
- 4) The responsible SWPPP Team member should review the Supplemental Form and complete the bottom portion of the form. Corrective actions, if required, should be indicated and the date the corrective actions were completed should be provided. The responsible SWPPP Team member is responsible for ensuring that the corrective actions are implemented.
- 5) These Forms should be kept with the SWPPP Binder for five years.

FIELD PH TEST SAMPLING FORM

A. WHEN TO CONDUCT FIELD PH MEASUREMENT

1. The PH measurement should be conducted within 15 minutes of the Storm Water Sampling tests
2. A trained Pollution Prevention Team member should conduct this test.

B. BEFORE THE STORM

1. Obtain a calibrated portable PH meter with a wide range meter that has the ability to read PH within 15 minutes of sample collection
2. Prepare and calibrate the portable PH meter following manufacturer's specifications to ensure accurate measurements.
3. The PH meter should be calibrated before each measurement; and it should be rinsed with distilled water and blotted dry with a scientific wipe to absorb any remaining water after each use.
4. Assemble items necessary to collect and test storm water from the Outfall(s).

C. DURING STORM

1. Record time on the Field Ph Test Sampling Form when discharge from the Outfall(s) began and when sample was collected.
2. Get a clean styrofoam cup for each Outfall.
3. Collect water in a styrofoam cup at the same time that you collect your Storm Water samples for the laboratory.
4. Place the PH electrode into Styrofoam cup until the results show up on the register
5. Remove the electrode from the water cup when the reading shows up on the register. Write down the results onto the appropriate forms.
6. Rinse the electrode with distilled water and dab dry with a scientific wipe to remove excess water.
7. Record the pH on the Chain of Custody Form.

SAMPLING EVENT VISUAL OBSERVATION FORM

A. WHEN TO CONDUCT THE INSPECTION

1. The inspection should be performed quarterly, and be spaced approximately 6 to 18 weeks apart. (The months of January, April, July and October were selected for our purposes).
2. The observation should be conducted during dry weather.

B. PURPOSE OF NON-STORM WATER DISCHARGE VISUAL OBSERVATION

The purpose of this inspection is to ensure that non-storm water discharge does not occur; exceptions are "authorized" non-storm water discharges such as springs and groundwater or even delayed stormwater runoff. These authorized non-storm water discharges should be kept away from industrial activity and potential pollutants, where feasible. If a discharge is observed it must be noted and described on the supplemental form.

C. COMPLETING THE FORM

1. Fill in the date and time of the inspection. Also provide the name of the person conducting the inspection and describe the weather conditions at the time of the inspection.
2. Observe each outfall and indicate in the Non-Storm Water Discharge Visual Observation Form if water is being discharged.
3. If water is being discharged, then complete the "Supplemental Form". Prepare a separate Supplemental Form for each outfall where discharge has been observed. Note the physical characteristics of the water and identify the potential sources of water on the form, and measure and note on the form the pH of the discharge.
4. The responsible SWPPP Team member should review the Supplemental Form and complete the bottom portion of the form. Corrective actions, if required, should be indicated and the date the corrective actions were completed should be provided. The responsible SWPPP Team member is responsible for ensuring that the corrective actions are implemented.
5. These Forms should be kept with the SWPPP Binder for five years.

Section 3

MONTHLY INSPECTIONS AND FORMS

(Refer to Appendix C for Inspection Forms)

Section 4

OUTFALL LOCATION DESCRIPTION

There are two outfall location within Sargent Quarry. Pit #1 is located at the southern portion of the mining site. A new swale on the east side of Pit #1 outlets into Sargent Creek. Swales around Pit #2 also discharge into Sargent Creek at approximately same location.

Pit #3 is located west of the plant site and will be excavated during Phases 3 and 4 of the mining project. The concentrated flow is proposed to be conveyed via a 36" culvert located between Pit #3 and Overburden Stockpile. The culvert will extend further southeast under the access road and outlet at the natural drainage depression, as in historic conditions.

Refer to Figure 2 for drainage facilities and outfall locations.

Section 5

SAMPLE CHAIN OF CUSTODY FORM



CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
 (408) 588-0200 FAX: (408) 588-0201

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest NC Job #: C

Client / Reporting Information			Project Information			Requested Analysis										Matrix Codes												
Company Name			Project Name:													WW- Wastewater												
Address			Street													GW- Ground Water												
City State Zip			City State													SW- Surface Water												
Project Contact:			Project #													SC- Soil												
Phone #			EMAIL:													OK-Oil												
Samplers' Name			Client Purchase Order #													WP-Wipe												
SGS Accutest Sample ID			Collection			Number of preserved Bottles										LIQ- Non-aqueous Liquid												
Sample ID / Field Point / Point of Collection			Date	Time	Sampled by	Matrix	# of bottles	IC1	INSH	IRSD3	IRSD4	IRSD5	IRSD6	IRSD7	IRSD8	IRSD9	IRSD10	IRSD11	IRSD12	IRSD13	IRSD14	IRSD15	IRSD16	IRSD17	IRSD18	IRSD19	IRSD20	LAB USE ONLY
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks																						
<input type="checkbox"/> 10 Day <input type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day <input type="checkbox"/> Same Day			Approved By/ Date:			<input type="checkbox"/> Commercial "A" - Results only <input type="checkbox"/> Commercial "B" - Results with QC summaries <input type="checkbox"/> Commercial "B+" - Results, QC, and chromatograms <input type="checkbox"/> FULT1 - Level 4 data package <input type="checkbox"/> EDF for Geotracker <input type="checkbox"/> EDD Format _____ Provide EDF Global ID _____ Provide EDF Logcode: _____																						
Emergency T/A data available VIA Lablink			Sample Custody must be documented below each time samples change possession, including courier delivery.																									
Relinquished by Sampler:			Date Time:	Received By:			Relinquished By:			Date Time:	Received By:																	
1				1			2				2																	
Relinquished by:			Date Time:	Received By:			Relinquished By:			Date Time:	Received By:																	
3				3			4				4																	
Relinquished by:			Date Time:	Received By:			Custody Seal #	Appropriate Bottle / Pres. Y / N	Headspace Y / N	On Ice Y / N	Cooler Temp.																	
5				5				Labels match Coc? Y / N	Separate Receiving Check List used: Y / N																			

NOTE: Be sure to add the proper EPA test method onto your form as shown above in the 'Requested Analysis' column.

Appendix C: Inspection Forms

ANNUAL COMPREHENSIVE FACILITY COMPLIANCE EVALUATION

To be filled out by reviewer.

Review Date: _____

Reviewer: _____

SWPPP (General Permit Section)	Not Applicable	Describe revisions made to SWPPP to reflect changes/differences identified at the site	SWPPP page # or Reference Location	Date implemented or last revised
1. Review of all visual inspection and monitoring records & sampling and analysis results (IGP: Section XV.A)				
2. Visual inspection of all areas of industrial activity & associated potential pollutant sources (IGP: Section XV.B)				
3. Visual inspection of all drainage areas previously identified as having no-exposure to industrial activities and materials (IGP: Section XV.C)				
4. Visual inspection of equipment needed to implement the bmps (IGP: Section XV.D)				
5. Visual inspection of any structural and/or treatment control BMPs (IGP: Section XV.E)				
6. Review & assessment of all BMPs for each area of industrial activity & associated potential pollutant sources (IGP: Section XV.F)				
7. Assessment of other factors needed to comply with SWPPP and IGP (IGP: Section XV.G)				
Continuation of Annual Comprehensive Facility Compliance Evaluation Form				

Page 2				
SWPPP Element	Not Applicable	Describe revisions made to SWPPP to reflect changes/differences identified at the site	SWPPP page #	Date Implemented or Last Revised
Site Map (Figures 2-5)				
List of Significant Industrial Materials (Table 3)				
Pollutant Sources (Table 4)				
Source-Specific BMP's (Table 4)				
Facility-Wide BMP's (Section 8.0)				
Sedimentation and Erosion Control (Table 6)				
Spill Prevention and Response (Table 5)				
Monitoring Inspection (Table 7)				
Pollution Prevention Team (Table 8)				
Record Keeping Procedures (Section 14)				
Employee Training Program (Appendix E)				
Chain of Custody				

To be filled out by person responsible for SWPPP implementation.

I have reviewed the above table and have supervised revisions to the SWPPP, as needed.

CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Signature: _____ Position: _____

Date: _____

MONTHLY VISUAL INSPECTION FORM – 1 SITE INSPECTION

Inspector(s): _____

Date and Time: _____

Weather: _____

Drainage Areas, Equipment/Processing Areas & Outfall(s)	Description of Observations**		Water Being Discharged	
	Unauthorized Non-Storm Water Discharges	Authorized Non-Storm Water Discharges	Yes	No
Plant Site – Processing Area				
Plant Site – Equipment Maintenance				
Plant Site – Stockpile Areas				
Plant Site – Boneyard				
Plant Site – Fuel Area				
Plant Site – Parking Lot				
Plant Site – Office/Scale Area				
Mining Pit #1 – Equipment Parking/Porta Potties				
Mining Pit #2 – Equipment Parking/Porta Potties				
Mining Pit #3 – Equipment Parking/Porta Potties				
Access Road to Pits #1 and #2				
Outfall #1 (Culvert at Pit #3)				
Outfall #2 (Sargent Creek at Pits #1 and #2)				

* “Non-storm water discharge” (NSWD) is runoff that is created by something other than rainfall or delayed rainfall runoff

- a) “authorized” non-storm water runoff:
 - ground water
 - spring water

- b) “unauthorized” non-storm water runoff:
 - washing off building or paved areas
 - vehicle washing

** **Observations should look for:**

- a) Presence or indication of prior, current, or potential unauthorized NSWs and their sources;
- b) Presence of authorized NSW, sources and associated BMPs; and
- c) Indicate if observe: Odor, Debris, Sheen, Turbidity or Color

To be filled out by person responsible for SWPPP implementation.

Have identified corrective actions been implemented to correct deficiencies noted during inspection?

() Yes () No Date corrective actions completed: _____

Signature: _____

Date: _____

MONTHLY VISUAL INSPECTION FORM-2 ROUTINE MAINTENANCE

To be completed at the same time as the Monthly Visual Inspection Form

Date: _____

Inspector(s): _____

Potential Sources	Check if inspected	Is there evidence of spills/leaks or poor housekeeping, or ineffective BMP		Describe condition and necessary corrective measure
		Yes	No	
Areas inspected		Yes	No	
1	Aggregate stockpiles			
2	Aggregate processing			
3	Mining areas			
4	Aggregate handling			
5	Equipment maintenance			
6	Air compressors			
7	Battery storage			
8	Used brake pads			
9	Lubricant storage			
10	Fueling Area			
11	Hazardous materials storage			
12	Hazardous waste storage			
13	Dumpsters w/Lids			
14	Paved parking & outside storage			
15	Unpaved parking & outside storage			
16	Boneyard/surplus equipment storage			
17	Storm water collection			
18	Unpaved Road			

To be filled out by person responsible for SWPPP implementation.

Have identified corrective actions been implemented to correct deficiencies noted during inspection?

() Yes () No

Date corrective actions completed: _____

Signature: _____

Date: _____

**MONTHLY VISUAL INSPECTION FORM-3:
EROSION CONTROLS
PLANT SITE**

To be completed at the same time as the Monthly Visual Inspection Form

Inspector: _____

Date: _____

Locations of Potential Erosion	Is there any evidence of erosion?		Are Erosion Control Measures Functioning Properly?		Describe condition and necessary corrective action
	Yes	No	Yes	No	
Earthen drainage ditches					
Berms around Tar Creek					
Sediment Basin					
Entrance/Exits to Culverts					
Unpaved areas					
Product Stockpiles					
Haul roads					

To be filled out by person responsible for SWPPP

Have identified corrective actions been implemented to correct deficiencies noted during inspection? Yes () No ()

Date corrective actions completed: _____

Signature: _____

Date: _____

**MONTHLY VISUAL INSPECTION FORM-3:
EROSION CONTROLS
Pit #1 and Pit #2**

To be completed at the same time as the Monthly Visual Inspection Form

Inspector: _____

Date: _____

Locations of Potential Erosion	Is there any evidence of erosion?		Are Erosion Control Measures Functioning Properly?		Describe condition and necessary corrective action
	Yes	No	Yes	No	
Drainage Swales					
Storm water discharge Point (Outfall #2)					
Entrance/Exits to Culverts					
Unpaved areas					
Product Stockpiles (if any)					
Excavated Slopes					
Haul Roads					

To be filled out by person responsible for SWPPP

Have identified corrective actions been implemented to correct deficiencies noted during inspection? Yes () No ()

Date corrective actions completed: _____

Signature: _____

Date: _____

MONTHLY VISUAL INSPECTION FORM-3: EROSION CONTROLS

Pit #3

To be completed at the same time as the Monthly Visual Inspection Form

Inspector: _____

Date: _____

Locations of Potential Erosion	Is there any evidence of erosion?		Are Erosion Control Measures Functioning Properly?		Describe condition and necessary corrective action
	Yes	No	Yes	No	
Drainage Swales					
Storm water discharge Point (Outfall #1)					
Entrance/Exits to Culverts					
Unpaved areas					
Product Stockpiles (if any)					
Excavated Slopes					
Haul Roads					

To be filled out by person responsible for SWPPP

Have identified corrective actions been implemented to correct deficiencies noted during inspection? Yes () No ()

Date corrective actions completed: _____

Signature: _____

Date: _____

**MONTHLY VISUAL INSPECTION FORM-3:
EROSION CONTROLS**
Access Road to Pits #1 and #2

To be completed at the same time as the Monthly Visual Inspection Form

Inspector: _____

Date: _____

Locations of Potential Erosion	Is there any evidence of erosion?		Are Erosion Control Measures Functioning Properly?		Describe condition and necessary corrective action
	Yes	No	Yes	No	
Entrance/Exits to Culverts					
Haul Roads					

To be filled out by person responsible for SWPPP

Have identified corrective actions been implemented to correct deficiencies noted during inspection? Yes () No ()

Date corrective actions completed: _____

Signature: _____

Date: _____

STORM WATER SAMPLING & ANALYSIS FORM

OUTFALL # 1

(Outlet from Culvert at Pit #3)


To be filled out by inspector.

Date: _____ Number of Outfall: 1

Sampler Name: _____

Destination Lab: _____ Lab Phone: _____

Parameters Lab to tests: _____

 Ph Measured in Field _____ Ph units
(take photo of meter reading & write units onto Chain of Custody form)

Delivery date/time:	Personnel making Delivery to Lab:	Chain of Custody Number:

Type of Outfall:

- Tank Discharge/Outfall
- Pond Outfall/ Weir*
- Ditch Outfall
- Pipe Outfall
- Drop Inlet

Time Discharge Began: _____ () AM () PM

Time of Sample Collection: _____ () AM () PM

Provide an explanation if sample were not collected within 4 hours from:

- a) the beginning of discharge during business hours; or
- b) when the operation opened, if storm/discharge began within the previous 12 hours

* If discharge from tank/pond does not occur during a storm event, i.e. storm water is retained for subsequent discharge, record the date of the most recent storm that produced significant storm water discharge.

LAB RESULTS NEED TO BE SUBMITTED VIA E-MAIL to:
tplatz@thainc.com

SAMPLING EVENT VISUAL OBSERVATION FORM

OUTFALL #1

(Outlet from Culvert at Pit #3)

Fill out form at the same date and time THAT the Storm Water is collected.

Date: _____

Time: _____ Weather: _____
(Hours of operation) (Dry weather only)

Inspector(s): _____

Rainfall event information:

Time Discharge Began: _____ () AM () PM

Time Samples Collected: _____ () AM () PM

To be completed by person responsible for SWPPP implementation (after reviewing inspection logs)

1. Was discharge from overflow or was pond discharged by operator? Overflow () Manuel ()
2. Was the storm water discharged at any outfall turbid or colored? () Yes () No
3. Did storm water discharged at any outfall have an odor? () Yes () No
4. Did storm water discharged have a sheen? () Yes () No
5. Did storm water discharged contain debris? () Yes () No
6. If the answer to any of questions 2 through 5 is yes, is corrective action necessary? () Yes () No

If the answer to question 6 is yes, describe corrective action and date of completion. If no corrective actions are required, explain why not:

Signature: _____

Date: _____

FIELD pH TEST SAMPLING FORM

OUTFALL #1

(Outlet from Culvert at Pit #3)

To be filled out by inspector.

Sampler Name: _____

Date: _____

Time Discharge began: _____ () AM () PM

Time Ph test began: _____ () AM () PM

Discharge Location: Outfall: 1

- () Basin Outfall
- () Ditch Outfall (at drop inlet)
- (x) Pipe Outfall
- () Drop Inlet

➔ pH Measured in Field: _____ pH units

STORM WATER SAMPLING & ANALYSIS FORM

OUTFALL # 2

(Sargent Creek at Pits #1 and #2)

To be filled out by inspector.

Date: _____ Number of Outfall: 2

Sampler Name: _____

Destination Lab: _____ Lab Phone: _____

Parameters Lab to tests: _____

➔ Ph Measured in Field _____ Ph units (take photo of meter reading & write units onto Chain of Custody form)

Delivery date/time:	Personnel making Delivery to Lab:	Chain of Custody Number:

Type of Outfall:

- Tank Discharge/Outfall
- Pond Outfall*
- Ditch Outfall
- Pipe Outfall
- Drop Inlet

Time Discharge Began: _____ () AM () PM

Time of Sample Collection: _____ () AM () PM

Provide an explanation if sample were not collected within 4 hours from:

- a) the beginning of discharge during business hours; or
- b) when the operation opened, if storm/discharge began within the previous 12 hours

* If discharge from tank/pond does not occur during a storm event, i.e. storm water is retained for subsequent discharge, record the date of the most recent storm that produced significant storm water discharge.

LAB RESULTS NEED TO BE SUBMITTED VIA E-MAIL to:
tplatz@thainc.com

SAMPLING EVENT VISUAL OBSERVATION FORM

OUTFALL # 2

(Sargent Creek at Pits #1 and #2)

Fill out form the same date and TIME THAT the Storm Water is collected.

Date: _____

Time: _____
(Hours of operation)

Weather: _____
(Dry weather only)

Inspector(s): Jason Voss or James Junio (circle one)

Rainfall event information:

Time Discharge Began: _____ () AM () PM

Time Samples Collected: _____ () AM () PM

To be completed by person responsible for SWPPP implementation (after reviewing inspection logs)

1. Was discharge from overflow or was pond discharged by operator? Overflow () Manuel ()
2. Was the storm water discharged at any outfall turbid or colored? () Yes () No
3. Did storm water discharged at any outfall have an odor? () Yes () No
4. Did storm water discharged have a sheen? () Yes () No
5. Did storm water discharged contain debris? () Yes () No
6. If the answer to any of questions 2 through 5 is yes, is corrective action necessary? () Yes () No

If the answer to question 6 is yes, describe corrective action and date of completion.

If no corrective actions are required, explain why not:

Signature: _____

Date: _____

FIELD pH TEST SAMPLING FORM

OUTFALL # 2

(Sargent Creek at Pits #1 and #2)

To be filled out by inspector.

Sampler Name: _____

Date: _____

Time Discharge began: _____ () AM () PM

Time Ph test began: _____ () AM () PM

Discharge Location: Outfall: 2

- () Basin Outfall
- (x) Ditch Outfall (at drop inlet)
- () Pipe Outfall
- () Drop Inlet

➔ pH Measured in Field: _____ pH units

**Appendix D:
Storm Water Training Sign-In Sheet**

**APPENDIX D:
EMPLOYEE TRAINING SIGN IN SHEET**

				SWPPP Implementation	Monitoring Procedures	Spill Prevention and Response	Good Housekeeping	Preventative Maintenance	BMP Maintenance	Record Keeping
Date	Attendees	Trainer/ Title	Training Materials	Ppt		All Employees				

Note:

Describe the annual employee training on the SWPPP, addressing location of potential pollutants, spill prevention and response; BMPs and maintenance, good housekeeping, record keeping and industrial material management practices.

**Appendix E:
Employee Training Manual**

**SARGENT QUARRY
SANTA CLARA COUNTY, CA**

STORM WATER POLLUTION PREVENTION

**EMPLOYEE TRAINING
2016**



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SECTION 1 PURPOSE

The purpose of this training program is to introduce you to the purpose of Storm Water Pollution Prevention Plan and Storm Water Monitoring program at Sargent Quarry in Santa Clara County, CA. State and Federal laws require industrial activities such as to control the pollutants that rain water picks up as it flows across the property and then discharges off of the quarry property.

This training program will generally review:

- 1) the storm water regulations;
- 2) the Storm Water Pollution Prevention Plan (SWPPP);
- 3) Potential Pollutants;
- 4) Best Management Practices (BMPs);
- 5) Good Housekeeping Practices;
- 6) Storm Water Monitoring Program.

All of these activities help Sargent Quarry comply with the regulations and avoid violations and fines; and they help to eliminate or reduce potential pollutants in storm water run-off and aid in the implementation of the plant's Storm Water Pollution Prevention Plan and Storm Water Monitoring Program.

SECTION 2

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR
STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
ORDER NPDES NO. CAS000001

- As of July 1, 2015 this Order supersedes Order 97-03-DWQ except for Order 97-03-DWQ's requirement to submit annual reports by July 1, 2015 and except for enforcement purposes. As of July 1, 2015, a Discharger shall comply with the requirements in this Order.
- Effective July 1, 2015, the State Water Board and the Regional Water Quality Control Boards (Regional Water Boards) (Water Boards, collectively) will enforce the provisions herein.
- This General Permit authorizes discharges of industrial storm water to waters of the United States, so long as those discharges comply with all requirements, provisions, limitations, and prohibitions in this General Permit.
- Discharges in compliance with this General Permit will not result in the lowering of water quality to a level that does not achieve water quality objectives and protect beneficial uses.
- This General Permit's requirements constitute best practicable treatment or control for discharges of industrial storm water and authorized non-storm water discharges.
- This General Permit requires that the Discharger submit all information and documents electronically using SMARTS

SECTION 3 INTRODUCTION

This document is a Storm Water Pollution Prevention Plan (SWPPP).

- The SWPPP has been prepared to comply with Section A of the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Industrial Activities (General Permit), adopted by the California State Water Resources Control Board on April 1, 2014 and effective on July 1, 2015
- The SWPPP is intended to achieve two purposes:
 - 1) to identify and evaluate sources of pollutions associated with industrial activities that could affect the quality of storm water discharged and authorized non-stormwater discharged from a facility; and
 - 2) to identify and implement site-specific Best Management Practices (BMPs) that the facility is committed to implement to minimize or prevent discharge of pollutants associated with industrial activities that may be in stormwater.
- Topics addressed in the SWPPP include
 1. elimination of non-storm water discharges,
 2. pollutant sources and associated BMPs,
 3. storm water management,
 4. sedimentation and erosion control practices,
 5. preventative maintenance and good housekeeping practices,
 6. spill prevention and response,
 7. inspections and monitoring,
 8. record keeping, and
 9. employee training

DRAINAGE BASIN PLAN

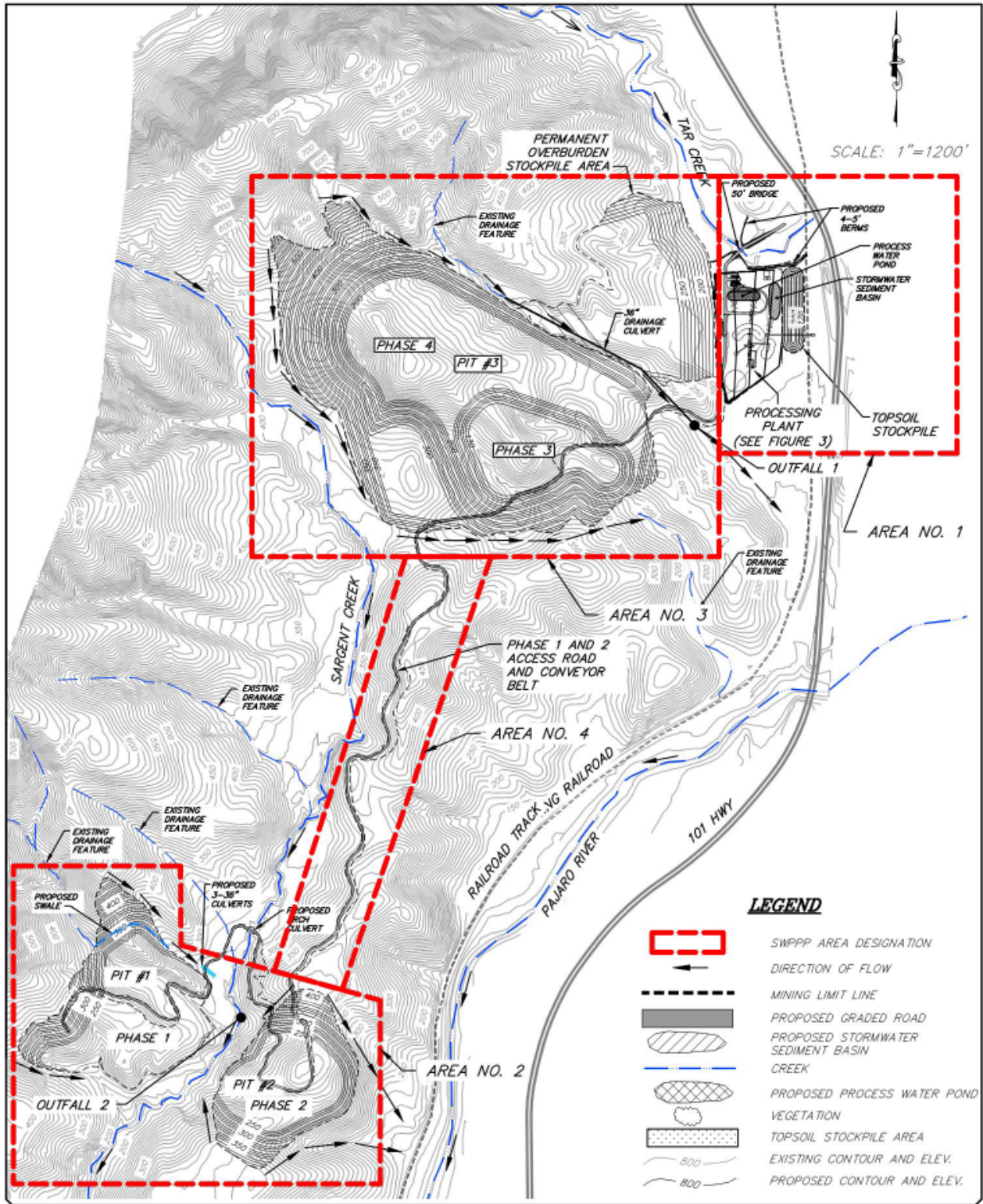
Two major creeks, Tar Creek and Sargent Creek, and other smaller drainages affect the mining areas and access to the site. Tar Creek runs just west to east, north of the project site and outlets under Hwy 101 just north of the plant site. Sargent Creek runs north to south and bisect the southern portion of the mining site where the first two phases of mining operation will take place. All major drainages that contribute concentrated flows to the mining areas will be diverted via swales and culverts around the mining pits and converge with the historic drainage patterns downstream of the mining pits.

The plant collects all of its storm water run-off in a graded brow ditch that runs around the perimeter of the plant. The stormwater is conveyed to the stormwater sediment basin. Storm water in the sediment basin would ultimately percolate on-site or be reused for plant operations. Refer to Figures 2 and 3 below for drainage patterns.

STORM WATER POLLUTION PREVENTION SITE PLANS

Look at the SWPPP Site Plan of Sargent Ranch Figures 2-5.

- Figure 2 shows the overall site plan including mining pits, overburden stockpile, and the plant site. The drainage pattern around the pits and the drainage facilities are noted.
- Figure 3 shows the plant site in detail.
- Figures 4 and 5 show the sources of potential pollutants like dust, sediments, and oil as well as the Best Management Practices (BMPs) to help keep those potential pollutants from getting into the storm water runoff or removing it from the runoff. Some of the BMPs will be discussed in this training.

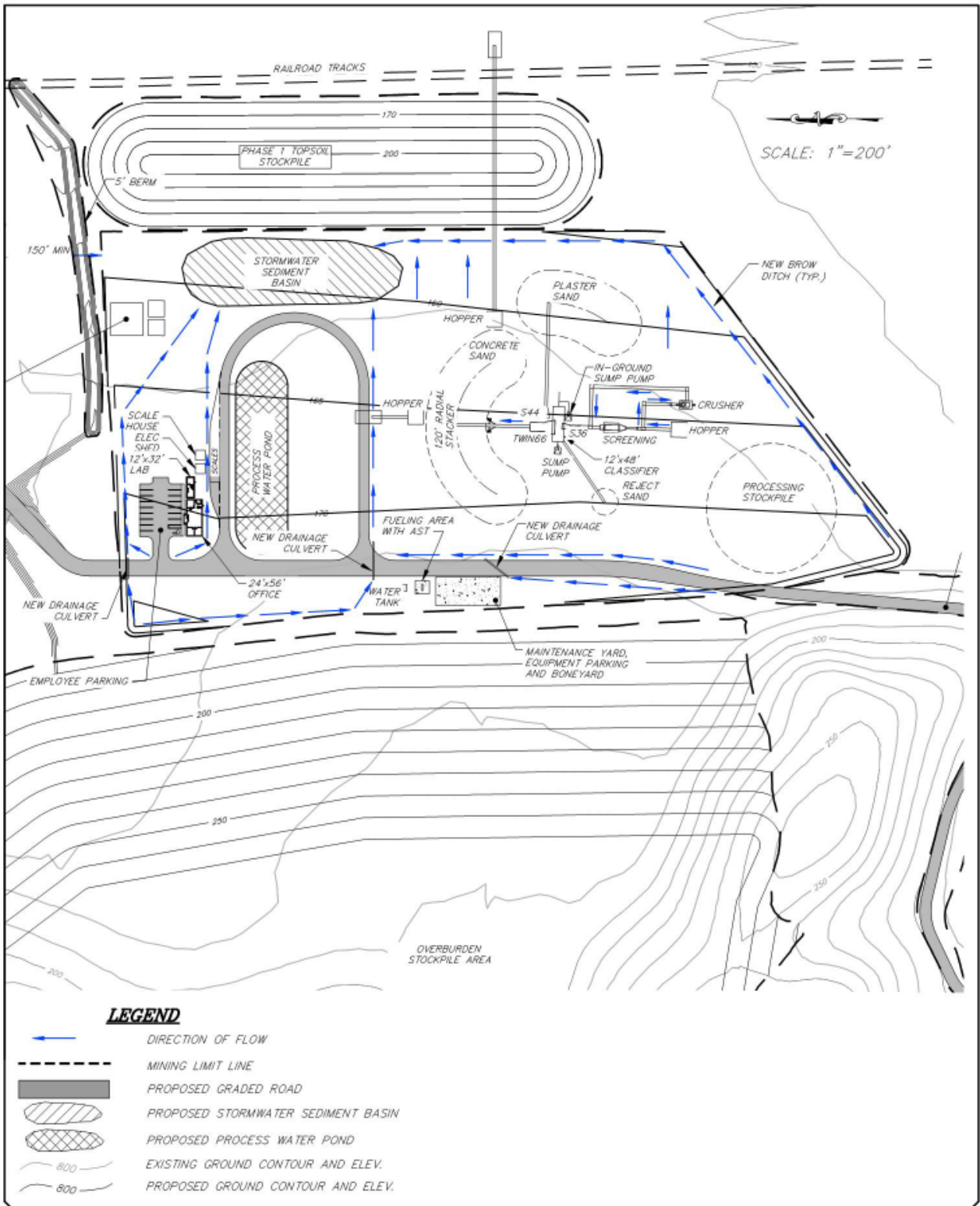


DATE:
08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY
INDUSTRIAL SWPPP
FIGURE 2 – FACILITY SITE PLAN AND DRAINAGE PATTERNS



© 101 Meadows | 4020 Sargent Ranch | Local Drainage SWPPP | 4020 SWPPP CAD 2014.dwg | Sep. 09, 2016 | 10:13am, rps@tristh.com



DATE: 08/31/2016

SARGENT RANCH QUARRY, SANTA CLARA COUNTY

INDUSTRIAL SWPPP

FIGURE 3 – PLANT SITE AND DRAINAGE PATTERNS

K:\01\Main\081620\Sargent Ranch\Level\Drainage SWPPP\0120 SWPPP CAP 2014.dwg Sep 09,2016 - 10:13am, rps@triac.com

SECTION 4

POTENTIAL POLLUTANTS

It is important to understand the activities at the site and know what potential pollutants might be exposed to rainwater and get into the storm water. For this reason the Storm Water Pollution Prevention Plan considers the potential pollutants at the site, creates a list of the potential pollutants at the quarry and identifies where they are on a site map and the operator trains their employees to be aware of the harms that each potential pollutant might have to the environment.

SOURCES AND EFFECTS OF POLLUTANTS

Pollutants:

- Substances that can make water harmful to people, fish, wildlife
- Substances that impair other beneficial uses of water (drinking water, industrial process water, recreation, aesthetic enjoyment, navigation)

Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Sediments</i>	<ul style="list-style-type: none"> • Erosion from hillsides • Erosion from earthen ditches • Run-off from unpaved roads • Run-off from stockpiles 	<ul style="list-style-type: none"> • Cause cloudy (turbid)water • Suffocate fish and other organisms • Smother fish eggs and larvae • Make drinking or process water source unusable • Impair aquatic plant growth by blocking sunlight • Lessen aesthetic enjoyment and recreational appeal • Increase discharge of pollutants absorbed onto sediments

Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Nutrients</i>	<ul style="list-style-type: none"> • Decaying vegetation • Sediments • Fertilizers • Bio-degradable materials 	<ul style="list-style-type: none"> • Cause excessive Plant growth • Deplete oxygen when plants die • Suffocate fish and other organisms • Lessen aesthetic enjoyment and recreational appeal • Make drinking or process water source unusable

Note: Nutrients are substances that plants need for growth. Nitrogen and phosphorus are the common nutrients that have caused excessive growth in water bodies due to water discharges.

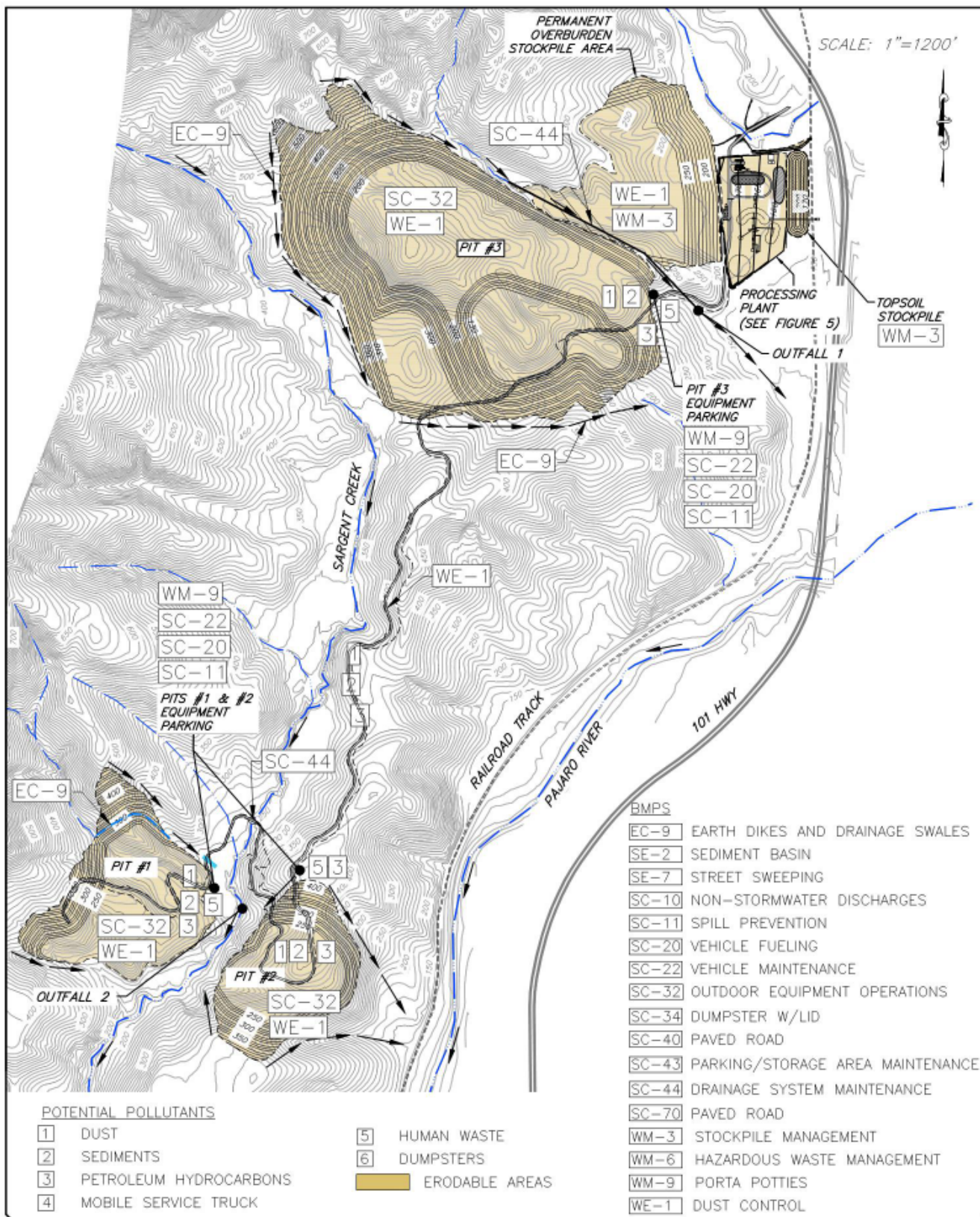
Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Oxygen Demanding Substances</i>	<ul style="list-style-type: none"> • Sewage • Municipal • Decaying vegetation • Some chemical • Other Biodegradable 	<ul style="list-style-type: none"> • Deplete water of dissolved oxygen • Suffocate fish and other organisms • Cause severe odor water • Lessen aesthetic enjoyment and recreational opportunities

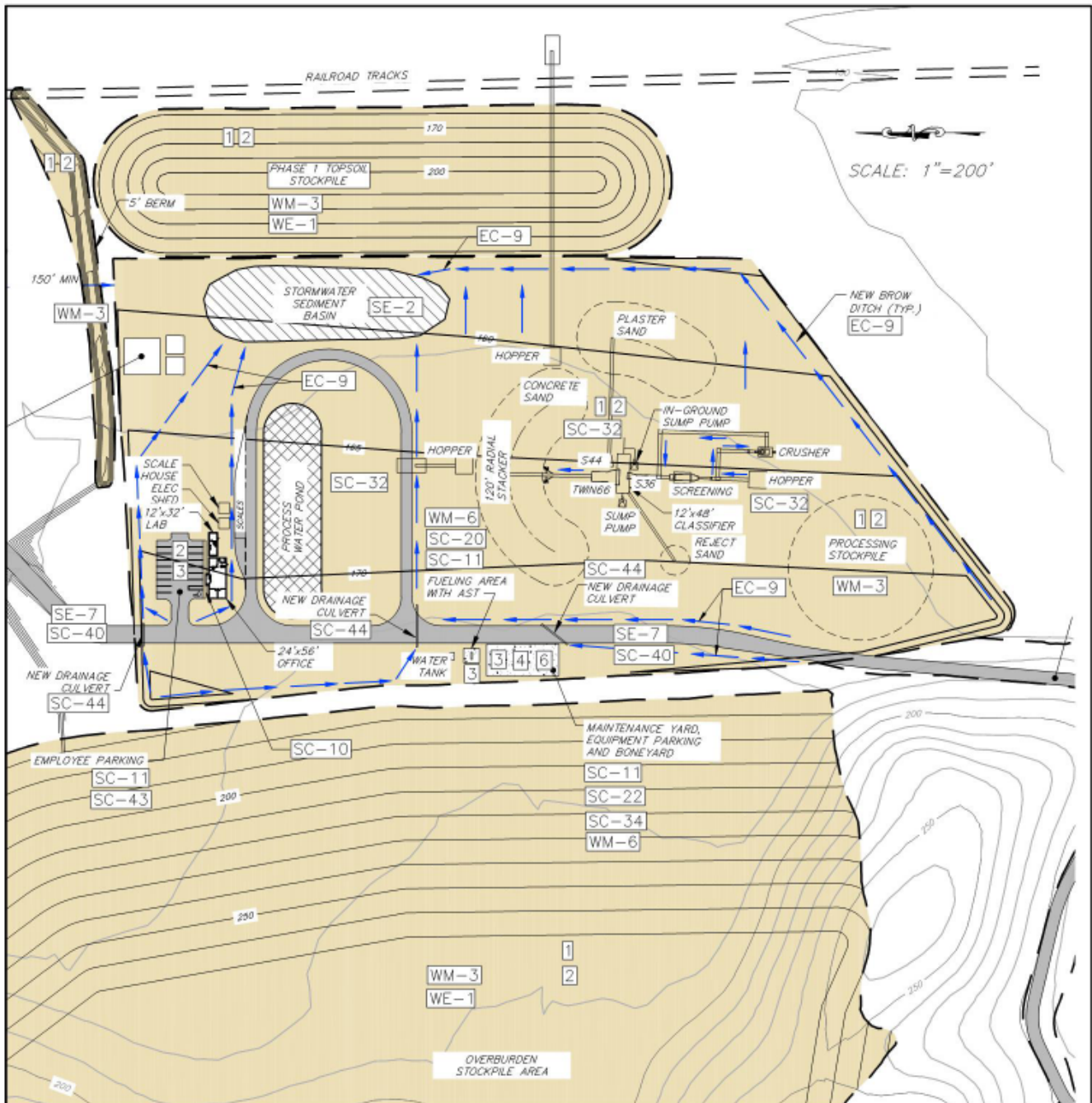
Note: Oxygen demanding substances are any material that would be consumed by microorganisms in a natural water body

Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Petroleum Hydrocarbons Oil and Grease</i>	<ul style="list-style-type: none"> • Diesel and gasoline • Lube oils • Waste oil filters and oil • Asphalt emulsion • Heating oil 	<ul style="list-style-type: none"> • Poison/kill fish and aquatic • Block oxygen from entering water • Coat fish gills and cause suffocation • Coat birds/ducks and other wildlife • Lessen aesthetic enjoyment and recreational opportunities • Make drinking and process source unusable

Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Metals</i>	<ul style="list-style-type: none"> • Sediments • Paints • Construction materials • Equipment • Waste oil • Brake lining • Sand blasted materials 	<ul style="list-style-type: none"> • Cause long-term chronic toxicity in fish and aquatic organisms • Cause poisoning in humans from consumption of fish • Poison bottom dwelling organisms • Make drinking and process source unusable

Type of Pollutant	Sources/Examples	Examples of Harmful Effect in Receiving Water
<i>Toxics</i>	<ul style="list-style-type: none"> • Solvents • Wet cement/concrete • Paints • Hazardous materials/waste • Waste oil • Brake lining • Sand blasted materials 	<ul style="list-style-type: none"> • Cause acute and chronic toxicity in fish and aquatic organisms • Cause toxicity in humans from consumption of fish or water • Make drinking and process source unusable • Prevent recreational use





BMPS	SC-34 DUMPSTER W/LID	POTENTIAL POLLUTANTS
EC-9 DRAINAGE SWALES	SC-40 PAVED ROAD	1 DUST
SE-2 SEDIMENT BASIN	SC-43 PARKING/STORAGE AREA MAINTENANCE	2 SEDIMENTS
SE-7 STREET SWEEPING	SC-44 DRAINAGE SYSTEM MAINTENANCE	3 PETROLEUM HYDROCARBONS
SC-10 NON-STORMWATER DISCHARGES	SC-70 PAVED ROAD	4 MOBILE SERVICE TRUCK
SC-11 SPILL PREVENTION	WM-3 STOCKPILE MANAGEMENT	5 HUMAN WASTE
SC-20 VEHICLE FUELING	WM-6 HAZARDOUS WASTE MANAGEMENT	6 DUMPSTERS
SC-22 VEHICLE MAINTENANCE	WM-9 PORTA POTTIES	ERODABLE AREAS
SC-32 OUTDOOR EQUIPMENT OPERATIONS	WE-1 DUST CONTROL	

**TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
1 Plant Site	Aggregate Product Stockpiles	Sediment PH	Year Round On-going	Run-off treated in sediment basin (SE-2)	Remove sediment from runoff
			Year Round On-going	Drainage features constructed to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff
			Year Round Daily as Needed	Water Truck to maintain pile moisture	Help control amount of air borne dust particles
			Year Round	Reduce spillage	Limited handling of loose rock material to reduce amount of sediments in runoff
2 Plant Site	Aggregate Processing	Sediments PH Petroleum hydrocarbons	Year Round On-going	Run-off treated in sediment basin (SE-2)	Reduce amount of sediments in runoff
			Year Round On-going	Drainage features constructed and sized to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff.
			As Needed	Excess lubrication leaked from bearings from heavy equipment is limited by use of drip, spill kits, and routine maintenance (SC-11)	Immediate on-site maintenance as well as the use of drip pans and absorbents will limit amount of pollutants that could potential contaminate storm water
			Year Round As Needed	Foggers are used at all source locations (i.e. screens) on processing plants	Reduce amount of pollutants that could contaminate storm water. Reduce amount of air borne particulates
			Year Round Daily	Process equipment and area cleanup is routine	Reduce sediments and other potential contaminants
			As Needed	Water Truck to maintain moisture on unpaved roads and material piles	Help control amount of air borne dust particles
			Year Round Daily	Conform to air quality permit	Reduce emissions and stay current with standards
			Year Round	Limit handling of materials	Reduce the amount of sediments, and dust particulates and emissions from equipment.
			As Needed	Drip pans used where feasible (SC-11)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water
			Year Round Daily	Equipment regularly inspected (SC-11)	Prevent spillage of potential pollutants
			As Needed	Leaks repaired or liquids drained (SC-11)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water

**TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**
(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Year Round On-going	Know source and document delivery	Avoid delivery of contaminated materials
3 Plant Site	Aggregate Handling	Sediment	Daily As Needed	Limit handling of materials	Reduce the amount of sediments, and dust particulates and emissions from equipment
			Daily As Needed	Surplus storage minimized	Reduce amount of spare part storage to reduce risk for equipment failure and contamination
			Daily As Needed	Vehicle/equipment maintenance performed in designated location (SC-22)	Reduce exposure to storm water and ease of cleanup of spills
4 Plant Site	Vehicle/ Equipment Maintain. Boneyard	Petroleum Hydrocarbons, Sulfuric Acid, Lead, Oil, Grease, Anti-freeze, solvents	Daily As Needed	Outdoor maintenance areas are paved	Facilitates cleanup of spills, eliminates contamination of ground surface, and reduce exposure to storm water
			On-going Daily	Clearly labeled drums and containers placed in convenient locations. (WM-6)	Eliminate contact with storm water
			Year Round	No Oil changes are done outside during the rain. (SC-32)	Eliminates contact with storm water
			Daily As Needed	Waste receptacles monitored and arrangements for pickups made promptly. (WM-6)	Eliminate contact with storm water
			As Needed	Waste oil, waste anti-freeze, spent solvents, filters and batteries are recycled. (WM-6)	Eliminate contact with storm water
			On-going, As Needed	Procedures established to ensure draining of engine fluids and transfer to waste containers without spillage. Drip pans placed under vehicles/equipment when draining fluids and transferred to waste containers without spillage. (SC-11, WM-4, WM-6)	Eliminate contact with storm water and contamination of ground surface
			Year Round	Employees instructed on proper cleanup procedures for minor spills. (WM-4)	Ensures proper cleanup of spills
			Year Round	Area equipped with spill kits to cleanup spills and empty drums (SC-11)	Facilitate proper cleanup of spills
			Year round	Proper Security measures implanted to prevent vandalism	
			Daily	Drip pan under compressors. (SC-11)	Eliminates contact with storm water and contamination of ground surface

**TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Daily	Seals regularly inspected and maintained. (SC-11, WM-4)	Prevent spillage of potential pollutants
5 Plant Site	Aboveground Storage Tanks and Fueling area	Petroleum hydrocarbons	Year round On-going	Storage tank fueling has auto shut off to prevent overfilling. (SC-11, WM-4)	Prevents accidental spills
			Year round On-going	Vehicle fueling area is paved. (SC-11, WM-4)	Prevents contamination of ground surface, and facilitate cleanup of spills
			Year round, On-going	Sign posted to instruct employees that all fuel spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor	Promotes awareness; and ensures proper cleanup
			Year round, On-going	Sign posted to instruct employees to not leave filling hose unattended during fueling	Preventing accidental spills
			Year round, On-going	Spill cleanup equipment clearly labeled and stored near fuel pumps in the main shop area. (SC-11, WM-4)	Facilitate cleanup of spills
			Year round, On-going	Proper security measures implemented to prevent vandalism	Eliminate spillage during vandalism
			Year round, On-going	All hazardous material containers clearly labeled. (WM-6)	Promote awareness; and ensures proper cleanup
			Year round, On-going	All hazardous materials containers closed. (WM-6)	Avoid contact with storm water
6 Plant Site	Hazardous Materials Storage Area: Lube oil, solvent, batteries, antifreeze	Petroleum hydrocarbons, solvents, acids, bases antifreeze, heavy metals, pesticides	Year round On-going	Flammable materials stored inside designated flammable cabinets. (WM-6)	Prevent accidental fires; ensure proper handling; keep materials under control
			Year round On-going	Hazardous materials stored in designated areas only. (WM-6)	Limited area where potential pollutants could be released.
			Year round On-going	Hazardous material storage areas secured to prevent unauthorized access. (WM-6)	Keep material in controlled area
			Year round On-going	Hazardous material storage maintained in accordance with Federal, State, and local regulations and codes. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going, Daily	Container conditions are routinely inspected and resolved. (WM-6)	Keep material under control
			Year round On-going, As Needed	Leaking or deteriorated containers placed in new containers. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going	Hazardous materials kept indoors or undercover. (WM-6)	Keep material under control and out of contact with storm water

**TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Year round On-going	Material safety data sheets kept at facility for all hazardous materials	Promote awareness
			Year round On-going	Hazardous materials inventory minimized where practical. (WM-6)	Reduce the potential impacts from unnecessary storage of materials
			Year round As Needed	Secondary containment and storage tank covered to prevent rain contact. (WM-6)	Keep material under control and out of contact with storm water
			Year round On-going As Needed	Sign posted to instruct employees that all hazardous material spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor	Promote awareness
			Year round, On-going	Spill cleanup equipment (ie. spill kits, drums and rags) stored where accessible. (SC-11, WM-4)	Facilitate cleanup of spills
			Year round, On-going	Proper security measures implemented to prevent vandalism	Eliminate spillage during vandalism
			Year round, On-going	All hazardous waste containers clearly labeled. (WM-6)	Promote awareness
			Year round, On-going	All hazardous waste containers closed. (WM-6)	Keep materials from contact with storm water
7 Plant Site	Hazardous Materials Waste storage (examples; used oil filters, drain/waste oil)	Petroleum Hydrocarbons, Solvents, Acids, Bases, Antifreeze, Heavy Metals, Pesticides	Year round, On-going	Hazardous waste stored in designated areas only. (WM-6)	Limited area where potential pollutants could be released and facilitates cleanup
			Year round, On-going	Hazardous waste storage secured to prevent unauthorized access	Keep material in controlled area
			Year round, On-going	Hazardous waste storage maintained in accordance with applicable Federal, State, and local regulations and codes	Keep material under control and out of contact with storm water
			Year round, On-going, Daily	Routine inspections of containers and area. (WM-6)	Keep material under control
			Year round, On-going, As Needed	Leaking or deteriorated containers placed in new containers. (WM-6)	Keep materials from contact with storm water
			Year round, On-going, As Needed	Remove and dispose of properly all hazardous wastes in accordance with applicable regulations. (WM-6)	Keep materials from contact with storm water
			Year round, On-going	Signs posted to identify storage areas	Promote awareness, Keep material under control
			Year round, On-going	Hazardous waste kept mostly indoors or undercover. (WM-6)	Keep material out of contact with storm water or keeps material contained
			Year round, On-going	Secondary containment and storage tank covered to prevent rain contact. (WM-6)	Keep material under control and out of contact with storm water

**TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES**

(IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Year round, On-going, As Needed	Accumulated rain water in the containment area disposed of in accordance with local, State and Federal regulations if any evidence of contamination were detected in or on the water. (WM-6)	Keep material under control and out of contact with storm water
			Year round, On-going	Spill cleanup equipment (rags) clearly labeled and stored where accessible. (SC-11, WM-4)	Facilitate cleanup of spills
			Year round On-going	Proper security measures (locked gate) implemented to prevent vandalism.	Eliminate spills during vandalism
			Year round As Needed	Used oil filters are drained and stored in approved container. (WM-6)	Eliminate contact with storm water
8 Plant Site	Dumpster with lid	Non-Hazardous Waste	Year round On-going	Dumpster with lid used to keep out rain water and prevent debris from blowing away. (SC-34)	Eliminate contact with storm water
9 Plant Site	Paved Vehicle Parking	Petroleum Hydrocarbons, Iron, Oil & Grease, Anti-freeze, Sediment	Year Round, Daily	Vehicle/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Year Round On-going	Storm water is directed into a Sediment Basin. (SE-3)	Reduces sediments in storm water
			Year Round Daily As Needed	Leaks from vehicle promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
			Year Round, Daily As Needed	Drip pans and absorbent materials used temporarily to collect leakage until repaired. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
10 Mining Pits	Unpaved vehicle/equipment parking	Petroleum Hydrocarbons Oil Grease Anti-freeze Sediment	Daily	Vehicles/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Daily, As Needed	Leaks from vehicles/equipment promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.
			Daily, As Needed	Drip pans used temporarily to collect leakage until repaired. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water
			Year Round Daily Use as Needed	Water Truck	Help control amount of air borne dust particles

TABLE 1
POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST
MANAGEMENT PRACTICES FOR MINING ACTIVITIES
 (IGP – Section X.G.2.a & X.H.1 a – d) & X.H.4 & 5)

Source No/ Industrial Activity Area	Associated industrial pollutant source description	Industrial Potential pollutant	Frequency of BMP implementation	Implemented BMPs	Expected BMP effectiveness
			Daily As Needed	All quarry heavy earthmoving equipment is maintained by the Mobile Field Truck which follows BMPs: drip pans, spill kits, empty drum, auto-shut off valve for fuel pump, alarm overflow preventer; & company policies. (SC-11, WM-4)	Avoid contamination of ground surface and possibility of a spill; reduce exposure to storm water. Facilitate proper cleanup of spills.
11 Mining Pits	Portable Chemical Toilets (Porta Potty)	Human waste and disinfectants (toilet chemicals)	Daily As Needed	Regularly maintained and pumped out at regular intervals. (WM-9)	Reduce the risk of the portable toilet from overflowing
			Year Round On-going	Placed in areas away from high vehicular traffic areas and environmentally sensitive areas. (WM-9)	Reduce the risk of the portable chemical toilet from being knocked over
12 Mining Pits	Mining Pits #1, 2, and 3	Sediment	As Needed	Drainage features constructed to facilitate collection and treatment of drainage (SC-44)	Reduce amount of sediments in runoff
			Year Round On-going	Employ fugitive emission air quality controls	Reduce emissions
			Daily As Needed	Process equipment and area cleanup is routine	Reduce sediments and other potential contaminants
			Year Round On-going	Conform to air quality permit	Reduce emissions and stay current with standards
13 Access Road to Pits #1 and #2	Unpaved Road	Sediment, Petroleum hydrocarbons pH	Year Round, Daily Use, as Needed	Water Truck	Help control amount of air borne dust particles
			Daily	Vehicles/equipment regularly inspected. (SC-43)	Eliminate collection of contaminants
			Daily, As Needed	Leaks from vehicles/equipment promptly repaired once discovered. (SC-11, WM-4)	Eliminate leakage of contaminants and exposure to storm water.

SECTION 5 BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING PRACTICES

To manage storm water and ensure that the water discharging off-site complies with the NPDES regulations, Sargent Creek implements numerous Best Management Practices (BMPs) and conducts Good Housekeeping Practices. Examples of BMPs are described and shown on the following pages and in the attached California Stormwater Quality Association (CASQA) BMP Handbook excerpts.

CASQA BMPs utilized on-site (PDFs attached separately):

EC-9	Earth Dikes and Drainage Swales
SC-10	Non-Stormwater Discharges
SC-11	Spill Prevention
SC-20	Vehicle Fueling
SC-22	Vehicle Maintenance
SC-32	Outdoor Equipment Operations
SC-34	Dumpsters with Lids
SC-40	Paved Road
SC-43	Parking/Storage Area Maintenance
SC-44	Drainage System Maintenance
SC-70	Paved Road
SE-2	Sediment Basin
SE-7	Street Sweeping
WE-1	Wind Erosion Control
WM-3	Stockpile Management
WM-6	Hazardous Waste Management
WM-9	Portable Toilet

BEST MANAGEMENT PRACTICES

DEFINITION:

- Any measure or activity that reduces and minimizes the discharge of pollutants to storm water.
- Administrative
- Structural
- 80% / 20% Rule:
80% of the goal is achieved with 20% of the effort

EXPECTED DUE DILLIGENCE:

- New permit language promotes “Best” BMP
- Industry standards are evolving

HOW:

- BMPs should be chosen to provide the Most pollutant reduction at the least Cost
- Change the activity/practice to avoid contamination of storm water
 - eliminate use of certain materials containing pollutants
 - enclose the activity inside a building to avoid storm water contact
 - roof and berm the activity area to avoid storm water contact
- Provide temporary covering for materials during storms
 - use tarps to cover cut back asphalt before storms

EXAMPLES:

- Regular scheduled inspections to detect leaks, new pollutant sources
- Regular scheduled maintenance activities using established procedures
- Good housekeeping
- Implemented policies to prohibit practices that releases pollutants
- Storm water treatment to remove pollutants
- Structures to prevent pollutant from contacting storm water
- Sedimentation and erosion control to reduce sediment discharge
- Operational changes to reduce pollutants discharge
- Present proactive “green” commitment
- Training to educate employees

- Segregate the activity or material to limit the volume of storm water that may become polluted
 - prevent the contaminated run-off from the rest of the site
 - treat contaminated run-off

- Treat contaminated storm water run- off
 - install and maintain sediment traps
 - install and maintain oil-water separators

- Recycling to minimize additional source
 - wash water holding tank
 - convert returned product to saleable commodity

SECTION 6

SEDIMENT & EROSION CONTROL PRACTICES

Erosion could cause large amounts of sediment to be discharged in storm water. Areas with erodible surfaces at the Facility, if any, are identified on Figure 5. The following Table 2, Sedimentation & Erosion Control Measures identifies the measures implemented at the site.

TABLE 6	
SEDIMENTATION & EROSION CONTROL MEASURES	
(IGP- Section X.G.1.f & X.H.1.e)	
Erosion Control Measure	Description
Management of storm water at the facility	Activities are restricted during wet weather. Throughout the site, storm water is directed into drainage ditches and culverts to minimize the volume of water that may be exposed to industrial activity. Topsoil stockpiles are covered with tarps in the rainy season. Sediment basin retains the diverted.
Placement of obstacles to intercept run-off from steep terrain	Straw bales, wattles, and/or rip rap may be used to intercept run-off from steep terrain and prevent high water velocities that could cause erosion.
Protection of drainage ditches	In areas with steep slopes or high volume of water check dams may be placed into the earth drainage ditches. In additions energy dissipating rip-rap and other devices prevent erosion.
Protection of discharge points	Storm water discharge points are constructed with energy dissipating discharge aprons made out of concrete structures, and/or rocks used as energy dissipaters.
Sediment Basin Culvert	Culverts under roadways or through embankments, Sediment Basin are sized to accommodate a 24 hour - 100-year storms and aligned to minimize abrupt changes in direction in the flow path.
Slope of Plant Site sloped to drain	Plant Site floor area is sloped to drain toward Sediment Basin
Wind Controls: - Water truck - Foggers - Truck Loading	During hours of operation the stockpiles and unpaved roads are sprayed with water by the water truck to control for dust. In addition, there are foggers at key points on the portable processing plants to wet down the product. Loaded material is compacted to be below the running board; many newer trucks have automated covers; and drivers are encouraged to tarp truck bed before departure
Treatment of unpaved road and storage areas.	Aggregate surface course is applied to the top of unpaved area to protect the surface from erosion
Paved road and parking areas around Office & Scale House and paved exit and entrance to Quarry operation	Paved access roads and paved parking areas direct storm water into Sediment Basin
Filtration/settling of sediments from stormwater in drainage ways	Fiber rolls or wattles are places around the base of the topsoil recycle stockpile to manage sediments, during rainy season as needed. Topsoil stockpiles are tarped during the rainy season. Sediment Basin captures plant site runoff.
Tracking Control	Routine sweeping and/or vacuuming will be performed on paved roads to collect accumulated dirt on the interior roads and entry/exit route.

SECTION 7 PREVENTIVE MAINTENANCE ACTIVITIES AND GOOD HOUSEKEEPING PRACTICES

Preventive maintenance at this facility is performed to prevent leaks and other accidental releases from equipment and storage containers and to maximize the removal of pollutants by BMPs that have been implemented. Examples of preventive maintenance performed at this facility are listed below:

- Monthly and after major rain storm inspecting all drainage ditches and swales to see if they are functioning properly, and clean as needed;
- Inspect and clean-out, if needed, all drop inlets monthly and after each major rain storm, and at other times as necessary, and dispose of sediments properly.
- Cleaning out drop inlets to maintain maximum capacity
- Check seals on all equipment containing petroleum hydrocarbons or other pollutants, and replace as necessary.
- Repair and improve erosion control measures before beginning of each rainy season.
- Mobile Truck Driver to:
 - Check seal on all containers holding petroleum hydrocarbons, and replace as necessary.
 - Check seal on gasoline or diesel fueling nozzle, and replace as necessary.
 - Always staying next to the mobile fuel truck when fueling equipment or vehicles;

Good Housekeeping Practices

Good housekeeping practices are measures that maintain a clean and orderly working environment. These measures include immediately cleaning up spilled materials, regularly sweeping paved areas or using vacuum trucks, and depositing waste in designated receptacles. Employees are responsible for maintaining their work areas. Supervisors are responsible for ensuring that work areas are orderly.

Good housekeeping consists of practical procedures to maintain a clean and orderly facility.

- Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly
- Minimize or prevent material tracking through regular sweeping and use of rumble strips
- Minimize dust generated from industrial materials or activities & comply with Air Permit
- Cover all stored industrial materials that can be readily mobilized by contact with storm water
- Keep all dumpsters under cover or fit with a lid that will remain closed when not in use
- Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with storm water
- Prevent disposal of any industrial materials into the storm water conveyance system
- Minimize storm water discharges from non-industrial areas

SECTION 8

STORM WATER MONITORING IMPLEMENTATION PLAN

This document is the Monitoring Implementation Plan (MIP) and its purpose is to ensure that inspections are performed to ensure that Best Management Practices are being implemented and to identify conditions that may allow potential pollutants to be discharged with storm water. The MIP was developed to assist the site operator in meeting the following objectives:

- Ensure that the storm water discharges are in compliance
- Address potentially sensitive downstream conditions/habitats
- Ensure practices at the facility to control pollutants in storm water discharge are evaluated and revised to meet changing conditions
- Aid in the implementation of the SWPPP
- Measure effectiveness of the Best Management Practices (BMPs) in removing or reducing pollutants in storm water discharge

All inspections are recorded on forms provided in the Storm Water Pollution Prevention Plan (SWPPP) and in Section 9 of this MIP. The inspections must be reviewed by the person responsible for SWPPP implementation. When conditions are identified that require corrective action, the follow-up action is also recorded.

The inspections that will be performed are listed below. For more information on how to complete the inspections, as well as copies of all inspection forms see Section 9 and 10 of this MIP.

SECTION 9

STORM WATER MONITORING INSPECTION DESCRIPTION

TABLE 3 DESCRIPTIONS OF STORM WATER MONITORING INSPECTIONS (IGP – Section G.2.a & X.H.1.d)		
Type Of Inspection	Description	Frequency
Annual Comprehensive Facility Compliance Evaluation	All areas of the industrial activities will be inspected to identify areas contributing pollutants to storm water. Evaluate effectiveness of BMPs and modify or add new ones as necessary. Review SWPPP for accuracy and up-date as needed. This inspection will coincide with preparation of the annual report.	Annually in June; Submit to SWRCB by July 15 each year
Monthly Visual Observation	<p>Facility Visual Observation: All storm water discharge points and drainage ditches and drainage areas will be visually inspected for evidence of dry weather discharge; including approved non-storm water discharges. Visual observation shall be made of industrial activity areas, equipment and storage areas and all potential sources of industrial pollutants. If found, the source(s) and corrective measures will be identified, as appropriate.</p> <p>Routine Inspection: The entire facility will be visually inspected to evaluate all hazardous material and waste areas, parking and equipment storage areas, aggregate storage and processing areas, and other areas with Industrial Materials and containing the potential pollutant sources identified in Tables 3 and 4. The inspection will include an assessment of whether good house-keeping practices and preventative maintenance activities are being performed; and if the BMPs are functioning properly.</p> <p>Erosion Control Inspection: Erosion potential of slopes, drainage channels, and unpaved areas at the facility should be assessed. Repairs and maintenance should be completed and additional erosion control measures should be implemented prior to the rainy season.</p>	Monthly
Storm Water Sampling & Analysis	Obtain Storm water sampling kit from approved Laboratory to analyze for: Total Suspended Solids, Oil & Grease, Nitrates and Nitrites as N, and Iron. Collect storm water samples after rainfall results in discharge for at least one drainage area, and the rain is preceded by 48 hours with no discharge from any drainage area. Samples may be collected: a) within 4 hours of discharge during hours of operation; or b) when facility opens and discharge had commenced 12 hours earlier (during the night before).	At least twice between Jan. 1 – June 30 and at least twice between July 1 and December 31
Ph Field Test	Required of rock crushing, and sand & gravel-operations as they are a Sub-chapter N facility with Federal effluent limitations guidelines. Measure Ph in field using a calibrated portable instrument of pH that can take a reading within 15 minutes. Record pH results onto Chain of Custody form and on Ph Field Test Sampling Form in Appendix C. Take a photo of the test results: i.e. the meter reader.	When storm water samples are collected
Sampling Event Visual Observation	The 6 sediment Ponds, 4 sediment traps, 2 storm water storage tanks, and numerous drop inlets as well as storm water discharge points (Outfalls #1 thru 4) and drainage ditches will be visually inspected for evidence of pollutant discharge. If found, the source(s) and corrective measures will be identified, as appropriate. The Sampling Event Visual Observation Inspection should be performed when storm water samples are collected and the Storm Water Sampling form is completed.	When storm water samples are collected

SECTION 10 STORM WATER MONITORING IMPLEMENTATION PLAN – SCHEDULE

Schedule for Completing SWPPP inspections and forms:

Rain Season	Annual Comprehensive Facility Compliance Evaluation	Monthly Visual Observation	Monthly Visual Observation Routine Inspection	Monthly Visual Observation Erosion Control Inspection	Storm Water Sampling	Ph Field Sampling Test	Sampling Event Visual Observation
July		X	X	X	**	***	***
August		X	X	X	**	***	***
September		X	X	X	**	***	***
October		X	X	X	**	***	***
November		X	X	X	**	***	***
December		X	X	X	**	***	***
January		X	X	X	**	***	***
February		X	X	X	**	***	***
March		X	X	X	**	***	***
April		X	X	X	**	***	***
May		X	X	X	**	***	***
June	X ¹	X	X	X	**	***	***

NOTES:

** **Storm water samples** must be collected and tested twice during the time period between July 1 and December 31 each year, and twice between January 1 and June 30 each year. The storm water should be collected when there has not been any discharge at any Outfall for the prior 48 hours. Then after it rains and produces a discharge for at least one drainage area the storm water can be collected. The storm water samples shall be collected within the first four (4) hours of discharge during hours of operation. However, if a storm event occurs during unscheduled facility operating hours (e.g. during the weekend or night) and produces discharge during the 12 hours preceding the scheduled facility operating hours, the Dischargers is still responsible for obtaining samples within the first 4 hours of opening from the Outfalls that are discharging.

*** These inspections and tests shall be conducted at the same time that storm water samples are collected

¹ While the entire SWPPP is evaluated annually, the SWPPP must be updated routinely after there are changes. Should the Annual Evaluation identify changes that are necessary these revisions shall be made within 90 days of the Annual Evaluation. Significant changes made to the SWPPP must be up-dated and submitted to SMARTs within 30 days of the change. For minor changes the SWPPP must be up-dated and submitted to SMARTS once every quarter (3 months).

KEY DATES and TIME PERIODS

Calendar Dates:

- **July 1st, 2015** submit to SMARTs all PDRs
- **July 1st** is when discharger with exceedances will move up a Level; or if corrective measures and BMPs prevented an NAL for four consecutive storm water samples after having to move up a Level, than discharger shall return to Baseline Level (exceptions if submitted pollutant source demonstration reports)
- **July 15th** Annual Report due via SMARTs
- **October 1st:** following commencement of Level 1 status must:
 - complete a Level 1 ERA Evaluation of Industrial Pollutant sources that might contribute to NAL exceedance
 - Identify corresponding BMPs that should mitigate the pollutant and identify any additional BMPs and SWPPP revisions necessary to prevent future NAL exceedances
- **January 1st** or earlier discharger must revise SWPPP and implement BMPS identified in the Level 1 ERA Evaluation; and certify and submit to SMARTs
- **January 1st** or before a Level 2 ERA Action Plan must be certified and submitted to SMARTs
- **January 1st** following submittal of the Level 2 ERA Action Plan, a Level 2 ERA Technical Report shall be submitted including one or more demonstration reports

Other Due dates:

- Revision made to SWPPP in Annual Report must be implemented within 90 days
- Storm Water lab tests must be submitted via SMARTs within 30 days or receipt of the tests
- Significant changes to SWPPP must be reported to SMARTs within 30 days
- Minor changes to SWPPP must be reported to SMARTs each quarter
- Level 2 ERA Action Plan elements must be implemented as soon as practicable and completed no later than 1 year after submitted to SMARTs
- For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status upon the date those results have been reported into SMARTS.

Section 11: Storm Water Analysis

- Samples to be analyzed for indicators of pollution, and specific compounds

■ pH

- Indicates the acidity/alkalinity of water
- Typical discharge limit between pH 6 to 9
- Sources: wet cement, acid wash for concrete trucks, batteries

■ Total Suspended Solids (TSS)

- Indicates clarity/murkiness of water
- Typical discharge limit as low as 30 mg/L
- Sources: stockpiles, unpaved roads, quarries, unpaved/unvegetated ground

■ Specific Conductivity (SC, EC)

- Indicates "saltiness" of water; how well water carries current
- Rain water may be as low as 10 $\mu\text{mhos/cm}$
Brine water may be as high as 100,000 $\mu\text{mhos/cm}$

- Sources: sediment, inorganic salts

■ Total Organic Carbon (TOC)

- Indicates amount of organic matter in water - includes plant, animal, and petroleum origin
- Typical sewage TOC = 160 mg/L
- Sources: petroleum hydrocarbons, sewage, domestic garbage

■ Iron (Fe) - Portland Cement Concrete - SIC 327x

- Required by EPA
- Ambient levels may be high
- Sources: soil, scrap & oxidation of metals, sand blasting

■ Nitrate plus Nitrite Nitrogen - Sand & gravel only - SIC 144x

- Required by EPA
- Levels will vary - dependent upon local land use
- Source: agricultural fertilizer, sewage, plant decomposition, garbage

Minimum Parameters to test storm water:

(source IGP: Fact Sheet)

The following three selected minimum parameters are considered indicator parameters, regardless of facility type. These parameters typically provide indication and/or the correlation of whether other pollutants are present in storm water discharge. These parameters were selected for the following reasons:

- i. **pH** is a numeric measurement of the hydrogen-ion concentration. Many industrial facilities handle materials that can affect pH. A sample is considered to have a neutral pH if it has a value of 7. At values less than 7, water is considered acidic; above 7 it is considered alkaline or basic. Pure rain water in California typically has a pH value of approximately 7.
- ii. **Total Suspended Solids (TSS)** is an indicator of the un-dissolved solids that are present in storm water discharge. Sources of TSS include sediment from erosion, and dirt from impervious (i.e., paved) areas. Many pollutants adhere to sediment particles; therefore, reducing sediment will reduce the amount of these pollutants in storm water discharge.
- iii. **Oil and Grease (O&G)** is a measure of the amount of O&G present in storm water discharge. At very low concentrations, O&G can cause sheen on the surface of water. O&G can adversely affect aquatic life, create unsightly floating material, and make water undrinkable. Sources of O&G include, but are not limited to, maintenance shops, vehicles, machines and roadways.

SECTION 12: EMPLOYEE TRAINING SIGN IN SHEET

				SWPPP Implementation	Monitoring Procedures	Spill Prevention and Response	Good Housekeeping	Preventative Maintenance	BMP Maintenance	Record Keeping
DATE	ATTENDEES	TRAINER/ TITLE	TRAINING MATERIALS	PPT		ALL EMPLOYEES				

Note:

Describe the annual employee training on the SWPPP, addressing location of potential pollutants, spill prevention and response; BMPs and maintenance, good housekeeping, record keeping and industrial material management practices.

Appendix F:

**General Permit for Storm Water Discharge Associated
With
Industrial Activities (Order No. 2014-00570 DWQ)**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

GENERAL PERMIT FOR
STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES

ORDER
NPDES NO. CAS000001

This Order was adopted by the State Water Resources Control Board on:	April 1, 2014
This Order shall become effective on:	July 1, 2015
This Order shall expire on:	June 30, 2020

IT IS HEREBY ORDERED that as of July 1, 2015 this Order supersedes Order 97-03-DWQ except for Order 97-03-DWQ's requirement to submit annual reports by July 1, 2015 and except for enforcement purposes. As of July 1, 2015, a Discharger shall comply with the requirements in this Order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act and regulations and guidelines adopted thereunder.

CERTIFICATION


I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order, including its fact sheet, attachments, and appendices is a full, true, and correct copy of an Order adopted by the State Water Resources Control Board, on April 1, 2014.

AYE: Chair Felicia Marcus
Vice Chair Frances Spivy-Weber
Board Member Tam M. Doduc
Board Member Steven Moore

NAY: None

ABSENT: Board Member Dorene D'Adamo

ABSTAIN: None



Jeanine Townsend
Clerk to the Board

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Attachment B Acronyms

Attachment C Glossary

Attachment D Permit Registration Documents (PRDs)

Attachment E TMDL Implementation

Attachment F Effluent Limitation Guidelines (ELGs)

Attachment G Requirements for Dischargers Who Have Been Granted An Ocean Plan Exception for Discharges to Areas of Special Biological Significance (ASBS)

Attachment H Storm Water Sample Collection and Handling Instructions

Appendix 1 Storm Water Pollution Prevention Plan (SWPPP) Checklist

Appendix 2 No Exposure Certification (NEC) Conditional Exclusion Instructions

Appendix 3 Waterbodies with Clean Water Act section 303(d) Listed Impairments

I. FINDINGS

A. General Findings

The State Water Resources Control Board (State Water Board) finds that:

1. The Federal Clean Water Act (Clean Water Act) prohibits certain discharges of storm water containing pollutants except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. (33 U.S.C. §§ 1311, 1342 (also referred to as Clean Water Act §§ 301, 402).) The United States Environmental Protection Agency (U.S. EPA) promulgates federal regulations to implement the Clean Water Act's mandate to control pollutants in storm water discharges. (40 C.F.R. § 122, et seq.) The NPDES permit must require implementation of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges (NSWDs). The NPDES permit must also include additional requirements necessary to implement applicable water quality objectives or water quality standards (water quality standards, collectively).
2. On November 16, 1990, U.S. EPA promulgated Phase I storm water regulations in compliance with section 402(p) of the Clean Water Act. (55 Fed. Reg. 47990, codified at 40 C.F.R. § 122.26.) These regulations require operators of facilities subject to storm water permitting (Dischargers), that discharge storm water associated with industrial activity (industrial storm water discharges), to obtain an NPDES permit. Section 402(p)(3)(A) of the Clean Water Act also requires that permits for discharges associated with industrial activity include requirements necessary to meet water quality standards.
3. Phase II storm water regulations¹ require permitting for storm water discharges from facilities owned and operated by a municipality with a population of less than 100,000. The previous exemption from the Phase I permitting requirements under section 1068 of the Intermodal Surface Transportation Efficiency Act of 1991 was eliminated.
4. This Order (General Permit) is an NPDES General Permit issued in compliance with section 402 of the Clean Water Act and shall take effect on July 1, 2015, provided that the Regional Administrator of U.S. EPA has no objection. If the U.S. EPA Regional Administrator has an objection, this General Permit will not become effective until the objection is withdrawn.
5. This action to adopt an NPDES General Permit is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000, et seq.) in accordance with section 13389 of the Water Code. (See *County of*

¹ U.S. EPA. Final NPDES Phase II Rule. <<http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm>>. [as of February 4, 2014]

Los Angeles v. California State Water Resources Control Bd. (2006) 143 Cal.App.4th 985.)

6. State Water Board Order 97-03-DWQ is rescinded as of the effective date of this General Permit (July 1, 2015) except for Order 97-03-DWQ's requirement that annual reports be submitted by July 1, 2015 and except for enforcement purposes.
7. Effective July 1, 2015, the State Water Board and the Regional Water Quality Control Boards (Regional Water Boards) (Water Boards, collectively) will enforce the provisions herein.
8. This General Permit authorizes discharges of industrial storm water to waters of the United States, so long as those discharges comply with all requirements, provisions, limitations, and prohibitions in this General Permit.
9. Industrial activities covered under this General Permit are described in Attachment A.
10. The Fact Sheet for this Order is incorporated as findings of this General Permit.
11. Acronyms are defined in Attachment B and terms used in this General Permit are defined in Attachment C.
12. This General Permit regulates industrial storm water discharges and authorized NSWDs from specific categories of industrial facilities identified in Attachment A hereto, and industrial storm water discharges and authorized NSWDs from facilities designated by the Regional Water Boards to obtain coverage under this General Permit. This General Permit does not apply to industrial storm water discharges and NSWDs that are regulated by other individual or general NPDES permits
13. This General Permit does not preempt or supersede the authority of municipal agencies to prohibit, restrict, or control industrial storm water discharges and authorized NSWDs that may discharge to storm water conveyance systems or other watercourses within their jurisdictions as allowed by state and federal law.
14. All terms defined in the Clean Water Act, U.S. EPA regulations, and the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000, et seq.) will have the same definition in this General Permit unless otherwise stated.
15. Pursuant to 40 Code of Federal Regulations section 131.12 and State Water Board Resolution 68-16, which incorporates the requirements of 40 Code of Federal Regulations section 131.12 where applicable, the State Water Board finds that discharges in compliance with this General Permit will not result in the lowering of water quality to a level that does not achieve water quality objectives and protect beneficial uses. Any degradation of water quality from existing high quality water to a level that achieves water quality objectives and

protects beneficial uses is appropriate to support economic development. This General Permit's requirements constitute best practicable treatment or control for discharges of industrial storm water and authorized non-storm water discharges, and are therefore consistent with those provisions.

16. Compliance with any specific limits or requirements contained in this General Permit does not constitute compliance with any other applicable permits.
17. This General Permit requires that the Discharger certify and submit all Permit Registration Documents (PRDs) for Notice of Intent (NOI) and No Exposure Certification (NEC) coverage via the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) website. (See Attachment D for an example of the information required to be submitted in the PRDs via SMARTS.) All other documents required by this General Permit to be electronically certified and submitted via SMARTS can be submitted by the Discharger or by a designated Duly Authorized Representative on behalf of the Discharger. Electronic reporting is required to reduce the state's reliance on paper, to improve efficiency, and to make such General Permit documents more easily accessible to the public and the Water Boards.
18. All information provided to the Water Boards shall comply with the Homeland Security Act and all other federal law that concerns security in the United States, as applicable.

B. Industrial Activities Not Covered Under this General Permit

19. Discharges of storm water from areas on tribal lands are not covered under this General Permit. Storm water discharges from industrial facilities on tribal lands are regulated by a separate NPDES permit issued by U.S. EPA.
20. Discharges of storm water regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board are not covered under this General Permit, including the State Water Board NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.
21. Storm water discharges to combined sewer systems are not covered under this General Permit. These discharges must be covered by an individual permit. (40 C.F.R. § 122.26(a)(7).)
22. Conveyances that discharge storm water runoff combined with municipal sewage are not covered under this General Permit.
23. Discharges of storm water identified in Clean Water Act section 402(l) (33 U.S.C. § 1342(l)) are not covered under this General Permit.
24. Facilities otherwise subject to this General Permit but for which a valid Notice of Non-Applicability (NONA) has been certified and submitted via SMARTS, by the Entity are not covered under this General Permit. Entities (See Section XX.C.1 of this General Permit) who are claiming "No Discharge"

through the NONA shall meet the eligibility requirements and provide a No Discharge Technical Report in accordance with Section XX.C.

25. This General Permit does not authorize discharges of dredged or fill material regulated by the US Army Corps of Engineers under section 404 of the Clean Water Act and does not constitute a water quality certification under section 401 of the Clean Water Act.

C. Discharge Prohibitions

26. Pursuant to section 13243 of the Water Code, the State Water Board may specify certain conditions or areas where the discharge of waste, or certain types of waste, is prohibited.
27. With the exception of certain authorized NSWDs as defined in Section IV, this General Permit prohibits NSWDs. The State Water Board recognizes that certain NSWDs should be authorized because they are not generated by industrial activity, are not significant sources of pollutants when managed appropriately, and are generally unavoidable because they are related to safety or would occur regardless of industrial activity. Prohibited NSWDs may be authorized under other individual or general NPDES permits, or waste discharge requirements issued by the Water Boards.
28. Prohibited NSWDs are referred to as unauthorized NSWDs in this General Permit. Unauthorized NSWDs shall be either eliminated or permitted by a separate NPDES permit. Unauthorized NSWDs may contribute significant pollutant loads to receiving waters. Measures to control sources of unauthorized NSWDs such as spills, leakage, and dumping, must be addressed through the implementation of Best Management Practices (BMPs).
29. This General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the Water Boards.
30. Direct discharges of waste, including industrial storm water discharges, to Areas of Special Biological Significance (ASBS) are prohibited unless the Discharger has applied for and the State Water Board has granted an exception to the State Water Board's 2009 Water Quality Control Plan for Ocean Waters of California as amended by State Water Board Resolution 2012-0056 (California Ocean Plan)² allowing the discharge.

² State Water Resources Control Board. Ocean Standards Web Page.

<http://www.waterboards.ca.gov/water_issues/programs/ocean/>. [as of February 4, 2014].

State Water Resources Control Board. Water Quality Control Plan for Ocean Waters of California 2009.

<http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/2009_cop_adoptedeffective_usepa.pdf>. [as of February 4, 2014].

State Water Resources Control Board. Resolution 2012-0056.

<http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0056.pdf>. [as of February 4, 2014].

D. Effluent Limitations

31. Section 301(b) of the Clean Water Act and 40 Code of Federal Regulations section require NPDES permits to include technology-based requirements at a minimum, and any more stringent effluent limitations necessary for receiving waters to meet applicable water quality standards. Clean Water Act section 402(p)(3)(A) requires that discharges of storm water runoff from industrial facilities comply with Clean Water Act section 301.
32. This General Permit requires control of pollutant discharges using BAT and BCT to reduce and prevent discharges of pollutants, and any more stringent effluent limitations necessary for receiving waters to meet applicable water quality standards.
33. It is not feasible for the State Water Board to establish numeric technology based effluent limitations for discharges authorized by this General Permit at this time. The rationale for this determination is discussed in detail in the Fact Sheet of this General Permit. Therefore, this General Permit requires Dischargers to implement minimum BMPs and applicable advanced BMPs as defined in Section X.H (collectively, BMPs) to comply with the requirements of this General Permit. This approach is consistent with U.S. EPA's 2008 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2008 MSGP).
34. 40 Code of Federal Regulations section 122.44(d) requires that NPDES permits include Water Quality Based Effluent Limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality standards for receiving waters.
35. Where numeric water quality criteria have not been established, 40 Code of Federal Regulations section 122.44(d)(1)(vi) provides that WQBELs may be established using U.S. EPA criteria guidance under section 304(a) of the Clean Water Act, a proposed state criteria or policy interpreting narrative criteria supplemented with other relevant information, and/or an indicator parameter.
36. This General Permit requires Dischargers to implement BMPs when necessary, in order to support attainment of water quality standards. The use of BMPs to control or abate the discharge of pollutants is authorized by 40 Code of Federal Regulations section 122.44(k)(3) because numeric effluent limitations are infeasible and implementation of BMPs is reasonably necessary to achieve effluent limitations and water quality standards, and to carry out the purposes and intent of the Clean Water Act. (40 C.F.R. § 122.44(k)(4).)

E. Receiving Water Limitations

37. This General Permit requires compliance with receiving water limitations based on water quality standards. The primary receiving water limitation requires that industrial storm water discharges and authorized NSWDS not

cause or contribute to an exceedance of applicable water quality standards. Water quality standards apply to the quality of the receiving water, not the quality of the industrial storm water discharge. Therefore, compliance with the receiving water limitations generally cannot be determined solely by the effluent water quality characteristics. If any Discharger's storm water discharge causes or contributes to an exceedance of a water quality standard, that Discharger must implement additional BMPs or other control measures in order to attain compliance with the receiving water limitation. Compliance with water quality standards may, in some cases, require Dischargers to implement controls that are more protective than controls implemented solely to comply with the technology-based requirements in this General Permit.

F. Total Maximum Daily Loads (TMDLs)

38. TMDLs relate to the maximum amount of a pollutant that a water body can receive and still attain water quality standards. A TMDL is defined as the sum of the allowable loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations), plus the contribution from background sources. (40 C.F.R. § 130.2(i).) Discharges addressed by this General Permit are considered to be point source discharges, and therefore must comply with effluent limitations that are "consistent with the assumptions and requirements of any available waste load allocation for the discharge prepared by the state and approved by U.S. EPA pursuant to 40 Code of Federal Regulations section 130.7. (40 C.F.R. § 122.44 (d)(1)(vii).) In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement any relevant water quality control plans. Many TMDLs contained in water quality control plans include implementation requirements in addition to waste load allocations. Attachment E of this General Permit lists the watersheds with U.S. EPA-approved and U.S. EPA-established TMDLs that include requirements, including waste load allocations, for Dischargers covered by this General Permit.

39. The State Water Board recognizes that it is appropriate to develop TMDL-specific permit requirements derived from each TMDL's waste load allocation and implementation requirements, in order to provide clarity to Dischargers regarding their responsibilities for compliance with applicable TMDLs. The development of TMDL-specific permit requirements is subject to public noticing requirements and a corresponding public comment period. Due to the number and variety of Dischargers subject to a wide range of TMDLs, development of TMDL-specific permit requirements for each TMDL listed in Attachment E will severely delay the reissuance of this General Permit. Because most of the TMDLs were established by the Regional Water Boards, and because some of the waste load allocations and/or implementation requirements may be shared by multiple Dischargers, the development of TMDL-specific permit requirements is best coordinated at the Regional Water Board level.

40. State and Regional Water Board staff will develop proposed TMDL-specific permit requirements (including monitoring and reporting requirements) for each of the TMDLs listed in Attachment E. After conducting a 30-day public comment period, the Regional Water Boards will submit to the State Water Board proposed TMDL-specific permit requirements for adoption by the State Water Board into this General Permit by July 1, 2016. The Regional Water Boards may also include proposed TMDL-specific monitoring requirements for inclusion in this General Permit, or may issue Regional Water Board orders pursuant to Water Code section 13383 requiring TMDL-specific monitoring. The proposed TMDL-specific permit requirements shall have no force or effect until adopted, with or without modification, by the State Water Board. Consistent with the 2008 MSGP, Dischargers are not required to take any additional actions to comply with the TMDLs listed in Attachment E until the State Water Board reopens this General Permit and includes TMDL-specific permit requirements, unless notified otherwise by a Regional Water Board.
41. The Regional Water Boards shall submit to the State Water Board the following information for each of the TMDLs listed in Attachment E:
- a. Proposed TMDL-specific permit, monitoring and reporting requirements applicable to industrial storm water discharges and NSWDS authorized under this General Permit, including compliance schedules and deliverables consistent with the TMDLs. TMDL-specific permit requirements are not limited by the BAT/BCT technology-based standards;
 - b. An explanation of how the proposed TMDL-specific permit requirements, compliance schedules, and deliverables are consistent with the assumptions and requirements of any applicable waste load allocation and implement each TMDL; and,
 - c. Where a BMP-based approach is proposed, an explanation of how the proposed BMPs will be sufficient to implement applicable waste load allocations.
42. Upon receipt of the information described in Finding 40, and no later than July 1, 2016, the State Water Board will issue a public notice and conduct a public comment period for the reopening of this General Permit to amend Attachment E, the Fact Sheet, and other provisions as necessary for incorporation of TMDL-specific permit requirements into this General Permit. Attachment E may also be subsequently reopened during the term of this General Permit to incorporate additional TMDL-specific permit requirements.

G. Discharges Subject to the California Ocean Plan

43. On October 16, 2012 the State Water Board amended the California Ocean Plan. The amended California Ocean Plan requires industrial storm water dischargers with outfalls discharging to ocean waters to comply with the

California Ocean Plan's model monitoring provisions. These provisions require Dischargers to: (a) monitor runoff for specific parameters at all outfalls from two storm events per year, and collect at least one representative receiving water sample per year, (b) conduct specified toxicity monitoring at certain types of outfalls at a minimum of once per year, and (c) conduct marine sediment monitoring for toxicity under specific circumstances. The California Ocean Plan provides conditions under which some of the above monitoring provisions may be waived by the Water Boards.

44. This General Permit requires Dischargers with outfalls discharging to ocean waters that are subject to the model monitoring provisions of the California Ocean Plan to develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers that have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015 (the effective date of this General Permit), or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.
45. The California Ocean Plan prohibits the direct discharge of waste to ASBS. ASBS are defined in California Ocean Plan as "those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable."
46. The California Ocean Plan authorizes the State Water Board to grant an exception to Ocean Plan provisions where the board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.
47. On March 20, 2012, the State Water Board adopted Resolution 2012-0012 which contains exceptions to the California Ocean Plan for specific discharges of storm water and non-point sources. This resolution also contains the special protections that are to be implemented for those discharges to ASBS.
48. This General Permit requires Dischargers who have been granted an exception to the Ocean Plan authorizing the discharges to ASBS by the State Water Board to comply with the requirements contained in Section VIII.B of this General Permit.

H. Training

49. To improve compliance and maintain consistent implementation of this General Permit, Dischargers are required to designate a Qualified Industrial Storm Water Practitioner (QISP) for each facility the Discharger operates that has entered Level 1 status in the Exceedance Response Action (ERA) process as described in Section XII of this General Permit. A QISP may be assigned to more than one facility. In order to qualify as a QISP, a State

Water Board-sponsored or approved training course must be completed. A competency exam may be required by the State Water Board to demonstrate sufficient knowledge of the QISP course material.

50. A QISP must assist the Discharger in completing the Level 1 status and Level 2 status ERA requirements as specified in Section XII of this General Permit. A QISP is also responsible for assisting New Dischargers that will be discharging to an impaired water body with a 303(d) listed impairment, demonstrate eligibility for coverage through preparing the data and/or information required in Section VII.B.
51. A Compliance Group Leader, as defined in Section XIV of this General Order must complete a State Water Board sponsored or approved training program for Compliance Group Leaders.
52. All engineering work subject to the Professional Engineers Act (Bus. & Prof. Code § 6700, et seq.) and required by this General Permit shall be performed by a California licensed professional engineer.
53. California licensed professional civil, industrial, chemical, and mechanical engineers and geologists have licenses that have professional overlap with the topics of this General Permit. The California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors and Geologists (CBPELSG) provides the licensure and regulation of professional civil, industrial, chemical, and mechanical engineers and professional geologists in California. The State Water Board is developing a specialized self-guided State Water Board-sponsored registration and training program specifically for these CPBELSG licensed engineers and geologists in good standing with CBPELSG.

I. Storm Water Pollution Prevention Plan (SWPPP) Requirements

54. This General Permit requires the development of a site-specific SWPPP in accordance with Section X of this General Permit. The SWPPP must include the information needed to demonstrate compliance with the requirements of this General Permit. The SWPPP must be submitted electronically via SMARTS, and a copy be kept at the facility. SWPPP revisions shall be completed in accordance with Section X.B of this General Permit

J. Sampling, Visual Observations, Reporting and Record Keeping

55. This General Permit complies with 40 Code of Federal Regulations section 122.44(i), which establishes monitoring requirements that must be included in storm water permits. Under this General Permit, Dischargers are required to:
 - (a) conduct an Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation) to identify areas of the facility contributing pollutants to industrial storm water discharges, (b) evaluate whether measures to reduce or prevent industrial pollutant loads identified in the Discharger's SWPPP are adequate and properly implemented in accordance with the terms of this

General Permit, and (c) determine whether additional control measures are needed.

56. This General Permit contains monitoring requirements that are necessary to determine whether pollutants are being discharged, and whether response actions are necessary. Data and information resulting from the monitoring will assist in Dischargers' evaluations of BMP effectiveness and compliance with this General Permit. Visual observations are one form of monitoring. This General Permit requires Dischargers to perform a variety of visual observations designed to identify pollutants in industrial storm water discharges and their sources. To comply with this General Permit Dischargers shall: (1) electronically self-report any violations via SMARTS, (2) comply with the Level 1 status and Level 2 status ERA requirements, when applicable, and (3) adequately address and respond to any Regional Water Board comments on the Discharger's compliance reports.

57. Dischargers that meet the requirements of the No Exposure Certification (NEC) Conditional Exclusion set forth in Section XVII of this General Permit are exempt from the SWPPP requirements, sampling requirements, and visual observation requirements in this General Permit.

K. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

58. U.S. EPA regulations at 40 Code of Federal Regulations Chapter I Subchapter N (Subchapter N) establish technology-based Effluent Limitation Guidelines and New Source Performance Standards (ELGs) for industrial storm water discharges from facilities in specific industrial categories. For these facilities, compliance with the BAT/BCT and ELG requirements constitutes compliance with technology-based requirements of this General Permit.

59. 40 Code of Federal Regulations section 122.44(i)(3) and (4) require storm water permits to require at least one Annual Evaluation and any monitoring requirements for applicable ELGs in Subchapter N. This General Permit requires Dischargers to comply with all applicable ELG requirements found in Subchapter N.

L. Sampling and Analysis Reduction

60. This General Permit reduces the number of qualifying sampling events required to be sampled each year when the Discharger demonstrates: (1) consistent compliance with this General Permit, (2) consistent effluent water quality sampling, and (3) analysis results that do not exceed numerical action levels.

M. Role of Numeric Action Levels (NALs) and Exceedance Response Actions (ERAs)

61. This General Permit incorporates a multiple objective performance measurement system that includes NALs, new comprehensive training requirements, Level 1 ERA Reports, Level 2 ERA Technical Reports, and Level 2 ERA Action Plans. Two objectives of the performance measurement system are to inform Dischargers, the public and the Water Boards on: (1) the overall pollutant control performance at any given facility, and (2) the overall performance of the industrial statewide storm water program. Additionally, the State Water Board expects that this information and assessment process will provide information necessary to determine the feasibility of numeric effluent limitations for industrial dischargers in the next reissuance of this General Permit, consistent with the State Water Board Storm Water Panel of Experts' June 2006 Recommendations.³
62. This General Permit contains annual and instantaneous maximum NALs. The annual NALs are established as the 2008 MSGP benchmark values, and are applicable for all parameters listed in Table 2. The instantaneous maximum NALs are calculated from a Water Board dataset, and are only applicable for Total Suspended Solids (TSS), Oil and Grease (O&G), and pH. An NAL exceedance is determined as follows:
- a. For annual NALs, an exceedance occurs when the average of all analytical results from all samples taken at a facility during a reporting year for a given parameter exceeds an annual NAL value listed in Table 2 of this General Permit; or,
 - b. For the instantaneous maximum NALs, an exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL value (for Total Suspended Solids, and Oil and Grease), or are outside of the instantaneous maximum NAL range (for pH) listed in Table 2 of this General Permit. For the purposes of this General Permit, the reporting year is July 1 through June 30.
63. The NALs are not intended to serve as technology-based or water quality-based numeric effluent limitations. The NALs are not derived directly from either BAT/BCT requirements or receiving water objectives. NAL exceedances defined in this General Permit are not, in and of themselves, violations of this General Permit. A Discharger that does not fully comply with the Level 1 status and/or Level 2 status ERA requirements, when required by the terms of this General Permit, is in violation of this General Permit.
64. ERAs are designed to assist Dischargers in complying with this General Permit. Dischargers subject to ERAs must evaluate the effectiveness of their

³ State Water Board Storm Water Panel of Experts, The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 19, 2006) <http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf> [as of February 4, 2014].

BMPs being implemented to ensure they are adequate to achieve compliance with this General Permit.

65. U.S. EPA regulations at Subchapter N establish ELGs for storm water discharges from facilities in 11 industrial categories. Dischargers subject to these ELGs are required to comply with the applicable requirements.
66. Exceedances of the NALs that are attributable solely to pollutants originating from non-industrial pollutant sources (such as run-on from adjacent facilities, non-industrial portions of the Discharger's property, or aerial deposition) are not a violation of this General Permit because the NALs are designed to provide feedback on industrial sources of pollutants. Dischargers may submit a Non-Industrial Source Pollutant Demonstration as part of their Level 2 ERA Technical Report to demonstrate that the presence of a pollutant causing an NAL exceedance is attributable solely to pollutants originating from non-industrial pollutant sources.
67. A Discharger who has designed, installed, and implemented BMPs to reduce or prevent pollutants in industrial storm water discharges in compliance with this General Permit may submit an Industrial Activity BMPs Demonstration, as part of their Level 2 ERA Technical Report.
68. This General Permit establishes design storm standards for all treatment control BMPs. These design standards are directly based on the standards in State Water Board Order 2000-0011 regarding Standard Urban Storm Water Mitigation Plans (SUSMPs). These design standards are generally expected to be consistent with BAT/BCT, to be protective of water quality, and to be effective for most pollutants. The standards are intended to eliminate the need for most Dischargers to further treat/control industrial storm water discharges that are unlikely to contain pollutant loadings that exceed the NALs set forth in this General Permit.

N. Compliance Groups

69. Compliance Groups are groups of Dischargers (Compliance Group Participants) that share common types of pollutant sources and industrial activity characteristics. Compliance Groups provide an opportunity for the Compliance Group Participants to combine resources and develop consolidated Level 1 ERA Reports for Level 1 NAL exceedances and appropriate BMPs for implementation in response to Level 2 status ERA requirements that are representative of the entire Compliance Group. Compliance Groups also provide the Water Boards and the public with valuable information as to how industrial storm water discharges are affected by non-industrial background pollutant sources (including natural background) and geographic locations. When developing the next reissuance of this General Permit, the State Water Board expects to have a better understanding of the feasibility and benefits of sector-specific and watershed-based permitting alternatives, which may include technology- or water quality-based numeric effluent limitations. The effluent data, BMP performance data

and other information provided from Compliance Groups' consolidated reporting will further assist the State Water Board in addressing sector-specific and watershed-based permitting alternatives.

O. Conditional Exclusion – No Exposure Certification (NEC)

70. Pursuant to U.S. EPA Phase II regulations, all Dischargers subject to this General Permit may qualify for a conditional exclusion from specific requirements if they submit a NEC demonstrating that their facilities have no exposure of industrial activities and materials to storm water discharges.
71. This General Permit requires Dischargers who seek the NEC conditional exclusion to obtain coverage in accordance with Section XVII of this General Permit. Dischargers that meet the requirements of the NEC are exempt from the SWPPP, sampling requirements, and monitoring requirements in this General Permit.
72. Dischargers seeking NEC coverage are required to certify and submit the applicable permit registration documents. Annual inspections, re-certifications, and fees are required in subsequent years. Light industry facility Dischargers excluded from coverage under the previous permit (Order 97-03-DWQ) must obtain the appropriate coverage under this General Permit. Failure to comply with the Conditional Exclusion conditions listed in this General Permit may lead to enforcement for discharging without a permit pursuant to sections 13385 or 13399.25, et seq., of the Water Code. A Discharger with NEC coverage that anticipates a change (or changes) in circumstances that would lead to exposure should register for permit coverage prior to the anticipated changes.

P. Special Requirements for Facilities Handling Plastic Materials

73. Section 13367 of the Water Code requires facilities handling preproduction plastic to implement specific BMPs aimed at minimizing discharges of such materials. The definition of Plastic Materials for the purposes of this General Permit includes the following types of sources of Plastic Materials: virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other types of preproduction plastics with the potential to discharge or migrate off-site.

Q. Regional Water Board Authorities

74. Regional Water Boards are primarily responsible for enforcement of this General Permit. This General Permit recognizes that Regional Water Boards have the authority to protect the beneficial uses of receiving waters and prevent degradation of water quality in their region. As such, Regional Water Boards may modify monitoring requirements and review, comment, approve or disapprove certain Discharger submittals required under this General Permit.

IT IS HEREBY ORDERED that all Dischargers subject to this General Permit shall comply with the following conditions and requirements.

II. RECEIVING GENERAL PERMIT COVERAGE

A. Certification

1. For Storm Water Multiple Application and Report Tracking System (SMARTS) electronic account management and security reasons, as well as enforceability of this General Permit, the Discharger's Legally Responsible Person (LRP) of an industrial facility seeking coverage under this General Permit shall certify and submit all Permit Registration Documents (PRDs) for Notice of Intent (NOI) or No Exposure Certification (NEC) coverage. All other documents shall be certified and submitted via SMARTS by the Discharger's (LRP) or by their Duly Authorized Representative in accordance with the Electronic Signature and Certification Requirements in Section XXI.K. All documents required by this General Permit that are certified and submitted via SMARTS shall be in accordance with Section XXI.K.
2. Hereinafter references to certifications and submittals by the Discharger refer to the Discharger's LRP and their Duly Authorized Representative.

B. Coverages

This General Permit includes requirements for two (2) types of permit coverage, NOI coverage and NEC coverage. State Water Board Order 97-03-DWQ (previous permit) remains in effect until July 1, 2015. When PRDs are certified and submitted and the annual fee is received, the State Water Board will assign the Discharger a Waste Discharger Identification (WDID) number.

1. General Permit Coverage (NOI Coverage)
 - a. Dischargers that discharge storm water associated with industrial activity to waters of the United States are required to meet all applicable requirements of this General Permit.
 - b. The Discharger shall register for coverage under this General Permit by certifying and submitting PRDs via SMARTS (<http://smarts.waterboards.ca.gov>), which consist of:
 - i. A completed NOI and signed certification statement;
 - ii. A copy of a current Site Map from the Storm Water Pollution Prevention Plan (SWPPP) in Section X.E;
 - iii. A SWPPP (see Section X); and,

- c. The Discharger shall pay the appropriate Annual Fee in accordance with California Code of Regulations, title 23, section 2200 et seq.⁴
2. General Permit Coverage (NEC Coverage)
 - a. Dischargers that certify their facility has no exposure of industrial activities or materials to storm water in accordance with Section XVII qualify for NEC coverage and are not required to comply with the SWPPP or monitoring requirements of this General Permit.
 - b. Dischargers who qualify for NEC coverage shall conduct one Annual Facility Comprehensive Compliance Evaluation (Annual Evaluation) as described in Section XV, pay an annual fee, and certify annually that their facilities continue to meet the NEC requirements.
 - c. The Discharger shall submit the following PRDs on or before October 1, 2015 for NEC coverage via SMARTS:
 - i. A completed NEC Form (Section XVII.F.1) and signed certification statement (Section XVII.H);
 - ii. A completed NEC Checklist (Section XVII.F.2); and
 - iii. A current Site Map consistent with requirements in Section X.E.;
 - d. The Discharger shall pay the appropriate annual fee in accordance with California Code of Regulations, title 23, section 2200 et seq.⁵
 3. General PRD Requirements
 - a. Site Maps

Dischargers registering for NOI or NEC coverage shall prepare a site map(s) as part of their PRDs in accordance with Section X.E. A separate copy of the site map(s) is required to be in the SWPPP. If there is a significant change in the facility layout (e.g., new building, change in storage locations, boundary change, etc.) a revision to the site map is required and shall be certified and submitted via SMARTS.
 - b. A Discharger shall submit a single set of PRDs for coverage under this General Permit for multiple industrial activities occurring at the same facility.
 - c. Any information provided to the Water Boards by the Discharger shall comply with the Homeland Security Act and other federal law that

⁴ Annual fees must be mailed or sent electronically using the State Water Boards' Electronic Funds Transfer (EFT) system in SMARTS.

⁵ See footnote 4.

addresses security in the United States; any information that does not comply should not be submitted in the PRDs. The Discharger must provide justification to the Regional Water Board regarding redacted information within any submittal.

- d. Dischargers may redact trade secrets from information that is submitted via SMARTS. Dischargers who certify and submit redacted information via SMARTS must include a general description of the redacted information and the basis for the redaction in the version that is submitted via SMARTS. Dischargers must submit complete and un-redacted versions of the information that are clearly labeled "CONFIDENTIAL" to the Regional Water Board within 30 days of the submittal of the redacted information. All information labeled "CONFIDENTIAL" will be maintained by the Water Boards in a separate, confidential file.
4. Schedule for Submitting PRDs - Existing Dischargers Under the Previous Permit.
- a. Existing Dischargers⁶ with coverage under the previous permit shall continue coverage under the previous permit until July 1, 2015. All waste discharge requirements and conditions of the previous permit are in effect until July 1, 2015.
 - b. Existing Dischargers with coverage under the previous permit shall register for NOI coverage by July 1, 2015 or for NEC coverage by October 1, 2015. Existing Dischargers previously listed in Category 10 (Light Industry) of the previous permit, and continue to have no exposure to industrial activities and materials, have until October 1, 2015 to register for NEC coverage.
 - c. Existing Dischargers with coverage under the previous permit, that do not register for NOI coverage by July 1, 2015, may have their permit coverage administratively terminated as soon as July 1, 2015.
 - d. Existing Dischargers with coverage under the previous permit that are eligible for NEC coverage but do not register for NEC coverage by October 1, 2015 may have their permit coverage administratively terminated as soon as October 1, 2015.
 - e. Existing Dischargers shall continue to comply with the SWPPP requirements in State Water Board Order 97-03-DWQ up to, but no later than, June 30, 2015.

⁶ Existing Dischargers are Dischargers with an active Notice of Intent (permit coverage) under the previous permit (97-03-DWQ) prior to the effective date of this General Permit.

- f. Existing Dischargers shall implement an updated SWPPP in accordance with Section X by July 1, 2015.
 - g. Existing Dischargers that submit a Notice of Termination (NOT) under the previous permit prior to July 1, 2015 and that receive NOT approval from the Regional Water Board are not subject to this General Permit unless they subsequently submitted new PRDs.
5. Schedule for Submitting PRDs - New Dischargers Obtaining Coverage On or After July 1, 2015
- New Dischargers registering for NOI coverage on or after July 1, 2015 shall certify and submit PRDs via SMARTS at least seven (7) days prior to commencement of industrial activities or on July 1, 2015, whichever comes later.
- a. New Dischargers registering for NEC coverage shall electronically certify and submit PRDs via SMARTS by October 1, 2015, or at least seven (7) days prior to commencement of industrial activities, whichever is later.

C. Termination and Changes to General Permit Coverage

1. Dischargers with NOI or NEC coverage shall request termination of coverage under this General Permit when either (a) operation of the facility has been transferred to another entity, (b) the facility has ceased operations, completed closure activities, and removed all industrial related pollutants, or (c) the facility's operations have changed and are no longer subject to the General Permit. Dischargers shall certify and submit a Notice of Termination via SMARTS. Until a valid NOT is received, the Discharger remains responsible for compliance with this General Permit and payment of accrued annual fees.
2. Whenever there is a change to the facility location, the Discharger shall certify and submit new PRDs via SMARTS. When ownership changes, the prior Discharger (seller) must inform the new Discharger (buyer) of the General Permit applications and regulatory coverage requirements. The new Discharger must certify and submit new PRDs via SMARTS to obtain coverage under this General Permit.
3. Dischargers with NOI coverage where the facility qualifies for NEC coverage in accordance with Section XVII of this General Permit, may register for NEC coverage via SMARTS. Such Dischargers are not required to submit an NOT to cancel NOI coverage.
4. Dischargers with NEC coverage, where changes in the facility and/or facility operations occur, which result in NOI coverage instead of NEC coverage, shall register for NOI coverage via SMARTS. Such Dischargers are not required to submit an NOT to cancel NEC coverage.

5. Dischargers shall provide additional information supporting an NOT, or revise their PRDs via SMARTS, upon request by the Regional Water Board.
6. Dischargers that are denied approval of a submitted NOT or registration for NEC coverage by the Regional Water Board, shall continue compliance with this General Permit under their existing NOI coverage.
7. New Dischargers (Dischargers with no previous NOI or NEC coverage) shall register for NOI coverage if the Regional Water Board denies NEC coverage.

D. Preparation Requirements

1. The following documents shall be certified and submitted by the Discharger via SMARTS:
 - a. Annual Reports (Section XVI) and SWPPPs (Section X);
 - b. NOTs;
 - c. Sampling Frequency Reduction Certification (Section XI.C.7);
 - d. Level 1 ERA Reports (Section XII.C) prepared by a QISP;
 - e. Level 2 ERA Technical Reports and Level 2 ERA Action Plans (Sections XII.D.1-2) prepared by a QISP; and,
 - f. SWPPPs for inactive mining operations as described in Section XIII, signed (wet signature and license number) by a California licensed professional engineer.
2. The following documents shall be signed (wet signature and license number) by a California licensed professional engineer:
 - a. Calculations for Dischargers subject to Subchapter N in accordance with Section XI.D;
 - b. Notice of Non-Applicability (NONA) Technical Reports described in Section XX.C for facilities that are engineered and constructed to have contained the maximum historic precipitation event (or series of events) using the precipitation data collected from the National Oceanic and Atmospheric Agency's website;
 - c. NONA Technical Reports described in Section XX.C for facilities located in basins or other physical locations that are not tributaries or hydrologically connected to waters of the United States; and,
 - d. SWPPPs for inactive mines described in Section XIII.

III. DISCHARGE PROHIBITIONS

- A. All discharges of storm water to waters of the United States are prohibited except as specifically authorized by this General Permit or another NPDES permit.
- B. Except for non-storm water discharges (NSWDs) authorized in Section IV, discharges of liquids or materials other than storm water, either directly or indirectly to waters of the United States, are prohibited unless authorized by another NPDES permit. Unauthorized NSWDs must be either eliminated or authorized by a separate NPDES permit.
- C. Industrial storm water discharges and authorized NSWDs that contain pollutants that cause or threaten to cause pollution, contamination, or nuisance as defined in section 13050 of the Water Code, are prohibited.
- D. Discharges that violate any discharge prohibitions contained in applicable Regional Water Board Water Quality Control Plans (Basin Plans), or statewide water quality control plans and policies are prohibited.
- E. Discharges to ASBS are prohibited in accordance with the California Ocean Plan, unless granted an exception by the State Water Board and in compliance with the Special Protections contained in Resolution 2012-0012.
- F. Industrial storm water discharges and NSWDs authorized by this General Permit that contain hazardous substances equal to or in excess of a reportable quantity listed in 40 Code of Federal Regulations sections 110.6, 117.21, or 302.6 are prohibited.

IV. AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- A. The following NSWDs are authorized provided they meet the conditions of Section IV.B:
 - 1. Fire-hydrant and fire prevention or response system flushing;
 - 2. Potable water sources including potable water related to the operation, maintenance, or testing of potable water systems;
 - 3. Drinking fountain water and atmospheric condensate including refrigeration, air conditioning, and compressor condensate;
 - 4. Irrigation drainage and landscape watering provided all pesticides, herbicides and fertilizers have been applied in accordance with the manufacturer's label;
 - 5. Uncontaminated natural springs, groundwater, foundation drainage, footing drainage;

6. Seawater infiltration where the seawater is discharged back into the source:
and,
 7. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains).
- B.** The NSWDs identified in Section IV.A are authorized by this General Permit if the following conditions are met:
1. The authorized NSWDs are not in violation of any Regional Water Board Water Quality Control Plans (Basin Plans) or other requirements, or statewide water quality control plans or policies requirement;
 2. The authorized NSWDs are not in violation of any municipal agency ordinance or requirements;
 3. BMPs are included in the SWPPP and implemented to:
 - a. Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
 - b. Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
 - c. Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards;
and,
 - d. Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.
 4. The Discharger conducts monthly visual observations (Section XI.A.1) of NSWDs and sources to ensure adequate BMP implementation and effectiveness; and,
 5. The Discharger reports and describes all authorized NSWDs in the Annual Report.
- C.** Firefighting related discharges are not subject to this General Permit and are not subject to the conditions of Section IV.B. These discharges, however, may be subject to Regional Water Board enforcement actions under other sections of the Water Code. Firefighting related discharges that are contained and are later discharged may be subject to municipal agency ordinances and/or Regional Water Board requirements.

V. EFFLUENT LIMITATIONS

- A. Dischargers shall implement BMPs that comply with the BAT/BCT requirements of this General Permit to reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.
- B. Industrial storm water discharges from facilities subject to storm water ELGs in Subchapter N shall not exceed those storm water ELGs. The ELGs for industrial storm water discharges subject to Subchapter N are in Attachment F of this General Permit.
- C. Dischargers located within a watershed for which a Total Maximum Daily Load (TMDL) has been approved by U.S. EPA, shall comply with any applicable TMDL-specific permit requirements that have been incorporated into this General Permit in accordance with Section VII.A. Attachment E contains a reference list of potential TMDLs that may apply to Dischargers subject to this General Permit.

VI. RECEIVING WATER LIMITATIONS

- A. Dischargers shall ensure that industrial storm water discharges and authorized NSWDS do not cause or contribute to an exceedance of any applicable water quality standards in any affected receiving water.
- B. Dischargers shall ensure that industrial storm water discharges and authorized NSWDS do not adversely affect human health or the environment.
- C. Dischargers shall ensure that industrial storm water discharges and authorized NSWDS do not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

VII. TOTAL MAXIMUM DAILY LOADS (TMDLs)

A. Implementation

1. The State Water Board shall reopen and amend this General Permit, including Attachment E, the Fact Sheet and other applicable Permit provisions as necessary, in order to incorporate TMDL-specific permit requirements, as described in Findings 38 through 42. Once this General Permit is amended, Dischargers shall comply with the incorporated TMDL-specific permit requirements in accordance with any specified compliance schedule(s). TMDL-specific compliance dates that exceed the term of this General Permit may be included for reference, and are enforceable in the event that this General Permit is administratively extended or reissued.
2. The State Water Board may, at its discretion, reopen this General Permit to add TMDL-specific permit requirements to Attachment E, or to incorporate new TMDLs adopted during the term of this General Permit that include requirements applicable to Dischargers covered by this General Permit.

- B.** New Dischargers applying for NOI coverage under this General Permit that will be discharging to a water body with a 303(d) listed impairment are ineligible for coverage unless the Discharger submits data and/or information, prepared by a QISP, demonstrating that:
1. The Discharger has eliminated all exposure to storm water of the pollutant(s) for which the water body is impaired, has documented the procedures taken to prevent exposure onsite, and has retained such documentation with the SWPPP at the facility;
 2. The pollutant for which the water body is impaired is not present at the Discharger's facility, and the Discharger has retained documentation of this finding with the SWPPP at the facility; or,
 3. The discharge of any listed pollutant will not cause or contribute to an exceedance of a water quality standard. This is demonstrated if: (1) the discharge complies with water quality standard at the point of discharge, or (2) if there are sufficient remaining waste load allocations in an approved TMDL and the discharge is controlled at least as stringently as similar discharges subject to that TMDL.

VIII. DISCHARGES SUBJECT TO THE CALIFORNIA OCEAN PLAN

A. Discharges to Ocean Waters

1. Dischargers with outfalls discharging to ocean waters that are subject to the model monitoring provisions of the California Ocean Plan shall develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015, or seven (7) days prior to commencing of operations, whichever is later, are ineligible to obtain coverage under this General Permit.
2. Dischargers are ineligible for the methods and exceptions provided in Section XI.C of this General permit for any of the outfalls discharging to ocean waters subject to the model monitoring provisions of the California Ocean Plan.

B. Discharge Granted an Exceptions for Areas of Special Biological Significance (ASBS)

Dischargers who were granted an exception to the California Ocean Plan prohibition against direct discharges of waste to an ASBS pursuant to Resolution 2012-0012⁷ amended by Resolution 2012-0031⁸ shall comply with the conditions and requirements set forth in Attachment G of this General Permit. Any Discharger that applies for and is granted an exception to the California Ocean Plan prohibition after July 1, 2013 shall comply with the conditions and requirements set forth in the granted exception.

IX. TRAINING QUALIFICATIONS

A. General

1. A Qualified Industrial Storm Water Practitioner (QISP) is a person (either the Discharger or a person designated by the Discharger) who has completed a State Water Board-sponsored or approved QISP training course⁹, and has registered as a QISP via SMARTS. Upon completed registration the State Water Board will issue a QISP identification number.
2. The Executive Director of the State Water Board or an Executive Officer of a Regional Water Board may rescind any QISP's registration if it is found that the QISP has repeatedly demonstrated an inadequate level of performance in completing the QISP requirements in this General Permit. An individual whose QISP registration has been rescinded may request that the State Water Board review the rescission. Any request for review must be received by the State Water Board no later than 30 days of the date that the individual received written notice of the rescission.
3. Dischargers with Level 1 status shall:
 - a. Designate a person to be the facility's QISP and ensure that this person has attended and satisfactorily completed the State Water Board-sponsored or approved QISP training course.
 - b. Ensure that the facility's designated QISP provides sufficient training to the appropriate team members assigned to perform activities required by this General Permit.

⁷ State Water Resources Control Board. Resolution 2012-0012. <http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0012.pdf>. [as of February 4, 2014].

⁸ State Water Resources Control Board. Resolution 2012-0031. <http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0031.pdf>. [as of February 4, 2014].

⁹ A specialized self-guided State Water Board-sponsored registration and training program will be available as an option for CPBELSG licensed professional civil, mechanical, industrial, and chemical engineers and professional geologists by the effective date of this General Permit.

X. Storm Water Pollution Prevention Plan (SWPPP)**A. SWPPP Elements**

Dischargers shall develop and implement a site-specific SWPPP for each industrial facility covered by this General Permit that shall contain the following elements, as described further in this Section¹⁰:

1. Facility Name and Contact Information;
2. Site Map;
3. List of Industrial Materials;
4. Description of Potential Pollution Sources;
5. Assessment of Potential Pollutant Sources;
6. Minimum BMPs;
7. Advanced BMPs, if applicable;
8. Monitoring Implementation Plan;
9. Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation);
and,
10. Date that SWPPP was Initially Prepared and the Date of Each SWPPP Amendment, if Applicable.

B. SWPPP Implementation and Revisions

All Dischargers are required to implement their SWPPP by July 1, 2015 or upon commencement of industrial activity. The Discharger shall:

1. Revise their on-site SWPPP whenever necessary;
2. Certify and submit via SMARTS their SWPPP within 30 days whenever the SWPPP contains significant revision(s); and,
3. With the exception of significant revisions, the Discharger is not required to certify and submit via SMARTS their SWPPP revisions more than once every three (3) months in the reporting year.

¹⁰ Appendix 1 (SWPPP Checklist) of this General Permit is provided to assist the Discharger in including information required in the SWPPP. This checklist is not required to be used.

C. SWPPP Performance Standards

1. The Discharger shall ensure a SWPPP is prepared to:
 - a. Identify and evaluate all sources of pollutants that may affect the quality of industrial storm water discharges and authorized NSWDS;
 - b. Identify and describe the minimum BMPs (Section X.H.1) and any advanced BMPs (Section X.H.2) implemented to reduce or prevent pollutants in industrial storm water discharges and authorized NSWDS. BMPs shall be selected to achieve compliance with this General Permit; and,
 - c. Identify and describe conditions or circumstances which may require future revisions to be made to the SWPPP.
2. The Discharger shall prepare a SWPPP in accordance with all applicable SWPPP requirements of this Section. A copy of the SWPPP shall be maintained at the facility.

D. Planning and Organization

1. Pollution Prevention Team

Each facility must have a Pollution Prevention Team established and responsible for assisting with the implementation of the requirements in this General Permit. The Discharger shall include in the SWPPP detailed information about its Pollution Prevention Team including:

- a. The positions within the facility organization (collectively, team members) who assist in implementing the SWPPP and conducting all monitoring requirements in this General Permit;
- b. The responsibilities, duties, and activities of each of the team members; and,
- c. The procedures to identify alternate team members to implement the SWPPP and conduct required monitoring when the regularly assigned team members are temporarily unavailable (due to vacation, illness, out of town business, or other absences).

2. Other Requirements and Existing Facility Plans

- a. The Discharger shall ensure its SWPPP is developed, implemented, and revised as necessary to be consistent with any applicable municipal, state, and federal requirements that pertain to the requirements in this General Permit.
- b. The Discharger may include in their SWPPP the specific elements of existing plans, procedures, or regulatory compliance documents that

contain storm water-related BMPs or otherwise relate to the requirements of this General Permit.

- c. The Discharger shall properly reference the original sources for any elements of existing plans, procedures, or regulatory compliance documents included as part of their SWPPP and shall maintain a copy of the documents at the facility as part of the SWPPP.
- d. The Discharger shall document in their SWPPP the facility's scheduled operating hours as defined in Attachment C. Scheduled facility operating hours that would be considered irregular (temporary, intermittent, seasonal, weather dependent, etc.) shall also be documented in the SWPPP.

E. Site Map

1. The Discharger shall prepare a site map that includes notes, legends, a north arrow, and other data as appropriate to ensure the map is clear, legible and understandable.
2. The Discharger may provide the required information on multiple site maps.
3. The Discharger shall include the following information on the site map:
 - a. The facility boundary, storm water drainage areas within the facility boundary, and portions of any drainage area impacted by discharges from surrounding areas. Include the flow direction of each drainage area, on-facility surface water bodies, areas of soil erosion, and location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.) or municipal storm drain inlets that may receive the facility's industrial storm water discharges and authorized NSWDS;
 - b. Locations of storm water collection and conveyance systems, associated discharge locations, and direction of flow. Include any sample locations if different than the identified discharge locations;
 - c. Locations and descriptions of structural control measures¹¹ that affect industrial storm water discharges, authorized NSWDS, and/or run-on;
 - d. Identification of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;

¹¹ Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

- e. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks (Section X.G.1.d) have occurred; and
- f. Areas of industrial activity subject to this General Permit. Identify all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources.

F. List of Industrial Materials

The Discharger shall ensure the SWPPP includes a list of industrial materials handled at the facility, and the locations where each material is stored, received, shipped, and handled, as well as the typical quantities and handling frequency.

G. Potential Pollutant Sources

1. Description of Potential Pollutant Sources

a. Industrial Processes

The Discharger shall ensure the SWPPP describes each industrial process including: manufacturing, cleaning, maintenance, recycling, disposal, and any other activities related to the process. The type, characteristics, and approximate quantity of industrial materials used in or resulting from the process shall be included. Areas protected by containment structures and the corresponding containment capacity shall be identified and described.

b. Material Handling and Storage Areas

The Discharger shall ensure the SWPPP describes each material handling and storage area, including: the type, characteristics, and quantity of industrial materials handled or stored; the shipping, receiving, and loading procedures; the spill or leak prevention and response procedures; and the areas protected by containment structures and the corresponding containment capacity.

c. Dust and Particulate Generating Activities

The Discharger shall ensure the SWPPP describes all industrial activities that generate a significant amount of dust or particulate that may be deposited within the facility boundaries. The SWPPP shall describe such industrial activities, including the discharge locations, the source type, and the characteristics of the dust or particulate pollutant.

d. Significant Spills and Leaks

The Discharger shall:

- i. Evaluate the facility for areas where spills and leaks can likely occur;
- ii. Ensure the SWPPP includes:
 - a) A list of any industrial materials that have spilled or leaked in significant quantities and have discharged from the facility's storm water conveyance system within the previous five-year period;
 - b) A list of any toxic chemicals identified in 40 Code of Federal Regulations section 302 that have been discharged from the facilities' storm water conveyance system as reported on U.S. EPA Form R, as well as oil and hazardous substances in excess of reportable quantities (40 C.F.R. §§ 110, 117, and 302) that have discharged from the facility's storm water conveyance system within the previous five-year period;
 - c) A list of any industrial materials that have spilled or leaked in significant quantities and had the potential to be discharged from the facility's storm water conveyance system within the previous five-year period; and,
- iii. Ensure that for each discharge or potential discharge listed above the SWPPP includes the location, characteristics, and approximate quantity of the materials spilled or leaked; approximate quantity of the materials discharged from the facility's storm water conveyance system; the cleanup or remedial actions that have occurred or are planned; the approximate remaining quantity of materials that have the potential to be discharged; and the preventive measures taken to ensure spills or leaks of the material do not reoccur.

e. NSWDS

The Discharger shall:

- i. Ensure the SWPPP includes an evaluation of the facility that identifies all NSWDS, sources, and drainage areas;
- ii. Ensure the SWPPP includes an evaluation of all drains (inlets and outlets) that identifies connections to the storm water conveyance system;
- iii. Ensure the SWPPP includes a description of how all unauthorized NSWDS have been eliminated; and,

- iv. Ensure all NSWs are described in the SWPPP. This description shall include the source, quantity, frequency, and characteristics of the NSWs, associated drainage area, and whether it is an authorized or unauthorized NSW in accordance with Section IV.
- f. Erodible Surfaces

The Discharger shall ensure the SWPPP includes a description of the facility locations where soil erosion may be caused by industrial activity, contact with storm water, authorized and unauthorized NSWs, or run-on from areas surrounding the facility.

2. Assessment of Potential Pollutant Sources

- a. The Discharger shall ensure that the SWPPP includes a narrative assessment of all areas of industrial activity with potential industrial pollutant sources. At a minimum, the assessment shall include:
 - i. The areas of the facility with likely sources of pollutants in industrial storm water discharges and authorized NSWs;
 - ii. The pollutants likely to be present in industrial storm water discharges and authorized NSWs;
 - iii. The approximate quantity, physical characteristics (e.g., liquid, powder, solid, etc.), and locations of each industrial material handled, produced, stored, recycled, or disposed;
 - iv. The degree to which the pollutants associated with those materials may be exposed to, and mobilized by contact with, storm water;
 - v. The direct and indirect pathways by which pollutants may be exposed to storm water or authorized NSWs;
 - vi. All sampling, visual observation, and inspection records;
 - vii. The effectiveness of existing BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized NSWs;
 - viii. The estimated effectiveness of implementing, to the extent feasible, minimum BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized NSWs; and,
 - ix. The identification of the industrial pollutants related to the receiving waters with 303(d) listed impairments identified in Appendix 3 or approved TMDLs that may be causing or contributing to an exceedance of a water quality standard in the receiving waters.
- b. Based upon the assessment above, Dischargers shall identify in the SWPPP any areas of the facility where the minimum BMPs described in

subsection H.1 below will not adequately reduce or prevent pollutants in storm water discharges in compliance with Section V.A. Dischargers shall identify any advanced BMPs, as described in subsection H.2 below, for those areas.

- c. Based upon the assessment above, Dischargers shall identify any drainage areas with no exposure to industrial activities and materials in accordance with the definitions in Section XVII.
- d. Based upon the assessment above, Dischargers shall identify any additional parameters, beyond the required parameters in Section XI.B.6 that indicate the presence of pollutants in industrial storm water discharges.

H. Best Management Practices (BMPs)

1. Minimum BMPs

The Discharger shall, to the extent feasible, implement and maintain all of the following minimum BMPs to reduce or prevent pollutants in industrial storm water discharges.¹²

a. Good Housekeeping

The Discharger shall:

- i. Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly;
- ii. Minimize or prevent material tracking;
- iii. Minimize dust generated from industrial materials or activities;
- iv. Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible;
- v. Cover all stored industrial materials that can be readily mobilized by contact with storm water;

¹² For the purposes of this General Permit, the requirement to implement BMPs “to the extent feasible” requires Dischargers to select, design, install and implement BMPs that reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.

- vi. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;
 - vii. Prevent disposal of any rinse/wash waters or industrial materials into the storm water conveyance system;
 - viii. Minimize storm water discharges from non-industrial areas (e.g., storm water flows from employee parking area) that contact industrial areas of the facility; and,
 - ix. Minimize authorized NSWDS from non-industrial areas (e.g., potable water, fire hydrant testing, etc.) that contact industrial areas of the facility.
- b. Preventive Maintenance
- The Discharger shall:
- i. Identify all equipment and systems used outdoors that may spill or leak pollutants;
 - ii. Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks;
 - iii. Establish an appropriate schedule for maintenance of identified equipment and systems; and,
 - iv. Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks.
- c. Spill and Leak Prevention and Response
- The Discharger shall:
- i. Establish procedures and/or controls to minimize spills and leaks;
 - ii. Develop and implement spill and leak response procedures to prevent industrial materials from discharging through the storm water conveyance system. Spilled or leaked industrial materials shall be cleaned promptly and disposed of properly;
 - iii. Identify and describe all necessary and appropriate spill and leak response equipment, location(s) of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and,
 - iv. Identify and train appropriate spill and leak response personnel.
- d. Material Handling and Waste Management

The Discharger shall:

- i. Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event;
 - ii. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water;
 - iii. Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
 - iv. Divert run-on and storm water generated from within the facility away from all stockpiled materials;
 - v. Clean all spills of industrial materials or wastes that occur during handling in accordance with the spill response procedures (Section X.H.1.c); and,
 - vi. Observe and clean as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.
- e. Erosion and Sediment Controls

For each erodible surface facility location identified in the SWPPP (Section X.G.1.f), the Discharger shall:

- i. Implement effective wind erosion controls;
 - ii. Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event;
 - iii. Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site;
 - iv. Divert run-on and storm water generated from within the facility away from all erodible materials; and,
 - v. If sediment basins are implemented, ensure compliance with the design storm standards in Section X.H.6.
- f. Employee Training Program

The Discharger shall:

- i. Ensure that all team members implementing the various compliance activities of this General Permit are properly trained to implement the requirements of this General Permit, including but not limited to: BMP implementation, BMP effectiveness evaluations, visual observations,

and monitoring activities. If a Discharger enters Level 1 status, appropriate team members shall be trained by a QISP;

- ii. Prepare or acquire appropriate training manuals or training materials;
 - iii. Identify which personnel need to be trained, their responsibilities, and the type of training they shall receive;
 - iv. Provide a training schedule; and,
 - v. Maintain documentation of all completed training classes and the personnel that received training in the SWPPP.
- g. Quality Assurance and Record Keeping

The Discharger shall:

- i. Develop and implement management procedures to ensure that appropriate staff implements all elements of the SWPPP, including the Monitoring Implementation Plan;
- ii. Develop a method of tracking and recording the implementation of BMPs identified in the SWPPP; and
- iii. Maintain the BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five (5) years (Section XXI.J.4).

2. Advanced BMPs

- a. In addition to the minimum BMPs described in Section X.H.1, the Discharger shall, to the extent feasible, implement and maintain any advanced BMPs identified in Section X.G.2.b, necessary to reduce or prevent discharges of pollutants in its storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.
- b. Advanced BMPs may include one or more of the following BMPs:
 - i. Exposure Minimization BMPs

These include storm resistant shelters (either permanent or temporary) that prevent the contact of storm water with the identified industrial materials or area(s) of industrial activity.
 - ii. Storm Water Containment and Discharge Reduction BMPs

These include BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of storm water runoff. Dischargers are

encouraged to utilize BMPs that infiltrate or reuse storm water where feasible.

iii. Treatment Control BMPs

This is the implementation of one or more mechanical, chemical, biologic, or any other treatment technology that will meet the treatment design standard.

iv. Other Advanced BMPs

Any additional BMPs not described in subsections b.i through iii above that are necessary to meet the effluent limitations of this General Permit.

3. Temporary Suspension of Industrial Activities

For facilities that plan to temporarily suspend industrial activities for ten (10) or more consecutive calendar days during a reporting year, the Discharger may also suspend monitoring if it is infeasible to conduct monitoring while industrial activities are suspended (e.g., the facility is not staffed, or the facility is remote or inaccessible) and the facility has been stabilized. The Discharger shall include in the SWPPP the BMPs necessary to achieve compliance with this General Permit during the temporary suspension of the industrial activity. Once all necessary BMPs have been implemented to stabilize the facility, the Discharger is not required to:

- a. Perform monthly visual observations (Section XI.A.1.a.); or,
- b. Perform sampling and analysis (Section XI.B.) if it is infeasible to do so (e.g. facility is remotely located).

The Discharger shall upload via SMARTS (7) seven calendar days prior to the planned temporary suspension of industrial activities:

- a. SWPPP revisions specifically addressing the facility stabilization BMPs;
- b. The justification for why monitoring is infeasible at the facility during the period of temporary suspension of industrial activities;
- c. The date the facility is fully stabilized for temporary suspension of industrial activities; and,
- d. The projected date that industrial activities will resume at the facility.

Upon resumption of industrial activities at the facility, the Discharger shall, via SMARTS, confirm and/or update the date the facility's industrial activities have resumed. At this time, the Discharger is required to resume all compliance activities under this General Permit.

The Regional Water Boards may review the submitted information pertaining to the temporary suspension of industrial activities. Upon review, the Regional Water Board may request revisions or reject the Discharger's request to temporarily suspend monitoring.

4. BMP Descriptions

- a. The Discharger shall ensure that the SWPPP identifies each BMP being implemented at the facility, including:
 - i. The pollutant(s) that the BMP is designed to reduce or prevent in industrial storm water discharges;
 - ii. The frequency, time(s) of day, or conditions when the BMP is scheduled for implementation;
 - iii. The locations within each area of industrial activity or industrial pollutant source where the BMP shall be implemented;
 - iv. The individual and/or position responsible for implementing the BMP;
 - v. The procedures, including maintenance procedures, and/or instructions to implement the BMP effectively;
 - vi. The equipment and tools necessary to implement the BMP effectively; and,
 - vii. The BMPs that may require more frequent visual observations beyond the monthly visual observations as described in Section XI.A.1.
- b. The Discharger shall ensure that the SWPPP identifies and justifies each minimum BMP or applicable advanced BMP not being implemented at the facility because they do not reflect best industry practice considering technological availability and economic practicability and achievability.
- c. The Discharger shall identify any BMPs described in subsection a above that are implemented in lieu of any of the minimum or applicable advanced BMPs.

5. BMP Summary Table

The Discharger shall prepare a table summarizing each identified area of industrial activity, the associated industrial pollutant sources, the industrial pollutants, and the BMPs being implemented.

6. Design Storm Standards for Treatment Control BMPs

All new treatment control BMPs employed by the Discharger to comply with Section X.H.2 Advanced BMPs and new sediment basins installed after the effective date of this order shall be designed to comply with design storm standards in this Section, except as provided in an Industrial Activity BMP Demonstration (Section XII.D.2.a). A Factor of Safety shall be incorporated into the design of all treatment control BMPs to ensure that storm water is sufficiently treated throughout the life of the treatment control BMPs. The design storm standards for treatment control BMPs are as follows:

- a. Volume-based BMPs: The Discharger, at a minimum, shall calculate¹³ the volume to be treated using one of the following methods:
 - i. The volume of runoff produced from an 85th percentile 24-hour storm event, as determined from local, historical rainfall records;
 - ii. The volume of runoff produced by the 85th percentile 24-hour storm event, determined as the maximized capture runoff volume for the facility, from the formula recommended in the Water Environment Federation's Manual of Practice;¹⁴ or,
 - iii. The volume of annual runoff required to achieve 80% or more treatment, determined in accordance with the methodology set forth in the latest edition of California Stormwater Best Management Practices Handbook¹⁵, using local, historical rainfall records.
- b. Flow-based BMPs: The Discharger shall calculate the flow needed to be treated using one of the following methods:
 - i. The maximum flow rate of runoff produced from a rainfall intensity of at least 0.2 inches per hour for each hour of a storm event;
 - ii. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from local historical rainfall records, multiplied by a factor of two; or,
 - iii. The maximum flow rate of runoff, as determined using local historical rainfall records, that achieves approximately the same reduction in total pollutant loads as would be achieved by treatment of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

¹³ All hydrologic calculations shall be certified by a California licensed professional engineer in accordance with the Professional Engineers Act (Bus. & Prof. Code § 6700, et seq).

¹⁴ Water Environment Federation (WEF). Manual of Practice No. 23/ ASCE Manual of Practice No. 87, cited in chapter 5 (1998 Edition) and Cited in Chapter 3 (2012 Edition) .

¹⁵ California Stormwater Quality Association. Stormwater Best Management Practice New Development and Redevelopment Handbook. < <http://www.casqa.org/> >. [as of July 3, 2013].

I. MONITORING IMPLEMENTATION PLAN

The Discharger shall prepare a Monitoring Implementation Plan in accordance with the requirements of this General Permit. The Monitoring Implementation Plan shall be included in the SWPPP and shall include the following items:

1. An identification of team members assigned to conduct the monitoring requirements;
2. A description of the following in accordance with Attachment H:
 - a. Discharge locations;
 - b. Visual observation procedures; and,
 - c. Visual observation response procedures related to monthly visual observations and sampling event visual observations.
3. Justifications for any of the following that are applicable to the facility:
 - a. Alternative discharge locations in accordance with Section XI.C.3;
 - b. Representative Sampling Reduction in accordance with Section XI.C.4; or,
 - c. Qualified Combined Samples in accordance with Section XI.C.5.
4. Procedures for field instrument calibration instructions, including calibration intervals specified by the manufacturer; and,
5. An example Chain of Custody form used when handling and shipping water quality samples to the lab.

XI. MONITORING

A. Visual Observations

1. Monthly Visual Observations
 - a. At least once per calendar month, the Discharger shall visually observe each drainage area for the following:
 - i. The presence or indications of prior, current, or potential unauthorized NSWDS and their sources;
 - ii. Authorized NSWDS, sources, and associated BMPs to ensure compliance with Section IV.B.3; and,

- iii. Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential source of industrial pollutants.
- b. The monthly visual observations shall be conducted during daylight hours of scheduled facility operating hours and on days without precipitation.
- c. The Discharger shall provide an explanation in the Annual Report for uncompleted monthly visual observations.

2. Sampling Event Visual Observations

Sampling event visual observations shall be conducted at the same time sampling occurs at a discharge location. At each discharge location where a sample is obtained, the Discharger shall observe the discharge of storm water associated with industrial activity.

- a. The Discharger shall ensure that visual observations of storm water discharged from containment sources (e.g. secondary containment or storage ponds) are conducted at the time that the discharge is sampled.
- b. Any Discharger employing volume-based or flow-based treatment BMPs shall sample any bypass that occurs while the visual observations and sampling of storm water discharges are conducted.
- c. The Discharger shall visually observe and record the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash/debris, and source(s) of any discharged pollutants.
- d. In the event that a discharge location is not visually observed during the sampling event, the Discharger shall record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.
- e. The Discharger shall provide an explanation in the Annual Report for uncompleted sampling event visual observations.

3. Visual Observation Records

The Discharger shall maintain records of all visual observations. Records shall include the date, approximate time, locations observed, presence and probable source of any observed pollutants, name of person(s) that conducted the observations, and any response actions and/or additional SWPPP revisions necessary in response to the visual observations.

4. The Discharger shall revise BMPs as necessary when the visual observations indicate pollutant sources have not been adequately addressed in the SWPPP.

B. Sampling and Analysis

1. A Qualifying Storm Event (QSE) is a precipitation event that:
 - a. Produces a discharge for at least one drainage area; and,
 - b. Is preceded by 48 hours with no discharge from any drainage area.
2. The Discharger shall collect and analyze storm water samples from two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30).
3. Compliance Group Participants are only required to collect and analyze storm water samples from one (1) QSE within the first half of each reporting year (July 1 to December 31) and one (1) QSE within the second half of the reporting year (January 1 to June 30).
4. Except as provided in Section XI.C.4 (Representative Sampling Reduction), samples shall be collected from each drainage area at all discharge locations. The samples must be:
 - a. Representative of storm water associated with industrial activities and any commingled authorized NSWDS; or,
 - b. Associated with the discharge of contained storm water.
5. Samples from each discharge location shall be collected within four (4) hours of:
 - a. The start of the discharge; or,
 - b. The start of facility operations if the QSE occurs within the previous 12-hour period (e.g., for storms with discharges that begin during the night for facilities with day-time operating hours). Sample collection is required during scheduled facility operating hours and when sampling conditions are safe in accordance with Section XI.C.6.a.ii.
6. The Discharger shall analyze all collected samples for the following parameters:
 - a. Total suspended solids (TSS) and oil and grease (O&G);
 - b. pH (see Section XI.C.2);

- c. Additional parameters identified by the Discharger on a facility-specific basis that serve as indicators of the presence of all industrial pollutants identified in the pollutant source assessment (Section X.G.2). These additional parameters may be modified (added or removed) in accordance with any updated SWPPP pollutant source assessment;
 - d. Additional applicable parameters listed in Table 1 below. These parameters are dependent on the facility Standard Industrial Classification (SIC) code(s);
 - e. Additional applicable industrial parameters related to receiving waters with 303(d) listed impairments or approved TMDLs based on the assessment in Section X.G.2.a.ix. Test methods with lower detection limits may be necessary when discharging to receiving waters with 303(d) listed impairments or TMDLs;
 - f. Additional parameters required by the Regional Water Board. The Discharger shall contact its Regional Water Board to determine appropriate analytical test methods for parameters not listed in Table 2 below. These analytical test methods will be added to SMARTS; and
 - g. For discharges subject to Subchapter N, additional parameters specifically required by Subchapter N. If the discharge is subject to ELGs, the Dischargers shall contact the Regional Water Board to determine appropriate analytical methods for parameters not listed in Table 2 below.
7. The Discharger shall select corresponding NALs, analytical test methods,, and reporting units from the list provided in Table 2 below. SMARTS will be updated over time to add additional acceptable analytical test methods. Dischargers may propose an analytical test method for any parameter or pollutant that does not have an analytical test method specified in Table 2 or in SMARTS. Dischargers may also propose analytical test methods with substantially similar or more stringent method detection limits than existing approved analytical test methods. Upon approval, the analytical test method will be added to SMARTS.
 8. The Discharger shall ensure that the collection, preservation and handling of all storm water samples are in accordance with Attachment H, Storm Water Sample Collection and Handling Instructions.
 9. Samples from different discharge locations shall not be combined or composited except as allowed in Section XI.C.5 (Qualified Combined Samples).
 10. The Discharger shall ensure that all laboratory analyses are conducted according to test procedures under 40 Code of Federal Regulations part 136, including the observation of holding times, unless other test procedures have been specified in this General Permit or by the Regional Water Board.

11. Sampling Analysis Reporting

- a. The Discharger shall submit all sampling and analytical results for all individual or Qualified Combined Samples via SMARTS within 30 days of obtaining all results for each sampling event.
- b. The Discharger shall provide the method detection limit when an analytical result from samples taken is reported by the laboratory as a "non-detect" or less than the method detection limit. A value of zero shall not be reported.
- c. The Discharger shall provide the analytical result from samples taken that is reported by the laboratory as below the minimum level (often referred to as the reporting limit) but above the method detection limit.

Reported analytical results will be averaged automatically by SMARTS. For any calculations required by this General Permit, SMARTS will assign a value of zero (0) for all results less than the minimum level as reported by the laboratory.

TABLE 1: Additional Analytical Parameters

SIC code	SIC code Description	Parameters*
102X	Copper Ores	COD; N+N
12XX	Coal Mines	Al; Fe
144X	Sand and Gravel	N+N
207X	Fats and Oils	BOD; COD; N+N
2421	Sawmills & Planning Mills	COD; Zn
2426	Hardwood Dimension	COD
2429	Special Product Sawmills	COD
243X	Millwork, Veneer, Plywood	COD
244X	Wood Containers	COD
245X	Wood Buildings & Mobile Homes	COD
2491	Wood Preserving	As; Cu
2493	Reconstituted Wood Products	COD
263X	Paperboard Mills	COD
281X	Industrial Inorganic Chemicals	Al; Fe; N+N
282X	Plastic Materials, Synthetics	Zn
284X	Soaps, Detergents, Cosmetics	N+N; Zn
287X	Fertilizers, Pesticides, etc.	Fe; N+N; Pb; Zn; P
301X	Tires, Inner Tubes	Zn
302X	Rubber and Plastic Footwear	Zn
305X	Rubber & Plastic Sealers & Hoses	Zn
306X	Misc. Fabricated Rubber Products	Zn
325X	Structural Clay Products	Al
326X	Pottery & Related Products	Al
3297	Non-Clay Refractories	Al
327X	Concrete, Gypsum, Plaster Products (Except 3274)	Fe
3295	Minerals & Earths	Fe
331X	Steel Works, Blast Furnaces, Rolling and Finishing Mills	Al; Zn
332X	Iron and Steel Foundries	Al; Cu; Fe; Zn
335X	Metal Rolling, Drawing, Extruding	Cu; Zn

336X	Nonferrous Foundries (Castings)	Cu; Zn
34XX	Fabricated Metal Products (Except 3479)	Zn; N+N; Fe; Al
3479	Coating and Engraving	Zn; N+N
4953	Hazardous Waste Facilities	NH ₃ ; Mg; COD; As; Cn; Pb; HG; Se; Ag
44XX	Water Transportation	Al; Fe; Pb; Zn
45XX	Air Transportation Facilities ¹⁶	BOD; COD; NH ₃
4911	Steam Electric Power Generating Facilities	Fe
4953	Landfills and Land Application Facilities	Fe
5015	Dismantling or Wrecking Yards	Fe; Pb; Al
5093	Scrap and Waste Materials (not including source-separated recycling)	Fe; Pb; Al; Zn; COD

*Table 1 Parameter Reference	
Ag – Silver	Mg – Magnesium
Al – Aluminum	N+N - Nitrate & Nitrite Nitrogen
As – Arsenic	NH – Ammonia
BOD – Biochemical Oxygen Demand	Ni – Nickel
Cd - Cadmium	P – Phosphorus
Cn – Cyanide	Se – Selenium
COD – Chemical Oxygen Demand	TSS – Total Suspended Solids
Cu – Copper	Zn – Zinc
Fe – Iron	Pb – Lead
Hg – Mercury	

¹⁶ Only airports (SIC 4512-4581) where a single Discharger, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, are required to monitor these parameters for those outfalls that collect runoff from areas where deicing activities occur.

TABLE 2: Parameter NAL Values, Test Methods, and Reporting Units

PARAMETER	TEST METHOD	REPORTING UNITS	ANNUAL NAL	INSTANTANEOUS MAXIMUM NAL
pH*	See Section XI.C.2	pH units	N/A	Less than 6.0 Greater than 9.0
Suspended Solids (TSS)*, Total	SM 2540-D	mg/L	100	400
Oil & Grease (O&G)*, Total	EPA 1664A	mg/L	15	25
Zinc, Total (H)	EPA 200.8	mg/L	0.26**	
Copper, Total (H)	EPA 200.8	mg/L	0.0332**	
Cyanide, Total	SM 4500–CN C, D, or E	mg/L	0.022	
Lead, Total (H)	EPA 200.8	mg/L	0.262**	
Chemical Oxygen Demand (COD)	SM 5220C	mg/L	120	
Aluminum, Total	EPA 200.8	mg/L	0.75	
Iron, Total	EPA 200.7	mg/L	1.0	
Nitrate + Nitrite Nitrogen	SM 4500-NO3- E	mg/L as N	0.68	
Total Phosphorus	SM 4500-P B+E	mg/L as P	2.0	
Ammonia (as N)	SM 4500-NH3 B+ C or E	mg/L	2.14	
Magnesium, total	EPA 200.7	mg/L	0.064	
Arsenic, Total (c)	EPA 200.8	mg/L	0.15	
Cadmium, Total (H)	EPA 200.8	mg/L	0.0053**	
Nickel, Total (H)	EPA 200.8	mg/l	1.02**	
Mercury, Total	EPA 245.1	mg/L	0.0014	
Selenium, Total	EPA 200.8	mg/L	0.005	
Silver, Total (H)	EPA 200.8	mg/L	0.0183**	
Biochemical Oxygen Demand (BOD)	SM 5210B	mg/L	30	

SM – Standard Methods for the Examination of Water and Wastewater, 18th edition

EPA – U.S. EPA test methods

(H) – Hardness dependent

* Minimum parameters required by this General Permit

**The NAL is the highest value used by U.S. EPA based on their hardness table in the 2008 MSGP.

C. Methods and Exceptions

1. The Discharger shall comply with the monitoring methods in this General Permit and Attachment H.
2. pH Methods
 - a. Dischargers that are not subject to Subchapter N ELGs mandating pH analysis related to acidic or alkaline sources and have never entered Level 1 status for pH, are eligible to screen for pH using wide range litmus pH paper or other equivalent pH test kits. The pH screen shall be performed as soon as practicable, but no later than 15 minutes after the sample is collected.
 - b. Dischargers subject to Subchapter N ELGs shall either analyze samples for pH using methods in accordance with 40 Code of Federal Regulations 136 for testing storm water or use a calibrated portable instrument for pH.
 - c. Dischargers that enter Level 1 status (see Section XII.C) for pH shall, in the subsequent reporting years, analyze for pH using methods in accordance with 40 Code of Federal Regulations 136 or use a calibrated portable instrument for pH.
 - d. Dischargers using a calibrated portable instrument for pH shall ensure that all field measurements are conducted in accordance with the accompanying manufacturer's instructions.
3. Alternative Discharge Locations
 - a. The Discharger is required to identify, when practicable, alternative discharge locations for any discharge locations identified in accordance with Section XI.B.4 if the facility's discharge locations are:
 - i. Affected by storm water run-on from surrounding areas that cannot be controlled; and/or,
 - ii. Difficult to observe or sample (e.g. submerged discharge outlets, dangerous discharge location accessibility).
 - b. The Discharger shall submit and certify via SMARTS any alternative discharge location or revisions to the alternative discharge locations in the Monitoring Implementation Plan.
4. Representative Sampling Reduction
 - a. The Discharger may reduce the number of locations to be sampled in each drainage area (e.g., roofs with multiple downspouts, loading/unloading areas with multiple storm drains) if the industrial

activities, BMPs, and physical characteristics (grade, surface materials, etc.) of the drainage area for each location to be sampled are substantially similar to one another. To qualify for the Representative Sampling Reduction, the Discharger shall provide a Representative Sampling Reduction justification in the Monitoring Implementation Plan section of the SWPPP.

- b. The Representative Sampling Reduction justification shall include:
 - i. Identification and description of each drainage area and corresponding discharge location(s);
 - ii. A description of the industrial activities that occur throughout the drainage area;
 - iii. A description of the BMPs implemented in the drainage area;
 - iv. A description of the physical characteristics of the drainage area;
 - v. A rationale that demonstrates that the industrial activities and physical characteristics of the drainage area(s) are substantially similar; and,
 - vi. An identification of the discharge location(s) selected for representative sampling, and rationale demonstrating that the selected location(s) to be sampled are representative of the discharge from the entire drainage area.
- c. A Discharger that satisfies the conditions of subsection 4.b.i through v above shall submit and certify via SMARTS the revisions to the Monitoring Implementation Plan that includes the Representative Sampling Reduction justification.
- d. Upon submittal of the Representative Sampling Reduction justification, the Discharger may reduce the number of locations to be sampled in accordance with the Representative Sampling Reduction justification. The Regional Water Board may reject the Representative Sampling Reduction justification and/or request additional supporting documentation. In such instances, the Discharger is ineligible for the Representative Sampling Reduction until the Regional Water Board approves the Representative Sampling Reduction justification.

5. Qualified Combined Samples

- a. The Discharger may authorize an analytical laboratory to combine samples of equal volume from as many as four (4) discharge locations if the industrial activities, BMPs, and physical characteristics (grade, surface materials, etc.) within each of the drainage areas are substantially similar to one another.

- b. The Qualified Combined Samples justification shall include:
 - i. Identification and description of each drainage area and corresponding discharge locations;
 - ii. A description of the BMPs implemented in the drainage area;
 - iii. A description of the industrial activities that occur throughout the drainage area;
 - iv. A description of the physical characteristics of the drainage area; and,
 - v. A rationale that demonstrates that the industrial activities and physical characteristics of the drainage area(s) are substantially similar.
 - c. A Discharger that satisfies the conditions of subsection 5.b.i through iv above shall submit and certify via SMARTS the revisions to the Monitoring Implementation Plan that includes the Qualified Combined Samples justification.
 - d. Upon submittal of the Qualified Combined Samples justification revisions in the Monitoring Implementation Plan, the Discharger may authorize the lab to combine samples of equal volume from as many as four (4) drainage areas. The Regional Water Board may reject the Qualified Combined Samples justification and/or request additional supporting documentation. In such instances, the Discharger is ineligible for the Qualified Combined Samples justification until the Regional Water Board approves the Qualified Combined Samples justification.
 - e. Regional Water Board approval is necessary to combine samples from more than four (4) discharge locations.
6. Sample Collection and Visual Observation Exceptions
- a. Sample collection and visual observations are not required under the following conditions:
 - i. During dangerous weather conditions such as flooding or electrical storms; or,
 - ii. Outside of scheduled facility operating hours. The Discharger is not precluded from collecting samples or conducting visual observations outside of scheduled facility operating hours.
 - b. In the event that samples are not collected, or visual observations are not conducted in accordance with Section XI.B.5 due to these exceptions, an explanation shall be included in the Annual Report.

- c. Sample collection is not required for drainage areas with no exposure to industrial activities and materials in accordance with the definitions in Section XVII.
7. Sampling Frequency Reduction Certification
 - a. Dischargers are eligible to reduce the number of QSEs sampled each reporting year in accordance with the following requirements:
 - i. Results from four (4) consecutive QSEs that were sampled (QSEs may be from different reporting years) did not exceed any NALs as defined in Section XII.A; and
 - ii. The Discharger is in full compliance with the requirements of this General Permit and has updated, certified and submitted via SMARTS all documents, data, and reports required by this General Permit during the time period in which samples were collected.
 - b. The Regional Water Board may notify a Discharger that it may not reduce the number of QSEs sampled each reporting year if the Discharger is subject to an enforcement action.
 - c. An eligible Discharger shall certify via SMARTS that it meets the conditions in subsection 7.a above.
 - d. Upon Sampling Frequency Reduction certification, the Discharger shall collect and analyze samples from one (1) QSE within the first half of each reporting year (July 1 to December 31), and one (1) QSE within the second half of each reporting year (January 1 to June 30). All other monitoring, sampling, and reporting requirements remain in effect.
 - e. Dischargers who participate in a Compliance Group and certify a Sampling Frequency Reduction are only required to collect and analyze storm water samples from one (1) QSE within each reporting year.
 - f. A Discharger may reduce sampling per the Sampling Frequency Reduction certification unless notified by the Regional Water Board that: (1) the Sampling Frequency Reduction certification has been rejected or (2) additional supporting documentation must be submitted. In such instances, a Discharger is ineligible for the Sampling Frequency Reduction until the Regional Water Board provides Sampling Frequency Reduction certification approval. Revised Sampling Frequency Reduction certifications shall be certified and submitted via SMARTS by the Discharger.
 - g. A Discharger loses its Sampling Frequency Reduction certification if an NAL exceedance occurs (Section XII.A).

D. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

1. In addition to the other requirements in this General Permit, Dischargers with facilities subject to storm water ELGs in Subchapter N shall:
 - a. Collect and analyze samples from QSEs for each regulated pollutant specified in the appropriate category in Subchapter N as specified in Section XI.B;
 - b. For Dischargers with facilities subject to 40 Code of Federal Regulations parts 419¹⁷ and 443¹⁸, estimate or calculate the volume of industrial storm water discharges from each drainage area subject to the ELGs and the mass of each regulated pollutant as defined in parts 419 and 443; and,
 - c. Ensure that the volume/mass estimates or calculations required in subsection b are completed by a California licensed professional engineer.
2. Dischargers subject to Subchapter N shall submit the information in Section XI.D.1.a through c in their Annual Report.
3. Dischargers with facilities subject to storm water ELGs in Subchapter N are ineligible for the Representative Sampling Reduction in Section XI.C.4.

XII. EXCEEDANCE RESPONSE ACTIONS (ERAs)

A. NALs and NAL Exceedances

The Discharger shall perform sampling, analysis and reporting in accordance with the requirements of this General Permit and shall compare the results to the two types of NAL values in Table 2 to determine whether either type of NAL has been exceeded for each applicable parameter. The two types of potential NAL exceedances are as follows:

1. Annual NAL exceedance: The Discharger shall determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data). The Discharger shall compare the average concentration for each parameter to the corresponding annual NAL values in Table 2. For Dischargers using composite sampling or flow-weighted measurements in accordance with standard practices, the average concentrations shall be calculated in accordance with the U.S. EPA's NPDES Storm Water

¹⁷ Part 419 - Petroleum refining point source category

¹⁸ Part 443 - Effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources for the paving and roofing materials (tars and asphalt) point source category

Sampling Guidance Document.¹⁹ An annual NAL exceedance occurs when the average of all the analytical results for a parameter from samples taken within a reporting year exceeds the annual NAL value for that parameter listed in Table 2; and,

2. Instantaneous maximum NAL exceedance: The Discharger shall compare all sampling and analytical results from each distinct sample (individual or combined as authorized by XI.C.5) to the corresponding instantaneous maximum NAL values in Table 2. An instantaneous maximum NAL exceedance occurs when two (2) or more analytical results from samples taken for any single parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G) or are outside of the instantaneous maximum NAL range for pH.

B. Baseline Status

At the beginning of a Discharger's NOI Coverage, all Dischargers have Baseline status for all parameters.

C. Level 1 Status

A Discharger's Baseline status for any given parameter shall change to Level 1 status if sampling results indicate an NAL exceedance for that same parameter. Level 1 status will commence on July 1 following the reporting year during which the exceedance(s) occurred.²⁰

1. Level 1 ERA Evaluation

- a. By October 1 following commencement of Level 1 status for any parameter with sampling results indicating an NAL exceedance, the Discharger shall:
 - b. Complete an evaluation, with the assistance of a QISP, of the industrial pollutant sources at the facility that are or may be related to the NAL exceedance(s); and,
 - c. Identify in the evaluation the corresponding BMPs in the SWPPP and any additional BMPs and SWPPP revisions necessary to prevent future NAL exceedances and to comply with the requirements of this General Permit. Although the evaluation may focus on the drainage areas where the NAL exceedance(s) occurred, all drainage areas shall be evaluated.

2. Level 1 ERA Report

¹⁹ U.S. EPA. NPDES Storm Water Sampling Guidance Document. <<http://www.epa.gov/npdes/pubs/owm0093.pdf>>. [as of February 4, 2014]

²⁰ For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status once those results have been reported.

- a. Based upon the above evaluation, the Discharger shall, as soon as practicable but no later than January 1 following commencement of Level 1 status :
 - i. Revise the SWPPP as necessary and implement any additional BMPs identified in the evaluation;
 - ii. Certify and submit via SMARTS a Level 1 ERA Report prepared by a QISP that includes the following:
 - 1) A summary of the Level 1 ERA Evaluation required in subsection C.1 above; and,
 - 2) A detailed description of the SWPPP revisions and any additional BMPs for each parameter that exceeded an NAL.
 - iii. Certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address).
 - b. A Discharger's Level 1 status for a parameter will return to Baseline status once a Level 1 ERA report has been completed, all identified additional BMPs have been implemented, and results from four (4) consecutive QSEs that were sampled subsequent to BMP implementation indicate no additional NAL exceedances for that parameter.
3. NAL Exceedances Prior to Implementation of Level 1 Status BMPs.

Prior to the implementation of an additional BMP identified in the Level 1 ERA Evaluation or October 1, whichever comes first, sampling results for any parameter(s) being addressed by that additional BMP will not be included in the calculations of annual average or instantaneous NAL exceedances in SMARTS.

D. Level 2 Status

A Discharger's Level 1 status for any given parameter shall change to Level 2 status if sampling results indicate an NAL exceedance for that same parameter while the Discharger is in Level 1. Level 2 status will commence on July 1 following the reporting year during which the NAL exceedance(s) occurred.²¹

1. Level 2 ERA Action Plan

²¹ For all sampling results reported before June 30th of the preceding reporting year. If sample results indicating an NAL exceedance are submitted after June 30th, the Discharger will change status upon the date those results have been reported into SMARTS.

- a. Dischargers with Level 2 status shall certify and submit via SMARTS a Level 2 ERA Action Plan prepared by a QISP that addresses each new Level 2 NAL exceedance by January 1 following the reporting year during which the NAL exceedance(s) occurred. For each new Level 2 NAL exceedance, the Level 2 Action Plan will identify which of the demonstrations in subsection D.2.a through c the Discharger has selected to perform. A new Level 2 NAL exceedance is any Level 2 NAL exceedance for 1) a new parameter in any drainage area, or 2) the same parameter that is being addressed in an existing Level 2 ERA Action Plan in a different drainage area.
- b. The Discharger shall certify and submit via SMARTS the QISP's identification number, name, and contact information (telephone number, e-mail address) if this information has changed since previous certifications.
- c. The Level 2 ERA Action Plan shall at a minimum address the drainage areas with corresponding Level 2 NAL exceedances.
- d. All elements of the Level 2 ERA Action Plan shall be implemented as soon as practicable and completed no later than 1 year after submitting the Level 2 ERA Action Plan.
- e. The Level 2 ERA Action Plan shall include a schedule and a detailed description of the tasks required to complete the Discharger's selected demonstration(s) as described below in Section D.2.a through c.

2. Level 2 ERA Technical Report

On January 1 of the reporting year following the submittal of the Level 2 ERA Action Plan, a Discharger with Level 2 status shall certify and submit a Level 2 ERA Technical Report prepared by a QISP that includes one or more of the following demonstrations:

a. Industrial Activity BMPs Demonstration

This shall include the following requirements, as applicable:

- i. Shall include a description of the industrial pollutant sources and corresponding industrial pollutants that are or may be related to the NAL exceedance(s);
- ii. Shall include an evaluation of all pollutant sources associated with industrial activity that are or may be related to the NAL exceedance(s);
- iii. Where all of the Discharger's implemented BMPs, including additional BMPs identified in the Level 2 ERA Action Plan, achieve

compliance with the effluent limitations of this General Permit and are expected to eliminate future NAL exceedance(s), the Discharger shall provide a description and analysis of all implemented BMPs;

- iv. In cases where all of the Discharger's implemented BMPs, including additional BMPs identified in the Level 2 ERA Action Plan, achieve compliance with the effluent limitations of this General Permit but are not expected to eliminate future NAL exceedance(s), the Discharger shall provide, in addition to a description and analysis of all implemented BMPs:
 - 1) An evaluation of any additional BMPs that would reduce or prevent NAL exceedances;
 - 2) Estimated costs of the additional BMPs evaluated; and,
 - 3) An analysis describing the basis for the selection of BMPs implemented in lieu of the additional BMPs evaluated but not implemented.
 - v. The description and analysis of BMPs required in subsection a.iii above shall specifically address the drainage areas where the NAL exceedance(s) responsible for the Discharger's Level 2 status occurred, although any additional Level 2 ERA Action Plan BMPs may be implemented for all drainage areas; and,
 - vi. If an alternative design storm standard for treatment control BMPs (in lieu of the design storm standard for treatment control BMPs in Section X.H.6 in this General Permit) will achieve compliance with the effluent limitations of this General Permit, the Discharger shall provide an analysis describing the basis for the selection of the alternative design storm standard.
- b. Non-Industrial Pollutant Source Demonstration

This shall include:

- i. A statement that the Discharger has determined that the exceedance of the NAL is attributable solely to the presence of non-industrial pollutant sources. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance.) The sources shall be identified as either run-on from adjacent properties, aerial deposition from man-made sources, or as generated by on-site non-industrial sources;

- ii. A statement that the Discharger has identified and evaluated all potential pollutant sources that may have commingled with storm water associated with the Discharger's industrial activity and may be contributing to the NAL exceedance;
 - iii. A description of any on-site industrial pollutant sources and corresponding industrial pollutants that are contributing to the NAL exceedance;
 - iv. An assessment of the relative contributions of the pollutant from (1) storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition and (2) the storm water associated with the Discharger's industrial activity;
 - v. A summary of all existing BMPs for that parameter; and,
 - vi. An evaluation of all on-site/off-site analytical monitoring data demonstrating that the NAL exceedances are caused by pollutants in storm water run-on to the facility from adjacent properties or non-industrial portions of the Discharger's property or from aerial deposition.
- c. Natural Background Pollutant Source Demonstration

This shall include:

- i. A statement that the Discharger has determined that the NAL exceedance is attributable solely to the presence of the pollutant in the natural background that has not been disturbed by industrial activities. (The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance);
- ii. A summary of all data previously collected by the Discharger, or other identified data collectors, that describes the levels of natural background pollutants in the storm water discharge;
- iii. A summary of any research and published literature that relates the pollutants evaluated at the facility as part of the Natural Background Source Demonstration;
- iv. Map showing the reference site location in relation to facility along with available land cover information;
- v. Reference site and test site elevation;

- vi. Available geology and soil information for reference and test sites;
- vii. Photographs showing site vegetation;
- viii. Site reconnaissance survey data regarding presence of roads, outfalls, or other human-made structures; and,
- ix. Records from relevant state or federal agencies indicating no known mining, forestry, or other human activities upstream of the proposed reference site.

3. Level 2 ERA Technical Report Submittal

- a. The Discharger shall certify and submit via SMARTS the Level 2 ERA Technical Report described in Section D.2 above.
- b. The State Water Board and Regional Boards (Water Boards) may review the submitted Level 2 ERA Technical Reports. Upon review of a Level 2 ERA Technical Report, the Water Boards may reject the Level 2 ERA Technical Report and direct the Discharger to take further action(s) to comply with this General Permit.
- c. Dischargers with Level 2 status who have submitted the Level 2 ERA Technical Report are only required to annually update the Level 2 ERA Technical Report based upon additional NAL exceedances of the same parameter and same drainage area (if the original Level 2 ERA Technical Report contained an Industrial Activity BMP Demonstration and the implemented BMPs were expected to eliminate future NAL exceedances in accordance with Section XII.D.2.a.ii), facility operational changes, pollutant source(s) changes, and/or information that becomes available via compliance activities (monthly visual observations, sampling results, annual evaluation, etc.). The Level 2 ERA Technical Report shall be prepared by a QISP and be certified and submitted via SMARTS by the Discharger with each Annual Report. If there are no changes prompting an update of the Level 2 ERA Technical Report, as specified above, the Discharger will provide this certification in the Annual Report that there have been no changes warranting re-submittal of the Level 2 ERA Technical Report.
- d. Dischargers are not precluded from submitting a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status if information is available to adequately prepare the report and perform the demonstrations described above. A Discharger who chooses to submit a Level 2 ERA Action Plan or ERA Technical Report prior to entering Level 2 status will automatically be placed in Level 2 in accordance to the Level 2 ERA schedule.

4. Eligibility for Returning to Baseline Status

- a. Dischargers with Level 2 status who submit an Industrial Activity BMPs Demonstration in accordance with subsection 2.a.i through iii above and have implemented BMPs to prevent future NAL exceedance(s) for the Level 2 parameter(s) shall return to baseline status for that parameter, if results from four (4) subsequent consecutive QSEs sampled indicate no additional NAL exceedance(s) for that parameter(s). If future NAL exceedances occur for the same parameter(s), the Discharger's Baseline status will return to Level 2 status on July 1 in the subsequent reporting year during which the NAL exceedance(s) occurred. These Dischargers shall update the Level 2 ERA Technical Report as required above in Section D.3.c.
- b. Dischargers are ineligible to return to baseline status if they submit any of the following:
 - i. A industrial activity BMP demonstration in accordance with subsection 2.a.iv above;
 - ii. An non-industrial pollutant source demonstration; or,
 - iii. A natural background pollutant source demonstration.

5. Level 2 ERA Implementation Extension

- a. Dischargers that need additional time to submit the Level 2 ERA Technical Report shall be automatically granted a single time extension for up to six (6) months upon submitting the following items into SMARTS, as applicable:
 - i. Reasons for the time extension;
 - ii. A revised Level 2 ERA Action Plan including a schedule and a detailed description of the necessary tasks still to be performed to complete the Level 2 ERA Technical Report; and
 - iii. A description of any additional temporary BMPs that will be implemented while permanent BMPs are being constructed.
- b. The Regional Water Boards will review Level 2 ERA Implementation Extensions for completeness and adequacy. Requests for extensions that total more than six (6) months are not granted unless approved in writing by the Water Boards. The Water Boards may (1) reject or revise the time allowed to complete Level 2 ERA Implementation Extensions, (2) identify additional tasks necessary to complete the Level 2 ERA Technical Report, and/or (3) require the Discharger to implement additional temporary BMPs.

XIII. INACTIVE MINING OPERATION CERTIFICATION

- A.** Inactive mining operations are defined in Part 3 of Attachment A of this General Permit. The Discharger may, in lieu of complying with the General Permit requirements described in subsection B below, certify and submit via SMARTS that their inactive mining operation meets the following conditions:
1. The Discharger has determined and justified in the SWPPP that it is impracticable to implement the monitoring requirements in this General Permit for the inactive mining operation;
 2. A SWPPP has been signed (wet signature and license number) by a California licensed professional engineer and is being implemented in accordance with the requirements of this General Permit; and,
 3. The facility is in compliance with this General Permit, except as provided in subsection B below.
- B.** The Discharger who has certified and submitted that they meet the conditions in subsection A above, are not subject to the following General Permit requirements:
1. Monitoring Implementation Plan in Section X.I;
 2. Monitoring Requirements in Section XI;
 3. Exceedance Response Actions (ERAs) in Section XII; and,
 4. Annual Report Requirements in Section XVI.
- C.** Inactive Mining Operation Certification Submittal Schedule
1. The Discharger shall certify and submit via SMARTS NOI coverage PRDs listed in Section II.B.1 and meet the conditions in subsection A above.
 2. The Discharger shall annually inspect the inactive mining site and certify via SMARTS no later than July 15th of each reporting year, that their inactive mining operation continues to meet the conditions in subsection A above.
 3. The Discharger shall have a California licensed professional engineer review and update the SWPPP if there are changes to their inactive mining operation or additional BMPs are needed to comply with this General Permit. Any significant updates to the SWPPP shall be signed (wet signature and license number) by a California license professional engineer.
 4. The Discharger shall certify and submit via SMARTS any significantly revised SWPPP within 30 days of the revision(s).

XIV. COMPLIANCE GROUPS AND COMPLIANCE GROUP LEADERS

A. Compliance Group Qualification Requirements

1. Any group of Dischargers of the same industry type or any QISP representing Dischargers of the same industry type may form a Compliance Group. A Compliance Group shall consist of Dischargers that operate facilities with similar types of industrial activities, pollutant sources, and pollutant characteristics (e.g., scrap metals recyclers would join a different group than paper recyclers, truck vehicle maintenance facilities would join a different group than airplane vehicle maintenance facilities, etc.). A Discharger participating in a Compliance Group is termed a Compliance Group Participant. Participation in a Compliance Group is not required. Compliance Groups may be formed at any time.
2. Each Compliance Group shall have a Compliance Group Leader.
3. To establish a Compliance Group, the Compliance Group Leader shall register as a Compliance Group Leader via SMARTS. The registration shall include documentation demonstrating compliance with the Compliance Group qualification requirements above and a list of the Compliance Group Participants.
4. Each Compliance Group Participant shall register as a member of an established Compliance Group via SMARTS.
5. The Executive Director of the State Water Board may review Compliance Group registrations and/or activities for compliance with the requirements of this General Permit. The Executive Director may reject the Compliance Group, the Compliance Group Leader, or individual Compliance Group Participants within the Compliance Group.

B. Compliance Group Leader Responsibilities

1. A Compliance Group Leader must complete a State Water Board sponsored or approved training program for Compliance Group Leaders.
2. The Compliance Group Leader shall assist Compliance Group Participants with all compliance activities required by this General Permit.
3. A Compliance Group Leader shall prepare a Consolidated Level 1 ERA Report for all Compliance Group Participants with Level 1 status for the same parameter. Compliance Group Participants who certify and submit these Consolidated Level 1 ERA Reports are subject to the same provisions as individual Dischargers with Level 1 status, as described in Section XII.C. A Consolidated Level 1 ERA Report is equivalent to a Level 1 ERA Report.

4. The Compliance Group Leader shall update the Consolidated Level 1 ERA Report as needed to address additional Compliance Group Participants with ERA Level 1 status.
5. A Compliance Group Leader shall prepare a Level 2 ERA Action Plan specific to each Compliance Group Participant with Level 2 status. Compliance Group Participants who certify and submit these Level 2 ERA Action Plans are subject to the same provisions as individual Dischargers with Level 2 status, as described in Section XII.D.
6. A Compliance Group Leader shall prepare a Level 2 ERA Technical Report specific to each Compliance Group Participant with Level 2 status. Compliance Group Participants who certify and submit these Level 2 ERA Technical Reports are subject to the same provisions as individual Dischargers with Level 2 status, as described in Section XII.D.
7. The Compliance Group Leader shall inspect all the facilities of the Compliance Group Participants that have entered Level 2 status prior to preparing the individual Level 2 ERA Technical Report.
8. The Compliance Group Leader shall revise the Consolidated Level 1 ERA Report, individual Level 2 ERA Action Plans, or individual Level 2 Technical Reports in accordance with any comments received from the Water Boards.
9. The Compliance Group Leader shall inspect all the facilities of the Compliance Group Participants at a minimum of once per reporting year (July 1 to June 30).

C. Compliance Group Participant Responsibilities

1. Each Compliance Group Participant is responsible for permit compliance for the Compliance Group Participant's facility and for ensuring that the Compliance Group Leader's activities related to the Compliance Group Participant's facility comply with this General Permit.
2. Compliance Group Participants with Level 1 status shall certify and submit via SMARTS the Consolidated Level 1 ERA Report. The Compliance Group Participants shall certify that they have reviewed the Consolidated Level 1 ERA Report and have implemented any required additional BMPs. Alternatively, the Compliance Group Participant may submit an individual Level 1 ERA Report in accordance with the provisions in Section XII.C.2.
3. Compliance Group Participants with Level 2 status shall certify and submit via SMARTS their individual Level 2 ERA Action Plan and Technical Report prepared by their Compliance Group Leader. Each Compliance Group Participant shall certify that they have reviewed the Level 2 ERA Action Plan and Technical Report and will implement any required additional BMPs.

4. Compliance Group Participants can at any time discontinue their participation in their associated Compliance Group via SMARTS. Upon discontinuation, the former Compliance Group Participant is immediately subject to the sampling and analysis requirements described in Section XI.B.2.

XV. ANNUAL COMPREHENSIVE FACILITY COMPLIANCE EVALUATION (ANNUAL EVALUATION)

The Discharger shall conduct one Annual Evaluation for each reporting year (July 1 to June 30). If the Discharger conducts an Annual Evaluation fewer than eight (8) months, or more than sixteen (16) months, after it conducts the previous Annual Evaluation, it shall document the justification for doing so. The Discharger shall revise the SWPPP, as appropriate, and implement the revisions within 90 days of the Annual Evaluation. At a minimum, Annual Evaluations shall consist of:

- A. A review of all sampling, visual observation, and inspection records conducted during the previous reporting year;
- B. An inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the storm water conveyance system;
- C. An inspection of all drainage areas previously identified as having no exposure to industrial activities and materials in accordance with the definitions in Section XVII;
- D. An inspection of equipment needed to implement the BMPs;
- E. An inspection of any BMPs;
- F. A review and effectiveness assessment of all BMPs for each area of industrial activity and associated potential pollutant sources to determine if the BMPs are properly designed, implemented, and are effective in reducing and preventing pollutants in industrial storm water discharges and authorized NSWDDs; and,
- G. An assessment of any other factors needed to comply with the requirements in Section XVI.B.

XVI. ANNUAL REPORT

- A. The Discharger shall certify and submit via SMARTS an Annual Report no later than July 15th following each reporting year using the standardized format and checklists in SMARTS.
- B. The Discharger shall include in the Annual Report:
 1. A Compliance Checklist that indicates whether a Discharger complies with, and has addressed all applicable requirements of this General Permit;

2. An explanation for any non-compliance of requirements within the reporting year, as indicated in the Compliance Checklist;
3. An identification, including page numbers and/or sections, of all revisions made to the SWPPP within the reporting year; and,
4. The date(s) of the Annual Evaluation.

XVII. CONDITIONAL EXCLUSION - NO EXPOSURE CERTIFICATION (NEC)

A. Discharges composed entirely of storm water that has not been exposed to industrial activity are not industrial storm water discharges. Dischargers are conditionally excluded from complying with the SWPPP and monitoring requirements of this General Permit if all of the following conditions are met:

1. There is no exposure of Industrial Materials and Activities to rain, snow, snowmelt, and/or runoff;
2. All unauthorized NSWDS have been eliminated and all authorized NSWDS meet the conditions of Section IV;
3. The Discharger has certified and submitted via SMARTS PRDs for NEC coverage pursuant to the instructions in Section II.B.2; and,
4. The Discharger has satisfied all other requirements of this Section.

B. NEC Specific Definitions

1. No Exposure - all Industrial Materials and Activities are protected by a Storm-Resistant Shelter to prevent all exposure to rain, snow, snowmelt, and/or runoff.
2. Industrial Materials and Activities - includes, but is not limited to, industrial material handling activities or equipment, machinery, raw materials, intermediate products, by-products, final products, and waste products.
3. Material Handling Activities - includes the storage, loading and unloading, transportation, or conveyance of any industrial raw material, intermediate product, final product, or waste product.
4. Sealed - banded or otherwise secured, and without operational taps or valves.
5. Storm-Resistant Shelters - includes completely roofed and walled buildings or structures. Also includes structures with only a top cover supported by permanent supports but with no side coverings, provided material within the structure is not subject to wind dispersion (sawdust, powders, etc.), or track-out, and there is no storm water discharged from within the structure that comes into contact with any materials.

C. NEC Qualifications

To qualify for an NEC, a Discharger shall:

1. Except as provided in subsection D below, provide a Storm-Resistant Shelter to protect Industrial Materials and Activities from exposure to rain, snow, snowmelt, run-on, and runoff;
2. Inspect and evaluate the facility annually to determine that storm water exposed to industrial materials or equipment has not and will not be discharged to waters of the United States. Evaluation records shall be maintained for five (5) years in accordance with Section XXI.J.4;
3. Register for NEC coverage by certifying that there are no discharges of storm water contaminated by exposure to Industrial Materials and Activities from areas of the facility subject to this General Permit, and certify that all unauthorized NSWDS have been eliminated and all authorized NSWDS meet the conditions of Section IV (Authorized NSWDS). NEC coverage and annual renewal requires payment of an annual fee in accordance with California Code of Regulations, title 23, section 2200 et seq.; and,
4. Submit PRDs for NEC coverage shall be prepared and submitted in accordance with the:
 - a. Certification requirements in Section XXI.K; and,
 - b. Submittal schedule in accordance with Section II.B.2.

D. NEC Industrial Materials and Activities - Storm-Resistant Shelter Not Required

To qualify for NEC coverage, a Storm-Resistant Shelter is not required for the following:

1. Drums, barrels, tanks, and similar containers that are tightly Sealed, provided those containers are not deteriorated, do not contain residual industrial materials on the outside surfaces, and do not leak;
2. Adequately maintained vehicles used in material handling;
3. Final products, other than products that would be mobilized in storm water discharge (e.g., rock salt);
4. Any Industrial Materials and Activities that are protected by a temporary shelter for a period of no more than ninety (90) days due to facility construction or remodeling; and,
5. Any Industrial Materials and Activities that are protected within a secondary containment structure that will not discharge storm water to waters of the United States.

E. NEC Limitations

1. NEC coverage is available on a facility-wide basis only, not for individual outfalls. If a facility has industrial storm water discharges from one or more drainage areas that require NOI coverage, Dischargers shall register for NOI coverage for the entire facility through SMARTS in accordance with Section II.B.2. Any drainage areas on that facility that would otherwise qualify for NEC coverage may be specially addressed in the facility SWPPP by including an NEC Checklist and a certification statement demonstrating that those drainage areas of the facility have been evaluated; and that none of the Industrial Materials or Activities listed in subsection C above are, or will be in the foreseeable future, exposed to precipitation.
2. If circumstances change and Industrial Materials and Activities become exposed to rain, snow, snowmelt, and/or runoff, the conditions for this exclusion shall no longer apply. In such cases, the Discharger may be subject to enforcement for discharging without a permit. A Discharger with NEC coverage that anticipates changes in circumstances should register for NOI coverage at least seven (7) days before anticipated exposure.
3. The Regional Water Board may deny NEC coverage and require NOI coverage upon determining that:
 - a. Storm water is exposed to Industrial Materials and Activities; and/or
 - b. The discharge has a reasonable potential to cause or contribute to an exceedance of an applicable water quality standards.

F. NEC Permit Registration Documents Required for Initial NEC Coverage

A Discharger shall submit via SMARTS the following PRDs for NEC coverage to document the applicability of the conditional exclusion:

1. The NEC form, which includes:
 - a. The legal name, postal address, telephone number, and e-mail address of the Discharger;
 - b. The facility business name and physical mailing address, the county name, and a description of the facility location if the facility does not have a physical mailing address; and,
 - c. Certification by the Discharger that all PRDs submitted are correct and true and the conditions of no exposure have been met.
2. An NEC Checklist prepared by the Discharger demonstrating that the facility has been evaluated; and that none of the following industrial materials or activities are, or will be in the foreseeable future, exposed to precipitation:

- a. Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed;
- b. Materials or residuals on the ground or in storm water inlets from spills/leaks;
- c. Materials or products from past industrial activity;
- d. Material handling equipment (except adequately maintained vehicles);
- e. Materials or products during loading/unloading or transporting activities;
- f. Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);
- g. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
- h. Materials or products handled/stored on roads or railways owned or maintained by the Discharger;
- i. Waste material (except waste in covered, non-leaking containers, e.g., dumpsters);
- j. Application or disposal of processed wastewater (unless already covered by an NPDES permit); and,
- k. Particulate matter or visible deposits of residuals from roof stacks/vents evident in the storm water outflow.

3. Site Map (see Section X.E).

G. Requirements for Annual NEC Coverage Recertification

By October 1 of each reporting year beginning in 2015, any Discharger who has previously registered for NEC coverage shall either submit and certify an NEC demonstrating that the facility has been evaluated, and that none of the Industrial Materials or Activities listed above are, or will be in the foreseeable future, exposed to precipitation, or apply for NOI coverage.

H. NEC Certification Statement

All NEC certifications and re-certifications shall include the following certification statement:

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of 'no exposure' and obtaining an exclusion from NPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities

or materials from the industrial facility identified in this document (except as allowed in subsection C above). I understand that I am obligated to submit a no exposure certification form annually to the State Water Board and, if requested, to the operator of the local Municipal Separate Storm Sewer System (MS4) into which this facility discharges (where applicable). I understand that I must allow the Water Board staff, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of storm water from the facility. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

XVIII. SPECIAL REQUIREMENTS - PLASTIC MATERIALS

- A.** Facilities covered under this General Permit that handle Plastic Materials are required to implement BMPs to eliminate discharges of plastic in storm water in addition to the other requirements of this General Permit that are applicable to all other Industrial Materials and Activities. Plastic Materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site. Any Dischargers' facility handling Plastic Materials will be referred to as Plastics Facilities in this General Permit. Any Plastics Facility covered under this General Permit that manufactures, transports, stores, or consumes these materials shall submit information to the State Water Board in their PRDs, including the type and form of plastics, and which BMPs are implemented at the facility to prevent illicit discharges. Pursuant to Water Code section 13367, Plastics Facilities are subject to mandatory, minimum BMPs.
1. At a minimum, Plastics Facilities shall implement and include in the SWPPP:
 - a. Containment systems at each on-site storm drain discharge location down gradient of areas containing plastic material. The containment system shall be designed to trap all particles retained by a 1mm mesh screen, with a treatment capacity of no less than the peak flow rate from a one-year, one-hour storm.
 - b. When a containment system is infeasible, or poses the potential to cause an illicit discharge, the facility may propose a technically feasible

alternative BMP or suite of BMPs. The alternative BMPs shall be designed to achieve the same or better performance standard as a 1mm mesh screen with a treatment capacity of the peak flow rate from a one-year, one-hour storm. Alternative BMPs shall be submitted to the Regional Water Board for approval.

- c. Plastics Facilities shall use durable sealed containers designed not to rupture under typical loading and unloading activities at all points of plastic transfer and storage.
 - d. Plastics Facilities shall use capture devices as a form of secondary containment during transfers, loading, or unloading Plastic Materials. Examples of capture devices for secondary containment include, but are not limited to catch pans, tarps, berms or any other device that collects errant material.
 - e. Plastics Facilities shall have a vacuum or vacuum-type system for quick cleanup of fugitive plastic material available for employees.
 - f. Pursuant to Water Code section 13367(e)(1), Plastics Facilities that handle Plastic Materials smaller than 1mm in size shall develop a containment system designed to trap the smallest plastic material handled at the facility with a treatment capacity of at least the peak flow rate from a one-year, one-hour storm, or develop a feasible alternative BMP or suite of BMPs that are designed to achieve a similar or better performance standard that shall be submitted to the Regional Water Board for approval.
2. Plastics Facilities are exempt from the Water Code requirement to install a containment system under section 13367 of the Water Code if they meet one of the following requirements that are determined to be equal to, or exceed the performance requirements of a containment system:
- a. The Discharger has certified and submitted via SMARTS a valid No Exposure Certification (NEC) in accordance with Section XVII; or
 - b. Plastics Facilities are exempt from installing a containment system, if the following suite of eight (8) BMPs is implemented. This combination of BMPs is considered to reduce or prevent the discharge of plastics at a performance level equivalent to or better than the 1mm mesh and flow standard in Water Code section 13367(e)(1).
 - i. Plastics Facilities shall annually train employees handling Plastic Materials. Training shall include environmental hazards of plastic discharges, employee responsibility for corrective actions to prevent errant Plastic Materials, and standard procedures for containing, cleaning, and disposing of errant Plastic Materials.

- ii. Plastics Facilities shall immediately fix any Plastic Materials containers that are punctured or leaking and shall clean up any errant material in a timely manner.
- iii. Plastics Facilities shall manage outdoor waste disposal of Plastic Materials in a manner that prevents the materials from leaking from waste disposal containers or during waste hauling.
- iv. Plastics Facilities that operate outdoor conveyance systems for Plastic Materials shall maintain the system in good operating condition. The system shall be sealed or filtered in such a way as to prevent the escape of materials when in operation. When not in operation, all connection points shall be sealed, capped, or filtered so as to not allow material to escape. Employees operating the conveyance system shall be trained how to operate in a manner that prevents the loss of materials such as secondary containment, immediate spill response, and checks to ensure the system is empty during connection changes.
- v. Plastics Facilities that maintain outdoor storage of Plastic Materials shall do so in a durable, permanent structure that prevents exposure to weather that could cause the material to migrate or discharge in storm water.
- vi. Plastics Facilities shall maintain a schedule for regular housekeeping and routine inspection for errant Plastic Materials. The Plastics Facility shall ensure that their employees follow the schedule.
- vii. PRDs shall include the housekeeping and routine inspection schedule, spill response and prevention procedures, and employee training materials regarding plastic material handling.
- viii. Plastics Facilities shall correct any deficiencies in the employment of the above BMPs that result in errant Plastic Materials that may discharge or migrate off-site in a timely manner. Any Plastic Materials that are discharged or that migrate off-site constitute an illicit discharge in violation of this General Permit.

XIX. REGIONAL WATER BOARD AUTHORITIES

- A.** The Regional Water Boards may review a Discharger's PRDs for NOI or NEC coverage and administratively reject General Permit coverage if the PRDs are deemed incomplete. The Regional Water Boards may take actions that include rescinding General Permit coverage, requiring a Discharger to revise and re-submit their PRDs (certified and submitted by the Discharger) within a specified time period, requiring the Discharger to apply for different General Permit coverage or a different individual or general permit, or taking no action.
- B.** The Regional Water Boards have the authority to enforce the provisions and requirements of this General Permit. This includes, but is not limited to,

reviewing SWPPPs, Monitoring Implementation Plans, ERA Reports, and Annual Reports, conducting compliance inspections, and taking enforcement actions.

- C. As appropriate, the Regional Water Boards may issue NPDES storm water general or individual permits to a Discharger, categories of Dischargers, or Dischargers within a watershed or geographic area. Upon issuance of such NPDES permits, this General Permit shall no longer regulate the affected Discharger(s).
- D. The Regional Water Boards may require a Discharger to revise its SWPPP, ERA Reports, or monitoring programs to achieve compliance with this General Permit. In this case, the Discharger shall implement these revisions in accordance with a schedule provided by the Regional Water Board.
- E. The Regional Water Boards may approve requests from a Discharger to include co-located, but discontinuous, industrial activities within the same facility under a single NOI or NEC coverage.
- F. Consistent with 40 Code of Federal Regulations section 122.26(a)(9)(i)(D), the Regional Water Boards may require any discharge that is not regulated by this General Permit, that is determined to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States, to be covered under this General Permit as appropriate. Upon designation, the Discharger responsible for the discharge shall obtain coverage under this General Permit.
- G. The Regional Water Boards may review a Discharger's Inactive Mining Operation Certification and reject it at any time if the Regional Water Board determines that access to the facility for monitoring purposes is practicable or that the facility is not in compliance with the applicable requirements of this General Permit.
- H. All Regional Water Board actions that modify a Discharger's obligations under this General Permit must be in writing and should also be submitted in SMARTS.

XX. SPECIAL CONDITIONS

A. Reopener Clause

This General Permit may be reopened and amended to incorporate TMDL-related provisions. This General Permit may also be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, water quality control plans or water quality control policies, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations sections 122.62, 122.63, 122.64, and 124.5.

B. Water Quality Based Corrective Actions

1. Upon determination by the Discharger or written notification by the Regional Water Board that industrial storm water discharges and/or authorized NSWDS contain pollutants that are in violation of Receiving Water Limitations (Section VI), the Discharger shall:
 - a. Conduct a facility evaluation to identify pollutant source(s) within the facility that are associated with industrial activity and whether the BMPs described in the SWPPP have been properly implemented;
 - b. Assess the facility's SWPPP and its implementation to determine whether additional BMPs or SWPPP implementation measures are necessary to reduce or prevent pollutants in industrial storm water discharges to meet the Receiving Water Limitations (Section VI); and,
 - c. Certify and submit via SMARTS documentation based upon the above facility evaluation and assessment that:
 - i. Additional BMPs and/or SWPPP implementation measures have been identified and included in the SWPPP to meet the Receiving Water Limitations (Section VI); or
 - ii. No additional BMPs or SWPPP implementation measures are required to reduce or prevent pollutants in industrial storm water discharges to meet the Receiving Water Limitations (Section VI).
2. The Regional Water Board may reject the Dischargers water quality based corrective actions and/or request additional supporting documentation.

C. Requirements for Dischargers Claiming “No Discharge” through the Notice of Non-Applicability (NONA)

1. For the purpose of the NONA, the Entity (Entities) is referring to the person(s) defined in section 13399.30 of the Water Code.
2. Entities who are claiming “No Discharge” through the NONA shall meet the following eligibility requirements:
 - a. The facility is engineered and constructed to have contained the maximum historic precipitation event (or series of events) using the precipitation data collected from the National Oceanic and Atmospheric Agency's website (or other nearby precipitation data available from other government agencies) so that there will be no discharge of industrial storm water to waters of the United States; or,
 - b. The facility is located in basins or other physical locations that are not hydrologically connected to waters of the United States.
3. When claiming the “No Discharge” option, Entities shall submit and certify via SMARTS both the NONA and a No Discharge Technical Report. The No

Discharge Technical Report shall demonstrate the facility meets the eligibility requirements described above.

4. The No Discharge Technical Report shall be signed (wet signature and license number) by a California licensed professional engineer.

XXI. STANDARD CONDITIONS

A. Duty to Comply

Dischargers shall comply with all standard conditions in this General Permit. Permit noncompliance constitutes a violation of the Clean Water Act and the Water Code and is grounds for enforcement action and/or removal from General Permit coverage.

Dischargers shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions.

B. Duty to Reapply

Dischargers that wish to continue an activity regulated under this General Permit after the expiration date of this General Permit shall apply for and obtain authorization from the Water Boards as required by the new general permit once it is issued.

C. General Permit Actions

1. This General Permit may be modified, revoked and reissued, or terminated for cause. Submittal of a request by the Discharger for General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.
2. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge, and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition.

D. Need to Halt or Reduce Activity Not a Defense

In an enforcement action, it shall not be a defense for a Discharger that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

E. Duty to Mitigate

Dischargers shall take all responsible steps to reduce or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

F. Proper Operation and Maintenance

Dischargers shall at all times properly operate and maintain any facilities and systems of treatment and control (and related equipment and apparatuses) which are installed or used by the Discharger to achieve compliance with the conditions of this General Permit. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a Discharger when necessary to achieve compliance with the conditions of this General Permit.

G. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges. It also does not authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of federal, state, or local laws and regulations.

H. Duty to Provide Information

Upon request by the relevant agency, Dischargers shall provide information to determine compliance with this General Permit to the Water Boards, U.S. EPA, or local Municipal Separate Storm Sewer System (MS4) within a reasonable time. Dischargers shall also furnish, upon request by the relevant agency, copies of records that are required to be kept by this General Permit.

I. Inspection and Entry

Dischargers shall allow the Water Boards, U.S. EPA, and local MS4 (including any authorized contractor acting as their representative), to:

1. Enter upon the premises at reasonable times where a regulated industrial activity is being conducted or where records are kept under the conditions of this General Permit;
2. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;
3. Inspect the facility at reasonable times; and,
4. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

J. Monitoring and Records

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. If Dischargers monitor any pollutant more frequently than required, the results of such monitoring shall be included in the calculation and reporting of the data submitted.
3. Records of monitoring information shall include:
 - a. The date, exact location, and time of sampling or measurement;
 - b. The date(s) analyses were performed;
 - c. The individual(s) that performed the analyses;
 - d. The analytical techniques or methods used; and,
 - e. The results of such analyses.
4. Dischargers shall retain, for a period of at least five (5) years, either a paper or electronic copy of all storm water monitoring information, records, data, and reports required by this General Permit. Copies shall be available for review by the Water Board's staff at the facility during scheduled facility operating hours.
5. Upon written request by U.S. EPA or the local MS4, Dischargers shall provide paper or electronic copies of Annual Reports or other requested records to the Water Boards, U.S. EPA, or local MS4 within ten (10) days from receipt of the request.

K. Electronic Signature and Certification Requirements

1. All Permit Registration Documents (PRDs) for NOI and NEC coverage shall be certified and submitted via SMARTS by the Discharger's Legally Responsible Person (LRP). All other documents may be certified and submitted via SMARTS by the LRP or by their designated Duly Authorized Representative.
2. When a new LRP or Duly Authorized Representative is designated, the Discharger shall ensure that the appropriate revisions are made via SMARTS. In unexpected or emergency situations, it may be necessary for the Discharger to directly contact the State Water Board's Storm Water Section to register for SMARTS account access in order to designate a new LRP.
3. Documents certified and submitted via SMARTS by an unauthorized or ineligible LRP or Duly Authorized Representative are invalid.

4. LRP eligibility is as follows:
 - a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function; or
 - ii. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
 - c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. This includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).
5. Duly Authorized Representative eligibility is as follows:
 - a. The Discharger must authorize via SMARTS any person designated as a Duly Authorized Representative;
 - b. The authorization shall specify that a person designated as a Duly Authorized Representative has responsibility for the overall operation of the regulated facility or activity, such as a person that is a manager, operator, superintendent, or another position of equivalent responsibility, or is an individual who has overall responsibility for environmental matters for the company; and,
 - c. The authorization must be current (it has been updated to reflect a different individual or position) prior to any report submittals, certifications, or records certified by the Duly Authorized Representative.

L. Certification

Any person signing, certifying, and submitting documents under Section XXI.K above shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

M. Anticipated Noncompliance

Dischargers shall give advance notice to the Regional Water Board and local MS4 of any planned changes in the industrial activity that may result in noncompliance with this General Permit.

N. Penalties for Falsification of Reports

Clean Water Act section 309(c)(4) provides that any person that knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than two years or by both.

O. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the initiation of any legal action or relieve the Discharger from any responsibilities, liabilities, or penalties to which the Discharger is or may be subject to under section 311 of the Clean Water Act.

P. Severability

The provisions of this General Permit are severable; if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

Q. Penalties for Violations of Permit Conditions

1. Clean Water Act section 309 provides significant penalties for any person that violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing any such section in a permit issued under section 402. Any

person that violates any permit condition of this General Permit is subject to a civil penalty not to exceed \$37,500²² per calendar day of such violation, as well as any other appropriate sanction provided by section 309 of the Clean Water Act.

2. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties, which may be greater than penalties under the Clean Water Act.

R. Transfers

Coverage under this General Permit is non-transferrable. When operation of the facility has been transferred to another entity, or a facility is relocated, new PRDs for NOI and NEC coverage must be certified and submitted via SMARTS prior to the transfer, or at least seven (7) days prior to the first day of operations for a relocated facility.

S. Continuation of Expired General Permit

If this General Permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 40 Code of Federal Regulations 122.6 and remain in full force and effect.

²² May be further adjusted in accordance with the Federal Civil Penalties Inflation Adjustment Act.

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FACT SHEET FOR
STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
NPDES NO. CAS000001**

*The factsheet to the IGP was updated in January 2015 to correct typographical errors. The deadline listed in Section I.D.13 (page 8) and Section II.G.1 (page 27) of the factsheet for dischargers with outfalls to ocean waters to develop and implement a monitoring program in compliance with the California Ocean Plan model monitoring provisions was corrected to July 1, 2015, which is the deadline listed in finding 44 in the general order.

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I. BACKGROUND

A. Purpose

The purpose of this Fact Sheet is to explain the legal requirements and technical rationale that serve as the basis for the requirements of this Order 2014-0057-DWQ (General Permit), adopted by the State Water Resources Control Board (State Water Board) on April 1, 2014. This General Permit regulates operators of facilities subject to storm water permitting (Dischargers), that discharge storm water associated with industrial activity (industrial storm water discharges). This General Permit replaces Water Quality Order 97-03-DWQ. This Fact Sheet does not contain any independently-enforceable requirements; the General Permit contains all of the actual requirements applicable to Dischargers. In case of any conflict between the Fact Sheet and the General Permit, the terms of the General Permit govern.

B. History

The Federal Clean Water Act (CWA)¹ prohibits discharges from point sources to waters of the United States, unless the discharges are in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. (CWA § 301(a).) In 1987, the CWA was amended to establish a framework for regulating municipal storm water discharges and discharges of storm water associated with industrial activity (industrial storm water discharges) under the NPDES program. (CWA § 402(p).) In 1990, the United States Environmental Protection Agency (U.S. EPA) promulgated regulations, commonly known as Phase I, establishing application requirements for storm water permits for specified categories of industries. (40 C.F.R. § 122.26.) In 1992, U.S. EPA revised the monitoring requirements for industrial storm water discharges. (40 C.F.R. § 122.44(i)(2), (4), (5).) In 1999, U.S. EPA adopted additional storm water regulations, known as Phase II. (64 Fed. Reg. 68722.) The Phase II regulations provide for, among other things, a conditional exclusion from NPDES permitting requirements for industrial activities that have no exposure to storm water.

Industrial storm water discharges are regulated pursuant to CWA section 402(p)(3)(A). This provision requires NPDES permits for industrial storm water discharges to implement CWA section 301, which includes requirements for Dischargers to comply with technology-based effluent limitations, and any more stringent water quality-based limitations necessary to meet water quality standards. Technology-based effluent limitations applicable to industrial activities are based on best conventional pollutant control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. (CWA § 301(b)(1)(A) and (2)(A).) To ensure compliance with water quality standards, NPDES permits may also require a Discharger to implement best management practices (BMPs). 40 Code of Federal Regulations section 122.44(k)(4) requires the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations (NELs) are infeasible. The State Water Board has concluded that it is infeasible to establish

¹ Federal Water Pollution Control Act of 1970 (also referred to as the Clean Water Act or CWA), 33 U.S.C. § 1201 et seq. All further statutory references herein are to the CWA unless otherwise indicated.

NELs for storm water discharges associated with industrial activity due to insufficient information at the time of adoption of this General Permit.

On April 17, 1997, the State Water Board issued NPDES General Permit for Industrial Storm Water Discharges, Excluding Construction Activities, Water Quality Order 97-03-DWQ (previous permit). This General Permit, Order 2014-0057-DWQ rescinds the previous permit and serves as the statewide general permit for industrial storm water discharges. The State Water Board concludes that significant revisions to the previous permit requirements are necessary for implementation, consistency and objective enforcement. As discussed in this Fact Sheet, this General Permit requires Dischargers to:

- Eliminate unauthorized non-storm water discharges (NSWDs);
- Develop and implement storm water pollution prevention plans (SWPPPs) that include best management practices (BMPs);
- Implement minimum BMPs, and advanced BMPs as necessary, to achieve compliance with the effluent and receiving water limitations of this General Permit;
- Conduct monitoring, including visual observations and analytical storm water monitoring for indicator parameters;
- Compare monitoring results for monitored parameters to applicable numeric action levels (NALs) derived from the U.S. EPA 2008 Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity (2008 MSGP) and other industrial storm water discharge monitoring data collected in California;
- Perform the appropriate Exceedance Response Actions (ERAs) when there are exceedances of the NALs; and,
- Certify and submit all permit-related compliance documents via the Storm Water Multiple Application and Report Tracking System (SMARTS). Dischargers shall certify and submit these documents which include, but are not limited to, Permit Registration Documents (PRDs) including Notices of Intent (NOIs), No Exposure Certifications (NECs), and Storm Water Pollution Prevention Plans (SWPPPs), as well as Annual Reports, Notices of Termination (NOTs), Level 1 ERA Reports, and Level 2 ERA Technical Reports.

C. Blue Ribbon Panel of Experts (Panel)

In 2005 and 2006, the State Water Board convened a Blue Ribbon Panel of Experts (Panel) to address the feasibility of NELs in California's storm water permits. Specifically, the Panel was charged with answering the following questions:

Is it technically feasible to establish numeric effluent limitations, or some other quantifiable limit, for inclusion in storm water permits?

How would such limitations or criteria be established, and what information and data would be required?²

The Panel was directed to answer these questions for industrial storm water discharge general permits, construction storm water discharge general permits, and area-wide municipal storm water discharge permits. The Panel was also directed to address both technology-based and water quality based limitations and criteria.

In evaluating the establishment of numeric limitations and criteria, the Panel was directed to consider all of the following:

- The ability of the State Water Board to establish appropriate objective limitations or criteria;
- How compliance is to be determined;
- The ability of Dischargers and inspectors to monitor for compliance; and
- The technical and financial ability of Dischargers to comply with the limitations or criteria.

Following an opportunity for public comment, the Panel identified several water quality concerns, public process and program effectiveness issues. A summary of the Panel's recommendations regarding industrial storm water discharges follows:³

- Current data are inadequate; accordingly, the State Water Board should improve monitoring requirements to collect useful data for establishing NALs and NELs.
- Required parameters for further monitoring should be consistent with the type of industrial activity (i.e., monitor for heavy metals when there is a reasonable expectation that the industrial activity will contribute to increased heavy metals concentrations in storm water).
- Insofar as possible, the use of California data (or national data applicable to California) is preferred when setting NELs and NALs.
- Industrial facilities that do not discharge to Municipal Separate Storm Sewer Systems (MS4s) should implement BMPs for their non-industrial exposure (e.g., parking lots, roof runoff) similar to BMPs implemented by commercial facilities in MS4 jurisdictions.

² State Water Board Storm Water Panel of Experts, The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 19, 2006). <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf>. [as of February 4, 2014].

³ See footnote 2.

- In all cases, Dischargers should implement a suite of minimum BMPs, including, but not limited to, good housekeeping practices, employee training, and preventing exposure of materials to rain.
- Standard Industrial Classification (SIC) code categories are not a satisfactory way of identifying industrial activities at any given site. The State Water Board should develop an improved method of characterizing industrial activities that will improve water quality in storm water.
- Recognizing that implementing the Panel's suggested changes is a large task, the State Water Board should set priorities for implementation of the Panel's suggested approach in order to achieve the greatest reduction of pollutants statewide.
- Recognizing that an increasing number of industries have moved industrial activities indoors to prevent storm water pollution, such facilities should be granted regulatory relief from NALs and/or NELs , but should still be required to comply with any applicable MS4 permit requirements.
- Recognizing the need for improved monitoring and reduction of pollutants in industrial storm water discharges, the State Water Board should consider the total economic impact of its requirements to not economically penalize California industries when compared to industries outside of California.

With regard to the industrial activities component of its charge, the Panel limited its focus to the question of whether sampling data can be used to derive technology-based NELs. The Panel did not address other factors or approaches that may relate to the task of determining technology- and water quality-based NELs consistent with the regulations and law. Examples of these other factors are discussed in more detail in this Fact Sheet. Additionally, in its final report the Panel did not clearly differentiate between the role of numeric and non-numeric effluent limitations, nor did it consider U.S. EPA procedures used to promulgate effluent limitation guidelines (ELGs) in 40 Code of Federal Regulations, Chapter I, Subchapter N (Subchapter N).

D. Summary of Significant Changes in this General Permit

The previous permit issued by the State Water Board on April 17, 1997, had been administratively extended since 2002 until the adoption of this General Permit. Significant revisions to the previous permit were necessary to update permit requirements consistent with recent regulatory changes pertaining to industrial storm water under the CWA. This General Permit differs from the previous permit in the following areas:

1. Minimum Best Management Practices (BMPs)

This General Permit requires Dischargers to implement a set of minimum BMPs. Implementation of the minimum BMPs, in combination with any advanced BMPs (BMPs, collectively,) necessary to reduce or prevent pollutants in industrial storm water discharges, serve as the basis for compliance with this General Permit's

technology-based effluent limitations and water quality based receiving water limitations. Although there is great variation in industrial activities and pollutant sources between industrial sectors and, in some cases between operations within the same industrial sector, the minimum BMPs specified in this General Permit represent common practices that can be implemented by most facilities.

The previous permit did not require a minimum set of BMPs but rather allowed Dischargers to consider which non-structural BMPs should be implemented and which structural BMPs should be considered for implementation when non-structural BMPs are ineffective.

This General Permit requires Dischargers to implement minimum BMPs (which are mostly non-structural BMPs), and advanced BMPs (which are mostly structural BMPs) when implementation of the minimum BMPs do not meet the requirements of the General Permit. Advanced BMPs consists of treatment control BMPs, exposure reduction BMPs, and storm water containment and discharge reduction BMPs. BMPs that exceed the performance expectation of minimum BMPs are considered advanced BMPs. Dischargers are encouraged to utilize advanced BMPs that infiltrate or reuse storm water where feasible.

The minimum and advanced BMPs required in this General Permit are consistent with U.S. EPA's 2008 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2008 MSGP), guidance developed by the California Stormwater Quality Association, and recommendations by Regional Water Quality Control Board (Regional Water Board) inspectors. Dischargers are required to evaluate BMPs being implemented and determine an appropriate interval for the implementation and inspection of these BMPs.

2. Conditional Exclusion - No Exposure Certification (NEC)

This General Permit applies U.S. EPA Phase II regulations regarding a conditional exclusion for facilities that have no exposure of industrial activities and materials to storm water. (40 C.F.R. § 122.26(g).) (The previous permit required light industries to obtain coverage only if their activities were exposed to storm water.) This General Permit implements current U.S. EPA rules allowing any type of industry to claim a conditional exclusion. The NEC requires enrollment for coverage prior to conditionally excluding a Discharger from a majority of this General Permit's requirements.

3. Electronic Reporting Requirements

This General Permit requires Dischargers to submit and certify all reports electronically via SMARTS. The previous permit used a paper reporting process with electronic reporting as an option.

4. Training Expectations and Roles

This General Permit requires that Dischargers arrange to have appropriately trained personnel implementing this General Permit's requirements at each facility. In

addition, if a Discharger's facility enters Level 1 status, the Level 1 ERA Report must be prepared by a Qualified Industrial Storm Water Practitioner (QISP). All Action Plans and Technical Reports required in Level 2 status must also be prepared by a QISP.

Dischargers may appoint a staff person to complete the QISP training or may contract with an outside QISP. QISP training is tailored to persons with a high degree of technical knowledge and environmental experience. Although QISPs do not need to be California licensed professional engineers, it may be necessary to involve a California licensed professional engineer to perform certain aspects of the Technical Reports.

5. Numeric Action Levels (NALs) and NAL Exceedances

This General Permit contains two types of NAL exceedances. An annual NAL exceedance occurs when the average of all sampling results within a reporting year for a single parameter (except pH) exceeds the applicable annual NAL. The annual NALs are derived from, and function similarly to, the benchmark values provided in the 2008 MSGP. Instantaneous maximum NALs target hot spots or episodic discharges of pollutants. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the applicable instantaneous maximum NAL value. Instantaneous maximum NALs for Total Suspended Solids (TSS) and Oil and Grease (O&G) are based on previously gathered California industrial storm water discharge monitoring data. The instantaneous maximum NAL for pH is derived from the benchmark value provided in the 2008 MSGP.

6. Exceedance Response Actions (ERA)

This General Permit requires Dischargers to develop and implement ERAs, when an annual NAL or instantaneous maximum NAL exceedance occurs during a reporting year. The first time an annual NAL or instantaneous maximum NAL exceedance occurs for any one parameter, a Discharger's status is changed from Baseline to Level 1 status, and the Discharger is required to evaluate and revise, as necessary, its BMPs (with the assistance of a QISP) and submit a report prepared by a QISP. The second time an annual NAL or instantaneous maximum NAL exceedance occurs for the same parameter in a subsequent reporting year, the Discharger's status is changed from Level 1 to Level 2 status, and Dischargers are required to submit a Level 2 ERA Action Plan and a Level 2 ERA Technical Report. Unless the demonstration is not accepted by the State Water Board or a Regional Water Board, the Discharger is not required to perform additional ERA requirements for the parameter(s) involved if the Discharger demonstrates that:

- a. Additional BMPs required to eliminate NAL exceedances are not technologically available or economically practicable and achievable; or,
- b. NAL exceedances are solely caused by non-industrial pollutant sources; or,

- c. NAL exceedances are solely attributable to pollutants from natural background sources.

Information supporting the above demonstrations must be included in QISP-prepared Level 2 ERA Technical Reports.

7. CWA section 303(d) Impairment

This General Permit requires a Discharger to monitor additional parameters if the discharge(s) from its facility contributes pollutants to receiving waters that are listed as impaired for those pollutants (CWA section 303(d) listings). This General Permit lists the receiving waters that are 303(d) listed as impaired for pollutants that are likely to be associated with industrial storm water in Appendix 3. For example, if a Discharger discharges to a water body that is listed as impaired for copper, and the discharge(s) from its facility has the potential sources of copper, the Discharger must add copper to the list of parameters to monitor in its storm water discharge.

8. Design Storm Standards for Treatment Control BMPs

This General Permit includes design storm standards for Dischargers implementing treatment control BMPs. The design storm standards include both volume- and flow-based criteria. Dischargers are not required to retrofit existing treatment control BMPs unless required to meet the technology-based effluent limitations and receiving water limitations in this General Permit.

9. Qualifying Storm Event (QSE)

This General Permit defines a QSE as a precipitation event that:

- a. Produces a discharge for at least one drainage area; and,
- b. Is preceded by 48 hours with no discharge from any drainage area.

The definition above differs from the definition in the previous permit, resulting in an increase number of QSEs eligible for sample collection. Therefore, most Dischargers will be able to collect the required number of samples, regardless of their facility location.

10. Sampling Protocols

This General Permit requires Dischargers to collect samples during scheduled facility operating hours from each drainage location within four hours of: (1) the start of the discharge from a QSE occurring during scheduled facility operating hours, or (2) the start of scheduled facility operating hours if the QSE occurred in the previous twelve (12) hours. The benefits of this sampling protocol: (a) allows a more reasonable amount of time to collect samples, (b) increases the likelihood for samples collected at discharge locations to be representative of the drainage area discharge characteristics, (c) increases the number of QSEs eligible for sample collection, and, (d) reduces the likelihood of Dischargers collecting samples with short-term concentration spikes.

The previous permit required that Dischargers collect grab samples during the first hour of discharge that commenced during scheduled facility operating hours. These sample collection requirements were widely considered to be too rigid and out of step with other states' sample collection requirements. Since many storm events begin in the evening or early morning hours, numerous opportunities to collect samples were lost because Dischargers could not obtain samples during the first hour of discharge. Dischargers with facilities that have multiple discharge locations had difficulties collecting samples within such a short timeframe therefore affecting data quality.

11. Sampling Frequency

This General Permit increases the sampling frequency by requiring the Discharger to collect and analyze storm water samples from each discharge location for two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30). The increased sampling, compared to the previous permit's two samples during the wet season, is consistent with the 2008 MSGP and other states' permit requirements and will improve compliance determination with this General Permit. The State Water Board expects that the elimination of the wet season sampling requirements will increase the number of possible QSEs eligible for monitoring.

12. Compliance Groups

To allow industrial facilities to efficiently share knowledge, skills and resources towards achieving General Permit compliance, this General Permit allows the formation of Compliance Groups and Compliance Group Leaders. Dischargers participating in a Compliance Group (Compliance Group Participants) are collectively required to sample twice a year. Compliance Group Leaders are required to be approved through the State Water Board-approved training program process, inspect each facility once within each reporting year, and prepare Level 1 and Level 2 ERA reports as necessary. The Compliance Group option is described in more detail in General Permit section XIV and in this Fact Sheet in the Section titled "Compliance Groups."

13. Discharges to Ocean Waters

This General Permit requires Dischargers with ocean-discharging outfalls subject to model monitoring provisions of the California Ocean Plan to develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan model monitoring provisions by July 1, 2015 or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.

II. TECHNICAL RATIONALE FOR REQUIREMENTS IN THIS GENERAL PERMIT

A. Receiving General Permit Coverage

1. This General Permit provides regulatory coverage for new and existing industrial storm water discharges and authorized NSWs from:
 - a. Facilities required by federal regulations to obtain an NPDES permit;
 - b. Facilities designated by the Regional Water Boards to obtain an NPDES permit; and,
 - c. Facilities directed by the Regional Water Boards to obtain coverage specifically under this General Permit. The Regional Water Board typically directs a Discharger to change General Permit coverage under two circumstances:
 - (1) switch from an individual NPDES permit to this General Permit, or
 - (2) switch from the NPDES General Permit for Storm Water Discharges Associated with Construction And Land Disturbance Activities, (Order 2009-0009-DWQ, NPDES No CAS000002) to this General Permit for long-term construction related activities that are similar to industrial activities (e.g. concrete batch plants).

40 Code of Federal Regulations section 122.26(b)(14) defines "storm water discharge associated with industrial activity" and describes the types of facilities subject to permitting (primarily by Standard Industrial Classification (SIC) code). This General Permit provides regulatory coverage for all facilities with industrial activities described in Attachment A where the covered industrial activity is the Discharger's primary industrial activity. In some instances, a Discharger may have more than one primary industrial activity occurring at a facility.

The 1987 SIC manual uses the term "establishment" to determine the primary economic activity of a facility. The manual instructs that where distinct and separate economic activities are performed at a single location, each activity should be treated as a separate establishment (and, therefore, separate primary activity). For example, the United States Navy (primary SIC code 9711) may conduct industrial activities subject to permitting under this General Permit, such as landfill operations (SIC code 4953), ship and boat building and repair (SIC code 3731, and flying field operations (SIC code 4581).

The SIC manual also discusses "auxiliary" functions of establishments. Auxiliary functions provide management or support services to the establishment. Examples of auxiliary functions are warehouses and storage facilities for the establishment's own materials, maintenance and repair shops of the establishment's own machinery, automotive repair shops or storage garages of the establishment's own vehicles, administrative offices, research, development, field engineering support, and testing conducted for the establishment. When auxiliary functions are performed at physically separate facilities from the establishment they serve, they generally are not subject to General Permit coverage. If

auxiliary functions are performed at the same physical location as the establishment, then they are subject to General Permit coverage if they are associated with industrial activities.

This clarification does not change the scope of which facilities are subject to permitting relative to the 1997 IGP. The 1997 IGP Fact Sheet had used the term “auxiliary” to describe a facility’s separate primary activities, which has caused confusion.

In 1997, the North American Industrial Classification System (NAICS) was published, replacing the SIC code system. The U.S. EPA has indicated that it intends to incorporate the NAICS codes into the federal storm water regulations but has not done so yet. The State Water Board recognizes that many Dischargers in newer industries were not included in the 1987 SIC code manual and may have difficulty determining their SIC code information. To address this transition, SMARTS has been modified to accept both SIC codes and NAICS codes, and NAICS codes are automatically translated into SIC codes. There may be instances of conflict between SIC and NAICS codes. The use of NAICS codes shall not expand or reduce the types of industries subject to this General Permit as compared to the SIC codes listed in the General Permit. State Water Board staff will work closely with the applicant to resolve these conflicts in SMARTS as they are identified. Dischargers should be aware that the use of an NAICS code which results in failure to submit any of the required PRDs under this General Permit remains a violation of the terms of this General Permit.

The facilities included in category one of Attachment A (facilities subject to Subchapter N) are subject to storm water ELGs that are incorporated into the requirements of this General Permit. Dischargers whose facilities are included in this category must examine the appropriate federal ELGs to determine the applicability of those guidelines. This General Permit contains additional requirements (Section XI.D) that apply only to facilities with storm water ELGs.

2. Types of Discharges Not Covered by this General Permit
 - a. Discharges from construction and land disturbance activities that are subject to the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).
 - b. Discharges covered by an individual or general storm water NPDES permit. Some industrial storm water discharges may be regulated by other individual or general NPDES permits issued by the State Water Board or the Regional Water Boards (Water Boards, collectively,). This General Permit shall not regulate these discharges. When the individual or general NPDES permits for such discharges expire, the Water Boards may authorize coverage under this General Permit or another general NPDES permit, or may issue a new individual NPDES permit consistent with the federal and state storm water regulations. Interested parties may request that the State Water Board or appropriate Regional Water Board issue individual or general NPDES permits for specific discharges that, in their view are not properly regulated through this General Permit. General permits may be issued for a particular industrial group or watershed area which

would supersede this General Permit. To date, two Regional Water Board have issued such permits:

- i. The Lahontan Regional Water Board has adopted an NPDES permit and general Waste Discharge Requirements to regulate discharges from marinas and maintenance dredging (Regional Water Board Order R6T-2005-0015 - NPDES Permit No. CAG616003) in the Lake Tahoe Hydrologic Unit.
 - ii. The Santa Ana Regional Water Board adopted the Sector Specific General Permit for Stormwater Runoff Associated with Industrial Activities from Scrap Metal Recycling Facilities within the Santa Ana Region, Order R8-2012-0012, NPDES Permit No. CAG 618001 (Scrap Metal Recycling Permit). The Scrap Metal Recycling Permit is applicable to facilities within the Santa Ana Region that are listed under Standard Industrial Classification (SIC) Code 5093 and engaged in the following types of activities: (1) automotive wrecking for scrap-wholesale (this category does not include facilities engaged in automobile dismantling for the primary purpose of selling second hand parts); (2) iron and steel scrap - wholesale; (3) junk and scrap metal - wholesale; (4) metal waste and scrap - wholesale; and (5) non-ferrous metals scrap - wholesale. Other types of facilities listed under SIC Code 5093 and engaged in waste recycling are not required to get coverage under the Scrap Metal Recycling Permit. A list of covered facilities as of February 8, 2011 was included in Attachment A of the Scrap Metal Recycling Permit.
- c. Discharges that the Regional Water Boards determine to be ineligible for coverage under this General Permit. In such cases, a Regional Water Board will require the discharges be covered by another individual or general NPDES permit. The applicability of this General Permit to such discharges is terminated when the discharge is subject to another individual or general NPDES permit.
- d. Discharges that do not enter waters of the United States. These include:
- i. Discharges to municipal separate sanitary sewer systems;
 - ii. Discharges to evaporation ponds, discharges to percolation ponds, and/or any other methods used to retain and prevent industrial storm water discharges from entering waters of the United States;
 - iii. Discharges to combined sewer systems. In California, the only major combined sewer systems are located in San Francisco and downtown Sacramento. Dischargers who believe they discharge into a combined sewer system should contact the local Regional Water Board to verify discharge location; and,
 - iv. Dischargers Claiming the “No Discharge” Option in the Notice of Non-Applicability (NONA) (Fact Sheet Section II.S).
- e. Discharges from mining operations or oil and gas facilities composed entirely of flows that are from conveyances or systems of conveyances used for collecting and conveying precipitation runoff and do not come into contact with any overburden, raw materials, intermediate products, finished products, by-products, or waste products located at the facility. (33 U.S.C. § 1342(l)(2).)
- f. Discharges from facilities on Tribal Lands regulated by U.S. EPA.

3. Obtaining General Permit Coverage (Section II of this General Permit)

The State Water Board has developed the SMARTS online database system to handle registration and reporting under this General Permit. More information regarding SMARTS and access to the database is available online at <https://smarts.waterboards.ca.gov>. The State Water Board has determined that all documents related to general storm water enrollment and compliance must be certified and submitted via SMARTS by Dischargers.

This General Permit requires all Dischargers to electronically certify and submit PRDs via SMARTS to obtain: (1) regulatory coverage, or (2) to certify that there are no industrial activities exposed to storm water at the facility and obtain regulatory coverage under the NEC provision of this General Permit. Facilities that were eligible to self-certify no exposure under the previous permit (see category 10 in Attachment 1 of the previous permit) are required to certify and submit via SMARTS PRDs for NOI coverage under this General Permit by July 1, 2015 or for NEC coverage by October 1, 2015. The Water Board is estimating that 10,000 – 30,000 Dischargers may be registering for NOI or NEC coverage under this General Permit. Separate registration deadlines, one for NOI coverage and one for NEC coverage, provides Dischargers better assistance from Storm Water Helpdesk and staff.

Dischargers shall electronically certify and submit the PRDs via SMARTS for each individual facility. This requirement is intended to establish a clear accounting of the name, address, and contact information for each Discharger, as well as a description of each Discharger's facility.

The Water Boards recognize that certain information pertaining to an industrial facility may be confidential. Many Stakeholders were asking for clarification on the process the Water Boards would use to manage confidential information or the process Dischargers could use to redact such information. Dischargers may redact trade secrets information from required submittals (Section II.B.3.d). Dischargers are required to include a general description of the redacted information and the basis for the redaction. Dischargers are still required to submit complete and un-redacted versions of the information to the Water Boards within 30 days, however these versions should be clearly labeled "CONFIDENTIAL" so that the confidentiality of these documents is clear to Regional Water Board staff, even when there is a change in staff. This General Permit requires that all information provided to the Water Boards by the Discharger comply with the Homeland Security Act and other federal law that addresses security in the United States.

All Dischargers who certify and submit PRDs via SMARTS for NOI coverage on or after July 1, 2015 or for NEC coverage on or after October 1, 2015, shall immediately comply with the provisions in this General Permit.

4. General Permit Coverage for Landfills

This General Permit covers storm water discharges from landfills, land application sites, and open dumps that receive or have received industrial waste from any facility covered by this General Permit. Industrial storm water discharges from these

facilities must be covered by this General Permit unless (1) they are already covered by another NPDES permit, or (2) the Regional Water Board has determined that an NPDES permit is not required because the site has been stabilized or required closure activities have been completed.

In most cases, it is appropriate for new landfill construction or final closure to be covered by the Construction General Permit, rather than this General Permit. Questions have arisen as to what constitutes new landfill construction at an existing landfill versus the normal planned expansion of a landfill. Similarly, questions have arisen about the type of closure activities that may be subject to the Construction General Permit versus the normal closure of “cells” that occurs during continued landfill operations and are not subject to the Construction General Permit. Other questions such as whether temporary or permanent newly graded/paved roads disturbing greater than one acre at a landfill are subject to the Construction General Permit. Landfill Dischargers have asked for clarity regarding these questions. The previous permit required Dischargers to contact the Regional Water Boards to determine permit appropriateness. Site specific circumstances continue to require Dischargers to contact Regional Water Boards for final determinations.

Based upon the State Water Board’s storm water program history, there are only a handful of instances where an operating landfill has been simultaneously subject to both the construction and industrial permitting requirements. Typically a landfill is subject to the construction permitting requirements during the time the landfill is initially constructed and prior to operation. A landfill is subject to the industrial permitting requirements during landfill operations, and subject to the construction permitting requirements during final landfill closure activities.

Once a landfill begins operations, continued expansion or closure of incremental landfill cells is authorized under the industrial permitting requirements since these are normal aspects of landfill operations. These expansion/closure activities occur within a limited timeframe (often taking less than 90 days from beginning to end) and are not separately subject to additional local approval (e.g., a new building permit). Any construction or demolition of temporary non-impervious roads directly related to landfill operations are subject to the industrial permitting requirements.

Construction or closure of a separate section of the landfill that is either subject to additional permitting by the local authorities and/or lasts more than 90 days requires coverage under the Construction General Permit. Construction of permanent facility structures such as buildings and impervious parking lots or roads that disturb greater than one acre are also subject to the Construction General Permit. (Permanent facility structures are defined as any structural improvements designed to remain until the landfill is closed.)

Site specific circumstances such as proximity to nearby waterways, extent of activities, pollutants of concern, and other considerations can impact any decision as to whether a particular activity is to be regulated under this General Permit or the Construction General Permit. Regional Water Boards will continue to exercise their discretion as necessary to protect the beneficial uses of the receiving water(s).

5. General Permit Coverage for Small Municipal Separate Storm Sewer Systems (MS4s)

Section 1068 of the Intermodal Surface Transportation Efficiency Act of 1991 exempted municipal agencies serving populations of less than 100,000 from Phase I permit requirements other than sanitary landfills, power plants, and airports facilities. U.S. EPA's Phase II regulations eliminated the above exemption as of March 10, 2003. All facilities in Attachment A of this General Permit that are operated by a small municipal agency are subject to NPDES storm water permitting requirements and this General Permit.

6. Changes to General Permit Coverage

Dischargers who no longer operate a facility required to be covered under this General Permit (either NOI or NEC coverage) are required to electronically certify and submit via SMARTS a Notice of Termination (NOT). An NOT is required when there is a change in ownership of the industrial activities subject to permitting or when industrial activities subject to permitting are permanently discontinued by the Discharger at the site. When terminating NOI coverage, Dischargers may only submit an NOT once all exposure of industrial materials and equipment have been eliminated. Dischargers may not submit NOTs for temporary or seasonal facility closures. The General Permit requires Dischargers to implement appropriate BMPs to reduce or prevent pollutants in storm water discharges during the temporary facility closure.

This General Permit allows Dischargers to change General Permit coverage, as appropriate, from NOI coverage to NEC coverage or from NEC coverage to NOI coverage.

B. Discharge Prohibitions

This General Permit covers industrial storm water discharges and authorized NSWDS from industrial facilities and prohibits any discharge of materials other than storm water and authorized NSWDS (Section III and Section IV of this General Permit). It is a violation of this General Permit to discharge hazardous substances in storm water in excess of the reportable quantities established in 40 Code of Federal Regulations sections 117.3 and 302.4.

The State Water Board is authorized, under Water Code section 13377, to issue NPDES permits which apply and ensure compliance with all applicable provisions of the CWA, and any more stringent limitations necessary to implement water quality control plans, protect beneficial uses, and prevent nuisance.

C. Non-Storm Water Discharges (NSWDs)

Unauthorized NSWDS can be generated from various pollutant sources. Depending upon their quantity and location where generated, unauthorized NSWDS can discharge to the storm drain system during dry weather as well as during a storm event (comingled with storm water discharge). These NSWDS can consist of, but are not limited to; (1) waters generated by the rinsing or washing of vehicles, equipment,

buildings, or pavement, or (2) fluid, particulate or solid materials that have spilled, leaked, or been disposed of improperly.

Some NSWDs are not directly related to industrial activities and normally discharge minimal pollutants when properly managed. Section IV of this General Permit provides a limited list of NSWDs that are authorized if Dischargers implement BMPs to prevent contact with industrial materials prior to discharge. The list in Section IV is similar to the list provided in the 2008 MSGP but does not include pavement and external building surfaces washing without detergents. These two items are not included because the Discharger is responsible to reduce or prevent pollutants in storm water discharges from paved areas and buildings associated with industrial activities. Since industrial materials and non-industrial material likely co-exist, the washing of paved areas and external building surfaces may result in discharges of pollutants associated with industrial activities. In addition, washing activities generally occur during dry-weather periods when receiving water flows are lower than wet-weather periods. Wash waters are likely to discharge in higher concentrations than would occur if these pollutants were naturally discharged during a storm event. The discharge of high concentration wash water during a time of dry-weather flows is inconsistent with the goal of protecting receiving waters. These discharges are, therefore, considered unauthorized NSWDs. Similar to the 2008 MSGP, firefighting related discharges are not subject to this General Permit.

A major required element of the SWPPP is the identification and measures for elimination of unauthorized NSWDs. Unauthorized NSWDs can contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping can often be addressed through BMPs. This General Permit's BMP requirements for NSWDs remain essentially unchanged from the previous permit other than the increased frequency of required visual observations from quarterly to monthly. See Section XI.A.1 of this General Permit.

D. Effluent Limitations

1. Technology-Based and Water Quality-Based Effluent Limitations

CWA Section 301(b)(1)(C) requires that discharges from existing facilities must, at a minimum, comply with technology-based effluent limitations based on the technological capability of Dischargers to control pollutants in their discharges. Discharges must also comply with any more stringent water quality-based limitations necessary to meet water quality standards in accordance with CWA Section 301(b)(1)(C). Water quality-based limitations are discussed in Section E of this Fact Sheet titled "Receiving Water Limitations." Both technology-based effluent limitations and water quality-based limitations are implemented through NPDES permits. (CWA sections 301(a) and (b).)

2. Types of Technology-Based Effluent Limitations

All NPDES permits are required to contain technology-based effluent limitations (TBELs). (40 C.F.R. §§122.44(a)(1) and 125.3.) TBELs may consist of effluent limitations guidelines (ELGs) established by U.S. EPA through regulation, or may be developed using best professional judgment on a case-by-case basis.

The CWA sets forth standards for TBELs based on the type of pollutant or the type of facility/source involved. The CWA establishes two levels of pollution control for existing sources. For the first level, existing sources that discharge pollutants directly to receiving waters were initially subject to effluent limitations based on the “best practicable control technology currently available” (BPT). (33 U.S.C. § 1314(b)(1)(B).) BPT applies to all pollutants. For the second level, existing sources that discharge conventional pollutants are subject to effluent limitations based on the “best conventional pollutant control technology” (BCT). (33 U.S.C. §1314(b)(4)(A); see also 40 C.F.R. §401.16 (list of conventional pollutants).) Also for the second level, other existing sources that discharge toxic pollutants or “nonconventional” pollutants (“nonconventional” pollutants are pollutants that are neither “toxic” nor “conventional”) are subject to effluent limitations based on “best available technology economically achievable” (BAT). (33 U.S.C. §1311(b)(2)(A); see also 40 C.F.R. §401.15 (list of toxic pollutants).) The factors to be considered in establishing the levels of these control technologies are specified in section 304(b) of the CWA and in U.S. EPA’s regulations at 40 C.F.R. §125.3.

When establishing ELGs for an industrial category, U.S. EPA evaluates a wide variety of technical factors to determine BPT, BCT, and BAT. U.S. EPA considers the specific factors of an industry such as pollutant sources, industrial processes, and the size and scale of operations. U.S. EPA evaluates the specific treatment, structural, and operational source control BMPs available to reduce or prevent pollutants in the discharges. The costs of implementing BMPs to address these factors are weighed against their effectiveness and ability to protect water quality. Factors such as industry economic viability, economies of scale, and retrofit costs are also considered.

To date, U.S. EPA has: (1) not promulgated storm water ELGs for most industrial categories, (2) not established NELs within all ELGs that have been promulgated, and (3) exempted certain types of facilities within an industrial category from complying with established ELGs. The feedlot category (40 Code of Federal Regulations part 412) provides an example of several of these points. In that instance, U.S. EPA did not establish numeric effluent limitations but instead: (1) established a narrative effluent limitation requiring retention of all feedlot-related runoff from a 25-year, 24-hour storm, and (2) limited application of the ELG to feedlots with a minimum number of animals. U.S. EPA also recently promulgated ELGs for the "Construction and Development (C&D)" industry, which included, among many other limitations, conditional numeric effluent limitations. Though the NELs in these ELGs were later stayed by U.S. EPA, the ELGs exempted construction sites of less than 30 acres from complying with the established numeric effluent limitations.

40 Code of Federal Regulations, Chapter I, Subchapter N (“Subchapter N”), includes over 40 separate industrial categories where the U.S. EPA has established ELGs for new and existing industrial wastewater discharges to surface waters, discharges to publicly owned treatment works (pre-treatment standards), and storm water discharges to surface waters. Generally, U.S. EPA has focused its efforts on the development of ELGs for larger industries and those industries with the greatest potential to pollute. In total, the 40 categories for which ELGs have been

established (not including construction) represent less than 10 percent of the types of facilities subject to this General Permit. Additionally, most ELGs focus on industrial process wastewater discharges and pre-treatment standards, and only 11 of the 40 categories establish numeric or narrative ELGs for industrial storm water discharges. Those that do include ELGs for industrial storm water discharges generally address storm water discharges that are generated from direct contact with primary pollutant sources at the subject facilities, and not the totality of the industrial storm water discharge from the facility, as the term “storm water discharge associated with industrial activity” for this General Order is defined in the CWA. (40 C.F.R. § 122.26(b)(14).) Where U.S. EPA has not issued effluent limitation guidelines for an industry, the State Water Board is required to establish effluent limitations for NPDES permits on a case-by-case basis based on best professional judgment (BPJ). (33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3(c)(2).) In this General Permit, most of the TBELs are based on BPJ decision-making because no ELG applies.

The TBELs in this General Permit represent the BPT (for conventional, toxic, and non-conventional pollutants), BCT (for conventional pollutants), and BAT (for toxic pollutants and non-conventional pollutants) levels of control for the applicable pollutants. If U.S. EPA has not promulgated ELGs for an industry, or if a Discharger is discharging a pollutant not covered by the otherwise applicable ELG, the State Water Board is required to establish effluent limitations in NPDES permit limitations based on best professional judgment. (33 U.S.C. § 1342(a)(1); 40 C.F.R. 125.3(c).) This General Permit includes TBELs established on best professional judgment and limitations based on storm water-specific ELGs listed in Attachment F of this General Permit, where applicable.

3. Authority to Include Non-Numeric Technology-Based Limits in NPDES Permits

TBELs in this General Permit are based on best professional judgment and are non-numeric (“narrative”) technology-based effluent limitations expressed as requirements for implementation of effective BMPs. Federal regulations provide that permits must include BMPs to control or abate the discharge of pollutants when where “[n]umeric effluent limitations are infeasible.” 40 C.F.R. 122.44(k)(3).

Since 1977, courts have recognized that there are circumstances when numeric effluent limitations are infeasible and have held that EPA may issue permits with conditions (e.g., BMPs) designed to reduce the level of effluent discharges to acceptable levels. *Natural Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369 (D.C.Cir.1977).

U.S. EPA has also interpreted the CWA to allow BMPs to take the place of numeric effluent limitations under certain circumstances. 40 C.F.R. §122.44(k), titled “Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs ...),” provides that permits may include BMPs to control or abate the discharge of pollutants when: (1) “[a]uthorized under section 402(p) of the CWA for the control of stormwater discharges”; or (2) “[n]umeric effluent limitations are infeasible.” 40 C.F.R. § 122.44(k).

In 2006, The U.S. Court of Appeals for the Sixth Circuit held that the CWA does not require U.S. EPA to set numeric limits where such limits are infeasible. (*Citizens Coal Council v. United States Environmental Protection Agency*, 447 F.3d 879, 895-96 (6th Cir. 2006)). The *Citizens Coal* court cited to the statement in *Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486, 502 (2d Cir. 2005) that “site-specific BMPs are effluent limitations under the CWA” in concluding that “the EPA’s inclusion of numeric and non-numeric limitations in the guideline for the coal remaining subcategory was a reasonable exercise of its authority under the CWA.” (447 F.3d at 896.) Additionally, the *Citizen’s Coal* court cited to *Natural Res. Def. Council, Inc. v. EPA*, 673 F.2d 400, 403 (D.C.Cir.1982) noting that “section 502(11) [of the CWA] defines ‘effluent limitation’ as ‘any restriction’ on the amounts of pollutants discharged, not just a numerical restriction.” NPDES permit writers have substantial discretion to impose non-quantitative permit requirements pursuant to section 402(a)(1)), especially when the use of numeric limits is infeasible. (*NRDC v. EPA*, 822 F.2d 104, 122-24 (D.C. Cir. 1987); 40 C.F.R. 122.44(k)(3).)

4. Decision to Include Non-Numeric Technology-Based Effluent Limits in This General Permit

It is infeasible for the State Water Board to develop numeric effluent limitations using the best professional judgment approach due to lack of sufficient information. Previous versions of this General Permit required Dischargers to sample their industrial storm water discharges and report the results to the Regional Water Boards. Dischargers were not required to submit this data online into a statewide database; as a result, much of this data is not available for analysis. Moreover, much of the data that are available for analysis are not of sufficient quality to make conclusions or perform basic statistical tests.

The Blue Ribbon Panel of Experts, State Water Board staff, and many stakeholders evaluated the available storm water data set and concluded that the information provides limited value due to the limited pool of industrial facilities submitting data, poor overall data quality, and extreme variance within the dataset, as described below.

The poor quality of the existing data set is attributable a number of factors. For example, the previous permits have required Dischargers to sample during the first hour of discharge from two storm events a year. This sampling schedule was designed to catch what was considered to represent the higher end of storm water discharge concentrations for most parameters. The results from this type of sampling were thought to be an indicator of whether or not additional BMPs would be necessary. The sampling schedule was not designed, however, to estimate pollutant discharge loading, or to characterize the impact of the discharge on the receiving water. Doing so would normally require the use of more advanced sampling protocols such as flow meters, continuous automatic sampling devices, certified/trained sampling personnel, and other facility-specific considerations.

Furthermore, there is currently no data which details the relationship between the BMPs implemented at each facility and the facility’s sampling results. The SWPPPs required by the previous permits were not submitted to the Water Boards, but were

kept onsite by Dischargers. Due to the limited availability of quality sampling data and "level of effort" information contained in SWPPPs, the State Water Board is unable to exercise best professional judgment to make the connection between effluent quality (sampling results) and the level of effort, costs, and performance of the various technologies that is needed in order to express the TBELs in this General Permit numerically, as NELs.

Some stakeholders have suggested that separating the data sets by industry type would lead to more reliable data with which to develop NELs. Advocates of this approach suggest that the variability of the data may be caused in part by the mixing of data from different industrial categories. The State Water Board believes that the variation is primarily due to storm intensity, duration, time of year, soil saturation or some other factors. It is necessary to collect information related to those factors and BMPs implemented in order to evaluate the variability attributable to those factors. There is currently too large of an information gap to begin the process of developing NELs for all industrial sectors not currently subject to ELGs.

The State Water Board has proposed NELs in past drafts of this General Permit. In comments, many stakeholders have highlighted the difficulty of developing statewide NELs that are applicable to all industry sectors, or even NELs that cover any specific industry sectors. For example, stakeholders have commented that:

- a. Background/ambient conditions in some hydrogeologic zones may contribute pollutant loadings that would significantly contribute to, if not exceed, the NEL values;
- b. Some advanced treatment technologies have flow/volume limitations as well as economy of scale issues for smaller facilities;
- c. Treatment technologies that require that sheet flows be captured and conveyed via discrete channels or basins may not only result in significant retrofit costs, but may conflict with local ordinances that prohibit such practices, as they can cause damage or erosion to down gradient property owners, or cause other environmental problems;
- d. There is insufficient regulatory guidance and procedures to allow permit writers to properly specify monitoring frequency and sampling protocols (e.g., instantaneous maximum, 1-day average, 3-day average, etc.), and for Dischargers to obtain representative samples to compare to NELs for the purpose of strict compliance; and,
- e. NELs must be developed with consideration of what is economically achievable for each industrial sector. These stakeholders point out that the U.S. EPA goes to great lengths evaluating the various BMP technologies available for a particular pollutant, the costs and efficiency of each BMP, and the applicability of the BMPs to the industry as a whole or to a limited number of industrial sites based upon the size of the facility, the quantity of material, and other considerations.

The State Water Board does not have the information (including monitoring data, industry specific information, BMP performance analyses, water quality information, monitoring guidelines, and information on costs and overall effectiveness of control technologies) necessary to promulgate NELs at the time of adoption of this General Permit. Therefore, it is infeasible to include NELs in this statewide General Permit.

Many of the new requirements in this General Permit have been designed to address the shortcomings of previous permits and the existing storm water data set. Under this General Permit, sampling results must be certified and submitted into SMARTS by Dischargers, along with SWPPPs which outline the technologies and BMPs used to control pollutants at each facility. The ERA process will also collect information on costs and the engineering aspects of the various control technologies employed by each facility. Previous permit versions did not have a mechanism for receiving this site specific information electronically, and only a small percentage of Dischargers submitted their Annual Reports via SMARTS. This General Permit will make this information more accessible, allowing the Water Boards to evaluate the relationship between BMPs and the ability of facilities to meet the NALs set forth in this General Permit. Finally, the new Qualified Industrial Storm Water Practitioner (QISP) training requirements of this General Permit have been designed in part to improve the quality of the data submitted.

5. Narrative Technology-Based Effluent Limitations (TBELs) and Best Management Practices (BMPs)

The primary TBEL in this General Permit requires Dischargers to “implement BMPs that comply with the BAT/BCT requirements of this General Permit to reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.” (Section V.A of this General Permit). This TBEL is a restatement of the BAT/BCT standard, as articulated by U.S. EPA in the 2008 MSGP and accompanying Fact Sheet. In order to comply with this TBEL, Dischargers must implement BMPs that meet or exceed the BAT/BCT technology-based standard. The requirement to “reduce or prevent” is equivalent to the requirement in the federal regulations that BMPs be used in lieu of NELs to “control or abate” the discharge of pollutants. (40 C.F.R. § 122.44(k).)

BMPs are defined as the “scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to reduce or prevent the discharge of pollutants... includ[ing] treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.” (40 C.F.R. § 122.2.)

This General Permit (Sections X.H.1 and X.H.2) requires all Dischargers to implement minimum BMPs, as well as any advanced BMPs that are necessary to adequately reduce or prevent pollutants in discharges consistent with the TBELs. The minimum BMPs specified in this General Permit represent common practices that can be implemented by most facilities. This General Permit generally does not mandate the specific mode of design, installation or implementation for the minimum BMPs at a Discharger’s facility. It is up to the Discharger, in the first instance, to

determine what must be done to meet the applicable effluent limits. For example, Section X.H.1.a.vi of this General Permit requires Dischargers to contain all stored non-solid industrial materials that can be transported or dispersed via wind or contact with storm water. How this is achieved will vary by facility: for some facilities, all activities may be moved indoors, while for others this will not be feasible. However, even for the latter, many activities may be moved indoors, others may be contained using tarps or a containment system, while still other activities may be limited to times when exposure to precipitation is not likely. Each of these control measures is acceptable and appropriate depending upon the facility-specific circumstances.

BMPs can be actions (including processes, procedures, schedules of activities, prohibitions on practices and other management practices), or structural or installed devices to reduce or prevent water pollution. (40 C.F.R. § 122.2.) They can be just about anything that is effective at preventing pollutants from entering the environment, and for meeting applicable limits of this General Permit. In this General Permit, Dischargers are required to select, design, install, and implement facility-specific control measures to meet these limits. Many industrial facilities already have such control measures in place for product loss prevention, accident and fire prevention, worker health and safety or to comply with other environmental regulations. Dischargers must tailor the BMPs detailed in this General Permit to their facilities, as well as improve upon them as necessary to meet permit limits. The examples detailed in this Fact Sheet emphasize prevention over treatment. However, sometimes more traditional end-of-pipe treatment may be necessary, particularly where a facility might otherwise cause or contribute to an exceedance of water quality standards.

This General Permit requires Dischargers to implement BMPs “to the extent feasible.” Consistent with the control level requirements of the CWA, for the purposes of this General Permit, the requirement to implement BMPs “to the extent feasible” means to reduce and/or prevent discharges of pollutants using BMPs that represent BAT and BPT in light of best industry practice.⁴ In other words, Dischargers are required to select, design, install and implement BMPs that reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering their technological availability and economic practicability and achievability.

To determine technological availability and economic practicability and achievability, Dischargers need to consider what control measures are considered “best” for their industry, and then select and design control measures for their site that are viable in terms of cost and technology. The State Water Board believes that for many facilities minimization of pollutants in storm water discharges can be achieved without using highly engineered, complex treatment systems. The BMPs included in

⁴ Because toxic and nonconventional pollutants are controlled in the first step by BPT and in the second step by BAT, and the second level of control is “increasingly stringent” (EPA v. National Crushed Stone, 449 U.S. 64, 69 (1980), for simplicity of discussion, the rest of this discussion will focus on BAT. Similarly, because the BAT levels of control in this General Permit are expressed as BMPs and pollution prevention measures, they will also control conventional pollutants. Therefore this discussion will focus on BAT rather than BCT or BPT for conventional pollutants.

this General Permit emphasize effective “low-tech” controls, such as regular cleaning of outdoor areas where industrial activities may take place, proper maintenance of equipment, diversion of storm water around areas where pollutants may be picked up, and effective advanced planning and training (e.g., for spill prevention and response).

E. Receiving Water Limitations and Water Quality Standards

Pursuant to CWA section 301(b)(1)(C) and Water Code section 13377, this General Permit requires compliance with receiving water limitations based on water quality standards. The primary receiving water limitation requires that industrial storm water discharges not cause or contribute to an exceedance of applicable water quality standards. Implementation of the BMPs as required by the technology-based effluent limitation in Section V of this General Permit will typically result in compliance with the receiving water limitations. The discussion of BMPs in this General Permit generally focuses on requiring implementation of BMPs to the extent necessary to achieve compliance with the technology-based effluent limitations, because the technology-based limitations apply similarly to all facilities. In addition, however, this General Permit also makes it clear that, if any individual facility's storm water discharge causes or contributes to an exceedance of a water quality standard, that Discharger must implement additional BMPs or other control measures that are tailored to that facility in order to attain compliance with the receiving water limitation. A Discharger that is notified by a Regional Water Board or who determines the discharge is causing or contributing to an exceedance of a water quality standard must comply with the Water Quality Based Corrective Actions found in Section XX.B of this General Permit.

Water Quality Based Corrective Actions are different from the Level 1 and Level 2 ERAs that result from effluent-based monitoring. It is possible for a Discharger to be engaged in Level 1 or Level 2 ERAs for one or more pollutants and simultaneously be required to perform Water Quality Based Corrective Actions for one or more other pollutants.

Failure to comply with these additional Water Quality Based Corrective Action requirements is a violation of this General Permit. If additional operational source control measures do not adequately reduce the pollutants, Dischargers must implement additional measures such as the construction of treatment systems and/or overhead coverage. Overhead coverage is any structure or temporary shelter that prevents the vertical contact of precipitation with industrial materials or activities. If the Regional Water Board determines that the Discharger's selected BMPs are inadequate, the Regional Water Board may require implementation of additional BMPs and/or may take enforcement against Dischargers for failure to comply with this General Permit.

F. Total Maximum Daily Loads (TMDLs)

TMDLs are regulatory tools that provide the maximum amount of a pollutant from potential source in the watershed that a water body can receive while attaining water quality standards. A TMDL is defined as the sum of the allowable loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations), plus the contribution from background sources. (40 C.F.R. § 130.2, subd. (i).) Discharges covered by this General Permit are considered to be point

source discharges, and therefore must comply with effluent limitations that are “consistent with the assumptions and requirements of any available waste load allocation for the discharge prepared by the State and approved by EPA pursuant to 40 Code of Federal Regulations section 130.7.” (40 C.F.R. § 122.44, subd. (d)(1)(vii).) In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement relevant water quality control plans. Many TMDLs in existing water quality control plans include both waste load allocations and implementation requirements. Attachment E of this General Permit lists the watersheds with U.S. EPA-approved and U.S. EPA-established TMDLs that include TMDL requirements for Dischargers covered by this General Permit.

NPDES-regulated storm water discharges (which include industrial storm water) must be addressed by waste load allocations in TMDLs. (40 C.F.R. § 130.2(h).) NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the waste load allocations in TMDLs. (40 C.F.R. § 122.44(d)(1)(vii)(B).) To date, the relevant waste load allocations assigned to industrial storm water discharges are not directly translatable to effluent limitations. Many of the TMDLs lack sufficient facility specific information, discharge characterization data, implementation requirements, and compliance monitoring requirements. Accordingly, an analysis of each TMDL applicable to industrial storm water discharges must be performed to determine if it is appropriate to translate the waste load allocation into a numeric effluent limit, or if the effluent limit is to be expressed narratively using a BMP approach. U.S. EPA recognizes that because storm water discharges are highly variable in frequency and duration and are not easily characterized, it is often not feasible or appropriate to establish numeric limits. Variability and the lack of data available make it difficult to determine with precision or certainty actual and projected loadings for individual Dischargers or groups of Dischargers.

Regardless of whether the effluent limit is to be numeric or narrative, the existing waste load allocations must be carefully analyzed, and in many cases translated, to determine the appropriate effluent limitations. Issues of interpretation exist with all of the waste load allocations applicable to Dischargers, and these issues vary based on the TMDL. Below is an example of one of the simpler issues:

FIGURE 1: Example Waste Load Allocations Proposed Translation: Ballona Creek Estuary – Toxic Pollutants

Metals per Acre Waste Load Allocations for Individual General Construction or Industrial Storm Water Permittees (grams/year/acre)				
Cadmium	Copper	Lead	Silver	Zinc
0.1	3	4	0.1	13
Metals per Acre Waste Load Allocations for Individual General Construction or Industrial Storm Water Permittees (milligrams/year/acre)				
Chlordane	DDTs	Total Polychlorinated biphenyl (PCBs)	Total Polycyclic aromatic hydrocarbons (PAHs)	
0.04	0.14	2	350	

In order for the above waste load allocations to effectively be implemented as effluent limits under the General Permit, the Water Boards must (1) identify which discharges the waste load allocations apply to, (2) identify the acreages of the individual facilities, (3) convert the waste load allocations from grams/year/acre (or milligrams/year/acre) to grams/year (or milligrams/year) based on the acreage at each identified facility, (4) assign the effluent limits to the identified Dischargers, (5) determine appropriate monitoring to assess compliance with the effluent limits, and (6) develop a tracking mechanism for each identified facility and their individual effluent limits. A similar stepwise process is necessary for each TMDL with waste load allocations assigned to industrial storm water discharges. For TMDLs where effluent limits will be expressed as BMPs, analysis must be performed to determine the appropriate BMPs and the corresponding effectiveness to comply with the assigned waste load allocations.

Some waste load allocations are already expressed as concentration based numbers. It may appear simple to incorporate these values into this General Permit as effluent limits, but the questions still remain regarding how to determine compliance. The monitoring requirements in this General Permit are not designed to measure compliance with a numeric effluent limit or to measure the effect of a discharge on a receiving water body. (See the discussion on monitoring requirements in Fact Sheet Section II.J.) This General Permit requires sampling of four (4) storm events a year, with certain limitations as to when a discharge may be sampled. This method of monitoring may not appropriately serve as TMDL compliance sampling since grab samples are only representative of the particular moment in time when the sample was taken. Since storm water is highly variable, four grab samples per year may not provide sufficient confidence that the effluent limit is being met. An alternative monitoring scheme may be necessary to determine the facility's impact on the receiving water and to determine compliance with any assigned effluent limits. Questions concerning whether sampling results should be grab samples, composite samples, flow-weighted averaged over all drainage areas, etc. cannot be determined for each concentration-based TMDL without a more thorough analysis.

Additionally, monitoring and assessment requirements must be developed for all of the TMDLs to determine compliance with or progress towards meeting TMDL requirements. The proposed monitoring requirements in this General Permit are not designed to assess pollutant loading or determine compliance with TMDL-specific effluent limits.

Due to the large number and variety of discharges subject to a wide range of TMDLs statewide, to prevent a severe delay in the adoption of this General Permit, TMDL-specific permit requirements for the TMDLs listed in Attachment E will be proposed by the Regional Water Boards. Since the waste load allocations and/or implementation requirements apply to multiple discharges in the region(s) the TMDL were developed, the development of TMDL-specific permit requirements is best coordinated at the Regional Water Board level. The development of TMDL-specific permit requirements is subject to notice and a public comment period prior to incorporation into this General Permit.

Regional Water Board staff, with the assistance of State Water Board staff, will develop and submit the proposed TMDL-specific permit requirements for each of the TMDLs listed in Attachment E by July 1, 2016.⁵ After conducting a 30-day public comment period, the Regional Water Boards will propose TMDL-specific permit requirements to the State Water Board for adoption into this General Permit. The Regional Water Boards may also include TMDL-specific monitoring requirements for inclusion in this General Permit, or may issue Regional Water Board orders pursuant to Water Code section 13383 requiring TMDL-specific monitoring. The Regional Water Boards or their Executive Officers may complete these tasks, and the proposed TMDL-specific permit requirements shall have no force or effect until adopted, with or without modification, by the State Water Board. Unless directed to do so by the Regional Water Board, Dischargers are not required to take any additional actions to comply with the TMDLs listed in Attachment E until the State Water Board reopens this General Permit and includes TMDL-specific permit requirements. This approach is consistent with the 2008 MSGP. TMDL-specific permit requirements are not limited by the BAT/BCT technology-based standards.

The Regional Water Boards will submit to the State Water Board the following information for each of the TMDLs listed in Attachment E:

- Proposed TMDL-specific permit requirements, including any applicable effluent limitations, implementation timelines, additional monitoring requirements, reporting requirements, an explanation of how an exceedance of an effluent limitation or a violation of the TMDL will be determined, and required deliverables consistent with the TMDL(s);
- An explanation of how the proposed TMDL-specific permit requirements, timelines, and deliverables are consistent with the assumptions and requirements of applicable waste load allocation(s) to implement the TMDL(s);
- Where a BMP-based approach is proposed, an explanation of how the proposed BMPs will be sufficient to implement applicable waste load allocations; and
- Where concentration-based monitoring is required, an explanation of how the required monitoring, reporting and calculation methodology for an exceedance of an effluent limitation or a violation of the TMDL(s) will be sufficient to demonstrate compliance with the TMDL(s).

Upon receipt of the information described above, the State Water Board will conduct a public comment period and reopen this General Permit to populate Attachment E, the Fact Sheet, and other provisions as necessary in order to incorporate these TMDL-specific permit requirements into this General Permit. Attachment E may also be reopened during the term of this General Permit to add additional TMDLs and corresponding implementation requirements.

This General Permit (Section X.G.2.a.ix) requires a Discharger to identify any additional industrial parameters that may be discharged to a waterbody with a 303(d) impairment identified in Appendix 3 as likely to be associated with industrial storm water.

⁵ Due to the workload associated with the implementation of this General Permit (e.g., training program development, NEC outreach, electronic enrollment and reporting via SMARTS) it is believed that two years is necessary for Staff to complete a comprehensive analysis and stakeholder process for TMDLs applicable to Dischargers under this General Permit.

Dischargers may need to implement additional monitoring for any applicable parameters (Section XI.B.6.e). Appendix 3 of this General Permit includes the water bodies with 303(d) impairments or TMDLs for pollutants that are likely to be associated with industrial storm water in black font, and those that are not likely to be associated with industrial storm water in red font. This determination is based on the pollutant or pollutants that are causing each impairment, and the State Water Board's general experience regarding the types of pollutants that are typically found in industrial storm water discharges. The list of waterbodies is from the State Water Boards statewide 2010 Integrated CWA Section 303(d) List / Section 305(b) Report.

Some of the water bodies with 303(d) impairments or TMDLs listed in Appendix 3 of this General Permit are not applicable to Dischargers covered under this General Permit. Appendix 3 indicates these water bodies Dischargers are not required to include in their pollutant source assessment (unless directed to do so by the Regional Water Board).

New Dischargers (as defined in Attachment C) applying for NOI coverage under this General Permit that will be discharging to an impaired water body with a 303(d) listed impairment are ineligible for coverage unless the Discharger submits data and/or information, prepared by a QISP, demonstrating that the facility will not cause or contribute to the impairment. Section VII.B of this General Permit describes the three different options New Dischargers have for making this determination. This General Permit requires a QISP to assist the New Discharger with this determination because individuals making this determination will need expertise in industrial storm water pollutant sources, BMPs and a thorough understanding of complying with U.S. EPA's storm water regulations and this General Permit's requirements. Not requiring New Dischargers to have a QISP assist in this demonstration would possibly lead to costly retrofits or closure of a new facility that has not demonstrated that the facility will not cause or contribute to the impairment.

G. Discharges Subject to the California Ocean Plan

1. Discharges to Ocean Waters

On October 16, 2012 the State Water Board amended the California Ocean Plan (California Ocean Plan) to require industrial storm water Dischargers with outfalls discharging to ocean waters to comply with the California Ocean Plan's model monitoring provisions. The amended California Ocean Plan requires industrial storm water dischargers with outfalls discharging to ocean waters to comply with the California Ocean Plan's model monitoring provisions. These provisions require Dischargers to: (a) monitor runoff for specific parameters at all outfalls from two storm events per year, and collect at least one representative receiving water sample per year, (b) conduct specified toxicity monitoring at certain types of outfalls at a minimum of once per year, and (c) conduct marine sediment monitoring for toxicity under specific circumstances (California Ocean Plan, Appendix III). The California Ocean Plan provides conditions under which some of the above monitoring provisions may be waived by the Water Boards.

This General Permit requires dischargers with outfalls that discharge to ocean waters to comply with the California Ocean Plan's model monitoring provisions and

any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015 or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.

2. Areas of Special Biological Significance (ASBS) Exception

The State Water Board adopted the California Ocean Plan (California Ocean Plan) in 1972, and has subsequently amended the Plan. The California Ocean Plan prohibits the discharge of waste to designated ASBS. ASBS are ocean areas designated by the State Water Board as requiring special protection through the maintenance of natural water quality. The California Ocean Plan states that the State Water Board may grant an exception to California Ocean Plan provisions where the State Water Board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.

On March 20, 2012, the State Water Board adopted Resolution 2012-0012 (ASBS Exception), which grants an exception to the California Ocean Plan prohibition on discharges to ASBS for a limited number of industrial storm water Discharger applicants. The ASBS Exception contains "Special Protections" to maintain natural water quality and protect the beneficial uses of the ASBS. In order to legally discharge into an ASBS, these Dischargers must comply with the terms of the ASBS Exception and obtain coverage under this General Permit. This General Permit incorporates the terms of the ASBS Exception and includes the applicable monitoring requirements for all Dischargers discharging to an ASBS under the ASBS Exception.

H. Training Qualifications

This General Permit and the previous permit both require Dischargers to ensure that personnel responsible for permit compliance have an acceptable level of knowledge. Stakeholders have observed that the previous permit did not adequately specify how to comply with various elements of the permit, such as selecting discharge locations representative of the facility storm water discharge and evaluating potential pollutant sources, nor did it provide a clearly outlined Discharger training program. Guidance that is available from outside sources can be complicated to understand or costly to obtain, which can result in many Dischargers developing and implementing deficient SWPPPs and conducting inadequate monitoring activities. Some Dischargers under the previous permit had the resources to hire professional environmental staff or environmental consultants to assist in compliance. Even in those cases, however, there was little certainty that Dischargers received training regarding implementation of the various BMPs being implemented and required monitoring activities under the previous permit. Through this General Permit, the State Water Board seeks to improve compliance and monitoring data quality, and expand each Discharger's understanding of this General Permit's requirements.

This General Permit establishes the Qualified Industrial Storm Water Practitioner (QISP) role. A QISP is someone who has completed a State Water Board sponsored or

approved QISP training course and has registered in SMARTS. A QISP is required to implement certain General Permit requirements at the facility once it has entered Level 1 status in the ERA process as described in Section XII of this General Permit. In some instances it may be advisable for a facility employee to take the training, or for a facility to hire a QISP prior to entering Level 1 status as the training will contain information on the new permit requirements and how to perform certain tasks such as selecting discharge locations representative of the facility storm water discharge, evaluating potential pollutant sources, and identifying inadequate SWPPP elements.

Some industry stakeholders have claimed that their staff is already adequately trained. These employees may continue to perform the basic permit functions (e.g. prepare SWPPPs, perform monitoring requirements, and prepare Annual Reports) without receiving any additional training if the facility's sampling and analysis results do not exceed the NALs. This requirement is structured in a manner to reduce the costs of compliance for facilities that may not negatively impact receiving water quality.

California licensed professional civil, industrial, chemical, and mechanical engineers and geologists have licenses that have professional overlap with the topics of this General Permit. The California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors and Geologists (CBPELSG) provides the licensure and regulation of professional civil, industrial, chemical, and mechanical engineers and professional geologists in California. The State Water Board is developing a specialized self-guided State Water Board-sponsored registration and training program specifically for these CPBELSG licensed engineers and geologists in good standing with CBPELSG. The CBPELSG has staff and resources dedicated to investigate and take appropriate enforcement actions in instances where a licensed professional engineer or geologist is alleged to be noncompliant with CBPELSG's laws and regulations. Actions that result in noncompliance with this General Permit may constitute a potential violation of the CBPELSG requirements and may subject a licensee to investigation by the CBPELSG.

A QISP may represent one or more facilities but must be able to perform the functions required by this General Permit at all times. It is advisable that this individual be limited to a specific geographic region due to the difficulty of performing the needed tasks before, during, and after qualifying storm events may be difficult or impossible if extensive travel is required. Dischargers are required to ensure that the designated QISP has completed the appropriate QISP training course.

This General Permit contains a mechanism that allows for the Water Boards' Executive Director or Executive Officer to rescind the registration of any QISPs who are found to be inadequately performing their duties as a QISP will no longer be able to do so. A QISP may ask the State Water Board to review any decision to revoke his or her QISP registration. Table 1 of this Fact Sheet below describes the different roles that the QISP and California licensed professional engineers have in this General Permit.

TABLE 1: Role-Specific Permit Requirements

Qualifications	Task
QISP	Assist New Dischargers determine coverage eligibility for Discharges to an impaired water body, Level 1 ERA Evaluation and report, Level 2 ERA Action Plan, and Technical Report, and the Level 2 ERA extension
California licensed professional engineer	Inactive Mining Operation Certification, SWPPPs for inactive mining, and annual re-certification of Inactive Mining Operation Certification, NONA Technical Reports, and Subchapter N calculations

I. Storm Water Pollution Prevention Plan (SWPPP)

1. General

This General Permit requires that all Dischargers develop, implement, and retain onsite a site-specific SWPPP. The SWPPP requirements generally follow U.S. EPA's five-phase approach to developing SWPPPs, which has been adapted to reflect the requirements of this General Permit in Figure 2 of this Fact Sheet. This approach provides the flexibility necessary to establish appropriate BMPs for different industrial activities and pollutant sources. This General Permit requires a Discharger to include in its SWPPP (Section X of this General Permit) a site map, authorized NSWDs at the facility, and an identification and assessment of potential pollutant sources resulting from exposure of industrial activities to storm water.

This General Permit requires that Dischargers clearly describe the BMPs that are being implemented in the SWPPP. In addition to providing descriptions, Dischargers must also describe who is responsible for the BMPs, where the BMPs will be installed, how often and when the BMPs will be implemented, and identify any pollutants of concern. Table 2 of this Fact Sheet provides an example of how a Discharger could assess potential pollution sources and provide a corresponding BMPs summary.

This General Permit requires that Dischargers select an appropriate facility inspection frequency beyond the required monthly inspections if necessary, and to determine if SWPPP revisions are necessary to address any physical or operational changes at the facility or make changes to the existing BMPs (Section X.H.4.a.vii and Section XI.A.4 of this General Permit). Facilities that are subject to multi-phased physical expansion or significant seasonal operational changes may require more frequent SWPPP updates and facility inspections. Facilities with very stable operations may require fewer SWPPP updates and facility inspections.

Failure to develop or implement an adequate SWPPP, or update or revise an existing SWPPP as required, is a violation of this General Permit. Failure to maintain the SWPPP on-site and have it available for inspection is also a violation of this General Permit.

Dischargers are also required to submit their SWPPPs and any SWPPP revisions via SMARTS; accordingly, BMP revisions made in response to observed compliance problems will be included in the revised SWPPP electronically submitted via SMARTS. Not all SWPPP revisions are significant and it is up to the Dischargers to distinguish between revisions that are significant and those that are not significant. If no changes are made at all to the SWPPP, the Discharger is not required to resubmit the SWPPP on any specific frequency.

- **Significant SWPPP Revisions:** Dischargers are required to certify and submit via SMARTS their SWPPP within 30 days of the significant revision(s). While it is not easy to draw a line generally between revisions that are significant and those that are not significant, Dischargers are not required to certify and submit via SMARTS any SWPPP revisions that are comprised of only typographical fixes or minor clarifications.
- **All Other SWPPP Revisions:** Dischargers are required to submit revisions to the SWPPP that are determined to not be significant every three (3) months in the reporting year.

FIGURE 2: Five Phases for Developing and Implementing an Industrial Storm Water Pollution Prevention Plan (SWPPP)

PLANNING AND ORGANIZATION

- *Form Pollution Prevention Team
- *Review other facility plans

ASSESSMENT

- *Develop a site map
- *Identify potential pollutant sources
- *Inventory of materials and chemicals
- *List significant spills and leaks
- *Identify Non-Storm Water Discharges
- *Assess pollutant risk

Best Management Practice (BMP) IDENTIFICATION

- *Identify minimum required BMPs
- *Identify any advanced BMPs

IMPLEMENTATION

- *Train employees for the Pollution Prevention Team
- *Implement BMPs
- *Collect and review records

EVALUATION / MONITORING

- *Conduct annual facility evaluation (Annual Evaluation)
- *Review monitoring information
- *Evaluate BMPs
- *Review and revise SWPPP

TABLE 2: Example - Assessment of Potential Industrial Pollution Sources and Corresponding BMPs Summary

Area	Activity	Pollutant Source	Industrial Pollutant	BMPs
Vehicle and Equipment Fueling	Fueling	Spills and leaks during delivery	Fuel oil	-Use spill and overflow protection
		Spills caused by topping off fuel tanks	Fuel oil	-Train employees on proper fueling, cleanup, and spill response techniques
		Hosing or washing down fuel area	Fuel oil	-Use dry cleanup methods rather than hosing down area -Implement proper spill prevention control program
		Leaking storage tanks	Fuel oil	-Inspect fueling areas regularly to detect problems
		Rainfall running off fueling area, and rainfall running onto and off fueling area	Fuel oil	-Minimize run-on of storm water into the fueling area, cover fueling area

2. Minimum and Advanced BMPs

Section V of this General Permit requires the Discharger to comply with technology-based effluent limitations (TBELs). In this General Permit, TBELs rely on implementation of BMPs for Dischargers to reduce and prevent pollutants in their discharge. The BMP effluent limitations have been integrated into the Section X.H of this General Permit and are divided into two categories – minimum BMPs which are generally non-structural BMPs that all Dischargers must implement to the extent feasible, and advanced BMPs which are generally structural BMPs that must be implemented if the minimum BMPs are inadequate to achieve compliance with the TBELs. Section X of this General Permit includes both substantive control requirements in the form of the BMPs listed in Section X.H, as well as various reporting and recordkeeping requirements. The requirement to implement BMPs “to the extent feasible” allows Dischargers flexibility when implementing BMPs, by not requiring the implementation of BMPs that are not technologically available and economically practicable and achievable in light of best industry practices.

The 2008 MSGP requires Dischargers to comply with 12 non-numeric technology-based effluent limits in Section 2.1.2 of the permit through the implementation of “control measures.” This requirement is an expansion of the general considerations outlined in the MSGP adopted in 2000. The control measures specified by the U.S. EPA in the 2008 MSGP are as follows (in order as listed in the 2008 MSGP):

1. Minimize Exposure
2. Good Housekeeping
3. Maintenance
4. Spill Prevention and Response Procedures
5. Erosion and Sediment Controls
6. Management of Runoff
7. Salt Storage Piles or Piles Containing Salt
8. Sector Specific Non-Numeric Effluent Limits
9. Employee Training
10. Non-Storm Water Discharges (NSWDs)
11. Waste, Garbage and Floatable Debris
12. Dust Generation and Vehicle Tracking of Industrial Materials

This General Permit addresses eleven of the above twelve control measures from the 2008 MSGP Section 2.1.2 Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT). Eleven of the control measures are addressed as minimum BMPs that the State Water Board has determined to be most applicable to California’s Dischargers. Two of those eleven control measures (1- Minimize Exposure, 6 – Management of Runoff) are also identified as advanced BMPs (Section X.H.2 of this General Permit). This General Permit is not a sector-specific permit and therefore does not contain limitations to address control measure number 8 (Sector Specific Non-Numeric Effluent Limits).

The non-structural elements of the control measure to minimize exposure are addressed in the minimum BMP Section X.H.1 of this General Permit while structural control elements are addressed in the advanced BMP Section X.H.2 of this General Permit. The on-site diversion elements of the control measure to minimize exposure are addressed as minimum BMPs.

The runoff reduction elements of the control measure to minimize exposure are included as advanced BMPs. Advanced BMPs that are required to be implemented when a Discharger has implemented the minimum BMPs to the extent feasible and they are not adequate to comply with the TBELs. The advanced BMP categories are: (1) exposure minimization BMPs, (2) storm water containment and discharge reduction BMPs, (3) treatment control BMPs, and (4) additional advanced BMPs needed to meet the effluent limitations of this General Permit. Advanced BMPs are generally structural control measures and can include any BMPs that exceed the minimum BMPs. The control measure for Non-Storm Water Discharges (NSWDs) is addressed in both the discharge prohibitions (Section III) and authorized non-storm water discharges (Section IV) of this General Permit and essentially represents a minimum BMP.

This General Permit encourages Dischargers to utilize BMPs that infiltrate or reuse storm water where feasible. The State Water Board expects that these types of BMPs will not be appropriate for all industrial facilities, but recognizes the many possible benefits (e.g. increased aquifer recharge, reduces flooding, improvements to water quality) associated with the infiltration and reuse of storm water. Encouraging the use of storm water infiltration and reuse BMPs is consistent with the statewide approach to managing storm water with lower impact methods.

The BMPs in this General Permit that coincide with the control measures in the 2008 MSGP are as follows (in order as listed in the 2008 MSGP):

a. Minimization of Exposure to Storm Water

Section 2.1.2.1 of the 2008 MSGP requires Dischargers to minimize the exposure of industrial materials and areas of industrial activity to rain, snow, snowmelt, and runoff. The 2008 MSGP mixes both structural and nonstructural BMPs and specifies particular BMPs to consider when minimizing exposure such as grading/berming areas to minimize runoff, locating materials indoors, spill clean up, contain vehicle fluid leaks or drain fluids before storing vehicles on-site, secondary containment of materials, conduct cleaning activities undercover, indoors or in bermed areas, and drain all wash water to a proper collection system.

This General Permit requires the evaluation of BMPs in the potential pollutant source assessment in the SWPPP (Section X.G.2). When the minimum BMPs are not adequate to comply with the TBELs, Dischargers are required to implement advanced BMPs (Section X.H.2.a). These advanced BMPs may include additional exposure minimization BMPs (Section X.H.2.b.1).

b. Good Housekeeping

Section 2.1.2.2 of the 2008 MSGP requires that Dischargers keep all exposed areas that may be a potential source of pollutants clean and orderly. This General Permit (Section X.H.1.a) seeks to define “clean and orderly” by specifying a required set of nine (9) minimum good housekeeping BMPs, which include: observations of outdoor/exposed areas, BMPs for controlling material tracking, BMPs for dust generated from industrial materials or activities, BMPs for rinse/wash water activities, covering stored industrial materials/waste, containing all stored non-solid industrial materials, preventing discharge of rinse/wash waters/industrial materials, prevent non-industrial area discharges from contact with industrial areas of the facility, and prevent authorized NSWDS from non-industrial areas from contact with industrial areas of the facility.

c. Preventative Maintenance

Section 2.1.2.3 of the 2008 MSGP requires that Dischargers regularly inspect, test, maintain, and repair all industrial equipment to prevent leaks, spills and releases of pollutants that may be exposed to storm water discharged to receiving waters. This General Permit (Section X.H.1.b) incorporates this

concept by requiring four (4) nonstructural BMPs which include: identification and inspection of equipment, observations of potential leaks in identified equipment, an equipment maintenance schedule, and equipment maintenance procedures.

d. Spill and Leak Prevention and Response

Section 2.1.2.4 of the 2008 MSGP requires that Dischargers minimize the potential for leaks, spills and other releases that may be exposed to storm water. Dischargers are also required to develop a spill response plan which includes procedures such as labeling of containers that are susceptible to a spill or a leakage, establishing containment measures for such industrial materials, procedures for stopping leaks/spills, and provisions for notification of the appropriate personnel about any occurrence. This General Permit (Section X.H.1.c) requires implementation of four (4) BMPs to address spills. These BMPs include: developing a set of spill response procedures to minimize spills/leaks, develop procedures to minimize the discharge of industrial materials generated through spill/leaks, identifying/describing the equipment needed and where it will be located at the facility, and identify/training appropriate spill response personnel.

e. Erosion and Sediment Controls

Section 2.1.2.5 of the 2008 MSGP requires the use of structural and/or non-structural control measures to stabilize exposed areas and contain runoff. Also required is the use of a flow velocity dissipation device(s) in outfall channels where necessary to reduce erosion and/or settle out pollutants. This General Permit (Section X.H.1.e) requires the implementation of (5) BMPs to prevent erosion and sediment discharges. The erosion and sediment control BMPs include: implementing effective wind erosion controls, providing for effective stabilization of erodible areas prior to a forecasted storm event, site entrance stabilization/prevent material tracking offsite and implement perimeter controls, diversion of run-on and storm water generated from within the facility away from all erodible materials, and ensuring compliance with the design storm standards in Section X.H.6. U.S. EPA has developed online resources for erosion and sediment controls.⁶

f. Management of Runoff

Section 2.1.2.6 of the 2008 MSGP requires the diversion, infiltration, reuse, containment, or otherwise reduction of storm water runoff, to minimize pollutants in discharges. This General Permit (Sections X.H.1.a.viii, X.H.1.d.iv., and

⁶ U.S. EPA. 2008 MSGP. <<http://cfpub.epa.gov/npdes/stormwater/msgp.cfm>> [as of February 4, 2014].
 U.S. EPA. National Menu of BMPs. <<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>>.
 [as of February 4, 2014].
 U.S. EPA. National Management Measures to Control Nonpoint Source Pollution from Urban Areas
 <<http://water.epa.gov/polwaste/nps/urban/index.cfm>>. [as of February 4, 2014].

X.H.1.e.iv) requires Dischargers to divert run-on from non-industrial sources and manage storm water generated within the facility away from industrial materials and erodible surfaces. Runoff reduction is required as an advanced BMP when minimum BMPs are not adequate to comply with the TBELs. The 2008 MSGP encouraged Dischargers to consult with EPA's internet-based resources relating to runoff management.⁷

g. Salt Storage Piles or Piles Containing Salt

Section 2.1.2.7 of the 2008 MSGP requires salt storage piles/piles containing salt that may be discharged to be enclosed or covered and to use BMPs when the salt is being used. This General Permit does not have a minimum BMP specifically for salt storage, however it does require all stockpiled/stored industrial materials be managed in a way to reduce or prevent industrial storm water discharges of the stored/stockpiled pollutants. The good housekeeping (Section X.H.1.a) and material handling and waste management (Section X.H.1.d) minimum BMPs in this General Permit require that all materials readily mobilized by storm water be covered, the minimization of handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event, and the diversion of run-on from stock piled materials.

h. Sector Specific Non-Numeric Effluent Limits

Section 2.1.2.8 of the 2008 MSGP requires Dischargers to achieve any additional non-numeric limits stipulated in the relevant sector-specific section(s) of Part 8 of the 2008 MSGP. This General Permit is not a sector-specific permit and does not contain sector-specific non-numeric effluent limitations like the 2008 MSGP. While this General Permit does not specify sector-specific BMPs, Dischargers are required to select and implement BMPs for their specific facility to reduce or prevent industrial storm water discharges of pollutants to comply with the technology-based effluent limitations. In addition, sectors with applicable ELGs must comply with those ELGs.

i. Employee Training Program

Section 2.1.2.9 of the 2008 MSGP requires all employees engaged in industrial activities or the handling of industrial materials that may affect storm water to obtain training covering implementation of this General Permit. This General Permit (Section X.D.1 and X.H.1.f) requires a facility to establish a Pollution Prevention Team (team members, collectively) responsible for implementing permit requirements such as the SWPPP, monitoring requirements, or BMPs.

⁷ U.S. EPA. Sector-Specific Industrial Stormwater Fact Sheet Series <www.epa.gov/npdes/stormwater/msgp>. [as of February 4, 2014].
 U.S. EPA. National Menu of Stormwater BMPs <www.epa.gov/npdes/stormwater/menuofbmps> [as of February 4, 2014].
 U.S. EPA. National Management Measures to Control Nonpoint Source Pollution from Urban Areas (and any similar State or Tribal publications) <www.epa.gov/owow/nps/urbanmm/index.html>. [as of February 4, 2014].

The five (5) minimum training BMPs include: ensuring that all team members are properly trained, preparing the proper training materials and manuals, identifying which individuals need to be trained, providing a training schedule, and maintaining documentation on the training courses and which individuals received the training.

This General Permit also requires a QISP to be assigned to each facility that reaches Level 1 status. One purpose of a QISP is to have an individual available who can provide compliance assistance with these training requirements. The QISP is responsible for training the appropriate team members. Appropriate team members are any team members involved in implementing this General Permit for drainage areas causing NAL exceedances, and any other team members identified by the QISP that need additional training to implement this General Permit.

j. NSWDs

Section 2.1.2.10 of the 2008 MSGP requires that unauthorized NSWDs are eliminated (Part 1.2.3 of the 2008 MSGP lists the NSWDs authorized by the 2008 MSGP). The good housekeeping minimum BMP (Section X.H.1.a.ix of this General Permit) requires that contact between authorized NSWDs and industrial areas of the facility be minimized. This General Permit (Section IV) also includes separate requirements for authorized NSWDs and (Section III) prohibits unauthorized NSWDs.

k. Material Handling and Waste Management

Section 2.1.2.11 of the 2008 MSGP requires that Dischargers ensure waste, garbage, and floatable debris are not discharged into receiving waters. The 2008 MSGP identifies keeping areas clean and intercepting such materials as ways to minimize such discharges. This General Permit (Section X.H.1.d) requires Dischargers to implement six (6) general BMPs that address material handling and waste management. These BMPs include: preventing or minimizing handling of waste or materials during a storm event that could potentially result in a discharge, containing industrial materials susceptible to being dispersed by the wind, covering industrial waste disposal containers when not in use to contain industrial materials, diversion of run-on and storm water generated from within the facility away from all stock piled materials, cleaning and managing spills of such wastes or materials (in accordance with Section X.H.1.e of this General Permit), and conducting observations of outdoor areas and equipment that may come into contact with such materials or waste and become contaminated.

l. Waste, Garbage and Floatable Debris

Section 2.1.2.11 of the 2008 MSGP requires that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged. Material handling and waste management BMPs are included in Section X.H.1.d of this General Permit. Dischargers are required to: prevent handling of waste materials during a storm event that could result in a discharge, contain waste disposal

containers when not in use, clean and manage spills from waste, and observe outdoor areas and equipment that may come into contact with waste and become contaminated.

m. Dust Generation and Vehicle Tracking of Industrial Materials

Section 2.1.2.12 of the 2008 MSGP requires that generation of dust and off-site tracking of raw, final, or waste materials is minimized. This General Permit does not require minimization of dust generation and vehicle tracking of industrial materials as a minimum BMP directly. Dust generation and vehicle tracking of industrial materials BMPs are included in Section X.H.1.a (“good housekeeping”) of this General Permit where Dischargers must prevent dust generation from industrial materials or activities and contain all stored non-solid industrial materials that can be transported or dispersed via wind or come in contact with storm water, and Section X.H.1.d. (“material handling and waste management”) of this General Permit, which requires Dischargers to contain non-solid industrial materials or wastes that can be dispersed via wind erosion or come into contact with storm water during handling.

n. Quality Assurance and Record Keeping

Section 2.1.2 of the 2008 MSGP does not directly designate record keeping as a control measure. This General Permit (Section X.H.1.g) includes quality assurance and record keeping as a minimum BMP and requires Dischargers to implement three (3) general BMPs. These BMPs include: developing and implementing procedures to ensure that all elements of the SWPPP are implemented, develop a method of tracking and recording the implementation of all BMPs identified in the SWPPP, and a requirement to keep and maintain those records. This ensures that management procedures are designed and permit requirements are implemented by appropriate staff.

o. Implementation of BMPs in the SWPPP

Like the previous permit, this General Permit does not assign Dischargers a schedule to implement BMPs. Instead, this General Permit requires Dischargers to select the appropriate schedule to implement the minimum BMPs. In addition, this General Permit requires Dischargers to identify, as necessary, any BMPs that should be implemented prior to precipitation events. Although Dischargers are required to maintain internal procedures to ensure the BMPs are implemented according to schedule or prior to precipitation events, Dischargers are only required to certify in the Annual Report whether they complied with the BMP implementation requirements.

Dischargers are required to implement an effective suite of BMPs that meet the technology and water-quality based limitations of this General Permit. Based upon Regional Water Board staff inspections, there is significant variation between Dischargers’ interpretations of what BMPs were necessary to comply with the previous permit. This General Permit establishes a new requirement that Dischargers must implement, to the extent feasible, specific minimum BMPs

to reduce or prevent the presence of pollutants in their industrial storm water discharge. In addition, due to the wide variety of facilities conducting numerous and differing industrial activities throughout the state, this General Permit retains the requirement from the previous permit that Dischargers establish and implement additional BMPs beyond the minimum. Implementation of this General Permit's minimum BMPs, together with any necessary advanced BMPs, will result in compliance with the effluent limitations of this General Permit (Section V.A). All Dischargers must evaluate their facilities and determine the best practices within their industry considering technological availability and economic practicability and achievability to implement these minimum BMPs and any advanced BMPs.

The State Water Board has selected minimum BMPs that are generally applicable at all facilities. The minimum BMPs are consistent with the types of BMPs normally found in properly developed SWPPPs and, in most cases, should represent a significant portion of the effort required for a Discharger to achieve compliance. Due to the diverse industries covered by this General Permit, the development of a more comprehensive list of minimum BMPs is not currently feasible. The selection, applicability, and effectiveness of a given BMP is often related to industrial activity type and to facility-specific facts and circumstances. Advanced BMPs must be selected and implemented by Dischargers, based on the type of industry and facility-specific conditions, to the extent necessary to comply with the technology-based effluent limitation requirements of this General Permit.

Failure to implement all of the minimum BMPs to the extent feasible is a violation of this General Permit. (Section X.H.1.) Dischargers must justify any determination that it is infeasible to implement a minimum BMP in the SWPPP (Section X.H.4.b). Failure to implement advanced BMPs necessary to achieve compliance with either the technology or water quality standards requirements in this General Permit is a violation of this General Permit.

p. Temporary Suspension of Industrial Activities

The exception for inactive and unstaffed sites in section 6.2.1.3 of the 2008 MSGP does not require a Discharger with a facility that is inactive and unstaffed with no industrial materials or activities exposed to storm water (in accordance with the substantive requirements in 40 Code of Federal Regulations section 122.26(g)) to complete benchmark monitoring. The Discharger is required to sign and certify a statement in the SWPPP verifying that the site is inactive and unstaffed. If circumstances change and industrial materials or activities become exposed to storm water or the facility becomes active and/or staffed, this exception no longer applies and the Discharger is required to begin complying immediately with the applicable benchmark monitoring requirements under part 6.2 of the 2008 MSGP.

This General Permit allows Dischargers to temporarily suspend monitoring at facilities where industrial activities have been suspended in accordance with Section X.H.3. This is only intended for Dischargers with facilities where it is

infeasible to comply with this General Permit's monitoring while activities are suspended (e.g. remote, unstaffed, or inaccessible facilities during the time of such a suspension). Dischargers are required to update the facility's SWPPP with the BMPs being used to stabilize the site and submit the suspension dates and a justification for the suspension of monitoring via SMARTS.

3. Design Storm Standards for Treatment Control BMPs

It is the State Water Board's intent to minimize the regulatory uncertainty and costs concerning treatment control BMPs in order to encourage the implementation of treatment control BMPs when appropriate. Section X.H.6 of this General Permit specifies a design storm standard for use when treatment controls BMPs are installed. There is both a volume-based and flow-based design storm standard in this General Permit. Both are based on the 85th percentile 24-hour storm event. Without a design storm standard, Dischargers have installed treatment controls using a wide variety of designs that were sometimes either unnecessarily stringent/expensive, or deficient in complying with the requirements of the relevant permit. Some Dischargers have been hesitant to consider treatment options because of the uncertainty concerning acceptable treatment design. The design storm standards are generally expected to:

- Be consistent with the effluent limitations of this General Permit;
- Be protective of water quality;
- Be achievable for most pollutants and their associated treatment technologies; and,
- Reduce the costs associated with treating industrial storm water discharges beyond the levels necessary to achieve compliance with this General Permit.

In lieu of complying with the design storm standards for treatment control BMPs, Dischargers may certify and submit a Level 2 ERA Technical Report, including an Industrial Activity BMPs Demonstration (Section XII.D.2.a of this General Permit). The Level 2 ERA Technical Report requirement is based upon NAL exceedances. Under this option, a Discharger with Level 2 status must either implement BMPs to eliminate future NAL exceedances, or justify what BMPs must be implemented to comply with this General Permit even if the BMPs will not eliminate future exceedances of NALs. Dischargers who implement treatment control BMPs that vary from the design storm standards in Section X.H.6 must include an analysis showing that their treatment control BMPs comply with this General Permit's effluent limitations in the Industrial Activity BMP Demonstration.

This General Permit does not require Dischargers to retrofit existing treatment controls that do not meet the design storm standard, unless the Discharger determines that the existing treatment controls are not adequate to comply with this General Permit. In addition, once TMDL-specific implementation requirements are added to this General Permit, those Dischargers subject to TMDLs may need to add

new or retrofitted treatment control BMPs to meet the TMDL implementation requirements.

To arrive at these design storm standards, the State Water Board has relied heavily on previous Water Board decisions concerning treatment efficacy for municipalities, published documents, stakeholder comments, and reasonableness. In 2000, the State Water Board issued State Water Board Order WQ 2000-11, which upheld Los Angeles Regional Water Board's permit requirements which mandated that all new development and redevelopment exceeding certain size criteria design treatment BMPs based on a specific storm volume: the 85th percentile 24-hour storm event. This design storm standard was based on research demonstrating that the standard represents the maximized treatment volume cut-off at the point of diminishing returns for rainfall/runoff frequency.⁸ On the basis of this equation, the maximized runoff volume for 85 percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inch depending on the imperviousness of the watershed area and the mean amount of rainfall. This design storm standard is referred to as the Standard Urban Storm Water Mitigation Plan's volumetric criterion and there are multiple acceptable methods of calculating this volume. For more information, see the California Stormwater Best Management Practices Handbook.⁹

The San Diego Regional Water Board first established both volumetric and flow-based design storm criteria for NPDES MS4 permits. It is generally accepted by civil engineers doing hydrology work to use twice the peak hourly flow of a specific storm event to use as the basis for flow-based design of BMPs. This General Permit therefore establishes the flow-based design storm standard to be twice the peak hourly flow of the 85th percentile 24-hour storm event.

The primary objective of specifying a design storm standard is to properly size BMPs to, at a minimum, effectively treat the first flush of run-off from all storm events. The economic impacts of treating all storm water from a facility versus the minimal environmental benefit of complete treatment justify the design storm approach. It is unrealistic to require each facility to do a cost benefit analysis of their treatment structures. To simplify the requirements for design, the State Water Board reviewed research from the City of Portland¹⁰ and the City of San Jose¹¹ to determine the volume of each rain event compared to the amount of events that occur for that volume. The results of their findings show an inflection point that is typically found at approximately the 80 to 85 percentile of recorded storm events.

⁸ California Regional Water Quality Control Board Los Angeles Region, Standard Urban Storm Water Mitigation Plans and Numerical Design Standards for Best Management Practices - Staff Report and Record of Decision (Jan. 18, 2000) <http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/stormwater/susmp/susmp_final_staff_report.pdf>. [as of February 4, 2014].

⁹ California Stormwater Quality Association, Stormwater Best Management Practice New Development and Redevelopment Handbook (2003) <<http://www.casqa.org/>>. [as of February 4, 2014].

¹⁰ City of Portland Oregon. Portland Stormwater Management Manual Appendix E.1: Pollution Reduction Methodology E.1-1 (August 1, 2008). <<http://www.portlandoregon.gov/bes/article/202909>>. [as of February 4, 2014].

¹¹ California Stormwater Quality Association (CASQA). CASQA BMP Handbook (January 2003) New Development and Redevelopment (Errata 9-04) <<http://www.casqa.org/>>. [as of February 4, 2014].

Dischargers should be aware of the potential unintended public health concerns associated with treatment control BMPs. Extensive monitoring studies conducted by the California Department of Public Health (CDPH) have documented that mosquitoes opportunistically breed in structural BMPs, particularly those that hold standing water for over 96 hours. BMPs that produce mosquitoes create potential public health concerns and increase the burden on local vector control agencies that are mandated to inspect for and abate mosquitoes and other vectors within their jurisdictional boundaries. These unintended consequences can be lessened when BMPs incorporate design, construction, and maintenance principles developed specifically to minimize standing water available to mosquitoes¹² while having negligible effects on the capacity of the structures to provide water quality improvements. The California Health and Safety Code prohibits landowners from knowingly providing habitat for or allowing the production of mosquitoes and other vectors, and gives local vector control agencies broad inspection and abatement powers.¹³

Dischargers who install any type of volume-based treatment device are encouraged to consider the BMPs in the California Department of Public Health's guidance manual published July 2012, "Best Management Practices for Mosquito Control in California" at <http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf>.

4. Monitoring Implementation Plan

Dischargers are required to prepare and implement a Monitoring Implementation Plan (Section X.I of this General Permit). The Monitoring Implementation Plan requirements are designed to assist the Discharger in developing a comprehensive plan for the monitoring requirements in this General Permit and to assess their monitoring program. The Monitoring Implementation Plan includes a description of visual observation procedures and locations, as well as sampling procedures, locations, and methods. The Monitoring Implementation Plan shall be included in the SWPPP.

J. Monitoring and Reporting Requirements

1. General Monitoring Provisions

This General Permit requires Dischargers to develop and implement a facility-specific monitoring program. Monitoring is defined as visual observations, sampling and analysis. The monitoring data will be used to determine:

¹² California Department of Public Health. (2012). Best Management Practices for Mosquito Control in California. <<http://www.westnile.ca.gov/resources.php>>. [as of February 4, 2014]

¹³ California Health & Safety Code, Division 3, Section 2060 and following.

- a. Whether BMPs addressing pollutants in industrial storm water discharges and authorized NSWDS are effective for compliance with the effluent and receiving water limitations of this General Permit,
- b. The presence of pollutants in industrial storm water discharges and authorized NSWDS (and their sources) that may trigger the implementation of additional BMPs and/or SWPPP revisions; and,
- c. The effectiveness of BMPs in reducing or preventing pollutants in industrial storm water discharges and authorized NSWDS.

Effluent sampling and analysis information may be useful to Dischargers when evaluating the need for improved BMPs. The monitoring requirements in this General Permit recognize the 2008 MSGP approach to visual observations as an effective monitoring method for evaluating the effectiveness of BMPs at most facilities. Section 6.2 of the 2008 MSGP limits its monitoring sampling requirements to certain industrial categories. Similar to the previous permit, this General Permit requires all Dischargers to sample unless they have obtained NEC coverage or have an inactive mining operation(s) certified as allowed under this General Permit Section XIII.

This General Permit defines a Qualifying Storm Event (QSE) to provide clarity to Dischargers of when sampling is required. The previous permit (Section B.5.a) specified that sampling was required within the first hour of discharge, however, this General Permit requires Dischargers to sample within four hours of the start of Discharge. Many Dischargers were not able to get samples of their discharge locations within one (1) hour under the previous permit so this general permit has expanded the timeframe allowed to provide enough time to sample all discharge locations. The previous permit required three working dry days before sampling and this General Permit defines this period as 48 hours, this timeframe was decreased to provide more opportunities for Dischargers to obtain samples. This General Permit does not specify a volume for sampling due to the complexity of using rain gauges and the limited access of rain gauge station data.

Dischargers are only required to obtain samples required during scheduled facility operating hours and when sampling conditions are safe in accordance with Section XI.C.6.a.ii of this General Permit. If a storm event occurs during unscheduled facility operating hours (e.g. during the weekend or night) and during the 12 hours preceding the scheduled facility operating hours, the Dischargers is still responsible for obtaining samples at discharge locations that are still producing a discharge at the start of facility operations. Under the previous permit, many Dischargers were unable to obtain samples due to rainfall beginning at night.

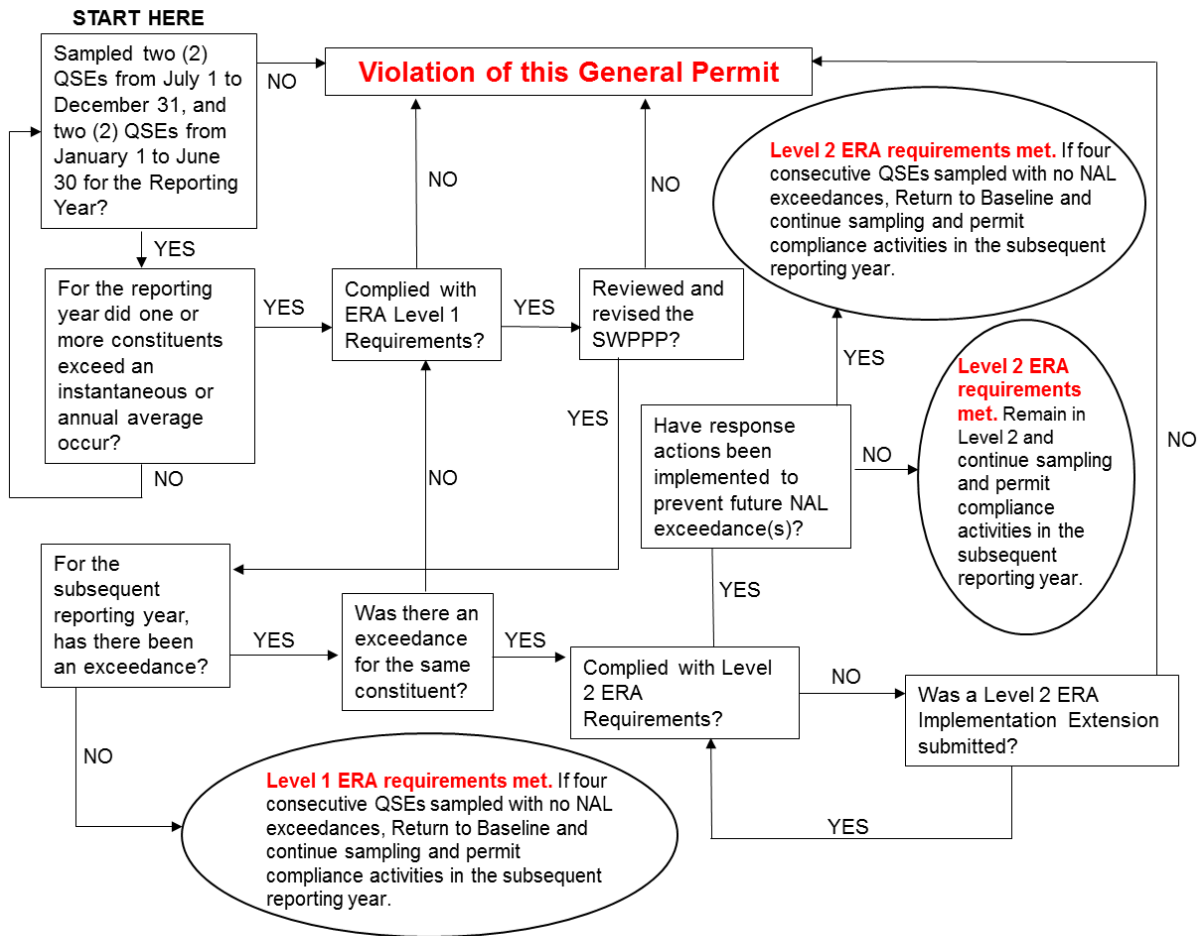
The State Water Board recognizes that it may not be feasible for all facilities to obtain four QSEs in a reporting year because there may not be enough qualifying storm events to do so. Therefore, a Discharger that is unable to collect and analyze storm water samples from two QSEs in each half of a reporting year due to a lack of QSEs is not in violation of Section XI.B.2. Dischargers that miss four QSEs during

a reporting year due to the fact that four QSEs did not occur are not required to make up these sampling events in subsequent reporting years.

The State Water Board recognizes that each facility has unique physical characteristics, industrial activities, and/or variations in BMP implementation and performance which warrants the requirement that each facility demonstrate its compliance. Figure 3 of this Fact Sheet provides a summary of all the monitoring-related requirements of this General Permit. This General Permit's monitoring requirements include sampling and analysis requirements for specific indicator parameters that indicate the presence of pollutants in industrial storm water discharges. The "indicator parameters" are oil and grease (for petroleum hydrocarbons), total suspended solids (for sediment and sediment bound pollutants) and pH (for acidic and alkaline pollutants). Additionally, Dischargers are required to evaluate their facilities and analyze samples for additional facility-specific parameters. These monitoring program requirements are designed to provide useful, cost-effective, timely, and easily obtained information to assist Dischargers as they identify their facility's pollutant sources and implement corrective actions and revise BMPs as necessary (Section XI.A.4 of this General Permit).

This General Permit requires a combination of visual observations and analytical monitoring. Visual observations provide Dischargers with immediate information indicating the presence of many pollutants and their sources. Dischargers must implement timely actions and revise BMPs as necessary (Section XI.A.4) when the visual observations indicate pollutant sources have not been adequately addressed in the SWPPP. Analytical monitoring provides an additional indication of the presence and concentrations of pollutants in storm water discharge. Dischargers are required to evaluate potential pollutant sources and corresponding BMPs and revise the SWPPP appropriately when specific types of NAL exceedances occur as described below.

FIGURE 3: Compliance Determination Flowchart



2. Visual Observations

There are two major changes to the visual observation requirements in this General Permit compared to the previous permit, which include:

a. Monthly Visual Observations

The previous permit required separate quarterly visual observations for unauthorized and authorized non-storm water discharges. It did not require periodic visual observations of the facility to determine whether all potential pollutant sources were being adequately controlled with BMPs. Prior drafts of this General Permit proposed the addition of pre-storm inspections. This was met with great resistance by Dischargers because of the complexity and burden of determining when a QSE would occur. Many of these Dischargers recommended that monthly BMP and non-storm water discharge visual observations should replace the proposed pre-storm inspections. This General Permit merges all visual observations into a single monthly visual observation.

b. Sampling Event Visual Observations

The previous permit required monthly storm water visual observations. This required Dischargers to conduct visual observations for QSEs that were not being sampled since only two QSEs were required to be sampled in the previous permit. As discussed below, the sampling requirement has been increased to four QSEs within each reporting year with two QSEs required in each half of the reporting year. We expect that this will result in more samples being collected and analyzed, since most of California experiences, on average, at least two QSEs per half year. This General Permit streamlines the storm water visual observation requirement by linking the visual observations to the time of sampling.

3. Sampling and Analysis

a. General

As part of the process for developing previous drafts of this General Permit, the State Water Board considered comments from numerous stakeholders concerning sampling and analysis. Sampling and analysis issues were the most dominant of all issues raised in the comments.

The State Water Board received stakeholder comments that fall into three primary categories concerning this General Permit's sampling and analysis approach:

- i. Comments supporting an intensive water quality sampling and analysis approach (with the goal of producing more accurate discharge-characterizing and pollutant concentration data) as the primary method of determining compliance with effluent limitations and receiving water limitations. Since this approach requires large amounts of high quality data to accurately quantify the characteristics of the discharges, it is referred to as the quantitative monitoring approach. Stakeholders supporting the quantitative approach generally also support the use of stringent NELs to evaluate compliance with this General Permit;
- ii. Comments supporting only visual observations as the primary method of determining compliance: These stakeholders generally assert that storm water sampling is an incomplete and not very cost effective means of determining water quality impacts on the receiving waters; and,
- iii. Comments supporting a combination of visual observations and cost-effective water quality sampling and analysis approach (sampling and analysis that would produce data indicating the presence of pollutants) to determine compliance (similar to the previous permit's approach). Since this approach uses more qualitative information to describe the quality and characteristics of the discharges, it is referred to as the qualitative monitoring approach.

Within each of the three categories, there are various recommendations and rationales as to the exact monitoring frequencies, procedures and methods, required to implement the approach. Stakeholders in favor of the quantitative monitoring approach commented that it is the only reliable and meaningful

method of assuring that: (1) BMPs are effective in reducing or preventing pollutants in storm water discharge in compliance with BAT/BCT, and (2) the discharge is not causing or contributing to an exceedance of a water quality standards. The stakeholders state that visual observations are not effective in measuring pollutant concentrations nor is it effective in determining the presence of colorless and/or odorless pollutants. The stakeholders state that qualitative monitoring (and the use of indicator parameters) will not provide results useful for calculating pollutant loading nor will it accurately characterize the discharge.

Stakeholders in favor of requiring only visual observations state that sampling and analysis is unnecessary because (1) the previous permit did not include NELs so the usefulness of sampling and analysis data is limited, (2) a significant majority of Dischargers should be able to develop appropriate BMPs without sampling and analysis data, (3) most pollutant sources and pollutants can be detected and mitigated through visual observations, (4) the costs associated with quantitative monitoring are excessive and disproportionate to any benefits, (5) U.S. EPA's storm water regulations do not require sampling, (6) The 2008 MSGP relies heavily on visual observations and requires only a limited number of specific industries to conduct sampling and analysis, and (7) the majority of Dischargers are small businesses and do not have sufficient training or understanding to perform accurate sampling and analysis.

Stakeholders in favor of requiring both visual observations and a cost-effective qualitative monitoring program state that (1) both are within the means and understanding of most Dischargers, and (2) monitoring results are useful for evaluating a Discharger's compliance without unnecessarily increasing the burden on the Discharger and without subjecting Dischargers to non-technical enforcement actions.

The State Water Board finds that it is feasible for the majority of Dischargers to develop appropriate BMPs without having to perform large amounts of quantitative monitoring, which can be very costly. In the absence of implementing NELs, the State Water Board has determined that the infeasibility and costs associated with developing quantitative monitoring programs at each of thousands industrial facilities currently permitted would outweigh the limited benefits. The primary difficulty associated with requiring intensive quantitative monitoring lies with the cost and the difficulty of accurately sampling industrial storm water discharges.

Stakeholders that support quantitative monitoring believe the data is necessary to determine pollutant loading, concentration, or contribution to water quality violations. In order to derive data necessary to support those goals, however, the data must be of high quality, meaning it must be accurate, precise and have an intact chain of custody. Many industrial facilities do not have well-defined storm water conveyance systems for sample collection. Storm water frequently discharges from multiple locations through sheet flow into nearby streets and adjoining properties. Sample collection from a portion of the sheet flow is an inexact measurement since not all of the flow is sampled. Requiring every Discharger to construct well-defined storm water conveyances may cost

anywhere from thousands to hundreds of thousands of dollars per facility depending on the size and nature of each industrial facility. At many facilities, the construction of such conveyances may also violate local building codes, create safety hazards, cause flooding, or increase erosion. In addition, eliminating sheet flow at some facilities could result in increased pollutant concentrations.

The State Water Board has considered the complexity and costs associated with quantitative monitoring. Unlike continuous point source discharges (e.g., publicly owned treatment works), storm water discharges are variable in intensity and duration. The concentration of pollutants discharged at any one time is dependent on many complex variables. The largest concentration of pollutants would be expected to discharge earlier in the storm event and taper off as discharges continue. Therefore, effective quantitative monitoring of storm water discharges would require that storm water discharges be collected and sampled until most or all of the pollutants have been discharged. Multiple samples would need to be collected over many hours. To determine the pollutant mass loading, the storm water discharge flow must also be measured each time a sample is collected.

For a quantitative monitoring approach to yield useful pollutant loading information, the installation of automatic sampling devices and flow meters at each discharge location would usually be necessary. In addition, qualified individuals would be needed to conduct the monitoring procedures, and to handle and maintain flow meters and automatic samplers are needed. A significant majority of storm water Dischargers under this General Permit do not possess the skills to manage such an effort. Dischargers will bear the cost of employing and/or training on-site staff to do this work, or the cost of contracting with environmental consultants and acquiring the required flow meters and automatic samplers. The cost to Dischargers to conduct quantitative monitoring varies depending on the number of outfalls, the number of storms, the length of each storm, the amount of staff training, and other variables.

To address these concerns, this General Permit includes a number of new items that bridge the gap between the previous permit's qualitative monitoring and the quantitative approach recommended by many commenters. This General Permit includes a requirement for all Dischargers to designate a QISP when they enter Level 1 status due to NAL exceedances. The QISP is required to be trained to: (1) more accurately identify discharge locations representative of the facility storm water discharge (2) select and implement appropriate sampling procedures (3) evaluate and develop additional BMPs to reduce or prevent pollutants in the industrial storm water discharges.

Dischargers that fail to develop and implement an adequate Monitoring Implementation Plan that includes both visual observations and sampling and analysis, are in violation of this General Permit. Dischargers that fail to comply with Level 1 status and Level 2 status ERA requirements, triggered by NAL exceedances, are in violation of this General Permit.

Water Code section 13383.5 requires that the State Water Board include (1) standardized methods for collection of storm water samples, (2) standardized methods for analysis of storm water samples, (3) a requirement that every sample analysis be completed by a State certified laboratory or in the field in accordance with Quality Assurance and Quality Control (QA/QC) protocols, (4) a standardized reporting format, (5) standardized sampling and analysis programs for QA/QC, and (6) minimum detection limits. The monitoring requirements in this General Permit (Section XI), as supplemented by SMARTS, address these requirements.

Under the previous permit, many Dischargers did not developed adequate sample collection and handling procedures, decreasing the quality of analytical results. In addition, Dischargers often selected inappropriate test methods, method detection limits, or reporting units. This General Permit requires all Dischargers to identify discharge locations that are representative of industrial storm water discharges and develop and implement reasonable sampling procedures to ensure that samples are not mishandled or contaminated.

It is infeasible for the State Water Board to provide a single comprehensive set of sample collection and handling procedures/instructions due to the wide variation in storm water conveyance and collection systems in use at facilities around the state. As an alternative, Attachment H of this General Permit provides minimum storm water sample collection and handling instructions that pertain to all facilities. Dischargers are required to develop facility-specific sample collection and handling procedures based upon these minimum requirements. Table 2 in this General Permit provides the minimum test methods that shall be used for a variety of common pollutants. Dischargers must be aware that use of more sensitive test methods (e.g., U.S. EPA Method 1631 for Mercury) may be necessary if they discharge to an impaired water body or are otherwise required to do so by the Regional Water Board. This General Permit allows Dischargers to propose an analytical test method for any parameter or pollutant that does not have an analytical test method specified in Table 2 or in SMARTS. Dischargers may also propose analytical test methods with substantially similar or more stringent method detection limits than existing approved analytical test methods. Upon approval, SMARTS will be updated over time to add additional acceptable analytical test methods.

The previous permit allowed Dischargers to reduce sampling analysis requirements for substantially similar drainage areas by either (1) combining samples for an unspecified maximum number of substantially similar drainage areas, or (2) sampling a reduced number of substantially similar drainage areas. The State Water Board provided this procedure to reduce analytical costs. The complexity associated with determining substantially similar drainage areas has led Dischargers to produce various, and sometimes questionable, analytical schemes. In addition, the previous permit did not establish a maximum number of samples that could be combined.

To standardize sample collection and analysis as required by Water Code section 13383.5, while continuing to offer a reduced analytic cost option, these

requirements have been revised. Section XI.B.4 of this General Permit requires Dischargers to collect samples from all discharge locations regardless of whether the discharges are substantially similar or not. Dischargers may analyze each sample collected, or may analyze a combined sample consisting of equal volumes, collected from as many as four (4) substantially similar discharge locations. A minimum of one combined sample shall be analyzed for every one (1) to four (4) discharge locations, and the samples shall be combined in the lab in accordance with Section XI.C.5 of this General Permit.

Representative sampling is only allowed for sheet flow discharges or discharges from drainage areas with multiple discharge locations. Dischargers shall select the appropriate location(s) to be sampled and intervals necessary to obtain samples representative of storm water associated with industrial activities generated within the corresponding drainage area. Dischargers are not required to sample discharge locations that have no exposure of industrial activities or materials as defined in Section XVII of this General Permit within the corresponding drainage area. However, Dischargers are required to conduct the monthly visual observations regardless of the selected locations to be sampled.

This General Permit defines a QSE as a precipitation event that produces a discharge from any drainage area that is preceded by 48 consecutive hours without a discharge from any drainage area. The previous permit did not include a QSE definition; instead, it utilized a different approach to defining the storm events that were required to be sampled. Under the previous permit, eligible storm events were storm events that occurred after three consecutive working days of dry weather. The three consecutive working days of dry weather definition in the previous permit led Dischargers to miss many opportunities to sample. Some Dischargers were unable to collect samples from two storm events in certain years under the previous definition. To resolve this difficulty, this General Permit increases the sampling requirements to four (4) QSEs per year, while decreasing the number of days without a discharge, resulting in additional opportunities for Dischargers to sample. Additionally, by eliminating the previous permit's reference to "dry weather," this General Permit allows some precipitation to occur between QSEs so long as there is no discharge from any drainage area. This change will result in more QSE sampling opportunities.

To improve clarity and consistency, the definitions contained in other storm water permits were considered with the goal of developing a standard definition for 'dry weather' for this General Permit. The 2008 MSGP sets a "measurable storm event" as one that produces at least 0.1 inches of precipitation and results in an actual discharge after 72 hours (three days) of dry weather. The State of Washington defines a "qualifying storm event" as a storm with at least 0.1 inches of precipitation preceded by at least 24 hours of no measurable precipitation, mirroring the definition found in the previous MSGP (2000 version). The State of Oregon requires that samples be taken in the first 12 hours of discharge and no less than 14 days apart. Review of other permits concludes that there is not a single commonly used approach to triggering sampling in industrial general permits. Therefore an enforceable sampling trigger is included in this General

permit that requires Dischargers to sample four storm events within each reporting year.

b. Effluent Water Quality Sampling and Analysis Parameters

Dischargers are required to sample and analyze their effluent for certain parameters. "Parameter" is a term used in laboratory analysis circles to represent a distinct, reportable measure of a particular type. For example, ammonia, hexavalent chromium, total nitrogen and chemical oxygen demand are all parameters that a laboratory can analyze storm water effluent for and report a quantity back. A parameter is also an indicator of pollution. In this General Permit, pH, total suspended solids and chemical oxygen demand are examples of indicator parameters. They are not direct measures of a water quality problem or condition of pollution but can be used to indicate a problem or condition of pollution. Indicator parameters can also be used to indicate practices and/or the presence of materials at a facility to bring forth information for compliance evaluation processes, like annual report review and inspection. For example, chemical oxygen demand concentrations can indicate the presence of dissolved organic compounds, like residual food from collected recycling materials.

Minimum parameter-specific monitoring is required for Dischargers, regardless of whether additional facility-specific parameters are selected. This General Permit requires some parameters to be analyzed and reported for the duration of permit coverage to develop comparable sampling data over time and over many storm events and to demonstrate compliance. The Regional Water Boards may use such data to evaluate individual facility compliance and assess the differences between various industries. Accordingly, the parameters selected correspond to a broad range of industrial facilities, are inexpensive to sample and analyze, and have sampling and analysis methods which are easy to understand and implement. Some analytical methods for field measurements of some parameters, such as pH, may be performed using relatively inexpensive field instruments and provides an immediate alert to possible pollutant sources.

The following three selected minimum parameters are considered indicator parameters, regardless of facility type. These parameters typically provide indication and/or the correlation of whether other pollutants are present in storm water discharge. These parameters were selected for the following reasons:

- i. pH is a numeric measurement of the hydrogen-ion concentration. Many industrial facilities handle materials that can affect pH. A sample is considered to have a neutral pH if it has a value of 7. At values less than 7, water is considered acidic; above 7 it is considered alkaline or basic. Pure rain water in California typically has a pH value of approximately 7.
- ii. Total Suspended Solids (TSS) is an indicator of the un-dissolved solids that are present in storm water discharge. Sources of TSS include sediment from erosion, and dirt from impervious (i.e., paved) areas. Many pollutants adhere to sediment particles; therefore, reducing sediment will reduce the amount of these pollutants in storm water discharge.

- iii. Oil and Grease (O&G) is a measure of the amount of O&G present in storm water discharge. At very low concentrations, O&G can cause sheen on the surface of water. O&G can adversely affect aquatic life, create unsightly floating material, and make water undrinkable. Sources of O&G include, but are not limited to, maintenance shops, vehicles, machines and roadways.

The previous permit allowed Dischargers to analyze samples for either O&G or Total Organic Carbon (TOC). This General Permit requires all Dischargers analyze samples for O&G since almost all Dischargers with outdoor activities operate equipment and vehicles can potentially generate insoluble oils and greases. Dischargers with water soluble-based organic oils may be required to also test for TOC. The TOC and O&G tests are not synonymous, duplicative or interchangeable.

This General Permit removes the requirement to analyze for specific conductance as part of the minimum analytic parameters. Specific conductance is not required by U.S. EPA for any industry type. Additionally, stakeholder comments indicate that there are many non-industrial sources that may cause high specific conductance and interfere with the efficacy of the test. For example, salty air deposition that occurs at facilities in coastal areas may raise the specific conductance in water over 500 micro-ohms per centimeter ($\mu\text{hos/cm}$). Dischargers are not prevented from performing a specific conductance test as a screening tool if it is useful to detect a particular pollutant of concern as required (e.g. salinity).

This General Permit requires Dischargers subject to Subchapter N ELGs for pH to analyze for pH using approved test methods in accordance with 40 Code of Federal Regulations part 136. These federal regulations specify that analysis of pH must take place within 15 minutes of sample collection. All other Dischargers may screen for pH using wide range litmus pH paper or other equivalent pH test kits within 15 minutes of sample collection. If in any reporting year a Discharger has two or more pH results outside of the range of 6.0 – 9.0 pH units, that Discharger is required to comply with the approved test methods in 40 Code of Federal Regulations part 136 in subsequent reporting years.

For almost all Dischargers, obtaining laboratory analysis within 15 minutes is logistically impossible. For many Dischargers, maintaining a calibrated pH meter is difficult, labor intensive, and error prone. Screening for pH will limit the number of additional Dischargers required to comply with 40 Code of Federal Regulations part 136 methods to those that have pH measures outside the range of 6.0-9.0 pH units. The use of wide range litmus pH paper or other equivalent pH test kits is not as accurate as a calibrated pH meter, however litmus paper is allowed in the 2008 MSGP, and when used properly it can provide an accurate screening measure to determine if further more-accurate pH sampling is necessary to determine compliance.

Review of available monitoring data shows that storm water discharges from most types of industrial facilities comply with the pH range of 6.0 to 9.0 pH units. There are specific types of industries, like cement or concrete manufacturers that

have shown a trend of higher pH values very close to 9.0 pH units. Rather than require all industries as a whole to monitor with the more costly 40 Code of Federal Regulations part 136 methods, this General Permit establishes a triggering mechanism for these more advanced pH test methods. The Regional Water Boards retain their authority to require more accurate test methods. Once a Discharger triggers the requirement to use the more accurate testing methods in 40 Code of Federal Regulations part 136, the Discharger may not revert back to screening for pH for the duration of coverage under this General Permit.

In the early 1990s, U.S. EPA, through its group application program, evaluated nationwide monitoring data and developed the listed parameters and SIC associations shown in Table 1 of this General Permit. The 2008 MSGP requires that Dischargers analyze storm water effluent for the listed parameters under certain conditions. In addition to the parameters in Table 1 of this General Permit, Dischargers are required to select additional facility-specific analytical parameters to be monitored, based upon the types of materials that are both exposed to and mobilized by contact with storm water. Dischargers must, at a minimum, understand how to identify industrial materials that are handled outdoors and which of those materials can easily dissolve or be otherwise transported via storm water.

The Regional Water Boards have the authority to revise the monitoring requirements for an individual facility or group of facilities based on site-specific factors including geographic location, industry type, and potential to pollute. For example, the Los Angeles Regional Water Board required all dismantlers (SIC Code 5015) within their jurisdiction to monitor for copper and zinc instead of aluminum and iron during the term of the previous permit. SMARTS will be programmed to incorporate any monitoring revisions required by the Regional Water Boards. Dischargers will receive email notification of the monitoring requirement revision and their SMARTS analytical reporting input screen will display the corresponding revisions. Dischargers may add, but not otherwise modify, the sampling parameters on their SMARTS input screen.

Dischargers are also required to identify pollutants that may cause or contribute to an existing exceedance of any applicable water quality standards for the receiving water. This General Permit requires Dischargers to control its discharge as necessary to meet the receiving water limitations, and to select additional monitoring parameters that are representative of industrial materials handled at the facility (regardless of the degree of storm water contact or relative mobility) that may be related to pollutants causing a water body to be impaired.

4. Methods and Exceptions

a. Storm Water Discharge Locations

Dischargers are required to visually observe and collect samples of industrial storm water discharges from each drainage area at all discharge locations. These samples must be representative of the storm water discharge leaving each drainage area. This is a change from the previous permit which allowed a

Discharger to reduce the number of discharge locations sampled if two or more discharge locations were substantially similar.

Dischargers are required to identify, when practicable, alternate discharge locations if: (1) the facility's industrial drainage areas are affected by storm water run-on from surrounding areas that cannot be controlled, or (2) discharge locations are difficult to observe or sample (e.g. submerged discharge outlets, dangerous discharge location accessibility).

b. Representative Sampling Reduction

Some stakeholders have indicated that there are unique circumstances where sampling a subset of representative discharge locations fully characterizes the full set of storm water discharges. Stakeholders provided examples related to drainage areas with multiple discharge locations where sampling only a subset of these discharge locations produces results that are representative of the drainage areas' storm water discharges. In such situations, this General Permit allows Dischargers to reduce the number of discharge locations. For each drainage area with multiple discharge locations (e.g. roofs with multiple downspouts, loading/unloading areas with multiple storm drain inlets), the Discharger may reduce the number of discharge locations to be sampled if the conditions in Section XI.C.4 of this General Permit are met.

c. Qualified Combined Samples

Dischargers may combine samples from up to four (4) discharge locations if the industrial activities within each drainage area and each drainage area's physical characteristics (i.e. grade, surface materials) are substantially similar.

Dischargers are required to provide documentation in the Monitoring Implementation Plan supporting that the above conditions have been evaluated and fulfilled. A Discharger may combine samples from more than four (4) discharge locations only with approval from the appropriate Regional Water Board.

d. Sample Collection and Visual Observation Exceptions

Dischargers are not required to collect samples or conduct visual observations during dangerous weather conditions such as flooding or electrical storms, or outside of scheduled facility operating hours. A Discharger is not precluded from conducting sample collection activities or visual observations outside of scheduled facility operating hours.

In the event that a Discharger is unable to collect the required samples or conduct visual observations due to the above exceptions, the Discharger must include an explanation of the conditions obstructing safe monitoring in its Annual Report. If access to a discharge location is dangerous on a routine basis, a Discharger must choose an alternative discharge location in accordance with General Permit Section XI.C.3.

e. Sampling Frequency Reduction

Facilities that do not have NAL exceedances for four (4) consecutive QSEs are unlikely to pose a significant threat to water quality. If the storm water from these facilities is also in full compliance with this General Permit, the Discharger is eligible for a reduction in sampling frequency. The Sampling Frequency Reduction allows a Discharger to decrease its monitoring from four (4) samples within each reporting year to one (1) QSE within the first half of each reporting year (July 1 to December 31) and one (1) QSE within the second half of each reporting year (January 1 to June 30). If a Discharger has a subsequent NAL exceedance after the Sampling Frequency Reduction, it must comply with the original sampling requirements of this General Permit. Only Dischargers that have baseline status or that have satisfied the Level 1 requirements are eligible for this sampling and analysis reduction.

A Discharger requesting to reduce its sampling frequency shall certify and submit a Sampling Frequency Reduction certification via SMARTS. The Sampling Frequency Reduction certification shall include documentation that the General Permit conditions for the Sampling Frequency Reduction have been satisfied.

Dischargers participating in a Compliance Group and certifying a Sampling Frequency Reduction are only required to collect and analyze storm water samples from one (1) QSE within each reporting year. These Dischargers must receive year-round compliance assistance from their Compliance Group Leader and must comply with all requirements of this General Permit.

5. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

Federal regulations at Subchapter N establish ELGs for industrial storm water discharges from facilities in eleven industrial sectors. For these facilities, compliance with the ELGs constitutes compliance with the technology standard of BPT, BAT, BCT, or New Source Performance Standards provided in the ELG for the specified pollutants, and compliance with the technology-based requirements in this General Permit for the specified pollutant.

K. Exceedance Response Actions (ERAs)

1. General

The previous permit did not incorporate the benchmarks from any of the MSGPs or NALs for Dischargers to evaluate sampling results. Unlike the requirements for industrial storm water discharges that cause or contribute to an exceedance of a water quality standards, the previous permit did not provide definitions, procedures or guidelines to assess sampling results. Many Regional Water Boards have formally or informally notified Dischargers that exceedances of the MSGP benchmarks should be used to determine whether additional BMPs are necessary. However, there was considerable confusion as to the extent to which a Discharger would be expected to implement actions in response to exceedances of these values, and the timelines that had to be met to prevent an enforcement action. The lack of specificity with regards to what constituted an exceedance, and what actions

are required in response to an exceedance, have been identified as a problem by the Water Boards, industry and environmental stakeholders.

This General Permit contains two (2) types of NALs. Annual NALs function similarly to, and are based upon, the values provided in the 2008 MSGP. Instantaneous maximum NALs target hot spots or episodic discharges of pollutants and are established based on California industrial storm water discharge monitoring data. When a Discharger exceeds an NAL it is required to perform ERAs. The ERAs are divided into two levels of responses and can generally be differentiated by the number of years in which a facility's discharge exceeds an NAL trigger. These two levels are explained further in Section XII of this General Permit. This ERA process provides Dischargers with an adaptive management-based process to develop and implement cost-effective BMPs that are protective of water quality and compliant with this General Permit. This process is also designed to provide Dischargers with a more defined pathway towards full compliance.

The ERA requirements in this General Permit were developed using best professional judgment and Water Board experience with the shortcomings of the previous permit's compliance procedures. Public comments received during State Water Board hearings on the 2002, 2005, 2011, 2012 and 2013 draft permits, and NPDES industrial storm water discharge permits from other states with well-defined ERA requirements were also considered by the State Water Board.

The State Water Board presumes that one single NAL exceedance for a particular parameter is not a clear indicator that a facility's discharge is out of compliance with the technology-based effluent limitations or receiving water limitations. This presumption recognizes the highly variable nature of storm water discharge and the limited value of a single quarterly grab sample to represent the quality of a facility's storm water discharge for an entire storm event and all other non-sampled storm events. With this presumption, the State Water Board is addressing costly monitoring requirements that do not bring forth valuable compliance and/or water quality information.

2. NALs and NAL Exceedances

a. This General Permit contains two types of NAL exceedances as follows:

Annual NAL exceedance - the Discharger is required to calculate the average annual concentration for each parameter using the results of all sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data), and compare the annual average concentration to the corresponding Annual NAL values in Table 2 of this General Permit. An annual NAL exceedance occurs when the annual average of all the sampling results for a parameter taken within a reporting year exceeds the annual NAL value for that parameter listed in Table 2 of this General Permit.

For the purposes of calculating the annual average concentration for each parameter, this General Permit considers any sampling result that are a "non-detect" or less than the method detection limit as a zero (0) value. The reason to use zero (0) values instead of the detected but not quantifiable

value (minimum level or reporting limit) is that these values are very low and are unlikely to contribute to an NAL exceedance. There are statistical methods to include low values when calculations are for numeric criteria and limitations, however, the NALs in this General Permit are approximate values used to provide feedback to the Discharger on site performance, and are not numeric criteria or limitations. Therefore, it is not necessary to include these insignificant values in the calculations for the NALs. For Dischargers using composite sampling or flow measurement in accordance with standard practices, the average concentrations shall be calculated in accordance with the U.S. EPA Guidance Manual for the Monitoring and Reporting Requirements of the NPDES Multi-Sector Storm Water General Permit.¹⁴

- i. Instantaneous maximum NAL exceedance - the Discharger is required to compare all sampling and analytical results from each distinct sample (individual or combined) to the corresponding instantaneous maximum NAL values in Table 2 of this General Permit. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G), or are outside of the instantaneous maximum NAL range (for pH).

b. Instantaneous maximum NAL analysis

In its June 19, 2006 report, the Blue Ribbon Panel of Experts (Panel) made several specific recommendations for how to set numeric limitations in future industrial storm water general permit(s). For sites not subject to TMDLs, the Panel suggested that the numeric values be based upon industry types or categories, with the recognition that each industry has its own specific water quality issues and financial viability. Furthermore, the Panel concluded:

To establish Numeric Limits for industrial sites requires a reliable database, describing current emissions by industry types or categories, and performance of existing BMPs. The current industrial permit has not produced such a database for most industrial categories because of inconsistencies in monitoring or compliance with monitoring requirements. The Board needs to reexamine the existing data sources, collect new data as required and for additional water quality parameters (the current permit requires only pH, conductivity, total suspended solids, and either total organic carbon or oil and grease) to establish practical and achievable Numeric Limits.

The Panel suggested an alternative method that would allow the use of the existing Water Board dataset to establish action levels, referred to as the “ranked percentile” method. The Panel recommended:

¹⁴ U.S. EPA. NPDES Storm Water Sampling Guidance Document. Web. July 1992. <<http://www.epa.gov/npdes/pubs/owm0093.pdf>>. [as of February 4, 2014].

The ranked percentile approach (also a statistical approach) relies on the average cumulative distribution of water quality data for each constituent developed from many water quality samples taken for many events at many locations. The Action Level would then be defined as those concentrations that consistently exceed some percentage of all water quality events (i.e. the 90th percentile). In this case, action would be required at those locations that were consistently in the outer limit (i.e. uppermost 10th percentile) of the distribution of observed effluent qualities from urban runoff.

After performing various data analysis exercises with the Water Board dataset, State Water Board staff concluded that the Water Board dataset is not adequate to calculate instantaneous NAL values using the Panel's recommended method for all of parameters that have annual NAL values based on the U.S. EPA benchmarks. Additionally, public comments on the January 2011 draft of this General Permit suggest that it is problematic to calculate NAL values based on the existing data. Therefore, the Water Board dataset was not used to calculate instantaneous NAL values for all parameters.

However, since all Dischargers regulated under the previous permit were required to sample for TSS and O&G/TOC, State Water Board staff found that the existing dataset for these parameters is of sufficient quality to calculate instantaneous NAL values. State Water Board staff also found that this data was less prone to what appear to be data input errors. The final dataset used to calculate the instantaneous NALs in this General Permit had outlier values that were eliminated from the dataset by using approved test method detection limits ranges. The methods and corresponding method detection limit ranges used to screen outliers are as follows:

- O&G - EPA 413.1 Applicable Range: 5-1,000 mg/L
- O&G - EPA 1664 Applicable Range: 5-1,000 mg/L
- TSS - EPA 160.2 Applicable Range: 4-20,000 mg/L

The intent of the instantaneous maximum NAL is to identify specific drainage areas of concern or episodic sources of pollution in industrial storm water that may indicate inadequate storm water controls and/or water quality impacts. In the effort to add instantaneous NAL exceedances to the ERA process, the State Water Board explored different options for the development of an appropriate value (i.e. percentile approach, benchmarks times a multiplier, confidence intervals). The California Stormwater Quality Association's comments on the previous draft permit included a proposed method for calculating NAL values using a percentile approach. The State Water Board researched and evaluated this methodology and determined it is the most appropriate way to directly compare available electronic sampling data from Dischargers regulated under the previous permit. This percentile approach was used to establish the instantaneous maximum NALs in this General Permit, for discharges to directly compare with sampling results and identify drainage areas of water quality concern.

The percentile approach is a non-parametric approach identified in many statistical textbooks for determining highly suspect values. Highly suspect values are defined as values that exceed the limits of the outer fences of a box plot. Upper limits of the outer fence are calculated by adding three times the inter-quartile range (25th to 75th percentiles) to the upper-end of the inter-quartile range (the 75th percentile). The California Stormwater Quality Association calculated an NAL value of 401 mg/L for TSS using the percentile approach using the Water Board dataset. The State Water Board performed the same analysis with the same Water Board dataset and calculated a slightly different value of 396 mg/L; therefore, the instantaneous maximum NAL value for TSS of 400 mg/L was established. Applying the percentile approach to the existing O&G data results in the instantaneous maximum NAL value for O&G of 25 mg/L.

The State Water Board compared existing sampling data to the instantaneous maximum NAL values and concluded that seven (7) percent of the total samples exceeded the highly suspected value for TSS and 7.8 percent of the total samples exceeded the highly suspected value for O&G. These results suggest that the instantaneous maximum NAL values are adequate to identify drainage areas of concern statewide since they are not regularly exceeded. Using best professional judgment, the State Water Board concludes that an exceedance of these values twice within a reporting year is unlikely to be the result of storm event variability or random BMP implementation problems, and the use of the percentile approach is therefore appropriate.

Due to issues with the ranges of concentrations and the logarithmic nature of pH, statistical methods cannot be applied to pH in the same ways as other parameters. Review of storm water sampling data by the State Water Board and other stakeholders has shown that pH is not typically a parameter of concern for most industrial facilities. Accordingly, a range of pH limits established in Regional Water Board Basin Plans is implemented in this General Permit for the instantaneous maximum NAL values. Most Basin Plans set a water quality objective of 6.0 - 9.0 pH units for water bodies, an exceedance outside the range of 6.0 - 9.0 pH units is consistent with the water quality concerns for pH among Regional Water Boards. An industrial facility with proper BMP implementation is expected to have industrial storm water discharges within the range of 6.0 - 9.0 pH units.

High concentrations of TSS and O&G, or pH values outside the range of 6.0 – 9.0 pH units, in a discharge may be an indicator of potential BMP implementation or receiving water quality concerns with other pollutants with parameters that do not have an instantaneous maximum NAL value. The State Water Board may consider instantaneous maximum NAL values for other parameters in a subsequent reissuance of this General Permit, based on data collected during this General Permit term.

The percentile approach is considered by many stakeholders to be the best method to evaluate BMP performance and general effluent quality in a community or population where the vast majority of the industrial facilities are implementing sufficient pollutant control measures. The Water Board's current

dataset does not provide a way of evaluating actual BMP implementation at each facility when analyzing the data; therefore the monitoring information reported during the previous permit term cannot be linked to compliance with technology-based standards. The State Water Board intends to use data collected during this General Permit term to evaluate the percentile approach, improve the quality of collected data for other parameters, and further develop an understanding of how reported data relates to implemented BMP-control technologies.

Under this General Permit, a Discharger enters Level 1 status and must fulfill the Level 1 status ERA requirements following its first occurrence of any NAL exceedance. Level 2 status ERA requirements follow the second occurrence of an NAL exceedance for the same parameter in a subsequent reporting year. This ERA process provides Dischargers with an adaptive management-based process to develop and implement cost-effective BMPs that are protective of water quality and compliant with this General Permit. This General Permit's ERA process is designed to have a well-defined compliance end-point. It is not a violation of this General Permit to exceed the NAL values; it is a violation of the permit, however, to fail to comply with the Level 1 status and Level 2 status ERA requirements in the event of NAL exceedances.

The State Water Board acknowledges that storm water discharge concentrations are often highly variable and dependent upon numerous circumstances such as storm size, the time elapsed since the last storm, seasonal activities, and the time of sample collection. Since there are potential enforcement consequences for failure to comply with this General Permit's ERA process, the State Water Board's intention is to use NAL exceedances to solely require Dischargers with recurring annual NAL exceedances or drainage areas that produce recurring instantaneous maximum NAL exceedances to be subject to the follow-up ERA requirements.

If NALs exceedances do not occur, the State Water Board generally expects that the Discharger has implemented sufficient BMPs to control storm water pollution. When NAL exceedances do occur, however, the potential that the Discharger may not have implemented appropriate and/or sufficient BMPs increases, and the Discharger is required to implement escalating levels of ERAs. If NAL exceedances occur, this General Permit requires Dischargers to evaluate and potentially install additional BMPs, or re-evaluate and improve existing BMPs to be in compliance with this General Permit.

3. Baseline Status

At the beginning of a Discharger's NOI coverage under this General Permit, the Discharger has Baseline status. A Discharger demonstrating compliance with all NALs will remain at Baseline status and is not required to complete Level 1 status and Level 2 status ERA requirements.

If a Discharger has returned to Baseline status (from Level 2 status) and additional NAL exceedances occur, the Discharger goes into Level 1 status, then potentially

Level 2 status. Dischargers do not go directly into Level 2 status from Baseline status.

4. Level 1 Status

Regardless of when an NAL exceedance occurs during Baseline status, a Discharger's status changes from Baseline status to Level 1 status on July 1 of the subsequent reporting year. By October 1 following the commencement of Level 1 status, the Discharger is required to appoint a QISP to assist with the completion of the Level 1 Evaluation. The Level 1 Evaluation must include a review of the facility's SWPPP for compliance with the effluent and receiving water limitations of this General Permit, an evaluation of the industrial pollutant sources at the facility that are or may be related to the NAL exceedance(s), and identification of any additional BMPs that will eliminate future exceedances. When conducting the Level 1 Evaluation, a Discharger must ensure that all potential pollutant sources that could be causing or contributing to the NAL exceedance(s) are fully characterized, that the current BMPs are adequately described, that employees responsible for implementing BMPs are appropriately trained, and that internal procedures are in place to track that BMPs are being implemented as designed in the SWPPP. A Discharger is additionally required to evaluate the need for additional BMPs. Level 1 ERAs are designed to provide the Discharger the opportunity to improve existing BMPs or add additional BMPs to comply with the requirements of this General Permit.

By January 1 following commencement of Level 1 status, a Discharger is required to certify and submit via SMARTS a Level 1 ERA Report prepared by a QISP. The Level 1 ERA Report must contain a summary of the Level 1 Evaluation, all new or revised BMPs added to the SWPPP.

In most cases, the State Water Board believes that Level 1 status BMPs will be operationally related rather than structural and, therefore can be implemented without delay. Recognizing that a Discharger should not be penalized for sampling results obtained before implementing BMPs, sampling results for parameters and their corresponding drainage areas that caused the NAL exceedance up to October 1 or the date the BMPs were implemented, whichever is sooner, will not be used for calculating NAL exceedances. Although this General Permit allows up to January 1 to implement Level 1 status BMPs, the State Board has chosen an interim date of October 1 to encourage more timely Level 1 BMP implementation. Dischargers who implement Level 1 BMPs after October 1 may risk obtaining subsequent sampling results that may cause them to go into Level 2 status.

5. Level 2 Status

Level 2 ERAs are required during any subsequent reporting year in which the same parameter(s) has an NAL exceedance (annual average or instantaneous maximum), if this occurs, a Discharger's status changes from Level 1 status to Level 2 status on July 1 of the subsequent reporting year. Dischargers with Level 2 status must further evaluate BMP options for their facility. Dischargers may have to implement additional BMPs, which may include physical, structural, or mechanical devices that

are intended to prevent pollutants from contacting storm water. Examples of such controls include, but are not limited to:

- Enclosing and/or covering outdoor pollutant sources within a building or under a roofed or tarped outdoor area.
- Physically separating the pollutant sources from contact with run-on of uncontaminated storm water.
- Devices that direct contaminated storm water to appropriate treatment BMPs (e.g., discharge to sanitary sewer as allowed by local sewer authority).
- Treatment BMPs including, but not limited to, detention ponds, oil/water separators, sand filters, sediment removal controls, and constructed wetlands.

Dischargers may select the most cost-effective BMPs to control the discharge of pollutants in industrial storm water discharges. Where appropriate, BMPs can be designed and targeted for various pollutant sources (e.g., providing overhead coverage for one potential pollutant while discharging to a detention basin for another source may be the most cost-effective solution).

a. Level 2 ERA Action Plans

The State Water Board acknowledges that there may be circumstances that make it difficult, if not impossible, for a Discharger to immediately implement additional BMPs. For example, it may take time to get a contract for construction in place, obtain necessary building permits, and design and construct the BMPs. Dischargers may also suspect that pollutants are from a non-industrial or natural background source and need time to study their site. A Discharger is required to certify and submit an Action Plan prepared by a QISP via SMARTS by January 1 following the reporting year in which the NAL exceedance that resulted in the Discharger entering Level 2 occurred. The Level 2 ERA Action Plan requires a Discharger to propose actions necessary to complete the Level 2 ERA Technical Report, the demonstrations the Discharger has selected, and propose a time frame for implementation.

If a Discharger changes the QISP assisting with the Level 2 ERA requirements this General Permit requires the Discharger to update the QISP information via SMARTS. Current information on individuals assisting Dischargers with compliance of this General Permit provides the Water Boards with the necessary contact information if there are questions on the submitted documents, and for possible verification of a QISP's certification.

Dischargers are required to address each Level 2 NAL exceedance in an Action Plan. The State Water Board recognizes that Dischargers with Level 2 status may have multiple parameters or facility areas that have Level 2 NAL exceedances and the timing of the exceedances may make it very difficult to address all Level 2 NAL exceedances in one Action Plan. When Level 2 ERA exceedances occur in subsequent reporting years, after an Action Plan is

certified and submitted, a Discharger will need to develop an Action Plan for this new Level 2 NAL exceedance. This General Permit defines new Level 2 NAL exceedances as an exceedance for a new parameter in any drainage area at the facility, or an exceedance for the same parameter being addressed in an existing Action Plan, but where the exceedance occurred in a different drainage area than identified in the existing Action Plan.

b. Level 2 ERA Technical Reports

The Level 2 ERA Technical Report contains three different options that require a Discharger to submit demonstrations showing the cause of the NAL exceedance(s). This General Permit requires a Discharger to appoint a QISP to prepare the Level 2 ERA Technical Reports. The State Water Board acknowledges that there may be cases where a combination of the demonstrations may be appropriate; therefore a Discharger may combine any of the following three demonstration options in their Level 2 ERA Technical Report when appropriate. A Discharger is only required to annually update its Level 2 ERA Technical Report when necessary as defined in Section XII.D.3.c of this General Permit, and is not required to annually re-certify and re-submit the entire Level 2 ERA Technical Report. If there are no changes prompting an update of the Level 2 ERA Technical Report, as specified in Section XII.D.3.c of this General Permit, the Discharger will provide this certification in the Annual Report that there have been no changes warranting re-submittal of the Level 2 ERA Technical Report.

i. Industrial Activity BMPs Demonstration

The Industrial Activity BMPs Demonstration is for the following:

- Dischargers who decided to implement additional BMPs that are expected to eliminate future NAL exceedance(s) and that have been implemented in order to achieve compliance with the technology-based effluent limitations of this General Permit, and
- Dischargers who decided to implement additional BMPs that may not eliminate future NAL exceedance(s) and that have been implemented in order to achieve compliance with the technology-based effluent limitations of this General Permit.

When preparing the Industrial Activity BMPs Demonstration, the QISP shall identify and evaluate all individual pollutant source(s) associated with industrial activity that are or may be related to an NAL exceedance and all designed, information on the drainage areas associated with the Level 2 NAL exceedances, and installed BMPs that are implemented to reduce or prevent pollutants in industrial storm water discharges in compliance with this General Permit.

If an Industrial Activity BMPs Demonstration is submitted as the Level 2 ERA Technical Report and the Discharger is able to show reductions in pollutant concentrations below the NALs for four (4) subsequent consecutive QSEs, the Discharger returns to Baseline Status. A Discharger that submits an Industrial Activity BMPs Demonstration but has not installed additional BMPs that are expected to eliminate future NAL exceedance(s) will remain with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

ii. Non-Industrial Pollutant Source Demonstration

A Non-Industrial Pollutant Source Demonstration is for a Discharger to demonstrate that the pollutants causing the NAL exceedances are not related to industrial activities conducted at the facility, and additional BMPs at the facility will not contribute to the reduction of pollutant concentrations.

Dischargers including the Non-Industrial Pollutant Demonstration in their Level 2 ERA Technical Report shall have a QISP determine that the sources of non-industrial pollutants in storm water discharges are not from industrial activity or natural background sources within the facility.

Sources of non-industrial pollutants that are discharged separately and are not comingled with storm water associated with industrial activity are not considered subject to this General Permit's requirements. When pollutants from non-industrial sources are comingled with storm water associated with industrial activity, the Discharger is responsible for all the pollutants in the combined discharge unless the technical report clearly demonstrates that the NAL exceedances due to the combined discharge are solely attributable to the non-industrial sources. The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance. In most cases, the Non-Industrial Pollutant Source Demonstration will contain sampling data and analysis distinguishing the pollutants from non-industrial sources from the pollutants generated by industrial activity.

Once the Level 2 ERA Technical Report, including this demonstration is certified and submitted via SMARTS, the Discharger has satisfied all the requirements necessary for that pollutant for ERA purposes. A Discharger that submits a Non-Industrial Pollutant Demonstration remains with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

iii. Natural Background Pollutant Source Demonstration

The benchmark monitoring schedule in section 6.2.1.2 of the 2008 MSGP allows a Discharger to determine that the exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background. A Discharger making this determination is not required to perform corrective

action or additional benchmark monitoring providing that the other 2008 MSGP requirements are met. The 2008 MSGP Fact Sheet requires Dischargers to include in the following in the SWPPP: 1) map(s) showing the reference site location, facility, available land cover information, reference site and test site elevation, available geology and soil information for reference and test sites, photographs showing site vegetation, site reconnaissance survey data and records. This General Permit requires this information to be included in the Natural Background Pollutant Source Demonstration in Section XII.D.2.c.

The Natural Background Pollutant Source Demonstration in this General Permit is for a Discharger that can demonstrate that pollutants causing the NAL exceedances are not related to industrial activities conducted at the facility, and are solely attributable to the presence of those pollutants in natural background. The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL exceedance. Natural background pollutants include those substances that are naturally occurring in soils or groundwater that have not been disturbed by industrial activities. Natural background pollutants do not include legacy pollutants from earlier activity on a site, or pollutants in run-on from neighboring sources which are not naturally occurring. Dischargers are not required to reduce concentrations for pollutants in the effluent caused by natural background sources if these pollutants concentrations are not increased by industrial activity.

The 2008 MSGP Fact Sheet states that the background concentration of a pollutant in runoff from a non-human impacted reference site in the same watershed must be determined by evaluation of ambient monitoring data or by using information from a peer-reviewed publication or a local, state, or federal government publication specific to runoff or storm water in the immediate region. Studies that are in other geographic areas, or are clearly based on different topographies or soils, are not sufficient to meet this requirement. When such data is not available, and there are no known sources of the pollutant, the background concentration should be assumed to be zero.

In cases where historic monitoring data from a site are used for generating a natural background concentration, and the site is no longer accessible or able to meet reference site acceptability criteria, the Discharger must submit documentation (e.g., historic land use maps) indicating the site did meet reference site criteria (such as indicating the absence of human activity) during the time data collection occurred.

Once the Level 2 ERA Technical Report, including a Natural Background Demonstration meeting the conditions in Section XII.D.2.c of this General Permit is certified and submitted via SMARTS, the Discharger is no longer responsible for the identified background parameters(s) in the corresponding drainage area(s). A Discharger that submits this type of demonstration will

remain with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

c. **Level 2 ERA Implementation Extension**

The State Water Board recognizes that there may be circumstances that make implementation of all necessary actions required in the Level 2 ERAs by the permitted due dates infeasible. In such circumstances a Discharger may request additional time by submitting a Level 2 ERA Implementation Extension. The Level 2 ERA Implementation Extension will automatically allow Dischargers up to an additional six (6) months to complete the tasks identified in the Level 2 ERA Action Plans while remaining in compliance with this General Permit. The Level 2 ERA Implementation Extension is subject to Regional Water Board review. If additional time is needed beyond the initial six (6) month extension, a second Level 2 ERA Implementation Extension may be submitted but is not effective unless it is approved by the Water Board.

L. Inactive Mining Operations

Inactive mining sites may need coverage under this General Permit. Inactive mining operations are mining sites, or portions of sites, where mineral mining and/or dressing occurred in the past with an identifiable Discharger (owner or operator), but are no longer actively operating. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials. A Discharger has the option to certify and submit via SMARTS that its inactive mining operations meet the conditions for an Inactive Mining Operation Certification in Section XIII of this General Permit. The Discharger must have a SWPPP for an inactive mine signed (wet signature with license number) by a California licensed professional engineer. The Inactive Mining Operation Certification in this General Permit is in lieu of performing certain identified permit requirements. This General Permit requires an annual inspection of an inactive mining site and an annual re-certification of the SWPPP. Any significant updates to the SWPPP shall be signed (wet signature and license number) by a California license professional engineer. The Discharger must certify and submit via SMARTS any significantly revised SWPPP within 30 days of the revision(s)

M. Compliance Groups and Compliance Group Leaders

Group Monitoring, as defined in the previous permit, has been eliminated in this General Permit and replaced with a new compliance option called Compliance Groups. The Compliance Group option differs from Group Monitoring as it requires (1) all Dischargers participating in a Compliance Group (Compliance Group Participants) sample two QSEs each year, (2) the Compliance Group Leader to inspect each Participant's facility within each reporting year, (3) the Compliance Group Leader must complete a State Water Board sponsored or approved training program for Compliance Group Leaders, and (4) the Compliance Group Leader to prepare Consolidated Level 1 ERA Reports, and individual Level 2 ERA Action Plans and Technical Reports. The Compliance Group option is similar to Group Monitoring as it retains a mechanism that

allows Dischargers of the same industry type to comply with this General Permit through shared resources in a cost saving manner.

This General Permit emphasizes sampling and analysis as a means to evaluate BMP performance and overall compliance, and the significantly reduced sampling requirements previously afforded to Group Monitoring Participants (two samples within a five-year period) does not provide the necessary information to achieve these goals. However, a moderate reduction in sampling requirements is included as an incentive for Compliance Group Participants while concurrently requiring sufficient individual facility sampling data to determine compliance. A Compliance Group Leader is required to provide the necessary sampling training and guidance to the Compliance Group Participants. This additional training requirement will increase sampling data quality that will offset the reduced sampling frequency for Compliance Groups.

Participation in Compliance Groups will provide additional cost savings for Dischargers in the preparation of the Consolidated Level 1 ERA Reports, and for Compliance Group Leader assistance in preparing the Level 2 ERA Action Plans and the individual Level 2 ERA Technical Reports. It is likely that many of the pollutant sources causing NAL exceedances, and the corresponding BMP cost evaluation and selection, when appropriate, will overlap for groups of facilities in a similar industry type. When these overlaps occur, a Compliance Group Leader should be able to more efficiently evaluate the pollutant sources and BMP options, and prepare the necessary reports.

The State Water Board believes that it is necessary for Compliance Group Leaders to have a higher level of industrial storm water compliance and training experience than the expectations of a QISP. Many stakeholder comments on this General Permit suggested various certifications to provide this higher level of experience; however, the State Water Board believes a process similar to the Trainer of Record process for the Construction General Permit training program will develop Compliance Group Leaders with the appropriate level of experience to fulfill the necessary qualifications.

The intent of the Compliance Groups is to have only one or a small number of Compliance Groups per industrial sector. The process for becoming a QISP trainer and/or a Compliance Group Leader is purposely similar to the Construction General Permit trainer of record process for consistency within storm water regulatory leaders. The formal process to qualify to conduct trainings for QISPs and/or to be a Compliance Group Leader will include the submittal of a statement of qualifications for review, a review fee, completion of an exam and training specific to this role. For more information see the Construction General Permit trainer of record process: <http://www.casqa.org/TrainingandEducation/ConstructionGeneralPermitTrainingQSDQSPToR/tabid/205/Default.aspx>

After the initial Compliance Group registration, Compliance Group Leaders are required to submit and maintain their list of Compliance Group Participants via SMARTS. There are no additional administrative documents required. The previous permit required group leaders to provide annual group evaluation reports and a letter of intent to continue group monitoring. The State Water Board found these items to be resource intensive and placed an unnecessary administrative burden on group leaders. The

Compliance Group requirements in this General Permit reduces the administrative burden on both the Compliance Group Leaders and Water Board staff.

The State Water Board's intent for the effluent data, BMP selection, cost, and performance information, and other industry specific information provided in Compliance Group reports is for evaluation of sector-specific permitting approaches and the use of NALs in the next reissuance of this General Permit.

N. Annual Evaluation

Federal regulations require NPDES industrial storm water Dischargers to evaluate their facility and SWPPP annually. Typically this requires an inspection of the facility to ensure: (1) the SWPPP site map is up to date, (2) control of all potential pollutant sources is included in the SWPPP, and (3) sampling data and visual observation records are used to evaluate if the proper BMPs are being implemented. As Dischargers are required to conduct monthly visual observation that partially overlap with the actions required by the annual evaluation requirements, Dischargers may perform the annual evaluation inspection concurrent with a monthly visual observation.

O. Annual Report

All Dischargers shall certify and submit via SMARTS an Annual Report no later than July 15 following each reporting year. The reporting requirements for this General Permit's Annual Report are streamlined in comparison to the previous permit. The Annual Report now consists of two primary parts: (1) a compliance checklist indicating which permit requirements were completed and which were not (e.g., a Discharger who completes the required sampling of four QSEs during the reporting year, versus a Discharger who is only able to sample two QSEs during the reporting year), and (2) an explanation for items on the compliance checklist that were determined incomplete by the Discharger. Unlike the previous permit, the Annual Report does not require Dischargers to provide the details of each visual observation (such as name of observer, time of observation, observation summary, corrective actions, etc.) or provide the details of the Annual Comprehensive Site Evaluation. Dischargers, however, continue to be required to retain those records and have them available upon request. The Annual Report is further simplified through the immediate electronic reporting via SMARTS of sampling data and copies of the original laboratory reports instead of such information being included in the Annual Report.

P. Conditional Exclusion - No Exposure Certification (NEC) Requirements

This General Permit's conditional exclusion requirements are similar to the requirements provided in 40 C.F.R. section 122.26(g)(3). Clarifications were added in this General Permit, however, to the types of "storm resistant shelters" and the periods when "temporary shelters" may be used in order to avert regulatory confusion. California does not have operating coal power plants, which are a major contributor to acid rain elsewhere in the United States. California does have nonpoint sources or atmospheric deposition that may locally impact the pH of the rain water, however this is

not categorized as acid rain as referred to by the U.S. EPA for the NEC coverage requirements. The No Exposure Guidance Document¹⁵ developed by the U.S. EPA mentions acid rain as a potential source of contaminants to consider for NEC coverage. The acid rain leachate language was not included in this General Permit's Appendix 2 to clarify that Dischargers may qualify for NEC coverage, even if the facility has metal buildings or structures.

The Discharger shall certify and submit complete PRDs for NEC coverage via SMARTS. Based upon the State Water Board's experience with reissuing and implementing the 2009 Construction General Permit, the transition for existing Dischargers to register under this new General Permit is staff resource intensive. The State Water Board staff is available to assist Dischargers requiring assistance with enrolling under this General Permit, both for NOI coverage and NEC coverage. The State Water Board has also experienced that more time is needed for its staff to assist Dischargers registering for NEC coverage. To provide better customer service to all Dischargers, three months have been added to the NEC coverage PRD submittal schedule for new and existing Dischargers (Section II.B.4 of this General Permit, extending the NEC coverage registration date to October 1, 2015).

Dischargers must annually inspect their facility to ensure continued compliance with NEC requirements, and annually re-certify and submit an NEC via SMARTS. Based on its regulatory experience, the State Water Board has determined that a five-year NEC re-certification period is inadequate. A significant percentage of facilities may revise, expand, or relocate their operations in any given year. Furthermore, a significant percentage of facilities experience turnover of staff knowledgeable of the NEC requirements and limitations. Accordingly, the State Water Board believes that annual NEC evaluation and re-certification requirements are appropriate to continually assure adequate program compliance.

Q. Special Requirements - Plastic Materials

Water Code section 13367 requires the Water Boards to implement measures that control discharges of preproduction plastic from point and nonpoint sources. The State Water Board intends to use this General Permit to regulate discharges of preproduction plastics from areas of facilities that are subject to this General Permit. A Regional Water Board may designate facilities, or areas of facilities, that are not otherwise subject to this General Permit, pursuant to Section XIX.F. For example, a Regional Water Board may designate Plastic Materials handling areas of a transportation facility that are not associated with vehicle maintenance as requiring coverage under this General Permit.

Preproduction plastics used by the plastic manufacturing industry are small in size and have the potential to mobilize in storm water. Preproduction plastic washed into storm water drains can move to waters of the United States where it contributes to the growing problem of plastic debris in inland and coastal waters. Water Code section 13367

¹⁵ U.S. EPA. Guidance Manual for Conditional Exclusion from Storm Water Permitting Based On "No Exposure" of Industrial Activities to Storm Water. Web. June 2000. < <http://www.epa.gov/npdes/pubs/noxguide.pdf>>. [as of January 31, 2014].

outlines five mandatory BMPs that are required for all facilities that handle preproduction plastic. These mandatory BMPs are included in this General Permit.

The State Water Board has received comments regarding the Water Code requirements for Plastics Facilities to install a containment system for on-site storm drain locations that meet 1mm capture and 1-year 1-hour storm flow requirement standards. As a result, this General Permit includes the option under Water Code section 13367 that allows a plastics facility to propose an alternative BMP or suite of BMPs that can meet the same performance and flow requirements as a 1mm capture and 1-year 1-hour storm flow containment system standards. These alternative BMPs are to be submitted to the Regional Water Board for approval. This alternative is intended to allow the facility to develop BMPs that focus on pollution prevention measures that can perform as well as, or better than, the containment system otherwise required by the statute.

The State Water Board also includes two additional containment system alternatives in this General Permit that are considered to be equivalent to, or better than, the 1mm capture and 1-year 1-hour storm flow requirements:

- An alternative allowing plastic facilities to implement a suite of eight BMPs addressing the majority of potential sources of plastic discharges. This suite of BMPs is based on industry and U.S. EPA recommendations and Water Board experience with storm water inspections, violations, and enforcement cases throughout California.
- An alternative allowing a facility to operate in a manner such that all preproduction plastic materials are used indoors and pose no potential threat for discharge off-site. The facility is required to notify the Regional Water Board of the intent to seek this exemption and of any changes to the facility or operations that may disqualify the facility for the exemption. The exemption may be revoked by the Regional Water Board at any time.

Plastics facilities may use preproduction plastic materials that are less than 1mm in size, or produce materials, byproducts, or waste that is smaller than 1mm in size. These small size materials will pass through the 1mm capture containment system required by Water Code section 13367. Plastics facilities with sub-1mm materials must design a containment system to capture the smallest size material onsite with a 1-year 1-hour storm flow requirement, or propose alternative BMPs for Regional Water Board approval that meet the same requirements.

The remaining BMPs required by Water Code section 13367 are consistent with recommendations for handling and clean-up of preproduction plastics in the American Chemistry Council publication, *Operation Clean Sweep* and U.S. EPA's publication *Plastic Pellets in the Aquatic Environment: Sources and Recommendations*. The State Water Board believes that the entire approach in this General Permit for plastic materials is consistent with Water Code section 13367.

R. Regional Water Board Authorities

The Regional Water Boards retain discretionary authority over many issues that may arise from industrial discharges within their respective regions. This General Permit

emphasizes the authority of the Regional Water Boards over specific requirements of this General Permit that do not meet region-specific water quality protection regulatory needs.

S. Special Conditions: Requirements for Dischargers Claiming the “No Discharge” Option in the Notice of Non-Applicability

1. General

Entities that operate facilities generating storm water associated with industrial activities that is not discharged to waters of the United States are not required to obtain General Permit coverage. Entities that have contacted the Water Boards to inquire what is necessary to avoid permit coverage have received inconsistent guidance. This has resulted in regulatory inconsistency and uncertainty as to whether they are in compliance if their industry operates without General Permit coverage. Depending upon how each Regional Water Board handles “No Discharge” claims, some facilities with advanced containment design may be required to obtain General Permit coverage while other facilities with less advanced containment design may be allowed to operate without General Permit coverage. Some stakeholders have complained that this type of regulatory inconsistency puts some facilities at an economically-competitive disadvantage given the costs associated with permit compliance.

U.S. EPA regulations do not provide a design standard, definition, or guidance as to what constitutes “No Discharge.” Unlike Conditional Exclusion requirements, U.S. EPA regulations do not require an entity to submit technical justification or certification that a facility does not discharge to waters of the United States (U.S.). Therefore entities have previously been allowed to self-determine that their facility does not discharge to water of the U.S. when using any containment design standard. The State Water Board does not have available information showing that most entities have adequately performed hydraulic calculations to determine the frequency of discharge corresponding to their containment controls or have had these hydraulic calculations reviewed or completed by a California licensed professional engineer. Although U.S. EPA makes clear that an unpermitted discharge to waters of the U.S. is a violation of the CWA, this leaves regulatory agencies with the very difficult task of knowing when any given facility discharges in order to carry-out enforcement actions.

In 1998, the Water Code was amended to require entities who are requested by the Water Boards to obtain General Permit coverage, but that have a valid reason to not obtain General Permit coverage, to submit a Notice of Non-Applicability (NONA). (Wat. Code, § 13399.30, subd. (a)(2)). The NONA covers multiple reasons why an entity is not required to be permitted including (1) facility closure, (2) not the legal owner, (3) incorrect SIC code, (4) eligibility for the Conditional Exclusion (No Exposure Certification), and (5) the facility not discharging to water of the U.S. (“No Discharge”). The previous permit contained definitions, requirements, and guidance that entities may reference to determine whether they are eligible to select any of the first four NONA reasons for not obtaining General Permit coverage. However, neither the previous permit nor the Water Code provide definitions, requirements,

and guidance for entities to determine whether they are eligible to indicate “No Discharge” on the NONA as a reason for not obtaining General Permit coverage.

This General Permit addresses and resolves the issues discussed above by establishing consistent, statewide eligibility requirements in Section XX.C for entities submitting NONAs indicating “No Discharge.” When requested by the Water Boards to obtain General Permit coverage, entities must meet these “No Discharge” eligibility requirements or obtain General Permit coverage. The Water Boards retain enforcement authority if a facility subsequently discharges.

2. “No Discharge” Eligibility Requirements

The entity must certify submit in SMARTS a NONA Technical Report signed (wet signature and license number) by a California licensed professional engineer that contains the analysis and details of the containment design supporting the “No Discharge” eligibility determination. Because containment design will require hydraulic calculations, soil permeability analysis, soil stability calculations, appropriate safety factor consideration, and the application of other general engineering principles, state law requires the technical report to be signed (wet signature and license number) by a California licensed professional engineer.

The State Water Board has selected a containment design target that, as properly applied will result in few, if any, discharges. The facility must either be:

- a. Engineered and constructed to contain all storm water associated with industrial activities from discharging to waters of the United States. (The determination of what is a water of the United States can be complicated, and in certain circumstances, a discharge to groundwater that has a direct hydrologic connection to waters of the United States may constitute a discharge to a water of the United States.) Dischargers must base their information upon maximum historic precipitation event data (or series of events) from the nearest rain gauges as provided by the National Oceanic and Atmospheric Administration’s (NOAA) website, or other nearby precipitation data available from other government agencies. At a minimum, Dischargers must ensure that the containment design addresses maximum 1-hour, 24-hour, weekly, monthly, and annual precipitation data for the duration of the exclusion.

Design storm events are generally specified as a one-time expected hydraulic failure over a reoccurrence of years for a specified storm event. For example, if a design storm standard is a 100 year 24-hour event, then a facility’s containment system designed to contain the maximum volume of water would be expected to fall in 24 hours once every 100 years. Design standards vary dependent upon the regulatory program and the level of protection needed. Since California has considerable variations in climate/topography/soil conditions across the state, the “No Discharge” NONA eligibility requirements have been created so that each facility’s containment design can incorporate unique site specific circumstances to meet the requirement that discharges will not occur based upon past historical precipitation data. Facilities that are not designed to not meet the “No Discharge” eligibility requirements must obtain General Permit coverage.

- b. Located in basins or other physical locations that are not hydrologically connected to waters of the United States.

The State Water Board considered allowing Entities to review United States Army Corp of Engineer maps to determine, without a California licensed professional engineer, whether their facility location is within a basin and/or other physical location that is not hydrologically connected to waters of the United States. The State Water Board believes that this determination can be difficult in some cases, or is likely to be performed incorrectly. In addition, there may be areas of the state that are not hydrologically connected to waters of the United States, but are not on United States Army Corps of Engineer maps. Therefore, all “No Discharge” Technical Reports must be signed (wet signature and license number) by a California licensed professional engineer.

3. Additional Considerations

The “No Discharge” determination does not cover storm water containment systems that transfer industrial pollutants to groundwater. Entities must determine whether designs that incorporate infiltration may discharge to and contaminate groundwater. If there is a threat to groundwater, Entities must contact the Regional Water Boards prior to construction of infiltration design elements.

Entities that have not eliminated all discharges that are subject to General Permit coverage (NOI Coverage or NEC Coverage) are ineligible to submit NONAs indicating “No Discharge.”

ATTACHMENT A

FACILITIES COVERED BY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

1. Facilities Subject To Storm Water Effluent Limitations Guidelines, New Source Performance Standards, or Toxic Pollutant Effluent Standards Found in 40 Code of Federal Regulations, Chapter I, Subchapter N (Subchapter N):

Cement Manufacturing (40 C.F.R. Part 411); Feedlots (40 C.F.R. Part 412); Fertilizer Manufacturing (40 C.F.R. Part 418); Petroleum Refining (40 C.F.R. Part 419), Phosphate Manufacturing (40 C.F.R. Part 422), Steam Electric (40 C.F.R. Part 423), Coal Mining (40 C.F.R. Part 434), Mineral Mining and Processing (40 C.F.R. Part 436), Ore Mining and Dressing (40 C.F.R. Part 440), Asphalt Emulsion (40 C.F.R. Part 443), Landfills (40 C.F.R. Part 445), and Airport Deicing (40 C.F.R. Part 449).
2. Manufacturing Facilities:

Facilities with Standard Industrial Classifications (SICs) 20XX through 39XX, 4221 through 4225. (This category combines categories 2 and 10 of the previous general permit.)
3. Oil and Gas/Mining Facilities:

Facilities classified as SICs 10XX through 14XX, including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 Code of Federal Regulations. 434.11(1) because the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Acts authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations. Inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material; or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.
4. Hazardous Waste Treatment, Storage, or Disposal Facilities:

Hazardous waste treatment, storage, or disposal facilities, including any facility operating under interim status or a general permit under Subtitle C of the Federal Resource, Conservation, and Recovery Act.
5. Landfills, Land Application Sites, and Open Dumps:

Landfills, land application sites, and open dumps that receive or have received industrial waste from any facility within any other category of this Attachment; including facilities subject to regulation under Subtitle D of the Federal Resource, Conservation, and Recovery Act, and facilities that have accepted wastes from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance).
6. Recycling Facilities:

Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093.
7. Steam Electric Power Generating Facilities:

Any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.
8. Transportation Facilities:

Facilities with SICs 40XX through 45XX (except 4221-25) and 5171 with vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified under this Permit as associated with industrial activity.
9. Sewage or Wastewater Treatment Works:

Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge, that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program under 40 Code of Federal Regulations part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act.

ATTACHMENT B

ACRONYM LIST

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

ASBS	Areas of Special Biological Significance
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BPT	Best Practicable Control Technology Currently Available
CBPELSG	California Board for Professional Engineers, Land Surveyors and Geologists
DWQ	Division of Water Quality
ELGs	Effluent Limitations Guidelines and New Source Performance Standards
ERA	Exceedance Response Action
MS4	Municipal Separate Storm Sewer System
MSGP	Multi Sector General Permit
NAL	Numeric Action Level
NAICS	North American Industrial Classification System
NEC	No Exposure Certification
NEL	Numeric Effluent Limitation
NOI	Notice of Intent
NONA	Notice of Non Applicability
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NSWD	Non Storm Water Discharges
O&G	Oil and Grease
PRDs	Permit Registration Documents
QA/QC	Quality Assurance/Quality Control
QISP	Qualified Industrial Storm water Practitioner
QSE	Qualifying Storm Event
SIC	Standard Industrial Classification
SMARTS	Storm Water Multiple Application and Report Tracking System
SWPPP	Storm Water Pollution Prevention Plan
TBEL	Technology Based Effluent Limitation
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	United States Environmental Protection Agency
WDID	Waste Discharge Identification Number
WQBEL	Water Quality Based Effluent Limitation

ATTACHMENT C

GLOSSARY

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

Adoption Date April 1, 2014

Aerial Deposition

Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and time of year. Sources of airborne particulates include but are not limited to: dust, emissions from industrial processes, combustion products from the burning of wood and coal, combustion products associated with motor vehicle or non-road engine exhausts, and reactions to gases in the atmosphere. Deposition is the act of these materials being added to a landform.

Beneficial Uses

As defined in the California Water Code, beneficial uses of the waters of the state that may be protected against quality degradation, include but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Best Available Technology Economically Achievable (BAT)

As defined by United States Environmental Protection Agency (U.S. EPA), BAT is a technology-based standard established by the Clean Water Act (CWA) as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Best Conventional Pollutant Control Technology (BCT)

As defined by U.S. EPA, BCT is a technology-based standard for the discharge from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended sediment (TSS), fecal coliform, pH, oil and grease.

Best Professional Judgment (BPJ)

The method used by permit writers to develop technology-based NPDES permits conditions on a case-by-case basis using all reasonably available and relevant data.

GLOSSARY

Best Management Practices (BMPs)

Scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Chain of Custody

Form used to track sample handling as samples progress from sample collection to the laboratory. The chain of custody is also used to track the resulting analytical data from the laboratory to the client. Chain of custody forms can be obtained from an analytical laboratory upon request.

Debris

Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste.

Detected Not Quantifiable

A sample result that is between the Method Detection Limit (MDL) and the Minimum Level (ML).

Discharger

A person, company, agency, or other entity that is the operator of the industrial facility covered by this General Permit.

Drainage Area

The area of land that drains water, sediment, pollutants, and dissolved materials to a common discharge location.

Effective Date

The date, set by the State Water Resources Control Board (State Water Board), when at least one or more of the General Permit requirements take effect and the previous permit expires. This General Permit requires most of the requirements (such as SMARTs submittals, minimum BMPs, sampling and analysis requirements) to take effect on July 15, 2015.

Effluent

Any discharge of water either to the receiving water or beyond the property boundary controlled by the Discharger.

Effluent Limitation

Any numeric or narrative restriction imposed on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the United States, waters of the contiguous zone, or the ocean.

GLOSSARY

Erosion

The process by which soil particles are detached and transported by the actions of wind, water or gravity.

Erosion Control BMPs

Vegetation, such as grasses and wildflowers, and other materials, such as straw, fiber, stabilizing emulsion, protective blankets, etc., placed to stabilize areas of disturbed soils, reduce loss of soil due to the action of water or wind, and prevent water pollution.

Facility

A collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.

Field Measurements

Testing procedures performed in the field with portable field-testing kits or meters.

Good Housekeeping BMPs

BMPs designed to reduce or eliminate the addition of pollutants through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

Industrial Materials

Includes, but is not limited to: raw materials, recyclable materials, intermediate products, final products, by product, waste products, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge and that are used, handled, stored, or disposed in relation to a facility's industrial activity.

Method Detection Limit

The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

Minimum Level

The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Monitoring Implementation Plan

Planning document included in the Storm Water Pollution Prevention Plan (SWPPP). Dischargers are required to record information on the implementation of the monitoring requirements in this General Permit. The MIP should include relevant information on:

GLOSSARY

the Monthly Visual Observation schedule, Sampling Parameters, Representative Sampling Reduction, Sample Frequency Reduction, and Qualified Combined Samples.

Monitoring Requirements

Includes sampling and analysis activities as well as visual observations.

Natural Background

Pollutants including substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from previous activity at a facility, or pollutants in run-on from neighboring sources which are not naturally occurring.

New Discharge(r)

A facility from which there is a discharge, that did not commence the discharge at a particular site prior to August 13, 1979, which is not a new source as defined in 40 Code of Federal Regulations 122.29, and which has never received a finally effective NPDES permit for discharges at that site. See 40 Code of Federal Regulations 122.2.

Numeric Action Level (NAL) Exceedance

Annual NAL exceedance - the Discharger shall determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data) and compare this to the corresponding Annual NAL values in Table 2. For Dischargers using composite sampling or flow measurement in accordance with standard practices, the average concentrations shall be calculated in accordance with the U.S. EPA Guidance Manual for the Monitoring and Reporting Requirements of the NPDES Multi-Sector Storm Water General Permit.¹ An annual NAL exceedance occurs when the average of all the analytical results for a parameter from samples taken within a reporting year exceeds an annual NAL value for that parameter listed in Table 2 (or is outside the NAL pH range);

Instantaneous maximum NAL exceedance - the Discharger shall compare all sampling and analytical results from each distinct sample (individual or composite) to the corresponding Instantaneous maximum NAL values in Table 2. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G), or are outside of the instantaneous maximum NAL range (for pH).

Non Detect

Sample result is less than Method Detection Limit; Analyte being tested cannot be detected by the equipment or method.

¹ U.S. EPA. NPDES Storm Water Sampling Guidance Document. <<http://www.epa.gov/npdes/pubs/owm0093.pdf>>. [as of July 3, 2013]

GLOSSARY

Non-Storm Water Discharges (NSWDs)

Discharges that do not originate from precipitation events. Including but not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

Numeric Action Level (NAL)

Pollutant concentration levels used to evaluate if best management practices are effective and if additional measures are necessary to control pollutants. NALs are not effluent limits. The exceedance of an NAL is not a permit violation.

Operator

In the context of storm water associated with industrial activity, any party associated with an industrial facility that meets either of the following two criteria:

- a. The party has operational control over the industrial SWPPP and SWPPP specifications, including the ability to make modifications to those plans and specifications
- b. The party has day-to-day operational control of activities at the facility which are necessary to ensure compliance with a SWPPP for the facility or other permit conditions (e.g., authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

pH

Unit universally used to express the intensity of the acid or alkaline condition of a water sample. The pH of natural waters tends to range between 6.0 and 9.0, with neutral being 7.0.

Plastic Materials

Plastic Materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site.

Qualified Industrial Storm Water Practitioner (QISP)

Only required once a Discharger reaches Level 1 status, a QISP is the individual assigned to ensure compliance with this General Permit or to assist New Dischargers with determining coverage eligibility for discharges to an impaired water body. A QISP's responsibilities include implementing the SWPPP, performing the Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation), assisting in the preparation of Annual Reports, performing ERAs, and training appropriate Pollution Prevention Team members. The individual must take the appropriate state approved or sponsored training to be qualified. Dischargers shall ensure that the designated QISP is geographically located in an area where they will be able to adequately perform the permit requirements at all of the facilities they represent.

GLOSSARY

Qualifying Storm Event (QSE)

A precipitation event that:

- a. Produces a discharge for at least one drainage area; and
- b. Is preceded by 48 hours with no discharge from any drainage area.

Regional Water Board

Includes the Executive Officer and delegated Regional Water Board staff.

Runoff Control BMPs

Measures used to divert run-on from offsite and runoff within the site.

Run-on

Discharges that originate offsite and flow onto the property of a separate facility or property or, discharges that originate onsite from areas not related to industrial activities and flow onto areas on the property with industrial activity.

Scheduled Facility Operating Hours

The time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

Sediment

Solid particulate matter, both mineral and organic, that is in suspension, is being transported, or has been moved from its origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Sedimentation

Process of deposition of suspended matter carried by water, wastewater, or other liquids that flow by gravity. Control of sedimentation is accomplished by reducing the velocity of the liquid below the point at which it can transport the suspended material.

Sediment Control BMPs

Practices that trap soil particles after they have been eroded by rain, flowing water, or wind. Includes those practices that intercept and slow or detain the flow of storm water to allow sediment to settle and be trapped (i.e., silt fence, sediment basin, fiber rolls, etc.).

Sheet Flow

Flow of water that occurs overland in areas where there are no defined channels and where the water spreads out over a large area at a uniform depth.

Source

Any facility or building, property, road, or area that causes or contributes to pollutants in storm water.

GLOSSARY

Storm Water

Storm water runoff, snowmelt runoff, and storm water surface runoff and drainage.

Storm Water Discharge Associated With Industrial Activity

The discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant as identified in Attachment A of this General Permit. The term does not include discharges from facilities or activities excluded from the NPDES program. The term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials; manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 C.F.R. section 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 C.F.R. section 122.

Material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph) include those facilities designated under 40 C.F.R. section 122.26(a)(1)(v).

Structural Controls

Any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution.

Total Suspended Solids (TSS)

The measure of the suspended solids in a water sample including inorganic substances such as soil particles, organic substances such as algae, aquatic plant/animal waste, and particles related to industrial/sewage waste, etc. The TSS test measures the concentration of suspended solids in water by measuring the dry weight of a solid material contained in a known volume of a sub-sample of a collected water sample. Results are reported in mg/L.

GLOSSARY

Toxicity

The adverse response(s) of organisms to chemicals or physical agents ranging from mortality to physiological responses, such as impaired reproduction or growth anomalies.

Trade Secret

Information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (1) derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Turbidity

The cloudiness of water quantified by the degree to which light traveling through a water column is scattered by the suspended organic and inorganic particles it contains. The turbidity test is reported in Nephelometric Turbidity Units (NTU) or Jackson Turbidity Units (JTU).

Waters of the United States

Generally refers to surface waters, as defined for the purposes of the federal Clean Water Act.

Water Quality Objectives

Defined in the California Water Code as limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Water Quality Standards

Consists of beneficial uses, water quality objectives to protect those uses, an antidegradation policy, and policies for implementation. Water quality standards are established in Regional Water Quality Control Plans (Basin Plans) and statewide Water Quality Control Plans. U.S. EPA has also adopted water quality criteria (the same as objectives) for California in the National Toxics Rule and California Toxics Rule.

ATTACHMENT D

PERMIT REGISTRATION DOCUMENTS (PRDs)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

This Attachment provides an example of the information Dischargers are required to submit in the PRDs via the Storm Water Multiple Application and Report Tracking System (SMARTS). The actual PRD requirements are in Section II of this General Permit.

A. Who Must Submit PRDs

All Dischargers that operate facilities as described in Attachment A of this General Permit are subject to either Notice of Intent (NOI) or No Exposure Certification (NEC) Coverage and shall comply with the PRD requirements in this General Permit.

B. Who Is Not Required to Submit PRDs

Dischargers that operate facilities described below are not required to submit PRDs:

1. Facilities that are not described in Attachment A;
2. Facilities that are described in Attachment A but do not have discharges of storm water associated with industrial activity to waters of the United States; or,
3. Facilities that are already covered by an NPDES permit for discharges of storm water associated with industrial activity.

C. Annual Fees for NOI and NEC Coverage

Annual Fees for NOI and NEC coverage are established through regulations adopted by the State Water Board and are subject to change (see California Code of Regulations, title 23, section 2200 et seq.).

D. When and How to Apply

Dischargers proposing to conduct industrial activities subject to this General Permit must electronically certify and submit PRDs via the Storm Water Multiple Application

PERMIT REGISTRATION DOCUMENTS (PRDS)

Reporting and Tracking System (SMARTS)¹ no less than seven (7) days prior to the commencement of industrial activity. Existing Dischargers must submit PRDs for NOI coverage by July 1, 2015 or for NEC coverage by October 1, 2015.

E. PRD Requirements for NOI Coverage

1. Notice of Intent (NOI) and Signed Electronic Authorization Form.
2. Site Map (Section X.E of this General Permit).
3. Storm Water Pollution Prevention Plan (see Section X of this General Permit).

F. Description of PRDs for NOI Coverage

1. The Notice of Intent (NOI) requires the following information:

- a. Operator/Owner Information

Operator/Owner Company or Organization Name
 Contact First Name
 Contact Last Name
 Title
 Street Address
 Address Line 2
 City/State/Zip
 Phone (e.g. 999-999-9999)
 E-mail (e.g. abc@xyz.com)
 Federal Tax ID

- b. Facility Information

Facility Name
 WDID Number (if applicable)
 Contact First Name
 Contact Last Name
 Title
 Street Address
 Address Line 2
 City
 County
 Phone (e.g. 999-999-9999)

¹ The State Water Board has developed the SMARTS online database system to handle registration and reporting under this General Permit. More information regarding SMARTS and access to the database is available online at <https://smarts.waterboards.ca.gov>. [as of June 26, 2013].

PERMIT REGISTRATION DOCUMENTS (PRDS)

Emergency Phone (e.g. 999-999-9999)
 E-mail (abc@xyz.com)
 State/Zip CA
 Total Site Size (Acres)
 Latitude (Decimal degrees only, minimum 5 significant digits, e.g. 99.99999)
 Longitude (Decimal degrees only, minimum 5 significant digits, e.g. 99.99999)
 Total Percentage Site Imperviousness Area of Facility (Acres)
 Total Areas of Industrial Activities and Materials Exposed to Precipitation
 Primary SIC Code
 Secondary SIC Code
 Tertiary SIC Code
 Regional Water Board

c. Billing Information

Billing Name
 Contact First Name
 Contact Last Name
 Title
 Street Address
 Address Line 2
 City/State/Zip
 Phone (e.g. 999-999-9999)
 E-mail (e.g. abc@xyz.com)

d. Receiving Water Information

Does your facility's storm water flow directly or indirectly into waters of the US such as river, lake, ocean, etc. (check box for directly or indirectly)

- i. Indirectly to waters of the US
- ii. Storm drain system - Enter owner's name:
- iii. Directly to waters of the US (e.g., river, lake, creek, stream, bay, ocean, etc.)
- iv. Name of the receiving water: _____

PERMIT REGISTRATION DOCUMENTS (PRDS)

2. The Site Map(s) shall include the following Information:
 - a. The facility boundary;
 - b. Storm water drainage areas within the facility boundary;
 - c. Portions of any drainage area impacted by discharges from surrounding areas and flow direction of each drainage area;
 - d. On-facility surface water bodies;
 - e. Areas of soil erosion;
 - f. Location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.);
 - g. Location(s) of municipal storm drain inlets that may receive the facility's industrial storm water discharges and authorized Non-Storm Water Discharges (NSWDs);
 - h. Locations of storm water collection and conveyance systems and associated points of discharge, and direction of flow;
 - i. Any structural control measures (that affect industrial storm water discharges, authorized NSWDs, and run-on);
 - j. All impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;
 - k. Locations where materials are directly exposed to precipitation;
 - l. Locations where significant spills or leaks identified (Section X.G.1.d of this General Permit) have occurred;
 - m. Areas of industrial activity subject to this General Permit;
 - n. All storage areas and storage tanks;
 - o. Shipping and receiving areas;
 - p. Fueling areas;

PERMIT REGISTRATION DOCUMENTS (PRDS)

- q. Vehicle and equipment storage/maintenance areas;
 - r. Material handling and processing areas;
 - s. Waste treatment and disposal areas;
 - t. Dust or particulate generating areas;
 - u. Cleaning and material reuse areas; and,
 - v. Any other areas of industrial activity which may have potential pollutant sources.
3. The Storm Water Pollution Prevention Plan (SWPPP) must be prepared in accordance with Section X of this General Permit.
 4. A NOI Certification by the Discharger that all PRDs submitted are correct and true.
 5. SMARTS Electronic Authorization Form (Signed by any user authorized to certify and submit data electronically).

G. PRD Requirements for NEC Coverage

1. No Exposure Certification and Signed Electronic Authorization Form.
2. No Exposure Certification Checklist Consistent with Requirements in Section XVII.F.2 of this General Permit.
3. Current Site Map Consistent with Requirements in Section X.E of this General Permit.

H. Description of PRDs for NEC Coverage

1. The No Exposure Certification requires the following information:
 - a. Operator/Owner Information
 - Operator/Owner Name
 - Contact First Name
 - Contact Last Name
 - Title

PERMIT REGISTRATION DOCUMENTS (PRDS)

Street Address
 Address Line 2
 City/State/Zip
 Phone Ex (999-999-9999)
 E-mail (abc@xyz.com)
 Federal Tax ID

b. Facility Information

Facility Name
 Contact First Name
 Contact Last Name
 Title
 Street Address
 Address Line 2
 City
 County
 Phone Ex (999-999-9999)
 Emergency Phone Ex (999-999-9999)
 E-mail (abc@xyz.com)
 State/Zip CA
 Total Site Size (Acres)
 Latitude (Decimal degrees only, minimum 5 significant digits, Ex 99.99999)
 Longitude (Decimal degrees only, minimum 5 significant digits, Ex 99.99999)
 Percent of Site Imperviousness (%)
 Primary SIC Code
 Secondary SIC Code
 Tertiary SIC Code
 Regional Water Board

c. Billing Information

Billing Name (if different than Operator/Owner)
 Contact First Name
 Contact Last Name
 Title
 Street Address
 Address Line 2
 City/State/Zip
 Phone E.g. (999-999-9999)
 E-mail (e.g. abc@xyz.com)

d. SMARTS Electronic Authorization Form - Signed by any user authorized to certify and submit data electronically.

PERMIT REGISTRATION DOCUMENTS (PRDS)

- e. Certification by the Discharger that all PRDs submitted are correct and true and that the conditions of no-exposure have been met.
2. The NEC Checklist (Section XVII.F.2 of this General Permit) must be prepared to demonstrate that, based upon a facility inspection and evaluation, none of the following industrial materials or activities are, or will be in the foreseeable future, exposed to precipitation:
 - a. Activities such as using, storing, or cleaning industrial machinery or equipment, and areas with materials or residuals from these activities;
 - b. Materials or residuals on the ground or in storm water inlets from spills/leaks;
 - c. Materials or products from past industrial activity;
 - d. Material handling equipment (except adequately maintained vehicles);
 - e. Materials or products during loading/unloading or transporting activities;
 - f. Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);
 - g. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
 - h. Materials or products handled/stored on roads or railways owned or maintained by the Discharger;
 - i. Waste material (except waste in covered, non-leaking containers, e.g., dumpsters). Application or disposal of processed wastewater (unless already covered by an NPDES permit); and,
 - j. Particulate matter or visible deposits of residuals from roof stacks/vents evident in the storm water outflow.
 3. The Site Map(s) shall include the following information (see Section X.E of this General Permit):
 - a. The facility boundary;
 - b. Storm water drainage areas within the facility boundary;
 - c. Portions of any drainage area impacted by discharges from surrounding areas and flow direction of each drainage area;

PERMIT REGISTRATION DOCUMENTS (PRDS)

- d. On-facility surface water bodies;
- e. Areas of soil erosion;
- f. Location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.);
- g. Location(s) of municipal storm drain inlets that may receive the facility's industrial storm water discharges and authorized NSWDS;
- h. Locations of storm water collection and conveyance systems and associated points of discharge, and direction of flow;
- i. Any structural control measures (that affect industrial storm water discharges, authorized NSWDS, and run-on);
- j. All impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;
- k. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified (Section X.G.1.d of this General Permit) have occurred;
- l. Areas of industrial activity subject to this General Permit;
- m. All storage areas and storage tanks;
- n. Shipping and receiving areas;
- o. Fueling areas;
- p. Vehicle and equipment storage/maintenance areas;
- q. Material handling and processing areas;
- r. Waste treatment and disposal areas;
- s. Dust or particulate generating areas;
- t. Cleaning and material reuse areas; and,
- u. Any other areas of industrial activity which may have potential pollutant sources.

PERMIT REGISTRATION DOCUMENTS (PRDS)**I. Obtaining Coverage**

To obtain coverage under this General Permit PRDs must be included and completed. If any of the required items are missing, the PRD submittal is considered incomplete and will be rejected. Upon receipt of a complete PRD submittal, the State Water Board will process the application package in the order received and assign a (WDID) number.

J. Additional Information

The Water Board may require the submittal of additional information in SMARTS if required to determine the appropriate fee for the facility as specified by the fee regulations.

K. Questions

If you have any questions on completing the PRDs or about SMARTS, please email stormwater@waterboards.ca.gov or call (866) 563-3107.

ATTACHMENT E

LIST OF TOTAL MAXIMUM DAILY LOADS (TMDLS) APPLICABLE TO INDUSTRIAL STORM WATER DISCHARGERS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

The following table contains a list of Regional Water Board adopted and/or U.S. EPA established/approved TMDLs, as of the adoption date of this General Permit, that are applicable to industrial storm water Dischargers. TMDLs adopted/established after the effective date of the General Permit may, at the Water Boards discretion, be included in this General Permit. This General Permit may be reopened to amend TMDL-specific permit requirements in this Attachment E, or to incorporate new TMDLs adopted during the term of this General Permit that include requirements applicable to Dischargers covered by this General Permit.

Water Body	Pollutant
<u>San Francisco Bay Regional Water Quality Control Board</u>	
Napa River	Sediment
Sonoma Creek	Sediment
<u>Los Angeles Regional Water Quality Control Board</u>	
Santa Clara River Reach 3	Chloride
Santa Clara River	Nutrients
Los Angeles River	Metals
Los Angeles River	Nutrients
San Gabriel River	Metals and Selenium
Santa Monica Bay	Nearshore Debris
Machado Lake	Nutrient
Harbor Beaches of Ventura	Bacteria
Ballona Creek	Metals
Ballona Creek Estuary	Toxic Pollutants
Los Angeles Harbor	Bacteria
Marina del Rey Back Basins	Bacteria
Santa Clara River	Bacteria
Walker Creek,	Mercury
Oxnard Drain No. 3	Pesticides, PCBs ¹ and Sediment Toxicity
Long Beach City Beaches and Los Angeles River Estuary	Indicator Bacteria
Los Angeles and Long Beach Harbors	Toxic and Metals

¹ Polychlorinated biphenyls

**LIST OF TOTAL MAXIMUM DAILY LOADS (TMDLS) APPLICABLE TO
INDUSTRIAL STORM WATER DISCHARGERS**






Los Angeles Area Lakes	Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs
Santa Monica Bay	DDTs and PCBs
Machado Lake	Toxics
Colorado Lagoon	Pesticides, Polycyclic aromatic hydrocarbons, PCBs, and Metals
Calleguas Creek Watershed	Salts
Calleguas Creek Watershed	Metals and Selenium
Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria
Marina Del Rey Harbor-Back Basins	Copper, Lead, Zinc, and Chlordane, and Total PCBs
Los Cerritos Channel	Metals
<u>Santa Ana Regional Water Quality Control Board</u>	
San Diego Creek and Newport Bay	Toxic Pollutants
<u>San Diego Regional Water Quality Control Board</u>	
Chollas Creek	Diazinon
Chollas Creek	Copper, Lead, and Zinc
Los Peñasquitos Lagoon	Sediment
Rainbow Creek	Total Nitrogen and Total Phosphorus
Shelter Island Yacht Basin	Dissolved Copper
Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park in SD Bay	Indicator Bacteria
Twenty Beaches and Creeks	Indicator Bacteria

ATTACHMENT F

EFFLUENT LIMITATION GUIDELINES (ELGs)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

The following Parts of federal regulations at 40 Code of Federal Regulations Chapter I Subchapter N (Subchapter N) contain ELGs approved by US EPA for specific categories of industrial storm water discharges:

Point Source Category	ELGs ¹
Part 411 - Cement Manufacturing	 411.pdf
Part 418 - Fertilizer Manufacturing	 418.pdf
Part 419 - Petroleum Refining	 419.pdf
Part 422 - Phosphate Manufacturing	 422.pdf
Part 423 - Steam Electric Power Generating	 423.pdf

¹ The applicable ELGs are attached to this Attachment F. To view the attachments from an electronic (pdf) version of this Attachment F, left-click on the paper clip icon to the left of this pdf file to make the attachment window appear, then double-click on the icons of the attached pdf files. The attachments are also available on the Industrial Storm Water program pages of the State Water Resources Control Board's website (www.waterboards.ca.gov).

EFFLUENT LIMITATION GUIDELINES (ELGs)

Point Source Category	ELGs ²
Part 429 - Wetting of logs at wet deck storage areas	 429.pdf
Part 434 - Coal Mining	 434.pdf
Part 436 - Mineral Mining And Processing	 436.pdf
Part 440 - Ore Mining And Dressing	 440.pdf
Part 443 - Paving And Roofing Materials (Tars And Asphalt)	 443.pdf
Part 445 - Landfills	 445.pdf
Part 449 - Airport Deicing	 449.pdf

² The applicable ELGs are attached to this Attachment F. To view the attachments from an electronic (pdf) version of this Attachment F, left-click on the paper clip icon to the left of this pdf file to make the attachment window appear, then double-click on the icons of the attached pdf files. The attachments are also available on the Industrial Storm Water program pages of the State Water Resources Control Board's website (www.waterboards.ca.gov).

EFFLUENT LIMITATION GUIDELINES (ELGs)

New Source Performance Standards

New source performance standards (NSPS) represent the best available demonstrated control technology standards. US EPA has established NSPS guidelines for the industries found in the Table below. The intent of NSPS guidelines is to set effluent limitations that represent state-of-the-art treatment technology for new sources.³

Table 1 - Storm Water Specific NSPS Effluent Limitation Guidelines

Regulated Discharge	40 CFR Section	Multi Sector General Permit Sector	NSPS	Date New Source Data Established
Discharge resulting from spray down or intentional wetting of logs as wet deck storage areas	Part 429, Subpart I	A	Yes	1/26/81
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished products, by-products or waste products (SIC 2874)	Part 418, Subpart A	C	Yes	4/8/74
Runoff from asphalt emulsion facilities	Part 443, Subpart A	D	Yes	7/28/75
Runoff from materials storage piles at cement manufacturing facilities	Part 411, Subpart C	E	Yes	2/20/74
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, D	J	No	N/A
Runoff from hazardous waste and non-hazardous waste landfills	Part 445, Subparts A and B	K, L	Yes	2/2/00
Runoff from coal storage piles at steam electric generating facilities	Part 423	O	Yes	11/19/82 & 10/8/74
Discharges from primary airports with over 1,000 annual jet departures that conduct deicing operations.	Part 449, Subpart A	S	Yes	NA

³ New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced: (1) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or (2) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal as defined in 40 C.F.R section 122.26.

ATTACHMENT G

REQUIREMENTS FOR DISCHARGERS WHO HAVE BEEN GRANTED AN OCEAN PLAN EXCEPTION FOR DISCHARGES TO ASBS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

A. Areas of Special Biological Significance (ASBS)

1. ASBS are defined in the California Ocean Plan as “those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.”
2. The California Ocean Plan prohibits the discharge of waste to ASBS.
3. The California Ocean Plan authorizes the State Water Board to grant an exception to Ocean Plan provisions where the board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.
4. On March 20, 2012, the State Water Board adopted Resolution 2012-0012 (amended by Resolution 2012-0031 on June 19, 2012) which contained a general exception to the California Ocean Plan for discharges of storm water and non-point sources (ASBS Exception). This resolution also contains the Special Protections that are to be implemented for direct discharges to ASBS. Resolution 2012-0012 is hereby incorporated by reference and its requirements must be complied with by industrial storm water Dischargers discharging directly to ASBS.
5. This General Permit requires Dischargers who have been granted an Ocean Plan exception for discharges to ASBS to comply with the requirements contained in the Special Protections. These requirements are contained below.

B. ASBS Non-Storm Water Discharges

1. The term “ASBS Non-Storm Water Discharges” means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not comprised entirely of storm water.
2. Only the following ASBS Non-Storm Water Discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:

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- a. Discharges associated with emergency fire fighting operations.
 - b. Foundation and footing drains.
 - c. Water from crawl space or basement pumps.
 - d. Hillside dewatering.
 - e. Naturally occurring groundwater seepage via a storm drain.
 - f. Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.
3. Authorized ASBS Non- Storm Water Discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.
 4. At the San Clemente Island ASBS, discharges incidental to military training and research, development, test, and evaluation operations are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed in the two military closure areas in the vicinity of Wilson Cove and Castle Rock. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.
 5. At the San Nicolas Island and Begg Rock ASBS, discharges incidental to military research, development, testing, and evaluation of, and training with, guided missile and other weapons systems, fleet training exercises, small-scale amphibious warfare training, and special warfare training are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

C. ASBS Compliance Plan

1. State Water Board Resolution 2012-0012 grants an exception to the Ocean Plan's prohibition on discharges to ASBS (ASBS Exception) to applicants who were identified as Dischargers of industrial storm water to ASBS (ASBS Dischargers). Each ASBS Discharger shall specifically address the prohibition of ASBS Non-Storm Water Discharges and the requirement to maintain natural water quality for industrial storm water discharges to an ASBS in an ASBS Compliance Plan to be included in the ASBS Discharger's SWPPP. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board. The ASBS Compliance Plan shall include:

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- a. A map of surface drainage of storm water runoff, showing areas of sheet runoff and priority discharges, and a description of any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future. Priority discharges are those that pose the greatest water quality threat and which are identified as requiring installation of structural BMPs. The map shall also show the storm water conveyances in relation to other features such as service areas, sewage conveyances and treatment facilities, landslides, areas prone to erosion, and waste and hazardous material storage areas, if applicable. The SWPPP shall also include a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.
- b. A description of the measures by which all unauthorized ASBS Non-Storm Water Discharges (e.g., dry weather flows) has been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.
- c. A description of how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. Structural BMPs need not be installed if the Discharger can document to the satisfaction of the Executive Director that such installation would pose a threat to health or safety. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:
 - 1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or
 - 2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline date for the reduction is March 20, 2012 (the effective date of the ASBS Exception), except for those structural BMPs installed between January 1, 2005 and the adoption of these special protections. The reductions must be achieved and documented by March 20, 2018.
- d. A description of how the ASBS Discharger will address erosion and the prevention of anthropogenic sedimentation in the ASBS. The natural habitat conditions in the ASBS shall not be altered as a result of anthropogenic sedimentation.
- e. A description of the non-structural BMPs currently employed and planned in the future (including those for construction activities), and include an implementation schedule. The ASBS Compliance Plan shall also describe the structural BMPs, including any low impact development (LID) measures, currently employed and planned for higher threat discharges and include an

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implementation schedule. To control storm water runoff discharges (at the end-of-pipe) during a design storm, ASBS Dischargers must first consider using LID practices to infiltrate, use, or evapotranspiration storm water runoff on-site. The BMPs and implementation schedule shall be designed to ensure that natural water quality conditions in the receiving water are achieved and maintained by either reducing flows from impervious surfaces or reducing pollutant loading, or some combination thereof.

D. Reporting

If the results of the receiving water monitoring described in Section F. below (Sampling and Analysis Requirements) indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the ASBS Discharger shall submit a report to the State Water Board within 30 days of receiving the results.

1. The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents.
2. The report shall describe BMPs that are currently being implemented, BMPs that are identified in the SWPPP for future implementation, and any additional BMPs that may be added to the SWPPP to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.
3. Within 30 days of the approval of the report by the Executive Director, the ASBS Discharger shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.
4. As long as the ASBS Discharger has complied with the procedures described above and is implementing the revised SWPPP, the Discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.
5. Compliance with this section does not excuse violations of any term, prohibition, or special condition contained in the Special Protections of the ASBS Exception.

E. Compliance Schedule

1. As of March 20, 2012, all unauthorized ASBS Non-Storm Water Discharges (e.g., dry weather flow) were effectively prohibited.
2. By September 20, 2013, the Discharger shall submit a draft written ASBS Compliance Plan to the Executive Director that describes its strategy to comply with these special conditions, including the requirement to maintain natural water

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quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls (implementation schedule) to comply with these special conditions for inclusion in the Discharger's SWPPP.

3. By September 20, 2014, the Discharger shall submit the final ASBS Compliance Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring.
4. By September 20, 2013, any non-structural controls that are necessary to comply with these special conditions shall be implemented.
5. By March 20, 2018, any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.
6. By March 20, 2018, all Dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the Discharger must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See Flowchart at the end of this Attachment.
7. The Executive Director may only authorize additional time to comply with the special conditions 5 and 6, above if good cause exists to do so. Good cause means a physical impossibility or lack of funding

If a Discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the Discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in 5. or 6. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of these requirements. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the Discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The Discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The Discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

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- a. for municipalities, a demonstration of significant hardship to Discharger ratepayers, by showing the relationship of storm water fees to annual household income for residents within the Discharger's jurisdictional area, and the Discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or
- b. for other governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

F. Additional Requirements – Waterfront and Marine Operations

In addition to the above provisions, a Discharger with waterfront and marine operations shall comply with the following:

1. For discharges related to waterfront and marine operations, the Discharger shall develop a Waterfront and Marine Operations Management Plan (Waterfront Plan). This plan shall contain appropriate Management Measures/Practices to address nonpoint source pollutant discharges to the affected ASBS.
 - a. The Waterfront Plan shall contain appropriate Management Measures/Practices for any waste discharges associated with the operation and maintenance of vessels, moorings, piers, launch ramps, and cleaning stations in order to ensure that beneficial uses are protected and natural water quality is maintained in the affected ASBS.
 - b. For discharges from marinas and recreational boating activities, the Waterfront Plan shall include appropriate Management Measures, described in The Plan for California's Nonpoint Source Pollution Control Program, for marinas and recreational boating, or equivalent practices, to ensure that nonpoint source pollutant discharges do not alter natural water quality in the affected ASBS.
 - c. The Waterfront Plan shall include Management Practices to address public education and outreach to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The management practices shall include appropriate signage, or similar measures, to inform the public of the ASBS restrictions and to identify the ASBS boundaries.
 - d. The Waterfront Plan shall include Management Practices to address the prohibition against trash discharges to ASBS. The Management Practices shall include the provision of adequate trash receptacles for marine recreation areas, including parking areas, launch ramps, and docks. The plan shall also include appropriate Management Practices to ensure that the receptacles are

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- adequately maintained and secured in order to prevent trash discharges into the ASBS. Appropriate Management Practices include covering the trash receptacles to prevent trash from being windblown, staking or securing the trash receptacles so they don't tip over, and periodically emptying the receptacles to prevent overflow.
- e. The Discharger shall submit its Waterfront Plan to the State Water Board Executive Director by September 20, 2012. The Waterfront Plan is subject to approval by the State Water Board Executive Director. The plan must be fully implemented within by September 20, 2013.
2. The discharge of chlorine, soaps, petroleum, other chemical contaminants, trash, fish offal, or human sewage to ASBS is prohibited. Sinks and fish cleaning stations are point source discharges of wastes and are prohibited from discharging into ASBS. Anthropogenic accumulations of discarded fouling organisms on the sea floor must be minimized.
 3. Limited-term activities, such as the repair, renovation, or maintenance of waterfront facilities, including, but not limited to, piers, docks, moorings, and breakwaters, are authorized only in accordance with Chapter III.E.2 of the Ocean Plan.
 4. If the Discharger anticipates that the Discharger will fail to fully implement the approved Waterfront Plan within the 18 month deadline, the Discharger shall submit a technical report as soon as practicable to the Executive Director. The technical report shall contain reasons for failing to meet the deadline and propose a revised schedule to fully implement the plan.
 5. The State Water Board may, for good cause, authorize additional time to comply with the Waterfront Plan. Good cause means a physical impossibility or lack of funding.

If a Discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the Discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in Section F.1.e above. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Attachment. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the Discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The Discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality. The Discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

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- a. a demonstration of significant hardship by showing that the Discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.
- b. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

G. Sampling and Analysis Requirements

1. Monitoring is mandatory for all ASBS Dischargers to assure compliance with the Ocean Plan. Monitoring requirements include both: (1) Core Discharge Monitoring and (2) Ocean Receiving Water Monitoring (see Sections H. and I. below). The State and Regional Water Boards must approve sampling site locations and any adjustments to the monitoring programs. All ocean receiving water and reference area monitoring must be comparable with the Water Boards' Surface Water Ambient Monitoring Program (SWAMP).
2. Safety concerns: Sample locations and sampling periods must be determined considering safety issues. Sampling may be postponed upon notifying the Executive Director that hazardous conditions prevail.
3. Analytical Chemistry Methods: All constituents must be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, must be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

H. Core Discharge Monitoring Program

1. General sampling requirements for timing and storm size:

Runoff must be collected during a storm event that is greater than 0.1 inch and generates runoff, and at least 72 hours from the previously measurable storm event. Runoff samples shall be collected during the same storm and at approximately the same time when post-storm receiving water is sampled, and analyzed for the same constituents as receiving water and reference site samples as described in Section I. below.

2. Runoff flow measurements

- a. For industrial storm water outfalls in existence as of December 31, 2007, 18 inches (457mm) or greater in diameter/width (including multiple outfall pipes in combination having a width of 18 inches, runoff flows must be

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- measured or calculated, using a method acceptable to and approved by the Executive Director.
- b. This will be reported annually for each precipitation season to the Executive Director.
3. Runoff samples – storm events
- a. For outfalls equal to or greater than 18 inches (0.46m) in diameter or width:
 - 1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, if within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination; and 2) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.
 - b. For outfalls equal to or greater than 36 inches (0.91m) in diameter or width:
 - 1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, if within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination; and
 - 2) samples of storm water runoff shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals (provided at the end of this Attachment) for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates); and
 - 3) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.
 - 4) if an ASBS Discharger has no outfall greater than 36 inches, then storm water runoff from the applicant's largest outfall shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals (provided at the end of this Attachment) for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates).
 - c. For an applicant not participating in a regional integrated monitoring program [see below in Section I.3.] in addition to the sampling requirements in Section H.3.a. and b. above, a minimum of the two largest outfalls or 20 percent of the

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larger outfalls, whichever is greater, shall be sampled (flow weighted composite samples) at least three times annually during wet weather (storm event) and analyzed for all Ocean Plan Table A constituents, Table B constituents (Table A and B constituents are provided at the end of this Attachment) for marine aquatic life protection (except for toxicity, only chronic toxicity for three species shall be required), DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, and Ocean Plan indicator bacteria. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one (the largest) such discharge shall be sampled annually in each Region.

- d. The Executive Director may reduce or suspend core monitoring once the storm runoff is fully characterized. This determination may be made at any point after the discharge is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

I. Ocean Receiving Water and Reference Area Monitoring Program

1. In addition to performing the Core Discharge Monitoring Program in Section H. above, all ASBS Dischargers must perform ocean receiving water monitoring. In order to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS, ASBS Dischargers may choose either (1) an individual monitoring program, or (2) participation in a regional integrated monitoring program.
2. Individual Monitoring Program: The requirements listed below are for those ASBS Dischargers who elect to perform an individual monitoring program to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within the affected ASBS. In addition to Core Discharge Monitoring, the following additional monitoring requirements shall be met:
 - a. Three times annually, during wet weather (storm events), the receiving water at the point of discharge from the outfalls described in Section H.3. above shall be sampled and analyzed for Ocean Plan Table A constituents, Table B constituents (Table A and B constituents are provided at the end of this Attachment) for marine aquatic life, DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, salinity, chronic toxicity (three species), and Ocean Plan indicator bacteria.

The sample location for the ocean receiving water shall be in the surf zone at the point of discharges; this must be at the same location where storm water runoff is sampled. Receiving water shall be sampled prior to (pre-storm), and during (or immediately after) the same storm (post-storm). Post-storm sampling shall be during the same storm and at approximately the same time as when the runoff is sampled. Reference water quality shall also be

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- sampled three times annually and analyzed for the same constituents pre-storm and post-storm, during the same storm seasons when receiving water is sampled. Reference stations will be determined by the State Water Board's Division of Water Quality and the applicable Regional Water Board(s).
- b. Sediment sampling shall occur at least three times during every five (5) year period. The subtidal sediment (sand or finer, if present) at the discharge shall be sampled and analyzed for Ocean Plan Table B constituents (provided at the end of this Attachment) for marine aquatic life, DDT, PCBs, PAHs, pyrethroids, and OP pesticides. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed.
 - c. A quantitative survey of intertidal benthic marine life shall be performed at the discharge and at a reference site. The survey shall be performed at least once every five (5) year period. The survey design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The results of the survey shall be completed and submitted to the State Water Board and Regional Water Board at least six months prior to the end of the permit cycle.
 - d. Once during each five (5) year period, a bioaccumulation study shall be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The study design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*). Based on the study results, the Regional Water Board and the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add or modify additional test organisms (such as shore crabs or fish), or modify the study design appropriate for the area and best available sensitive measures of contaminant exposure.
 - e. Marine Debris: Representative quantitative observations for trash by type and source shall be performed along the coast of the ASBS within the influence of the ASBS Discharger's outfalls. The design, including locations and frequency, of the marine debris observations is subject to approval by the Regional Water Board and State Water Board's Division of Water Quality.
 - f. The monitoring requirements of the Individual Monitoring Program in this Section are minimum requirements. After a minimum of one (1) year of continuous water quality monitoring of the discharges and ocean receiving waters, the Executive Director of the State Water Board may require additional monitoring, or adjust, reduce or suspend receiving water and reference station monitoring. This determination may be made at any point

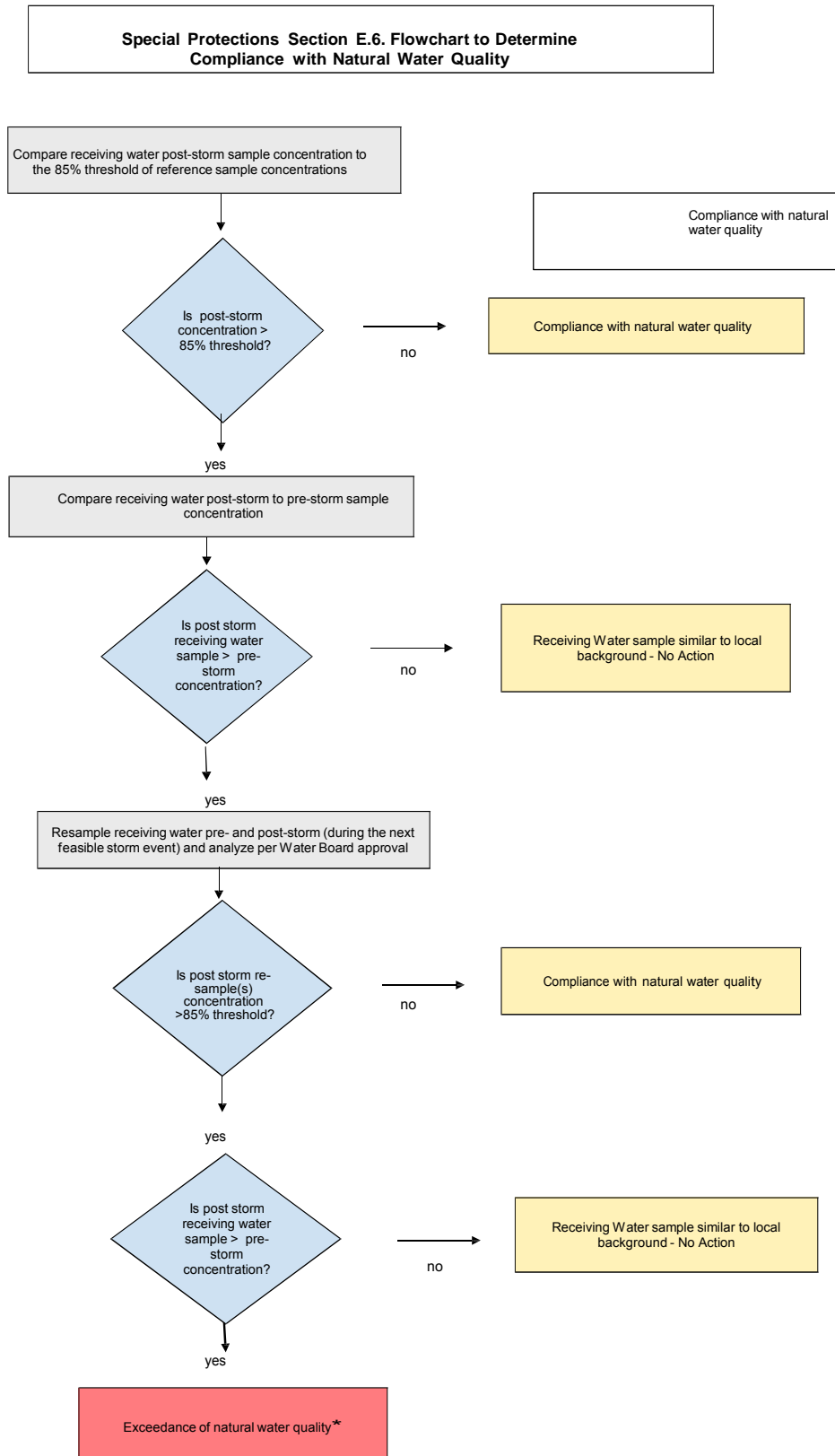
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- after the discharge and receiving water is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.
3. Regional Integrated Monitoring Program: ASBS Dischargers may elect to participate in a regional integrated monitoring program, in lieu of an individual monitoring program, to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS. This regional approach shall characterize natural water quality, pre- and post-storm, in ocean reference areas near the mouths of identified open space watersheds and the effects of the discharges on natural water quality (physical, chemical, and toxicity) in the ASBS receiving waters, and should include benthic marine aquatic life and bioaccumulation components. The design of the ASBS stratum of a regional integrated monitoring program may deviate from the otherwise prescribed individual monitoring approach (in Section I.2.) if approved by the State Water Board's Division of Water Quality and the Regional Water Boards.
 - a. Ocean reference areas shall be located at the drainages of flowing watersheds with minimal development (in no instance more than 10% development), and shall not be located in CWA Section 303(d) listed waterbodies or have tributaries that are 303(d) listed. Reference areas shall be free of wastewater discharges and anthropogenic non-storm water runoff. A minimum of low threat storm runoff discharges (e.g. stream highway overpasses and campgrounds) may be allowed on a case-by-case basis. Reference areas shall be located in the same region as the ASBS receiving water monitoring occurs. The reference areas for each Region are subject to approval by the participants in the regional integrated monitoring program, the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean reference water samples must be collected from each station, each from a separate storm during the same storm season that receiving water is sampled. A minimum of one reference location shall be sampled for each ASBS receiving water site sampled per responsible party. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
 - b. ASBS ocean receiving water must be sampled in the surf zone at the location where the runoff makes contact with ocean water (i.e. at "point zero"). Ocean receiving water stations must be representative of worst-case discharge conditions (i.e. co-located at a large drain greater than 36 inches, or if drains greater than 36 inches are not present in the ASBS then the largest drain greater than 18 inches.) Ocean receiving water stations are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean receiving water samples must be collected during each storm season from each station, each from a separate

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- storm. A minimum of one receiving water location shall be sampled in each ASBS per responsible party in that ASBS. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.
- c. Reference and receiving water sampling shall commence during the first full storm season following the adoption of these special conditions, and post-storm samples shall be collected during the same storm event when storm water runoff is sampled. Sampling shall occur in a minimum of two storm seasons. For those ASBS Dischargers that have already participated in the Southern California Bight 2008 ASBS regional monitoring effort, sampling may be limited to only one storm season.
 - d. Receiving water and reference samples shall be analyzed for the same constituents as storm water runoff samples. At a minimum, constituents to be sampled and analyzed in reference and discharge receiving waters must include oil and grease, total suspended solids, Ocean Plan Table B metals (provided at the end of this Attachment) for protection of marine life, Ocean Plan PAHs, pyrethroids, OP pesticides, ammonia, nitrate, phosphates, and critical life stage chronic toxicity for three species. In addition, within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination shall be analyzed.

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* When an exceedance of natural water quality occurs, the Discharger must comply with Section D. Note, when sampling data is available, end-of-pipe effluent concentrations will be considered by the Water Boards in making this determination.

ASBS Monitoring

TABLE A
Monitoring Constituent List
(excerpted from California Ocean Plan dated 2009)

Constituent	Units
Grease and Oil	mg/L
Suspended Solids	Mg/L
Settleable Solids	mL/L
Turbidity	NTU
PH	

TABLE B
Monitoring Constituent List
(Excerpted from California Ocean Plan dated 2009)

Constituent	Units
Arsenic	µg/L
Cadmium	µg/L
Chromium	µg/L
Copper	µg/L
Lead	µg/L
Mercury	µg/L
Nickel	µg/L
Selenium	µg/L
Silver	µg/L
Zinc	µg/L
Cyanide	µg/L
Total Chlorine Residual	µg/L
Ammonia (as N)	µg/L
Acute Toxicity	TUa
Chronic Toxicity	TUc
Phenolic Compounds (non-chlorinated)	µg/L
Chlorinated Phenolics	µg/L
Endosulfan	µg/L
Endrin	µg/L
HCH	µg/L

Analytical Chemistry Methods: All constituents shall be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

ATTACHMENT H

SAMPLE COLLECTION AND HANDLING INSTRUCTIONS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

For more detailed guidance, Dischargers should refer to the U.S. EPA's "Industrial Stormwater Monitoring and Sampling Guide," dated March 2009, available at: http://www.epa.gov/npdes/pubs/msgp_monitoring_guide.pdf and the "NPDES Storm Water Sampling Guidance Document," dated July 1992, available at: <http://www.epa.gov/npdes/pubs/owm0093.pdf>.

1. Identify the sampling parameters required to be tested and the number of storm water discharge points that will be sampled. Request the analytical testing laboratory to provide the appropriate number and type of sample containers, sample container labels, blank chain of custody forms, and sample preservation instructions.
2. Determine how samples will be transported to the laboratory. The testing laboratory should receive samples within 48 hours of the physical sampling (unless otherwise required by the laboratory). The Discharger may either deliver the samples to the laboratory, arrange for the laboratory to pick up the samples, or overnight ship the samples to the laboratory. All sample analysis shall be done in accordance with 40 Code of Federal Regulations part 136. Samples for pH have a holding time of 15 minutes.¹
3. Qualified Combined Samples shall be combined by the laboratory and not by the Discharger. Sample bottles must be appropriately labeled to instruct the laboratory on which samples to combine.
4. Unless the Discharger can provide flow weighted information, all combined samples shall be volume weighted.
5. For grab samples, use only the sample containers provided by the laboratory to collect and store samples. Use of any other type of containers may contaminate samples.
6. For automatic samplers that are not compatible with bottles provided by the laboratory, the Discharger is required to send the sample container included with the automatic sampler to the laboratory for analysis.

¹ 40 C.F.R. section 136.3, Table II - Required Containers, Preservation Techniques, and Holding Times.

SAMPLE COLLECTION AND HANDLING INSTRUCTIONS

7. The Discharger can only use automatic sampling device to sample parameters that the device is designed to. For pH, Dischargers can only use automatic sampling devices with the ability to read pH within 15 minutes of sample collection.
8. The Discharger is prohibited from using an automatic sampling device for Oil and Grease, unless the automatic sampling device is specifically designed to sample for Oil and Grease.
9. To prevent contamination, do not touch inside of sample container or cap or put anything into the sample containers before collecting storm water samples.
10. Do not overfill sample containers. Overfilling can change the analytical results.
11. Tightly screw on the cap of each sample container without stripping the threads of the cap.
12. Complete and attach a label for each sample container. The label shall identify the date and time of sample collection, the person taking the sample, and the sample collection location or discharge point. The label should also identify any sample containers that have been preserved.
13. Carefully pack sample containers into an ice chest or refrigerator to prevent breakage and maintain temperature during shipment. Remember to place frozen ice packs into shipping containers. Samples should be kept as close to 4 degrees Celsius (39 degrees Fahrenheit) as possible until arriving to the laboratory. Do not freeze samples.
14. Complete a Chain of Custody form for each set of samples. The Chain of Custody form shall include the Discharger's name, address, and phone number, identification of each sample container and sample collection point, person collecting the samples, the date and time each sample container was filled, and the analysis that is required for each sample container.
15. Upon shipping/delivering the sample containers, obtain both the signatures of the persons relinquishing and receiving the sample containers.
16. Dischargers shall designate and train personnel to collect, maintain, and ship samples in accordance with the sample protocols and laboratory practices.
17. Refer to Table 1 in the General Permit for test methods, detection limits, and reporting units.
18. All sampling and sample preservation shall be in accordance with 40 Code of Federal Regulations part 136 and the current edition of "Standard Methods for

SAMPLE COLLECTION AND HANDLING INSTRUCTIONS

the Examination of Water and Wastewater” (American Public Health Association). All monitoring instruments and equipment (including Discharger field instruments for measuring pH or specific conductance if identified as an additional sampling parameter) shall be calibrated and maintained in accordance with manufacturers’ specifications to ensure accurate measurements. All laboratory analyses shall be conducted according to approved test procedures under 40 Code of Federal Regulations part 136, unless other test procedures have been specified by the Regional Water Quality Control Board. All metals shall be reported as total metals. Dischargers may conduct their own field analysis of pH (or specific conductance if identified as an additional sampling parameter) if the Discharger has sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform the field analysis. With the exception of field analysis conducted by Dischargers for pH (or specific conductance if identified as an additional sampling parameter), all analyses shall be sent to and conducted at a laboratory certified for such analyses by the California Department of Public Health. Dischargers are required to report to the Water Board any sampling data collected more frequently than required in this General Permit (Section XXI.J.2)

APPENDIX 1

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CHECKLIST

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

FACILITY NAME: _____

Waste Discharge Identification (WDID) #: _____

	FACILITY CONTACT	Consultant/Qualified Industrial Storm Water Practitioner (QISP)
Name		
Title		
Company		
Street Address		
City, State		
Zip		

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Signed Certification (Section II.A)			
Pollution Prevention Team (Section X.D.1)			
Existing Facility Plans (Section X.D.2)			
Site Map(s) (Section X.E)			
Facility boundaries (Section X.E.3.a)			
Drainage areas (Section X.E.3.a)			
Direction of flow (Section X.E.3.a)			
On-facility water bodies (Section X.E.3.a)			

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CHECKLIST**

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Areas of soil erosion (Section X.E.3.a)			
Nearby water bodies (Section X.E.3.a)			
Municipal storm drain inlets (Section X.E.3.a)			
Points of discharge (Section X.E.3.b)			
Sampling Locations (Section X.E.3.b)			
Structural control measures (Section X.E.3.c)			
Impervious areas (Section X.E.3.d)			
Location of Directly Exposed Materials (Section X.E.3.e)			
Locations of significant spills and leaks (Section X.E.3.e)			
Areas of Industrial Activity (Section X.E.3.f)			
Areas of industrial activity (Section X.E.3.f)			
Storage areas/storage tanks (Section X.E.3.f)			
Shipping and receiving areas (Section X.E.3.f)			
Fueling areas (Section X.E.3.f)			
Vehicle and equipment storage/maintenance (Section X.E.3.f)			
Material handling/processing (Section X.E.3.f)			
Waste treatment/disposal (Section X.E.3.f)			
Dust or particulate generation (Section X.E.3.f)			
Cleaning and material reuse (Section X.E.3.f)			

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CHECKLIST**

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Other areas of industrial activities (Section X.E.3.f)			
List of Industrial Materials (Section X.F)			
Storage location			
Quantity			
Frequency			
Receiving and shipping location			
Quantity			
Frequency			
Handling location			
Quantity			
Frequency			
Potential Pollution Sources (Section X.G)			
Description of Potential Pollution Sources (Section X.G.1)			
Industrial processes (Section X.G.1.a)			
Material handling and storage areas (Section X.G.1.b)			
Dust & particulate generating activities (Section X.G.1.c)			
Significant spills and leaks (Section X.G.1.d)			
Non-storm water discharges (Section X.G.1.e)			
Erodible surfaces (Section X.G.1.f)			
Assessment of Potential Pollutant Sources (Section X.G.2)			
Narrative assessment of likely sources of pollutants (Section X.G.2.a)			
Narrative assessment of likely pollutants present in storm water discharges (Section X.G.2.a)			
Identification of additional BMPs Section X.G.2.b)			

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CHECKLIST**

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Identification of drainage areas with no exposure (Section X.G.2.c)			
Identification of additional parameters (Section X.G.2.d)			
Storm Water Best Management Practices (Section X.H)			
Minimum BMPs (Section X.H.1)			
Good housekeeping (Section X.H.1.a)			
Preventative maintenance (Section X.H.1.b)			
Spill response (Section X.H.1.c)			
Material handling and waste management (Section X.H.1.d)			
Erosion and sediment controls (Section X.H.1.e)			
Employee training program (Section X.H.1.f)			
Quality assurance and record keeping (Section X.H.1.g)			
Advanced BMPs (Section X.H.2)			
Implement advanced BMPs at the facility (Section X.H.2.a)			
Exposure Minimization BMPs (Section X.H.2.b.i)			
Storm Water containment and discharge reduction BMPS (Section X.H.2.b.ii)			
Treatment Control BMPs (Section X.H.2.b.iii)			
Other advance BMPs (Section X.H.2.b.iv)			
Temporary Suspension of Activities (Section X.H.3)			
BMPs necessary for stabilization of the facility (Section X.H.3)			

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CHECKLIST**

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
BMP Descriptions (Section X.H.4)			
Pollutant that a BMP reduces or prevents (Section X.H.4.a.i)			
Frequency of BMP implementation (Section X.H.4.a.ii)			
Location of BMP (Section X.H.4.a.iii)			
Person implementing BMP (Section X.H.4.a.iv)			
Procedures/maintenance/ instructions for BMP implementation (Section X.H.4.a.v)			
Equipment and tools for BMP implementation (Section X.H.4.a.vi)			
BMPs needing more frequent inspections (Section X.H.4.a.vii)			
Minimum BMP/applicable advanced BMPs not implemented at the facility (Section X.H.4.b)			
BMPs implemented in lieu of minimum or applicable advanced BMPs (Section X.H.4.c)			
BMP Summary Table (Section X.H.5)			
Monitoring Implementation Plan (Section X.I)			
Team members assisting in developing the MIP (Section X.I.1)			
Summary of visual observation procedures, locations, and details (Section X.I.2)			
Justifications if applicable for: Alternative discharge locations, Representative Sampling Reduction or, Qualified Combined Samples (Section X.I.3)			
Procedures for field instrument calibration (Section X.I.4)			

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CHECKLIST**

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Example of Chain of Custody (Section X.I.5)			
Annual Comprehensive Facility Compliance Evaluation (Section XV)			
Review of all visual inspection and monitoring records and sampling and analysis results conducted during the previous reporting year (Section XV.A)			
Visual inspection of all areas of industrial activity and associated potential pollutant sources (Section XV.B)			
Visual inspection of all drainage areas previously identified as having no-exposure to industrial activities and materials in accordance with the definitions in Section XVII (Section XV.C)			
Visual inspection of equipment needed to implement the BMPs (Section XV.D)			
Visual inspection of any structural and/or treatment control BMPs (Section XV.E)			
Review and assessment of all BMPs for each area of industrial activity and associated potential pollutant sources (Section XV.F)			
Assessment of other factors needed to complete the information described in Section XVI.B (Section XV.G)			

APPENDIX 2

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

This Attachment provides general guidance instructions and guidance for obtaining NEC coverage. The actual NEC requirements are primarily contained in Section XVII of this General Permit.

A. INSTRUCTIONS:

Who May File for NEC Coverage

Sections 301 and 402(p) of the Clean Water Act (CWA), and Sections 1311 and 1342(p) of 33 United States Code prohibit the discharge of storm water associated with industrial activity to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit. However, NPDES permit coverage is “conditionally excluded” for discharges of storm water associated with industrial activities (industrial storm water discharges) if the Discharger can certify that a condition of “No Exposure” exists at the industrial facility. A condition of “No Exposure” means that a Discharger’s industrial activities and materials are not exposed to storm water. Industrial storm water discharges from construction and land disturbance activities are ineligible for the NEC coverage. Dischargers who file valid NECs in accordance with these instructions are not required to implement Best Available Technology Economically Achievable /Best Conventional Pollutant Control Technology and comply with the Storm Water Pollution Prevention Plan (SWPPP) and monitoring requirements of this General Permit.

Obtaining and Maintaining NEC Coverage

A Discharger must electronically certify and submit NEC Permit Registration Documents (PRDs) via State Water Resources Control Board’s (State Water Board’s) Storm Water Multi-Application and Report Tracking System (SMARTS) to obtain NEC coverage. This conditional exclusion does not become effective until the PRDs are submitted and the annual fee is paid. Upon receipt of the annual fee, the Discharger will electronically receive an NEC acceptance notification via SMARTS, which will include a Waste Discharge Identification (WDID) number. A Discharger must maintain a condition of “No Exposure” at the facility for the conditional exclusion to remain applicable. The Discharger must annually electronically re-certify the NEC via SMARTS to confirm that the conditions of “no exposure” are being maintained. If conditions change resulting in the exposure of materials and activities to storm water, the Discharger must electronically certify and submit PRDs via SMARTS for Notice of Intent (NOI) coverage under the General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit).

Fees

First time NEC coverage PRDs and the annual re-certification require a fee. Fees may be changed by State Water Board regulation, independent of this General Permit.

How to Prepare and Submit PRDs for NEC Coverage

A Discharger must electronically certify and submit PRDs for NEC coverage in accordance with the instructions provided at the State Water Board web site for SMARTS:

<https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp>

A Discharger with multiple facilities that satisfy the conditions of “No Exposure” must certify and submit PRDs for each facility. The Discharger is required to inspect and evaluate each individual facility to determine the condition of No-Exposure. The Discharger must retain an electronic or paper copy of the NEC coverage acceptance notification for their records.

The following information is required in the PRDs:

Discharger Information

1. The legal business name of the business entity, public organization, or any other entity that operates the facility described in the certification. The name of the operator may or may not be the same as the name of the facility. The operator is the legal entity that controls the facility operations, not the plant or site manager.
2. The mailing address of the facility operator, including the city, state, and zip code.
3. The facility operator contact person, telephone number and e-mail address.

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

Facility Information

4. The legal business name of the facility.
5. The total acreage of the facility associated with industrial activity. (Facility size in acres is calculated by taking the square feet and dividing by 43,560.)
6. The complete physical street address (e.g. the street address used for express deliveries), including the city, State, and zip code. Do not use a P.O. Box number. If a physical street address does not exist, describe the location or provide the latitude and longitude of a point within the facility boundary. Latitude and longitude are available from United States Geological Survey quadrangle or topographic maps, or may be found using a mapping site on the internet.
7. The facility contact person, telephone number, and e-mail address.
8. The 4-digit Standard Industrial Classification (SIC) code that represents the facility primary industrial activity. Provide a brief description of the primary industrial activity. If applicable, enter other significant SIC codes and descriptions. To obtain these codes, see the 1987 SIC Manual or the Occupational Health and Safety Administration's site:

<http://www.osha.gov/pls/imis/sicsearch.html>
9. If the facility is currently covered under the General Permit, include the WDID number. The WDID number will be used at a later date to terminate the facility's coverage under the General Permit as necessary.

Facility Mailing or Billing Address

Completion of this item is required the facility mailing address or billing address differs from the physical facility address provided above. The Discharger must indicate which address the annual fee invoice must be sent to if the State Water Board is unable to transmit the invoice electronically.

Site Maps

Site maps must be prepared and submitted in accordance with the requirements in Section X.E of this General Permit.

NEC Checklist

The Discharger must evaluate the eleven major areas that storm water exposure may occur, per the listing at the end of this appendix. The Discharger must be able to certify

that none of these major areas have potential for exposure. If the Discharger cannot certify that every one of the eleven major areas do not have exposure, a potential for exposure exists at the facility and the facility is not eligible for NEC coverage. The Discharger must obtain (or continue) NOI coverage under this General Permit if the facility is not eligible for NEC coverage. After obtaining NOI coverage, the Discharger may implement facility modifications to eliminate the potential for a discharge of storm water exposed to industrial activity, and then change their NOI coverage to NEC coverage by certifying the conditions of "No Exposure" are met.

Certification

Federal and state statutes provide for severe penalties for Dischargers that submit false information on the PRDs. Dischargers shall certify and submit PRDs via SMARTS for NEC coverage in accordance with Electronic Signature and Certification Requirements in Section XXI.K of this General Permit.

B. GUIDANCE:

Contact your local Regional Water Quality Control Board (Regional Water Board) office with questions regarding this guidance.

1. Who is Eligible to Qualify for the No Exposure Certification (NEC) - Conditional Exclusion?

All industrial categories listed in Attachment A of this General Permit (excluding construction) are eligible to apply for the NEC coverage.

2. Limitations on Eligibility for NEC coverage

In addition to construction projects not being eligible, the following situations limit the applicability of NEC coverage:

- a. NEC coverage is available on a facility-wide basis only, not for individual drainage areas or discharge locations. Generally, if any exposed industrial materials or activities exist, or have a potential to exist, anywhere at a facility, NEC coverage is not applicable to the facility. If the Regional Water Board determines that a facility does have exposure or the facility's storm water discharges have a reasonable potential to cause or contribute to an exceedance of applicable water quality objectives/standards, the Regional Water Board can deny NEC coverage.
- b. If changes at a facility result in potential exposure of industrial activities or materials, the facility is no longer eligible for NEC coverage. Dischargers

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

shall register for NOI coverage under this General Permit prior to a planned facility change that will cause exposure, or within seven (7) calendar days after unplanned exposure occurs. If an unplanned exposure occurs due to an emergency response or one-time event that is unlikely to re-occur, a Discharger may contact the Regional Water Board to discuss whether the requirement to obtain NOI coverage can be waived. Unless the Discharger receives a written waiver from the Regional Water Board, the Discharger shall electronically certify and submit PRDs to obtain NOI coverage.

- c. Current contamination resulting from historic industrial practices at the facility (e.g., soil contamination, groundwater contamination, etc.) represents a condition of exposure to waters of the United State; therefore a facility with historic contamination is not eligible for NEC coverage.

3. What is the Definition of No Exposure?

- a. No Exposure means all industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt and/or runoff.
- b. Industrial materials and activities include, but are not limited to, material-handling equipment or activities; industrial machinery; raw materials, intermediate products, by-products, and final products; or waste products.
- c. Material handling activities include storage, loading and unloading, transport, or conveyance of any raw material, intermediate product, by-product, final product, or waste product.
- d. Final products intended to be used outdoors (e.g., automobiles) typically pose little risk of polluting storm water since not typically contaminated with pollutants that become mobilized by contact with storm water. Final products are exempt from the requirement for protection by a storm-resistant shelter to qualify for no exposure. Similarly, containers, racks, and other transport platforms (e.g., wooden pallets) used for the storage or conveyance of final products may also be stored outside if pollutant-free or pollutants do not mobilize via contact with storm water.
- e. Storm-resistant shelters include: (1) completely roofed and walled buildings or structures, (2) structures with only a top cover (no side coverings) supported by permanent supports, provided material within the structure is not subject to wind dispersion (sawdust, powders, etc.) or being

tracked out of the facility, and is not a source of pollutants in the industrial storm water discharges.

4. Industrial Materials/Activities Not Requiring a Storm-Resistant Shelter

The intent of the “No Exposure” exclusion is to maintain a condition of permanent “No Exposure”. A storm-resistant shelter is not required for the following industrial materials and activities:

- a. Drums, Barrels, Tanks, and Similar Containers that are sealed (“sealed” means banded or otherwise secured and without operational taps or valves), are not exposed provided those containers are not deteriorated, do not contain residual materials on the outside surfaces, and do not leak. Drums, barrels, etc., that are not opened while outdoors, or are not deteriorated or leaking, and that do not pose a risk of contaminating storm water runoff. Consider the following when making a “No Exposure” determination:
 - i. Materials shall not be added or withdrawn to/from containers while outdoors
 - ii. Simply moving containers while outside does not create exposure unless exposure occurs when pollutants are “tracked out” by the container handling equipment or vehicles.
 - iii. All outdoor containers shall be inspected to ensure they are not open, deteriorated, or leaking. When an outdoor container is observed as opened, deteriorated, or leaking, the container must immediately be closed, replaced, or sheltered. Frequent detection of open, deteriorated, or leaking containers, or failure to immediately close, replace, or shelter opened, deteriorated or leaking containers will cause a condition of exposure.
 - iv. Containers, racks, and other transport platforms (e.g., wooden pallets) used with drums, barrels, etc., can be stored outside providing they are contaminant-free and in good repair.
- b. Above Ground Storage Tanks (ASTs) In addition to generally being considered as not exposed, ASTs may also be exempt from the prohibition against adding or withdrawing material to/from external containers. ASTs typically use transfer valves to dispense materials that support facility operations (e.g., heating oil, propane, butane, chemical feedstock) or fuel for delivery vehicles (gasoline, diesel, compressed natural gas). For operational

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

ASTs to qualify for “No Exposure”, the following must be satisfied:

- i. The tank(s) shall be physically separated from and not associated with vehicle maintenance operations.
 - ii. There shall be no leaks from piping, pumps, or other equipment that has the potential to come in contact with storm water.
 - iii. Wherever feasible, the tank(s) shall have secondary containment (e.g., an impervious dike, berm or concrete retaining structure) to prevent runoff in the event of a structural failure or leaking transfer valve. Note: any resulting unpermitted discharge is in violation of the CWA.
- c. Lidded Dumpsters. Lidded dumpsters containing waste materials, providing the containers are completely covered and nothing can drain out holes in the bottom, spilled when loaded into the dumpster, or spilled in loading into a garbage truck. Industrial waste materials and trash that is stored uncovered is considered exposed.
- d. Adequately maintained vehicles, such as trucks, automobiles, forklifts, trailers or other general-purpose vehicles found onsite - but not industrial machinery that are not leaking, are in good repair or are not otherwise a potential source of contaminants:
- i. Vehicles passing between buildings may be exposed to storm water, however if the vehicles are adequately maintained, a condition of exposure may not exist. Similarly, non-leaking vehicles awaiting maintenance at vehicle maintenance facilities are not considered as potential exposure. However, vehicles that have been washed or rinsed that are not completely dry prior to outside exposure have the potential to cause a condition of exposure. Vehicles that track materials out of the facility are considered to be mobilizing pollutants. Vehicles that exit maintenance bays are also considered to cause exposure.
 - ii. The mere conveyance between buildings of materials / products that are otherwise not allowed to be stored outdoors, does not create a condition of exposure, provided the materials/products are adequately protected from storm water and do not have the potential to be released as a result of a leak or spill.
- e. Final products built and intended for use outdoors (e.g., new cars), provided the final products have not deteriorated, are not contaminated, or are not otherwise potential sources of contaminants.
- Types of final products not qualifying for a certification of “No Exposure”:
- i. Products that may be mobilized in storm water discharges (e.g., rock salt).
 - ii. Products, which may, when exposed, oxidize, deteriorate, leak, or otherwise be a potential source of contaminants (e.g., junk cars, stockpiled train rails).
 - iii. “Final” products that are, in actuality, “intermediate” products. Intermediate products are those used in the composition of yet another product (i.e., sheet metal, tubing, and paint used in making tractors).
 - iv. Even if the intermediate product is “final” for a manufacturer and destined for incorporation in a “final product intended for use outdoors,” the product is not allowed to be exposed because they may be chemically treated or are insufficiently impervious to weathering.
- f. Special Conditions for Construction Activities
Permanent, uninterrupted sheltering of industrial activities or materials may not always be possible during facility renovation or construction. When such circumstances exist, the Discharger is not required to obtain coverage under an NPDES permit as long as the following conditions are met:
- i. Materials and activities are protected with temporary covers or shelters (i.e. tarpaulins);
 - ii. Temporary covers or shelters prevent the contact of storm water to materials and activities;
 - iii. Materials are subject to wind dispersion are not stored under temporary sheltering;
 - iv. Temporary shelters are only used when necessary during facility renovation or construction and until permanent storm-resistant shelters as described above are available; and,
 - v. Temporary shelters are only used for a single period of ninety days or less. (Facilities with construction and renovation projects that will need the use of temporary shelters beyond 90 days, or that will require multiple periods of ninety

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

days or less, are required to be covered by an NPDES permit.)

5. Other Potential Sources of Contaminants

- a. Particulate Emissions from Roof Stacks and/or Vents: Deposits of particles or residuals from roof stacks/vents that have the potential to be mobilized by storm water runoff are considered exposed.
- b. Pollutants Potentially Mobilized by Wind Windblown materials cause a condition of exposure. Materials sheltered from precipitation are be deemed exposed if the materials has a potential to be mobilized by wind.

6. Certifying a Condition of “No Exposure”

To obtain the NEC coverage, the Discharger must electronically certify and submit PRDs via SMARTS that the facility meets the definition of “No Exposure” and pay an annual fee. The Discharger must **submit PRDs for NEC coverage even if the Discharger was not previously required to file for NEC coverage under the previous General Permit**. These PRDs include a checklist requiring the Discharger to evaluate eleven major areas to determine whether there is exposure of industrial activities and materials at the facility. To qualify for NEC coverage the Discharger must satisfy all the NEC coverage conditions in this General Permit and certify that there is “No Exposure”. The checklist: 1) aids the Discharger in determining if its facility is eligible for NEC coverage, and 2) furnishes the necessary documentation supporting relief from the General Permit’s requirement of NOI coverage. Additionally, Dischargers with NEC coverage are not required to develop and implement SWPPPs or comply with the monitoring requirements.

If a Discharger cannot certify that there is “No Exposure” at the facility, the Discharger must make appropriate changes at the facility to eliminate exposure prior to registering for future NEC coverage. Facility changes must remove all potential for pollutant exposure to storm water.

An annual inspection and evaluation, re-certification and fee are required thereafter.

7. Other NEC coverage Facts:

- a. NEC coverage is only valid if the condition of “No Exposure” exists and is reasonably expected to continue to exist. Dischargers shall electronically certify and submit PRDs for NOI coverage when the condition of “No Exposure” is no longer expected to exist.
- b. Dischargers must file PRDs for NEC coverage for each qualifying facility.
- c. An NEC must be submitted for each separate facility qualifying for the “No Exposure” conditional exclusion.
- d. An NEC is non-transferable. If a new operator takes over facility operations, the new operator shall electronically certify and submit PRDs and applicable fees for new NEC coverage via SMARTS prior to the operations transfer. NEC coverage cannot be transferred from one physical location to another regardless of ownership.

8. Operators May Be Required to Obtain NOI Coverage Based on the Protection Of Water Quality?

Operators who certified that their facilities qualify for NEC coverage may, nonetheless, be required by the Regional Water Board to obtain NOI coverage if the Regional Water Board determines that the facility’s discharge has the potential to cause or contribute to an exceedance of applicable water quality objectives/standards or determines that exposure exists at the facility. The Regional Water Board may request information and/or inspect the facility to assess potential water quality impacts and to determine if NOI coverage is required. The Discharger shall take appropriate actions to ensure compliance with the General Permit.

9. Steps to Obtain NEC coverage

This section will walk you through the process of obtaining NEC coverage.

Step 1: Determine if your facility is subject to this General Permit (refer to Attachment A of this General Permit). If yes, proceed to Step 2. If not, stop here.

If your facility is included in Attachment A and conducts industrial activities, you are required to **either** register for NOI coverage or NEC coverage.

Step 2: Determine if your regulated industrial activity meets the definition of “No Exposure” and qualifies for the exclusion from permitting. If yes, proceed to Step 3. If no, stop here and obtain NOI coverage. An

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

evaluation of the facility must be conducted by facility personnel familiar with the facility and its operations. Inspect all facility areas and potential pollutant sources to determine whether the facility satisfies the “No Exposure” conditions.

Step 3: Electronically certify and submit the PRDs for NEC coverage via SMARTS and mail the annual fee to the State Water Board at the following address:

SWRCB
Surface Water Permitting Section
PO Box 1977
Sacramento, CA 95812-1977

To maintain NEC coverage, the NEC must re-certify and pay a fee annually. This may only be done if the condition of “No Exposure” continues to exist at the facility.

Step 4: If requested, staff from the Water Boards, local Municipal Separate Storm Sewer System (MS4), or United States Environmental Protection Agency must be allowed to inspect your facility. All inspection reports will be made publicly available.

Step 5: Maintain a condition of “No Exposure”.

- NEC coverage is not a blanket exemption. Therefore, if facility physical or operational changes occur which cause exposure of industrial activities or materials to storm water, the Discharger must then immediately comply with all the requirements of this General Permit, including obtaining NOI coverage as applicable.
- To maintain the condition of “No Exposure”, the Discharger shall annually evaluate the facility to assure that the conditions of “No Exposure” still exist. More frequent evaluations may be necessary in circumstances when facility operations are rapidly changing.
- Failure to maintain the condition of “No Exposure” or otherwise obtain NOI coverage may lead to the unauthorized discharge of storm water associated with industrial activity to waters of the United States, resulting in penalties under the CWA and Water Code.

C. Frequently Asked Questions:

Q1. Who is eligible for NEC Coverage?

- A. Any Discharger operating a facility described in Attachment A may register for NEC coverage if their facility has a condition of “No Exposure”.

Q2. How does an eligible Discharger file for NEC coverage and where is the annual fee sent?

- A. The PRDs for NEC coverage shall be electronically certified and submitted in accordance with the instructions provided in SMARTS at the State Water Board website at: <https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp>. The fee is currently \$242, but may be changed by regulation. Once NEC coverage is accepted, an invoice will be electronically sent to the Discharger. The annual fee and invoice shall be sent to:
- State Water Resources Control Board
Division of Water Quality
Attention: Industrial Storm Water Unit
P.O. Box 1977
Sacramento, CA 95812-1977

Q3. If my facility’s storm water discharges are covered by an individual permit, can I file for NEC coverage?

- A. Yes. Storm water discharges covered by an individual permit are eligible for NEC coverage if the conditions at the facility satisfy the definition of “No Exposure” and you obtain approval to terminate individual permit coverage from the local Regional Water Board prior to PRD submittal. Approval from the Regional Water Board is mandatory. Many individual permits, for example, contain numeric storm water effluent limitations (“antibacksliding” provisions may prevent these facilities from qualifying for the “No Exposure” conditional exclusion).

Q4. My facility was originally excluded from the Phase I regulations because it was classified as a "light industrial facility". The facility has never had any exposure to storm water runoff. Do I now need to certify that the facility meets the No Exposure Exclusion from NPDES Storm Water Permitting?

- A. Yes. See answer provided to question number 9, “What is the exclusion “conditional” upon?”

Q5. Do I have to file a Notice of Termination (NOT) and a register for NEC coverage if my facility has NOI coverage and qualifies for NEC coverage?

- A. No. You are only required to register for NEC coverage. You must provide the WDID# in your NEC coverage PRDs in order for the State Water Board to change permit coverage status.

Q6. When and how often is a NEC coverage re-certification required?

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

- A.** Re-certification of NEC coverage is required annually (assuming the facility maintains its “No Exposure” status). The State Water Board will electronically transmit an NEC re-certification and annual fee notification to each facility operator who has filed for NEC coverage.

New Dischargers must register for NEC coverage before the commencement of facility operations. Dischargers that fail to file for NEC coverage or apply for NOI coverage before the commencement of facility operations will be out of compliance and subject to enforcement.

Existing Dischargers have two options for submitting NECs:

1. Facility operators of “light industrial” facilities who have been operating under their original, no-certification-required permitting exemption must submit the NEC at any time prior to October 1, 2015. Dischargers who have not submitted an NEC or applied for permit coverage by this due date will be considered out of compliance and subject to Water Board enforcement.
2. Dischargers who have NOI coverage may register for NEC coverage at any time following completion of facility changes that result in the condition of “No Exposure”.

Q7. What happens if I know of changes that may cause exposure?

- A.** If exposure has the potential to occur in the near future due to some anticipated change at the facility, the Discharger must obtain NOI coverage to avoid potential enforcement for violations of this General Permit.

Q8. Is the NEC coverage transferable to a new Discharger?

- A.** No. If a new operator takes over your facility, the new operator must register for new NEC coverage prior to the transfer. A new application fee is required.

Q9. What is the exclusion "conditional" upon?

- A.** The exclusion from permit coverage requirements is “conditional” upon the certification of the Discharger that the facility does not have exposure of materials or activities to storm water. PRDs for NEC coverage shall be electronically submitted to the State Water Board and will not be accepted if incomplete. The Regional Water Board may review the information, contact and/or inspect the facility, and invalidate the NEC and require the Discharger to obtain NOI coverage. PRDs are

public documents and will be available for public review via SMARTS.

Q10. Can secondary containment around an outdoor exposed area qualify for a condition of “No Exposure”?

- A.** If secondary containment is engineered to always prevent a discharge of collected rainfall (based on the historical rainfall record) and a simultaneous spill of any other industrial materials or liquids, the “No Exposure” condition may be claimed. Note that there must be proper disposal of any water or liquids collected from the containment (i.e., discharged in compliance with another NPDES permit, treated and discharged to the sanitary sewer, or trucked offsite to an appropriate disposal/treatment facility).

D. NEC Checklist

An NEC Checklist must be prepared by the Discharger demonstrating that: (1) the facility has been evaluated, (2) none of the following materials or activities are, or will be in the foreseeable future, exposed to precipitation, and (3) all unauthorized NSWs have been eliminated:

1. Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed;
2. Materials or residuals on the ground or in storm water inlets from spills/leaks;
3. Materials or products from past industrial activity;
4. Material handling equipment (except adequately maintained vehicles);
5. Materials or products during loading/unloading or transporting activities;
6. Materials or products stored outdoors (except final products intended for outside use, i.e., new cars, where exposure to storm water does not result in the discharge of pollutants);
7. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
8. Materials or products handled/stored on roads or railways owned or maintained by the Discharger;
9. Waste material (except waste in covered, non-leaking containers, i.e., dumpsters);

INSTRUCTIONS FOR NO EXPOSURE CERTIFICATION (NEC)

10. Application or disposal of processed wastewater (unless already covered by an NPDES permit); and
11. Particulate matter or visible deposits of residuals from roof stacks/vents evident in the storm water outflow.

APPENDIX 3

WATERBODIES WITH CLEAN WATER ACT SECTION 303(D) LISTED IMPAIRMENTS

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

The 303(d) impairments below are sourced from the 2010 Integrated Report. The rows in red are impairments for which industrial storm water Dischargers subject to this General Permit are not required to analyze for additional parameters unless directed by the Regional Water Board, because these parameters are typically not associated with industrial storm water. Test methods with substantially similar or more stringent method detection limits may be used if approved by the staff of the State Water Board prior to sampling and analysis and upon approval, will be added into SMARTS. The rows that are not in red are impairments for which Dischargers in the 303(d) impaired watershed are required to analyze for additional parameters, if applicable, because these parameters are more likely to be associated with industrial storm water. See General Permit Section XI.B.6.e. In the event that any of the impairments in this appendix are subsequently delisted, the Dischargers with discharges to that watershed are no longer required to analyze for the additional parameters for those impairments, and the provisions for new Dischargers with discharges to 303(d) impaired water bodies contained in Section VII.B of this General Permit no longer apply for those impairments.

The Excel spreadsheet containing the water bodies with 303(d) impairments is an attachment to this Appendix 3. To view the attachment from an electronic (pdf) version of this Appendix 3, left-click on the paper clip icon to the left of this pdf file to make the attachment window appear, then double-click on the icon of an Excel spreadsheet. The Excel spreadsheet is also available on the Industrial Storm Water program pages of the State Water Resources Control Board's website (<http://www.waterboards.ca.gov/>).

**Appendix G:
Permit Registration Documents**

APPENDIX G

PERMIT REGISTRATION DOCUMENTS (PRDS)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT – Attachment D)

This Attachment provides an example of the information Dischargers are required to submit in the PRDs via the Storm Water Multiple Application and Report Tracking System (SMARTS). The actual PRD requirements are in Section II of this General Permit.

A. Who Must Submit PRDs

All Dischargers that operate facilities as described in Attachment A of this General Permit are subject to either Notice of Intent (NOI) or No Exposure Certification (NEC) Coverage and shall comply with the PRD requirements in this General Permit.

B. Who Is Not Required to Submit PRDs

Dischargers that operate facilities described below are not required to submit PRDs:

1. Facilities that are not described in Attachment A;
2. Facilities that are described in Attachment A but do not have discharges of storm water associated with industrial activity to waters of the United States; or,
3. Facilities that are already covered by an NPDES permit for discharges of storm water associated with industrial activity.

C. Annual Fees for NOI and NEC Coverage

Annual Fees for NOI and NEC coverage are established through regulations adopted by the State Water Board and are subject to change (see California Code of Regulations, title 23, section 2200 et seq.).

D. When and How to Apply

Dischargers proposing to conduct industrial activities subject to this General Permit must electronically certify and submit PRDs via the Storm Water Multiple Application

Reporting and Tracking System (SMARTS)¹ no less than seven (7) days prior to the commencement of industrial activity. Existing Dischargers must submit PRDs for NOI coverage by July 1, 2015 or for NEC coverage by October 1, 2015.

E. PRD Requirements for NOI Coverage

4. Notice of Intent (NOI) and Signed Electronic Authorization Form.
5. Site Map (Section X.E of this General Permit).
6. Storm Water Pollution Prevention Plan (see Section X of this General Permit).

F. Description of PRDs for NOI Coverage

7. The Notice of Intent (NOI) requires the following information:

a. Operator/Owner Information

Operator/Owner Company or Organization Name Contact
Contact First Name
Contact Last Name
Contact Title
Street Address
Address Line 2
City/State/Zip
Phone (e.g. 999-999-9999)
E-mail (e.g. abc@xyz.com)
Federal Tax ID

b. Facility Information

Facility Name
WDID Number (if applicable)
Contact First Name
Contact Last Name
Contact Title
Street Address
Address Line 2
City, State, Zip
County
Phone (e.g. 999-999-9999)
Emergency Phone (e.g. 999-999-9999)
E-mail (abc@xyz.com)
Total Site Size (Acres)
Latitude (Decimal degrees only, minimum 5 significant digits, e.g. 99.99999)
Longitude (Decimal degrees only, minimum 5 significant digits, e.g. 99.99999)
Total Percentage Site Imperviousness Area of Facility (Acres)
Total Areas of Industrial Activities and Materials Exposed to Precipitation Primary SIC Code
Secondary SIC Code Tertiary SIC Code Regional Water Board

¹ The State Water Board has developed the SMARTS online database system to handle registration and reporting under this General Permit. More information regarding SMARTS and access to the database is available online at <<https://smarts.waterboards.ca.gov>>. [as of June 26,2013].

a. Billing Information

Billing Name Contact
First Name Contact
Last Name Title
Street Address
Address Line 2
City/State/Zip
Phone (e.g. 999-999-9999)
E-mail (e.g. abc@xyz.com)

b. Receiving Water Information

Does your facility's storm water flow directly or indirectly into waters of the US such as river, lake, ocean, etc. (check box for directly or indirectly)

- i. Indirectly to waters of the US
- ii. Storm drain system - Enter owner's name:
- iii. Directly to waters of the US (e.g., river, lake, creek, stream, bay, ocean, etc.)
- iv. Name of the receiving water:

8. The Site Map(s) shall include the following Information:

- a. The facility boundary;
- b. Storm water drainage areas within the facility boundary;
- c. Portions of any drainage area impacted by discharges from surrounding areas and flow direction of each drainage area;
- d. On-facility surface water bodies;
- e. Areas of soil erosion;
- f. Location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.);
- g. Location(s) of municipal storm drain inlets that may receive the facility's industrial storm water discharges and authorized Non-Storm Water Discharges (NSWDs);
- h. Locations of storm water collection and conveyance systems and associated points of discharge, and direction of flow;
- i. Any structural control measures (that affect industrial storm water discharges, authorized NSWDs, and run-on);
- j. All impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;
- k. Locations where materials are directly exposed to precipitation;
- l. Locations where significant spills or leaks identified (Section X.G.1.d of this General Permit) have occurred;
- m. Areas of industrial activity subject to this General Permit;
- n. All storage areas and storage tanks;
- o. Shipping and receiving areas;
- p. Fueling areas;
- q. Vehicle and equipment storage/maintenance areas;
- r. Material handling and processing areas;
- s. Waste treatment and disposal areas;
- t. Dust or particulate generating areas;
- u. Cleaning and material reuse areas; and,

v. Any other areas of industrial activity which may have potential pollutant sources.

9. The Storm Water Pollution Prevention Plan (SWPPP) must be prepared in accordance with Section X of this General Permit.

10. A NOI Certification by the Discharger that all PRDs submitted are correct and true.

11. SMARTS Electronic Authorization Form (Signed by any user authorized to certify and submit data electronically).

G. PRD Requirements for NEC Coverage

12. No Exposure Certification and Signed Electronic Authorization Form.

13. No Exposure Certification Checklist Consistent with Requirements in Section XVII.F.2 of this General Permit.

14. Current Site Map Consistent with Requirements in Section X.E of this General Permit.

H. Description of PRDs for NEC Coverage

15. The No Exposure Certification requires the following information:

a. Operator/Owner Information

Operator/Owner Name
Contact First Name
Contact Last Name Title
Street Address
Address Line 2
City/State/Zip
Phone Ex (999-999-9999)
E-mail (abc@xyz.com)
Federal Tax ID

b. Facility Information

Facility Name Contact
First Name Contact
Last Name Title
Street Address
Address Line 2
City
County
Phone Ex (999-999-9999)
Emergency Phone Ex (999-999-9999)
E-mail (abc@xyz.com)
State/Zip CA
Total Site Size (Acres)
Latitude (Decimal degrees only, minimum 5 significant digits, Ex 99.99999)
Longitude (Decimal degrees only, minimum 5 significant digits, Ex 99.99999)
Percent of Site Imperviousness (%)
Primary SIC Code
Secondary SIC Code
Tertiary SIC Code
Regional Water Board

c. Billing Information

Billing Name (if different than Operator/Owner)
Contact First Name
Contact Last Name
Title
Street Address
Address Line 2
City/State/Zip
Phone (e.g. 999-999-9999)
E-mail (e.g. abc@xyz.com)

d. SMARTS Electronic Authorization Form - Signed by any user authorized to certify and submit data electronically.

e. Certification by the Discharger that all PRDs submitted are correct and true and that the conditions of no-exposure have been met.

16. The NEC Checklist (Section XVII.F.2 of this General Permit) must be prepared to demonstrate that, based upon a facility inspection and evaluation, none of the following industrial materials or activities are, or will be in the foreseeable future, exposed to precipitation:

- a. Activities such as using, storing, or cleaning industrial machinery or equipment, and areas with materials or residuals from these activities;
- b. Materials or residuals on the ground or in storm water inlets from spills/leaks;
- c. Materials or products from past industrial activity;
- d. Material handling equipment (except adequately maintained vehicles);
- e. Materials or products during loading/unloading or transporting activities;
- f. Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);
- g. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
- h. Materials or products handled/stored on roads or railways owned or maintained by the Discharger;
- i. Waste material (except waste in covered, non-leaking containers, e.g., dumpsters). Application or disposal of processed wastewater (unless already covered by an NPDES permit); and,
- j. Particulate matter or visible deposits of residuals from roof stacks/vents evident in the storm water outflow.

17. The Site Map(s) shall include the following information (see Section X.E of this General Permit):

- a. The facility boundary;
- b. Storm water drainage areas within the facility boundary;
- c. Portions of any drainage area impacted by discharges from surrounding areas and flow direction of each drainage area;
- d. On-facility surface water bodies;
- e. Areas of soil erosion;
- f. Location(s) of nearby water bodies (such as rivers, lakes, wetlands, etc.);
- g. Location(s) of municipal storm drain inlets that may receive the facility's

- industrial storm water discharges and authorized NSWDs;
- h.** Locations of storm water collection and conveyance systems and associated points of discharge, and direction of flow;
 - i.** Any structural control measures (that affect industrial storm water discharges, authorized NSWDs, and run-on);
 - j.** All impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures;
 - k.** Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified (Section X.G.1.d of this General Permit) have occurred;
 - l.** Areas of industrial activity subject to this General Permit;
 - m.** All storage areas and storage tanks;
 - n.** Shipping and receiving areas;
 - o.** Fueling areas;
 - p.** Vehicle and equipment storage/maintenance areas;
 - q.** Material handling and processing areas;
 - r.** Waste treatment and disposal areas;
 - s.** Dust or particulate generating areas;
 - t.** Cleaning and material reuse areas; and,
 - u.** Any other areas of industrial activity which may have potential pollutant sources.

I. Obtaining Coverage

To obtain coverage under this General Permit PRDs must be included and completed. If any of the required items are missing, the PRD submittal is considered incomplete and will be rejected. Upon receipt of a complete PRD submittal, the State Water Board will process the application package in the order received and assign a (WDID) number.

J. Additional Information

The Water Board may require the submittal of additional information in SMARTS if required to determine the appropriate fee for the facility as specified by the fee regulations.

K. Questions

If you have any questions on completing the PRDs or about SMARTS, please email stormwater@waterboards.ca.gov or call (866) 563-3107.

Appendix H: SWPPP Amendment Form

SWPPP Amendment Form				
DATE CHANGES MADE	DESCRIPTION OF CHANGES MADE TO SWPPP TO REFLECT SITE CONDITIONS, STORM WATER MANAGEMENT AND MONITORING PROGRAM	PAGE, TABLE, MAP (INDICATE WHERE CHANGES WERE MADE)	PPT MEMBER MAKING THE CHANGE	DATE REVISED SWPPP SENT TO SMARTS*

*Significant changes to the SWPPP must be submitted to SMARTs within 30 day. Minor changes must be submitted every quarter (3 months).

Appendix I:
IGP – Table 2: Parameter NAL Values, Test Methods, and Reporting Units

Table 2 in the Industrial General Permit provides the minimum test methods that shall be used for a variety of common pollutants.

TABLE 2: Parameter NAL Values, Test Methods, and Reporting Units				
PARAMETER	TEST METHOD	REPORTING UNITS	ANNUAL NAL	INSTANTANEOUS MAXIMUM NAL
PH*	See Section XI.C.2	pH units	N/A	Less than 6.0 Greater than 9.0
Suspended Solids (TSS)*, Total	SM 2540-D	mg/L	100	400
Oil & Grease (O&G)*, Total	EPA 1664A	mg/L	15	25
Iron, Total (FE)	EPA 200.7	mg/L	1.0	
Nitrate + Nitrite as Nitrogen (N+N as N)	SM 4500-NO3-E	mg/L as N	0.68	

NOTES:

SM – Standard Methods for the Examination of Water and Wastewater, 18th edition

EPA – U.S. EPA test methods

(H) – Hardness dependent

* Minimum parameters required by this General Permit

**The NAL is the highest value used by U.S. EPA based on their hardness table in the 2008 MSGP.

*** When testing for Mercury in Impaired Water Bodies, the test method is: EPA 1631

Appendix J:

LIST OF SIGNIFICANT SPILLS AND LEAKS

To be filled out by inspector.

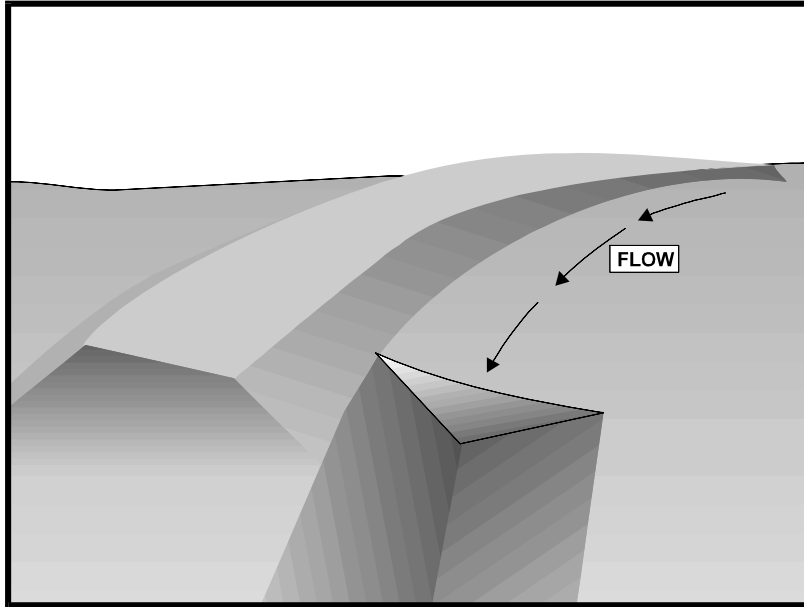
Sampler Name: _____

Date: _____

LIST OF SIGNIFICANT SPILLS AND LEAKS								
DATE	LOCATION	DESCRIPTION				RESPONSE PROCEDURE		PREVENTIVE MEASURES TAKEN (description & date)
		TYPE OF MATERIAL	QUANTITY	SOURCE, IF KNOWN	REASON FOR SPILL-LEAK	AMOUNT OF MATERIAL RECOVERED	MATERIAL NO LONGER EXPOSED TO STORMWATER (yes/no)	

- NOTE:**
1. List all spills and leaks of toxic or hazardous pollutants that were significant after the date of five years prior to the effective date of this permit.
 2. Significant spills and leaks should include but are not limited to, release of oil or hazardous substances in excess of reportable quantities.

Appendix K:
BEST MANAGEMENT PRACTICES
BMPs



Description and Purpose

An earth dike is a temporary berm or ridge of compacted soil used to divert runoff or channel water to a desired location. A drainage swale is a shaped and sloped depression in the soil surface used to convey runoff to a desired location. Earth dikes and drainage swales are used to divert off site runoff around the construction site, divert runoff from stabilized areas and disturbed areas, and direct runoff into sediment basins or traps.

Suitable Applications

Earth dikes and drainage swales are suitable for use, individually or together, where runoff needs to be diverted from one area and conveyed to another.

- Earth dikes and drainage swales may be used:
 - To convey surface runoff down sloping land
 - To intercept and divert runoff to avoid sheet flow over sloped surfaces
 - To divert and direct runoff towards a stabilized watercourse, drainage pipe or channel
 - To intercept runoff from paved surfaces
 - Below steep grades where runoff begins to concentrate
 - Along roadways and facility improvements subject to flood drainage

Categories

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Objective
- Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None



- At the top of slopes to divert runoff from adjacent or undisturbed slopes
- At bottom and mid slope locations to intercept sheet flow and convey concentrated flows
- Divert sediment laden runoff into sediment basins or traps

Limitations

Dikes should not be used for drainage areas greater than 10 acres or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted stormwater may cause downstream flood damage.
- Dikes should not be constructed of soils that may be easily eroded.
- Regrading the site to remove the dike may add additional cost.
- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.
- Earth dikes/drainage swales are not suitable as sediment trapping devices.
- It may be necessary to use other soil stabilization and sediment controls such as check dams, plastics, and blankets, to prevent scour and erosion in newly graded dikes, swales, and ditches.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in drainage swales.

Implementation

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert stormwater to a sediment trapping device or a stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off site and from undisturbed areas away from disturbed areas and to divert sheet flows away from unprotected slopes.

An earth dike does not itself control erosion or remove sediment from runoff. A dike prevents erosion by directing runoff to an erosion control device such as a sediment trap or directing runoff away from an erodible area. Temporary diversion dikes should not adversely impact adjacent properties and must conform to local floodplain management regulations, and should not be used in areas with slopes steeper than 10%.

Slopes that are formed during cut and fill operations should be protected from erosion by runoff. A combination of a temporary drainage swale and an earth dike at the top of a slope can divert

runoff to a location where it can be brought to the bottom of the slope (see EC-11, Slope Drains). A combination dike and swale is easily constructed by a single pass of a bulldozer or grader and compacted by a second pass of the tracks or wheels over the ridge. Diversion structures should be installed when the site is initially graded and remain in place until post construction BMPs are installed and the slopes are stabilized.

Diversion practices concentrate surface runoff, increasing its velocity and erosive force. Thus, the flow out of the drain or swale must be directed onto a stabilized area or into a grade stabilization structure. If significant erosion will occur, a swale should be stabilized using vegetation, chemical treatment, rock rip-rap, matting, or other physical means of stabilization. Any drain or swale that conveys sediment laden runoff must be diverted into a sediment basin or trap before it is discharged from the site.

General

- Care must be applied to correctly size and locate earth dikes, drainage swales. Excessively steep, unlined dikes, and swales are subject to erosion and gully formation.
- Conveyances should be stabilized.
- Use a lined ditch for high flow velocities.
- Select flow velocity based on careful evaluation of the risks due to erosion of the measure, soil types, overtopping, flow backups, washout, and drainage flow patterns for each project site.
- Compact any fills to prevent unequal settlement.
- Do not divert runoff onto other property without securing written authorization from the property owner.
- When possible, install and utilize permanent dikes, swales, and ditches early in the construction process.
- Provide stabilized outlets.

Earth Dikes

Temporary earth dikes are a practical, inexpensive BMP used to divert stormwater runoff. Temporary diversion dikes should be installed in the following manner:

- All dikes should be compacted by earth moving equipment.
- All dikes should have positive drainage to an outlet.
- All dikes should have 2:1 or flatter side slopes, 18 in. minimum height, and a minimum top width of 24 in. Wide top widths and flat slopes are usually needed at crossings for construction traffic.
- The outlet from the earth dike must function with a minimum of erosion. Runoff should be conveyed to a sediment trapping device such as a Sediment Trap (SE-3) or Sediment Basin

(SE-2) when either the dike channel or the drainage area above the dike are not adequately stabilized.

- Temporary stabilization may be achieved using seed and mulching for slopes less than 5% and either rip-rap or sod for slopes in excess of 5%. In either case, stabilization of the earth dike should be completed immediately after construction or prior to the first rain.
- If riprap is used to stabilize the channel formed along the toe of the dike, the following typical specifications apply:

Channel Grade	Riprap Stabilization
0.5-1.0%	4 in. Rock
1.1-2.0%	6 in. Rock
2.1-4.0%	8 in. Rock
4.1-5.0%	8 in. -12 in. Riprap

- The stone riprap, recycled concrete, etc. used for stabilization should be pressed into the soil with construction equipment.
- Filter cloth may be used to cover dikes in use for long periods.
- Construction activity on the earth dike should be kept to a minimum.

Drainage Swales

Drainage swales are only effective if they are properly installed. Swales are more effective than dikes because they tend to be more stable. The combination of a swale with a dike on the downhill side is the most cost effective diversion.

Standard engineering design criteria for small open channel and closed conveyance systems should be used (see the local drainage design manual). Unless local drainage design criteria state otherwise, drainage swales should be designed as follows:

- No more than 5 acres may drain to a temporary drainage swale.
- Place drainage swales above or below, not on, a cut or fill slope.
- Swale bottom width should be at least 2 ft
- Depth of the swale should be at least 18 in.
- Side slopes should be 2:1 or flatter.
- Drainage or swales should be laid at a grade of at least 1 percent, but not more than 15 percent.
- The swale must not be overtopped by the peak discharge from a 10-year storm, irrespective of the design criteria stated above.

- Remove all trees, stumps, obstructions, and other objectionable material from the swale when it is built.
- Compact any fill material along the path of the swale.
- Stabilize all swales immediately. Seed and mulch swales at a slope of less than 5 percent, and use rip-rap or sod for swales with a slope between 5 and 15 percent. For temporary swales, geotextiles and mats (EC-7) may provide immediate stabilization.
- Irrigation may be required to establish sufficient vegetation to prevent erosion.
- Do not operate construction vehicles across a swale unless a stabilized crossing is provided.
- Permanent drainage facilities must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drainage swale should conform to predevelopment drainage patterns and capacities.
- Construct the drainage swale with a positive grade to a stabilized outlet.
- Provide erosion protection or energy dissipation measures if the flow out of the drainage swale can reach an erosive velocity.

Costs

- Cost ranges from \$15 to \$55 per ft for both earthwork and stabilization and depends on availability of material, site location, and access.
- Small dikes: \$2.50 - \$6.50/linear ft; Large dikes: \$2.50/yd³.
- The cost of a drainage swale increases with drainage area and slope. Typical swales for controlling internal erosion are inexpensive, as they are quickly formed during routine earthwork.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed.
- Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment and repair linings and embankments as needed.
- Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction

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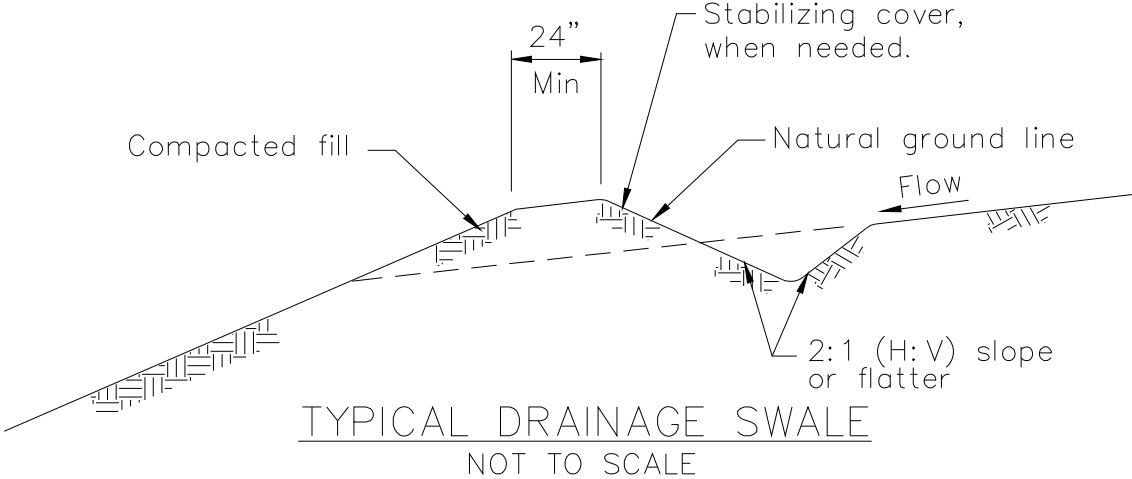
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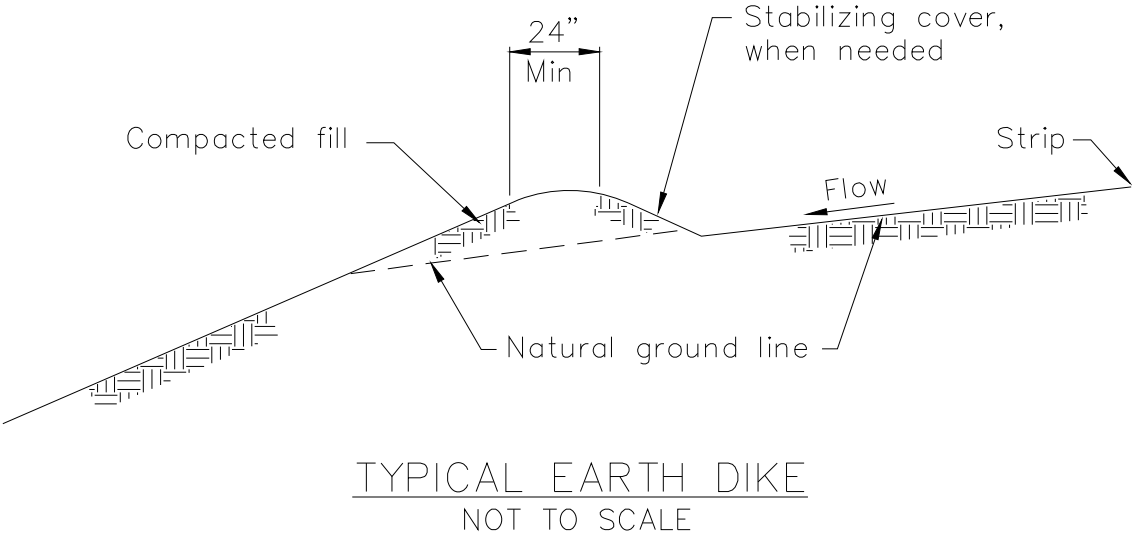
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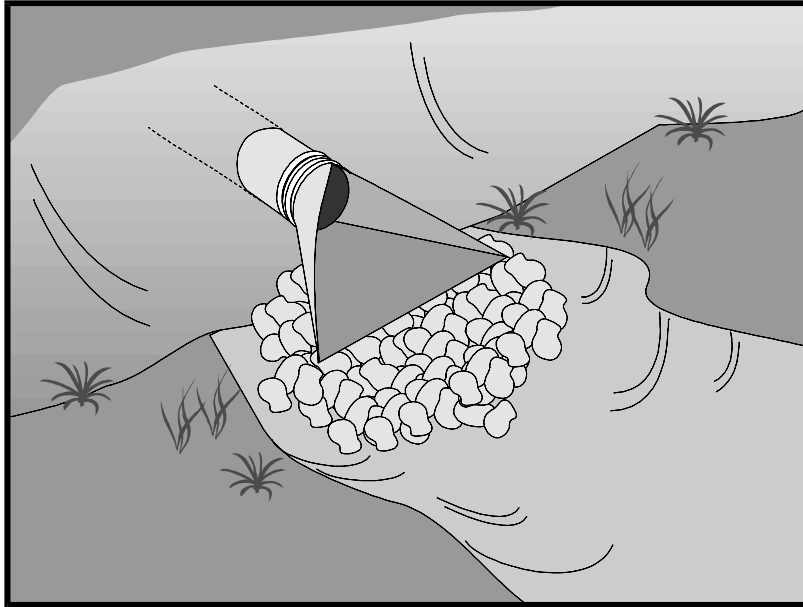
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NOTES:

- 1. Stabilize inlet, outlets and slopes.
- 2. Properly compact the subgrade.





Description and Purpose

Outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated, high velocity flows.

Suitable Applications

Whenever discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This includes temporary diversion structures to divert runoff during construction.

- These devices may be used at the following locations:
 - Outlets of pipes, drains, culverts, slope drains, diversion ditches, swales, conduits, or channels.
 - Outlets located at the bottom of mild to steep slopes.
 - Discharge outlets that carry continuous flows of water.
 - Outlets subject to short, intense flows of water, such as flash floods.
 - Points where lined conveyances discharge to unlined conveyances

Limitations

- Large storms or high flows can wash away the rock outlet protection and leave the area susceptible to erosion.

Categories

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Objective**
- Secondary Objective**

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None



- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.
- Grouted riprap may break up in areas of freeze and thaw.
- If there is not adequate drainage, and water builds up behind grouted riprap, it may cause the grouted riprap to break up due to the resulting hydrostatic pressure.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in velocity dissipation devices.

Implementation

General

Outlet protection is needed where discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the immediate downstream reach. This practice protects the outlet from developing small eroded pools (plunge pools), and protects against gully erosion resulting from scouring at a culvert mouth.

Design and Layout

As with most channel design projects, depth of flow, roughness, gradient, side slopes, discharge rate, and velocity should be considered in the outlet design. Compliance to local and state regulations should also be considered while working in environmentally sensitive streambeds. General recommendations for rock size and length of outlet protection mat are shown in the rock outlet protection figure in this BMP and should be considered minimums. The apron length and rock size gradation are determined using a combination of the discharge pipe diameter and estimate discharge rate: Select the longest apron length and largest rock size suggested by the pipe size and discharge rate. Where flows are conveyed in open channels such as ditches and swales, use the estimated discharge rate for selecting the apron length and rock size. Flows should be same as the culvert or channel design flow but never the less than the peak 5 year flow for temporary structures planned for one rainy season, or the 10 year peak flow for temporary structures planned for two or three rainy seasons.

- There are many types of energy dissipaters, with rock being the one that is represented in the attached figure.
- Best results are obtained when sound, durable, and angular rock is used.
- Install riprap, grouted riprap, or concrete apron at selected outlet. Riprap aprons are best suited for temporary use during construction. Grouted or wired tied rock riprap can minimize maintenance requirements.
- Rock outlet protection is usually less expensive and easier to install than concrete aprons or energy dissipaters. It also serves to trap sediment and reduce flow velocities.
- Carefully place riprap to avoid damaging the filter fabric.

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives

- *Cover*
- *Contain*
- *Educate*
- *Reduce/Minimize*
- *Product Substitution*

Targeted Constituents

<i>Sediment</i>	
<i>Nutrients</i>	✓
<i>Trash</i>	
<i>Metals</i>	✓
<i>Bacteria</i>	✓
<i>Oil and Grease</i>	✓
<i>Organics</i>	✓

Minimum BMPs Covered

	<i>Good Housekeeping</i>	✓
	<i>Preventative Maintenance</i>	
	<i>Spill and Leak Prevention and Response</i>	✓
	<i>Material Handling & Waste Management</i>	
	<i>Erosion and Sediment Controls</i>	
	<i>Employee Training Program</i>	✓
	<i>Quality Assurance Record Keeping</i>	✓



pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.
- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.
- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and
- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:
 - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
 - ✓ Pools of water in low lying areas when a rain event has not occurred; and
 - ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.
- If evidence of non-stormwater discharges is discovered:
- ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
 - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
 - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.
- Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of “as-built” piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate discharges to the storm drain system.
- Visual Inspection and Inventory:
 - ✓ Inventory and inspect each discharge point during dry weather.
 - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
 - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the “as-built” piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.
- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.
- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.
- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.
- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.
- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.
- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:
 - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;
 - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
 - ✓ Illegal dumping hot spots;
 - ✓ Types and quantities (in some cases) of wastes;
 - ✓ Patterns in time of occurrence (time of day/night, month, or year);
 - ✓ Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills);
 - ✓ An anonymous tip/reporting mechanism; and
 - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post “No Dumping” signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.



Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.



Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.



Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended “work-arounds.”

- Many facilities do not have accurate, up-to-date ‘as-built’ plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
 - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
 - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.”

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Spill Prevention, Control & Cleanup SC-11



Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental or illegal spills. Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

Approach

Pollution Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- Develop a Spill Prevention Control and Countermeasure (SPCC) Plan. The plan should include:

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>



SC-11 Spill Prevention, Control & Cleanup

- Description of the facility, owner and address, activities and chemicals present
- Facility map
- Notification and evacuation procedures
- Cleanup instructions
- Identification of responsible departments
- Identify key spill response personnel
- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Suggested Protocols (including equipment needs)

Spill Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- If consistent illegal dumping is observed at the facility:
 - Post “No Dumping” signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
 - Landscaping and beautification efforts may also discourage illegal dumping.
 - Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.
- Store and contain liquid materials in such a manner that if the tank is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.
- If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.
- Routine maintenance:
 - Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
 - Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site’s spill control plan and/or proper spill cleanup procedures.
 - Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*

Spill Prevention, Control & Cleanup SC-11

- Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.
- Label all containers according to their contents (e.g., solvent, gasoline).
- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).
- Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).
- Identify key spill response personnel.

Spill Control and Cleanup Activities

- Follow the Spill Prevention Control and Countermeasure Plan.
- Clean up leaks and spills immediately.
- Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste. Physical methods for the cleanup of dry chemicals include the use of brooms, shovels, sweepers, or plows.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to local agencies, such as the fire department; they can assist in cleanup.
- Establish a system for tracking incidents. The system should be designed to identify the following:
 - Types and quantities (in some cases) of wastes
 - Patterns in time of occurrence (time of day/night, month, or year)

SC-11 Spill Prevention, Control & Cleanup

- Mode of dumping (abandoned containers, “midnight dumping” from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

Training

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
 - The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
 - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- A Spill Prevention Control and Countermeasure Plan (SPCC) is required for facilities that are subject to the oil pollution regulations specified in Part 112 of Title 40 of the Code of Federal Regulations or if they have a storage capacity of 10,000 gallons or more of petroleum. (Health and Safety Code 6.67)
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

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Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from

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tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.

Spill Prevention, Control & Cleanup SC-11

- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.
- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

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- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:
 - Cover fueling area if possible.
 - Use a perimeter drain or slope pavement inward with drainage to a sump.
 - Pave fueling area with concrete rather than asphalt.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage “topping-off” of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities. The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department)
- Develop procedures to prevent/mitigate spills to storm drain systems
- Identify responsible departments
- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures
- Address spills at municipal facilities, as well as public areas

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- Provide training concerning spill prevention, response and cleanup to all appropriate personnel

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Stormwater Managers Resource Center <http://www.stormwatercenter.net/>



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to stormwater runoff. Implementing the following management practices can help prevent fuel spills and leaks.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Use properly maintained off-site fueling stations whenever possible. These businesses are better equipped to handle fuel and spills properly.
- Educate employees about pollution prevention measures and goals.
- Focus pollution prevention activities on containment of spills and leaks, most of which may occur during liquid transfers.

Suggested Protocols

General

- "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



- Manage materials and waste to reduce adverse impacts on stormwater quality.
- Label drains within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer.
- Post signs to remind employees and customers not to top off the fuel tank when filling and signs that ban customers and employees from changing engine oil or other fluids at that location.
- Report leaking vehicles to fleet maintenance.
- Install inlet catch basin equipped with a small sedimentation basin or grit chamber to remove large particles from stormwater in highly impervious areas.
- Ensure the following safeguards are in place:
 - Overflow protection devices on tank systems to warn the operator to automatically shutdown transfer pumps when the tank reaches full capacity.
 - Protective guards around tanks and piping to prevent vehicle or forklift damage.
 - Clear tagging or labeling of all valves to reduce human error.

Fuel Dispensing Areas

- Maintain clean fuel-dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, or use of rags and absorbents for leaks and spills.
- If you periodically clean by washing, place a temporary plug in the downstream drain and pump out the accumulated water. Properly dispose the water. Note: permission from the local sewerage agency must be obtained before discharging wash water to the sanitary sewer.
- Fit underground storage tanks with spill containment and overfill prevention systems meeting the requirements of Section 2635(b) of Title 23 of the California Code of Regulations.
- Fit fuel dispensing nozzles with "hold-open latches" (automatic shutoffs) except where prohibited by local fire departments.
- Post signs at the fuel dispenser or fuel island warning vehicle owners/operators against "topping off" of vehicle fuel tanks.
- Design fueling area to prevent stormwater runoff and spills.
- Cover fueling area with an overhanging roof structure or canopy so that precipitation cannot come in contact with the fueling area and use a perimeter drain or slope pavement inward with drainage to sump; pave area with concrete rather than asphalt.
- Where covering is not feasible and the fuel island is surrounded by pavement, apply a suitable sealant that protects the asphalt from spilled fuels.

- Install vapor recovery nozzles to help control drips as well as air pollution.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Cover storm drains in the vicinity during transfer.

Outdoor Waste Receptacle Area

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
 - Use only watertight waste receptacle(s) and keep the lid(s) closed.
 - Grade and pave the waste receptacle area to prevent run-on of stormwater.
 - Install a roof over the waste receptacle area.
 - Install a low containment berm around the waste receptacle area.
 - Use and maintain drip pans under waste receptacles.
- Post “no littering” signs.

Air/Water Supply Area

- Minimize the possibility of stormwater pollution from air/water supply areas by doing at least one of the following:
 - Spot clean leaks and drips routinely to prevent runoff of spillage.
 - Grade and pave the air/water supply area to prevent run-on of stormwater.
 - Install a roof over the air/water supply area.
 - Install a low containment berm around the air/water supply area.

Inspection

- Aboveground Tank Leak and Spill Control:
 - Check for external corrosion and structural failure.
 - Check for spills and overfills due to operator error.
 - Check for failure of piping system.
 - Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
 - Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.

- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Periodically, integrity testing should be conducted by a qualified professional.
- Inspect and clean, if necessary, storm drain inlets and catch basins within the facility boundary before October 1 each year.

Training

- Train all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste. Make sure that all employees understand stormwater discharge prohibitions, wastewater discharge requirements, and these best management practices.
- Train employees on proper fueling and cleanup procedures.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Store portable absorbent booms (long flexible shafts or barriers made of absorbent material) in unbermed fueling areas.
- Report spills promptly.
- If a dead-end sump is not used to collect spills, install an oil/water separator.

Other Considerations

- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.

Requirements***Costs***

- The retrofitting of existing fueling areas to minimize stormwater exposure or spill runoff can be expensive. Good design must occur during the initial installation.
- Extruded curb along the “upstream” side of the fueling area to prevent stormwater run-on is of modest cost.

Maintenance

- Clean oil/water separators at appropriate intervals.

- Keep ample supplies of spill cleanup materials on-site.
- Inspect fueling areas and storage tanks on a regular schedule.

Supplemental Information

Design Considerations

Designing New Installations

The elements listed below should be included in the design and construction of new or substantially remodeled facilities.

Fuel Dispensing Areas

- Fuel dispensing areas must be paved with Portland cement concrete (or, equivalent smooth impervious surface), with a 2 to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of stormwater to the extent practicable. The fuel dispensing area is defined as extending 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less. The paving around the fuel dispensing area may exceed the minimum dimensions of the "fuel dispensing area" stated above.
- The fuel dispensing area must be covered, and the cover's minimum dimensions must be equal to or greater than the area within the grade break or the fuel dispensing area, as defined above. The cover must not drain onto the fuel dispensing area.
- If necessary, install and maintain an oil control device in the appropriate catch basin(s) to treat runoff from the fueling area.

Outdoor Waste Receptacle Area

- Grade and pave the outdoor waste receptacle area to prevent run-on of stormwater to the extent practicable.

Air/Water Supply Area

- Grade and pave the air/water supply area to prevent run-on of stormwater to the extent practicable.

Designated Fueling Area

- If your facility has large numbers of mobile equipment working throughout the site and you currently fuel them with a mobile fuel truck, consider establishing a designated fueling area. With the exception of tracked equipment such as bulldozers and perhaps small forklifts, most vehicles should be able to travel to a designated area with little lost time. Place temporary "caps" over nearby catch basins or manhole covers so that if a spill occurs it is prevented from entering the storm drain.

Examples

The Spill Prevention Control and Countermeasure (SPCC) Plan, which is required by law for some facilities, is an effective program to reduce the number of accidental spills and minimize contamination of stormwater runoff.

The City of Palo Alto has an effective program for commercial vehicle service facilities. Many of the program's elements, including specific BMP guidance and lists of equipment suppliers, are also applicable to industrial facilities.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>

Best Management Practice Guide for Retail Gasoline Outlets, California Stormwater Quality Task Force. 1997.



Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Vehicle or equipment maintenance and repair are potentially significant sources of stormwater pollution, due to use of harmful materials and wastes during maintenance and repair processes. Engine repair and service (e.g., parts cleaning), replacement of fluids (e.g., oil change), and out door equipment storage and parking (leaking vehicles) can impact water quality if stormwater runoff from areas with these activities becomes polluted by a variety of contaminants. Implementation of the following activities will prevent or reduce the discharge of pollutants to stormwater from vehicle and equipment maintenance and repair activities.

Approach

- Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



- Minimize use of solvents. Clean parts without using solvents whenever possible, or use water-based solvents for cleaning.
- Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.

Suggested Protocols*General*

- Move maintenance and repair activities indoors whenever feasible.
- Store idle equipment under cover
- Use a vehicle maintenance area designed to prevent stormwater pollution - minimize contact of stormwater with outside operations through berming and appropriate drainage routing.
- Avoid hosing down your work areas. If work areas are washed, collect and direct wash water to sanitary sewer. Use dry sweeping if possible.
- Paint signs on storm drain inlets to indicate that they are not to receive liquid or solid wastes.
- Post signs at sinks to remind employees not to pour wastes down drains.
- Clean yard storm drain inlets(s) regularly and especially after large storms.
- Do not pour materials down storm drains.
- Cover the work area to limit exposure to rain.
- Place curbs around the immediate boundaries of process equipment.
- Build a shed or temporary roof over areas where parked cars await repair or salvage, especially wrecked vehicles. Build a roof over vehicles kept for parts.

Material and Waste Handling

- Designate a special area to drain and replace motor oil, coolant, and other fluids, where there are no connections to the storm drain or the sanitary sewer, and drips and spills can be easily cleaned up.
- Drain all fluids immediately from wrecked vehicles. Ensure that the drain pan or drip pan is large enough to contain drained fluids (e.g., larger pans are needed to contain antifreeze, which may gush from some vehicles).
- Do not pour liquid waste to floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.
- Do not put used or leftover cleaning solutions, solvents, and automotive fluids and in the sanitary sewer.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.

- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Place oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal since municipalities prohibit or discourage disposal of these items in solid waste facilities. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters. Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater.
- Store cracked batteries in a non-leaking secondary container and dispose of properly at recycling or household hazardous waste facilities.

Maintenance and Repair Activities

- Provide a designated area for vehicle maintenance.
- Keep equipment clean; don't allow excessive build-up of oil and grease.
- Use a tarp, ground cloth, or drip pans beneath the vehicle or equipment to capture all spills and drips if temporary work is being conducted outside. Collected drips and spills must be disposed, reused, or recycled properly.
- Perform all vehicle fluid removal or changing inside or under cover if possible to prevent the run-on of stormwater and the runoff of spills:
 - Keep a drip pan under the vehicle while you unclip hoses, unscrew filters, or remove other parts. Use a drip pan under any vehicle that might leak while working on it to keep splatters or drips off the shop floor.
 - Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
 - Keep drip pans or containers under vehicles or equipment that may drip during repairs.
 - Do not change motor oil or perform equipment maintenance in non-appropriate areas.
- Drain oil and other fluids first if the vehicle or equipment is to be stored outdoors.
- Monitor parked vehicles closely for leaks. Pans should be placed under any leaks to collect the fluids for proper disposal or recycling.
- Use one of the following for lubricating vehicle-trailer coupling:
 - Adhesive lubricant
 - Plastic plates
 - Fifth wheels with plastic inserts
 - On-Board lubricating system

Parts Cleaning

- Mechanics should clean vehicle parts without using liquid cleaners wherever possible to reduce waste.
- Steam cleaning and pressure washing may be used instead of solvent parts cleaning. The wastewater generated from steam cleaning must be discharged to an on-site oil water separator that is connected to a sanitary sewer or blind sump. Non-caustic detergents should be used instead of caustic cleaning agents, detergent-based or water-based cleaning systems in place of organic solvent degreasers, and non-chlorinated solvent in place of chlorinated organic solvents for parts cleaning. Refer to SC21 for more information on steam cleaning.

Inspection

- Inspect vehicles and equipment for leaks regularly and repair immediately.
- Make sure incoming vehicles are checked for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.

Training

- Train employees and contractors in the proper handling and disposal of engine fluids and waste materials.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures (You can use reusable cloth rags to clean up small drips and spills instead of disposables; these can be washed by a permitted industrial laundry. Do not clean them at home or at a coin-operated laundry business). Employees should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place an adequate stockpile of spill cleanup materials where it will be readily accessible.
- Clean leaks, drips, and other spills with as little water as possible. Use rags for small spills, a damp mop for general cleanup, and dry absorbent material for larger spills. Use the following three-step method for cleaning floors:
 - Clean spills with rags or other absorbent materials
 - Sweep floor using dry absorbent material
 - Mop the floor. Mop water may be discharged to the sanitary sewer via a toilet or sink.
- Remove the adsorbent materials promptly and dispose of properly when using adsorbent materials on small spills.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all work from being conducted indoors.
- It may not be possible to contain and clean up spills from vehicles/equipment brought on-site after working hours.
- Drain pans (usually 1 ft. x 1 ft.) are generally too small to contain antifreeze, so drip pans (3 ft. x 3 ft.) may have to be purchased or fabricated.
- Dry floor cleaning methods may not be sufficient for some spills. Use three-step method instead.
- Identification of engine leaks may require some use of solvents.
- Installation of structural treatment practices for pretreatment of wastewater discharges can be expensive.
- Prices for recycled materials and fluids may be higher than those of non-recycled materials.
- Some facilities may be limited by a lack of providers of recycled materials, and by the absence of businesses to provide services such as hazardous waste removal, structural treatment practice maintenance, or solvent equipment and solvent recycling.

Requirements

Costs

- Costs should be low, but will vary depending on the size of the facility.

Maintenance

- For facilities responsible for pre-treating their wastewater prior to discharging, the proper functioning of structural treatment practices is an important maintenance consideration. Routine cleanout of oil and grease is required for the devices to maintain their effectiveness, usually at least once a month. During periods of heavy rainfall, cleanout is required more often to ensure pollutants are not washed through the trap. Sediment removal is also required on a regular basis to keep the device working efficiently.
- It is important to sweep the maintenance area weekly, if it is paved, to collect loose particles, and wipe up spills with rags and other absorbent material immediately. Do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, 1,1,1-trichloroethane or methylene chloride. Many of these cleaners are harmful and must be disposed of as a hazardous waste. Cleaning without using liquid cleaners (e.g., wire brush) whenever possible reduces waste. Prevent spills and drips of solvents and cleansers to the shop floor. Do all liquid cleaning at a centralized station so the solvents and residues stay in one area. Locate drip pans, drain boards, and drying racks to direct drips back into a solvent sink or fluid holding tank for reuse.

Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents.

- Clean parts without using liquid cleaners whenever possible to reduce waste.
- Prevent spills and drips of solvents and cleansers to the shop floor.
- Do all liquid cleaning at a centralized station so the solvents and residues stay in one area.
- Locate drip pans, drain boards, and drying racks to direct drips back into a solvent sink or fluid holding tank for reuse.

Recycling

Separating wastes allows for easier recycling and may reduce treatment costs. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents (e.g., 1,1,1-trichloroethane) separate from non-chlorinated solvents (e.g., kerosene and mineral spirits).

Many products made of recycled (i.e., refined or purified) materials are available. Engine oil, transmission fluid, antifreeze, and hydraulic fluid are available in recycled form. Buying recycled products supports the market for recycled materials.

- Recycling is always preferable to disposal of unwanted materials.
- Separate wastes for easier recycling. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents separate from non-chlorinated solvents.
- Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
- Purchase recycled products to support the market for recycled materials.

Vehicle-Trailer Lubrication

Fifth-wheel bearings on trucks require routine lubrication. Typically chassis grease is applied to the fifth-wheel bearing at rates that result in grease dripping off of the bearing into the environment. To address this concern the following options are available:

- Use adhesive lubricant. Follow manufacturer's label regarding the use of adhesive lubricant for truck fifth-wheels. Typically this means applying no more than 6 oz. of grease. No visible extrusion of lubricant from the fifth-wheel bearing when truck and trailer are connected should be present.
- Use plastic plates oil on fifth-wheels with plastic inserts.
- Use on-board truck or on-board trailer lubrication system. If these systems apply lube thinner than National Grease Lubrication Institute #2, equipment for collection of used lubricant is needed to prevent excess lubricant from dripping off the truck.

Safer Alternatives

If possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous material:

- Use non-caustic detergents instead of caustic cleaning for parts cleaning.
- Use detergent-based or water-based cleaning systems in place of organic solvent degreasers. Wash water may require treatment before it can be discharged to the sewer.
- Replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents.
- Choose cleaning agents that can be recycled.

Examples

- Pick N Pull Auto Dismantlers in Rancho Cordova drains all fluids from automobiles before they enter the yard.
- Ecology Auto Wrecking in Rialto is surrounded by a steel plate/concrete fence and has a completely paved lot that is graded to a central low point. Collected stormwater is channeled through an underground drainage system of clarifiers and then stored in a 60,000 gallon UST before being processed through a filter system. In addition, the work area is covered, ventilated and has an additional sump. Vehicle fluids are drained in this area and segregated for recycling.
- All Auto Parts, Fontana, has a complete water recycling system in a 10,000 square foot concrete slab surrounded by a curb that contains all the runoff and sends it to the recycling system. All receiving, dismantling, and shipping occur on the slab.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.sevurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/E>

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, solid waste treatment and disposal, are examples of process operations that can lead to contamination of stormwater runoff. Source controls for outdoor process equipment operations and maintenance include reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

Approach

Pollution Prevention

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Suggested Protocols

- Consider enclosing the activity in a building and connecting the floor drains to the sanitary sewer.
- Cover the work area with a permanent roof if possible.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention). If possible, connect process equipment area to public sewer or facility wastewater treatment system. Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Dry clean the work area regularly.

Training

- Train employees to perform the activity during dry periods only or substituting benign materials for more toxic ones.
- Train employee and contractors in proper techniques for spill containment and cleanup. Employees should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



SC-32 Outdoor Equipment Operations

- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.
- Inspect storage areas regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.

Other Considerations

- Providing cover may be expensive.
- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Requirements

Costs

Costs vary depending on the complexity of the operation and the amount of control necessary for stormwater pollution control.

Maintenance

- Conduct routine preventive maintenance, including checking process equipment for leaks.
- Clean the storm drain system regularly.

Supplemental Information

Further Detail of the BMP

Hydraulic/Treatment Modifications

If stormwater becomes polluted, it should be captured and treated. If you do not have your own process wastewater treatment system, consider discharging to the public sewer system. Use of the public sewer might be allowed under the following conditions:

- If the activity area is very small (less than a few hundred square feet), the local sewer authority may be willing to allow the area to remain uncovered with the drain connected to the public sewer.
- It may be possible under unusual circumstances to connect a much larger area to the public sewer, as long as the rate of stormwater discharges does not exceed the capacity of the wastewater treatment plant. The stormwater could be stored during the storm and then transferred to the public sewer when the normal flow is low, such as at night.

Industries that generate large volumes of process wastewater typically have their own treatment system and corresponding permit. These industries have the discretion to use their wastewater treatment system to treat stormwater within the constraints of their permit requirements for process treatment. It may also be possible for the industry to discharge the stormwater directly to an effluent outfall without treatment as long as the total loading of the discharged process

water and stormwater does not exceed the loading had a stormwater treatment device been used. This could be achieved by reducing the loading from the process wastewater treatment system. Check with your Regional Water Quality Control Board or local sewerage agency, as this option would be subject to permit constraints and potentially regular monitoring.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Stormwater Managers Resource Center <http://www.stormwatercenter.net>



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
 - Production planning and sequencing
 - Process or equipment modification
 - Raw material substitution or elimination
 - Loss prevention and housekeeping
 - Waste segregation and separation
 - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓



Suggested Protocols*General*

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post “No Littering” signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
 - Vehicles equipped with baffles for liquid waste
 - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Requirements***Costs***

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

Supplemental Information***Further Detail of the BMP******Land Treatment System***

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

Examples

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>

Description

Areas within an industrial site that are bare of vegetation or are subject to activities that promote the suppression of vegetation are often subject to erosion. In addition, they may or may not be contaminated from past or current activities. If the area is temporarily bare because of construction, see SC-42, Building Repair, Remodeling, and Construction. Sites with excessive erosion or the potential for excessive erosion should consider employing the soil erosion BMPs identified in the Construction BMP Handbook. Note that this fact sheet addresses soils that are not so contaminated as to exceed hazardous waste criteria (see Title 22 California Code of Regulations for Hazardous Waste Criteria).

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

Preserve natural vegetation whenever possible. See also EC-2, Preservation of Existing Vegetation, in the Construction BMP Handbook.

Suggested Protocols

- Preserve natural vegetation.
- Analyze soil conditions.
- Re-vegetate when necessary.
- Remove contaminated soil.
- Utilize chemical stabilization when needed. See also EC-5, Soil Binders, and EC-13, Polyacrylamide, in the Construction BMP Handbook.
- Use geosynthetic membranes to control erosion if feasible. See also EC-7, Geotextiles and Mats, in the Construction BMP Handbook.

Training

Training is not a significant element of this best management practice.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓



SC-40 Contaminated or Erodible Areas

Other Considerations

- Disadvantages of preserving natural vegetation or revegetation include:
 - Requires substantial planning to preserve and maintain the existing vegetation
 - May not be cost-effective with high land costs
 - Lack of rainfall, inadequate irrigation and/or poor soils may limit the success of re-vegetated areas
- Disadvantages of chemical stabilization include:
 - Creation of impervious surfaces
 - May cause harmful effects on water quality
 - Is usually more expensive than vegetative cover

Requirements

Costs

Except for preservation of natural vegetation, each of the above solutions can be quite expensive depending upon the size of the area.

Maintenance

Maintenance should be minimal, except possibly if irrigation of vegetation is necessary.

Supplemental Information

Preserving Vegetation to Minimize Erosion

Preserving stabilized areas minimizes erosion potential, protects water quality, and provides aesthetic benefits. The most effective way to control erosion is to preserve existing vegetation. Preservation of natural vegetation provides a natural buffer zone and an opportunity for infiltration of stormwater and capture of pollutants in the soil matrix. This practice can be used as a permanent source control measure.

Vegetation preservation should be incorporated into the site. Preservation requires good site management to minimize the impact of construction when construction is underway and exposure of soils after construction. Proper maintenance is important to ensure healthy vegetation that can control erosion. Different species, soil types, and climatic conditions will require different maintenance activities such as mulching, fertilizing, liming, irrigation, pruning and weed and pest control. Maintenance should be performed regularly especially during construction phases.

The preferred approach is to leave as much native vegetation on-site as possible, thereby reducing or eliminating any erosion problem. However, assuming the site already has contaminated or erodible surface areas, there are four possible courses of action which can be taken:

- The area can be revegetated if it is not in use and therefore not subject to damage from site activities. In as much as the area is already devoid of vegetation, special measures are likely

necessary. Lack of vegetation may be due to the lack of water and/or poor soils. The latter can perhaps be solved with fertilization, or the ground may simply be too compacted from prior use. Improving soil conditions may be sufficient to support the recovery of vegetation. Use process wastewater for irrigation if possible. Finally, see the Construction BMP Handbook for further procedures on establishing vegetation.

- Chemical stabilization can be used as an alternate method in areas where temporary seeding practices cannot be used because of season or climate. It can provide immediate, effective, and inexpensive erosion control. Application rates and procedures recommended by the manufacturer should be followed as closely as possible to prevent the products from forming ponds and creating large areas where moisture cannot penetrate the soil. See also EC-5, Soil Binders, and EC-13, Polyacrylamide, in the Construction BMP Handbook for more information. Advantages of chemical stabilization include:
 - Applied easily to the surface
 - Stabilizes areas effectively
 - Provides immediate protection to soils that are in danger of erosion
- Contaminated soils can be removed, however this is a last resort and quite expensive. The level and extent of the contamination must be determined. This determination and removal must comply with State and Federal regulations, permits must be acquired and fees paid.
- Geosynthetics may be used. Geosynthetics include those materials that are designed as an impermeable barrier to contain or control large amounts of liquid or solid matter. Geosynthetics have been developed primarily for use in landfills and surface impoundments, and the technology is well established. There are two general types of geosynthetics: geomembranes (impermeable) and geotextiles (permeable). Geomembranes are composed of one of three types of impermeable materials: elastomers (rubbers), thermoplastics (plastics), or a combination of these two types of materials. See also EC-7, Geotextiles and Mats, in the Construction BMP Handbook for more information. The advantages of these materials include:
 - A variety of compounds are available
 - Sheeting is produced in a factory environment
 - Polymeric membranes are flexible
 - Installation is simpleDisadvantages include:
 - Chemical resistance must be determined for each application
 - Seaming systems may be a weak link in the system
 - Many materials are subject to attack from biotic, mechanical, or environmental sources

SC-40 Contaminated or Erodible Areas

Geotextiles are uncoated synthetic textile products that are not watertight. They are composed of a variety of materials, most commonly polypropylene and polyester. Geotextiles serve five basic functions:

- Filtration
- Drainage
- Separation
- Reinforcement
- Armoring

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>

Parking/Storage Area Maintenance SC-43



Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓



SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post “No Littering” signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
 - Block the storm drain or contain runoff.
 - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
 - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
 - Clean oily spots with absorbent materials.
 - Use a screen or filter fabric over inlet, then wash surfaces.

Parking/Storage Area Maintenance SC-43

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan <http://www.swrcb.ca.gov/nps/index.html>

Clark County Storm Water Pollution Control Manual
<http://www.co.clark.wa.us/pubworks/bmpman.pdf>

King County Storm Water Pollution Control Manual <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). <http://www.basmaa.org/>

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program <http://www.scvurppp.org>

The Storm Water Managers Resource Center <http://www.stormwatercenter.net/>



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>
Oxygen Demanding	<input checked="" type="checkbox"/>

Description

Streets, roads, and highways are significant sources of pollutants in stormwater discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. Stormwater pollution from roadway and bridge maintenance should be addressed on a site-specific basis. Use of the procedures outlined below, that address street sweeping and repair, bridge and structure maintenance, and unpaved roads will reduce pollutants in stormwater.

Approach

Pollution Prevention

- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal)
- Recycle paint and other materials whenever possible.
- Enlist the help of citizens to keep yard waste, used oil, and other wastes out of the gutter.

Suggested Protocols

Street Sweeping and Cleaning

- Maintain a consistent sweeping schedule. Provide minimum monthly sweeping of curbed streets.
- Perform street cleaning during dry weather if possible.



- Avoid wet cleaning or flushing of street, and utilize dry methods where possible.
- Consider increasing sweeping frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc. For example:
 - Increase the sweeping frequency for streets with high pollutant loadings, especially in high traffic and industrial areas.
 - Increase the sweeping frequency just before the wet season to remove sediments accumulated during the summer.
 - Increase the sweeping frequency for streets in special problem areas such as special events, high litter or erosion zones.
- Maintain cleaning equipment in good working condition and purchase replacement equipment as needed. Old sweepers should be replaced with new technologically advanced sweepers (preferably regenerative air sweepers) that maximize pollutant removal.
- Operate sweepers at manufacturer requested optimal speed levels to increase effectiveness.
- To increase sweeping effectiveness consider the following:
 - Institute a parking policy to restrict parking in problematic areas during periods of street sweeping.
 - Post permanent street sweeping signs in problematic areas; use temporary signs if installation of permanent signs is not possible.
 - Develop and distribute flyers notifying residents of street sweeping schedules.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- If available use vacuum or regenerative air sweepers in the high sediment and trash areas (typically industrial/commercial).
- Keep accurate logs of the number of curb-miles swept and the amount of waste collected.
- Dispose of street sweeping debris and dirt at a landfill.
- Do not store swept material along the side of the street or near a storm drain inlet.
- Keep debris storage to a minimum during the wet season or make sure debris piles are contained (e.g. by berming the area) or covered (e.g. with tarps or permanent covers).

Street Repair and Maintenance

Pavement marking

- Schedule pavement marking activities for dry weather.

- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- Provide drop cloths and drip pans in paint mixing areas.
- Properly maintain application equipment.
- Street sweep thermoplastic grindings. Yellow thermoplastic grindings may require special handling as they may contain lead.
- Paints containing lead or tributyltin are considered a hazardous waste and must be disposed of properly.
- Use water based paints whenever possible. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer.
- Properly store leftover paints if they are to be kept for the next job, or dispose of properly.

Concrete installation and repair

- Schedule asphalt and concrete activities for dry weather.
- Take measures to protect any nearby storm drain inlets and adjacent watercourses, prior to breaking up asphalt or concrete (e.g. place san bags around inlets or work areas).
- Limit the amount of fresh concrete or cement mortar mixed, mix only what is needed for the job.
- Store concrete materials under cover, away from drainage areas. Secure bags of cement after they are open. Be sure to keep wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff.
- Return leftover materials to the transit mixer. Dispose of small amounts of hardened excess concrete, grout, and mortar in the trash.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile, or dispose in the trash.
- When making saw cuts in pavement, use as little water as possible and perform during dry weather. Cover each storm drain inlet completely with filter fabric or plastic during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site. Alternatively, a small onsite vacuum may be used to pick up the slurry as this will prohibit slurry from reaching storm drain inlets.
- Wash concrete trucks off site or in designated areas on site designed to preclude discharge of wash water to drainage system.

Patching, resurfacing, and surface sealing

- Schedule patching, resurfacing and surface sealing for dry weather.
- Stockpile materials away from streets, gutter areas, storm drain inlets or watercourses. During wet weather, cover stockpiles with plastic tarps or berm around them if necessary to prevent transport of materials in runoff.
- Pre-heat, transfer or load hot bituminous material away from drainage systems or watercourses.
- Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and maintenance holes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from covered maintenance holes and storm drain inlets when the job is complete.
- Prevent excess material from exposed aggregate concrete or similar treatments from entering streets or storm drain inlets. Designate an area for clean up and proper disposal of excess materials.
- Use only as much water as necessary for dust control, to avoid runoff.
- Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquid in storm drains.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Equipment cleaning maintenance and storage

- Inspect equipment daily and repair any leaks. Place drip pans or absorbent materials under heavy equipment when not in use.
- Perform major equipment repairs at the corporation yard, when practical.
- If refueling or repairing vehicles and equipment must be done onsite, use a location away from storm drain inlets and watercourses.
- Clean equipment including sprayers, sprayer paint supply lines, patch and paving equipment, and mud jacking equipment at the end of each day. Clean in a sink or other area (e.g. vehicle wash area) that is connected to the sanitary sewer.

*Bridge and Structure Maintenance**Paint and Paint Removal*

- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Do not transfer or load paint near storm drain inlets or watercourses.

- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.
- Plug nearby storm drain inlets prior to starting painting where there is significant risk of a spill reaching storm drains. Remove plugs when job is completed.
- If sand blasting is used to remove paint, cover nearby storm drain inlets prior to starting work.
- Perform work on a maintenance traveler or platform, or use suspended netting or tarps to capture paint, rust, paint removing agents, or other materials, to prevent discharge of materials to surface waters if the bridge crosses a watercourse. If sanding, use a sander with a vacuum filter bag.
- Capture all clean-up water, and dispose of properly.
- Recycle paint when possible (e.g. paint may be used for graffiti removal activities). Dispose of unused paint at an appropriate household hazardous waste facility.

Graffiti Removal

- Schedule graffiti removal activities for dry weather.
- Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.
- When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal above.
- Direct runoff from sand blasting and high pressure washing (with no cleaning agents) into a landscaped or dirt area. If such an area is not available, filter runoff through an appropriate filtering device (e.g. filter fabric) to keep sand, particles, and debris out of storm drains.
- If a graffiti abatement method generates wash water containing a cleaning compound (such as high pressure washing with a cleaning compound), plug nearby storm drains and vacuum/pump wash water to the sanitary sewer.
- Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

Repair Work

- Prevent concrete, steel, wood, metal parts, tools, or other work materials from entering storm drains or watercourses.
- Thoroughly clean up the job site when the repair work is completed.
- When cleaning guardrails or fences follow the appropriate surface cleaning methods (depending on the type of surface) outlined in SC-71 Plaza & Sidewalk Cleaning fact sheet.

- If painting is conducted, follow the painting and paint removal procedures above.
- If graffiti removal is conducted, follow the graffiti removal procedures above.
- If construction takes place, see the Construction Activity BMP Handbook.
- Recycle materials whenever possible.

Unpaved Roads and Trails

- Stabilize exposed soil areas to prevent soil from eroding during rain events. This is particularly important on steep slopes.
- For roadside areas with exposed soils, the most cost-effective choice is to vegetate the area, preferably with a mulch or binder that will hold the soils in place while the vegetation is establishing. Native vegetation should be used if possible.
- If vegetation cannot be established immediately, apply temporary erosion control mats/blankets; a comma straw, or gravel as appropriate.
- If sediment is already eroded and mobilized in roadside areas, temporary controls should be installed. These may include: sediment control fences, fabric-covered triangular dikes, gravel-filled burlap bags, biobags, or hay bales staked in place.

Non-Stormwater Discharges

Field crews should be aware of non-stormwater discharges as part of their ongoing street maintenance efforts.

- Refer to SC-10 Non-Stormwater Discharges
- Identify location, time and estimated quantity of discharges.
- Notify appropriate personnel.

Training

- Train employees regarding proper street sweeping operation and street repair and maintenance.
- Instruct employees and subcontractors to ensure that measures to reduce the stormwater impacts of roadway/bridge maintenance are being followed.
- Require engineering staff and/or consulting A/E firms to address stormwater quality in new bridge designs or existing bridge retrofits.
- Use a training log or similar method to document training.
- Train employees on proper spill containment and clean up, and in identifying non-stormwater discharges.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, and implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Densely populated areas or heavily used streets may require parking regulations to clear streets for cleaning.
- No currently available conventional sweeper is effective at removing oil and grease. Mechanical sweepers are not effective at removing finer sediments.
- Limitations may arise in the location of new bridges. The availability and cost of land and other economic and political factors may dictate where the placement of a new bridge will occur. Better design of the bridge to control runoff is required if it is being placed near sensitive waters.

Requirements

Costs

- The maintenance of local roads and bridges is already a consideration of most community public works or transportation departments. Therefore, the cost of pollutant reducing management practices will involve the training and equipment required to implement these new practices.
- The largest expenditures for street sweeping programs are in staffing and equipment. The capital cost for a conventional street sweeper is between \$60,000 and \$120,000. Newer technologies might have prices approaching \$180,000. The average useful life of a conventional sweeper is about four years, and programs must budget for equipment replacement. Sweeping frequencies will determine equipment life, so programs that sweep more often should expect to have a higher cost of replacement.
- A street sweeping program may require the following.
 - Sweeper operators, maintenance, supervisory, and administrative personnel are required.
 - Traffic control officers may be required to enforce parking restrictions.
 - Skillful design of cleaning routes is required for program to be productive.
 - Arrangements must be made for disposal of collected wastes.

- If investing in newer technologies, training for operators must be included in operation and maintenance budgets. Costs for public education are small, and mostly deal with the need to obey parking restrictions and litter control. Parking tickets are an effective reminder to obey parking rules, as well as being a source of revenue.

Maintenance

- Not applicable

Supplemental Information***Further Detail of the BMP******Street sweeping***

There are advantages and disadvantages to the two common types of sweepers. The best choice depends on your specific conditions. Many communities find it useful to have a compliment of both types in their fleet.

Mechanical Broom Sweepers - More effective at picking up large debris and cleaning wet streets. Less costly to purchase and operate. Create more airborne dust.

Vacuum Sweepers - More effective at removing fine particles and associated heavy metals. Ineffective at cleaning wet streets. Noisier than mechanical broom sweepers which may restrict areas or times of operation. May require an advance vehicle to remove large debris.

Street Flushers - Not affected by biggest interference to cleaning, parked cars. May remove finer sediments, moving them toward the gutter and stormwater inlets. For this reason, flushing fell out of favor and is now used primarily after sweeping. Flushing may be effective for combined sewer systems. Presently street flushing is not allowed under most NPDES permits.

Cross-Media Transfer of Pollutants

The California Air Resources Board (ARB) has established state ambient air quality standards including a standard for respirable particulate matter (less than or equal to 10 microns in diameter, symbolized as PM₁₀). In the effort to sweep up finer sediments to remove attached heavy metals, municipalities should be aware that fine dust, that cannot be captured by the sweeping equipment and becomes airborne, could lead to issues of worker and public safety.

Bridges

Bridges that carry vehicular traffic generate some of the more direct discharges of runoff to surface waters. Bridge scupper drains cause a direct discharge of stormwater into receiving waters and have been shown to carry relatively high concentrations of pollutants. Bridge maintenance also generates wastes that may be either directly deposited to the water below or carried to the receiving water by stormwater. The following steps will help reduce the stormwater impacts of bridge maintenance:

- Site new bridges so that significant adverse impacts to wetlands, sensitive areas, critical habitat, and riparian vegetation are minimized.

- Design new bridges to avoid the use of scupper drains and route runoff to land for treatment control. Existing scupper drains should be cleaned on a regular basis to avoid sediment/debris accumulation.
- Reduce the discharge of pollutants to surface waters during maintenance by using suspended traps, vacuums, or booms in the water to capture paint, rust, and paint removing agents. Many of these wastes may be hazardous. Properly dispose of this waste by referring to CA21 (Hazardous Waste Management) in the Construction Handbook.
- Train employees and subcontractors to reduce the discharge of wastes during bridge maintenance.

De-icing

- Do not over-apply deicing salt and sand, and routinely calibrate spreaders.
- Near reservoirs, restrict the application of deicing salt and redirect any runoff away from reservoirs.
- Consider using alternative deicing agents (less toxic, biodegradable, etc.).

References and Resources

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July, 1998.

Orange County Stormwater Program

http://www.ocwatersheds.com/stormwater/swp_introduction.asp

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Fresh Concrete and Mortar Application Best Management Practices for the Construction Industry. June.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 2001. Roadwork and Paving Best Management Practices for the Construction Industry. June.

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Roadway and Bridge Maintenance. On-line http://www.epa.gov/npdes/menuofbmeps/poll_13.htm

Excerpt - Fact Sheet SE-2 Sediment Basin



Stormwater Best Management Practice
Handbook Portal: **Construction**



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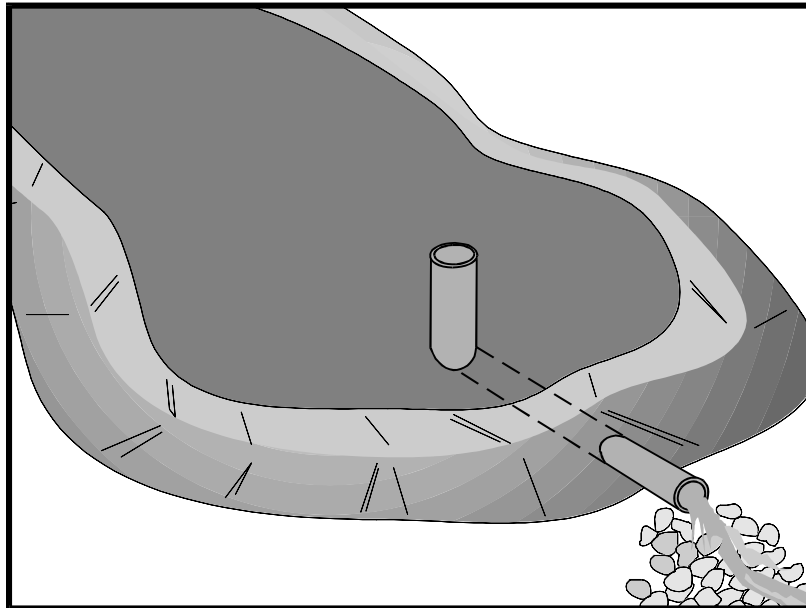
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Description and Purpose

A sediment basin is a temporary basin formed by excavation or by constructing an embankment so that sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is released.

Sediment basin design guidance presented in this fact sheet is intended to provide options, methods, and techniques to optimize temporary sediment basin performance and basin sediment removal. Basin design guidance provided in this fact sheet is not intended to guarantee basin effluent compliance with numeric discharge limits (numeric action levels or numeric effluent limits for turbidity). Compliance with discharge limits requires a thoughtful approach to comprehensive BMP planning, implementation, and maintenance. Therefore, optimally designed and maintained sediment basins should be used in conjunction with a comprehensive system of BMPs that includes:

- Diverting runoff from undisturbed areas away from the basin
- Erosion control practices to minimize disturbed areas on-site and to provide temporary stabilization and interim sediment controls (e.g., stockpile perimeter control, check dams, perimeter controls around individual lots) to reduce the basin's influent sediment concentration.

At some sites, sediment basin design enhancements may be required to adequately remove sediment. Traditional

Categories

EC	Erosion Control	
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Category
- Secondary Category

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-3 Sediment Trap (for smaller areas)

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(a.k.a. “physical”) enhancements such as alternative outlet configurations or flow deflection baffles increase detention time and other techniques such as outlet skimmers preferentially drain flows with lower sediment concentrations. These “physical” enhancement techniques are described in this fact sheet. To further enhance sediment removal particularly at sites with fine soils or turbidity sensitive receiving waters, some projects may need to consider implementing Active Treatment Systems (ATS) whereby coagulants and flocculants are used to enhance settling and removal of suspended sediments. Guidance on implementing ATS is provided in SE-11.

Suitable Applications

Sediment basins may be suitable for use on larger projects with sufficient space for constructing the basin. Sediment basins should be considered for use:

- Where sediment-laden water may enter the drainage system or watercourses
- On construction projects with disturbed areas during the rainy season
- At the outlet of disturbed watersheds between 5 acres and 75 acres and evaluated on a site by site basis
- Where post construction detention basins are required
- In association with dikes, temporary channels, and pipes used to convey runoff from disturbed areas

Limitations

Sediment basins must be installed only within the property limits and where failure of the structure will not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities. In addition, sediment basins are attractive to children and can be very dangerous. Local ordinances regarding health and safety must be adhered to. If fencing of the basin is required, the type of fence and its location should be shown in the SWPPP and in the construction specifications.

- As a general guideline, sediment basins are suitable for drainage areas of 5 acres or more, but not appropriate for drainage areas greater than 75 acres. However, the tributary area should be evaluated on a site by site basis.
- Sediment basins may become an “attractive nuisance” and care must be taken to adhere to all safety practices. If safety is a concern, basin may require protective fencing.
- Sediment basins designed according to this fact sheet are only effective in removing sediment down to about the silt size fraction. Sediment-laden runoff with smaller size fractions (fine silt and clay) may not be adequately treated unless chemical (or other appropriate method) treatment is used in addition to the sediment basin.
- Basins with a height of 25 ft or more or an impounding capacity of 50 ac-ft or more must obtain approval from California Department of Water Resources Division of Safety of Dams (<http://www.water.ca.gov/damsafety/>).

- Water that stands in sediment basins longer than 96 hours may become a source of mosquitoes (and midges), particularly along perimeter edges, in shallow zones, in scour or below-grade pools, around inlet pipes, along low-flow channels, and among protected habitats created by emergent or floating vegetation (e.g. cattails, water hyacinth), algal mats, riprap, etc.
- Basins require large surface areas to permit settling of sediment. Size may be limited by the available area.

Implementation

General

A sediment basin is a controlled stormwater release structure formed by excavation or by construction of an embankment of compacted soil across a drainage way, or other suitable location. It is intended to trap sediment before it leaves the construction site. The basin is a temporary measure expected to be used during active construction in most cases and is to be maintained until the site area is permanently protected against erosion or a permanent detention basin is constructed.

Sediment basins are suitable for nearly all types of construction projects. Whenever possible, construct the sediment basins before clearing and grading work begins. Basins should be located at the stormwater outlet from the site but not in any natural or undisturbed stream. A typical application would include temporary dikes, pipes, and/or channels to convey runoff to the basin inlet.

Many development projects in California are required by local ordinances to provide a stormwater detention basin for post-construction flood control, desilting, or stormwater pollution control. A temporary sediment basin may be constructed by rough grading the post-construction control basins early in the project.

Sediment basins if properly designed and maintained can trap a significant amount of the sediment that flows into them. However, traditional basins do not remove all inflowing sediment. Therefore, they should be used in conjunction with erosion control practices such as temporary seeding, mulching, diversion dikes, etc., to reduce the amount of sediment flowing into the basin.

Planning

To improve the effectiveness of the basin, it should be located to intercept runoff from the largest possible amount of disturbed area. Locations best suited for a sediment basin are generally in lower elevation areas of the site (or basin tributary area) where site drainage would not require significant diversion or other means to direct water to the basin but outside jurisdictional waterways. However, as necessary, drainage into the basin can be improved by the use of earth dikes and drainage swales (see BMP EC-9). . The basin should not be located where its failure would result in the loss of life or interruption of the use or service of public utilities or roads.

Construct before clearing and grading work begins when feasible.

- Do not locate the basin in a jurisdictional stream.

- Basin sites should be located where failure of the structure will not cause loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities.
- Basins with a height of 25 ft or more or an impounding capacity of 50 ac-ft must obtain approval from the Division of Dam Safety. Local dam safety requirements may be more stringent.
- Limit the contributing area to the sediment basin to only the runoff from the disturbed soil areas. Use temporary concentrated flow conveyance controls to divert runoff from undisturbed areas away from the sediment basin.
- The basin should be located: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where post-construction (permanent) detention basins will be constructed, and (3) where the basins can be maintained on a year-round basis to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area, and to maintain the basin to provide the required capacity.

Design

When designing a sediment basin, designers should evaluate the site constraints that could affect the efficiency of the BMP. Some of these constraints include: the relationship between basin capacity, anticipated sediment load, and freeboard, available footprint for the basin, maintenance frequency and access, and hydraulic capacity and efficiency of the temporary outlet infrastructure. Sediment basins should be designed to maximize sediment removal and to consider sediment load retained by the basin as it affects basin performance.

Three Basin Design Options (Part A) are presented below along with a Typical Sediment/Retention Basin Design Methodology (Part B). Regardless of the design option that is selected, designers also need to evaluate the sediment basin capacity with respect to sediment accumulation (See “*Step 3. Evaluate the Capacity of the Sediment Basin*”), and should incorporate approaches identified in “*Step 4. Other Design Considerations*” to enhance basin performance.

A) Basin Design Options:

Option 1:

Design sediment basin(s) using the standard equation:

$$A_s = \frac{1.2Q}{V_s} \quad (\text{Eq. 1})$$

Where:

A_s = Minimum surface area for trapping soil particles of a certain size

V_s = Settling velocity of the design particle size chosen ($V_s = 0.00028$ ft/s for a design particle size of 0.01 mm at 68°F)

1.2 = Factor of safety recommended by USEPA to account for the reduction in basin efficiency caused due to turbulence and other non ideal conditions.

$$Q = CIA \quad (\text{Eq.2})$$

Where

Q = Peak basin influent flow rate measured in cubic feet per second (ft³/s)

C = Runoff coefficient (unitless)

I = Peak rainfall intensity for the 10-year, 6-hour rain event (in/hr)

A = Area draining into the sediment basin in acres

The design particle size should be the smallest soil grain size determined by wet sieve analysis, or the fine silt sized (0.01 mm [or 0.0004 in.]) particle, and the Vs used should be 100 percent of the calculated settling velocity.

This sizing basin method is dependent on the outlet structure design or the total basin length with an appropriate outlet. If the designer chooses to utilize the outlet structure to control the flow duration in the basin, the basin length (distance between the inlet and the outlet) should be a minimum of twice the basin width; the depth should not be less than 3 ft nor greater than 5 ft for safety reasons and for maximum efficiency (2 ft of sediment storage, 2 ft of capacity). If the designer chooses to utilize the basin length (with appropriate basin outlet) to control the flow duration in the basin, the basin length (distance between the inlet and the outlet) should be a specifically designed to capture 100% of the design particle size; the depth should not be less than 3 ft nor greater than 5 ft for safety reasons and for maximum efficiency (2 ft of sediment storage, 2 ft of capacity).

Basin design guidance provided herein assumes standard water properties (e.g., estimated average water temperature, kinematic viscosity, etc.) as a basis of the design. Designers can use an alternative design (Option 3) with site specific water properties as long as the design is as protective as Option 1.

The design guidance uses the peak influent flow rate to size sediment basins. Designers can use an alternative design (Option 3) with site specific average flow rates as long as the design is as protective as Option 1.

The basin should be located on the site where it can be maintained on a year-round basis and should be maintained on a schedule to retain the 2 ft of capacity.

Option 2:

Design pursuant to local ordinance for sediment basin design and maintenance, provided that the design efficiency is as protective or more protective of water quality than Option 1.

Option 3:

The use of an equivalent surface area design or equation provided that the design efficiency is as protective or more protective of water quality than Option 1.

B) Typical Sediment/Detention Basin Design Methodology:

Design of a sediment basin requires the designer to have an understanding of the site constraints, knowledge of the local soil (e.g., particle size distribution of potentially contributing soils), drainage area of the basin, and local hydrology. Designers should not assume that a sediment basin for location A is applicable to location B. Therefore, designers can use this factsheet as guidance but will need to apply professional judgment and knowledge of the site to design an effective and efficient sediment basin. The following provides a general overview of typical design methodologies:

Step 1. Hydrologic Design

- Evaluate the site constraints and assess the drainage area for the sediment basin. Designers should consider on- and off-site flows as well as changes in the drainage area associated with site construction/disturbance. To minimize additional construction during the course of the project, the designer should consider identifying the maximum drainage area when calculating the basin dimensions.
- If a local hydrology manual is not available it is recommended to follow standard rational method procedures to estimate the flow rate. The references section of this factsheet provides a reference to standard hydrology textbooks that can provide standard methodologies. If local rainfall depths are not available, values can be obtained from standard precipitation frequency maps from NOAA (downloaded from <http://www.wrcc.dri.edu/pcpnfreq.html>).

Step 2. Hydraulic Design

- Calculate the surface area required for the sediment basin using Equation 1. In which the flow rate is estimated for a 10-yr 6-hr event using rational method procedure listed in local hydrology manual and V_s is estimated using Stokes Law presented in Equation 3.

$$V_s = 2.81d^2 \quad (\text{Eq.3})$$

Where

V_s = Settling velocity in feet per second at 68°F

d = diameter of sediment particle in millimeters (smallest soil grain size determined by wet sieve analysis or fine silt (0.01 mm [or 0.0004 in.]

- In general the basin outlet design requires an iterative trial and error approach that considered the maximum water surface elevation, the elevation versus volume (stage-storage) relationship, the elevation versus basin outflow (a.k.a.-discharge) relationship, and the estimated inflow hydrograph. To adequately design the basins to settle sediment, the outlet configuration and associated outflow rates can be estimated by numerous methodologies. The following provides some guidance for design the basin outlet:
 - An outlet should have more than one orifice.
 - An outlet design typically utilizes multiple horizontal rows of orifices (approximately 3 or more) with at least 2 orifices per row (see Figures 1 and 2 at the end of this fact sheet).

- Orifices can vary in shape.
- Select the appropriate orifice diameter and number of perforations per row with the objective of minimizing the number of rows while maximizing the detention time.
- The diameter of each orifice is typically a maximum of 3-4 inches and a minimum of 0.25-0.5 inches.
- If a rectangular orifice is used, it is recommended to have minimum height of 0.5 inches and a maximum height of 6 inches.
- Rows are typically spaced at three times the diameter center to center vertically with a minimum distance of approximately 4 inches on center and a maximum distance of 1 foot on center.
- To estimate the outflow rate, each row is calculated separately based on the flow through a single orifice then multiplied by the number of orifices in the row. This step is repeated for each of the rows. Once all of the orifices are estimated, the total outflow rate versus elevation (stage-discharge curve) is developed to evaluate the detention time within the basin.
- Flow through a single orifice can be estimated using an Equation 4:

$$Q = BC' A(2gH)^{0.5} \quad (\text{Eq.4})$$

Where

Q = Outflow rate in ft³/s

C' = Orifice coefficient (unitless)

A = Area of the orifice (ft²)

g = acceleration due to gravity (ft³/s)

H = Head above the orifice (ft)

B = Anticipated Blockage or clogging factor (unitless), It is dependent on anticipated sediment and debris load, trash rack configuration etc, so the value is dependent on design engineers professional judgment and/or local requirements (B is never greater than 1 and a value of 0.5 is generally used)

- Care must be taken in the selection of orifice coefficient ("C'"); 0.60 is most often recommended and used. However, based on actual tests, Young and Graziano (1989), "Outlet Hydraulics of Extended Detention Facilities for Northern Virginia Planning District Commission", recommends the following:
 - C' = 0.66 for thin materials; where the thickness is equal to or less than the orifice diameter, or
 - C' = 0.80 when the material is thicker than the orifice diameter
- If different sizes of orifices are used along the riser then they have to be sized such that not more than 50 percent of the design storm event drains in one-third of the drawdown time (to provide adequate settling time for events smaller than the design storm event)

and the entire volume drains within 96 hours or as regulated by the local vector control agency. If a basin fails to drain within 96 hours, the basin must be pumped dry.

- Because basins are not maintained for infiltration, water loss by infiltration should be disregarded when designing the hydraulic capacity of the outlet structure.
- **Floating Outlet Skimmer:** The floating skimmer (see Figure 3 at the end of this fact sheet is an alternative outlet configuration (patented) that drains water from upper portion of the water column. This configuration has been used for temporary and permanent basins and can improve basin performance by eliminating bottom orifices which have the potential of discharging solids. Some design considerations for this alternative outlet device includes the addition of a sand filter or perforated under drain at the low point in the basin and near the floating skimmer. These secondary drains allow the basin to fully drain. More detailed guidelines for sizing the skimmer can be downloaded from <http://www.fairclothskimmer.com/>.
- **Hold and Release Valve:** An ideal sediment/detention basin would hold all flows to the design storm level for sufficient time to settle solids, and then slowly release the storm water. Implementing a reliable valve system for releasing detention basins is critical to eliminate the potential for flooding in such a system. Some variations of hold and release valves include manual valves, bladder devices or electrically operated valves. When a precipitation event is forecast, the valve would be close for the duration of the storm and appropriate settling time. When the settling duration is met (approximately 24 or 48 hours), the valve would be opened and allow the stormwater to be released at a rate that does not resuspend settled solids and in a non-erosive manner. If this type of system is used the valve should be designed to empty the entire basin within 96 hours or as stipulated by local vector control regulations.

Step 3. Evaluate the Capacity of the Sediment Basin

- Typically, sediment basins do not perform as designed when they are not properly maintained or the sediment yield to the basin is larger than expected. As part of a good sediment basin design, designers should consider maintenance cycles, estimated soil loss and/or sediment yield, and basin sediment storage volume. The two equations below can be used to quantify the amount of soil entering the basin.
- The Revised Universal Soil Loss Equation (RUSLE, Eq.5) can be used to estimate annual soil loss and the Modified Universal Soil Equation (MUSLE, Eq.6) can be used to estimate sediment yield from a single storm event.

$$A = R \times K \times LS \times C \times P \quad (\text{Eq.5})$$

$$Y = 95 Q \times q_p^{0.56} \times K \times LS \times C \times P \quad (\text{Eq.6})$$

Where:

A = annual soil loss, tons/acre-year

R = rainfall erosion index, in 100 ft.tons/acre.in/hr

K = soil erodibility factor, tons/acre per unit of R

LS = slope length and steepness factor (unitless)

C = vegetative cover factor (unitless)

P = erosion control practice factor (unitless)

Y = single storm sediment yield in tons

Q = runoff volume in acre-feet

q_p = peak flow in cfs

- Detailed descriptions and methodologies for estimating the soil loss can be obtained from standard hydrology text books (See References section).
- Determination of the appropriate equation should consider construction duration and local environmental factors (soils, hydrology, etc.). For example, if a basin is planned for a project duration of 1 year and the designer specifies one maintenance cycle, RUSLE could be used to estimate the soil loss and thereby the designer could indicate that the sediment storage volume would be half of the soil loss value estimated. As an example for use of MUSLE, a project may have a short construction duration thereby requiring fewer maintenance cycles and a reduced sediment storage volume. MUSLE would be used to estimate the anticipated soil loss based on a specific storm event to evaluate the sediment storage volume and appropriate maintenance frequency.
- The soil loss estimates are an essential step in the design and it is essential that the designer provide construction contractors with enough information to understand maintenance frequency and/or depths within the basin that would trigger maintenance. Providing maintenance methods, frequency and specification should be included in design bid documents such as the SWPPP Site Map.
- Once the designer has quantified the amount of soil entering the basin, the depth required for sediment storage can be determined by dividing the estimated sediment loss by the surface area of the basin.

Step 4. Other Design Considerations

- Consider designing the volume of the settling zone for the total storm volume associated with the 2-year event or other appropriate design storms specified by the local agency. This volume can be used as a guide for sizing the basin without iterative routing calculations. The depth of the settling zone can be estimated by dividing the estimated 2-yr storm volume by the surface area of the basin.
- The basin volume consists of two zones:
 - A sediment storage zone at least 1 ft deep.
 - A settling zone at least 2 ft deep.

- The basin depth must be no less than 3 ft (not including freeboard).
- Proper hydraulic design of the outlet is critical to achieving the desired performance of the basin. The outlet should be designed to drain the basin within 24 to 96 hours (also referred to as “drawdown time”). The 24-hour limit is specified to provide adequate settling time; the 96-hour limit is specified to mitigate vector control concerns.
- Confirmation of the basin performance can be evaluated by routing the design storm (10-yr 6-hr, or as directed by local regulations) through the basin based on the basin volume (stage-storage curve) and the outlet design (stage-discharge curve based on the orifice configuration or equivalent outlet design).
- Sediment basins, regardless of size and storage volume, should include features to accommodate overflow or bypass flows that exceed the design storm event.
 - Include an emergency spillway to accommodate flows not carried by the principal spillway. The spillway should consist of an open channel (earthen or vegetated) over undisturbed material (not fill) or constructed of a non-erodible riprap (or equivalent protection) on fill slopes.
 - The spillway control section, which is a level portion of the spillway channel at the highest elevation in the channel, should be a minimum of 20 ft in length.
- Rock, vegetation or appropriate erosion control should be used to protect the basin inlet, outlet, and slopes against erosion.
- The total depth of the sediment basin should include the depth required for sediment storage, depth required for settling zone and freeboard of at least 1 foot or as regulated by local flood control agency for a flood event specified by the local agency.
- The basin alignment should be designed such that the length of the basin is more than twice the width of the basin; the length should be determined by measuring the distance between the inlet and the outlet. If the site topography does not allow for this configuration baffles should be installed so that the ratio is satisfied. If a basin has more than one inflow point, any inflow point that conveys more than 30 percent of the total peak inflow rate has to meet the required length to width ratio.
- An alternative basin sizing method proposed by Fifield (2004) can be consulted to estimate an alternative length to width ratio and basin configuration. These methods can be considered as part of Option 3 which allows for alternative designs that are protective or more protective of water quality.
- Baffles (see Figure 4 at the end of this fact sheet) can be considered at project sites where the existing topography or site constraints limit the length to width ratio. Baffles should be constructed of earthen berms or other structural material within the basin to divert flow in the basin, thus increasing the effective flow length from the basin inlet to the outlet riser. Baffles also reduce the change of short circuiting and allows for settling throughout the basin.

- Baffles are typically constructed from the invert of the basin to the crest of the emergency spillway (i.e., design event flows are meant to flow around the baffles and flows greater than the design event would flow over the baffles to the emergency spillway).
- Use of other materials for construction of basin baffles (such as silt fence) may not be appropriate based on the material specifications and will require frequent maintenance (maintain after every storm event). Maintenance may not be feasible when required due to flooded conditions resulting from frequent (i.e., back to back) storm events. Use of alternative baffle materials should not deviate from the intended purpose of the material, as described by the manufacturer.
- Sediment basins are best used in conjunction with erosion controls.
- Basins with an impounding levee greater than 4.5 ft tall, measured from the lowest point to the impounding area to the highest point of the levee, and basins capable of impounding more than 35,000 ft³, should be designed by a Registered Civil Engineer. The design should include maintenance requirements, including sediment and vegetation removal, to ensure continuous function of the basin outlet and bypass structures.
- A forebay, constructed upstream of the basin, may be provided to remove debris and larger particles.
- The outflow from the sediment basin should be provided with velocity dissipation devices (see BMP EC-10) to prevent erosion and scouring of the embankment and channel.
- The principal outlet should consist of a corrugated metal, high density polyethylene (HDPE), or reinforced concrete riser pipe with dewatering holes and an anti-vortex device and trash rack attached to the top of the riser, to prevent floating debris from flowing out of the basin or obstructing the system. This principal structure should be designed to accommodate the inflow design storm.
- A rock pile or rock-filled gabions can serve as alternatives to the debris screen, although the designer should be aware of the potential for extra maintenance involved should the pore spaces in the rock pile clog.
- The outlet structure should be placed on a firm, smooth foundation with the base securely anchored with concrete or other means to prevent floatation.
- Attach riser pipe (watertight connection) to a horizontal pipe (barrel). Provide anti-seep collars on the barrel.
- Cleanout level should be clearly marked on the riser pipe.

Installation

- Securely anchor and install an anti-seep collar on the outlet pipe/riser and provide an emergency spillway for passing major floods (see local flood control agency).
- Areas under embankments must be cleared and stripped of vegetation.

- Chain link fencing should be provided around each sediment basin to prevent unauthorized entry to the basin or if safety is a concern.

Costs

The cost of a sediment basin is highly variable and is dependent of the site configuration. To decrease basin construction costs, designers should consider using existing site features such as berms or depressed area to site the sediment basin. Designers should also consider potential savings associated with designing the basin to minimize the number of maintenance cycles and siting the basin in a location where a permanent BMP (e.g., extended detention basin) is required for the project site.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level and as required by local requirements. It is recommended that at a minimum, basins be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Examine basin banks for seepage and structural soundness.
- Check inlet and outlet structures and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.
- Check inlet and outlet area for erosion and stabilize if required.
- Check fencing for damage and repair as needed.
- Sediment that accumulates in the basin must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage volume. Sediment removed during maintenance should be managed properly. The sediment should be appropriately evaluated and used or disposed of accordingly. Options include: incorporating sediment into earthwork on the site (only if there is no risk that sediment is contaminated); or off-site export/disposal at an appropriate location (e.g., sediment characterization and disposal to an appropriate landfill).
- Remove standing water from basin within 96 hours after accumulation.
- If the basin does not drain adequately (e.g., due to storms that are more frequent or larger than the design storm or other unforeseen site conditions), dewatering should be conducted in accordance with appropriate dewatering BMPs (see NS-2) and in accordance with local permits as applicable.
- To minimize vector production:
 - Remove accumulation of live and dead floating vegetation in basins during every inspection.
 - Remove excessive emergent and perimeter vegetation as needed or as advised by local or state vector control agencies.

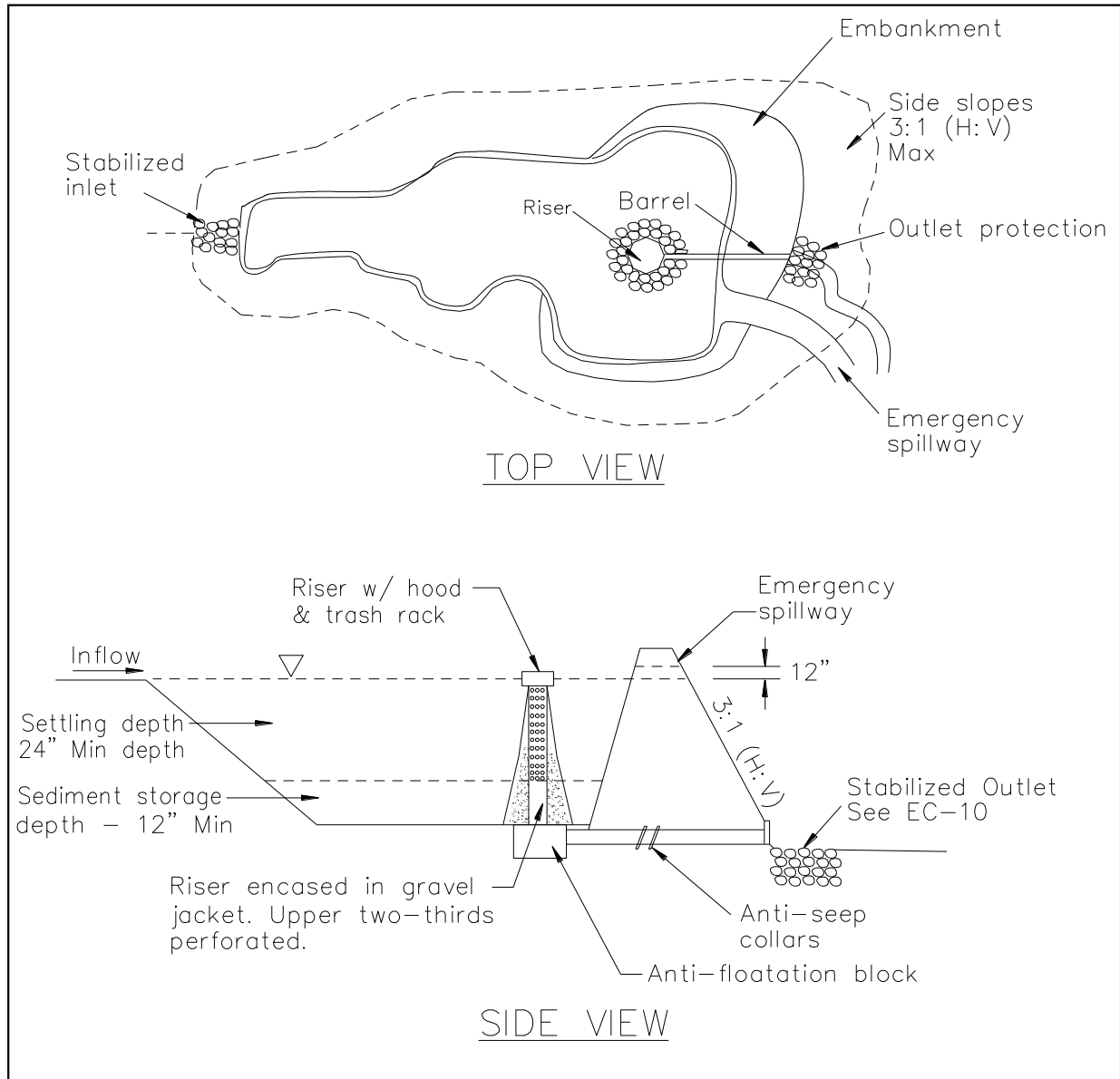
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- Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Water, Work Group-Working Paper, USEPA, April 1992.
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Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Water Quality Management Plan for the Lake Tahoe Region, Volume II Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Young, G.K. and Graziano, F., Outlet Hydraulics of Extended Detention Facilities for Northern Virginia Planning District Commission, 1989.



**FIGURE 1: TYPICAL TEMPORARY SEDIMENT BASIN
 MULTIPLE ORIFICE DESIGN
 NOT TO SCALE**

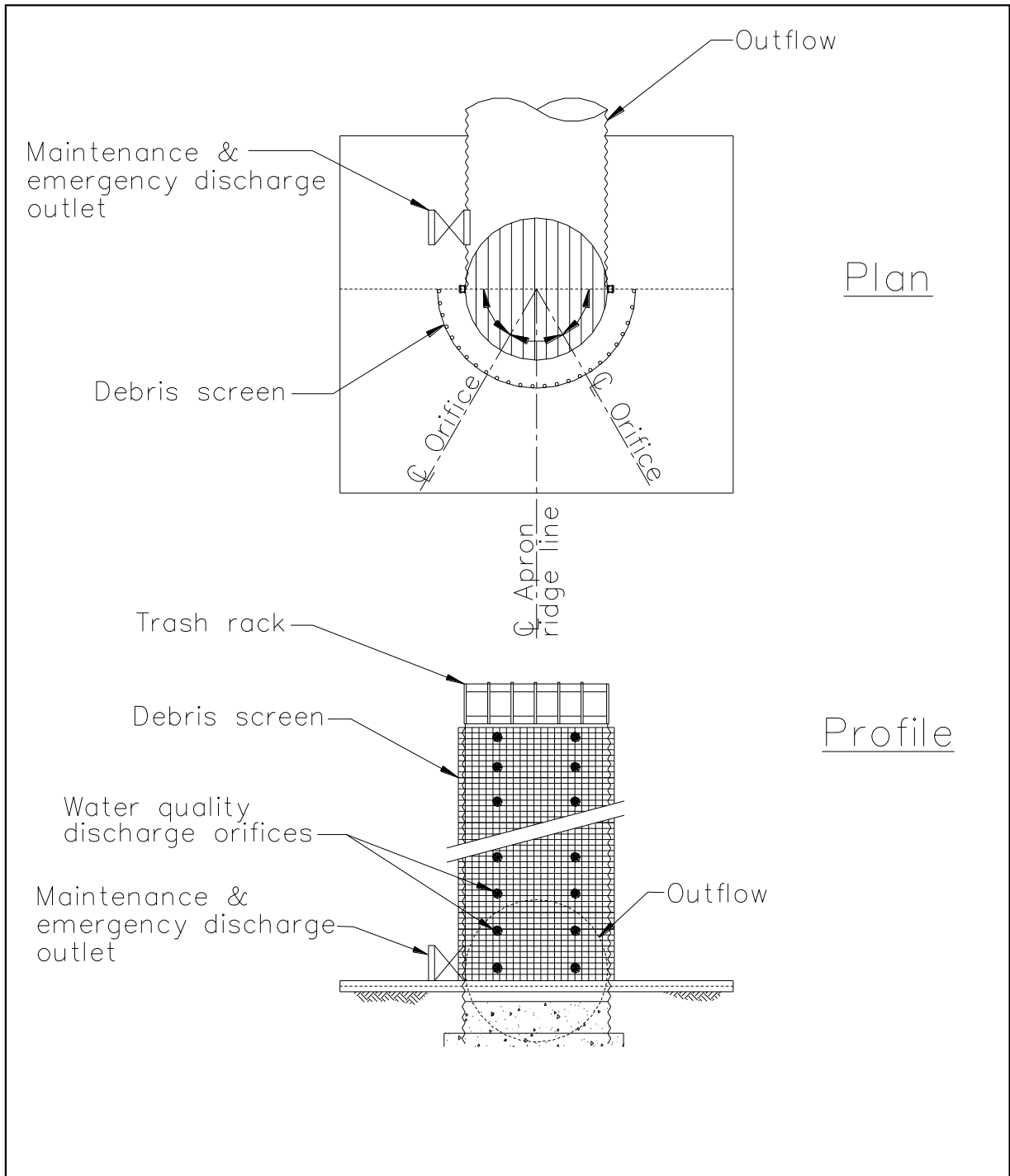


FIGURE 2: MULTIPLE ORIFICE OUTLET RISER
NOT TO SCALE

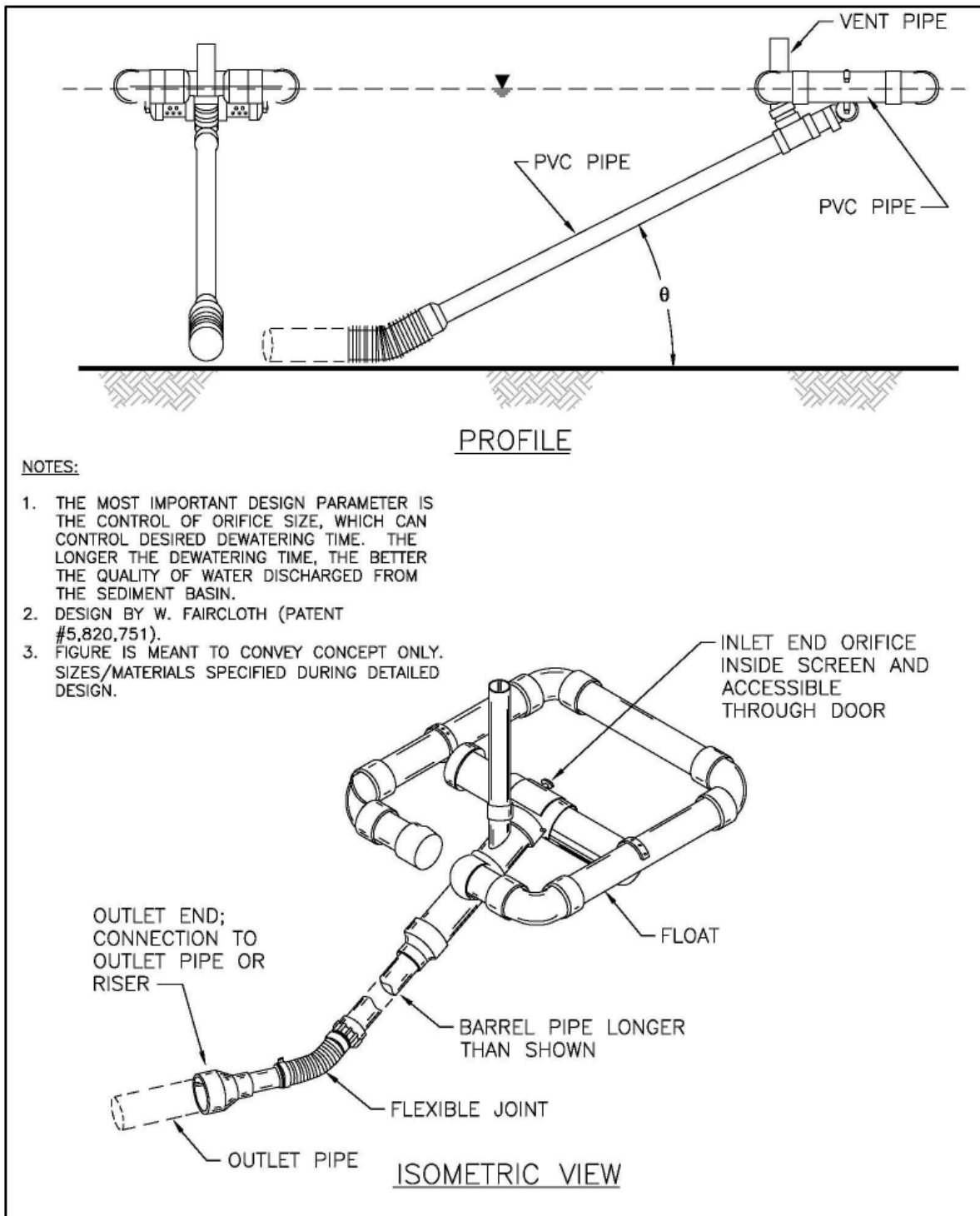


FIGURE 3: TYPICAL SKIMMER

NOT TO SCALE

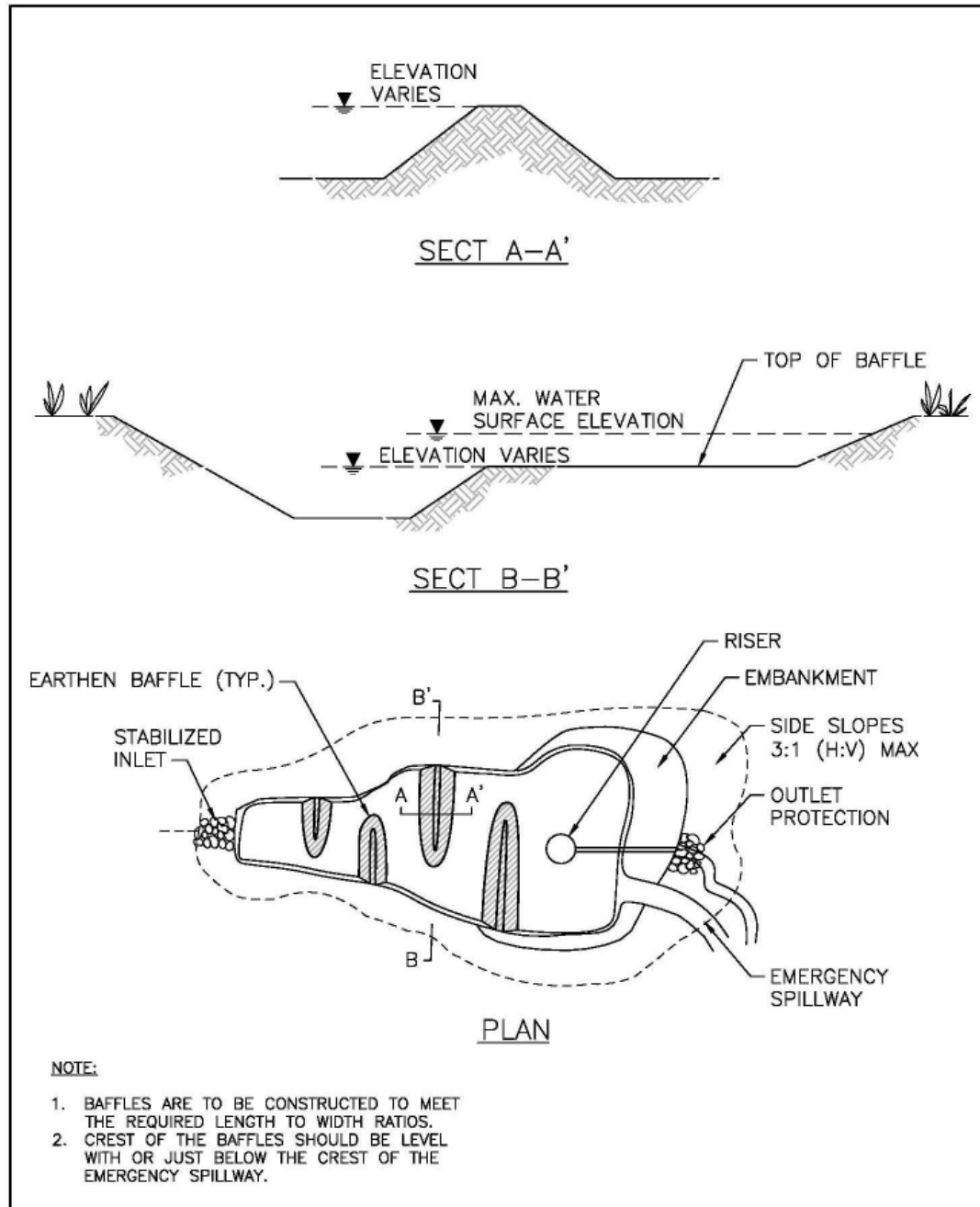


FIGURE 4: TYPICAL TEMPORARY SEDIMENT BASIN WITH BAFFLES
NOT TO SCALE



Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.
- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.

Categories

EC	Erosion Control	
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	<input checked="" type="checkbox"/>
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Objective**
- Secondary Objective**

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	

Potential Alternatives

None



- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from \$58/hour (3 yd³ hopper) to \$88/hour (9 yd³ hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

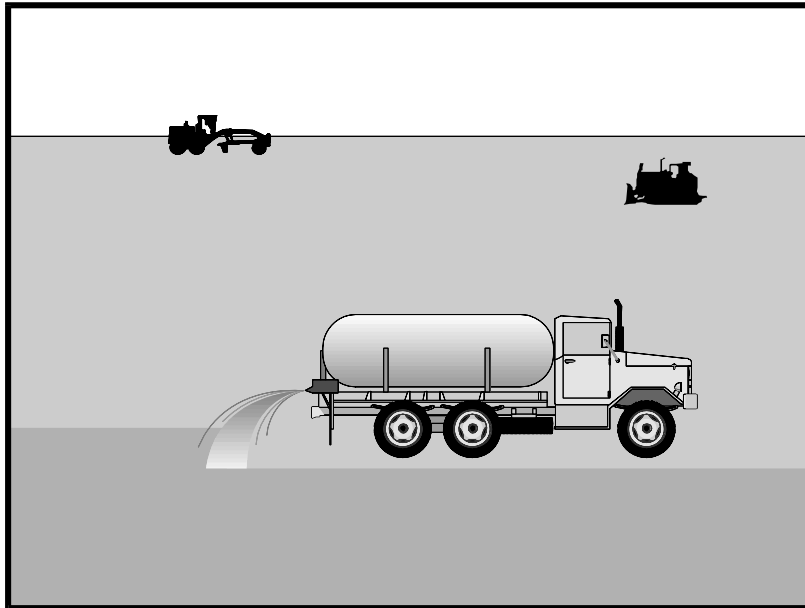
Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.



Description and Purpose

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

California’s Mediterranean climate, with a short “wet” season and a typically long, hot “dry” season, allows the soils to thoroughly dry out. During the dry season, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment. Site conditions and climate can make dust control more of an erosion problem than water based erosion. Additionally, many local agencies, including Air Quality Management Districts, require dust control and/or dust control permits in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. Wind erosion control is required to be implemented at all construction sites greater than 1 acre by the General Permit.

Suitable Applications

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection. Wind erosion control BMPs are suitable during the following construction activities:

Categories

EC	Erosion Control	
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	<input checked="" type="checkbox"/>
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Category
- Secondary Category

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-5 Soil Binders



- Construction vehicle traffic on unpaved roads
- Drilling and blasting activities
- Soils and debris storage piles
- Batch drop from front-end loaders
- Areas with unstabilized soil
- Final grading/site stabilization

Limitations

- Watering prevents dust only for a short period (generally less than a few hours) and should be applied daily (or more often) to be effective.
- Over watering may cause erosion and track-out.
- Oil or oil-treated subgrade should not be used for dust control because the oil may migrate into drainageways and/or seep into the soil.
- Chemical dust suppression agents may have potential environmental impacts. Selected chemical dust control agents should be environmentally benign.
- Effectiveness of controls depends on soil, temperature, humidity, wind velocity and traffic.
- Chemical dust suppression agents should not be used within 100 feet of wetlands or water bodies.
- Chemically treated subgrades may make the soil water repellent, interfering with long-term infiltration and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.
- If the soil surface has minimal natural moisture, the affected area may need to be pre-wetted so that chemical dust control agents can uniformly penetrate the soil surface.

Implementation

Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montmorillonite) and electrochemical products (e.g. enzymes, ionic products).

Site Condition	Dust Control Practices							
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt	Temporary Gravel Construction Entrances/Equipment Wash Down	Synthetic Covers	Minimize Extent of Disturbed Area
Disturbed Areas not Subject to Traffic	X	X	X	X	X			X
Disturbed Areas Subject to Traffic			X	X	X	X		X
Material Stockpiles		X	X	X			X	X
Demolition			X			X	X	
Clearing/Excavation			X	X				X
Truck Traffic on Unpaved Roads			X	X	X	X	X	
Tracking					X	X		

Additional preventive measures include:

- Schedule construction activities to minimize exposed area (see EC-1, Scheduling).
- Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimize the impact of dust by anticipating the direction of prevailing winds.
- Restrict construction traffic to stabilized roadways within the project site, as practicable.
- Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment should be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
- If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

Control Board (RWQCB) requirements. Non-potable water should not be conveyed in tanks or drain pipes that will be used to convey potable water and there should be no connection between potable and non-potable supplies. Non-potable tanks, pipes, and other conveyances should be marked, "NON-POTABLE WATER - DO NOT DRINK."

- Pave or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for rapid clean up of sediments deposited on paved roads. Furnish stabilized construction road entrances and wheel wash areas.
- Stabilize inactive areas of construction sites using temporary vegetation or chemical stabilization methods.

For chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. If chemical stabilization is used, the chemicals should not create any adverse effects on stormwater, plant life, or groundwater and should meet all applicable regulatory requirements.

Costs

Installation costs for water and chemical dust suppression vary based on the method used and the length of effectiveness. Annual costs may be high since some of these measures are effective for only a few hours to a few days.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check areas protected to ensure coverage.
- Most water-based dust control measures require frequent application, often daily or even multiple times per day. Obtain vendor or independent information on longevity of chemical dust suppressants.

References

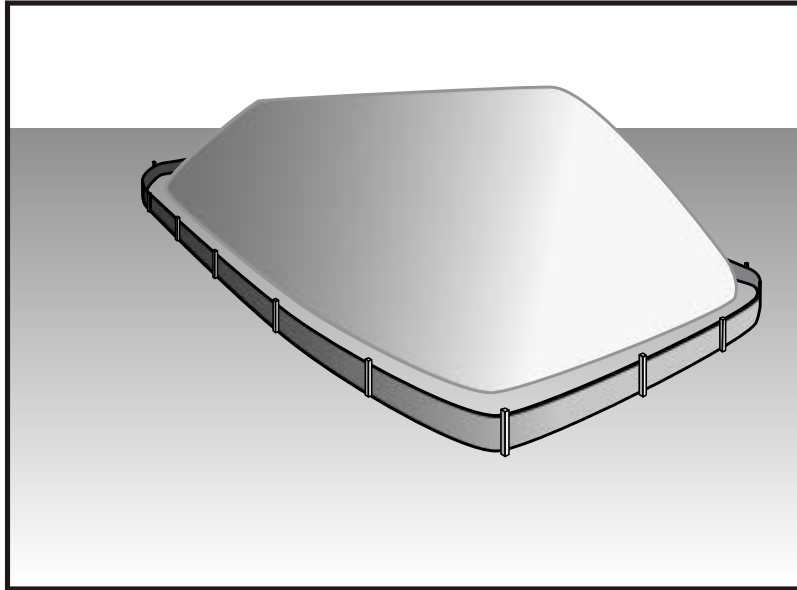
Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

California Air Pollution Control Laws, California Air Resources Board, updated annually.

Construction Manual, Chapter 4, Section 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative", California Department of Transportation (Caltrans), July 2001.

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM₁₀), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.



Description and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called “cold mix” asphalt), and pressure treated wood.

Suitable Applications

Implement in all projects that stockpile soil and other loose materials.

Limitations

- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of Plastic materials and photodegradable plastics should be avoided.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

Categories

EC	Erosion Control	
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	<input checked="" type="checkbox"/>
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Category**
- Secondary Category**

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None

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- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- After 14 days of inactivity, a stockpile is non-active and requires further protection described below. All stockpiles are required to be protected as non-active stockpiles immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater runoff using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles

A stockpile is considered non-active if it either is not used for 14 days or if it is scheduled not to be used for 14 days or more. Stockpiles need to be protected immediately if they are not scheduled to be used within 14 days. Non-active stockpiles of the identified materials should be protected as follows:

Soil stockpiles

- Soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Temporary vegetation should be considered for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- Stockpiles should be covered and protected with a temporary perimeter sediment barrier at all times.

Stockpiles of “cold mix”

- Cold mix stockpiles should be placed on and covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Stockpiles of fly ash, stucco, hydrated lime

- Stockpiles of materials that may raise the pH of runoff (i.e., basic materials) should be covered with plastic and surrounded by a berm.

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate)

- Treated wood should be covered with plastic sheeting or comparable material at all times and surrounded by a berm.

Protection of Active Stockpiles

A stockpile is active when it is being used or is scheduled to be used within 14 days of the previous use. Active stockpiles of the identified materials should be protected as follows:

- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of “cold mix” and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs

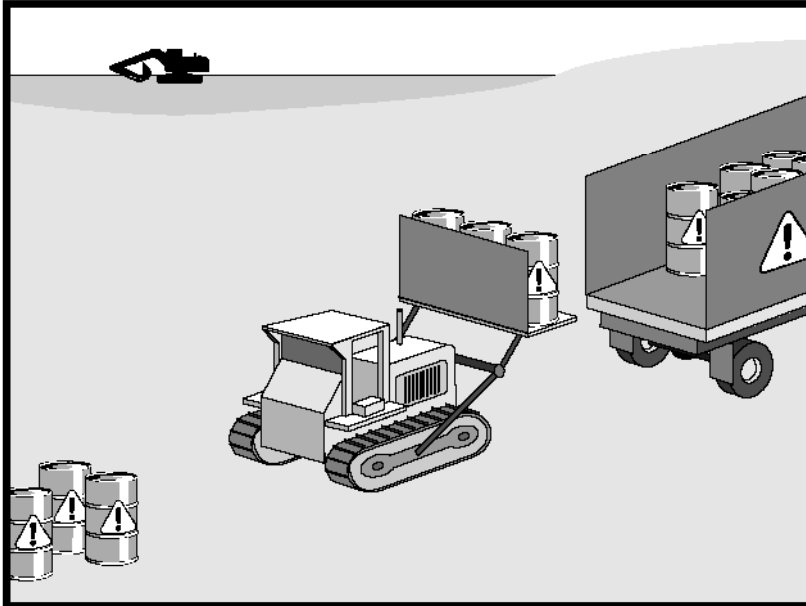
For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

Inspection and Maintenance

- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Concrete Curing Compounds
- Palliatives
- Septic Wastes
- Stains
- Wood Preservatives
- Asphalt Products
- Pesticides
- Acids
- Paints
- Solvents
- Roofing Tar
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	<input checked="" type="checkbox"/>
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
 - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
 - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
 - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
 - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.

Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

- Drums should not be overfilled and wastes should not be mixed.
- Unless watertight, containers of dry waste should be stored on pallets.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.
- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.
- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.
- The following actions should be taken with respect to temporary contaminant:
 - Ensure that adequate hazardous waste storage volume is available.
 - Ensure that hazardous waste collection containers are conveniently located.
 - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.
 - Minimize production or generation of hazardous materials and hazardous waste on the job site.
 - Use containment berms in fueling and maintenance areas and where the potential for spills is high.
 - Segregate potentially hazardous waste from non-hazardous construction site debris.
 - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.

Place hazardous waste containers in secondary containment.

- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.
- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.

- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

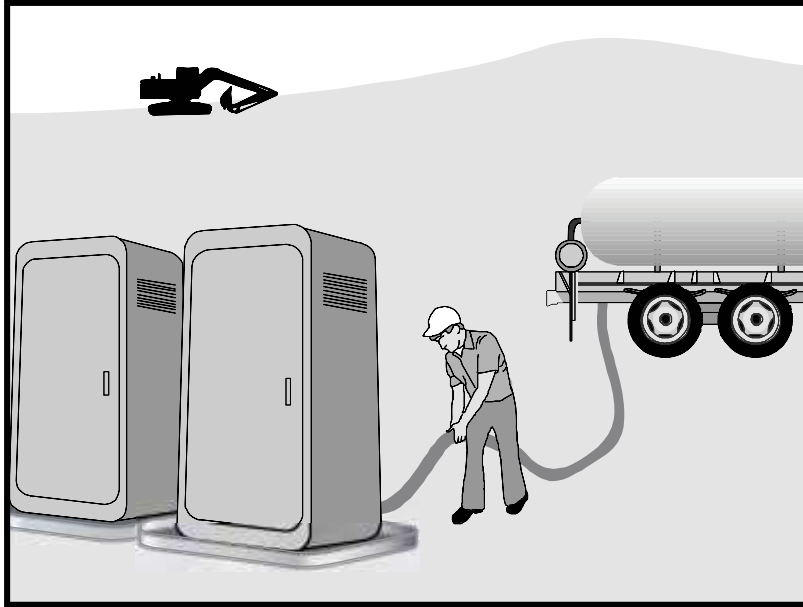
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Sanitary/Septic Waste Management WM-9



Description and Purpose

Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Suitable Applications

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Limitations

None identified.

Implementation

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes are properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, place portable facilities a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Category
- Secondary Category

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	<input checked="" type="checkbox"/>
Oil and Grease	
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



Sanitary/Septic Waste Management WM-9

- Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
- Consider safety as well as environmental implications before placing temporary sanitary facilities.
- Wastewater should not be discharged or buried within the project site.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, should comply with the local health agency, city, county, and sewer district requirements.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an onsite disposal system (OSDS), such as a septic system, local health agency requirements must be followed.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- Sanitary and septic facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.
- If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and clean-up.

Education

- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary and septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary and septic waste.
- Hold regular meetings to discuss and reinforce the use of sanitary facilities (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Costs

All of the above are low cost measures.

Sanitary/Septic Waste Management WM-9

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for regular waste collection.
- If high winds are expected, portable sanitary facilities must be secured with spikes or weighed down to prevent over turning.
- If spills or leaks from sanitary or septic facilities occur that are not contained and discharge from the site, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

APPENDIX L:
SWPPP Compliance Check List

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CHECK LIST

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT
FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES
(GENERAL PERMIT)

FACILITY NAME: Sargent Quarry

Waste Discharge Identification (WDID) #: _____

	FACILITY CONTACT	Consultant/Qualified Industrial Storm Water Practitioner
Name		Tom Platz
Title	Quarry Operations Manager	President
Company	Sargent Quarry	Triad/Holmes
Street Address	5 mi South of Gilroy, CA	549 Old Mammoth Road, P.O. Box 1570
City, State	Santa Clara County, CA	Mammoth Lakes, CA
Zip		

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Signed Certification (Section II.A)			
Pollution Prevention Team (Section X.D.1)			
Existing Facility Plans (Section X.D.2)			
Site Map(s) (Section X.E)			
Facility boundaries (Section X.E.3.a)			
Drainage areas (Section X.E.3.a)			
Direction of flow (Section X.E.3.a)			
On-facility water bodies (Section X.E.3.a)			

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Areas of soil erosion (Section X.E.3.a)			
Nearby water bodies (Section X.E.3.a)			
Municipal storm drain inlets (Section X.E.3.a)			
Points of discharge (Section X.E.3.b)			
Sampling Locations (Section X.E.3.b)			
Structural control measures (Section X.E.3.c)			
Impervious areas (Section X.E.3.d)			
Location of Directly Exposed Materials (Section X.E.3.e)			
Locations of significant spills and leaks (Section X.E.3.e)			
Areas of Industrial Activity (Section X.E.3.f)			
Areas of industrial activity (Section X.E.3.f)			
Storage areas/storage tanks (Section X.E.3.f)			
Shipping and receiving areas (Section X.E.3.f)			
Fueling areas (Section X.E.3.f)			
Vehicle and equipment storage/maintenance (Section X.E.3.f)			
Material handling/processing (Section X.E.3.f)			
Waste treatment/disposal (Section X.E.3.f)			
Dust or particulate generation (Section X.E.3.f)			
Cleaning and material reuse (Section X.E.3.f)			

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Other areas of industrial activities (Section X.E.3.f)			
List of Industrial Materials (Section X.F)			
Storage location			
Quantity			
Frequency			
Receiving and shipping location			
Quantity			
Frequency			
Handling location			
Quantity			
Frequency			
Potential Pollution Sources (Section X.G)			
Description of Potential Pollution Sources (Section X.G.1)			
Industrial processes (Section X.G.1.a)			
Material handling and storage areas (Section X.G.1.b)			
Dust & particulate generating activities (Section X.G.1.c)			
Significant spills and leaks (Section X.G.1.d)			
Non-storm water discharges (Section X.G.1.e)			
Erodible surfaces (Section X.G.1.f)			
Assessment of Potential Pollutant Sources (Section X.G.2)			
Narrative assessment of likely sources of pollutants (Section X.G.2.a)			
Narrative assessment of likely pollutants present in storm water discharges (Section X.G.2.a)			
Identification of additional BMPs Section X.G.2.b)			

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Identification of drainage areas with no exposure (Section X.G.2.c)			
Identification of additional parameters (Section X.G.2.d)			
Storm Water Best Management Practices (Section X.H)			
Minimum BMPs (Section X.H.1)			
Good housekeeping (Section X.H.1.a)			
Preventative maintenance (Section X.H.1.b)			
Spill response (Section X.H.1.c)			
Material handling and waste management (Section X.H.1.d)			
Erosion and sediment controls (Section X.H.1.e)			
Employee training program (Section X.H.1.f)			
Quality assurance and record keeping (Section X.H.1.g)			
Advanced BMPs (Section X.H.2)			
Implement advanced BMPs at the facility (Section X.H.2.a)			
Exposure Minimization BMPs (Section X.H.2.b.i)			
Storm Water containment and discharge reduction BMPs (Section X.H.2.b.ii)			
Treatment Control BMPs (Section X.H.2.b.iii)			
Other advance BMPs (Section X.H.2.b.iv)			
Temporary Suspension of Activities (Section X.H.3)			
BMPs necessary for stabilization of the facility (Section X.H.3)			

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
BMP Descriptions (Section X.H.4)			
Pollutant that a BMP reduces or prevents (Section X.H.4.a.i)			
Frequency of BMP implementation (Section X.H.4.a.ii)			
Location of BMP (Section X.H.4.a.iii)			
Person implementing BMP (Section X.H.4.a.iv)			
Procedures/maintenance/ instructions for BMP implementation (Section X.H.4.a.v)			
Equipment and tools for BMP implementation (Section X.H.4.a.vi)			
BMPs needing more frequent inspections (Section X.H.4.a.vii)			
Minimum BMP/applicable advanced BMPs not implemented at the facility (Section X.H.4.b)			
BMPs implemented in lieu of minimum or applicable advanced BMPs (Section X.H.4.c)			
BMP Summary Table (Section X.H.5)			
Monitoring Implementation Plan (Section X.I)			
Team members assisting in developing the MIP (Section X.I.1)			
Summary of visual observation procedures, locations, and details (Section X.I.2)			
Justifications if applicable for: Alternative discharge locations, Representative Sampling Reduction or, Qualified Combined Samples (Section X.I.3)			
Procedures for field instrument calibration (Section X.I.4)			

SWPPP (General Permit Section)	Not Applicable	SWPPP Page # or Reference Location	Date Implemented or Last Revised
Example of Chain of Custody (Section X.I.5)			
Annual Comprehensive Facility Compliance Evaluation (Section XV)			
Review of all visual inspection and monitoring records and sampling and analysis results conducted during the previous reporting year (Section XV.A)			
Visual inspection of all areas of industrial activity and associated potential pollutant sources (Section XV.B)			
Visual inspection of all drainage areas previously identified as having no-exposure to industrial activities and materials in accordance with the definitions in Section XVII (Section XV.C)			
Visual inspection of equipment needed to implement the BMPs (Section XV.D)			
Visual inspection of any structural and/or treatment control BMPs (Section XV.E)			
Review and assessment of all BMPs for each area of industrial activity and associated potential pollutant sources (Section XV.F)			
Assessment of other factors needed to complete the information described in Section XVI.B (Section XV.G)			

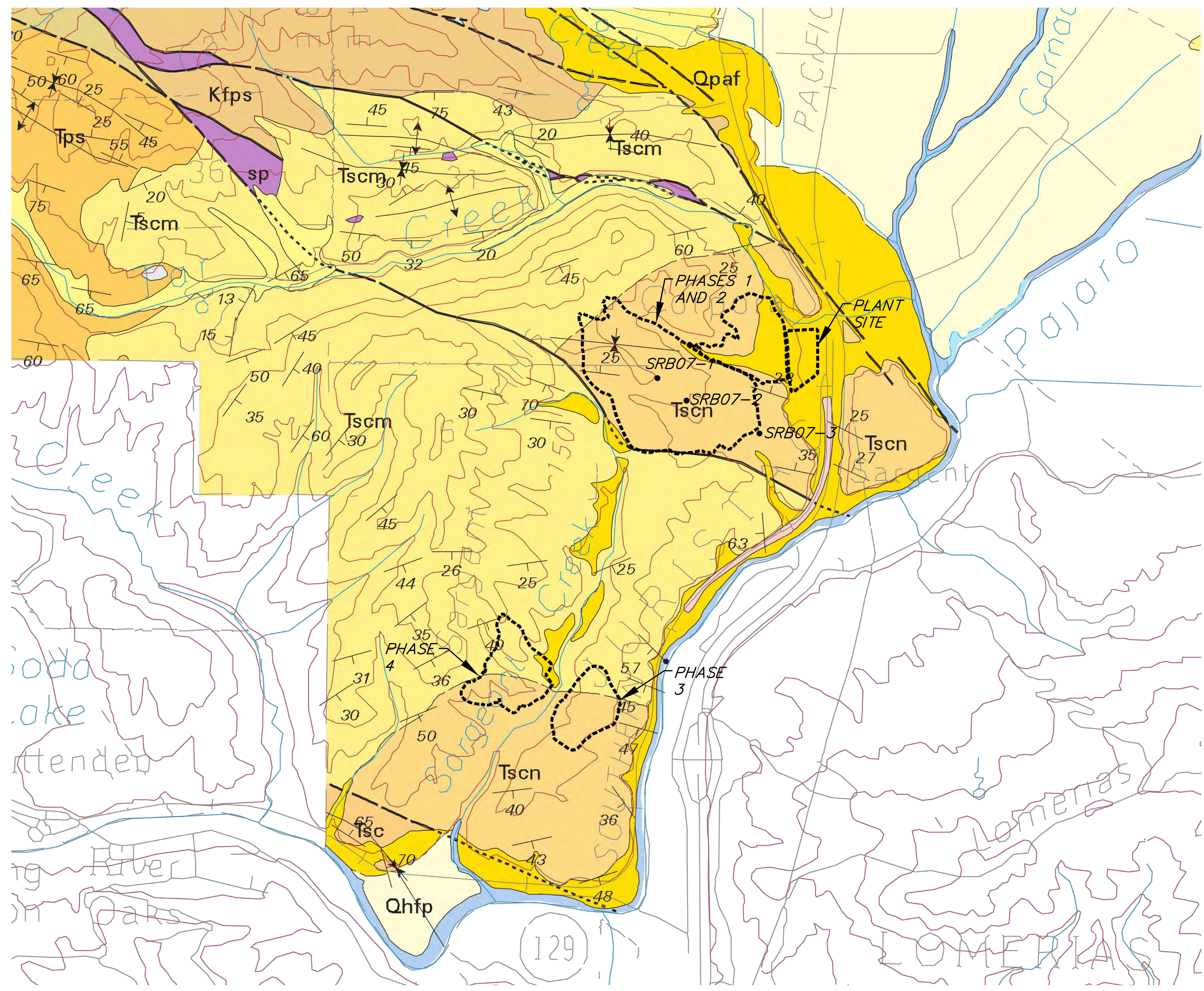
APPENDIX G
FULL SIZE PLANS



REVISIONS:	BY:

SARGENT RANCH QUARRY

 SITE GEOLOGY



LEGEND

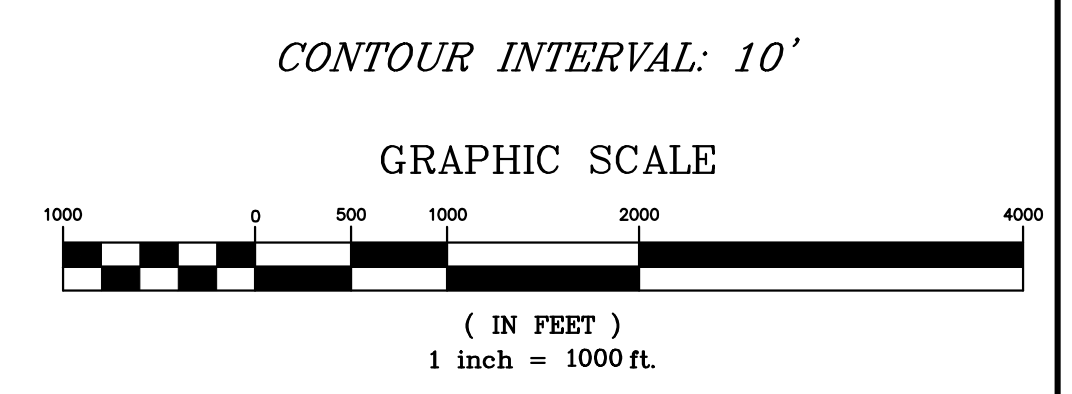
 Tscn - NON-MARINE SEDIMENTS

 Tscm - MARINE SEDIMENTS

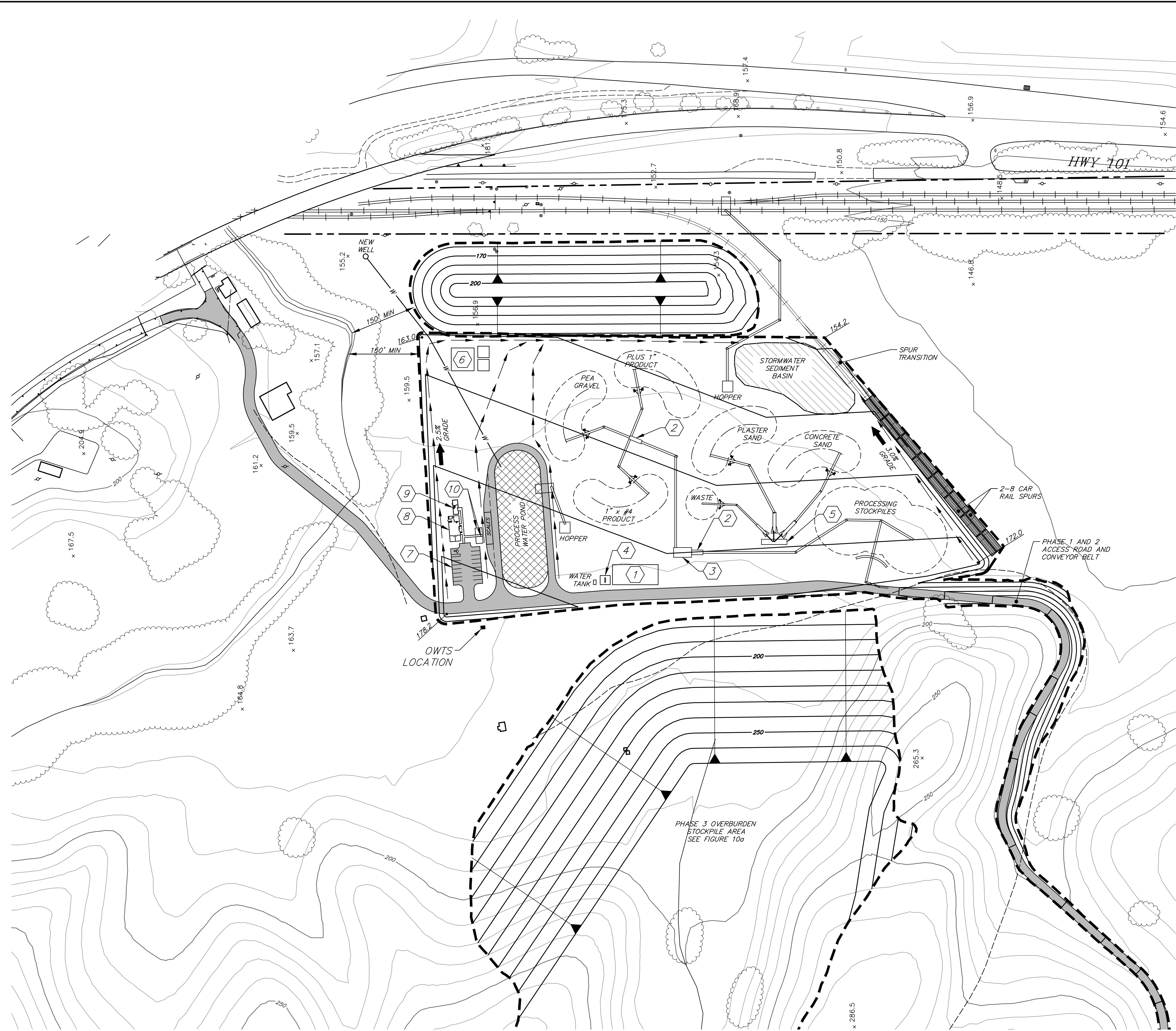
 Qpaf - ALLUVIAL FAN AND FLUVIAL DEPOSITS (PLEISTOCENE)

 Qhfp - FLOODPLAIN DEPOSITS (HOLOCENE)

 - - - - - MINING LIMIT LINE

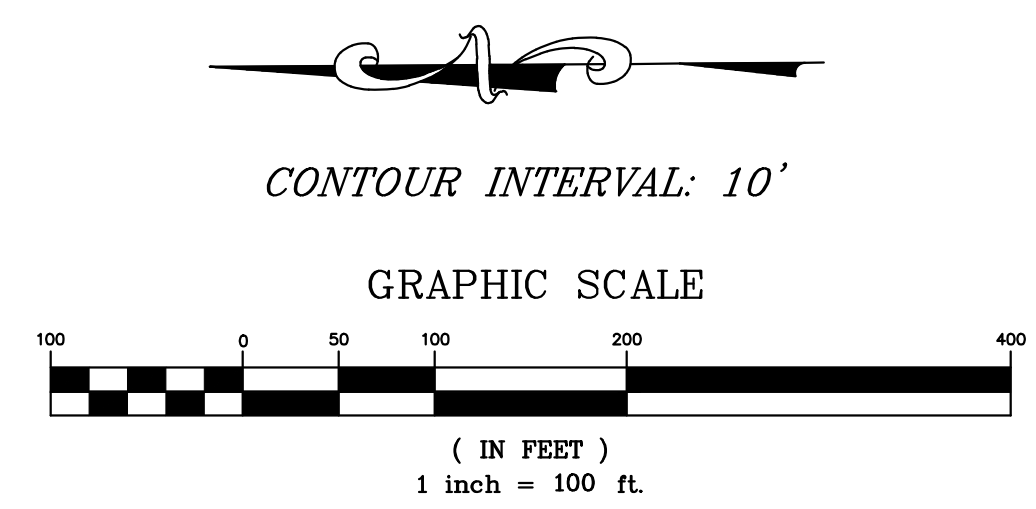


SARGENT RANCH QUARRY
 AGGREGATE PLANT
 SITE PLAN



- LEGEND**
- MINING LIMIT LINE
 - ▬ PROPOSED GRADED ROAD WIDTH AS SHOWN
 - ▨ PROPOSED STORMWATER SEDIMENT BASIN
 - W PROPOSED WATER LINE FROM OFFSITE WELL
 - ▨ PROPOSED PROCESS WATER POND
 - ➔ FLOW DIRECTION
 - ➔ GRADED BROW DITCH AND DIRECTION OF FLOW
 - ~ 200 EXISTING GROUND CONTOUR AND ELEV.
 - ~ 200 PROPOSED GROUND CONTOUR AND ELEV.
 - CREEK
 - ☁ VEGETATION

- PLANT SITE NOTES**
- 1 MAINTENANCE YARD, EQUIPMENT PARKING AND BONEYARD
 - 2 WET SCREENING STATION
 - 3 LOG WASHER
 - 4 FUELING AREA WITH AST
 - 5 SAND CLASSIFYING TANK
 - 6 REVEGETATION TEST PLOT AREAS (15,214 SQ FT) (SEE FIGURE 24)
 - 7 EMPLOYEE PARKING 16'-9"x20' SPACES 1-12'x20' HANDICAP SPACE
 - 8 24'x56' OFFICE
 - 9 12'x32' LAB
 - 10 SCALE HOUSE AND ELECTRICAL SHED



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DATE:

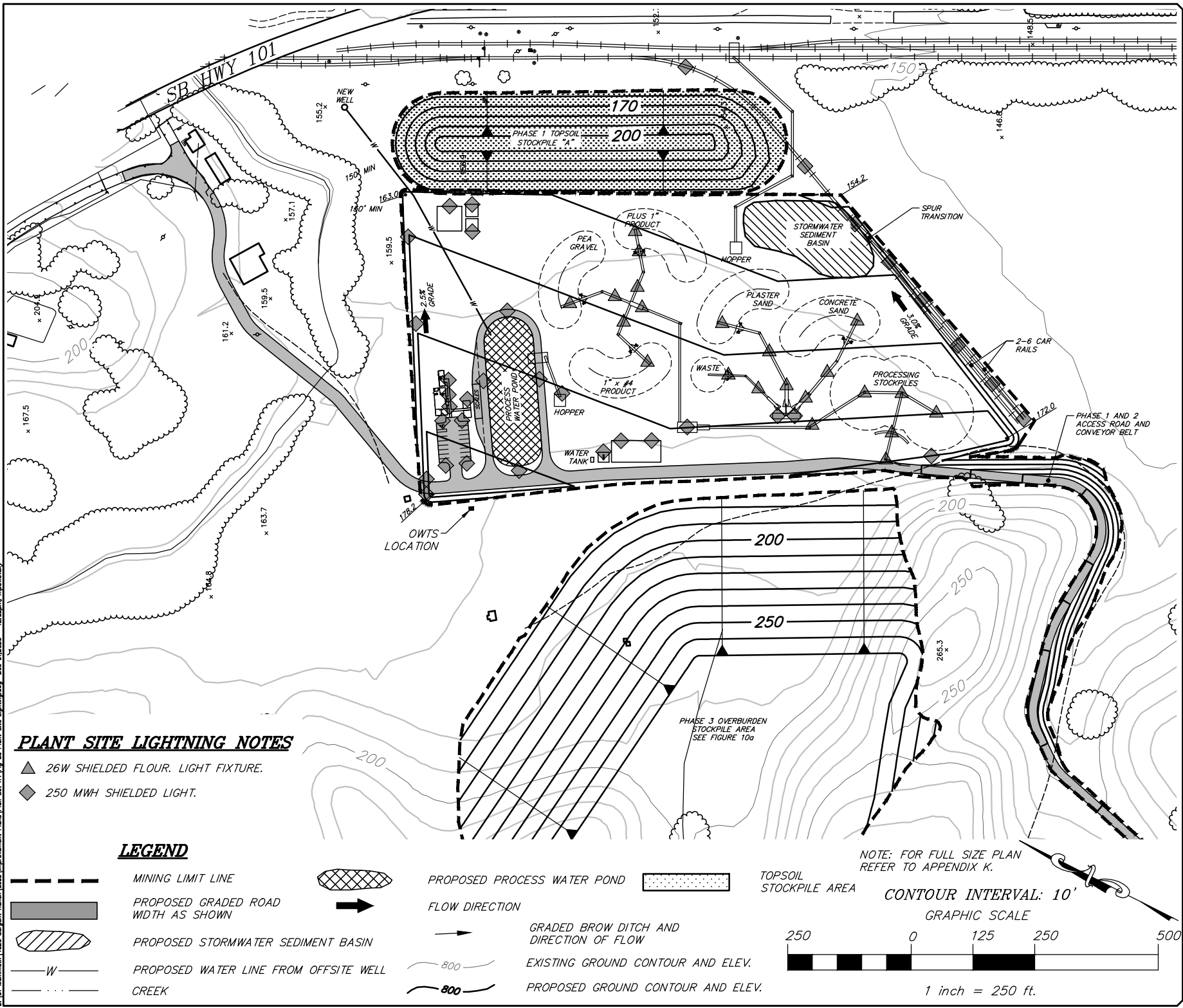
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REVISIONS:	BY:

PREPARED FOR:
VERNE FREDMAN
 804 SAN ANTONIO RD
 PALO ALTO, CA 94303

**SARGENT RANCH QUARRY
 AGGREGATE PLANT
 LIGHTING PLAN**

DATE: 12/01/2020
 SCALE: AS SHOWN
 DRAWN: SCR
 JOB NO.: 01_4020
 DWG:
FIGURE 8a



PLANT SITE LIGHTNING NOTES

- ▲ 26W SHIELDED FLOOR LIGHT FIXTURE.
- ◆ 250 MWH SHIELDED LIGHT.

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- W --- PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- FLOW DIRECTION
- GRADED BROW DITCH AND DIRECTION OF FLOW
- 800 --- EXISTING GROUND CONTOUR AND ELEV.
- 800 --- PROPOSED GROUND CONTOUR AND ELEV.
- TOPSOIL STOCKPILE AREA

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX K.

CONTOUR INTERVAL: 10'
 GRAPHIC SCALE



1 inch = 250 ft.

2:107 Mammoth 4020 Sargent Ranch Road Improvement Plans Plan Set A4 (P) for Plant Site Lighting.dwg Dec 01/2020 - 12:22pm mponohsey

REVISIONS:	BY:

PREPARED FOR:

 VERNIE FREEMAN

 594 SAN ANTONIO RD

 PALO ALTO, CA 94303

SARGENT RANCH QUARRY

 MINING SITE PLAN

DATE: 12/01/2020

 SCALE: AS SHOWN

 DRAWN: SR-TP

 JOB NO: 01.4020

 DWG:

FIGURE 9

QUARRY EXCAVATION ESTIMATED QUANTITIES



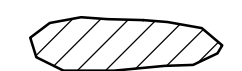

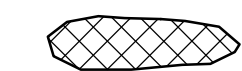


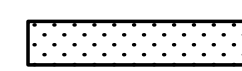
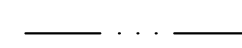


TOTAL VOLUME	35,016,000 CY
TOTAL PRODUCT	25,305,000 CY
	X 1.5 37,957,500 TONS
PLANT SITE GRADING	1,180 CY CUT AND 75,000 CY FILL
ACCESS ROAD TO PHASE 3 AND 4	88,000 CY CUT AND 14,000 CY FILL
PHASE 1 TOTAL VOLUME	13,300,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	375,000 CY
PHASE 1 OVERBURDEN	3,325,000 CY
PHASE 1 PRODUCT	9,600,000 CY
PHASE 2 TOTAL VOLUME	16,300,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	300,000 CY
PHASE 2 OVERBURDEN	4,100,000 CY
PHASE 2 PRODUCT	11,900,000 CY
PHASE 3 TOTAL VOLUME	3,600,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	135,000 CY
PHASE 3 OVERBURDEN	900,000 CY
PHASE 3 PRODUCT	2,565,000 CY
PHASE 4 TOTAL VOLUME	1,816,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	36,000 CY
PHASE 4 OVERBURDEN	540,000 CY
PHASE 4 PRODUCT	1,240,000 CY

NOTES:

 1. FIGURES 10-13 PROVIDE MORE DETAILED INFORMATION BY MINE PHASE.

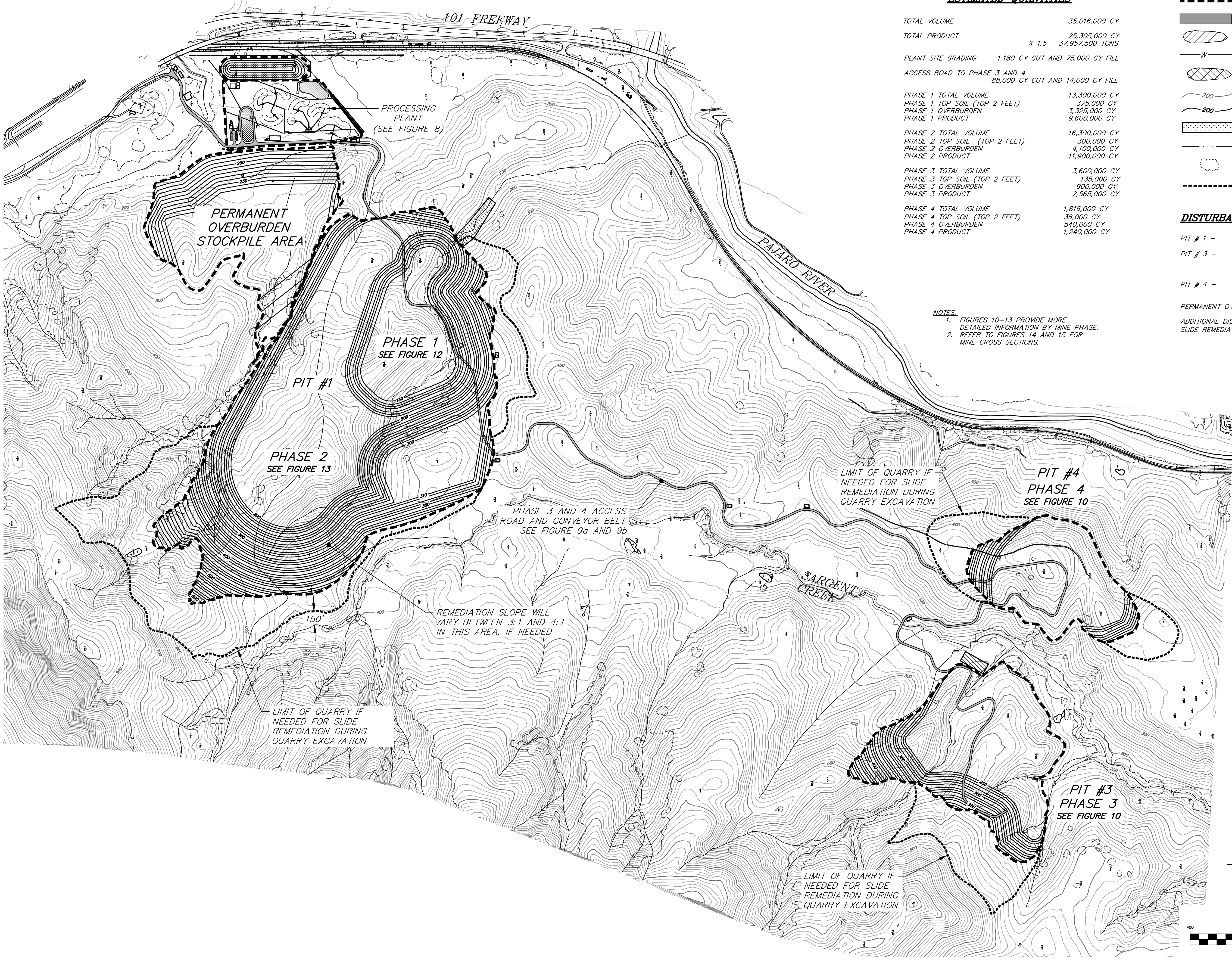
 2. REFER TO FIGURES 14 AND 15 FOR MINE CROSS SECTIONS.

LEGEND

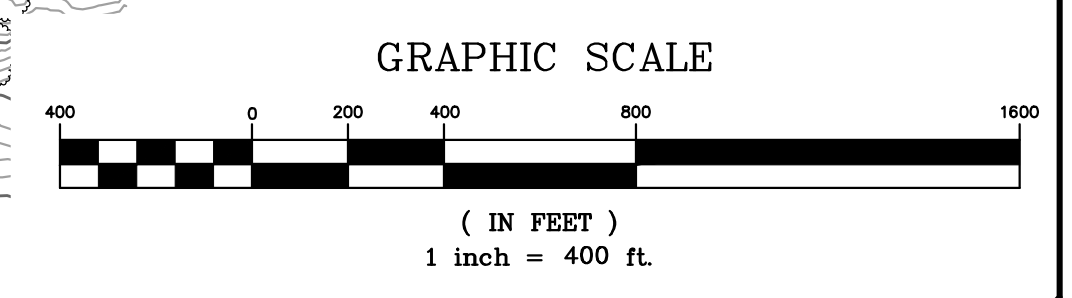
-  MINING LIMIT LINE
-  PROPOSED GRADED ROAD WIDTH AS SHOWN
-  PROPOSED STORMWATER SEDIMENT BASIN
-  PROPOSED WATER LINE FROM OFFSITE WELL
-  PROPOSED PROCESS WATER POND
-  EXISTING GROUND CONTOUR AND ELEV.
-  PROPOSED GROUND CONTOUR AND ELEV.
-  TOPSOIL STOCKPILE AREA
-  CREEK
-  VEGETATION
-  SLIDE REMEDIATION LIMIT LINE

DISTURBANCE AREAS

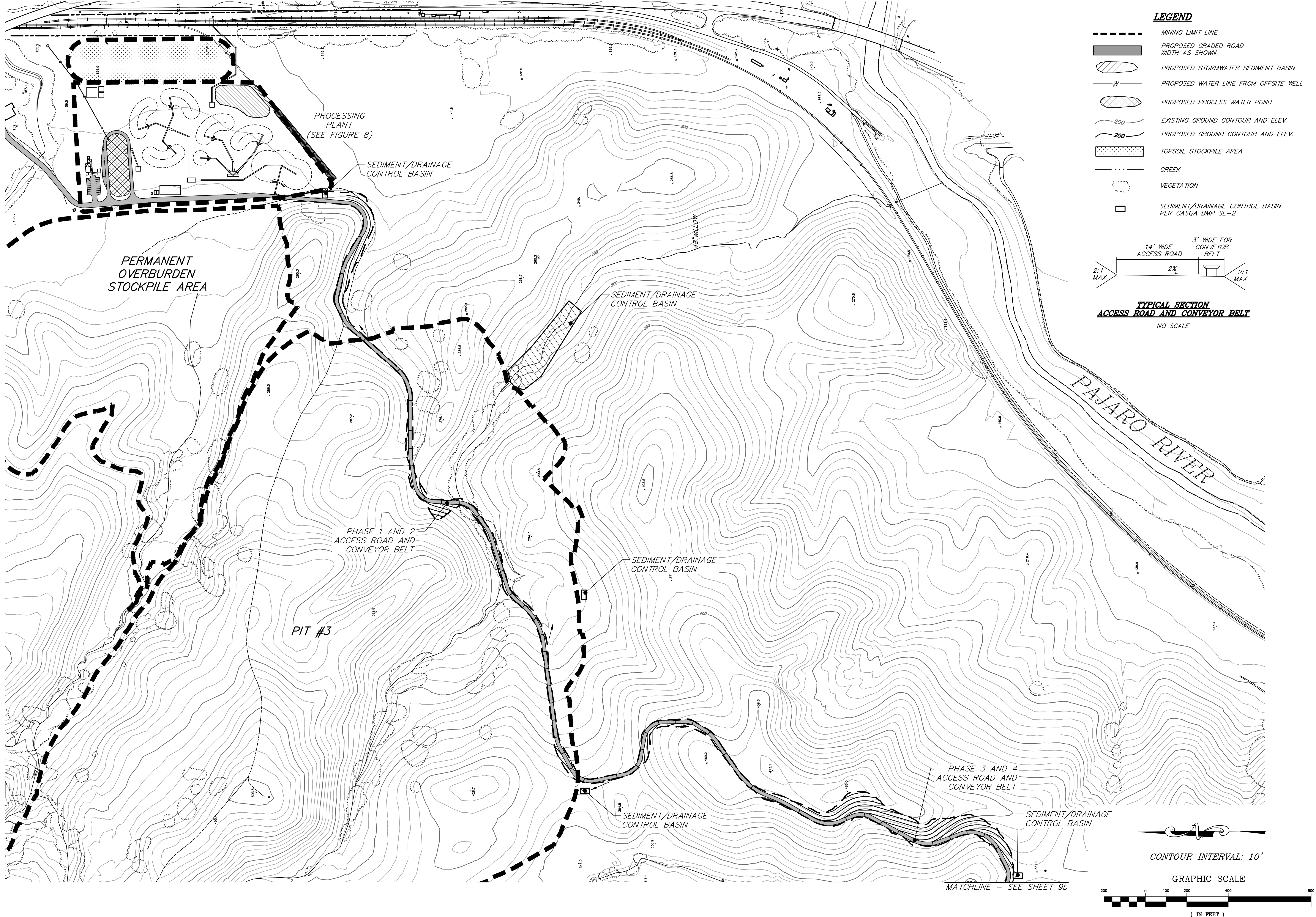
- PIT # 1 - 152.27 ACRES
- PIT # 3 - 56.14 ACRES (INCLUDES ROAD TO PITS 3 AND 4, PLANT SITE, AND TOPSOIL STOCKPILE "A")
- PIT # 4 - 28.80 ACRES
- PERMANENT OVERBURDEN STOCKPILE - 42.6 ACRES
- ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) - 120.0 ACRES



CONTOUR INTERVAL: 10'

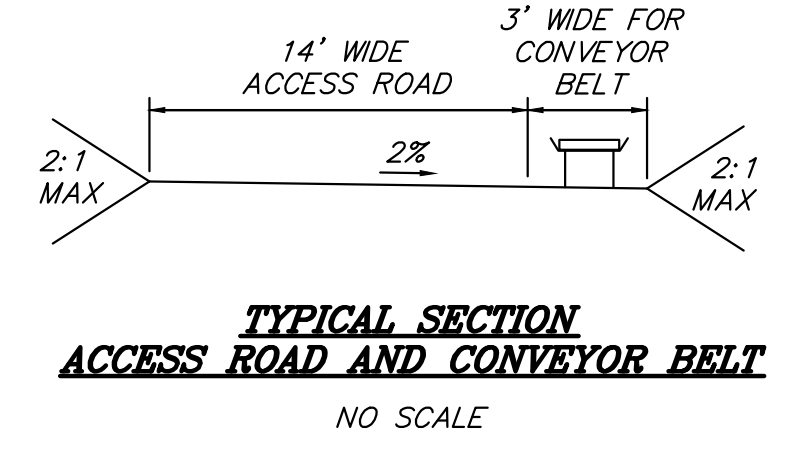


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LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- PROPOSED WATER LINE FROM OFFSITE WELL
- PROPOSED PROCESS WATER POND
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.
- TOPSOIL STOCKPILE AREA
- CREEK
- VEGETATION
- SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2



PREPARED & SUBMITTED BY:

DATE:

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REVISIONS:	BY:

PREPARED FOR:
VERNE FREEMAN
594 SAN ANTONIO RD
PALO ALTO, CA 94303

SARGENT RANCH QUARRY
PHASE 3 AND 4 ACCESS ROAD

DATE: 12/01/2020
SCALE: AS SHOWN
DRAWN: SR-TP
JOB NO.: 01.4020
DWG:

FIGURE 9a

Z:\01 Mammoth\4020 Sargent Ranch\Local Improvement Plans\Plan Set_R4\Fig 9 Site Plan.dwg - Jan. 04.2021 - 4:36pm - Triad

PREPARED & SUBMITTED BY:

DATE:

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REVISIONS: BY:

NO.	DESCRIPTION	DATE	BY

PREPARED FOR:

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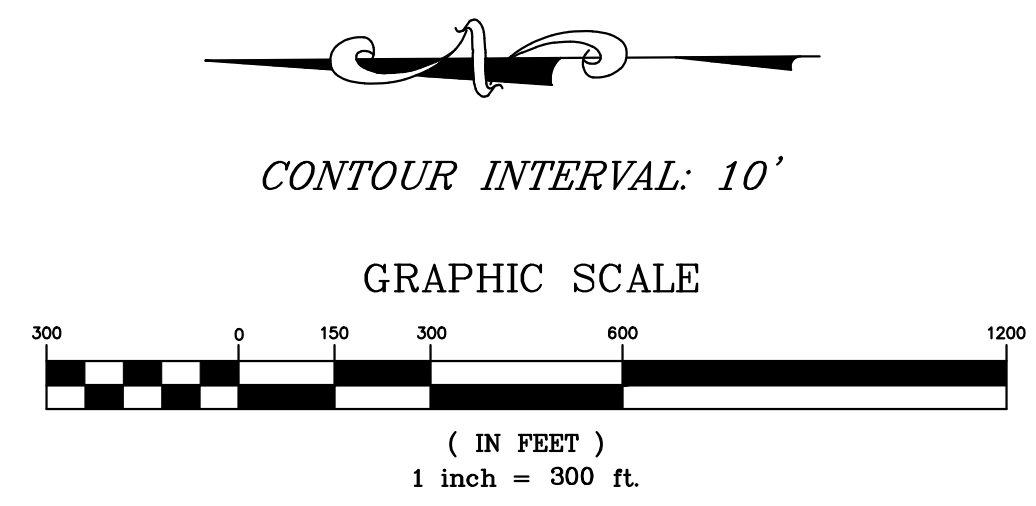
SARGENT RANCH QUARRY
PIT 1 GRADING AND PHASING PLAN

DATE: 12/01/2020
 SCALE: AS SHOWN
 DRAWN: SR-TP
 JOB NO: 01.4020
 DWG:

FIGURE 11

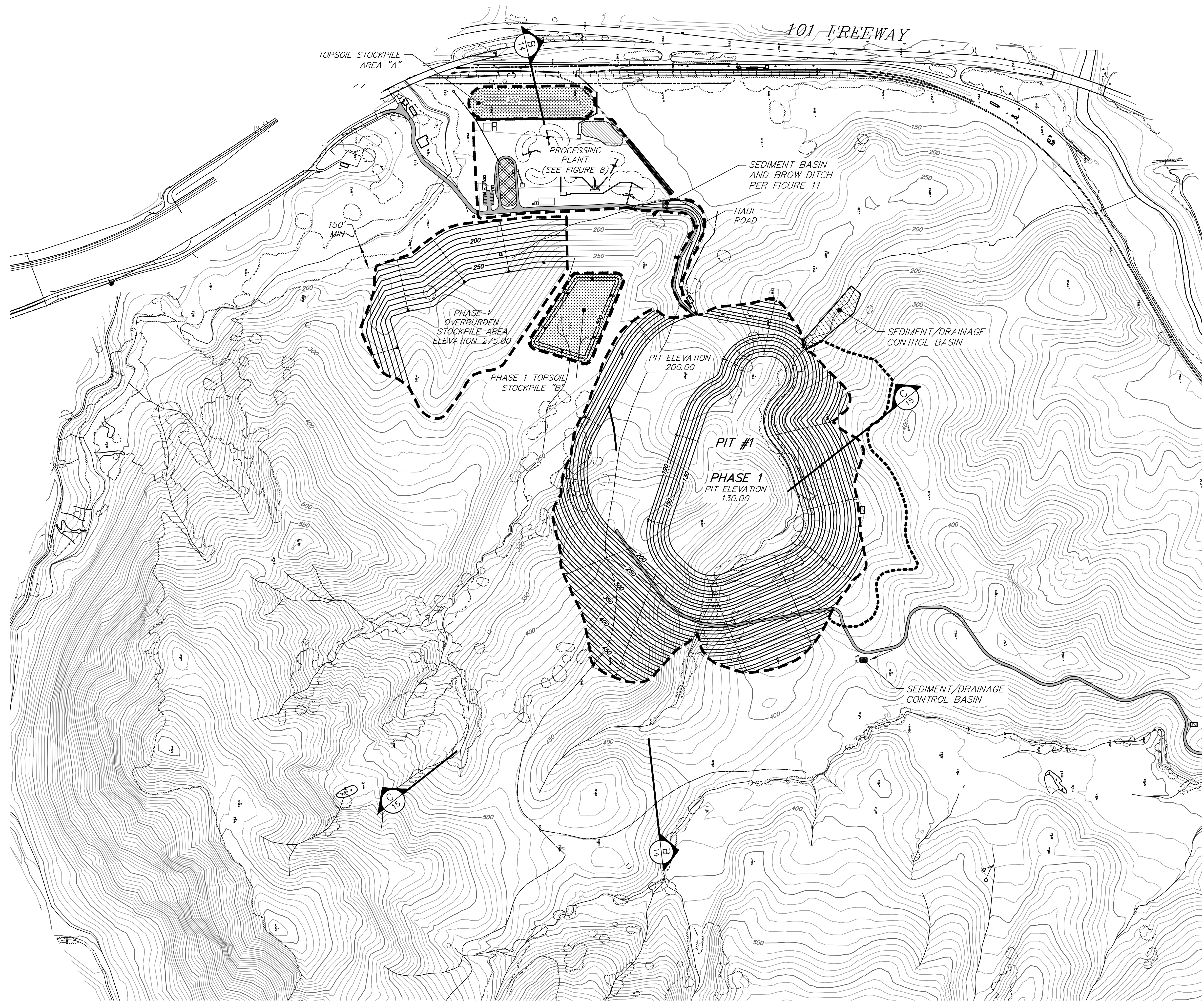


- LEGEND**
- MINING LIMIT LINE
 - PROPOSED GRADED ROAD WIDTH AS SHOWN
 - PROPOSED STORMWATER SEDIMENT BASIN
 - PROPOSED WATER LINE FROM OFFSITE WELL
 - PROPOSED PROCESS WATER POND
 - EXISTING GROUND CONTOUR AND ELEV.
 - PROPOSED GROUND CONTOUR AND ELEV.
 - TOPSOIL STOCKPILE AREA
 - CREEK
 - SLIDE REMEDIATION LIMIT LINE
 - VEGETATION
 - SECTION LINE
 - SEDIMENT/DRAINAGE CONTROL BASIN PER CASQA BMP SE-2



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SARGENT RANCH QUARRY
 PHASE 1 EXCAVATION PLAN



LEGEND

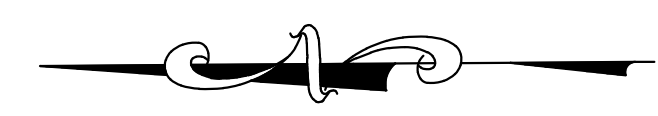
- MINING LIMIT LINE
- ▬ PROPOSED GRADED ROAD WIDTH AS SHOWN
- ▨ PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- ▨ PROPOSED PROCESS WATER POND
- 200 — EXISTING GROUND CONTOUR AND ELEV.
- 200 — PROPOSED GROUND CONTOUR AND ELEV.
- ▨ TOPSOIL STOCKPILE AREA
- CREEK
- SLIDE REMEDIATION LIMIT LINE
- ☁ VEGETATION
- ⊙ SECTION LINE
- SEDIMENT/ DRAINAGE CONTROL BASIN PER CASQA BMP SE-2

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 1 TOTAL VOLUME	13,300,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	375,000 CY
PHASE 1 OVERBURDEN	3,325,000 CY
PHASE 1 PRODUCT	9,600,000 CY

NOTES:

1. A PORTION OF TOPSOIL FROM PHASE 1 WILL BE USED FOR RECLAMATION PLANTING OF PHASE 4.
2. ADDITIONAL TOPSOIL SHALL BE STOCKPILED AS SHOWN HEREON AS TOPSOIL STOCKPILE "B" FOR PARTIAL RECLAMATION GRADING OF PHASE 1.
3. A PORTION OF OVERBURDEN IN PHASE 1 WILL BE STOCKPILED AS SHOWN HEREON AND WILL BE PERMANENT.
4. ADDITIONAL OVERBURDEN SHALL BE STOCKPILED IN PHASE 1 AND USED FOR INITIAL RECLAMATION OF PHASE 1.
5. TOPSOIL FROM STOCKPILE "B" SHALL BE SPREAD ACROSS THE PERMANENT OVERBURDEN STOCKPILE.
6. ADDITIONAL TOPSOIL FROM STOCKPILE "C" SHALL BE USED AS RECLAMATION PLANTING IN PHASE 1.
7. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
8. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
9. REFER TO FIGURES 20-21 FOR MINE RECLAMATION CROSS SECTIONS.



CONTOUR INTERVAL: 10'

GRAPHIC SCALE



(IN FEET)
 1 inch = 300 ft.

