Lehigh Hanson
HEIDELBERGCEMENT Group

24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

July 27, 2016

VIA CERTIFIED MAIL / RETURN RECEIPT
7015 0640 0007 4329 0792

Mr. James Baker
Department of Planning and Development
Land Development and Engineering
County of Santa Clara
70 West Hedding St.
San Jose, CA 95110

RE: Lehigh-Permanente Quarry, State Mine ID# 91-43-0004
Financial Assurance Cost Estimate

Dear Mr. Baker:

Please find enclosed a *Financial Assurance Cost Estimate* (FACE) for the above-referenced facility. The FACE was prepared by Damien Galford of EnviroMine, Inc., in accordance with Condition of Approval #14 of the facility's 2012 Reclamation Plan Amendments.

The FACE is submitted to the Planning Manager for review and approval, and serves as the basis for the amount of financial assurances required of the Mine Operator, account for disturbed and those lands to be disturbed in the following year by the surface mining operations, inflation, and reclamation of lands accomplished in accordance with the approved RPA. Cost estimates use the most up-to-date cost figures for the San Francisco Bay Area and include appropriate costs for all materials to be used, labor rates, and equipment rates used in calculating the FACE. Upon approval of the FACE by the County and review by the State Office of Mine Reclamation (OM), the Lehigh will post an acceptable Financial Assurance mechanism with the Department of Planning and Development prior to commencing any disturbance in areas not previously disturbed by the mining operation.

If you have questions or comments, please do not hesitate to contact me at 408-996-4269.

Sincerely,

Sam Barket
Environmental Manager

Enclosure

Financial Assurance Cost Estimate

for

Permanente Quarry

State Mine ID # 91-43-0004

Submitted to:

Santa Clara County
70 West Heading Street
East Wing, 7th Floor
San Jose, CA 95110

Prepared for:

Lehigh Southwest Cement Company
Permanente Quarry
24001 Stevens Creek Blvd.
Cupertino, CA 95014

Prepared by:

EnviroMINE Inc.

3511 Camino Del Rio South, Suite 403
San Diego, CA 92108
(619) 284-8515, Fax (619) 284-0115

July 2016

1.0 INTRODUCTION

1.1 Purpose

Under the California Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2719 *et seq.*), all surface mining operations are required to have an annually updated financial assurance cost estimate (FACE) approved by their Lead Agency, reflecting the cost of reclaiming the site. For purposes of this estimate, Santa Clara County is recognized as a Lead Agency through the adoption of local Zoning Ordinance, Title 8, Chapter 88-11, as certified SMARA compliant by the State of California.

1.2 Location

Permanente Quarry (Quarry) is a limestone and aggregate mining operation located in the unincorporated foothills of Santa Clara County, west of the city of Cupertino. The Quarry is situated approximately 3.0 miles southwest of the intersection of Interstate 280 and Highway 85. Site access is provided via Stevens Creek Boulevard and Foothill Expressway, continuing to the western terminus of Permanente Road.

1.3 Background

Limestone quarrying operations started at this site prior to the County's implementation of zoning in the area, thus making the mine a vested operation. SMARA requires all mine operators, including those with vested rights, to prepare a Reclamation Plan. The County approved the initial reclamation plan for the Quarry in March 1985. In June of 2012 a Reclamation Plan Amendment (RPA) was approved for the quarry and provides reclamation standards and strategies for lands impacted by the mining operation over the next 20 years. In total the RPA covers an area of 1,238.6 acres, with approximately 600 acres of the RPA Area existing as buffer that is not to be disturbed from mining. The remaining 639.6 acres referred to in the document as the RPA Footprint is subject to disturbance from mining operations.

Current operations at the site include a quarry cut-face with a series of benches and multiple material storage areas. The overall slope gradient of the benched quarry face is to be 1H:1V (horizontal: vertical), while the overburden fill slopes will be reclaimed at a maximum overall slope inclination between 2.5H:1V to 2.6H:1V. Reclamation at the Quarry is conducted on an annual basis for areas at final grade and not subject to further disturbance. In 2012, reclamation work commenced in the Permanente Creek Reclamation Area (PCRA), the installation of BMP's and hydroseeding was completed in Subareas 4, 5 and 6. Current grading activities are taking place in Phase 1A of the approved mine plan.

The majority of the 639.6 acre RPA footprint is found in a fully disturbed condition with little evidence of vegetative cover. An exception to this includes areas where reclamation has begun or areas that have naturally revegetated. Vegetation types within the quarry area include ruderal slopes, oak, chaparral and disturbed lands. The proposed end use for the quarry after reclamation is complete is open space. This FACE addresses all disturbed lands at the Quarry and reclamation costs are based off the 2012 approved RPA. Reclamation items at the Quarry that are addressed in the approved RPA and incorporated in this FACE include: EMSA

reclamation, backfilling the Main Pit to buttress past instabilities, Permanente Creek restoration, reclaiming the exploration areas on the south side of Permanente Creek, reclaiming the rock plant site and other mining related disturbance. In total, approximately 546 acres are currently disturbed at the Quarry.

Lehigh Southwest Cement Company, Inc. currently operates the mine and assumed the associated liability of reclaiming the site after the cessation of mining.

1.4 Methodology

This estimate utilizes the following resources:

- Reclamation Plan Amendment (RPA), Approved June 2012
- Existing geotechnical reports and studies
- Means Site Work & Landscape Cost Data
- Department of Industrial Relations, Prevailing Wage Determinations
- Caltrans, Labor Surcharge & Equipment Rental Rates (4/1/16-3/31/17)
- Caterpillar Handbook, Edition 37
- Cost estimate from Freeduln Hydroseeding
- Conveyor equipment cost from Aggregate Machinery Specialists
- Interviews with Lehigh personnel
- Pacific Coast Seed Company
- August 26, 2014 Ultimate Backfill Calculation Prepared By Cliff Maddocks
- Personal experience of the estimator
- June 2012 RPA Final Conditions of Approval
- Dumpster rental quote from CDR Dumpster Rental, San Jose, CA
- Scrap steel quote from Alco Metals, San Jose, CA

This reclamation estimate provides anticipated costs for direct and indirect expenses that would be faced by the responsible party. Based on the requirements of the approved reclamation plan the following elements represent the direct costs of reclamation:

1. Removal of equipment, disposal of structures, and disposal of miscellaneous rubbish
2. Site grading
3. Backfilling the Main Pit
4. PCRA Reclamation
5. Revegetation
6. Revegetation Monitoring and Maintenance

The following elements represent the indirect costs of reclamation:

1. Supervision
2. Profit and Overhead
3. Contingencies
4. Mobilization

Taken together, the Direct and Indirect reclamation costs identify the total cost for reclamation. Finally, Lead Agency administrative costs (2%) are added to the total cost of reclamation to determine the overall financial assurance requirement.

2.0 ESTIMATED DIRECT COST OF RECLAMATION

2.1 Removal of Processing Plant and Equipment

Plant removal involves demolishing and transporting the Rock Plant including conveyors, crushers, screens, wash plants, scales, and miscellaneous structures to an offsite location. This also includes the removal of the overland conveyor that extends from the Main Pit to the Cement Plant. In addition to demolition and removal of these structures, all foundations must be demolished and removed, and compacted surfaces must be ripped to prepare the site for revegetation. Scrap steel will be taken to Alco Metals in San Jose for recycling while other non-recyclable materials will be put into roll-off dumpsters provided by CDR Dumpster Rental and hauled to off-site. It is estimated that approximately 1,000 tons of steel will be removed from the site. Alco Metals located in San Jose will pay $160 per ton of scrap steel when delivered to their yard. Therefore, $160,000 will be deducted from the total plant and equipment removal costs.

Overland Conveyors:

Mined rock is hauled from the Main Pit to the primary crusher located on the south side of the Main Pit. This material is crushed and transported to the cement plant and/or rock plant via an overland conveyor. The overland conveyor extends for a distance of approximately 8,900 feet and includes a primary crusher, one crusher foundation, transfer points, secondary crushing, interim stockpiles and a tunnel. Removal of the overland conveyor will require demolition of the steel structures and foundations, removal of conveyor belts and loading onto trucks for delivery to a salvage yard. Clean-up of miscellaneous rubbish and preparation of access roads for revegetation will be the final steps in this process.

In 2015, one of the crusher foundations was demolished and removed. Costs below account for demolishing and removing the concrete foundation for the crusher at the new location.

This task involves a CAT 330 Hydraulic Excavator, with a La Bounty Shear attachment, and CAT 330 Hydraulic Excavator, with a grappling attachment, to cut and load manageable sized sections onto an over-the-road truck to haul to Alco Scrap Metal in San Jose for recycling. Also included in this task is the demolition and removal of the concrete footings and foundations using a CAT 330 excavator equipped with a NPK H 12 rock hammer. It is estimated that approximately 750 CY of concrete will need to be demolished and removed from the site. Demolished concrete materials will be transported off-site to a recycling facility. It is estimated that each truckload will have a capacity of 17 yd^3 and each load will take approximately 1.5 hours to complete.

Equipment	Each	Rate	Hours	Total
Cat 330 w/ Steel Shear	1	$233.17	45	$10,493
Cat 330 w/ Grapple	1	$159.74	60	$9,584
Cat 966 E Front-End Loader	1	$130.48	60	$7,829
Cat 330 w/ Breaker	1	$170.26	12	$2,043
Cat 330 w/2.2 cy bucket	1	$134.16	18	$2,415
Grove RT-635 40t Crane	1	$85.18	60	$5,111
Truck w/low bed trailer	1	$85.20	70	$5,964
Truck w/Semi-End Dump	1	$79.13	36	$2,849
Truck w/Semi-End Dump (Concrete)	5	$79.13	68	$5,381
Welding Truck	1	$49.64	60	$2,978
Pick up	2	$18.26	105	$1,917
Total Equipment Cost				**$56,564**

Labor	Each	Rate	Hours	Total
Excavator Operator	3	$67.39	135	$9,098
Loader Operator	1	$66.01	60	$3,961
Crane Operator	1	$70.82	60	$4,249
Low Bed Driver	1	$55.32	70	$3,872
Semi-End Dump Driver	1	$54.97	104	$5,717
Welder	2	$50.69	105	$5,322
Laborer	2	$48.74	105	$5,118
Foreman	1	$70.82	60	$4,249
Total Labor Cost				**$41,586**

Miscellaneous Expense	Each	Rate	Total
Roll-Off Trash Containers	5	$575	**$2,875**
Concrete Recycling Fees	45	$80	$3,600
Total Miscellaneous Expenses			**$6,475**

Rock Plant Removal:

The rock plant is a fully integrated rock processing facility. Equipment at the processing plant includes:

- Approximately 3,400' of conveyors with attendant structural supports
- Approximately 7,000' of 36" conveyor belting
- Maintenance, control, and office buildings (approximately 18,000 square feet)
- 1,700 l.f. of conveyor tunnel
- 6 bag houses
- 850,000-gallon water tank
- 10,000-gallon water tank
- 4,000-gallon water tank
- 2,000-gallon above ground diesel tank

- Miscellaneous Electrical Panels
- 2 crushers
- 7 vibrating screens
- 35,000 S.F. of concrete foundations (assume 12" thickness)
- 4,500 L.F. of 2" water mains.
- 2 truck scales
- 2 belt presses
- 4 compressors
- Office and storage trailers
- Sand Screw

Removal of the rock plant will be accomplished in similar fashion to removal of the overland conveyor. The steel structures will be cut into manageable pieces with an excavator mounted with a steel shear, with pieces placed on an over-the-road truck for removal to a scrap yard. However, the processing plant also includes screens, crushers, wash plant, support buildings, and scales. This equipment will be dismantled in the most efficient manner possible, which may include shearing, cutting using a cutting torch, or simply unbolting the equipment from the support structures prior to demolition. Five (5) separate tunnels that total approximately 1,700' in length connect the various surge piles with different processing circuits. These tunnels will need to be excavated to remove the corrugated culvert pipe supports.

Concrete foundations will be demolished using a rock breaker attachment on an excavator and a front end loader. It is estimated that approximately 2,200 CY of concrete will need to be demolished and removed from the site. Demolished concrete materials will be transported off-site to a recycling facility. It is estimated that each truckload will have a capacity of 17 yd^3 and each load will take approximately 1.5 hours to complete.

Equipment	Each	Rate	Hours	Total
Cat 330 w/ Steel Shear	1	$233.17	48	$11,192
Cat 330 w/ Grapple	1	$159.74	48	$7,668
Cat 966 E Front-End Loader	1	$130.48	48	$6,263
Cat 330 w/ Breaker	1	$170.26	80	$13,621
Cat 330 w/2.2 cy bucket	1	$134.16	40	$5,366
Grove RT-635 40t Crane	1	$85.18	48	$4,089
Truck w/low bed trailer	1	$85.20	48	$4,090
Truck w/Semi-End Dump	1	$79.13	48	$3,798
Truck w/Semi-End Dump (Concrete)	5	$79.13	200	$15,826
Welding Truck	1	$49.64	60	$2,978
Pick up	2	$18.26	80	$1,461
Total Equipment Cost				**$76,352**

Labor	Each	Rate	Hours	Total
Excavator Operator	4	$67.39	216	$14,556
Loader Operator	1	$66.01	48	$3,168
Crane Operator	1	$70.82	48	$3,399
Low Bed Driver	1	$55.32	48	$2,655
Semi-End Dump Driver	1	$54.97	48	$2,639
Semi-End Dump Driver (Concrete)	5	$54.97	200	$10,994
Welder	2	$50.69	120	$6,083
Laborer	2	$48.74	96	$4,679
Foreman	1	$70.82	80	$5,666
Total Labor Cost				**$53,839**

Miscellaneous Expense	Each	Rate	Total
Roll-Off Trash Containers	10	$585	$5,850
Concrete Recycling Fees	130	$80	$10,400
Total Miscellaneous Expenses			**$16,250**

Mobile Equipment Removal:

Aside from the processing plant facilities, other equipment used at the site includes the following:

- 2 CAT 988 Wheel Loaders
- 1 CAT 963 Loader
- 4 CAT 992 Wheel Loaders
- 1 CAT 216 Skid Steer
- 2 CAT 226 Skid Steer Loaders
- 1 CAT 16G Motor Grader
- 2 CAT D10T Bulldozers
- 1 Nobel R80 Forklift
- 1 CAT 824 C Rubber Tired Dozer
- 2 CAT 773 Mining Truck
- 2 CAT 777 Mining Trucks
- 1 Euclid R35 Mining Truck
- 1 Miller 600D Welder
- 1 CAT IT14 Loader
- 1 Ingersol-Rand WL 440 Loader
- 1 JLG Aerial Lift
- 9 Allmand 695 Lite portable light towers
- 1 Guzzler Sump Pump
- 2 Water Trucks

It is assumed that all of the equipment in the preceding list is in good repair and can be loaded directly onto a lowboy trailer and removed from the site. For purposes of this estimate, it is assumed that each load of equipment will require 0.5 hour for loading, 1.0 hour to haul to a resale dealer in the San Jose area, including unloading,

and 0.5 hour to return to the site. At this time there are 36 pieces of equipment that must be removed from the site. Removing this equipment will require 24 loads. Of the total loads required to remove the equipment 13 of which will require special treatment as wide loads with pilot cars, permits and a 5 axle lowboy trailer. Estimated costs for equipment removal are shown below.

Cost Item	Quantity	Hours	Rate	Total
Trucking w/ Tractor and Lowboy Trailer (including operator)	11	26	$140.52	$3,654
Trucking w/ Tractor, 5-axle Lowboy Trailer & 2 pilot vehicles (including operators)	13	lump sum	$2,661	$34,595
Total Heavy Equipment Removal Cost				**$38,249**

Note: trucking costs include truck, trailer and driver

Total Cost for Removal of Plant Facilities and Heavy Equipment	**$289,315**
Total Value of Scrap Steel	**$160,000**
Net Cost for Removal of Plant Facilities and Heavy Equipment	**$129,315**

2.2 Site Reclamation

Site grading will stabilize slopes and prepare the site for revegetation in accordance with the 2012 approved RPA. This estimate's restoration scenario incorporates backfilling of the Main Pit to buttress past instabilities. To accomplish this, the West Materials Storage Area (WMSA) will be used as the primary source of backfill material, since mining byproducts (unused mined material) will not be available.

2.2.1 Backfilling of the North Quarry

Backfilling the North Quarry will involve transporting material from the West Material Storage Area (WMSA) and placing it in the North Quarry to create the final reclaimed landform. Lehigh Hanson staff estimated the current backfill volume required to fill the North Quarry by comparing an August 2014 fly-over to the proposed reclamation contours identified in the approved 2012 RPA. Records from the previous year's grading and mining activities were also used to provide an a updated volume of backfill needed to complete reclamation. After analyzing the existing and proposed topography the total volume required for backfilling the North Quarry is estimated at 29,673,935 CY.

Ample fill material exists at the WMSA and must be relocated approximately 10,000 feet east to the North Quarry. A conveyor system will be utilized to transport 29,673,935 CY of backfill material from the WMSA to the North Quarry and place material directly into the pit. To increase efficiency of the conveying system, portable conveyors will be moved around the WMSA as backfilling progresses. Two (2) D10 dozers will push overburden into a dozer trap that will feed the conveyor system. Oversized material will be reduced by a jaw crusher to six (6) inch minus prior to loading onto the conveyor. A D11 dozer will be utilized within the North Quarry to spread conveyed materials in the backfill area. Backfilling of the North Quarry will

take approximately five (5) years, working two shifts per day, five days per week, on a year round basis.

Conveying Backfill Material:

Using a team of dozers, material will be pushed directly from the WMSA into a feeder and onto the conveyor system. Oversized material will be reduced by a jaw crusher to six (6) inch minus prior to loading onto the conveyor. The conveyor system will total approximately 10,000 feet in length and will carry all of the material needed to backfill the North Quarry.

Backfilling of the North Quarry will also include grading of approximately 6,700,000 CY of non-limestone material that has been identified as the "Main Slide". Materials originating from the Main Slide will be removed using a D 10 bull dozer. As the backfill elevation increases in the pit, Main Slide materials will be joined with this material. This will reduce push distances and allow a single dozer to complete removal of the Main Slide.

To optimize production from the dozers the conveyor system will be relocated as grading progresses; average push distances will be kept at approximately 300 feet. Throughout the backfilling operation, sections of conveyor will be relocated to reduce the need for additional conveyor to access all areas of the WMSA. During each phase of backfilling only one collection point for the dozers to push material to will be utilized. The system will be capable of shipping approximately 1,380 CY per hour over the conveyor. All equipment required to convey material from the WMSA to the North Quarry is included in the cost estimate from Aggregate Machinery Specialists included in Attachment 1. Generally the conveyor system is composed of three separate parts:

- Primary
- Conveyor
- Radial Stacker

The first equipment discussed in the proposal is the primary station, which includes a heavy duty 38" by 62" jaw crusher and a 62" by 42" vibrating grizzly feeder. The crusher and feeder come with all the add-ons necessary to operate the systems. The conveyor identified for the project is made up of four (4) 42" by 2,375' ground line channel conveyors. The conveyors come with all the belting, motors, pulleys and guards to operate the system. The last piece of equipment required to complete the conveyor system is the Radial Stacker. The stacker is a 30" by 190' portable TeleStacker conveyor, costs for the radial stacker include all accessories recommended in the quote provided in Attachment 1.

In addition to purchasing the system and installing it at the site there will be operation and maintenance costs to run the system while the backfill material is transported from the WMSA to the North Quarry. Costs for operation and maintenance have been included in the table below. These costs include all replacement parts and labor to operate the system over the approximate five (5) year period required to complete backfilling. It is assumed that the conveyor system will generate approximately 75% of the power to operate the conveyor. Remaining electrical power costs are included to address expected operating costs.

At the North Quarry once material is shipped over the conveyor system and generally distributed in the pit by the Radial Stacker, a D11 dozer will compact and push material around the dump site for final placement. The dozer will only be required to push approximately 1/4 of the material around the North Quarry because the Radial Stacker will distribute the majority of the backfill material. Costs in the table below include purchasing and operating the conveyor system as well as all mobile equipment and labor required to complete the backfilling operation. A detailed quote for the conveyor system machinery was provided by Aggregate Machinery Specialist included as Attachment 1.

Equipment	Each	Rate	Hours	Total
42" Conveyor System Over 10,000'	N/A	LS	N/A	$8,716,975
Cat D10N Dozers	3	$298.25	64,509	$19,239,676
Cat D11 Dozer	1	$466.60	7,220	$3,368,822
Water Truck	1	$39.57	7,220	$285,693
D 10 Dozer Operators	3	$66.01	64,509	$4,258,210
D 11 Dozer Operator	1	$66.01	7,220	$476,588
Water Truck Driver	1	$54.67	7,220	$394,714
Conveyor Operation/Maintenance	L.S./ Hour	$45.10	21,503	$969,873
Electricity	187 Kwh	$27.11	21,503	$582,969
Total Backfilling Costs				**$38,293,520**

Prior to operation of the conveyor system it will need to be installed at the site. Costs for initial installation of the conveyor and accessory equipment are included in the table below. Costs for removing the conveyor system are included in mobilization.

Equipment	Each	Rate	Hours	Total
Grove RT 525 Crane	1	$66.32	200	$13,264
Cat 938 G Loader	1	$94.07	200	$18,814
Cat 315L Excavator	1	$58.55	200	$11,710
Crane Operator	1	$70.82	200	$14,164
Pickup Truck	2	$18.26	400	$7,304
Excavator Operator	1	$67.39	200	$13,478
Loader Operator	1	$66.01	200	$13,202
Foreman	1	$70.82	200	$14,164
Laborers	2	$48.74	400	$19,496
Total Conveyor Installation Costs				**$125,596**

During operation of the conveyor system sections of the conveyor will need to be relocated as grading progress through the WMSA. Relocating the conveyor system will take approximately eight (8) hours to complete. Throughout the operation it is anticipated that relocating the system will need to be done about 10 times. Costs in the table below include all equipment and labor necessary to relocate sections of the portable conveyor.

Equipment	Each	Rate	Hours	Total
Cat 325L Excavator	1	$106.39	80	$8,511
Cat 988 Loader	1	$166.11	80	$13,289
Excavator Operator	1	$67.39	80	$5,391
Loader Operator	1	$66.01	80	$5,281
Laborers	2	$48.74	160	$7,798
Total Conveyor Relocation Costs				**$40,270**

Water is necessary for dust suppression for the pit back fill operations. The water will service the conveyor system and haul road dust suppression needs. Water is currently available at the existing crusher/conveyor. Extension of water to the backfill conveyor will require digging a trench and running a 4" water main, including pipe bedding over a 6,000' distance within the existing haul road that extends between the crusher and the west materials storage area. Means Site Work and Landscape Cost Data, was used to estimate these costs.

Activity	Distance	$/foot	Total
Water Line Construction	6,000	$15.64	$93,820

Electrical power must be provided to power the conveyor system used to backfill the pit. Although the conveyor system will generate up to 75% of total power requirements, some power will be necessary for start up and continuous operations. Electrical power will be extended from the crusher/conveyor system used to transport materials from the pit to the cement and aggregate plants. This will require an extension of electrical lines for approximately 5,800 feet to the backfill conveyor system. It is assumed that the power poles can be spaced at 300' intervals. Over the 5,800' distance, 20 power poles will be necessary. The cost for extending power is estimated using Means Site Work and Landscape Cost Data. Power line extension is estimated on a per pole basis and includes all poles and wiring.

Activity	Poles	$/Pole	Total
Power Line Construction	20	$2,140	$42,799

2.2.2 Stockpile Relocation Costs

A stockpile located west of the Rock Plant that contains approximately 300,000 tons of crushed rock will be relocated to the North Quarry using a team of off-road haul-trucks traveling over the existing network of quarry roads. A Cat 992 front-end-loader will load the stockpiled material into the haul trucks while a water truck and grader will be utilized to maintain the road network and suppress dust. Equipment production rates from the Caterpillar Handbook and individual site conditions dictate equipment needs for the job. Production rates in the Caterpillar Handbook are expressed in CY and not tons, therefore the volume of the stockpile has been converted to CY using a factor of 1.5 tons per CY. Using this conversion factor the stockpile volume is approximately 200,000 CY. All equipment rates and site characteristics used to develop equipment production rates for this particular application are included in the tables below:

Cat 777 Off-Road Haul-Truck Production Rates:

Fixed Time (min)	
Load Site Maneuvering	1.1
Dump Site Maneuvering	0.7
Loading W/992	3
Total Time (min)	**4.8**

Cat 777 Haul Truck Production Rates	Avg. (ft) Distance	Avg Grade (%)	Avg Time (min)	Round Trip Travel Time (min)	Total Trip Time (min)	777 D Capacity
Site Average Loaded	13,000	10	18	25.6	30.4	65 CY
Site Average Empty	13,000	10	7.6			

Front-End-Loader Production Rates:

Cat 992 C Front-End-Loader Production Rates	Bucket Capacity	Cycle Time (min)	Buckets Per Truckload	Total Time to Load a 777 D (min)
	15CY	0.6	5	3

To complete relocating the 200,000 CY of material a team of eight haul-trucks will be used to transport the material to the North Quarry. A Cat 992 front-end-loader will be used to load material into the haul trucks. Costs in the table below represent all labor and equipment needed to complete the task:

Item	Each	Rate/Hr	Hours	Total
Cat 992 C Front End Loader	1	$457.06	195	$89,127
Cat 777 D Haul Trucks	8	$253.97	195	$396,193
12H Blade	1	$81.82	98	$8,018
Water Truck	1	$71.07	195	$13,859
Haul Truck Driver	8	$55.67	195	$86,845
Water Truck Driver	1	$54.97	195	$10,719
Loader Operator	1	$39.57	195	$7,716
Blade Operator	1	$68.87	98	$6,749
Total Stockpile Relocation Costs				**$619,227**

2.2.3 Adding Organic Material to Backfilling

As recommended in the Attachment G -SES Reclamation Water Quality Report of the RPA, backfill is to be amended with organic matter while it is being placed in the North Quarry. It is estimated that approximately 63,000 tons of organic matter will be required to be mixed into the backfill material at the North Quarry. The source of the organic matter is to be from an off-site source. This estimate assumes that these organic materials would originate from a material from a supplier in Gilroy, Ca.

The organic material would be mixed into the backfill material during filling of the upper zones of the quarry within the pit; i.e., starting at elevation 935 to 960 ft amsl and up to approximately 985 ft amsl. Groundwater in the quarry is expected to stabilize at an elevation of between 985 and 990 ft amsl. The addition of organic material will occur during the placement of approximately 5,000,000 CY of backfill within the final 25 to 50 feet of fill in the quarry area near the end of Phase 2. Given the estimated production of the backfilling operation of 1,380 CY per hour, it will take approximately 190 days of backfilling the North Quarry at elevations where Organic material is recommended.

Trucks will deliver the material to the WMSA near the hopper for the portable conveyor system and a 938 loader will feed the material into the hopper. The 938 loader is capable of loading 420 cubic yards per hour into the hopper; however a much lower production level is assumed to account for mixing of organic material and backfill. To balance out the distribution of the organic material the loader will feed material into the hopper three times per day operating one hour at a time. Once loaded into the hopper the material will travel along the portable conveyor system to be transported to the North Quarry.

Equipment	Each	Rate	Hours	Total
Cat 938 Loader	1	$83.25	600	$49,950
Loader Operator	1	$66.01	600	$39,606
Organic Material*	63,000 (Tons)	$32.82	N/A	$2,067,887
Total Organic Material Mixing Costs				**$2,157,443**

**Costs for organic material include delivery*

2.2.4 Capping Site With Non-Limestone Material

Measures to protect surface water quality during reclamation activities consist of isolating runoff from limestone materials in the North Quarry backfill, WMSA, and EMSA. This will be accomplished during reclamation construction by covering reclaimed areas, and by construction of an effective surface drainage system. The recommended cover includes the placement of a 1-foot thick layer of run-of-mine non-limestone rock (i.e., greywacke, chert, and greenstone) over areas where limestone materials are used as general fill for reclamation. These areas are limited to 440 acres of the site and include the WMSA, EMSA and the North Quarry. The total area to receive capping material accounted for in the FACE is a conservative estimate and accounts for capping all surfaces within the WMSA, EMSA and North Quarry. Field investigation and testing performed by a geologist in the field will determine areas of the site to be capped with non-limestone material during reclamation. The FACE assumes costs for capping the entire 440 acres, even though capping may not be required over the entire 440 acre area.

Preliminary analysis indicates that the WMSA has ample quantities of non-limestone material, which will meet the required 710,000 CY needed for capping. Drill borings and geologic investigation of the WMSA estimate that approximately 80% of the material in the WMSA is non-limestone material that is suitable for use as capping material. Stockpiled in the WMSA, the non-limestone material will be identified by a geologist during backfilling and utilized for capping material. No additional processing

or stockpiling of the material is required prior to use as capping material. Costs for finish grading of non-limestone capping material are accounted for in Section 2.2.5 Finish Reclamation.

Distribution of non-limestone material for capping will utilize a variety of equipment. A combination of dozers, scrapers, loaders and off-road haul trucks will be utilized to distribute the non-limestone capping material. Three separate areas require capping material and three separate equipment combinations will be utilized in order to maximize the efficiency of the equipment.

East Material Storage Area (EMSA) :

Since the previous cost estimate was prepared, the operator completed all remaining capping of the EMSA. Non-limestone material was used for this task. As required by Condition of Approval 74, the EMSA capping was observed, tested, and sampled by a Certified Engineering Geologist (See Attachment 3 for letter from Golder Associates). Therefore, the costs described in the table below have been reduced accordingly.

North Quarry:

Material required for the North Quarry is approximately 361,000 CY of non-limestone material. This material will be transported from the WMSA to the EMSA using 777D haul trucks. The average haul distance is approximately 4,000 feet one way. Material will be loaded into off-road haul trucks by a Cat 992 loader and transported to the North Quarry for placement. Production estimates and assumptions utilized for the cost estimate are listed below:

Loaded-1.4 Min @ an average grade of -4%
Empty-1.4 Min @ an average grade of 4%
Total Travel Time-2.8
Loading and unloading-4.1 min
Loads/Hour- 8.7
Truck Capacity-72 CY
Production Per Truck Per Hour- 626 CY
Job Efficiency- 83%
Adjusted Production Per Hour- 520 CY
Total Time Required- 694 Hours

West Material Storage Area (WMSA):

Material required for the WMSA is approximately 229,000 CY of non-limestone material. This material will be distributed around the WMSA using Cat 651 scrapers. Scrapers are self-loading machines and do not require a loader, however a dozer is required as a push cat to assist in loading of the scrapers. The average haul distance is approximately 1,400 feet one way. Below are production estimates and assumptions utilized for the cost estimate:

Fixed Time	
Load Time	.6 min
Spread Time	.7 min
Total	1.3 min

Cat 651E Scraper Production Rates	Avg (ft) Distance	Avg Grade (%)	Avg Time (min)	Round Trip Time (min)	Total Trip Time (min)	Trips per Hour
Site Average Loaded	1,400	4	1.1	2.9	4.2	14.2
Site Average Empty	1,400	4	.8			

Cat 651E Scraper Operational Logistics	Trips/Hour	651E Capacity (struck)	CY/Hr	CY Total	Job Efficiency	Hours Required
Logistics	14.2	32 cy	454	229,000	83%	**608**

All labor and equipment costs for distributing non-limestone capping material are included in the table below:

Equipment	Each	Rate	Hours	Total
Cat 992B Loader	2	$295.04	314	$92,643
Cat 777 Haul Truck	3	$253.97	694	$176,255
Cat 651 B Scraper	4	$265.39	608	$161,357
Cat D 10N Dozer	2	$298.25	238	$70,984
Water Truck	1	$39.57	297	$11,752
Loader Operator	2	$66.01	314	$20,727
Off-Road Haul Truck Driver	3	$55.67	694	$38,635
Scraper Operator	4	$66.01	608	$40,134
Dozer Operator	2	$66.01	238	$15,710
Water Truck Driver	1	$54.67	297	$16,237
Total Non-Limestone Material Capping Costs				**$644,434**

2.2.5 Slope Repairs

On December 3, 2014 during a heavy rain fall event the sump pump at the main crusher overflowed and caused some erosion to the slope below the crusher. Repairs to the slope must be made to stabilize the slope and prevent further erosion. Golder and Associates has been out to evaluate the erosion on-site and has developed a plan to remediate the erosion. Golder estimates cost to make the repairs as well as remaining costs for geotechnical oversight to monitor the repair work. A detailed cost estimate is included as Attachment 5.

Task	Each	Hours	Rate	Total
Slope Repairs	1	Lump Sum	$120,901	$120,901
Geotechnical Oversight	1	Lump Sum	$24,480	$24,480
Total Cost for Road Scarifying				**$145,381**

2.2.6 Scarification of Roads

It is assumed that a CAT D8R Bulldozer, configured with multi-shank ripper, will be used to scarify the roads. Moving at an assumed average rate of 2.2 m.p.h. (1st gear) it will take approximately four (4) hours to rip an estimated 18,000 feet of roadway, making four overlapping passes.

Equipment costs were derived from the Caltrans Labor Surcharge and Equipment Rental Rates manual (4/1/16-3/31/17). Labor rates are provided by the Department of Industrial Relations Prevailing Wage Determinations for Operating Engineers and Teamsters.

Task	Each	Hours	Rate	Total
D8R Dozer W/Ripper	1	7	$195.27	$1,367
Operator Cost	1	7	$66.01	$462
Total Cost for Road Scarifying				**$1,829**

2.2.7 Finish Reclamation

Finished grading will include dressing out material storage areas, the Rock Plant site and other previously disturbed areas in preparation for revegetation.

Approximately 546 acres at the site are currently disturbed by mining operations. Of this area approximately 498 acres of this total will require finish grading prior to revegetation. This total assumes that 30 acres of roadway will remain following reclamation, 4 acres that are graded awaiting revegetation and another 14 acres within the Permanente Creek Restoration Area (PCRA) will not be graded. The table below assumes the use of a dozer with an average finish grading rate of one acre per hour. A dozer is preferred over a wheel type tractor because its track impressions will imprint final slopes to retain seeds and increase water retention and infiltration, thereby increasing the potential for revegetative success.

Task	Each	Hours	Hourly Rate	Total Cost
Grading with a D8R	1	498	$179.71	$89,496
Operator Cost	1	498	$66.01	$32,873
Total Cost for Finish Grading				**$122,369**

2.2.8 Installation of BMP's

After grading work has been completed and prior to revegetating the site permanent BMP's will be installed to manage stormwater runoff. A total of three permanent desiltation basins will be constructed to manage runoff at the WMSA, North Quarry and EMSA. Costs in the table below include all equipment and labor required to install BMP's.

Type	Cost Each	Quantity	Total Cost
Desiltation Basins	$21,905	3	$65,714
Total Cost for BMP Installation			**$65,714**

2.2.9 Geotechnical Oversight

Backfilling operations as well as distribution of non-limestone capping material and Permanente creek restoration will require the oversight of a geological technician in the field during operations. Once all backfilling is completed a final report will be prepared by a Registered Geologist. Costs in the table below account for a field geologist to spend 20 hours per week for observing backfilling operations for approximately five years. Additional field time is also included in the table to account for time to geotechnical supervision of distribution of capping material.

Task	Hours	Hourly Rate	Total Cost
Geotechnical Monitoring (Technician)	5,600	$90.00	$504,000
Geotechnical Monitoring (Supervision)	280	$155.00	$43,400
Final Geotechnical Report	80	$155.00	$12,400
Total Costs for Geotechnical Oversight			**$559,800**

Total Cost for Site Grading and Backfilling **$42,912,201**

2.3 Permanente Creek Reclamation Areas (PCRA)

This section describes the reclamation costs of historic mining disturbance adjacent to Permanente Creek, described as the Permanente Creek Reclamation Area ("PCRA"). For mapping and illustrative purposes, the PCRA is divided into seven different subareas (numbered one through seven) with customized reclamation treatments for each subarea. In 2012 after approval of the RPA reclamation work commenced in Subareas 4, 5 and 6 and was completed in late October. Work completed included installation of BMP's as well as hydroseeding of disturbed areas. In total approximately nine (9) acres in the PCRA was reclaimed in 2012. In 2016, the application for permitting the restoration work with ACOE and CDFW was submitted and is in process. Costs in the tables below reflect completed reclamation work as well as anticipated reclamation costs in accordance with the approved RPA.

2.3.1 Concrete Culvert Removal from Permanente Creek

Removing a concrete half culvert located in the proposed restored stream channel is one aspect of the Permanente Creek Restoration. The concrete half culvert is located just downstream from Pond 13 and covers a length of approximately 375 feet. It is estimated that approximately 130 cubic yards of concrete will need to be demolished and removed to complete removing the concrete half culvert.

According to the CAT Handbook, an H120c hydraulic hammer attached to a 315L excavator can demolish approximately 230 cubic yards of reinforced concrete within 8 hours. Once the concrete has been broken into pieces 2-feet in diameter or smaller, the excavator will be used to load the material into haul trucks. According to the CAT handbook, the 315L has an average cycle time of 20 seconds. Assuming that the average bucket load is 0.75 yd^3, it will take one (1) hour for the excavator to load 130 yd^3 into the trucks. Each truckload will have a capacity of 17 yd^3. Each load will require 1.5 hours to complete. All concrete removed from the site will be hauled off site to a C and D Recycling facility. Additional time has been added to this time to

account for truck warm-up and mobilization. The table below represents a cost estimate for demolishing and removing the culvert.

Task	No.	Rate	Hours	Total
315L Excavator w/ Rock Breaker Attachment	1	$94.65	6	$568
Excavator Operator	1	$67.39	6	$404
315L Excavator w/ bucket	1	$58.55	2	$117
Excavator Operator	1	$67.39	2	$135
Haul Truck	4	$79.13	12	$950
Truck Driver	4	$54.97	12	$660
Foreman	1	$70.82	8	$567
Laborer	2	$48.74	8	$390
Pick Up	1	$18.26	8	$146
Concrete Recycling Fees*				$640
Total Cost of Removing Concrete Culvert				**$4,576**

** Concrete Recycling fees of $80 per load were obtained from Hanson Aggregates*

2.3.2 Permanente Creek Reclamation Grading

The reclamation plan calls for restoration of about 2,500 linear feet of Permanente Creek. Material from historic mining has collected in the creek channel. The reclamation plan calls for removal of this material and creation of a reconfigured creek channel that is roughly 50 feet wide with a 10 foot bottom and 3:1 side slopes. Material removed from the creek during the reconstruction of the channel will be hauled to the North Quarry and utilized as backfill material. In total there is an estimated 17,500 Cubic Yards of material that will be removed from the channel to create the reconfigured channel. Costs in the table below include all grading to reconstruct the channel, as well as the installation of step pools and the repair of sheet piles located in Subarea 6.

Task	Each	Hours	Rate	Total
Cat 330 Excavator	1	110	$134.16	$14,758
Cat 966F Loader	1	100	$133.37	$13,337
Cat 740 Articulated Haul Truck	2	90	$112.59	$10,133
Excavator Operator	1	110	$67.39	$7,413
Loader Operator	1	100	$66.01	$6,601
Truck Driver	2	90	$55.67	$5,010
Laborer	1	20	$48.74	$975
Total Cost for Creek Channel Restoration Grading				**$58,227**

2.3.3 Boulder Removal

A number of limestone boulders have found their way into Permanente Creek as a consequence of mining operations. These boulders range in size from approximately 10" to 3' in diameter. The majority of these boulders falls within a size class of between 12" and 24" in size. This estimate assumes that 200 boulders are located within the inundation limits of Permanente Creek. It is estimated that 25% of the

boulders fall into the smaller sized fraction. These boulders will be removed using hand labor. Boulders ranging in size from 12" to 24" represent 60% of the total, while 15% fall in the upper size range. These boulders must be removed using a combination of hand labor and mechanized equipment. The smaller of these boulders will be removed using hand labor, while the larger boulder will require mechanized removal. All boulders will be removed and deposited on the north side of Permanente Creek where they can be removed using a front end loader and dump truck.

Boulders in the 12" to 24" size fraction represent the majority of the boulders and will be removed using a variety of mechanized methods. Where the boulders can be removed by an excavator, these boulders will be placed within the bucket of the excavator using mechanized power assisted by hand labor. This estimate assumes that approximately 25% of the boulders fall within this capability. Where boulders cannot be manipulated and removed directly using an excavator, large (1 cy) nylon bags will be used to extract the boulders. The boulders will be placed into the bags using hand labor. The bags will be connected to a choker that is connected to an excavator and pulled onto an area where they can be removed from the influence of Permanente Creek. Larger sized boulders will either be broken up into smaller pieces and removed using hand labor or anchor bolts will be inserted into the boulders. The anchor (eye bolts) will then be attached to a choker using a clevis and choker and pulled from the influence of Permanente Creek. Once removed from the creek, boulders will be loaded onto off-road haul trucks and hauled to the North Quarry for final placement. Costs in the table below include all labor and equipment necessary to complete the task of removing limestone boulders from Permanente Creek.

Task	Each	Hours	Rate	Total
Cat 330 Excavator	1	64	$134.16	$8,586
Cat 966F Loader	1	48	$133.37	$6,402
Cat 740 Articulated Haul Truck	1	64	$112.59	$7,206
Excavator Operator	1	64	$67.39	$4,313
Loader Operator	1	48	$66.01	$3,168
Truck Driver	1	64	$55.67	$3,563
Laborer	4	256	$48.74	$12,477
Total Cost for Boulder Removal				**$45,716**

2.3.4 BMP Installation

After grading work has been completed and prior to revegetating the site temporary and permanent BMP's will be installed to manage stormwater runoff. Temporary BMP's will include Straw Waddles and Silt Fencing to be installed in the PCRA. A total of two permanent desiltation basins will be constructed in Subarea 1. Costs in the table below include all equipment and labor required to install BMP's.

Type	Cost Each	Quantity	Total Cost
Straw Waddles	$4.93	37,600	$185,240
Silt Fencing	$4.38	3,450	$15,097
Desiltation Basins	$21,886	2	$43,772
Total Cost for BMP Installation			**$244,109**

2.3.5 Slope Treatment

Slopes located in Subareas 2 and 3 of the PCRA are comprised of loose unconsolidated fill material. In an effort to reduce erosion from these slopes and provide more favorable surfaces for seed propagation the slopes will be compacted with a sheep's foot that is moved up and down the slopes by a winch.

Task	Each	Hours	Rate	Total
D8R Dozer W/Winch	1	16	$192.48	$3,080
Sheep's Foot Attachment	1	16	$12.77	$204
Operator Cost	1	16	$66.01	$1,056
Total Cost for Slope Compaction				**$4,340**

2.3.6 PCRA Revegetation

Seed Mixes:

The tables below summarize the hydroseeding components and associated costs that will be incurred for revegetation of 13.7 acres in the PCRA treatment areas. See Attachment 7 for a seed quote from Pacific Coast Seed.

PCRA Slope Seed Mix:

Scientific Name	Common Name	Lb/Acre	Price/Lb	Total Cost for 13.7 Acres
SHRUBS				
Artemisia californica	California sagebrush	10	$36.00	$4,932
Baccharis pilularis	coyote brush	6	$30.00	$2,466
Eriogonum fasciculatum	Eastern Mojave buckwheat	16	$9.50	$2,082
Salvia mellifera	black sage	4.3	$48.00	$2,828
GRASSES AND HERBS				
Achillea millefolium	yarrow	2	$36.00	$986
Artemisia douglasiana	Douglas' sagewort	1.9	$64.00	$1,666
Bromus carinatus	California brome	6	$8.00	$658
Clarkia purpurea ssp. quadrivulners	winecup clarkia	1	$75.00	$1,028
Elymus glaucus	Blue wildrye	6	$15.00	$1,233
Heterotheca grandiflora	telegraph weed	1	$64.00	$877
Lotus purshianus	Spanish clover	3.6	$90.00	$4,439
Plantago erecta	dotseed plantain	3	$40.00	$1,644
Sisyrinchium bellum	Western blue-eyed grass	1.4	$96.00	$1,841
Vulpia microstachys	small fescue	10	$20.00	$2,740
Total		**72.2**		**$29,419**

PCRA Riparian Seed Mix:

Scientific Name	Common Name	Lb/Acre	Price/Lb	Total Cost for 1 Acres
Artemisia douglasiana	mugwort	2	$64.00	$128
Carex barbarae	valley sedge	3	$245.00	$735
Carex praegracilis	field sedge	3	$95.00	$285
Cyperus eragrostis	tall flatsedge	6	$120.00	$720
Hordeum brachyantherum	meadow barley	18	$24.00	$432
Juncus effusus	bog rush	1	$120.00	$120
Juncus patens	common rush	1	$135.00	$135
Leymus triticoides	creeping wildrye	6	$90.00	$540
Total		**40**		**$3,095**

Hydroseeding

Area	Total Acres to Hydroseed	Hydroseed Slurry Application $/acre	Total Cost
PCRA	13.7	$5,500	$75,350
Total			**$75,350**

PCRA Riparian Planting

In areas of Permanente Creek where the channel has been reclaimed, the 3:1 floodplain banks will be hand planted with container stock. Approximately 1.5 acres will require hand planting. This estimate assumes a mix of one gallon and smaller container stock planted at a spacing of about 5'. Costs for plant materials and labor were provided by WRA Inc. Costs in the table below include all labor and materials to install plantings along approximately 2,500 feet of the reclaimed Permanente Creek channel.

Total Number of Plants	Cost Per Plant	Total Cost
2,500	$13.69	$34,221

PCRA Permitting

Prior to completing Permanente Creek restoration activities the proper permits must be obtained. These may include CDFG permits, ACOE permits or RWQCB permits. Costs for obtaining permits and completing a wetland delineation of Permanente Creek. Currently the application for all necessary permits has been compiled and submitted to the various stakeholder agencies. Costs remaining to complete permitting of the restoration project are are included in the table below.

Permitting Costs	$22,948
Wetland Delineation	$5,532
Total	**$28,480**

2.3.6 PCRA Monitoring

During the reclamation of the PCRA treatment areas geologic and revegetation monitoring will be required. Monitoring will include a geologist going in the field to observe grading activities and make grading recommendations as needed. The biologist would monitor the site during construction activity to limit the impacts to existing vegetation. Monitoring costs included in the table only account for monitoring during reclamation activities and do not include costs for monitoring for reclamation success, those costs can be found in Section 2.5.

Cost Item	Hours	Rate	Total
Creek Restoration Monitoring (Biologist)	100	$105	$10,500
Geologic Monitoring (Geologist)	120	$155	$18,600
Total Monitoring Costs			**$29,100**

Total PCRA Reclamation Costs **$556,633**

2.4 Revegetation

The revegetation of disturbed lands at the Quarry is designed to establish a self-sustaining community of native species, in compliance with the Reclamation Plan and consistent with the Reclamation Standards identified in SMARA (California Public Resources Code, Article 9, Section 3705).

Previous restoration planting at the Quarry has been used as a guide for revegetation planning. Revegetated areas now dominated by native species serve as a basis for anticipated revegetation success. Native species common in revegetated areas include California buckwheat, coyote brush, buckbrush and sagebrush.

The goal for revegetation efforts is native community restoration. This refers to the reclamation of disturbed lands to a self-sustaining community of native species which would visually integrate with surrounding lands. Revegetation is designed to control erosion and stabilize slopes against long-term erosion using plant materials capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer.

Revegetation relies on an adaptive management approach. Plant species selected for revegetation consist of native species known to occur on the quarry property. Preliminary species selection is shown in the tables below and includes species common in the area that have proven to be successful in past revegetation efforts. Depending on revegetative success, final species selection may include native plants observed within the greater quarry property.

Growth Medium Distribution:

Prior to revegetation, growth medium will be applied to approximately 498 acres of the site. Growth medium will be distributed over areas where container stock is installed on fill slopes at a target depth of 12 inches, with a minimum of 6-inches comprised of topsoil. Hydroseeded areas require six inches of growth medium comprised of a minimum of three inches of topsoil. Of the 498 acres that will receive growth medium, a thickness of six inches of topsoil will be distributed over 28 acres of the site and a thickness of three inches of topsoil will be distributed over 470 acres for a total volume

of 212,152 CY. All growth medium will come from within the RPA boundary; however it must be transported from locations around the site to areas of final placement. To transport the material around the site a team of off-road haul trucks will be utilized and D8 dozer will be used to spread the material out. A dozer is preferred to distribute the topsoil over a wheel type tractor because its track impressions will imprint final slopes to retain seeds and increase water retention and infiltration, thereby increasing the potential for revegetative success.

Fixed Time	
Load Time	2 min
Dump Time	.5 min
Total	2.5 min

Cat 740 Production Rates	Avg (ft) Distance	Avg Grade (%)	Avg Time (min)	Round Trip Time (min)	Total Trip Time (min)	Trips per Hour
Site Average Loaded	3,500	4	2.1	3.4	5.9	10.1
Site Average Empty	3,500	4	1.3			

Cat 740 Operational Logistics	Trips/Hour	740 Capacity (heaped)	CY/Hr	CY Total	Job Efficiency	Truck Hours Required
Logistics	10.1	30 CY	303	212,152	83%	**844**

All costs to relocate and spread 212,152 CY of growth medium over areas of the site to be revegetated are included in the table below.

Equipment	Each	Rate	Hours	Total
Cat 988 Loader	1	$171.58	422	$72,407
Cat 740 Haul Truck	2	$112.59	844	$95,026
Water Truck	1	$39.57	422	$16,699
D8R Dozer	1	$179.71	422	$75,838
Dozer Operator	1	$66.01	422	$27,856
Loader Operator	1	$66.01	422	$27,856
Off-Road Haul Truck Driver	2	$55.67	842	$46,874
Water Truck Driver	1	$54.67	422	$23,071
Total Cost for Growth Medium Distribution				**$385,626**

Hydroseeding:

The tables below summarize the hydroseeding components and associated costs that will be incurred for revegetation of 502 acres. This area represents a 15 acre reduction when compared to the 2015 FACE, this is due to 55 acres of hydroseeding

that was completed in the November 2015 and January 2016. The 15 acre area is generally located in the EMSA, the specific location of the hydroseeding is shown on the figure included as Attachment 6. See Attachment 9 for a seed quote from Pacific Coast Seed.

General Hydroseeding Seed Mix

Scientific Name	Common Name	Lb/Acre	Price/Lb	Total Cost For 502 Acres
Artemisia californica	California sagebrush	16	$36.00	$289,152
Baccharis pilularis	coyote brush	20	$28.00	$281,120
Eriogonum fasciculatum	California buckwheat	20	$9.50	$95,380
Salvia leucophylla	purple sage	2	$80.00	$80,320
Salvia mellifera	black sage	3	$48.00	$72,288
Achillea millefolium	yarrow	2	$36.00	$36,144
Artemisia douglasiana	mugwort	1	$64.00	$32,128
Bromus carinatus	California brome	6	$6.50	$19,578
Elymus glaucus	blue wildrye	6	$15.00	$45,180
Eschscholzia californica	California poppy	2	$18.00	$18,072
Heterotheca grandiflora	telegraph weed	1	$56.00	$28,112
Lotus purshianus	Spanish clover	1	$70.00	$35,140
Lotus scoparius	deerweed	2	$36.00	$36,144
Lupinus nanus	sky lupine	1	$40.00	$20,080
Melica californica	California melic	2	$36.00	$36,144
Nassella pulchra	purple needlegrass	4	$48.00	$96,384
Poa secunda	one-sided bluegrass	2	$30.00	$30,120
Trifolium willdenovii	tomcat clover	2	$40.00	$40,160
Total		**93**		**$1,291,646**

Using mechanical hydroseeding equipment, finished slopes will be seeded, mulched, and composted in a single application. The hydromulch mix will contain compost, organic mulch, fertilizer and the seed mix. The compost provides an infusion of soil organic matter to the graded material that is richer in nutrients than the mulch. Organic matter provides a long-term source of nutrients, increases water holding capacity, and improves the texture of the soil.

Commercial fertilizers, intended for agricultural or ornamental applications, are inappropriate for restoration because they provide a strong flush of nutrients at concentrations rarely present in nature. The typical result is rapid growth of weedy grasses and herbs, which then may out-compete slower-growing chaparral species for sunlight and soil water. Biosol fertilizer is a slow-release fertilizer designed for restoration objectives, and provides a steady supply of major nutrients at relatively low concentrations.

Freedlun Hydroseeding provided a conservative cost quote for the hydroseed applications. The following cost includes all materials and labor required:

Area	Total Acres to Hydroseed	Hydroseed Slurry Application $/acre	Total Cost
Areas Disturbed from Mining	502	$1,525	$765,550
Total			**$765,550**

Bench Planting

In addition to hydroseeding trees and shrubs container plantings will occur on the benches . Approximately 28 acres of the total revegetation area in the EMSA and Rock Plant areas will be planted as tree and/or shrub container planting areas. Shrubs will be planted at approximately 4.5-foot spacing and trees at 9-foot spacing in the designated planting areas.

North-facing benches will be revegetated with approximately 6.5 acres of oak-dominated plantings along with hydroseed. A target quantity of approximately 1,745 oak trees is scheduled to be planted in these areas, in addition to other native tree species. The oaks will be a mixture of acorn and container plantings.

Common name	Scientific name	Unit Cost	Quantity per acre	Total Cost for 6.5 Acres
Pacific madrone	Arbutus menziesii	$2.13	50	$693
Grey pine	Pinus sabiniana	$2.54	50	$825
Coast live oak	Quercus agrifolia	$2.54	54	$891
Canyon live oak	Quercus chrysolepis	$2.54	54	$891
Blue oak	Quercus douglasii	$2.54	54	$891
Valley oak	Quercus lobata	$2.54	54	$891
Interior live oak	Quercus wislizenii	$2.54	54	$891
Mountain mahogany	Cercocarpus betuloides	$3.10	142	$2,862
Toyon	Heteromeles arbutifolia	$1.32	142	$1,214
Scrub oak	Quercus berberidifolia	$2.13	142	$1,968
California coffeeberry	Rhamnus californica	$1.71	142	$1,582
Redberry	Rhamnus californica	$1.71	142	$1,582
Hillside gooseberry	Ribes californicum	$1.71	142	$1,582
Chaparral currant	Ribes malvaceum	$1.71	142	$1,582
Total			**1,264**	**$18,345**

East-facing benches comprise of approximately 21.5 acres will be planted with 75 percent (approximately 8,660) grey pine (*Pinus sabiniana*), along with 25 percent other native tree and shrub plantings common to oak woodland habitats.

Trees and Shrubs for Pine Woodland- East facing Benches				
Common name	**Scientific name**	**Unit Cost**	**Quantity per acre**	**Total Cost for 21.5 Acres**
Pacific madrone	Arbutus menziesii	$2.13	22	$1,008
Grey pine	Pinus sabiniana	$2.54	403	$22,006
Coast live oak	Quercus agrifolia	$2.54	22	$1,201
Canyon live oak	Quercus chrysolepis	$2.54	22	$1,201
Blue oak	Quercus douglasii	$2.54	22	$1,201
Valley oak	Quercus lobata	$2.54	22	$1,201
Interior live oak	Quercus wislizenii	$2.54	22	$1,201
Mountain mahogany	Cercocarpus betuloides	$3.10	142	$9,467
Toyon	Heteromeles arbutifolia	$1.32	142	$4,017
Scrub oak	Quercus berberidifolia	$2.13	142	$6,508
California coffeeberry	Rhamnus californica	$1.71	142	$5,232
Redberry	Rhamnus californica	$1.71	142	$5,232
Hillside gooseberry	Ribes californicum	$1.71	142	$5,232
Chaparral currant	Ribes malvaceum	$1.71	142	$5,232
Total			**1,529**	**$69,939**

Planting shrubs and trees will require the efforts of four common laborers and two pickup trucks along with the oversight of a revegetation specialist. Labor and equipment included in the table below accounts for plantings on 28 acres of the site.

Item	Each	Rate/Hr	Hours	Total
Pickup Truck	2	$18.26	240	$4,382
Laborers	4	$48.74	480	$23,395
Revegetation Specialist	1	$92.00	120	$11,040
Total Costs for Planting				**$38,817**

Total Cost for Site Revegetation **$2,569,923**

2.5 Monitoring and Maintenance

A large number of trees and shrubs are proposed for planting within groupings of tree and shrub "islands" in areas of the EMSA and the Rock Plant. By planting a large number of trees and shrubs without irrigation, hearty trees and shrubs will be selected for increasing the chances of their survival. Approximately twice as many trees and shrubs will be planted than the total required to meet performance standards for this area of the site. Based on the preliminary results of test plots at the site and the strategy of planting "extra" trees and shrubs, the amount of replacement plantings required to meet performance standards are expected to be minimized. The costs for replacement plantings were estimated by the biological consultant and are incorporated into the total amount for annual weed control and general maintenance.

A restoration biologist will monitor the revegetated areas three times each year (spring, summer, and fall), and provide an annual report to Lehigh and Santa Clara County.

The annual report will specifically assess the following:

- Numbers of trees surviving on each planted bench and slope unit
- General size and condition of trees
- General condition and extent of brush and herbaceous cover
- Overall progress toward a stable, natural plant community and towards meeting performance standards
- Noxious weed growth

The annual report should describe all actions taken during the preceding year and include recommendations for the upcoming planting season.

After planting, the area will be monitored and controlled to ensure unwanted plants do not threaten the success of revegetation efforts. The plants that are considered problematic are found on the California Invasive Plant Council's weed inventory (Cal-IPC 2006). Noxious weeds present at the quarry include, but are not limited to: yellow star thistle (*Centaurea solstitialis*, annual); black mustard (*Brassica nigra*, annual); pampas grass (*Cortaderia sp.*, annual); and fennel (*Foeniculum vulgare*, perennial).

The site will be managed to prevent the spread of noxious weeds. At a minimum, monitoring will occur annually until performance standards have been met for two consecutive years (estimated at 5 years) by means of visual observation to identify the potential for uncontrolled weed propagation. Should weed control be necessary, cultural methods will be implemented to eliminate the spread of noxious species.

In addition to biological monitoring and maintenance, costs for geologic and water quality monitoring are also included in the table below. Geotechnical monitoring will encompass backfilling and inspection of all final slopes within the RPA boundary. These areas include the North Quarry high wall, scenic easement landslide, as well as other areas of the site. The costs below are based on personal communication with the biological and geological consultants who are familiar with the site.

Cost Item	Hours	Rate	Total
Annual Monitoring (Scientist/Tech)	130	$115	$14,984
Annual Monitoring (Project Manager)	12	$137	$1,640
Geologic Monitoring (Geologist)	40	$137	$5,467
Water Quality Monitoring (QSP)	120	$115	$13,800
Water Quality Monitoring (QSD)	40	$137	$5,480
Report Preparation (Scientist/Tech)	50	$115	$5,750
Report Preparation (Project Manager)	10	$137	$1,370
Annual Weed Control and General Maintenance			$131,426
Total Annual Monitoring and Maintenance Costs			$184,444
Total 5-Year Monitoring and Maintenance Costs			**$922,218**

In addition to revegetation monitoring and maintenance, earthwork maintenance will be required for the five (5) year period following completion of reclamation activities. Earthwork maintenance will consist of repairing slopes that are affected by uneven settling or erosion; specifically, settling of fill material may result in areas of the North Quarry where backfilling has occurred. To maintain drainage and reclamation contours minor grading work is expected. Earthwork maintenance is expected to reduce as time passes with the greatest level of effort coming the first year after reclamation work is complete. No reclamation work is expected the in year six (6) following reclamation grading completion. A dozer will be utilized to recontour slopes and provide compaction of material as it operates. The dozer will also create a rough surface from the track impressions that will be beneficial for revegetation success. Revegetation maintenance costs for areas disturbed during earthwork maintenance are addressed in this section in the previous table. Costs in the table below only account for earthwork maintenance.

Monitoring Year	Hours of Grading Required
1	80
2	60
3	40
4	20
5	10
6	0
Total	**210**

Task	Hours	Rate	Total Cost
Grading with a D8R	210	$179.71	$37,739
Operator Cost	210	$66.01	$13,862
Total Cost for Grading			**$51,601**

Total Cost for Monitoring and Maintenance **$973,819**

3.0 DIRECT COST OF RECLAMATION SUMMARY

Task	Cost
Removal of Equipment, Structures, & Rubbish	$129,315
Site Grading	$42,912,201
Permanente Creek Reclamation Area	$556,633
Revegetation	$2,569,923
Revegetation Monitoring and Maintenance	$973,819
Total Direct Reclamation Costs	**$47,141,891**

4.0 INDIRECT COST OF RECLAMATION

Item	Cost
Supervision Expense @ 2.3%	$1,084,263
Profit & Overhead Expense @ 3.9%	$1,838,534
Contingencies @ 4%	$1,885,676
Mobilization Expense @ 1.8%	$848,554
Total Indirect Cost	**$5,657,027**

5.0 SUBTOTALS

Total Direct Reclamation Costs	$47,141,891
Total Indirect Costs	$5,657,027
Total Direct and Indirect Cost of Reclamation	$52,798,918
Lead Agency Administrative Costs @ 2%	$1,055,978

TOTAL COST OF RECLAMATION **$53,854,896**

Attachment 1

AMS
Aggregate Machinery Specialist

924 Calle Negocio • Unit A
San Clemente, CA 92673
Phone: (949) 366-3070 • Fax: (949) 366-3069
www.aggregatemachineryspecialist.net

July 12, 2016

Mr. Damien Galford
Project Manager
ENVIROMINE, INC.
135 Camino Dorado, Suite 11
Napa, CA 94558

SUBJECT: Lehigh Hanson Permanente
QUOTE #: 1607-1074-JFM

Dear Mr. Galford,

We are pleased to forward BUDGET prices and specifications for the Primary Station at Lehigh Hanson Permanente. Final prices may vary dependent upon when and if an order is placed. These prices are valid until December 30, 2017.

Prices and deliveries are all over the place. In general factories are somewhat busy with reduced staff, handing one project at a time. There is no consistency in the market. This being said we realize this is a long term project; currently complete shipment would be accomplished in a 6 – 8 month period.

Our invoice EQ16118 for services in relation to this project is attached.

We trust this meets your requirements and that you will not hesitate in contacting us if you need additional information.

Very truly yours,

AGGREGATE MACHINERY SPECIALIST

John F. Mulligan

Cc: J.C. Mulligan
T. ONeill

ENVIROMINE
Lehigh Hanson Permanente Reclamation

July 12, 2016

ITEM 1 Primary Station

1. New Telsmith 3858 PP-VGF Portable Primary Plant consisting of the following:

Structural steel chassis with blocking supports, crusher discharge hopper, chutes, and all necessary supporting structures.

Telsmith 60" x 24' Heavy Duty Vibrating Grizzly Feeder complete with mild steel pan, 1/2" thick AR steel pan liner, 10' long step deck AR steel grizzly bar section, and heavy duty coil support springs with pads.

- Dual shaft gear driven vibrating unit with adjustable counterweights, 140 mm oil lubricated bearings, 1/2 HP oil lube system with electric circulating pump and oil reservoir, and drive sheave.
- Variable Frequency, 60 HP, 1800 RPM, totally enclosed, fan cooled, high torque, ball bearing, squirrel cage motor with V-belt drive for motor including motor sheave, bushing for motor sheave, v-belts for standard drive centers, and pivotal motor base

Telsmith Model 38" x 58" Roller Bearing Jaw Crusher complete with fabricated steel frames, manganese steel jaw dies, AR cheek plates, hydraulic locking and unlocking wedge lock mechanism with manual hand pump, toggle beam, fly wheel and crusher sheave.

- Automatic pressure oil lubrication system including 2 HP electric oil pump, oil tank, filter, pressure regulator, by-pass valve, pressure gauge, alarm system.
- Hydraulic toggle relief cylinders controlled by a hydraulic power unit with 20 HP electric driven pump, reservoir, filter, water to oil cooler, relief valve and hydraulic controls.
- V-belt drive for 1200 RPM motor including motor sheave, bushing for motor sheave and v-belts for standard drive centers. (Shaft diameter, length and keyway details must be provided if motor supplied by Customer.)
- V-belt drive guard consisting of guard with mounting bracket for attachment to standard foundations. Guards comply with most safety codes, but may require field modifications to meet specific codes.
- Quad axles and highway towing kit including axles, axle support, air brakes, wheels, tires, kingpin, mud-flaps, and lights with reflectors.
- 250 HP, 1200 RPM, TEFC electric motor with slide-rails.
- 54" x 32'-3" End Discharge Conveyor complete with V-belt and torque arm reducer drive, 20 HP, 1800 RPM, TEFC, 3/60/460 electric motor, drive guard, nip guards, idlers, 3-ply 3/16" x 1/16" conveyor belting, lagged head pulley, self-cleaning tail pulley, skirting with rubber flashing, belt scraper, and backstop.

PRICE:	ExWorks Mequon, WI	**$1,068,000.00**

OPTIONS/ACCESSORIES

A. Self-contained gas engine powered 4-point hydraulic leveling system including 6" bore hydraulic rams with 36" stroke, control valves, hoses, and mounting brackets. Plant must be blocked for operation.

ADD: **$ 30,450.00**

B. Lift off motor starter panel with wiring to plant motors and variable speed control.

ADD: **$ 59,250.00**

ITEM 2 Dust Collector

A. DCE Model DLMV 60/15 Type F (H + K11- 15 Hp Integral Fan) Base Model

- Finish cost: standard finish
- Seal frame assembly (tube sheet): standard –mild steel
- Inserts: mild steel
- Filter bags: Dura-Life™ Polyester
- Control Box with Timer: with solenoids (NEMA 4 ENCL)
- Pressure gauge: Magnehelic
- Motor options: fan rotation
- Compressed air components: piggyback filter and regulator
- Housing assembly (upstands): vertical, unmounted
- Clamp assembly: standard

PRICE: fob Louisville, KY **$ 40,700.00**

B. Mounting

Designed to be installed on the discharge conveyor, removed when traveling.

Vertical mounting support, corrugated metal conveyor covers, discharge head box for conveyor.

PRICE: fob Factory **$ 18,575.00**

TOTAL: **$ 59,275.00**

SUMMARY – Item 1

Primary	$1,068,000.00
Leveling Jacks	$ 30,450.00
Motor Control	$ 59,250.00
Dust Collector with Mounting	$ 59,275.00
Subtotal	**$1,216,975.00**
Sales Tax (4.81%) – *Special Rate*	$ 58,536.00
Freight, estimated	$ 85,189.00
TOTAL	**$1,360,700.00**

ITEM 3 Masaba 42" x 2375' Overland Conveyor

- **Frame –** 8" channel, bolt in cross members
- **Supports –** 2' tall intermediate supports on 20' spacing, head end supports for 8' discharge height
- **Drive –** Falk V-Class shaft mounted right-angle gear reducer assembly with cooling fan and L.S. Hindon emergency brake
- **Motor –** 300hp electric with VFD control package
- **V-Belt Drive –** with drive guard
- **Capacity –** 2000 TPH based on 100# per cu/ft of material
- **Belt Speed –** 511 FPM @ 212' decline
- **Pulleys – ENGINEERED CLASS PULLEYS**
- **Take Up –** Gravity take up tower on tail end
- **Belting –** Quoted Separately
- **Primary Belt Scraper –** Martin Pit Viper Primary with Twist Tensioner
- **Secondary Belt Scraper –** Martin Secondary Scraper with tungsten-carbide blade
- **V-Plow –** On return side
- **Transition Idlers –** CEMA D, PPI, 20 degree sealed 5" diameter trough idlers
- **Troughing Idlers –** CEMA D, PPI, 35 degree sealed 5" diameter trough idlers, 3.5' spacing
- **Return Idlers –** CEMA D, PPI, sealed 5" return idlers, 10' spacing
- **Self-Aligning Idlers –** CEMA D, PPI 50' from ends, then 100' spacing
- **Hopper –** 6ft long with adjustable rubber flashing
- **Switchgear – NOT INCLUDED**
- **Guards –** Tail pulley guard, v-belt guard and nip guard on head pulley. We do not warrant that our guards will meet all local codes. It is the responsibility of the end user to have them checked by a local inspector
- **Steel Shot Blasted**
- **Primer –** (1) coat of 2 part urethane primer
- **Paint –** (1) coat of 2 part urethane paint
- **Owner's Manual –** (2) copies for maintenance and parts

PRICE:	fob, South Dakota	**$ 985,000.00 each**

OPTIONS/ACCESSORIES

A. Safety Cut-off switch with cable	**ADD:**	**$ 9,875.00**
B. Discharge Hood with replaceable AR liners	**ADD:**	**$ 3,000.00**
C. Fenner-Dunlop 42" PSR 3-1200 Granite 3/8 x ¼ covers	**ADD:**	**$ 490,000.00**
D. Dust collector, Model DLVM-2010, 7½ Hp, vertical mounting, support legs	**ADD:**	**$ 28,125.00**
Total for one (1) conveyor:		**$1,516,000.00**
Lot of four (4) conveyors:		**$6,064,000.00**
Sales Tax (4.81%) – *Special Rate*		$ 291,070.00
Freight, estimated		$ 303,230.00
TOTAL:		**$6,717,575.00**

ITEM 4 Masaba 42" x 190' Pit Portable Magnum Telescoping Stacker

Conveyor Frame
Main Frame – 84" Deep engineered truss
Extra Chord Angle – From tail end to head end undercarriage pinning point.
Counterweight – On-board design installed in the main frame tail
Stinger Frame – 66" Deep engineered truss
Stinger Drive – ***MASABA*** **TRACK TECHNOLOGY**. Eliminates danger of cable breakage and uncontrolled roll back - No winch or cable. Conveyor extends to 190' length

Road Portability
Tubular Undercarriage – Hydraulic raise & lower with 30 hp pumping unit
Swing Axle – Pit portable tandem walking beam axle with dual (8) 385/65D-19.5 tires and wheel
Axle Jacks – Jacks hydraulically lift conveyor to allow swing axle deployment
Power Travel – (1) hydraulic drive with #100 chain and sprockets
Towing Eye – For pit transport
Anchor Pivot Plate - Maintains tail end during radial travel.

Main & Stinger Components
Drives – Class II head end
Motors – (2) 60 hp/(2) 50 hp
Gear Reducers – Dodge TAII shaft mount with backstop
Capacity – 1500 TPH based on 100# per cu/ft of material at 18 degrees
Belt Speed – 450/600 FPM
Head Pulley – Heavy Duty 18" diameter drum pulley with 3/8" herringbone lagging
Tail Pulley – Heavy Duty 16" diameter self-cleaning wing type pulley
Take Ups – Screw type
Belting – 3-ply 3/16" x 1/16" 330 PIW
Belt Splice – Flexco mechanical steel fasteners
Belt Scraper – Martin Pit Viper with Twist Tensioner
Transition Idlers ***(main)*** **–** CEMA C, Precision, 20 degree, sealed 5" diameter idlers
Troughing Idlers – CEMA C, Precision, 35 degree, sealed 5" diameter, 4' spacing
Return Idlers – CEMA C, Precision, sealed 5" return idlers, 10' spacing
Self-Aligning ***(main)*** **–** (1) CEMA C, Precision, self-aligning idler
Self-Aligning Return ***(stinger)*** **–** ASGCO Tru-Trainer Return Roll
Hopper – 6' long hopper with adjustable rubber flashing, radial receiving hopper and rock ledge

Controls
Complete Switchgear - manual operation for extend/retract, raise/lower, axle jacks, start/stop conveyors and main disconnect
PLC – Manual – electric buttons control. Power travel, conveyor raise and conveyor extension.
Material Flow Sensor – pauses conveyor movement when material is not present

General Specifications
Guards – Tail pulley guard, v-belt guard and nip guard on head pulley. We do not warrant that our guards will meet all local codes. It is the responsibility of the end user to have them checked by a local inspector
Steel Shot Blasted
Primer – (1) coat of 2 part urethane primer
Paint – (1) coat of 2 part urethane paint
Owner's Manual – (2) copies for maintenance and parts

PRICE:	fob, South Dakota	**$ 563,650.00**

OPTIONS/ACCESSORIES

A. Remote grease bank for pulley bearings	**ADD:**	**$**	**2,750.00**
B. Wireless remote control for all manual conveyor functions 1,000 ft. range	**ADD:**	**$**	**4,295.00**
C. Impact idlers in lieu of steel rolls in load area	**ADD:**	**$**	**1,190.00**
D. Safety switch, radial travel safety switches	**ADD:**	**$**	**1,315.00**
E. Dual power travel, 4-wheel drive	**ADD:**	**$**	**8,500.00**

Total with options:	**$**	**581,700.00**
Sales Tax (4.81%) – *Special rate*	$	27,920.00
Freight, estimated	$	29,080.00
TOTAL:	**$**	**638,700.00**

Delivery currently:

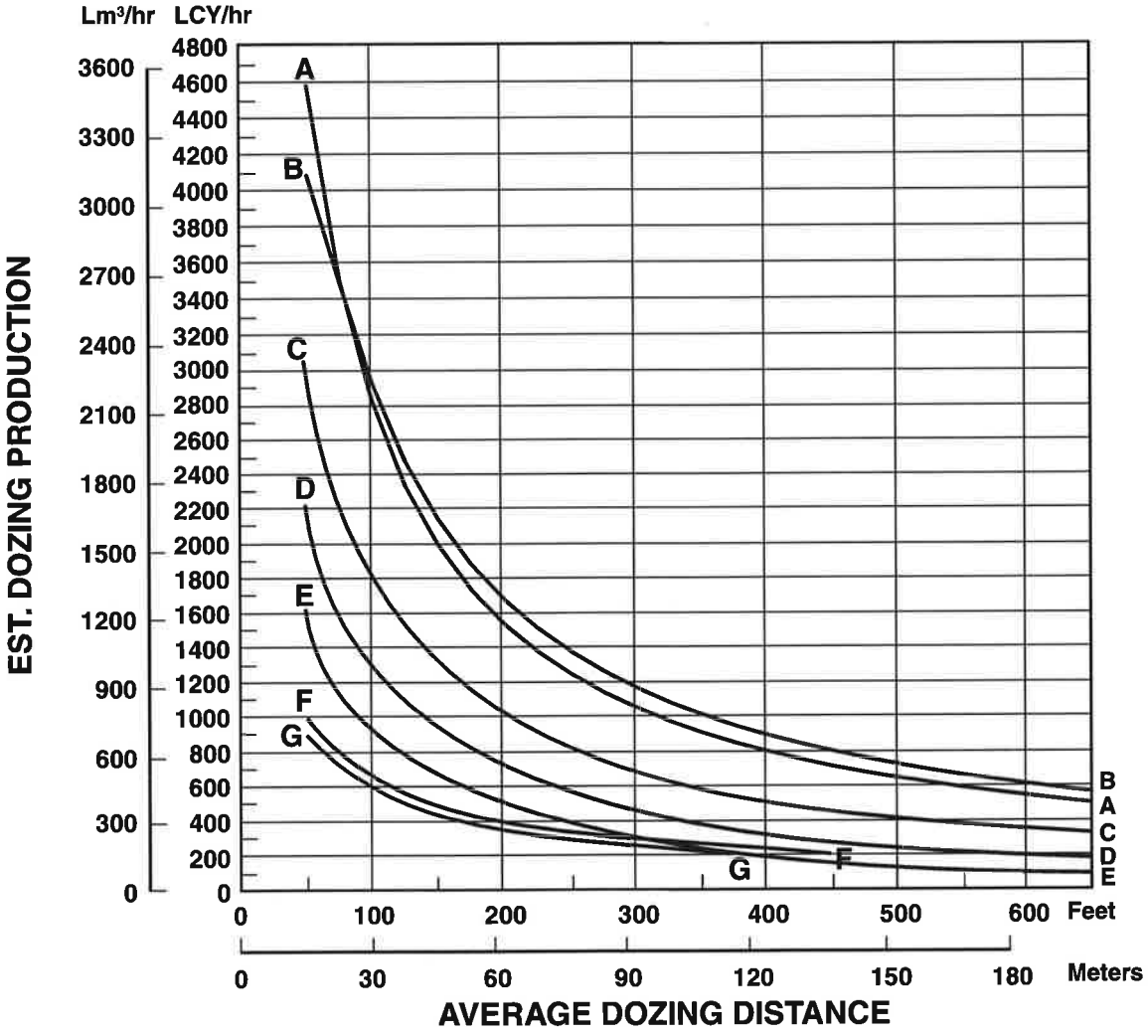
Primary	16 – 20 weeks
Dust Collector	14 – 16 weeks
Overland Conveyor	16 – 20 weeks
Telescoping Conveyor	14 – 16 weeks

Freights are based on current freight estimates and would be invoiced at our actual cost. Sales tax is quoted at current rate and would be adjusted to appropriate rate at time of invoice. Terms to be agreed upon.

J.F. Mulligan
July 12, 2016

Attachment 2

ESTIMATED DOZING PRODUCTION • Universal Blades • D7G through D11T



KEY

A — D11T-11U
B — D11T CD
C — D10T-10U
D — D9R/D9T-9U
E — D8R/D8T-8U
F — D7R Series 2-7U
G — D7G-7U

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

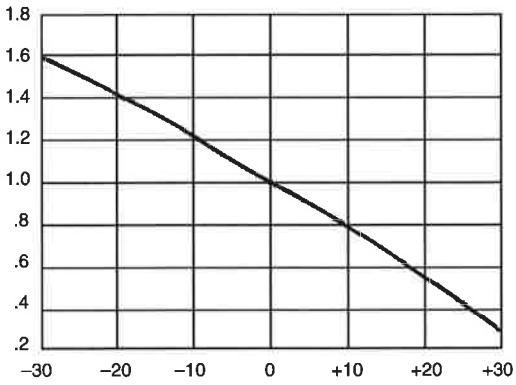
JOB CONDITION CORRECTION FACTORS

	TRACK-TYPE TRACTOR	WHEEL-TYPE TRACTOR
OPERATOR —		
Excellent	1.00	1.00
Average	0.75	0.60
Poor	0.60	0.50
MATERIAL —		
Loose stockpile	1.20	1.20
Hard to cut; frozen —		
with tilt cylinder	0.80	0.75
without tilt cylinder	0.70	—
Hard to drift; "dead" (dry, non-cohesive material) or very sticky material	0.80	0.80
Rock, ripped or blasted	0.60-0.80	—
SLOT DOZING	1.20	1.20
SIDE BY SIDE DOZING	1.15-1.25	1.15-1.25
VISIBILITY —		
Dust, rain, snow, fog or darkness	0.80	0.70
JOB EFFICIENCY —		
50 min/hr	0.83	0.83
40 min/hr	0.67	0.67
BULLDOZER*		
Adjust based on SAE capacity relative to the base blade used in the Estimated Dozing Production graphs.		
GRADES — See following graph.		

***NOTE:** Angling blades and cushion blades are not considered production dozing tools. Depending on job conditions, the A-blade and C-blade will average 50-75% of straight blade production.

% Grade vs. Dozing Factor

(–) Downhill
(+) Uphill



ESTIMATING DOZER PRODUCTION OFF-THE-JOB

Example problem:

Determine average hourly production of a D8T/8SU (with tilt cylinder) moving hard-packed clay an average distance of 45 m (150 feet) down a 15% grade, using a slot dozing technique.

Estimated material weight is 1600 kg/Lm³ (2650 lb/LCY). Operator is average. Job efficiency is estimated at 50 min/hr.

Uncorrected Maximum Production — 458 Lm³/h (600 LCY/hr) (example only)

Applicable Correction Factors:

Hard-packed clay is "hard to cut" material –0.80
Grade correction (from graph) . . . . . .–1.30
Slot dozing . . . . . .–1.20
Average operator . . . . . .–0.75
Job efficiency (50 min/hr) . . . . . .–0.83
Weight correction . . . . . .(2300/2650)–0.87

Production = Maximum Production × Correction Factors
= (600 LCY/hr) (0.80) (1.30) (1.20) (0.75) (0.83) (0.87)
= 405.5 LCY/hr

To obtain production in metric units, the same procedure is used substituting maximum uncorrected production in Lm³.

= 458 Lm³/h × Factors
= 309.6 Lm³/h

Attachment 3

July 28, 2015

Project No. 140500502

Mr. Sam Barket
Area Environmental Manager
Lehigh Southwest Cement Company
24001 Stevens Creek Blvd.
Cupertino, CA 95014

RE: DOCUMENTATION OF ACTIVITIES PERFORMED TO ADDRESS CONDITION OF APPROVAL 74, EAST MATERIALS STORAGE AREA, LEHIGH SOUTHWEST CEMENT, PERMANENTE FACILITY, CUPERTINO, CALIFORNIA

Dear Mr. Barket:

Golder Associates (Golder) has prepared this letter to document activities performed related to reclamation at the East Material Storage Area (EMSA) at Lehigh's Permanente Facility (Figure 1). These tasks were performed to address Condition of Approval (COA) 74 per the "Final Conditions of Approval" (COA) approved by County of Santa Clara Board of Supervisors on June 26, 2012. COA 74 states the following (annotated):

> *"A California Certified Engineering Geologist shall be onsite during reclamation to verify that non-limestone run-of-mine rock is used as cover on the EMSA and WMSA…. Using visual and field testing methods, with occasional bulk sampling and laboratory analysis, the geologist shall observe and document the type of rock placed over the limestone-containing material during reclamation activities. The geologist shall inspect and document whether limestone is present at the source area (Quarry Pit and WMSA), whether limestone rock is transported from the source area to segregation stockpiles, and whether limestone is present within the lifts of the proposed 1-foot layer of run-of-mine cover rock (in the EMSA, WMSA, and Quarry Pit). Inspection involves observing the excavation hauling, stockpiling, and placement of the non-limestone cover material, performing a visual assessment of the rock, and conducting random spot sampling and field testing of suspect rock fragments…"*

In November 2014, Golder provided a report documenting activities that occurred prior to November 1, 2014.[1] This current report provides an update on activities completed since the previous report.

1.0 INSPECTION AND TESTING OF COVER MATERIALS

As noted in the November 2014 report, a Golder geologist, under the direct supervision of the undersigned, inspected overburden material encountered during mining activities along the southeast portion of the quarry. Golder determined the material consisted of clayey, sandy gravel that was comprised of the Santa Clara Formation and weathered greenstone and to a lesser degree graywacke of the Franciscan Formation. No significant quantities of limestone were observed in the material. Three samples were collected by Golder and analyzed for TTLC and STLC selenium by a California-certified laboratory. The results, which were included in the November 2014 report, are summarized below:

[1] Golder Associates. November 14, 2014, Documentation of Work Performed to Address Conditions of Approval, East Materials Storage Area, Permanente Facility, Cupertino, CA.

Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085 USA
Tel: (408) 220-9223 Fax: (408) 220-9224 www.golder.com

Table 1: Analytical Results for EMSA Cover Materials

Sample Type	Selenium TTLC (mg/kg)	Selenium STLC (mg/L)
Santa Clara Formation	ND	ND
Greenstone	ND	0.00062
Graywacke	ND	0.00150
Method Detection Limit	0.022	0.00026

ND = Not detected above the laboratory method detection limit; TTLC = total threshold limit concentration; STLC = soluble threshold limit concentration.

Golder concluded that the overburden material was suitable to be used as cover material. As the material was mined in the summer of 2014, Lehigh transported the material to the EMSA and segregated it for later use as cover material by stockpiling at two designated areas. Golder inspected the stockpiled material and determined that no significant quantities of limestone were present. After the stockpiled material was placed as cover, Lehigh began directly placing the cover material in the EMSA instead of stockpiling. The overburden material originated from the same section of the mine as the stockpiled material and consisted primarily of Santa Clara Formation.

2.0 INSPECTION OF COVER MATERIAL PLACEMENT

A Golder geologist, under the direct supervision of the undersigned, inspected the remaining portions of the EMSA limit of fill while the final cover material was placed (Figure 2). Several site visits and inspections were performed from December 2014 through July 2015 while the remaining portions of the EMSA were covered. Golder performed field inspections to ensure that only non-limestone bearing earth material was placed as the final cover material. Prior to the placement of the final cover, Golder confirmed that the previous identified areas containing rock plant fines were either removed or re-graded to a maximum 8-ft thickness and covered by a minimum 25-ft overburden with a 30-ft minimum horizontal setback from surface.

The cover material was from the stockpiled material and from overburden material of the same origin as it was mined from the southeast portion of the quarry. During the site visits, Golder observed the hauling and placement of the approved cover materials to ensure adequate cover thickness (minimum one-foot-thick) and that the place cover materials were being track-walked a minimum of three equipment passes to achieve appropriate compaction. After the material was placed, Golder completed field observations to confirm that limestone was not present.

During an April 2015 inspection, Golder inspected the lower portion of the EMSA outside of the material storage area, but within the EMSA boundary (Figure 2). In May and June 2015, Lehigh removed limestone bearing earth material from this area and placed at least one foot of cover material. The cover material was recently mined overburden consisting of weathered greenstone from the southeast part of the quarry. Lehigh completed the work in July 2015 and reconstructed the Pond 30 drainage swale. Golder inspected the area upon completion and verified that no limestone bearing earth material was present within the upper one foot of cover.

On July 20, 2015, Golder performed a final inspection of the EMSA and determined that the area has been covered in accordance to COA 74 with run-of-mine rock. The run-of-mine rock consisted of predominately Santa Clara Formation overburden. No significant quantities of limestone bearing material were present within the top one foot of the cover. Placement of final cover for other areas within the Reclamation Plan Boundary will be completed at a later date once site operations are complete and reclamation activities are initiated.

3.0 CLOSING

If you have any questions or we can provide additional information please free to contact us.

GOLDER ASSOCIATES INC.

George C. Wegmann, PG
Senior Geologist

William L. Fowler, PG, CEG
Principal Engineering Geologist

PROFESSIONAL GEOLOGIST
WILLIAM L. FOWLER
No. 1401
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Attachments:

Figure 1 – Site Plan
Figure 2 – EMSA Layout

LEGEND

- Stream
- Property Boundary

NOTES

1) Locations based on conversion from local coordinates or Google Earth placement.

REFERENCES

1)Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
2) Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet

1,200 0 1,200
Feet

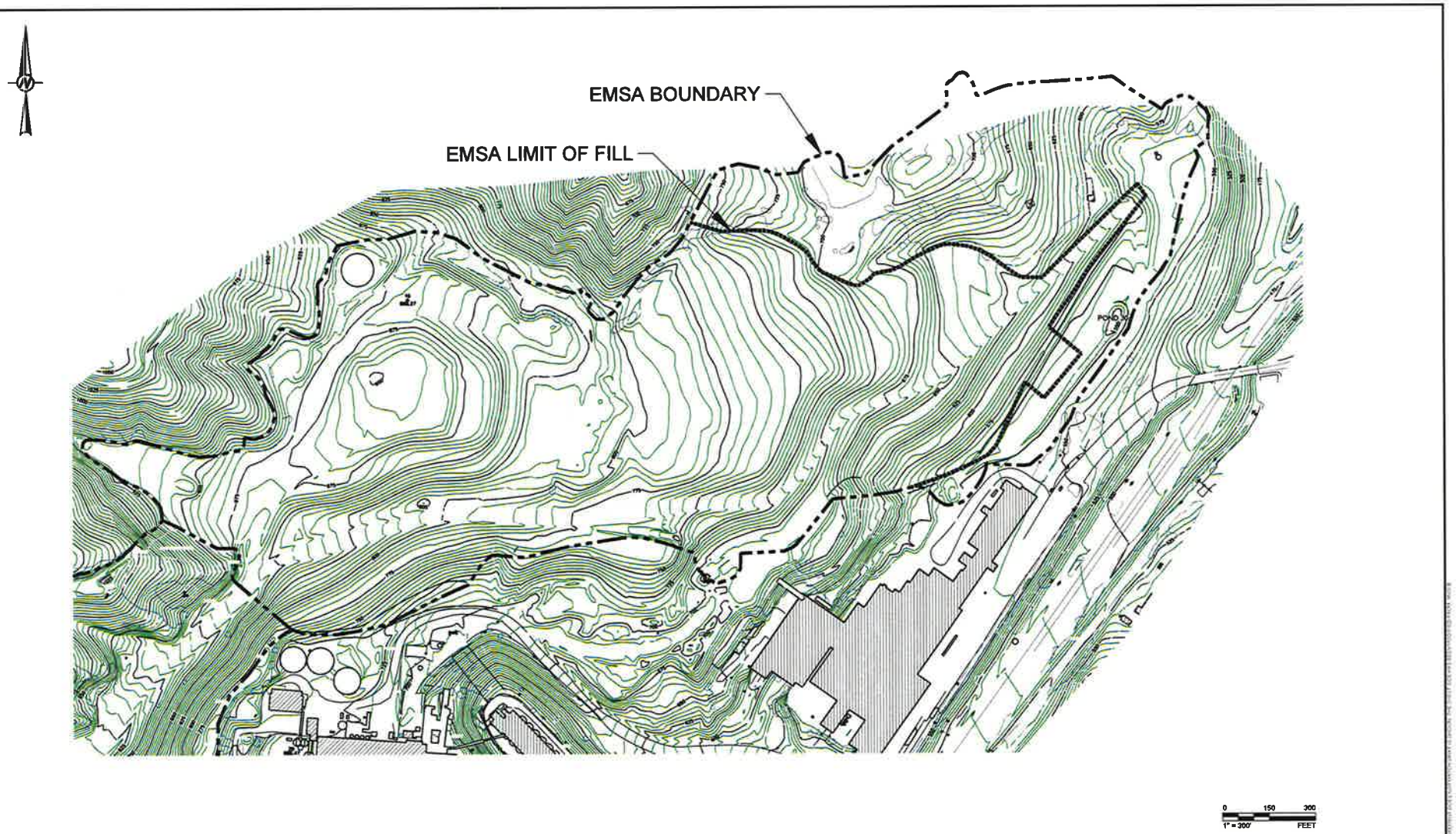
PROJECT
EAST MATERIALS STORAGE AREA
PERMANENTE QUARRY
SANTA CLARA COUNTY, CALIFORNIA

TITLE
SITE PLAN

Golder Associates

PROJECT No.		1405005	FILE No.	SitePlan_1405005_SV.mxd
DESIGN	DZF	10/31/2013	SCALE: AS SHOWN	REV. 0
GIS	DZF	11/11/2014		
CHECK	GW	11/11/2014		
REVIEW	GW	11/11/2014		

FIGURE 1



REFERENCE(S)

1. BASE MAP OBTAINED FROM AERIAL PHOTOMAPPING SERVICES, DATE 6-16-2015.

CLIENT
LEHIGH SOUTHWEST CEMENT COMPANY
SANTA CLARA COUNTY, CALIFORNIA

CONSULTANT
Golder Associates

YYYY-MM-DD	2015-07-28
DESIGNED	####
PREPARED	LKB
REVIEWED	####
APPROVED	####

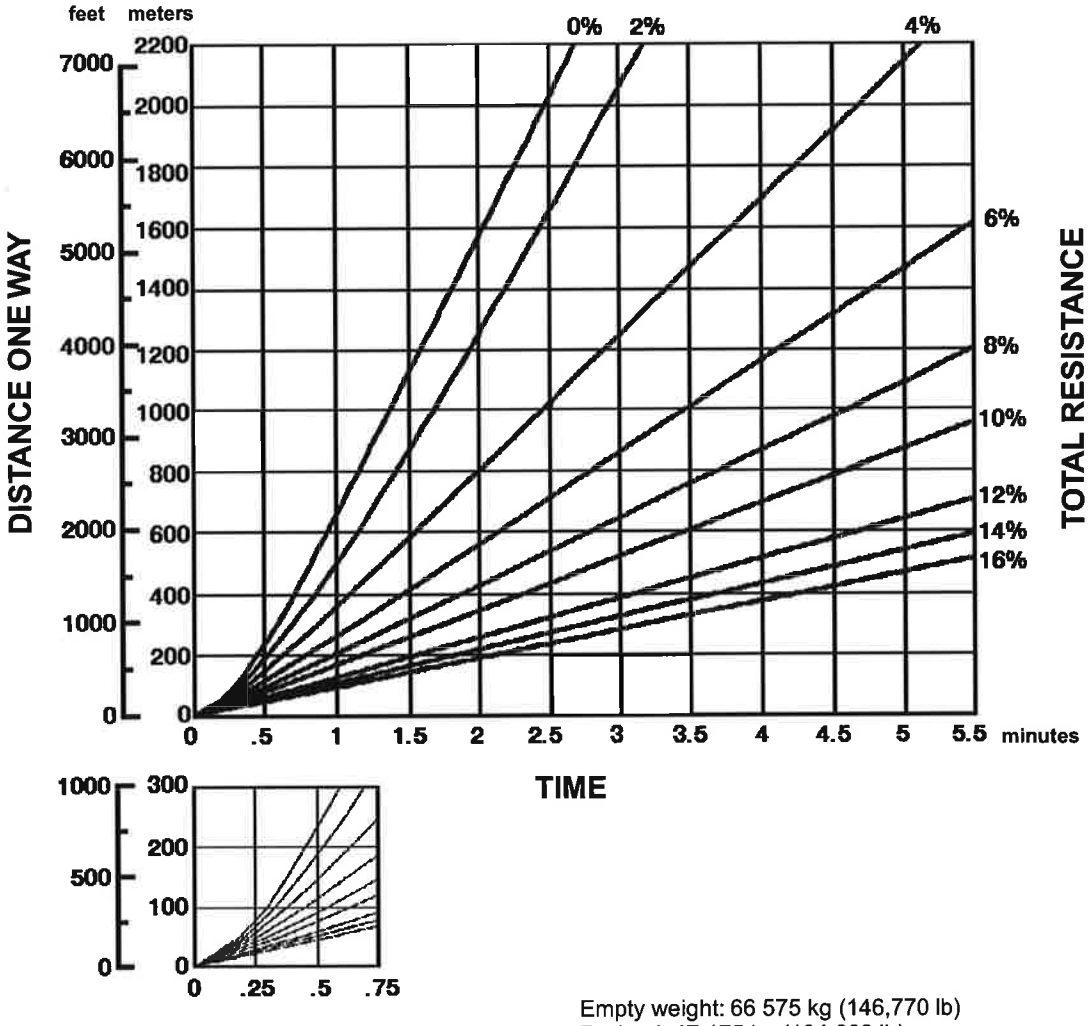
PROJECT
EAST MATERIAL STORAGE AREA
PERMANENTE QUARRY
SANTA CLARA COUNTY, CALIFORNIA

TITLE
EMSA LAYOUT

PROJECT NO.	PHASE	REV.	FIGURE
1405505	100	0	1

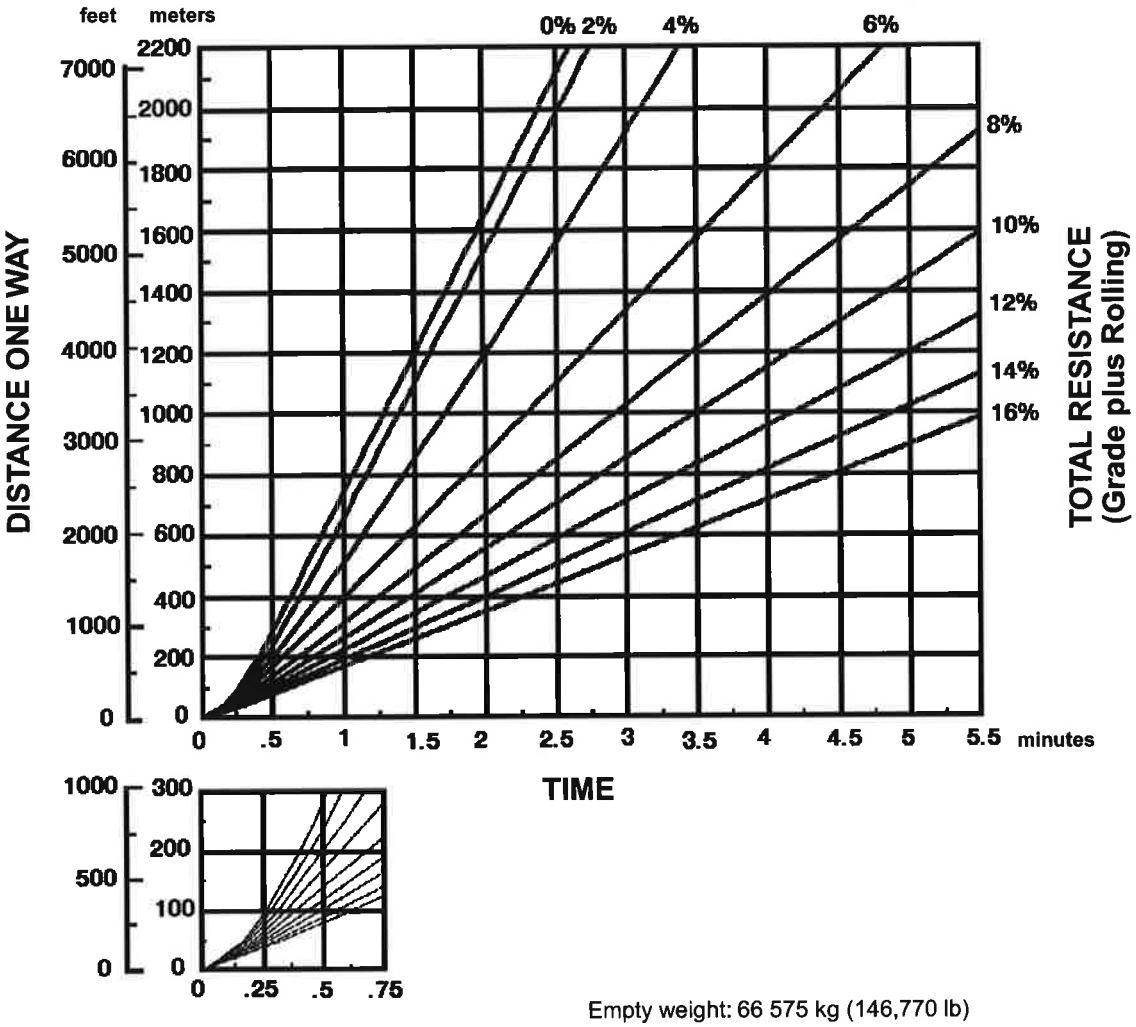
Attachment 4

LOADED



Empty weight: 66 575 kg (146,770 lb)
Payload: 47 175 kg (104,000 lb)

EMPTY



Empty weight: 66 575 kg (146,770 lb)

Attachment 5

Barket III, Sam (Cupertino) USA

From: Fowler, Bill <bfowler@golder.com>
Sent: Thursday, June 04, 2015 5:35 PM
To: Barket III, Sam (Cupertino) USA
Cc: Sean Hungerford
Subject: FW: Stabilization Efforts - attorney client privileged communication

Sam,

After additional discussions with Sean and Ken Haskell (one of our Principal Engineers), we can agree to a modified approach of not performing the grading work to repair the debris flow scar below the headscarp area, and instead recommend hydroseeding and a program of visual monitoring to assess erosion/additional slope failure. But I think it needs to be clear that in my opinion, there is a significant risk that the County will reject the proposed monitoring approach as it does not directly address their request for repair of the debris flow scar. Again in my opinion, the county letter is explicit in their observation that the repair of the debris flow by erosion blankets that they observed in the field is not adequate.

Note below, the costs for the grading element of the project are relatively small with respect to the overall cost of the project. The costs associated with modifying the plans, followed by likely discussions/negotiations with the County, and then possibly modifying and resubmitting again, should be considered against the relatively small cost of the grading element.

I will contact the designers who put the plan sets together and see when they can get this into the queue. The actual work shouldn't take more than a day or two.

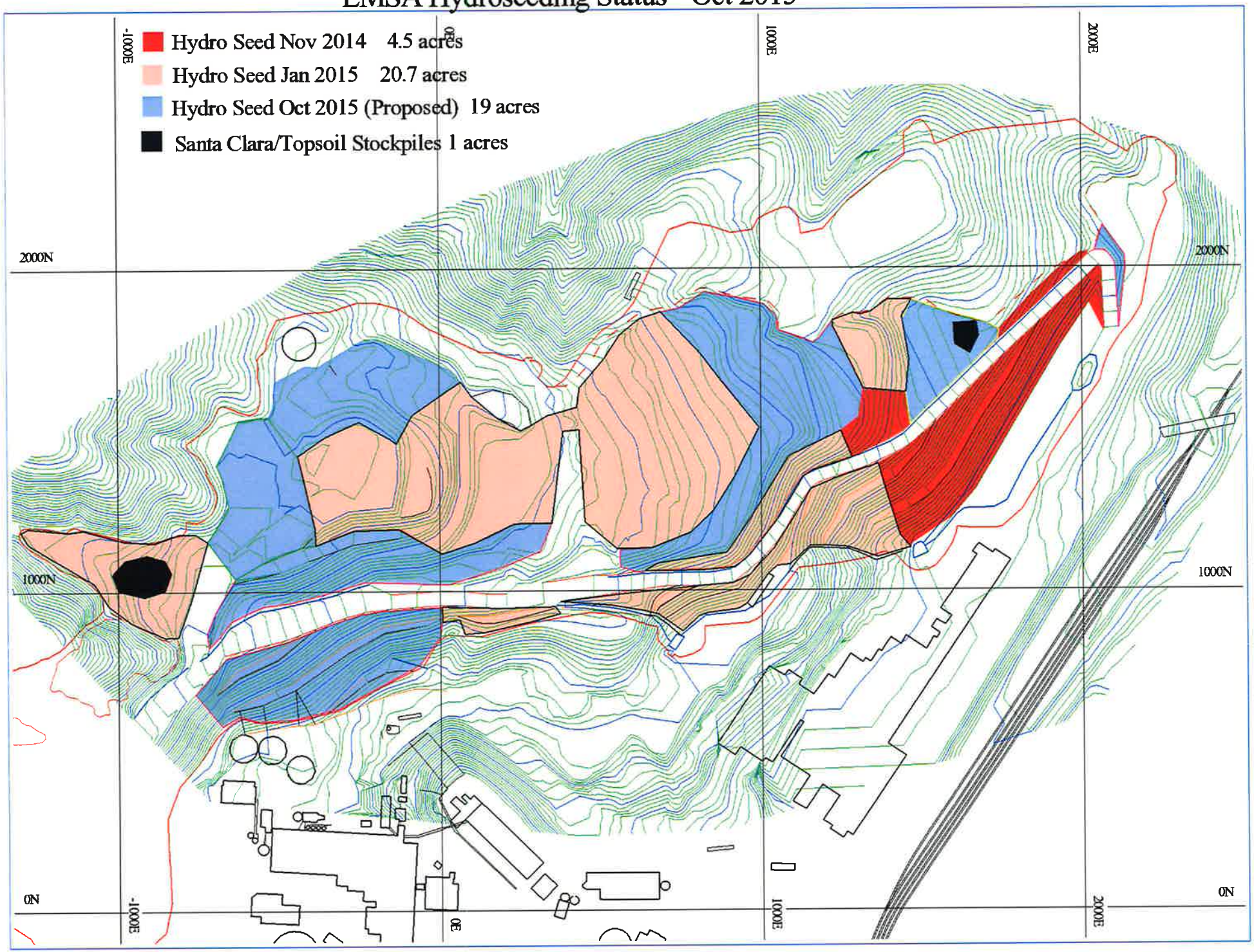
Prior to performing the work, however, I need to get authorization from you to do this work. As you are aware from prior emails, we never received any additional PO's for the project after the intial PO of $25K. Our costs to date on the project are ~$28, 000 versus our proposed budget of ~$52K. So, we are well within our estimated budget but have exceeded the initial PO. We can commence work upon receiving written authorization from you to continue work on a time and materials basis and/or a supplemental PO. Thank you.

Item	Unit	Quantity	Unit Price	Amount
Soil Nails (14' Long)	Each	40	$750	$30,000
Micropiles (18' long)	Each	6	$1,000	$6,000
Shotcrete (fiber reinforced, 4" thick)	SF	1250	$11.00	$13,750
Pile Cap	Each	1	$3,500	$3,500
			Subtotal	**$ 53,250.00**
Excavation and Grading	Day	4	$ 4,500	$18,000
			Subtotal	**$ 71,250.00**
Erosion Control Labor	Day	5	$ 1,500	$7,500
Erosion Control Materials	Cost	5%		$3,563
			Subtotal	**$ 82,312.50**
Mobilization	Cost	20%		$16,463

			Subtotal	**$ 98,775.00**
Contingency	Cost	20%		$19,755
Total:				**$ 118,530.00**
Notes Construction Surveying and moving/handling existing pipes assumed to be performed by Lehigh				

Attachment 6

EMSA Hydroseeding Status - Oct 2015



Attachment 7

Pacific Coast Seed INC.

Damien L. Galford
Enviromine, Inc.
135 Camino Dorado, Suite 11
Napa, CA 94558

July 18, 2016

Re: Permanente Quarry Cupertino

Dear Mr. Galford:

Thank you for contacting Pacific Coast Seed, Inc. as your seed supplier for the above referenced project. We anticipate that we will have the below listed seed in sufficient quantities to seed the ~13.70 acres located in Cupertino, CA. The below items have been priced assuming the seed is provided on a Standard Commercial Quality basis. These items will be mixed and labeled in accordance with California and Federal Seed Laws and consist of the following:

Table 1:

SCIENTIFIC NAME	COMMON NAME	Pounds Per Acre Bulk Seed	Cost Per Pound Bulk Seed
SHRUBS			
Artemisia californica	coastal sagebrush	10	$36.00
Baccharis pilularis	coyotebrush	6	$30.00
Eriogonum fasciculatum	Eastern Mojave buckwheat	16	$9.50
Lotus scoparius	deer weed	2	$36.00
Salvia mellifera	black sage	4.3	$48.00
GRASSES AND HERBS			
Achillea millefolium	common yarrow	2	$36.00
Artemisia douglasiana	Douglas' sagewort	1.9	$64.00
Bromus carinatus	California brome	10	$8.00
Clarkia purpurea ssp. quadrivulnera	winecup clarkia	1	$75.00
Elymus glaucus	blue wildrye	6	$15.00
Heterotheca grandiflora	telegraph weed	1	$64.00
Lotus purshianus	Spanish Clover	3.6	$90.00
Plantago erecta	dotseed plantain	3	$40.00

Sisyrinchium bellum	western blue-eyed grass	1.4	$96.00
Vulpia microstachys	small fescue	10	$20.00

Table 2:

Scientific Name	Common Name	Lb/Acre	Price/Lb
Artemisia douglasiana	mugwort	2	$64.00
Carex barbarae	valley sedge	3	$245.00
Carex praegracilis	field sedge	3	$95.00
Cyperus eragrostis	tall flatsedge	6	$120.00
Hordeum brachyantherum	meadow barley	18	$24.00
Juncus effusus	bog rush	1	$120.00
Juncus patens	common rush	1	$135.00
Leymus triticoides	creeping wildrye	6	$64.00
Total		**40**	

Please provide a purchase order by June 1st on the year preceding that in which the seed purchase is intended. Some items may require extra collections be made in advance to assume supply of the quantities requested.

Thank you again for consulting Pacific Coast Seed, Inc. as your seed supplier for this project. We look forward to working with you on future projects.

Sincerely,

Pacific Coast Seed, Inc

Kitty Luckert

Kitty Luckert
Office Manager

Attachment 8

FREEDLUN HYDROSEEDING INC

518 BAYWOOD CT, VACAVILLE, CA 95688

LICENSE #740810

800-300-9423 707-448-9423

FAX 707-446-8146

DEAN@FREEDLUN.NET OR TERRI@FREEDLUN.NET

Price Quote

July 21, 2016
Damien L. Galford
EnviroMine, Inc.
RE: Reclamation Cost Estimate 2016

Hello Damien
Please find our updated pricing for the following BFM products:
Hydroseed using Flexterra: 20+ acres @ $5,500.00 per acre
Hydroseed using HydroBlanket: 20 + acres @ $4,500.00 per acre
Both products shall be applied @ 4,000 lbs/acre

This quote is for one application. Should more applications be required, additional charges will apply. Full payment of the quoted price is due within 30 days of application. Late payments will incur an additional fee of 1.5% per month.
This quote assumes customer will provide legal access to the property and to an ample water supply. If no water is available, let us know. This quote excludes any soil prep, soil amendments, any guarantee of growth, watering, weeding, or maintenance. The seed we purchase is determined by the details you have provided and authorized above, and is State inspected for germination percentages.
If a payment & performance bond is required, our rate is 3%. Unless we have been notified of such requirement in writing, the cost of any bond is not included in our quote, and will be added to the final quoted price. Our company is SB/MICRO certified through the State of California. **Init. _____**

Due to the changing prices of seed, the quoted price is good for 60 days. Let us know if you want to 'Lock-in' a price for a date more than 2 months away.

To accept this proposal, initial where indicated, sign and date below & fax back to 707-446-8146. Once accepted, this quote will become a contract.
In any legal action undertaken to enforce its terms, the successful party will be entitled to any and all attorney fees and legal costs incurred in connection with such an enforcement action.

x_____ Date_____ **Initial Required Above**

Printed name_____Title_____

Attachment 9

Pacific Coast Seed Inc.

Damien L. Galford
Enviromine, Inc.
135 Camino Dorado, Suite 11
Napa, CA 94558

July 7, 2016

Re: Permanente Quarry Cupertino

Dear Mr. Galford:

Thank you for contacting Pacific Coast Seed, Inc. as your seed supplier for the above referenced project. We anticipate that we will have the below listed seed in sufficient quantities to seed the ~517 acres located in Cupertino, CA. The below items have been priced assuming the seed is provided on a Standard Commercial Quality basis. These items will be mixed and labeled in accordance with California and Federal Seed Laws and consist of the following:

Table 1:

SCIENTIFIC NAME	COMMON NAME	Pounds Per Acre Bulk Seed	Cost Per Pound Bulk Seed
SHRUBS			
Artemisia californica	coastal sagebrush	16 (8) *	$36.00
Baccharis pilularis	coyotebrush	20 (6) *	$28.00
Eriogonum fasciculatum	California buckwheat	20 (10) *	$9.50
Salvia leucophylla	Purple sage	2 *	$80.00
Salvia mellifera	black sage	3	$48.00
GRASSES AND HERBS			
Achillea millefolium	common yarrow	1	$36.00
Artemisia douglasiana	Douglas' sagewort	1 (2) *	$64.00
Bromus carinatus	California brome	6 (8)	$6.50
Elymus glaucus	blue wildrye	6 (8)	$15.00
Eschscholzia californica	California Poppy	2 (1.5)	$18.00
Heterotheca grandiflora	telegraph weed	1 *	$56.00
Lotus purshianus	Spanish Clover	1 (1.5)	$70.00
Lotus scoparius	Deerweed	2	$36.00
Lupinus nanus	Sky lupine	1 (2)	$40.00
Melica californica	Californica melic	2	$36.00

Nasella pulchra	Purple needlegrass	4	$48.00
Poa secunda	One-sided bluegrass	2	$30.00
Trifolium wildenovii	Tomcat clover	2	$40.00
Total		**93**	

Please provide a purchase order by June 1st on the year preceding that in which the seed purchase is intended. Some items may require extra collections be made in advance to assume supply of the quantities requested and are noted with a *. Numbers in ( ) show the more usual seeding rates for these seeds.

Thank you again for consulting Pacific Coast Seed, Inc. as your seed supplier for this project. We look forward to working with you on future projects.

Sincerely,

Pacific Coast Seed, Inc

David Gilpin
President