LEHIGH HANSON
"PERMANENTE QUARRY"
FINANCIAL ASSURANCE COST ESTIMATE REVIEW
MINE ID# 91-43-0004
COUNTY OF SANTA CLARA

Prepared For:

COUNTY OF SANTA CLARA
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December 15, 2021

PERMANENTE QUARRY
FACE REVIEW

Lilburn Corporation has been retained by the County of Santa Clara to review the 2021 Financial Assurance Cost Estimate (FACE) for the Lehigh Hanson Southwest Cement Company "Permanente Quarry" CA Mine ID NO. 91-43-0004. FACE is dated October 15, 2021.

General Comment

The FACE concludes on page 9 that the operational hours of the three dozers (four dozers in 2020) to complete Reclamation of Phase II would be 66,375 (73,804 in 2020). With that understanding and assuming the calculations are correct, it would take over 10 years to reclaim the site. Based on 2080 work hours a year. Is the County comfortable with this timeframe to manage and close the Site? If so, Cost of Living Adjustment (COLA) needs be included. The EIR indicates that this Task is to be completed within 5 years. Refer to the attachment for additional information.

It is recommended that the County request that the applicant obtain third-party costs estimate that would include the removal and transport of the plant structures and equipment. An estimate needs to also be received from a grading contractor to implement the backfilling of the Main Pit as the County does not have staff nor the means to manage a 10-year reclamation project. The Department of Conservation, Division of Mine Reclamation Financial Assurance Cost Estimate Form Instructions recommends that if post-reclamation monitoring is to be conducted by a consultant the financial assurance estimate include copies of the estimate or contract.

Our initial findings and needs are as follows:

The FACE used the 37th (2007) Editions of the Caterpiller Handbook, rather than the current edition which is the 49th Edition. Caterpiller updates their handbooks since specifications, materials, and machine performance periodically change over time. The most current handbook needs to be utilized in preparing a revised FACE.

- V. Plant Structures & Equipment Removal
    - Not sure if they used net salvage value for scrap metal to reduce Task V. The amount of scrap metal needs to be confirmed by a third party. The current market value of scrap metals ($260/ton) arriving from the site needs to be confirmed in writing from ALCO Metals-San Jose. Scrap metal rates need to be revised annually.
    - Mobile Equipment Removal – Identify location where mobile equipment will be hauled to (for example, Auction yard or salvage yard, etc..), and increase the time as necessary. The task mentions 30 pieces of mobile units, whereas the spreadsheet indicates 14 units. The FACE needs to account for all 30 units.
    - Include a cost estimate for demolition and removal of all on-site support structures including equipment maintenance buildings, a laboratory, office trailers, scale houses, scales, water storage tanks, a fueling station, sea cargo containers, and miscellaneous structures around the site.

    - Include the assumptions and calculations used to determine the quantity of asphalt and concrete, concrete breaking productivity, load and haul time and number of trucks.
    - Include a separate cost to remove utility poles and related electrical equipment.
- VI. Primary Reclamation Activity – Backfill Main Pit
    - Cost to periodically relocate the conveyor system in the main pit– number of moves, labor and equipment required to move the conveyor.
    - Foreman – 200 hours is insufficient. The foreman needs to be supervising for the entire length of the operations.
    - Water Truck – The hours should be increased so that the water truck is onsite for the entire time of earth moving activities.
    - Equipment Productivity – Calculations needs to be provided for each piece of earthmoving equipment. The FACE refers to Attachment 3 which is an example rather than an actual calculation of productivity.
- VI. Primary Reclamation Activity - Stockpile Relocation, Organic Material, Capping
    - Equipment Productivity – Calculations needs to be provided for each earthmoving equipment.
- VI. Primary Reclamation Activity - Ripping, Finish Grading, BMP Installation
    - Provide equipment productivity calculations
    - Include a water truck for dust control.
    - Include erosion control materials for desilting basin installation (straw waddles, silt fencing cost needs to be included).
- VI. Primary Reclamation Activity - PCRA Culvert/Boulder Removal, Grading, BMPs
    - 8 hours for a foreman is low. Foreman needs to be onsite for the entire task.
    - Are 200 boulders an estimate or actual count?
- VII. Revegetation
    - Provide equipment productivity
    - Container Stock Planting – Materials need to include cages for each plan to avoid animal grazing.
- VIII. Miscellaneous Costs
    - There needs to be a separate cost for closure of 5 conveyor tunnels.
    - Removal of Power Lines and Poles – Identify equipment needed and include cost to haul away and dump fees.
    - Water and power line removal costs are lump sum estimates and do not include labor, equipment, offsite removal, and dump fees.
    - Provide a 3rd party cost for an Environmental Site Assessment (Phase I) of fueling areas, waste oil storage areas, and equipment maintenance areas.
- IX. Monitoring
    - Include Revegetation Monitoring – 1/year for 5 years, plus report
        - Attach consultant estimates for monitoring

Note: Attachment 3 & 4 – These are examples of equipment production for scrapers and bulldozers taken from the Cat Handbook. The FACE needs to include and show the actual calculations of all mobile equipment production used for each separate task. The calculations need to be included in all Cat Handbook factors. Any trips to the landfill and necessary fees need to be included in the FACE.

2.7.1 Reclamation Phasing

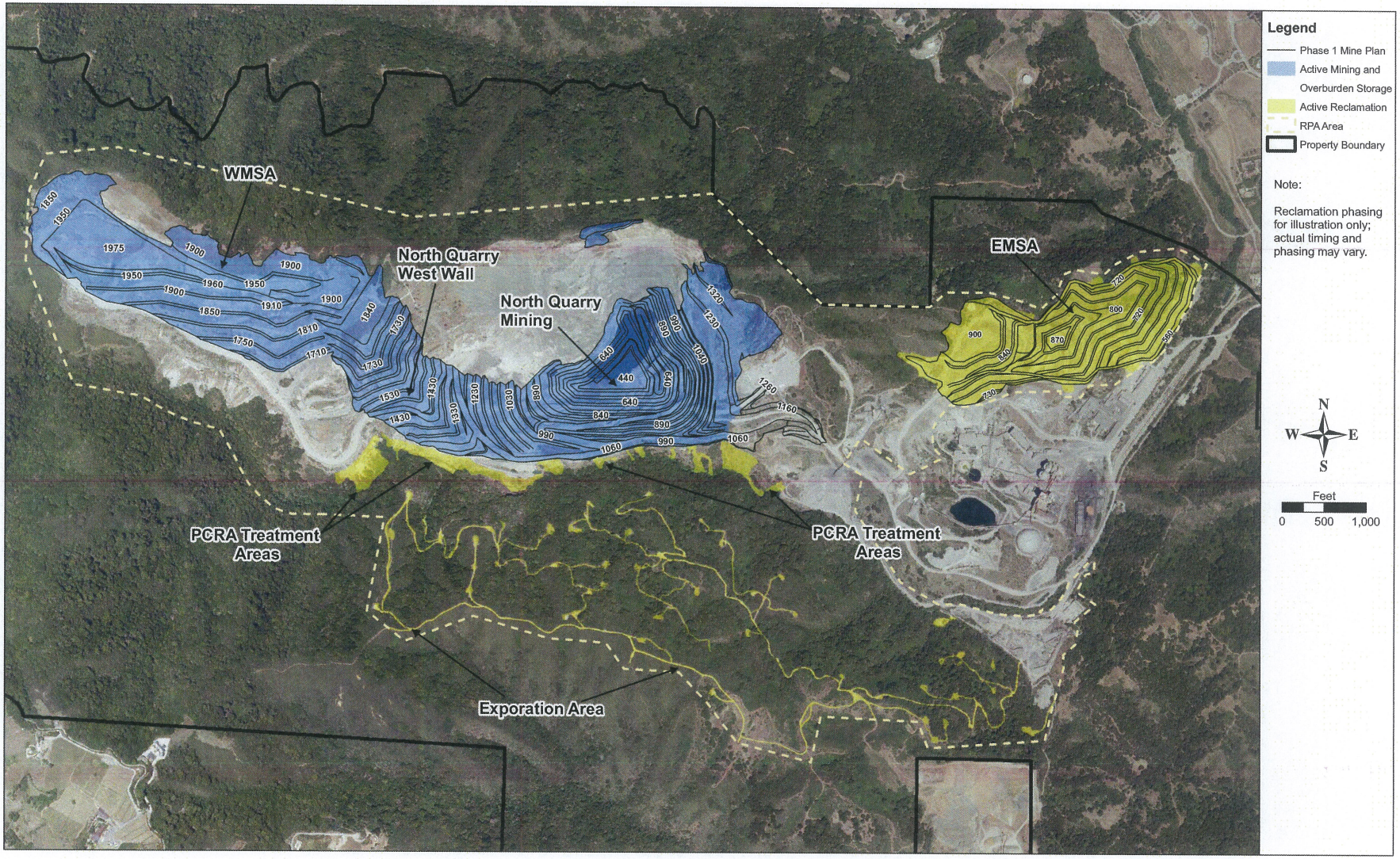
The Project would be implemented in the three phases shown in **Table 2-2**. The actual timing of each phase of reclamation would depend on the rate of extraction and the availability of overburden for use in backfilling the Quarry pit, which could vary based on market conditions and the quality of mineral resources encountered during the mining process. Additional time could be required for one or more of the proposed phases to allow for maintenance and monitoring of revegetation efforts until reclamation goals standards are met.

TABLE 2-2
RECLAMATION PHASING AND RELATED ACTIVITIES

Phase	Years	Start Date	End Date
Phase 1	9	2012	2020
Reclamation to Commence in Phase 1			
PCRA Subareas 1 through 7			
Exploration Area (ongoing reclamation activities would continue)			
EMSA Phase A			
EMSA Phase B			
EMSA Phase C			
Phase 2	5	2021	2025
Reclamation to Commence in Phase 2			
Quarry Pit Phase A			
Quarry Pit Phase B			
WMSA Phase A			
WMSA Phase B			
PCRA Subareas 1, 2, 6 and 7			
Phase 3	5	2026	2030
Reclamation Sub-Phases Commencing in Phase 3			
WMSA Phase C			
Quarry Pit Phase C			
Final Reclamation			
PCRA Subareas 3,4, 5 and 7			

* Note : All reclamation timing is approximate. The dates provided in the table above may change subject to market demand and the quality of resource encountered during the mining process.

Reclamation Phase 1 (shown in **Figure 2-4**) would begin with Project approval and end when excavation activities conclude in the Quarry pit. Phase 1 would include stabilization, removal and restoration activities along Permanente Creek to address water quality concerns, beginning immediately upon Project approval; by the closure and commencement of final reclamation in the EMSA beginning in or before 2015; and by continued active excavation in the Main Quarry and WMSA (Lehigh, 2011c). Reclamation of the Exploration Area also would occur in Phase 1.



SOURCE: EnviroMine Inc., 2011

Lehigh Permanente Quarry Reclamation Plan Amendment. 211742

Figure 2-4

Reclamation Plan Amendment Phase 1

Reclamation Phase 2 (as shown in **Figure 2-5**) would begin in approximately 2021, after Quarry pit extraction ends. Phase 2 would be characterized by excavation in the WMSA, backfilling of the Quarry pit. Portions of the WMSA containing quality limestone and aggregates would be separated for subsequent processing. Revegetation would begin in this phase as conditions allow, where final contours are reached, and excavation and backfilling are completed (Lehigh, 2011c).

Reclamation Phase 3 (as shown in **Figure 2-6**) would begin in approximately 2026, once the Quarry pit has been backfilled to the height and configuration shown in the RPA. Phase 3 would be characterized by the removal of equipment and structures throughout the Project Area, as well as finish grading and revegetation activities associated with WMSA Reclamation Phase C, Quarry pit Reclamation Phase C, the Crusher and Quarry Office Area, Surge Pile, Rock Plant, and other areas of mining-related disturbance. Phase 3 includes final reclamation. "Final reclamation" refers to the process of bringing areas in active reclamation to conclusion, according to the established reclamation performance standards set forth in Section 2.8, and the initiation and continuation of long-term monitoring and maintenance until reclamation is certified as complete (Lehigh, 2011c).

2.7.2 East Materials Storage Area

The proposed reclamation of the EMSA would achieve final contours and establish native vegetation and oak woodland habitats consistent with the surrounding area and topography. Reclamation of the EMSA would occur during Reclamation Phase 1.

To achieve final contours, overburden would be moved using heavy, earth-moving equipment, and graded. Final elevations in the EMSA would be a maximum of 900 feet amsl, and overall slope angles would not exceed 2.6H:1V. These slopes would be comprised of 2H:1V inter-bench slopes, interrupted by 25-foot wide benches spaced at 40-foot vertical intervals in accordance with engineering design requirements for stability and suitability for future open space use. Fill slopes would conform to the surrounding hillside topography and natural contours.

To establish native vegetation and oak woodland habitats consistent the surrounding area and topography, no topsoil would be imported (EnviroMine, Inc., 2011a). Instead, available topsoil from the site would be blended with overburden and other available materials. Different topsoil blends currently are being monitored in multiple test plots to identify the optimal topsoil blend. The results of these tests would continue to provide data until Project-related revegetation activities begin.

2.7.3 Quarry Pit

Reclamation of the Quarry pit would include re-grading to "lay-back" the upper slopes to create a less steep, more stable configuration, and transformation of the existing contours of the benches and slopes of the excavation to a downward-sloping hillside generally consistent with the surrounding natural topography, and achieve long-term slope stability (Golder Associates, Inc., 2011).