Attachment A

COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit File Number: PLN 2000-00456 Board Meeting Date: December 18, 2007

Prepared By: Michael Schaller
Senior Planner

For Adoption By: Board of Supervisors

RECOMMENDED FINDINGS

Regarding the Mitigated Negative Declaration, find:

1. That the Mitigated Negative Declaration is complete, correct and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County guidelines.

2. That, on the basis of the Initial Study, comments received hereto, and testimony presented and considered at the public hearing there is no substantial evidence that the project if subject to the mitigation measures contained in the negative declaration, will have a significant effect on the environment.

3. That the Mitigated Negative Declaration reflects the independent judgment of San Mateo County.

4. That the mitigation measures identified in the Mitigated Negative Declaration, agreed to by the applicant, placed as conditions on the project, and identified as part of this public hearing, have been incorporated into a Mitigation Monitoring and Reporting Plan in conformance with California Public Resources Code Section 21081.6.

Regarding the Coastal Development Permit, find:

5. That the project, as described in the application and accompanying materials required by Section 6328.7 and as conditioned in accordance with Section 6328.14, conforms to the plans, policies, requirements and standards of the San Mateo County Local Coastal Program (LCP). Conditions have been placed upon the project that will protect biological and visual resources. These measures include pre-mining surveys for listed species and construction of wetland habitat to augment existing conditions as described in the Revised Biological Resources Report, prepared by LSA Associates, dated June 21, 2007.

6. That the project conforms to specific findings required by policies of the San Mateo County LCP. The applicant has designed its project to avoid riparian and wetland resources and their associated buffer zones. The project is in compliance with these applicable policies of the LCP.

Regarding the Resource Management District Coastal Zone Permit, find:

7. That this project has been reviewed under and found to be in compliance with the Development Review Criteria as stipulated in Chapter 36A.2 of the County Zoning Regulations. The proposed Reclamation Plan Amendment complies with the requirements of the RM-CZ zoning district, in particular, with regards to air and noise quality, revegetation, and water quality issues.

Regarding the Surface Mining Permit and Reclamation Plan Amendments, find:

8. That the Conceptual Reclamation Plan Amendment complies with SMARA Section 2772 and Section 2773, and any other applicable provisions. The project complies with the referenced SMARA Sections as they pertain to application requirements and financial assurances.

9. That the Conceptual Reclamation Plan Amendment complies with applicable requirements of State Regulations (CCR Sections 3500-3505, and Sections 3700-3713). The project complies with the referenced SMARA Sections as they pertain to the required elements of reclamation plans, and surface mining and reclamation practices.

10. That the Conceptual Reclamation Plan Amendment and potential use of reclaimed land pursuant to the plan are consistent with this Chapter and the County's General Plan and any applicable resource plan or element. The applicant is proposing open space and agriculture as end uses for the quarry site. These are preferred uses within the General Open Space category of the General Plan.

11. That the Conceptual Reclamation Plan Amendment has been reviewed pursuant to CEQA and the County's environmental review guidelines, and all significant adverse impacts from reclamation of the surface mining operations are mitigated to the maximum extent feasible. A Revised Mitigated Negative Declaration was prepared for this project. Per the requirements of the CEQA Guidelines, this document was distributed through the State Clearinghouse to applicable State agencies including the Office of Mine Reclamation. Mitigation measures have been included to offset the potential impacts of this Reclamation Plan amendment to the environment.

12. That the land and/or resources such as water bodies to be reclaimed will be restored to a condition that is compatible with, and blends in with, the surrounding natural environment, topography, and other resources, or that suitable off-site development will compensate for related disturbance to resource values. Upon

completion of mining, the benched slopes in both the current mining area and in the expansion area will be revegetated with native groundcover and shrubs. Clusters of trees will be planted along and adjacent to the drainage channels.

13. That the Conceptual Reclamation Plan Amendment will restore the mined lands to a usable condition which is readily adaptable for alternative land uses consistent with the General Plan and applicable resource plan. Upon completion of mining, the benched slopes of the mined areas will be revegetated with native plants. Once restored, these areas will comply with the General Open Space designation of the County General Plan. It is intended to restore the canyon floor to a condition that is suitable for agricultural use. Agriculture is considered a compatible use in general open space lands, according to Policy 9.42 of the General Plan.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval is for the project as described on the plans and documents submitted to the Board of Supervisors for final consideration at the December 18, 2007 Board of Supervisors hearing. Any revisions to the approved plans must be submitted to the Planning Department for review and approval prior to implementation. Minor adjustments to the project may be approved by the Community Development Director if they are consistent with the intent of, and are in substantial conformance with, this approval. Any other development on the property will be subject to a separate permitting process.

2. Prior to the beginning of mining operations within the proposed expansion area, the applicant shall submit, for review and approval by the County Planning Department, a site-specific erosion control plan which prevents sediment from entering into the adjacent ESHA's in compliance with the County's Stormwater Control Best Management Practices and SWQCB guidelines for erosion control. The approved erosion control plan shall be implemented prior to the beginning of mining operations and shall be maintained throughout the life of mining operations at this location.

3. During the clearing of vegetation from the expansion area, a biological monitor familiar with western leatherwood shall work with the vegetation clearing crew. Heavy equipment shall clear the vegetation from one or more transects to provide the monitor access. The biological monitor shall survey the vegetation along the transect edges for western leatherwood and if none are found will give authorization to continue vegetation clearing.

   If any western leatherwood plants are observed within the quarry expansion area during the vegetation clearing and the plant or plants cannot be avoided, the quarry shall transplant said plants to a previously quarried area, preferably on a

north- or east-facing slope because these slopes are relatively cool and moist. Translocation will occur at the time when vegetation is cleared. Topsoil shall be added to the transplantation site at a depth of 3 feet. This transplantation site should be located on a bench of the quarry for ease of transplantation and maintenance. Translocation of western leatherwood is an experimental endeavor and different techniques will be utilized in order to discover the best methodology for success at this site. The branches, and as an experiment the trunk(s) of some western leatherwood, should be pruned to reduce water stress. (Observations indicate that western leatherwood sprouts from trimmed and or mowed trunks.) The planting hole for the transplants should be 1.5 times the size of the rootball.

A front-end loader, backhoe, Vermeer spade, or other type of suitable heavy equipment should be used to excavate the western leatherwood plant. As large an area as possible should be excavated around the rootball of the plant. Western leatherwood reproduces by underground rhizomes and any rhizomes observed in the excavated rootball should be cleanly severed to reduce the chance of infection.

If the western leatherwood plant cannot be planted immediately, it shall be covered with wet burlap or similar material to avoid desiccation and kept out of the sun as much as possible. Nevertheless, the leatherwood should be planted the same day as excavated. The rootball should be planted such that the crown is slightly above the level of the soil and soil should be firmly packed by hand around the rootball. A trough should be made at the edge of the planting hole to retain water during watering. After transplantation occurs, the plants should be watered-in. A temporary shade cloth structure should be constructed over the transplanted western leatherwood to avoid over exposure to the sun.

4. The applicant shall revise the proposed reclamation plan's revegetation plan to include seedlings of western leatherwood, which should be planted on the quarried slopes of the Pilarcitos Quarry. The seeds should be germinated in a growing facility and when approximately the size of 1-gallon containers, transplanted onto the quarry slopes. As with translocated plants, seedlings should be planted into 3 feet of topsoil that has been placed on a bench of a north- or east- facing slope. A shade structure should be installed over the seedlings. Experimentation will be required to determine the best method for seedling survival.

5. Prior to the beginning of mining operations within the expansion area, the applicant shall amend the proposed "replanting plan" (Figure 16, Page 59 of proposed amendment) to extend the proposed evergreen replanting area an additional 150 feet south of what is currently proposed. This will more closely approximate the existing vegetation patterns within the expansion area. Additionally, the spacing between planting clusters (as discussed under Table 5 – Revegetation Program) shall be reduced to 30 feet in order to provide a denser tree canopy upon maturation of the revegetation plan.

6. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall implement the sediment pond enhancement plan, including the excavation of deep and shallow areas, the installation of a stand pipe, stabilization of the lower edge of the pond's berm, installation of a sediment trap upslope of the pond's current inlet. A fully detailed plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

7. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall construct habitat ponds in the upper portion of the Nuff Creek drainage as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). A fully detailed grading plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

8. In order to assess the success of the pond restoration outlined above, a 5-year monitoring plan shall be implemented. This plan shall include two surveys per year of each created or restored pond; one in late winter/early spring and another in late summer/early fall. The focus of the monitoring shall be to: (1) document colonization/use of the created and enhanced ponds by CRLF; (2) estimate numbers of adult frogs using the ponds; and (3) monitor breeding activity and success. In addition, the physical features of the ponds, changes in vegetation, and water level shall be assessed during the monitoring visits. A staff gauge shall be placed in the deepest portion of the ponds for water depth to be accurately recorded during monitoring visits. Photographs of the pond and adjacent area shall be taken during each monitoring visit to provide a record of changes in vegetation cover and water levels. The presence of other amphibians shall be noted during monitoring visits and shall include information on species, numbers of individuals or egg masses, and life cycle (i.e., eggs, larvae, metamorphs, and adults). Field observations shall be recorded on a data sheet and summarized in a short annual report. If necessary, the report shall provide recommendations on adaptive management practices to maintain the pond as suitable habitat for CRLF.

   Eggs, larvae, metamorphs, and/or adult CRLF discovered within the active quarry or expansion area shall be relocated to suitable habitat within a protected portion of the study area by USFWS-approved biologist. If quarry personnel discover a CRLF (or any life cycle stage) within the active quarry or expansion area, they shall stop work in the area of discovery and inform the quarry manager. The quarry manager shall contact LSA to determine if relocation is necessary. If relocation is deemed necessary, a USFWS-approved LSA biologist will come to the quarry and relocate the frog, tadpole, or egg mass to a designated mitigation pond or to a suitable upland protected area. An annual report will be completed each year to summarize monitoring activities and findings.

9. The applicant shall revise their proposed reclamation plan amendment to incorporate additional habitat ponds within Expansion Area Two as outlined in the revised Biological Resources Report (LSA Associates, June, 2007).

10. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall submit, for review and approval by the County and all responsible resource agencies, a plan to implement the water catchments strategy as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). Said plan shall indicate proposed locations of said catchments, methods of construction, and timetable for implementation.

11. At least 15 days prior to the onset of activities, the project proponent shall submit the name(s) and credentials of biologists who would conduct activities associated with CRLF. No project activities shall begin until the project proponent has received written approval from the USFWS.

12. USFWS-approved biologists will conduct a survey for the CRLF at the sediment trap pond and surrounding area two weeks before the onset of quarry operations and other construction in the expansion area, or restoration activities at the sediment pond. If CRLFs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life stages is appropriate. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of CRLFs.

13. Before the onset of quarry operations, other construction activities within the expansion area, or restoration activities at the sediment pond the approved biologist(s) shall conduct a training session for all quarry personnel working within the expansion area. At a minimum, the training shall include: (a) a description of the CRLF and the San Francisco gartersnake and their habitat requirements; (b) the general measures that are being implemented to conserve the red-legged frog and San Francisco garter snakes as they relate to the quarry; and (c) the boundaries within which the quarry expansion may be accomplished.

14. A USFWS-approved biologist shall be present at the expansion area until such time as all removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. After that time, the quarry operator shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the U.S. Army Corps of Engineers (Corps) and/or USFWS.

15. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly.

16. All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from Nuff Creek, the pond, and associated

tributaries. The applicant will also prepare a plan to allow a prompt and effective response to any accidental spills into the creek, pond, or other aquatic habitats. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

17. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to complete the quarry expansion. Routes and boundaries shall be clearly demarcated, and these areas shall be located outside ESHAs.

18. To control erosion during and after quarrying operations the project proponent shall implement best management practices, as identified by the quarry's Stormwater Pollution Prevention Plan.

19. When a work site is to be temporarily de-watered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent red-legged frogs from entering the pump.

20. A USFWS-approved biologist shall permanently remove, from within the project site, any individuals of exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

21. Although frog movement to and from the restored pond is likely to occur primarily at night when the when the quarry will not be in operation, a gate will be placed across the road west of the pond at its junction with the main quarry access road. This will restrict traffic on the road adjacent to restored pond to the occasional vehicle trip for road maintenance.

22. A frog-proof barrier will be placed along both sides of the rock chute between the expansion area and the quarry processing area. This will keep dispersing frogs from traversing or sheltering in an area where they are in danger of being crushed by falling rock.

23. All new and existing onsite ponds will be regularly inspected during the breeding season and any adults, tadpoles, or egg masses observed will be captured/collected and relocated to suitable aquatic habitat outside of areas of activity (e.g., constructed/restored ponds).

24. To the maximum extent practicable given rainfall patterns and sediment/stormwater retention requirements, water levels in the ponds within the active quarry and processing areas should be kept dry, or ponding limited to a maximum of 24 hours during the frog breeding season. Ponds should also be regularly maintained to preclude the establishment of aquatic vegetation.

25. A snake-proof barrier (snake fence) shall be installed around the perimeter of the active rock excavation area and will have one-way funnel exit doors placed at

various locations to allow snakes and other animals within the quarry area to escape. The active rock excavation area will vary as quarry operations progress and the snake fence shall be moved accordingly. The fence shall be built with silt-fencing and/or wooden boards and buried six inches deep in the substrate. The fence will exclude any potential dispersing snakes from the active quarry area and confine them to ESHAs as they move through the area. The quarry currently has as speed limit of 15 miles per hour for all vehicles within the active quarry. This speed limit combined with driver awareness (through training described under *California red-legged frog*, above) of the potential for snakes in the quarry will greatly reduce the likelihood of impacts to San Francisco garter snakes.

26. A visual search for garter snakes will be conducted concurrently with the daytime CRLF monitoring surveys. In addition, two to three cover-boards of half-inch plywood (2.5 x 3 feet) will be placed in permanent locations in open areas near the constructed ponds. Cover-boards are attractive to snakes and provide them with a concealed space to thermoregulate and hide from predators. The cover-boards will be numbered and their locations mapped with a GPS unit. The boards will be periodically checked for snakes. The results of the cover-board monitoring will be included in the red-legged frog annual report.

27. If feasible, the removal of vegetation and overburden within the expansion area shall be scheduled for the period between September 1 and November 30 so as to avoid disturbance to nesting birds. If this is not possible, a nesting raptor survey shall be conducted in the expansion area prior to vegetation removal. If an active raptor nest is found within the expansion area, the nest site and a suitable buffer zone around the nest site shall be established, and no work shall occur within this buffer zone until the young had fledged.

28. If feasible, the removal of vegetation and overburden shall be scheduled for the period between September 1 and March 31 in order to avoid disturbance to nesting birds. If vegetation must be scheduled for removal in the period between April 1 and August 31, then a nesting bird survey shall be conducted in the expansion area. If nesting birds are discovered, the nest and a suitable buffer zone (50 to 100 feet) around the nest shall be established, and no work shall occur within this buffer zone until August 31 or until the young have fledged.

29. To provide temporary shelter for woodrats forced out of the expansion area by vegetation removal, artificial shelters constructed of old wine half-barrels shall be placed along the edge of the area to be cleared of vegetation. The wine barrels will be placed with the open end down and holes cut in the sides near ground level will allow woodrats to enter and exit. Wine barrels will be similarly placed within active reclamation areas within the existing quarry in order to provide cover for woodrats that may seek to establish territories in these areas.

30. The CDFG has expressed a primary interest in making an attempt to gather data on survivorship of displaced woodrats to gain a better understanding of impacts to

these mammals from development. To this end, a woodrat trapping and marking program will be conducted. Prior to vegetation clearing in the expansion area, a live-trapping program will be conducted for woodrats using Sherman small mammal traps. All trap locations will be numbered and located on a map of the expansion area with the aid of a GPS unit. All woodrats captured will be sexed, measured, weighed, and marked with a numbered ear tag. This will allow for subsequent identification of individual woodrats if they are recaptured. Ear tagging is a humane standard method for marking small mammals (Wilson et al.1996). Numbering and mapping trap locations will provide information on the movements of recaptured animals.

Trapping will continue (in areas still supporting vegetation) during vegetation removal and grading until the entire work area has been cleared of vegetation. Concurrent with clearing and after the expansion area is cleared, peripheral areas (including reclaimed areas within the existing quarry that support woodrat habitat) will be sampled to determine if any of the displaced woodrats (i.e., ear-tagged individuals) are present and reestablishing territories. Trapping will be conducted for at least two periods in these peripheral areas for one year after vegetation clearing in the expansion area. The results of the trapping survey will be summarized in an annual report.

31. No road construction, tree or vegetation removal, blasting or other activities associated with mining shall be conducted within the 165-foot buffer zone for Nuff Creek (measured from the edge of existing riparian habitat), as delineated in the letter from LSA Associates, dated September 11, 2007. The above activities are prohibited during the marbled murrelet nesting season (March 24 – July 31) until the USFWS required protocol level surveys are completed and assuming the murrelets are found to be absent.

32. Blasting at the quarry is prohibited during the following times:

    a. Two hours before and two hours after sunrise,

    b. Two hours before and two hours after sunset.

33. Prior to the beginning of mining operations in the expansion area, the biologist(s) retained by the applicant shall submit a written report stating that the applicant has complied with these conditions of approval. Said report shall outline what activities they provided, performed, etc. and when they were completed. Said report shall be submitted to the Current Planning Section for review and approval prior to the beginning of mining operations.

34. Prior to the beginning of mining operations in the expansion area, the applicant shall submit copies of their updated NPDES permit and BAAQMD permits to the Planning Department for inclusion within the project file.

35. Prior to initiating any ground disturbing activities in Expansion Area 2, the applicant shall submit proof to the Current Planning Section that the project is in compliance with the Federal Endangered Species Act, California Endangered Species Act, Section 404 and 401 of the Federal Clean Water Act, and Sections 1602 and 5050 of the State Fish and Game Code. Compliance shall be demonstrated by letters from the applicable agencies stating no permits are required or that activities are in compliance with applicable regulations, a copy of a valid Corps of Engineers Section 404 permit and associated Biological Opinion for the applicable activities, and issuance of a Streambed Alteration Agreement for applicable activities.

Existing Conditions of Approval (still in effect)

36. The applicant shall comply with all requirements of the County Surface Mining and Reclamation Ordinance and all conditions of this permit. Failure to comply with the County Surface Mining and Reclamation Ordinance and all conditions of this permit may result in the quarry not being allowed to operate.

37. The renewal of this Surface Mining Permit (originally SMP 84 1, now PLN 2000-00456) shall be valid from December 18, 2007 to December 18, 2012. The applicant shall submit an application to renew PLN 2000-00456 by December 18, 2011, and if a decision is not issued on the permit application by December 18, 2012, the surface mining operation may not continue to operate without written permission of the Community Development Director pending action on the application.

38. In accordance with the California Surface Mining and Reclamation Act, Planning staff shall perform annual inspections to assure compliance with all conditions. Planning staff may require the applicant to submit an annual report indicating the status of compliance with the terms and conditions of this approval. If staff determines that the quarry is not operated in compliance with the conditions of this permit, the applicant shall immediately correct the problems. If the applicant does not immediately correct the problems, then the quarry may not be allowed to continue to operate. If the fee is not paid, the quarry may not be allowed to operate. Fees for quarry inspections are set by resolution of the Board of Supervisors and such inspections shall be made at least annually and, for cause, more frequently.

39. All trucks loaded with quarry products must be sprayed with water prior to leaving the quarry site.

40. The quarry floor shall be maintained so that all drainage from work areas, and roads goes into adequate sediment basins prior to entry into any other water-course. The sedimentation system shall be maintained in a functional condition to the satisfaction of the Department of Public Works and the Current Planning Section, and cleansed of all trapped sediment prior to November 15 of each year.

41. No hauling shall be permitted on Saturdays, Sundays, New Year's Day, Presidents' Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving, Christmas Day, or any other federally-designated holiday. Hauling on Saturdays, Sundays, and holidays for emergency work may be permitted only with prior written approval by the Community Development Director.

42. Reclamation for the quarry shall occur in accordance with the approved reclamation plan of December 18, 2007. A performance bond shall be held by the County for the entire cost of reclamation of the Quarry. The performance bond shall indicate both the County of San Mateo and the State Department of Conservation as payees. The County currently holds a bond (plus rider) totaling $225,645. This amount shall be amended to account for the cost of reclaiming the expansion area for a total of $382, 884.80. The amount of the rider shall be adjusted annually to reflect the changes in the Bay Area Consumer Price Index.

43. The applicant (or successors in ownership) shall maintain the following schedule for trucks leaving the Quarry during the morning commute hours between 7:00 and 9:00 a.m. This schedule shall be maintained throughout the life of the Surface Mining Permit PLN 2000-00456.

    6:00 to 7:00 a.m. - Headways not less than 2 minutes upon entering Route 92
    7:00 to 9:00 a.m. - Headways not less than 4 minutes upon entering Route 92
    After 9:00 a.m. - Headways not less than 2 minutes upon entering Route 92

    The applicant may request that the Planning Commission consider altering the above schedule. This will require the submittal of a traffic report prepared by a consultant that both the County and the applicant agree to. For the County to approve an alteration of the schedule, the report must demonstrate that altering the headways for trucks leaving the quarry will not significantly impact levels of service on Highway 92. The report should include suggested mitigation measures such as acceleration/deceleration lanes and traffic lights.

44. In the event Highway 1 is closed to traffic because of landslides at Devils Slide, this schedule will be modified to respond to the emergency situation. The quarry operator shall work with staff from the Planning Department and Department of Public Works to recommend to the Planning Commission a modified emergency schedule for quarry trucks to use Highway 92.

45. If at any time mining activity terminates permanently within the physical limits established for the permit, then the approved and updated Reclamation Plan for the quarry, prepared by Malcolm Carpenter Associates and approved by the Board of Supervisors on December 18, 2007, shall be maintained.

46. Over the term of this permit, the applicant shall remove sapling eucalyptus trees 3 inches or less in diameter from the channel of Nuff Creek in order to curtail the

spread of the tree within the riparian corridor. This clearing shall be limited to that area from the present position, as of July 22, 1992, of the truck watering bar on the south and the gate across the road to the north and to the east side of the channel. Any other removal of the eucalyptus forest within the stream channel may be done at any time without the benefit of obtaining a tree-cutting permit except during times of high water flow in Nuff Creek.

47. A Hazardous Materials Prevention Plan must be implemented which addresses the following:

    a. Limits the number of known sources and haulers of material.

    b. Checks all incoming loads for petroleum or chemical odors.

    c. Visual inspection of all loads so no building demolition material enters the site.

    d. Prominent signage stating it is unlawful to dispose of hazardous wastes.

    e. Requires all drivers to sign a non-contamination/non-hazardous certification form identifying the source of the recyclable materials and declaring that they are clean of hazardous wastes.

    f. The storage pile area will be surrounded by 4-foot berms on three sides to isolate contaminated runoff potential.

48. The quarry operator shall not accept recycle materials which arrive before 9:00 a.m. or after 3:00 p.m. Recycle trucks arriving before 9:00 a.m. will not be allowed to wait on the shoulders of the quarry access road or on quarry property until 9:00 a.m. Recycle trucks arriving after 3:00 p.m. will be forbidden and must be turned away.

49. The quarry shall continue to maintain the following signs: (1) a sign stating the hours of operation when trucks carrying recycle material may deliver to the quarry. This sign shall be prominently displayed at the quarry entrance at State Route 92; and (2) a second sign shall be installed along the west side of the quarry access road, approximately 800 to 1,000 feet from the intersection of the quarry access road and State Route 92, informing truck haulers of the quarry's restrictive trucking schedule during commute hours.

50. The quarry operator should contact each of his regular accounts and other contractors and expected sources of recyclable materials and advise them of the operating hours. Any driver who does not abide by the schedule after the initial warning by the quarry operator should be refused access to the facility.

51. The Mitigation Monitoring and Reporting Program prepared by the applicant shall be in effect for the life of the Surface Mining Permit. Failure to adhere to the

conditions of this permit, the approved Reclamation Plan, or the Mitigation Monitoring and Reporting Program shall be enforced by the Section 7703.2 of the Surface Mining and Reclamation Ordinance.

County Fire Marshal

52. The applicant is advised that the project site is located within Fire Hazard Severity Zone 3302 on Official Maps of the California Department of Forestry and Fire Protection. Upon sale or transfer, the applicant must comply with the Disclosure Requirements of Public Resources Code Section 4136.

53. The applicant must annually comply with the fire safety clearance requirements of Public Resources Code Section 4291 and the County Fire Ordinance for all structures. All equipment must be in compliance with Public Resources Code Section 4442. Prior to the approval of the renewal, the applicant shall schedule an inspection of the site with the County Fire Marshal, and shall correct any violations observed.

Regional Water Quality Control Board

54. As part of the quarry's NPDES permit approved by the Regional Water Quality Control Board, the applicant shall develop and implement a monitoring program to: (1) demonstrate compliance with the permit, (2) aid in the implementation of the Stormwater Pollution Prevention Plan, and (3) measure the effectiveness of the Best Management Practices in preventing and removing pollutants from industrial stormwater discharge. A copy of the approved monitoring program shall be submitted to the Planning Department prior to mining in the expansion area.

California Department of Fish and Game

55. Please be advised that this project will require the filing of a Notice of Determination in compliance with the California Environmental Quality Act. Per Fish and Game Code Section 711.4, the Department of Fish and Game charges a filing fee of $1,850 (includes County Clerk processing fee) for all Negative Declarations unless they can be found to have no effect on wildlife. If the project will have any effect on fish and wildlife resources, even a minimal effect, the fee is required. The filing fee must be paid before the project can become operative, vested, or final. Said fee shall be paid by check, made out to the County of San Mateo and shall be submitted to the project planner for recordation of the Notice of Determination.

ATTACHMENT B

San Mateo County Environmental Services Agency

Application for Appeal

Planning and Building Division

County Government Center • 590 Hamilton St. • Redwood City CA 94063
Mail Drop PLN 122 • 415 • 363 • 4161

RECEIVED

OCT 11 2007

San Mateo County
Planning Division

☐ To the Planning Commission

☒ To the Board of Supervisors

1. Appellant Information

Name: Kevin J. Lansing

Address: 359 Filbert Street
Half Moon Bay CA
Zip: 94019

Phone, W: 415 974 2393 H: 650 726 9089

2. Appeal Information

Permit Numbers involved:

PLN2000-00456
(West Coast Aggregates)

I hereby appeal the decision of the:

- ☐ Staff or Planning Director
- ☐ Zoning Hearing Officer
- ☐ Design Review Committee
- ☐ Planning Commission

made on _____ 19____, to approve/deny the above-listed permit applications.

I have read and understood the attached information regarding appeal process and alternatives.

☒ yes ☐ no

Appellant's Signature: Kevin J. Lansing

Date: Oct 11, 2007

3. Basis for Appeal

Planning staff will prepare a report based on your appeal. In order to facilitate this, your precise objections are needed. For example: Do you wish the decision reversed? If so, why? Do you object to certain conditions of approval? If so, then which conditions and why?

See attachment.

Appeal Attachment
PLN2000-00456 (West Coast Aggregates)

CEQA Non-Compliances

1. Illegal Piecemealing of the True Larger Project

The County has committed the fundamental CEQA error of artificially subdividing the true scope of the "project" that must be analyzed. The County is minimizing the project's true environmental effects and thereby depriving the public of its right to understand the true environmental consequences of the County's whole actions. Specifically, the County has attempted to define the "project" narrowly to include only the initial expansion area (labeled "H" on the attached map) and then short-cut the public review process by processing a Mitigated Negative Declaration for Area H alone, while eight other expansion areas are being analyzed separately in an EIR.

Expansion area H is the first step in a true larger project that includes eight additional expansion areas (labeled "A, B, C, D, E, F, G and J" on the attached map). A "project" as defined in 15378 of the CEQA guidelines is the "whole of an action" such that a project cannot legally be segmented into smaller pieces and then studied independently of one another.

The guidelines state: "The term "project" refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term "project" does not mean each separate governmental approval" (underline added). The County's narrow definition of the project to include only the initial expansion area H and not the other eight expansion areas amounts to an illegal "piecemealing" of the project for the purpose of assessing the true potential environmental effects.

CEQA requires the disclosure and mitigation of environmental impacts that are "cumulatively considerable." Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The eight additional expansion areas are reasonably foreseeable future projects that are currently being studied by an on-going EIR. CEQA requires expansion area H to also be included in the EIR because it is part of the true larger project and because the County is required to study sequencing alternatives for these expansion areas that could lead to reduced environmental impacts for the project as a whole.

At the September 26, 2007 public hearing, Planning Administrator Lisa Grote claimed that the County's action was not piecemealing because the initial expansion area H was included in a previously-issued Surface Mining Permit that is now being renewed. This is not a valid justification for segmenting a project under CEQA. Other discretionary permits are required for this initial expansion area (such as a Coastal Development Permit) that are now being issued for the first time. CEQA requires the County, as lead agency, to consider the environmental impacts of the true larger project before issuing any new discretionary permits.

2. Significant Impacts not Disclosed or Mitigated in the CEQA Document

CEQA requires the disclosure of environmental impacts that are potentially significant. If an impact is potentially significant, then the lead agency must incorporate mitigation measures prior to project approval that will reduce any impacts to less than significant. Numerous potentially significant impacts are not disclosed or mitigated in the draft CEQA document.

The joint USFWS/CDFG letter of May 7, 2007 (attached)states that "significant modification to a project and mitigation measures may be required" in order to obtain the necessary CDFG and USFWS permits needed to proceed. The applicant must obtain a California Endangered Species Act (CESA) permit and a USFWS permit for incidental take under section 7 or 10 of the Federal Endangered Species Act. Since both permit procedures will likely identify and impose mitigation measures that are unknown at this time, the current proposed CEQA document is not adequate to disclose and mitigate all potential impacts to less than significant. Certification of the CEQA document cannot proceed until all mitigation measures needed for the protection of listed species have been identified by the CDFG and USFWS permitting procedures.

The joint USFWS/CDFG letter of May 7, 2007 states:

"...the Service and CDFG believe that the California red-legged frog is present within the action area and that the proposed Pilarcitos Quarry expansion project is likely to adversely affect this species..."

"the Service and the CDFG believe that San Francisco garter snakes likely inhabit the area and that the proposed Pilarcitos Quarry expansion project is likely to adversely affect the San Francisco garter snake..."

"Although marbled murrelets are most active during dawn and dusk hours while exchanging parental care duties, mid-day feeding of chicks has been documented. Quarry expansion and work activities at Area 2 may preclude these activities and adversely affect the species..."

"All authorizations should be obtained prior to certification of the CEQA document on the Pilarcitos Quarry project."

At the September 26, 2007 public hearing, Planning Administrator Lisa Grote misinformed the County Planning Commission that USFWS and CDFG would wish to start their permitting procedures after the County has certified the CEQA document. Ms. Grote's statement is directly contradicted by the joint USFWS/CDFG letter of May 7, 2007. Unfortunately, this piece of misinformation seemed crucial in swaying the Planning Commission's decision to approve the CEQA document.

The CEQA document also fails to identify any mitigation measures needed to minimize impacts to Pilarcitos Creek. On May 18, 2007, a water pipe containing rinse water for harvested granite overflowed into the creek, causing the creek to become clouded with silt for several hours (see attached HMB Review articles). Pilarcitos Creek is home to several protected species, including steelhead, California red-legged frogs, and San Francisco garter snakes.

3: *Conditions of approval require the applicant to adopt mitigation measures to be identified in a future study.*

Condition of Approval 35 requires the applicant to show evidence of obtaining various permits issued by USFWS and CDFG "prior to initiating any ground disturbing activities..." The joint USFWS/CDFG letter of May 7, 2007 indicates that these future permitting procedures are expected to result in "significant modification" to the project and its mitigation measures. The permitting procedures of USFWS and CDFG

constitute a "future study" of the adequacy of the proposed project for protecting listed species. The County's action of requiring the project to adopt mitigations measures stemming from a future study of the project (as embodied in the permitting procedures of USFWS and CDFG) is a violation of the guidelines for implementing CEQA, as established in Sundstrom vs. the County of Mendocino (1988), which state:[1]

> "The requirement that the applicant adopt mitigation measures recommended in a future study is in direct conflict with the guidelines implementing CEQA. California Administrative Code, title 14, section 15070, subdivision (b)(1) provides that if an applicant proposes measures that will mitigate environmental effects, the project plans must be revised to incorporate these mitigation measures "before the proposed negative declaration is released for public review....Here, the use permit contemplates that project plans may be revised to incorporate needed mitigation measures after the final adoption of the negative declaration. This procedure, we repeat, is contrary to law." (underline added)

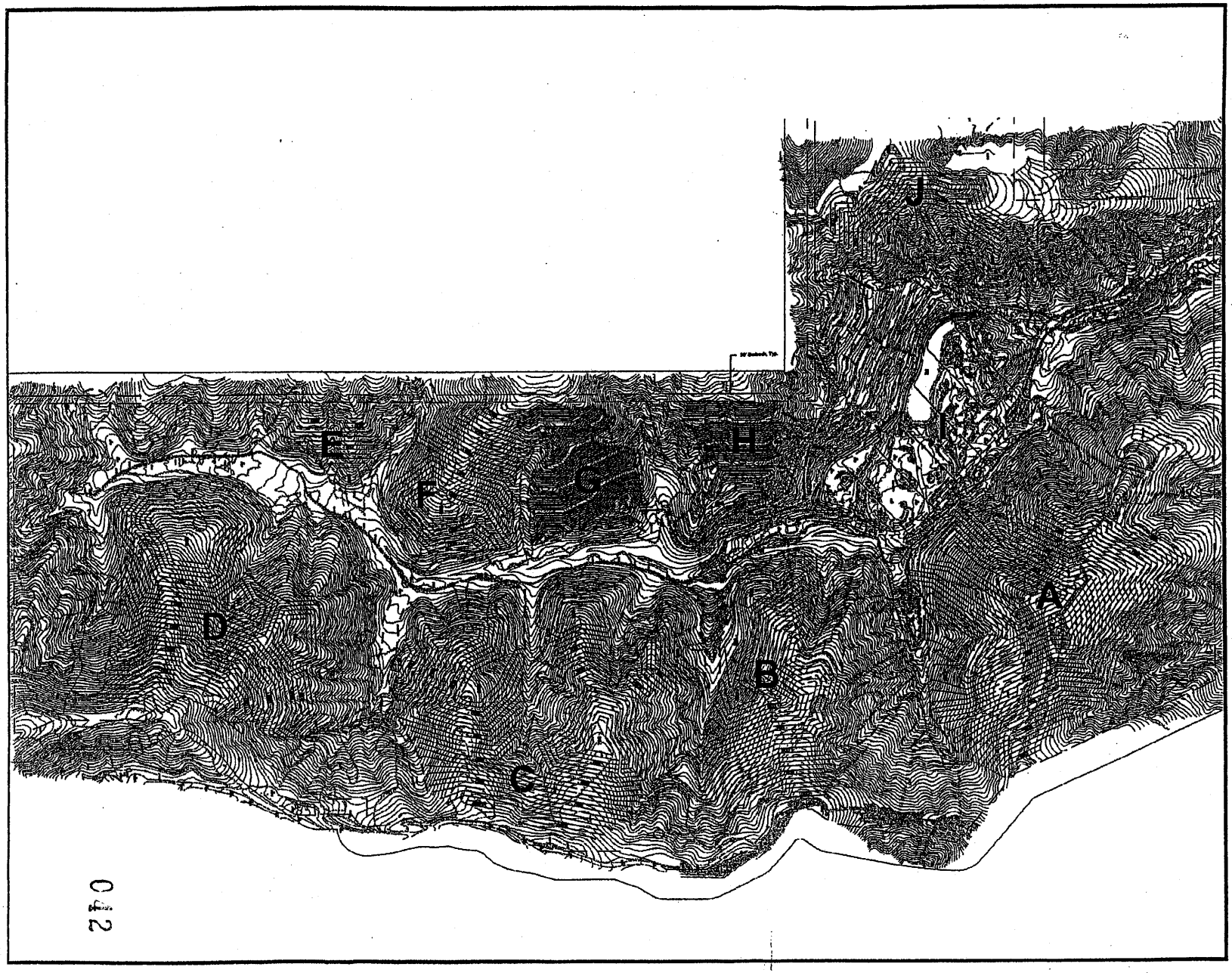
LCP Non-Compliance Issues

The attached letters from California Coastal Commission staff dated May 5, 2006 and September 25, 2007 identify numerous areas of the project that are not in compliance with the County's certified LCP. These points are directly incorporated into this appeal by reference.

Conditions of Approval 6 through 9 require the applicant to relocate sensitive habitat as a mitigation measure for the project. As described in the September 25, 2007 Coastal Commission staff letter, *Bolsa Chica Land Trust v. Superior Court* (1999) 83 Cal.Rptr. 85 affirmed that the relocation of sensitive habitat areas is prohibited under the California Coastal Act. By extension, such relocation is also prohibited by the County's LCP.

Page 37 of the June 2007 LSA Biological report states that "Wetland and riparian zone boundaries were mapped according to the Coastal Act definition of wetlands, the CCC regulations, and the CCC (1994) Procedural Guidance...". The County's LCP instead requires these zones to be mapped according to the definitions in LCP Policies 7.14 (wetlands) and 7.7 (riparian corridors).

1 See http://ceres.ca.gov/ceqa/cases/1988/sunstrom_062288.html



WEST COAST AGGREGATES

PILARCITOS QUARRY

SITE AND WORK AREA MAP

AGGREGATE RESOURCE INVENTORY

SITE	AREA (IN ACRE)	QUANTITY (IN TON)
A	49.88	25,646,656
B	24.15	4,971,493
C	42.10	9,405,606
D	35.14	9,479,833
E	4.32	261,919
F	14.76	4,240,293
G	12.81	1,503,804
H	7.36	853,661
I	53.31	1,190,250
J	12.61	1,413,054
TOTAL	256.43	58,966,570

— — CURRENT WORK AREA BOUNDARY (53.31 AC) (PLN2000-00-00456)

— · · — PROPERTY LINE

— — — — ESHA BOUNDARY

3

FIGURE
PAGE 8

SCALE IN FEET

0 600 1200

NORTH

Plan Prepared By:
LSA Associates, Inc., 1190 El Camino Real, Colma, CA 94014
(650) 985-2590, Info.Colma@LSA-assoc.com

9 / 2006

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US Fish & Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
94599
Sacramento, California, 95825

CA Dept. of Fish & Game
P.O. Box 47
Yountville, California

In Reply Refer to:
1-1-07-TA-0246

Mr. Mike Schaller
Senior Planner
San Mateo County Planning Division
San Mateo County Planning & Building Department
County Office Building
455 County Center
Redwood City, California 94063

Subject: Proposed Pilarcitos Quarry Expansion, Near the City of Half Moon Bay in Unincorporated San Mateo County, California.

Dear Mr. Schaller:

This letter is in response to the proposed expansion of the Pilarcitos Quarry, near the City of Half Moon Bay in unincorporated San Mateo County, California. The proposed project is located approximately 0.5 mile north of California State Highway 92 and two miles northeast from the City of Half Moon Bay. The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG) are concerned about the potential adverse effects of the proposed project on the federally threatened California red-legged frog (*Rana aurora draytonii*), the federally and State endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and the federally threatened and State endangered marbled murrelet (*Brachyramphus marmoratus*). This letter is issued under the authority of the Federal Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(FESA), the California Endangered Species Act (California Fish and Game Code §§ 2050-2097)(CESA), and the California Environmental Quality Act (California Public Resources Code § 15000 *et seq.*)(CEQA).

This letter is based on 1) the *Administrative Draft Biological Resources Report Pliarcitos Quarry (Expansion Area 2)* (Expansion Area 2), dated February, 2005, prepared by LSA Consulting (LSA); 2) the revised *Biological Resources Report Pilarcitos Quarry*, dated October 12, 2006, prepared by LSA; 3) the July 12, 2006, site visit with representatives from the Service, the California Coastal Commission (CCC) and LSA; 4) the *Pilarcitos Quarry-San Mateo County* letter, dated September 12, 2006, prepared by LSA; 5) the *Potential for the San Francisco Garter Snake (Thamnophis sirtalis tetrateania) to Occur [on] the Pilarcitos Quarry Expansion Area 2 in Half Moon Bay, San Mateo County, California* (Swaim letter), dated September 29, 2006,

prepared by Swaim Biological Incorporated; 6) the 2005. *Protocol-level Surveys for Marbled Murrelet (Brachyramphus marmoratus marmoratus) at Cahill Ridge and the Upper Pilarcitos Creek Watershed, San Mateo County, California* performed by Avocet Research Associates; 7) the October 18, 2006, meeting with representatives from the Service, San Mateo County, LSA, and CDFG; 8) the November 14, 2006 site visit with representatives from the Service, CDFG, and LSA; 9) the January 9, 2007, site visit to the neighboring Pilarcitos Creek watershed with representatives from LSA, the Service, CDFG, and the San Francisco Public Utilities Commission (SFPUC); 10) numerous conversations and emails between the Service, LSA, CCC and CDFG; and 11) other information available to the Service.

It is our understanding that the proposed project will consist of the expansion of the existing quarry into nine new areas in order to mine a total of 256.43 acres within the Nuff Creek watershed. The first of the proposed expansion areas (Area 2) consists of approximately seven acres and will include the construction of a new dirt access road, the grading of several bench and toe areas, and the placement of a conveyer belt system that will move aggregate from the expansion area to the processing plant, which will remain at its current location throughout all nine proposed expansions. As aggregates are removed from the area, Phase One recovery actions will be initiated. Recovery will include the placement of reserved top soil on the site and the replanting of these areas with a grassland seed mix for initial erosion control. This will be followed by the planting of various shrub and tree species native to the area. Planting on mined slopes is scheduled so that planting follows by one or two benches from the actual mining process so that reclamation can occur simultaneously with mining operations but will remain free of equipment or blasting conflicts. Reclamation activities for each expansion site will follow similar procedures. All recovery actions will begin prior to movement to the next expansion area.

All mining activities on the 256.43-acre property are expected to be completed within approximately 75 years. Upon removal of all aggregates, Phase Two of the reclamation process will begin. These activities will include the removal of the processing plant and outbuildings as well as the restoration of Nuff Creek, which currently travels through a 1000-foot culvert within the processing area, to an open channel. The primary access road and the storage barn will remain on- site in order to support grazing and/or open space use.

Section 9 of the FESA prohibits the take of any federally listed animal species by any person subject to the jurisdiction of the United States. As defined in the FESA, take is defined as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavioral patterns, such as breeding, foraging or resting. Thus, not only are the California red-legged frog, San Francisco garter snake, and marbled murrelet protected from such activities as collecting and hunting, but also from actions that damage or destroy their habitat. The term "person" is defined in the FESA as "...an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States."

Take incidental to an otherwise lawful activity may be authorized by one of two procedures under the FESA. If a Federal agency is involved with the permitting, funding, or carrying out of the project and a listed species is going to be adversely affected, then initiation of formal consultation between that agency and the Service pursuant to Section 7 of the Act is required. Such consultation would result in a biological opinion addressing the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the FESA should be obtained. The Service may issue such a permit upon completion of a satisfactory conservation plan for the listed species that would be taken as a result of the project.

A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a 2081 permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a 2081. For these reasons, if any State-listed threatened or endangered species or their habitats will be impacted by the project, a CESA permit will be necessary. If you wish the final CEQA document to function as the environmental document for the CESA permit, it should include all supporting material for that application (see Title 14 CCR Section 783 and Fish and Game Code sections 2050-2116).

San Francisco garter snakes are also considered 'Fully Protected' pursuant to Section 5050 of the California Fish and Game Code. A Fully Protected species may not be taken or possessed at any time. CDFG may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species, but under no circumstances can "scientific research" include any actions taken as part of specified mitigation for a project, as defined in Section 21065 of the Public Resources Code. To comply with this statute, a project must be designed to avoid any take, during any phase of the project's initiation or operation.

Suitable habitat for the California red-legged frog, the San Francisco garter snake and the marbled murrelet likely exists within the area proposed for the Pilarcitos Quarry Expansion project. Although the Nuff Creek watershed was excluded from the 2006 final rule for critical habitat for the California red-legged frog, the area was included in the 2004 proposed rule for critical habitat due to the presence of all of the primary constituent elements necessary for this animal. Additionally, California red-legged frogs were found at two ponds within proposed quarry expansion area during initial reconnaissance surveys in 2004. Although it has not been verified that there is ongoing breeding activity at either of these locations, it is likely the threatened ranid moves between these two ponds as well as the neighboring SFPUC property. Due to recently documented sightings of the animal on-site and the presence of suitable habitat for the species throughout the Pilarcitos Quarry property, the Service and the CDFG believe that the California

red-legged frog is present within the action area and that the proposed Pilarcitos Quarry expansion project is likely to adversely affect this species. Additionally, due to the proposed establishment of quarry expansion Area 2 within 300 feet of documented California red-legged frog-occupied habitat the Service and the CDFG believe that authorization will need to be obtained prior to the initiation of activities in this area.

San Francisco garter snakes have been identified at numerous locations throughout the neighboring SFPUC property and the adjacent Pilarcitos Creek watershed. According to the Swaim letter, the closest of these locations is less than 1.2 miles from the Pilarcitos Quarry property. However, focused survey efforts in the Half Moon Bay area have been minimal, and additional occupied habitat may exist in closer proximity to the action area. Additionally, mature San Francisco garter snakes are known to have a diet that consists largely of California red-legged frogs which have been observed within the Pilarcitos Quarry property. Although no surveys for San Francisco garter snakes have been performed within the Pilarcitos Quarry property, this animal may enter the site through either aquatic or upland migrations in search of prey or in the course of dispersal from one habitat to another. Due to the proximity of recent sightings of the animal and the presence of suitable prey for the species on-site, the Service and the CDFG believe that San Francisco garter snakes likely inhabit the area and that the proposed Pilarcitos Quarry expansion project is likely to adversely affect the San Francisco garter snake. Therefore, the Service and the CDFG believe that authorization will need to be obtained prior to the initiation of activities in this area.

The proposed expansion area for Pilarcitos Quarry is less than 1.5 miles south of a federally proposed critical habitat unit for the marbled murrelet and approximately three miles northwest of another critical habitat unit for this species (Santa Cruz Mountains Proposed Critical Habitat Unit, California). The October 12, 2006, *Biological Resources Report* prepared by LSA states that there is a probable nesting observation less than five miles from the expansion area, and that marbled murrelet calls were detected in 2003 less than one mile northeast of the Quarry property. More recent information collected from audio-visual surveys conducted in 2005 and 2006 in the Pilarcitos Creek drainage indicates that marbled murrelets are likely nesting in the vicinity of the Stone Dam reservoir, approximately 0.5 miles from the quarry boundary. Further, suitable nesting habitat for the species was observed on SFPUC property by Service and CDFG personnel at the January 9, 2007 site visit in areas immediately adjacent to Pilarcitos Quarry property (Figure 1).

On November 14, 2006, the Service and CDFG conducted a site visit within the Nuff Creek drainage to determine the presence of marbled murrelet habitat within the watershed. Potential habitat containing suitable forest structure and tree crown size was identified by agency staff on southern-facing slopes within the Nuff Creek headwaters (hereafter referred to as Habitat Area)(Figure 1). Agency staff also investigated habitat quality within quarry expansion Area 2. Due to the low availability of potential nesting platforms, low conifer canopy and lack of foliar cover surrounding the larger Douglas fir (*Pseudotsuga menziesii*) limbs, the Service and CDFG determined that suitable habitat for the marbled murrelet does not exist within Area 2.

The proposed quarry expansion Area 2 is located approximately 0.6 mile south of the Habitat Area. Extreme sound levels (101-110 decibels) may be produced during quarry expansion activities from

the use of pneumatic tools and explosives, and by rock blasting. However, based on guidelines issued by the Service, the distance between the proposed quarry expansion area and the Habitat Area exceeds the harassment distances required for Extreme sounds. Therefore, it was determined by the Service and CDFG that no harassment buffer is necessary for proposed work within quarry expansion Area 2.

Information provided to the Service and CDFG states that work in proposed quarry expansion Area 2 is scheduled to begin in spring, 2007 and will continue during daylight hours throughout the marbled murrelet breeding season (March 24 September 15). Although it was determined that marbled murrelet habitat does not exist within Area 2, the site is immediately adjacent to Nuff Creek. The Service and CDFG have reason to believe that this riparian corridor may serve as a flyway for marbled murrelets during daily migrations between the Pacific Ocean and the Habitat Area and/or Pilarcitos Creek. Although, marbled murrelets are most active during dawn and dusk hours while exchanging parental care duties, mid-day feeding of chicks has been documented. Quarry expansion and work activities at Area 2 may preclude these activities and adversely affect the species.

To determine the effects of the proposed expansion project, the Service and CDFG recommend that the applicant complete, at minimum, Service protocol-level surveys for marbled murrelets along the Nuff Creek drainage prior to the implementation of any expansion or construction activities beyond the current quarry location. Construction activities include, but are not limited to, road grading, watercourse construction, heavy equipment use and other similar practices. Additionally, the Service and CDFG recommend that initial scoping for marbled murrelet habitat be performed in areas on or adjacent to proposed expansion areas east, west or south of current quarry operations. Scoping should include field work to more precisely delineate suitable habitat and other possible areas of potential murrelet habitat, as well as the preliminary selection of future protocol survey stations. Prior to the onset of marbled murrelet surveys, the project proponent should consult with the Service and CDFG to review, in the field, the proposed marbled murrelet survey design. All surveys must be performed by Service- and CDFG- approved biologists. Reports from both scoping and marbled murrelet surveys, which should include copies of the murrelet survey forms, should be submitted to the Service and CDFG for review.

In conclusion, we recommend the applicant obtain authorization for the incidental take of the California red-legged frog and San Francisco garter snake through sections 7 or 10(a) of the Act, and comply with Section 5050 of the Fish and Game Code for the San Francisco garter snake by designing the project to fully avoid take. Federal and State authorization should also be considered for incidental take for the marbled murrelet (Fish and Game Code Section 2081 or 2080.1). All authorizations should be obtained prior to certification of the CEQA document on the Pilarcitos Quarry project.

The Service and the CDFG are interested in contining to provide technical assistance to the Pilarcitos Quarry to resolve issues pertaining to federally and State listed species. Please contact Lucy Triffleman, Fish and Wildlife Biologist, or Chris Nagano, Deputy Assistant Field Supervisor for Endangered Species, of the Service at (916) 414-6600, or Serge Glushkoff, Environmental Scientist, of the California Department of Fish and Game, at (707) 944-5597 or sglushkoff@dfg.ca.gov, if you have any questions regarding these comments on the Pilarcitos Quarry Expansion Project.

Sincerely,

Cay C. Goude
Assistant Field Supervisor
Endangered Species Program
U.S. Fish and Wildlife Service

Charles Armor
Acting Regional Manager
Bay-Delta Region
CA Department of Fish and Game

cc:
Malcolm C. Carpenter, LSA, Colma, California
Holly Costa, U.S. Army Corps of Engineers, San Francisco, California
Richard O. DeAtley Tracy, California
Serge Glushkoff, California Department of Fish and Game, Yountville, California
Eric Lichtwardt, LSA Associates, Point Richmond, California
Stacy Martinelli, California Department of Fish and Game, Yountville, California
Ruby Pap, California Coastal Commission, San Francisco, California
Brendan Thompson, California Water Regional Control Board, Oakland, California
Joe Naras and Jennifer Stolz, San Francisco Public Utilities Commission, Bulingame, California

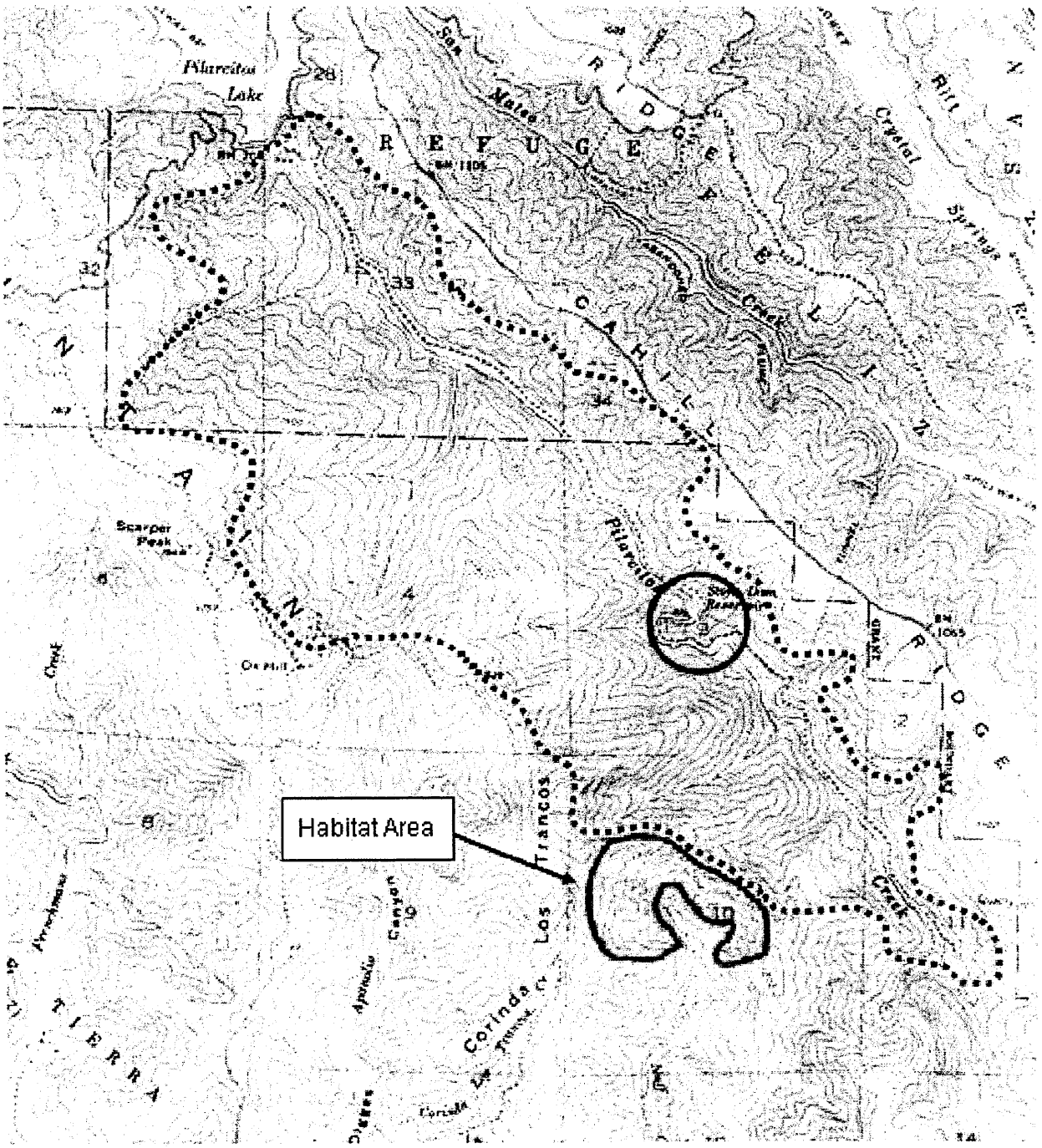

Figure 1. Map showing the approximate location of the potential marbled murrelet habitat (i.e. Habitat Area) located in the headwaters of Nuff Creek (solid pink polygon) (T5S, R5W, Section 10, MDB&M, Montara Mountain 7.5 minute USGS quad map) The solid red circle around the Stone Dam Reservoir in Pilarcitos Creek shows the approximate location of where marbled murrelet breeding behavior was recorded during 2005-06 surveys. The dashed blue polygon shows the approximate delineation of suitable marbled murrelet habitat in Pilarcitos Creek.

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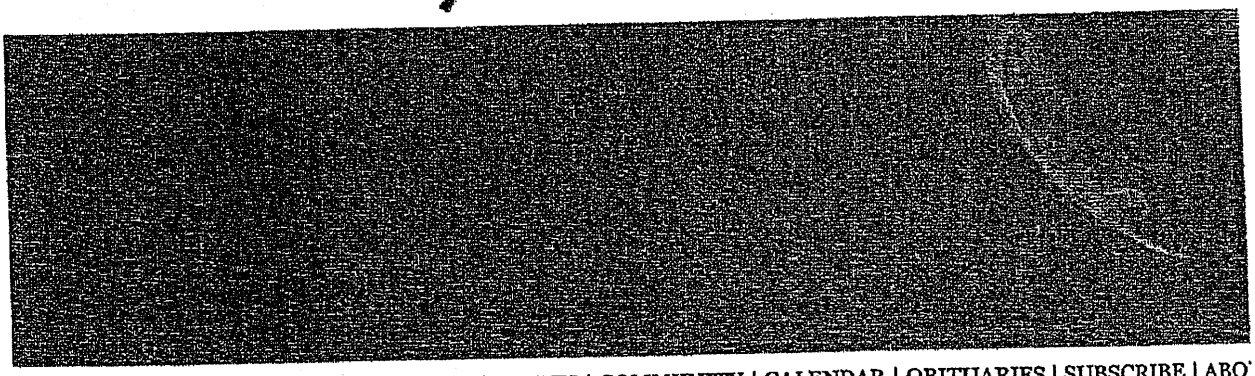
halfmoonbayreview.com Tuesday, September 25, 2007



Friday, May 18, 2007

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Quarry blamed for Pilarcitos discharge

By Nick Casey [nick@hmbreview.com]

A Coastside quarry was the source of the discharge that clouded Pilarcitos Creek for hours Thursday afternoon, officials said Friday.

Mike Berta, plant superintendent at Pilarcitos Quarry, said that an overflowing pipe released silt into the creek for about 30 minutes Thursday afternoon before the leak was contained. Though he did not offer any estimate of the discharge, he described it as a "small amount."

The quarry, located at 11700 San Mateo Road, is owned by West Coast Aggregates and processes granite under local permits, Berta said.

Habte Kifle, of the San Francisco Bay Regional Water Quality Board, said investigators were currently looking into the incident to determine if it was inadvertent. If deemed an accident, he said he did not foresee penalties for the leak.

"However, if this was intentional it is completely against the law," he said. "Dumping even one bucket of dirt into state waters is illegal."

The discharge caused a stir in Half Moon Bay Thursday. Pilarcitos Creek became a murky white color for many hours during the afternoon. Keith Mangold, of the Pilarcitos Creek Advisory Committee, said he received numerous calls asking for an explanation.

It remains unclear what damage the silting may have done to the creek. The creek is home to several rare species including federally threatened steelhead trout, the threatened California red-legged frog and the endangered San Francisco garter snake, according to the Committee for Green Foothills Web site.

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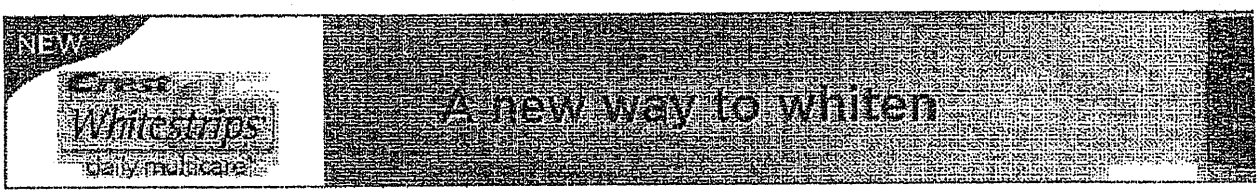
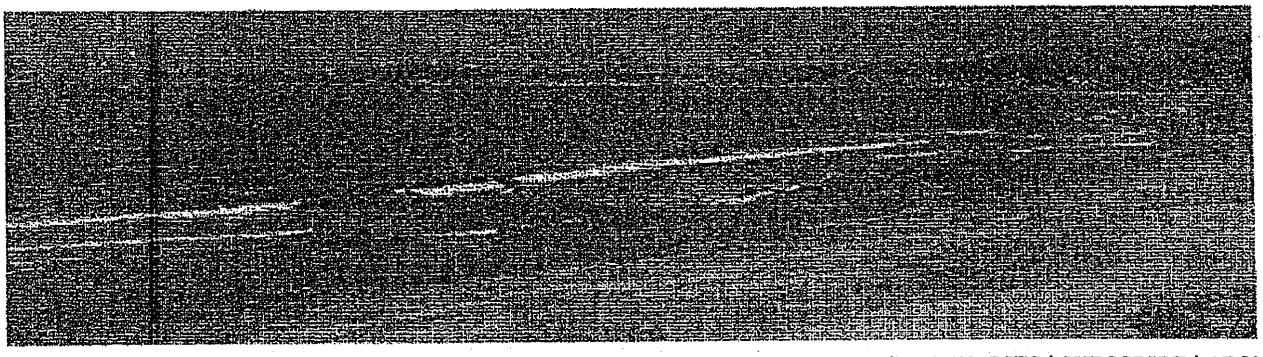
BREAKING NEWS

Quarry blamed for Pil discharge
Friday, May 18, 2007 1:22



halfmoonbayreview.com Tuesday, September 25, 2007



Thursday, May 24, 2007

Officials probe Pilarcitos discharge

By Nick Casey--[nick@hmbreview.com]

It remains unclear whether the Coastside quarry responsible for the discharge that clouded Pilarcitos Creek on Thursday will face penalties for the mishap, officials said this week.

Habte Kifle of the San Francisco Bay Regional Water Quality Board said that investigators were still determining if the incident that occurred at Pilarcitos Quarry was inadvertent. If deemed an accident, he said he did not foresee penalties for the leak.

"However, if this was intentional it is completely against the law," he said. "Dumping even one bucket of dirt into state waters is illegal."

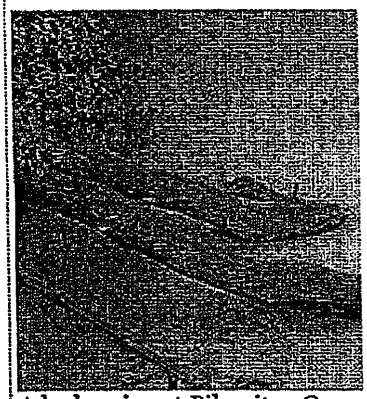
California law prohibits landowners or corporations from discharging waste into public water systems. Fines range up to $25,000 for serious offenses.

Pilarcitos Quarry maintains that the incident was unintentional. Mike Berta, a plant superintendent at the quarry, said workers noticed that a water pipe containing silt and sand was overflowing on Thursday afternoon. The leaks lasted approximately 30 minutes and only released a "small amount" of discharge, he said.

"We caught it and shut it down right away," he said. "We didn't run it afterward."

The quarry, located at 11700 San Mateo Road, is owned by Tracy-based West Coast Aggregates and processes granite.

Harvesting granite requires the rock first be quarried, then rinsed with water to remove excess material. It was this rinse water that flowed into the creek.



A leaky pipe at Pilarcitos Quar
Pilarcitos Creek to run cloudy f
day on Thursday.

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051

STATE OF CALIFORNIA—THE RESOURCES AGENCY ARNOLD SCHWARZENNEGER, GOVERNOR

CALIFORNIA COASTAL COMMISSION
NORTH CENTRAL COAST DISTRICT
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FAX (415) 904-5400

May 5, 2006

Michael J. Schaller
San Mateo County Planning and Building
455 County Center, 2nd Floor
Redwood City, CA 94063

RE: **NOI to Adopt Negative Declaration: Pilarcitos Quarry Expansion PLN 2000-00456**

Dear Mr. Schaller:

I am writing to provide comments on the Pilarcitos Quarry Expansion CDP application, and the County's NOI to adopt a negative declaration for the project. This project involves the expansion of quarry operations, including the surface mining of weathered, fractured granite and the production of gravel and sand, into a 7-acre area adjacent to existing operations. The proposed coastal development permit is appealable to the Coastal Commission.

Based on our review of the biological resources report conducted by LSA Associates, the proposed expansion area (no. 2) contains several LCP defined "sensitive habitats." The entire site appears to be habitat for the California red-legged frog, a federally listed Threatened species and California Species of Special Concern, there are several other special status plant and animal species that were either observed on the site or have high potential to occur on the site, and the site contains wetlands, ponds, creeks, and other riparian areas.

California Red-Legged Frog (*Rana aurora dratonii*)

The biological resources report confirmed the presence of two individual California red-legged frogs in a small pond within the proposed expansion area. Additionally, according to the report, the entire site meets the definition of critical habitat under the federal Endangered Species Act for the frog. Page 30 of the report states:

> *"...Within any given critical habitat unit a site must support three habitat features, termed the primary constituent elements, to be considered critical habitat for the California red-legged frog (USFWS 2004). These primary constituent elements are defined below.*
>
> *1) Aquatic habitat with a permanent water source with pools having a minimum depth of 20 inches for breeding and which can maintain water during the entire tadpole season;*

> *2) Upland areas up to 300 feet from the water's edge associated with the above aquatic habitat that will provide for shelter, forage, maintenance of water quality of the aquatic habitat, and dispersal; and*
>
> *3) Upland barrier-free dispersal habitat that is at least 300 feet in width that connect at least two (or more) suitable breeding locations defined by the aquatic habitat above, all within 1.24 miles of one another.*
>
> *These three primary constituent elements are present within the expansion area and therefore the entire expansion area is considered proposed critical habitat for the California red-legged frog. In addition, the entire Pilarcitos Quarry study area is within proposed critical habitat for the frog."*

The report goes on to state on page 49 that:

> *"The presence of aquatic habitat, upland habitat, and barrier-free dispersal habitat for the California red-legged frog over most of the Pilarcitos Quarry study area and in the surrounding landscape is extensive."*

As such, it appears that the entire proposed project site is "sensitive habitat" and subject to the sensitive habitat policies of the LCP. According to LCP Policy 7.4, only "resource dependent" uses are permitted in sensitive habitats, and quarry mining operations are not defined as resource dependent uses in any sensitive habitat area.

Other Special Status Species

According to the general biological assessment conducted by LSA, several other special status plant and animal species were either observed in the expansion area or have potential to occur on the site. Three special status land bird species were observed on the site and expected to nest: Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttallii*), Olive-sided flycatcher (*Contopus cooperi*), all on the Audubon and USBC "watch lists" (nesting); also, the Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), a California Species of Concern and Fish and Wildlife Service Bird of Conservation Concern has high potential to occur on the site. The report recommended conducting a follow-up nesting bird survey during the nesting season prior to construction.

The report also discusses special status raptor species with high potential to occur on the site including: Cooper's hawk (*Accipiter cooperi*), and Sharp-shinned hawk (*Accipiter striatus*), both California Species of Concern, and recommended a nesting raptor study to be conducted prior to construction. In addition, the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California Species of Concern has a high potential to occur on the site.

Two special status plant species had "moderate-high" potential to occur on the site, and follow-up surveys are recommended in the biological resources report: Santa Cruz manzanita

(*Arctostaphylos andersonii*) and Montara manzanita (*Arctostaphylos montaraensis*), both Federal Species of Concern and on the California Native Plant Society's (CNPS) List 1B.

Given the fact that additional surveys are recommended for many of the above species, some were observed on the site, and still others were "presumed to occur" (e.g. Dusky footed woodrat), in the absence of focused surveys the presence of these species and their "sensitive habitats" should be presumed on the site and should be subject to the LCP sensitive habitat policies.

Further, we note that while the biological resources report states that the Marbled murrelet (*Brachyramphus marmoratus*), a federal Threatened and state Endangered species, has a low potential to occur on the site, it also states that the species is known to occur within the watershed and its conclusions are not definitive that the habitat does not exist on the site. The only way to determine this is through a focused survey conducted by a murrelet expert.

Wetlands and Riparian Areas

The project description of the NOI states that expansion area encompasses seven acres. According to the biological resources report, the expansion area contains approximately six acres of riparian habitat. If this is indeed the case, we have additional concerns as to whether the applicant is proposing development in known riparian habitat or whether they would only develop the remaining one acre of non-riparian habitat. Riparian corridors and other sensitive riparian habitat areas are considered "sensitive habitat" in the LCP, and therefore subject to the "sensitive habitat" LCP policies, including LCP policies 7.7 – 7.13. If the majority of the expansion area is indeed "riparian corridor," the proposed quarry use is not an LCP permissible use.

In addition, there is a 0.42-acre area of potential wetland habitat containing arroyo willow in an area where wetland hydrology could not be determined due to the inaccessibility of the area. In the absence of a definitive conclusion, we assume that this area is wetland, and subject to the LCP wetland and sensitive habitat policies. It is unclear from the NOI whether this area would be protected from the proposed development, consistent with the LCP.

Mitigation Measures

The negative declaration includes proposed mitigation measures for erosion control, tree planting, and the protection of and the mitigation of impacts to California red-legged frog. In some cases, these measures appear to defer the conclusive determination as to the existence and location of actual sensitive habitats until after the development has been approved (e.g. Mitigation Measures 4 and 5: red-legged frog surveys). In other cases, the determination of appropriate mitigation measures are deferred until after the approval phase, including red-legged frog Mitigation Measures 4 and 5, and the erosion control plan in Mitigation No. 1, which requires an erosion plan be submitted, but provides no parameters as to what should be provided in the plan to adequately protect sensitive habitats. It is very important that the determination of project impacts be made and appropriate measures be determined prior to action on the CDP, otherwise it is impossible to make findings as to

whether the project is consistent with the LCP. Further, in a 1988 court decision, the California Court of Appeal held that CEQA requires mitigation measures to be identified before a project is approved and that the available evidence must demonstrate that the identified mitigation measures will in fact adequately address the project impacts (*Sundstrom v. County of Mendocino* (1988) 202 Cal. App. 3d 296, 248 Cal. Rptr. 352.). As such, the mitigation measures proposed for erosion control and mitigation of impacts to California red-legged frog do not satisfy the requirements of CEQA or the Coastal Act. Further, Mitigation Measure No. 2, which requires a tree "planting plan" is problematic, because as discussed above some or all of the trees to be removed may be sensitive habitat and therefore can not be removed consistent with LCP sensitive habitat policies. *Bolsa Chica Land Trust v. Superior Court* (1999) 83 Cal.Rptr. 85 affirmed that the relocation of sensitive habitat areas is prohibited under the California Coastal Act.

Conclusion and Recommendation

The San Mateo County LCP defines "sensitive habitats" as any area in which plant or animal life or their habitats are either rare or especially valuable, including but not limited to riparian corridors, wetlands, and habitats supporting rare, endangered, and unique species. LCP Policy 7.3 prohibits any land use or development which would have significant impact on sensitive habitat areas and Policy 7.4 permits only "resource dependent" uses in sensitive habitats. As defined in the LCP, quarry mining activities is not considered a "resource dependent use." As such, we recommend that the County consider whether the entire proposed expansion area is Sensitive Habitat for California red-legged frog.

Additionally, in the absence of definitive conclusions and detailed surveys on the presence or absence of the other species and habitats described above, the County should also evaluate whether areas where other sensitive plant and animal species were observed or have potential to exist on the site (as described in the biological resources report) are sensitive habitats, and as such, are required to be protected consistent with the LCP sensitive habitat policies.

If you would like to discuss this with me further, please call me at 415-904-5260. I appreciate the opportunity to comment, and your addressing our concerns.

Sincerely,

Ruby Pap
Coastal Planner
North Central District

Cc: Gloria Babuin and Laura Devincenzi/West Coast Aggregates
Dave Johnston, CA Dept. of Fish and Game
Ryan Olah, U.S. Fish and Wildlife Service

STATE OF CALIFORNIA—THE RESOURCES AGENCY ARNOLD SCHWARZENNEGER, *GOVERNOR*

CALIFORNIA COASTAL COMMISSION

NORTH CENTRAL COAST DISTRICT
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5260
FAX (415) 904-5400

September 25, 2007

Michael J. Schaller
San Mateo County Planning and Building
455 County Center, 2nd Floor
Redwood City, CA 94063

RE: NOI to Adopt Negative Declaration: Pilarcitos Quarry Expansion PLN 2000-00456

Dear Mr. Schaller:

I am writing to provide comments on the Pilarcitos Quarry Expansion (Area 2) CDP application, and the County's revised NOI to adopt a negative declaration for the project. I would appreciate it if you would include these comments in the record at tomorrow's (9/25/07) Planning Commission hearing. The project involves the expansion of quarry operations, including the surface mining of weathered, fractured granite and the production of gravel and sand, into a 7-acre area adjacent to existing operations. The proposed development is appealable to the Coastal Commission. This letter supplements our two previous letters, dated May 5, 2006 and August 24, 2006.

Based on our review of the biological resources report conducted by LSA Associates dated June 21, 2007 and comments from the CA Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service (FWS), it appears that the proposed quarry expansion area contains LCP defined sensitive habitat for the federally threatened California red-legged frog (CRLF), the federal and state endangered San Francisco Garter Snake (SFGS), San Francisco Dusky-Footed Woodrat, a California species of special concern, and Western Leatherwood, a California Native Plant Society (CNPS) List 1B species. In addition, the proposed project appears to be located adjacent to sensitive habitat for the federally threatened and state endangered Marbled Murrelet.

California Red-Legged Frog (*Rana aurora dratonii*)

California Red-Legged Frogs have been found at two ponds within the proposed quarry expansion area, with one of these ponds, the "sediment pond" located in the subject 7-acre "area 2" site. It is likely that these species move between the two ponds and the neighboring SFPUC property, and FWS and DFG biologists believe the frog to be present within the expansion area and the project will likely adversely affect this species. The Area 2 expansion would be within 300 feet of documented CRLF habitat (sediment pond).

Therefore, it appears the proposed Area 2 contains sensitive habitat for CRLF and is subject to the sensitive habitat policies of the certified LCP. LCP Policy 7.4 states that only "resource dependent" uses are permitted in sensitive habitats, and quarry mining operations are not defined as resource dependent uses in any sensitive habitat area. In addition, LCP Policy 7.3

prohibits any development or land use which would have a significant adverse impact on sensitive habitat areas.

We note that various mitigation measures for the proposed expansion outlined in the Negative Declaration involve the potential relocation of frogs, tadpoles, or eggs. *Bolsa Chica Land Trust v.Superior Court* (1999) 83 Cal.Rptr. 85 affirmed that the relocation of sensitive habitat areas is prohibited under the California Coastal Act. If the proposed Area 2 expansion area is sensitive habitat for the CRLF, the proposed development/mining activities appearS to be inconsistent with the LCP.

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

San Francisco Garter snakes (SFGS) have been identified at numerous locations throughout the neighboring San Francisco Public Utilities Commission (SFPUC) property and the adjacent Pilarcitos Creek watershed, and additional occupied habitat may exist in proximity to the expansion area. Mature SFGS are known to have a diet consisting largely of CRLF which have been observed on the Pilarcitos Quarry property. According to FWS and CDFG biologists, the proposed expansion project is likely to affect SFGS.

Therefore, as described above for CRLF, it appears the proposed Area 2 contains sensitive habitat for SFGS and is subject to the same sensitive habitat policies of the certified LCP. In addition, LCP Policy 7.36(b) requires developers to identify potential or existing migration routes, and to determine mitigation measures designed to provide for appropriate migration corridors.

Marbled Murrelet (*Brachyramphus marmoratus*)

According to FWS and CDFG, marbled murrelets are likely nesting in the vicinity of Stone Dam Reservoir, approximately 0.5-mile from the quarry property boundary and suitable nesting habitat for the species was observed on the adjacent SFPUC property. Although suitable habitat for marbled murrelet does not exist directly within Area 2, Area 2 is located adjacent to murrelet habitat and near Nuff Creek, which could serve as a flyway for murrelets during daily migrations between the Pacific Ocean and the Habitat Area. Although marbled murrelets are most active during dawn and dusk hours while exchanging parental care duties, midday feeding of chicks has been documented. According to FWS and DFG proposed mining activities at Area 2 could preclude these activities and adversely affect the species.

LCP Policy 7.3 prohibits any development or land use which would have a significant adverse impact on sensitive habitat areas. To determine the effect of the proposed expansion on marbled murrelets, FWS and DFG have recommended that protocol-level surveys be completed along the Nuff Creek drainage, as well as initial scoping for marbled murrelet habitat in areas east, west, and south of current quarry operations. In order to evaluate with sufficient evidence the current proposal for consistency with LCP Policy 7.3, we recommend that these surveys be conducted prior to final County action on the CDP and the results of the surveys be outlined in findings for consistency with sensitive habitat policies.

Western Leatherwood (*Dirca occidentalis*)

Certain areas of dense vegetation on the steep north facing slopes of the expansion area were not surveyed, and could contain sensitive habitat for western leatherwood plants, a California Native Plant Society (CNPS) List 1B species. Mitigation measure number 2 includes biological monitoring during quarry activities and transplantation of the plants if they cannot be avoided. LCP Policy 7.33 allows only a limited amount of non-impactive uses (e.g. education and research) in sensitive habitats of rare species such as the western leatherwood. LCP Policy 7.3 prohibits any land use or development which would have significant adverse impacts on sensitive habitat areas. As described above, *Bolsa Chica Land Trust v. Superior Court* (1999) 83 Cal.Rptr. 85 affirmed that the relocation of sensitive habitat areas (i.e. the transplanting of western leatherwood) is prohibited under the California Coastal Act. Therefore, we recommend that this mitigation be revised to require full avoidance of the plant and protection the plant and its habitat in place.

Dusky-Footed Woodrat *(Neotoma fuscipes)*

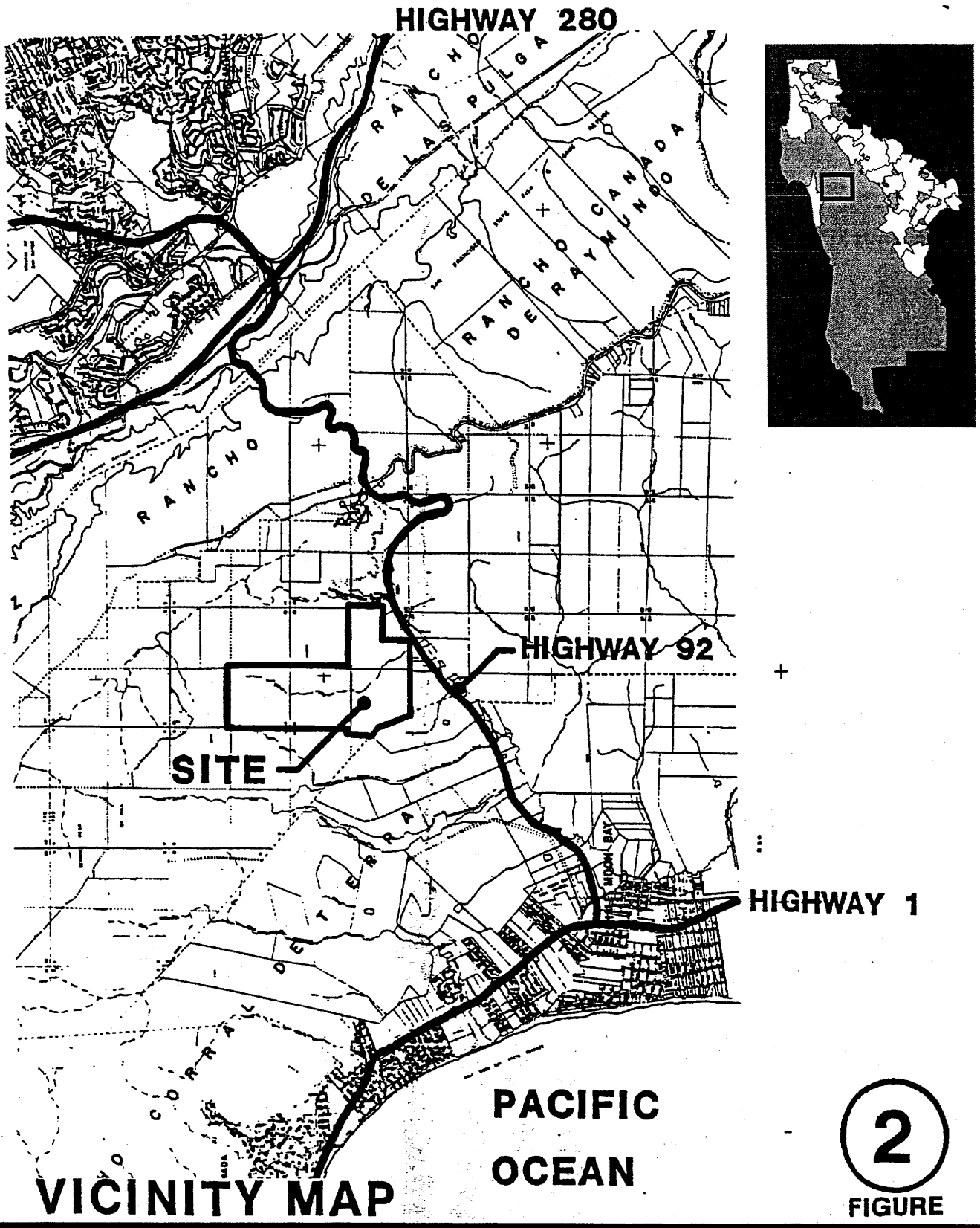
San Francisco Dusky Footed Woodrat is listed by the DFG as a California Species of Special Concern. According to the June 2007 Biological Resources Report, several dusky-footed woodrat nests were observed in the expansion area and, according to DFG, the site provides ideal habitat and the project would likely impacts to these species. The favored habitat of the woodrat is dense chaparral, coastal scrub, and riparian and oak woodland, and the woodrats build large conspicuous nests made of sticks that are used and occupied by successive generations. Based on the above, it appears Area 2 contains several areas of sensitive habitat for the Dusky-footed woodrat, as defined by LCP Policy 7.1, and is subject to all applicable LCP sensitive habitat policies. Policy 7.3 prohibits any land use or development that would have significant adverse impacts to sensitive habitats areas and development shall be sited and design to prevent impacts. As proposed, it does not appear that the proposed project is consistent with these policies because it would involve removal of San Francisco Dusky Footed Woodrat habitat. Further Mitigation measure #28 (temporary shelter for woodrats) and #29 (trapping) also appears to be inconsistent with the LCP sensitive habitat policies, which do not allow for relocation of sensitive habitats. As noted above, *Bolsa Chica Land Trust v. Superior Court* (1999) 83 Cal.Rptr. 85 affirmed that the relocation of sensitive habitat areas is prohibited under the California Coastal Act. To avoid the sensitive habitat, we recommend that 100-foot buffer areas be required between woodrat habitat and the proposed mining activities.

If you would like to discuss this with me further, please call me at 415-904-5260. I appreciate the opportunity to comment, and your addressing our concerns.

Sincerely,

Ruby Pap
Coastal Program Analyst II
North Central District

cc: Lucy Triffleman, U.S. Fish and Wildlife Service
Cay C. Goude, U.S. Fish and Wildlife Service
Charles Armor, California Department of Fish and Game, Bay Delta Region
Serge Glushkoff, California Department of Fish and Game
Stacy Martinelli, California Department of Fish and Game
Malcolm C. Carpenter, LSA
Steve Foreman, LSA
John Dixon, California Coastal Commission



VICINITY MAP

FIGURE 2

San Mateo County Board of Supervisors' Meeting

Owner/Applicant: **Richard Deatley**

File Numbers: **PLN2000-00456**

ATTACHMENT C

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CDR8\plan00-456 1-29-03 rp

ATTACHMENT D

COUNTY OF SAN MATEO, PLANNING AND BUILDING DEPARTMENT

NOTICE OF INTENT TO ADOPT
NEGATIVE DECLARATION

A notice, pursuant to the California Environmental Quality Act of 1970, as amended (Public Resources Code 21,000, et seq.), that the following project: *Pilarcitos Quarry Minor Expansion*, when adopted and implemented, will not have a significant impact on the environment.

FILE NO.: PLN 2000-00456

OWNER/APPLICANT: Gloria Babuin and Laura Devincenzi/West Coast Aggregates

ASSESSOR'S PARCEL NOs.: 048-350-030, -070 and 048-380-030

PROJECT LOCATION: 11700 San Mateo Road, Half Moon Bay

PROJECT'S CEQA HISTORY

An Environmental Impact Report (EIR), covering the entire 593-acre quarry property, was certified by San Mateo County in 1973. A detailed plan for mining in the current center of operations was included in the 1973 EIR but only conceptual level information was provided regarding future mining. A Supplemental EIR, addressing the addition of recycle operations, was certified in 1994. The 1973 EIR contemplated mining operations extending north from the current area of operations along both sides of Nuff Canyon over a 50 to 75 year period. The approved 1992 and 1997 reclamation plans for the Quarry reflect this anticipated phasing of mining operations within the Canyon.

This proposed Plan amendment provides additional detail regarding final grading plans for the area known as Phase 2 in the 1997 reclamation plan. This is information that was not previously considered under earlier environmental reviews. Additionally, a new biological reconnaissance of the Phase 2 area was submitted by the applicant (June 21, 2007). Because the potential impacts of mining within the Phase 2 area were not analyzed in detail in previous environmental documents, the County is undertaking this task per the provisions of Section 15152(d) of the CEQA Guidelines (Tiering). Pursuant to that provision, the County incorporates by reference the analysis and findings in the 1973 EIR and the 1994 Supplemental EIR. A copy of those documents are available at the Offices of Planning and Building Division, 455 County Center, Redwood City, California 94063

In addition to the Phase 2 expansion examined in this document, the applicant has recently submitted detailed grading plans for the remainder of the quarry site. Staff has informed the applicant that the review of these detailed grading plans for the remainder of the quarry site will require the preparation of an EIR, a process that the County has initiated. The County is anticipating that this EIR will be available for public comment by the end of 2007. The Phase 2 expansion discussed in this document is a separate, discreet project, independent of any future mining activities within the Canyon.

PROJECT DESCRIPTION: The applicant is proposing to modify their existing permits to mine the area known as the Pilarcitos Quarry. The modification will allow expansion of mining operations onto a 9.2-acre area adjacent and north of the existing mining operations. Current quarry operations involve surface mining of weathered, fractured granite and the production of gravel and sand. No expansion of the processing area or additional equipment is proposed. The applicant is not requesting an increase in the number of truck trips currently allowed for under the existing permits. The applicant is proposing this expansion because the usable material within the existing area of operations is reaching the point of depletion.

No new processing equipment will be added under this permit amendment. Mining in the area currently being worked is in the process of being wrapped up. This area will be restored as required under the existing reclamation plan. Moving the existing quarry operations into the new 9.2-acre area is a discreet function and will not cause or lead to the expansion of operations into additional areas at the quarry. Any expansion of additional areas will be subject to its own environmental review. For these reasons, in assessing whether there is a new significant cumulative effect, the County has concluded that the incremental effects of the project are not considerable when viewed in the context of past, present, and probable future projects, including operations under the existing use permits and the pending application for approval of a grading plan for the remainder of the quarry.

Pilarcitos Quarry is an ongoing sidehill mining operation producing fill material, asphaltic concrete aggregate, landscape materials, and various grades of sand, drain rock and road base from an extensive granite deposit. The operation also includes the recycling of broken concrete, broken asphalt and stone. The process for mining the native rock will involve several steps: (1) a GPS system will be used to accurately mark the boundaries of the extraction site and to locate the top edge of the excavation at a minimum distance of 50 feet from the property line; (2) a bulldozer road will then be constructed from the existing access road on the quarry floor to the top of the planned excavation; (3) a field fence with silt fence mounted on the inside face will then be installed along the boundary between the extraction area and all adjoining environmentally sensitive habitat areas (ESHAs); (4) a bulldozer will then remove surface vegetation from the extraction area; (5) topsoil from the area will then removed and pushed to the side of the excavation area for temporary stockpiling. It will be used for future resoiling of the benches or taken to the process area for stockpiling. Finally, a heavy-duty bulldozer fitted with a long shank and/or a large excavator will create the cut slope extending downward from the initial point of entry. Where the subsurface material cannot be easily ripped it will be fractured using a sequential blasting system. Blasting in the current operation is done twice monthly.

The raw material excavated from the upper three fourths of the expansion area will be pushed down a side chute to the south. A hopper will be installed at the bottom of the chute and the excavated material will be transported directly to the processing plant by conveyor belt. Material from the lower one fourth of the expansion area will be loaded into large capacity off-road haul trucks for transport to the process plant.

The mining cut will begin a minimum of 50 feet from the property line and will result in the creation of a working terrace that is continuously lowered as mining progresses down slope. A temporary low earth berm will be maintained at the outer edge of the extraction area to prevent rock from rolling away from the work area. The mined slope will be constructed with a vertical

rise of 1-foot for each 1.25 feet of horizontal distance. Thirty-foot-wide benches will be constructed at 100-foot intervals to catch loose material if any should fall and to convey drainage laterally to a small sediment trap constructed at the end of each bench. Benches will be sloped from front to back at a two percent gradient and laterally at a two to five percent gradient.

As mining is completed in the expansion area, reclamation activities will be initiated according to the proposed Reclamation Plan amendment. An additional aspect of the proposed project involves improvements and repairs to the existing road running up Nuff Creek Canyon. Two culverts, one on the mainstem of Nuff Creek and the other on a small perennial tributary have been washed out or clogged with sediment. The culverts on the mainstem and tributary will be replaced with three 36-inch diameter and two 24-inch diameter culverts, respectively. The roadbed will be re-graded and stabilized. These road improvements will reduce downstream sedimentation and improve stream flow; and will also allow equipment, required for mitigation pond construction, to access the proposed mitigation areas in the upper watershed.

SITE DESCRIPTION: Pilarcitos Quarry is located within the drainage of Nuff Creek, San Mateo County. Nuff Creek is a north-trending tributary of Pilarcitos Creek, which empties into the Pacific Ocean approximately 3.25 miles west of the project site, just north of the City of Half Moon Bay. The project site is situated within Section 15, township 5 south, range 5 west, of the Mount Diablo Base and Meridian on the 7.5' USGS Montara Mountain and Half Moon Bay Quads. Access to the Pilarcitos Quarry is via a private road off of San Mateo Road.

The expansion area is located on the steep eastern slopes of the Nuff Creek drainage. The expansion area occupies a slope above the creek. Nuff Creek traverses the western edge of the expansion area and the existing quarry is to the south. The eastern edge of the expansion area occupies the steep upper slopes of the eastern ridge line of the Nuff Creek watershed. The western edge of the expansion area is flanked by a dirt road running along the canyon floor just east of the creek itself.

Within the expansion area Nuff Creek is contained in a steep-sided channel (10-15 feet deep) in the alluvium of the canyon floor. During the survey period the creek exhibited a steady flow of clear water (2-3 inches in depth) over an unconsolidated sandy bed. Much of the creek bed was inaccessible due to the steep stream banks and dense riparian vegetation.

A graded road on the lower slopes of the expansion area provides access to an equipment storage area located in a drainage on the northern edge of the expansion area. A small constructed sediment pond (approximately 30 by 10 feet) is present behind a gravel berm adjacent to and east of the graded road.

The surficial geology in the project area consists of deeply weathered Cretaceous granitic rocks. This rock is exposed along a steep south-facing cliff face that has been cut above the graded road. Elevations range from approximately 380 feet in the creek bed to approximately 1,000 feet on the upper ridgeline.

The soils in the project area are mapped as four types on the San Mateo Area 1961 Soil Conservation Service maps (USDA 1961). The ridgetops, which lie mostly outside the project area, are mapped as Miramar coarse sandy loam, moderately steep, eroded. The majority of slopes in the expansion area are 41 percent or steeper and are mapped as Miramar coarse sandy

loam, very steep, eroded. This soil series is moderately deep over bedrock, with rapid permeability and low water holding capacity. Soils are mapped as Farallone coarse sandy loam, moderately steep, eroded, in small drainages or intermittent streams that feed into the mainstem of Nuff Creek below. Here runoff is slow to medium, permeability is rapid, and the content of loam is influenced by wetness in depressions and drainages. Willows and other hydrophytic plants grow in depressions and drainages in this soil type. The southern slopes of the expansion area, adjacent to the existing quarry, are mapped as Rough Broken Land. This soil series consists of very steep rocky uplands with seldom more than 10 inches of soil material, primarily vegetated by shrubs and a few trees. Vegetation within the expansion area consists of the following categories:

Coastal Scrub Community. The coastal scrub community on the upper portions of slopes in the expansion area is dominated by coyote brush but also includes a large component of poison oak. On the drier west- and south-facing slopes, the scrub includes occasional stands of California sagebrush, California coffeeberry, blue-blossom, and bush monkey-flower. Vegetation on the lower slopes is a mosaic of open areas and plant communities dominated and/or co-dominated by coyote brush, arroyo willow, ceanothus, Douglas fir, and blue gum eucalyptus.

The south-facing slope, parts of which have been disturbed by the construction of roads for the ongoing mining of the existing quarry, supports species associated with drier conditions, including bush monkey-flower, deerweed, yellow bush lupine, paintbrush, fairwell-to-spring, and buckwheat. Patches of relatively bare ground or areas with a sparse cover of shrubs, grasses, and forbs are present on the south-facing slope near the existing quarry, as well as on the south-facing slope of the drainage in the northern portion of the expansion area. According to the biological report, the bare or grassy areas were inaccessible, but a native grass, most likely a needlegrass, and a non-native annual fescue were observed from the road. Weedy species growing along the roads included hare barley, ripgut-brome, yellow sweet-clover, and burclover.

The coyote brush scrub vegetation on the west-facing slope grades into a ceanothus-dominated scrub (blue-blossom and potentially deerbrush), then into a denser, moisture loving shrub and fern community near the base of the slope, adjacent to the riparian vegetation along Nuff Creek. California blackberry and thimbleberry are dominant shrub species that are interspersed with large stands of Chamisso's hedge-nettle, American stinging nettle, and swordfern.

The north-facing slope supports dense stands of Douglas fir that are, in certain locations, edged by arroyo willow and shade tolerant shrubs such as twinberry, western burning bush, and oceanspray.

Sparse Scrub/Non-Native Grassland. Patches of relatively bare ground or areas with a sparse cover of shrubs are present within the coastal scrub community on most of the south-facing slopes. Areas that are currently in the early phase of revegetation are also included here. Some of these bare or grassy areas on steep slopes supported native grasses such as needlegrass, and non-native annual fescue. Deerweed, yellow bush lupine, paintbrush, farewell-to-spring, and coast buckwheat are also present in some of the steep sparsely vegetated areas. Non-native, weedy species growing along the roads in the expansion area include hare barley, ripgut-brome, oxeye daisy, redstem filaree, Italian thistle, and poison hemlock.

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Riparian Forest Community. An approximately 150 foot-wide riparian forest community of predominantly red alder occurs along Nuff Creek at the base of the west-facing slope in the expansion area. Mature red alders with a nearly closed canopy reach 30 to 45 feet in height in this area. Where the canopy is almost closed, the understory is mostly composed of ferns such as swordfern, lady fern and five-finger fern; where sunlight penetrates to the forest floor, shrub species including red elderberry, California blackberry, and thimbleberry provide a dense cover mixed with Chamisso's hedge-nettle, meadow rue, and other herbaceous species. Alder saplings are abundant, indicting that the forest is regenerating. Portions of the forest along this reach of Nuff Creek have been invaded by blue gum eucalyptus, an invasive, non-native tree, that, in places, grows taller than the alders.

Central Coast Arroyo Willow Riparian. Arroyo willow thickets are present in various portions of the expansion area. Arroyo willow occurs relatively sparingly along Nuff Creek, but it is the dominant tree along the tributary flowing east to west along the north border of the expansion area, and it occurs with Douglas fir on the north-facing slope. Several large stands of willow are also present in disturbed areas near the roads on the south-facing slope. Some of the thickets are associated with hydrophytic plants such as Chamisso's hedge-nettle, however, other stands consist of plants associated with upland conditions, including bush monkey-flower and yerba buena. Arroyo willow is capable of sending deep roots into the substrate to reach ground water (phreatophytic).

Douglas Fir Stands. Stands of Douglas fir are present on the lower portion of the west-facing slope and from the mid - to upper portions of the north-facing slope. Such trees are commonly found in wetter and more shaded portions of coastal scrubs. A few individuals of evergreen broadleaved trees, madrone and California bay, grow intermixed with the Douglas firs in these stands. The understory is composed of species associated with the Red Alder Riparian Forest community, such as lady fern and swordfern, and/or with species common in the wetter Coastal Scrub community, including Chamisso's hedge-nettle, cow-parsnip, and American stinging nettle. A few individuals of plants associated with woodlands and forests such as false Solomon's seal and fairy bells are also present.

Sediment Trap. A man-made sediment trap (containing a pond) has been constructed between a cliff-face and a 4-foot high earthen berm along an access road to the top portion of the existing quarry. Its purpose is to receive runoff from the slopes above and to trap sediment. It also captures water that seeps out from the cliff face. The sediment trap is surrounded by woody riparian vegetation consisting of arroyo willow, red alder, and red elderberry and a few annuals including yellow cress. Broadleaved cattails covered approximately 20 percent of its surface in May 2004. An unidentified aquatic plant (not slender-leaved pondweed) covered approximately 10 percent of the bottom of the pond in the sediment trap. Though this plant was not identified it did not have the characteristics of slender-leaved pondweed, a special-status plant. The sediment trap is subject to routine maintenance (sediment removal) by the quarry operator.

FINDINGS AND BASIS FOR A NEGATIVE DECLARATION

The Current Planning Section has reviewed the initial study for the project and, based upon substantial evidence in the record, finds that:

1. The project will not adversely affect water or air quality or increase noise levels substantially.

2. The project will not have adverse impacts on the flora or fauna of the area.

3. The project will not degrade the aesthetic quality of the area.

4. The project will not have adverse impacts on traffic or land use.

5. In addition, the project will not:

   a. Create impacts which have the potential to degrade the quality of the environment.

   b. Create impacts which achieve short-term to the disadvantage of long-term environmental goals.

   c. Create impacts for a project which are individually limited, but cumulatively considerable.

   d. Create environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

The County of San Mateo has, therefore, determined that the environmental impact of the project is insignificant.

MITIGATION MEASURES included in the project to avoid potentially significant effects:

1. Prior to the beginning of mining operations within the proposed expansion area, the applicant shall submit, for review and approval by the County Planning Department, a site specific erosion control plan which prevents sediment from entering into the adjacent ESHA's. The approved erosion control plan shall be implemented prior to the beginning of mining operations and shall be maintained throughout the life of mining operations at this location.

2. During the clearing of vegetation from the expansion area, a biological monitor familiar with western leatherwood shall work with the vegetation clearing crew. Heavy equipment shall clear the vegetation from one or more transects to provide the monitor access. The biological monitor shall survey the vegetation along the transect edges for western leather-wood and if none are found will give authorization to continue vegetation clearing.

   If any western leatherwood plants are observed within the quarry expansion area during the vegetation clearing and the plant or plants cannot be avoided, the quarry shall transplant said plants to a previously quarried area, preferably on a north-or east-facing slope because these slopes are relatively cool and moist. Translocation will occur at the time when vegetation is cleared. Topsoil shall be added to the transplantation site at a depth of 3 feet. This transplantation site should be located on a bench of the quarry for ease of transplantation and maintenance.

066

Translocation of western leatherwood is an experimental endeavor and different techniques will be utilized in order to discover the best methodology for success at this site. The branches, and as an experiment the trunk(s) of some western leatherwood, should be pruned to reduce water stress. (Observations indicate that western leatherwood sprouts from trimmed and or mowed trunks.) The planting hole for the transplants should be 1.5 times the size of the rootball.

A front-end loader, back-hoe, Vermeer spade, or other type of suitable heavy equipment should be used to excavate the western leatherwood plant. As large an area as possible should be excavated around the rootball of the plant. Western leatherwood reproduces by underground rhizomes and any rhizomes observed in the excavated rootball should be cleanly severed to reduce the chance of infection.

If the western leatherwood plant cannot be planted immediately, it shall be covered with wet burlap or similar material to avoid desiccation and kept out of the sun as much as possible. Nevertheless, the leatherwood should be planted the same day as excavated. The rootball should be planted such that the crown is slightly above the level of the soil and soil should be firmly packed by hand around the rootball. A trough should be made at the edge of the planting hole to retain water during watering. After transplantation occurs, the plants should be watered-in. A temporary shade cloth structure should be constructed over the transplanted western leatherwood to avoid over exposure to the sun.

3. The applicant shall revise the proposed reclamation plan's revegetation plan to include seedlings of western leatherwood, which should be planted on the quarried slopes of the Pilarcitos Quarry. The seeds should be germinated in a growing facility and when approximately the size of 1-gallon containers, transplanted onto the quarry slopes. As with translocated plants, seedlings should be planted into 3 feet of topsoil that has been placed on a bench of a north- or east- facing slope. A shade structure should be installed over the seedlings. Experimentation will be required to determine the best method for seedling survival.

4. Prior to the beginning of mining operations within the expansion area, the applicant shall amend the proposed "planting plan" contained within the reclamation plan amendment to include the planting of Douglas fir trees upon the benches created by the quarry operation. Said plan shall include details as to the number, size and location of trees as well as planting and irrigation details.

5. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall implement the sediment pond enhancement plan, including the excavation of deep and shallow areas, the installation of a stand pipe, stabilization of the lower edge of the pond's berm, installation of a sediment trap upslope of the pond's current inlet. A fully detailed plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

6. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall construct habitat ponds in the upper portion of the Nuff Creek drainage as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). A fully detailed

grading plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

7. In order to assess the success of the pond restoration outlined above, a five-year monitoring plan shall be implemented. This plan shall include two surveys per year of each created or restored pond; one in late winter/early spring and another in late summer/early fall. The focus of the monitoring shall be to: (1) document colonization/use of the created and enhanced ponds by California red-legged frogs; (2) estimate numbers of adult frogs using the ponds; and (3) monitor breeding activity and success. In addition, the physical features of the ponds, changes in vegetation, and water level shall be assessed during the monitoring visits. A staff gauge shall be placed in the deepest portion of the ponds for water depth to be accurately recorded during monitoring visits. Photographs of the pond and adjacent area shall be taken during each monitoring visit to provide a record of changes in vegetation cover and water levels. The presence of other amphibians shall be noted during monitoring visits and shall include information on species, numbers of individuals or egg masses, and life cycle (i.e., eggs, larvae, metamorphs, and adults). Field observations shall be recorded on a data sheet and summarized in a short annual report. If necessary, the report shall provide recommendations on adaptive management practices to maintain the pond as suitable habitat for California red-legged frogs.

   Eggs, larvae, metamorphs, and/or adult Californian red-legged frogs discovered within the active quarry or expansion area shall be relocated to suitable habitat within a protected portion of the study area by USFWS-approved biologist. If quarry personnel discover a California red-legged frog (or any life cycle stage) within the active quarry or expansion area they shall stop work in the area of discovery and inform the quarry manager. The quarry manager shall contact LSA to determine if relocation is necessary. If relocation is deemed necessary, a USFWS-approved LSA biologist will come to the quarry and relocate the frog, tadpole, or egg mass to a designated mitigation pond or to a suitable upland protected area. An annual report will be completed each year to summarize monitoring activities and findings.

8. The applicant shall revise their proposed reclamation plan amendment to incorporate additional habitat ponds within Expansion Area Two as outlined in the revised Biological Resources Report (LSA Associates, June, 2007).

9. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall submit, for review and approval by the County and all responsible resource agencies, a plan to implement the water catchments strategy as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). Said plan shall indicate proposed locations of said catchments, methods of construction, and timetable for implementation.

10. At least 15 days prior to the onset of activities, the project proponent shall submit the name(s) and credentials of biologists who would conduct activities associated with California red-legged frog. No project activities shall begin until the project proponent has received written approval from the USFWS.

11. USFWS-approved biologists will conduct a survey for the California red-legged frog at the sediment trap pond and surrounding area two weeks before the onset of quarry operations and other construction in the expansion area, or restoration activities at the sediment pond. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life stages is appropriate. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

12. Before the onset of quarry operations, other construction activities within the expansion area, or restoration activities at the sediment pond the approved biologist(s) shall conduct a training session for all quarry personnel working within the expansion area. At a minimum, the training shall include: (a) a description of the California red-legged frog and the San Francisco gartersnake and their habitat requirements; (b) the general measures that are being implemented to conserve the red-legged frog and San Francisco gartersnakes as they relate to the quarry; and (c) the boundaries within which the quarry expansion may be accomplished.

13. A USFWS-approved biologist shall be present at the expansion area until such time as all removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. After that time, the quarry operator shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the U.S. Army Corps of Engineers (Corps) and/or USFWS.

14. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly.

15. All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from Nuff Creek, the pond, and associated tributaries. The applicant will also prepare a plan to allow a prompt and effective response to any accidental spills into the creek, pond, or other aquatic habitats. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

16. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to complete the quarry expansion. Routes and boundaries shall be clearly demarcated, and these areas shall be located outside ESHAs.

17. To control erosion during and after quarrying operations the project proponent shall implement best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan.

18. When a work site is to be temporarily de-watered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent red-legged frogs from entering the pump.

19. A USFWS-approved biologist shall permanently remove, from within the project site, any individuals of exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

20. Although frog movement to and from the restored pond is likely to occur primarily at night when the when the quarry will not be in operation, a gate will be placed across the road west of the pond at its junction with the main quarry access road. This will restrict traffic on the road adjacent to restored pond to the occasional vehicle trip for road maintenance.

21. A frog-proof barrier will be placed along both sides of the rock chute between the expansion area and the quarry processing area. This will keep dispersing frogs from traversing or sheltering in an area where they are in danger of being crushed by falling rock.

22. All new and existing onsite ponds will be regularly inspected during the breeding season and any adults, tadpoles, or egg masses observed will be captured/collected and relocated to suitable aquatic habitat outside of areas of activity (e.g., constructed/restored ponds).

23. To the maximum extent practicable given rainfall patterns and sediment/stormwater retention requirements, water levels in the ponds within the active quarry and processing areas should be kept dry, or ponding limited to a maximum of 24 hours during the frog breeding season. Ponds should also be regularly maintained to preclude the establishment of aquatic vegetation.

24. A snake-proof barrier (snake fence) shall be installed around the perimeter of the active rock excavation area and will have one-way funnel exit doors placed at various locations to allow snakes and other animals within the quarry area to escape. The active rock excavation area will vary as quarry operations progress and the snake fence shall be moved accordingly. The fence shall be built with silt-fencing and/or wooden boards and buried six inches deep in the substrate. The fence will exclude any potential dispersing snakes from the active quarry area and confine them to ESHAs as they move through the area. The quarry currently has as speed limit of 15 miles per hour for all vehicles within the active quarry. This speed limit combined with driver awareness (through training described under California red-legged frog, above) of the potential for snakes in the quarry will greatly reduce the likelihood of impacts to San Francisco garter snakes.

25. A visual search for gartersnakes will be conducted concurrently with the daytime California red-legged frog monitoring surveys. In addition, two to three cover-boards of half-inch plywood (2.5 x 3 feet) will be placed in permanent locations in open areas near the constructed ponds. Cover-boards are attractive to snakes and provide them with a concealed space to thermoregulate and hide from predators. The cover-boards will be numbered and their locations mapped with a GPS unit. The boards will be periodically checked for snakes. The results of the cover-board monitoring will be included in the red-legged frog annual report.

26. If feasible, the removal of vegetation and overburden within the expansion area shall be scheduled for the period between September 1 and November 30 so as to avoid disturbance to nesting birds. If this is not possible, a nesting raptor survey shall be conducted in the expansion area prior to vegetation removal. If an active raptor nest is found within the

expansion area, the nest site and a suitable buffer zone around the nest site shall be established, and no work shall occur within this buffer zone until the young had fledged.

27. If feasible, the removal of vegetation and overburden shall be scheduled for the period between September 1 and March 31 in order to avoid disturbance to nesting birds. If vegetation must be scheduled for removal in the period between April 1 and August 31, then a nesting bird survey shall be conducted in the expansion area. If nesting birds are discovered, the nest and a suitable buffer zone (50 to 100 feet) around the nest shall be established, and no work shall occur within this buffer zone until August 31 or until the young have fledged.

28. To provide temporary shelter for woodrats forced out of the expansion area by vegetation removal, artificial shelters constructed of old wine half-barrels shall be placed along the edge of the area to be cleared of vegetation. The wine barrels will be placed with the open end down and holes cut in the sides near ground level will allow woodrats to enter and exit. Wine barrels will be similarly placed within active reclamation areas within the existing quarry in order to provide cover for woodrats that may seek to establish territories in these areas.

29. The CDFG has expressed a primary interest in making an attempt to gather data on survivorship of displaced woodrats to gain a better understanding of impacts to these mammals from development. To this end, a woodrat trapping and marking program will be conducted. Prior to vegetation clearing in the expansion area, a live-trapping program will be conducted for woodrats using Sherman small mammal traps. All trap locations will be numbered and located on a map of the expansion area with the aid of a GPS unit. All woodrats captured will be sexed, measured, weighed, and marked with a numbered ear tag. This will allow for subsequent identification of individual woodrats if they are recaptured. Ear tagging is a humane standard method for marking small mammals (Wilson et al. 1996). Numbering and mapping trap locations will provide information on the movements of recaptured animals.

    Trapping will continue (in areas still supporting vegetation) during vegetation removal and grading until the entire work area has been cleared of vegetation. Concurrent with clearing and after the expansion area is cleared, peripheral areas (including reclaimed areas within the existing quarry that support woodrat habitat) will be sampled to determine if any of the displaced woodrats (i.e., ear-tagged individuals) are present and reestablishing territories. Trapping will be conducted for at least two periods in these peripheral areas for one year after vegetation clearing in the expansion area. The results of the trapping survey will be summarized in an annual report.

INITIAL STUDY

The San Mateo County Current Planning Section has reviewed the Environmental Evaluation of this project and has found that the probable environmental impacts are insignificant. A copy of the initial study is attached.

REVIEW PERIOD: July 19, 2007 to August 6, 2007.

071

All comments regarding the correctness, completeness, or adequacy of this Negative Declaration must be received by the County Planning and Building Department, 455 County Center, Second Floor, Redwood City, no later than **5:00 p.m., August 6, 2007.**

CONTACT PERSON

Michael J. Schaller
Project Planner, 650/363-1849

Michael J. Schaller

Michael J. Schaller, Project Planner

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County of San Mateo
Planning and Building Department

INITIAL STUDY
ENVIRONMENTAL EVALUATION CHECKLIST
(To Be Completed By Current Planning Section)

I. BACKGROUND

Project Title: Pilarcitos Quarry Minor Expansion

File No.: PLN 2000-00456

Project Location: 11700 San Mateo Road, Half Moon Bay

Assessor's Parcel Nos.: 048-350-030, -070 and 048-380-030

Applicant/Owner: West Coast Aggregate/Gloria Babuin and Laura Devincenzi

Date Environmental Information Form Submitted: March 20, 2005

PROJECT DESCRIPTION

The applicant is proposing to modify their existing permits to mine the area known as the Pilarcitos Quarry. The modification will allow expansion of mining operations onto a 9.2-acre area adjacent and north of the existing mining operations. Current quarry operations involve surface mining of weathered, fractured granite and the production of gravel and sand. No expansion of the processing area or additional equipment is proposed. The applicant is not requesting an increase in the number of truck trips currently allowed for under the existing permits. The applicant is proposing this expansion because the usable material within the existing area of operations is reaching the point of depletion.

073

II. ENVIRONMENTAL ANALYSIS

Any controversial answers or answers needing clarification are explained on an attached sheet. For source, refer to pages 11 and 12.

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
1. LAND SUITABILITY AND GEOLOGY						
Will (or could) this project:						
a. Involve a unique landform or biological area, such as beaches, sand dunes, marshes, tidelands, or San Francisco Bay?	X					B,F,O
b. Involve construction on slope of 15% or greater?		X				E,I
c. Be located in an area of soil instability (subsidence, landslide or severe erosion)?	X					Bc,D
d. Be located on, or adjacent to a known earthquake fault?	X					Bc,D
e. Involve Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?	X					M
f. Cause erosion or siltation?			X			M,I
g. Result in damage to soil capability or loss of agricultural land?	X					A,M
h. Be located within a flood hazard area?	X					G
i. Be located in an area where a high water table may adversely affect land use?	X					D
j. Affect a natural drainage channel or streambed, or watercourse?			X			E

074

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
2. VEGETATION AND WILDLIFE Will (or could) this project:						
a. Affect federal or state listed rare or endangered species of plant life in the project area?			X			F
b. Involve cutting of heritage or significant trees as defined in the County Heritage Tree and Significant Tree Ordinance?			X			I,A
c. Be adjacent to or include a habitat food source, water source, nesting place or breeding place for a federal or state listed rare or endangered wildlife species?			X			F
d. Significantly affect fish, wildlife, reptiles, or plant life?			X			I
e. Be located inside or within 200 feet of a marine or wildlife reserve?	X					E,F,O
f. Infringe on any sensitive habitats?			X			F
g. Involve clearing land that is 5,000 sq. ft. or greater (1,000 sq. ft. within a County Scenic Corridor), that has slopes greater than 20% or that is in a sensitive habitat or buffer zone?			X			I,F,Bb
3. PHYSICAL RESOURCES Will (or could) this project:						
a. Result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, oil, trees, minerals or topsoil)?		X				I

075

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
b. Involve grading in excess of 150 cubic yards?		X				I
c. Involve lands currently protected under the Williamson Act (agricultural preserve) or an Open Space Easement?	X					I
d. Affect any existing or potential agricultural uses?	X					A,K,M
4. AIR QUALITY, WATER QUALITY, SONIC		X				
Will (or could) this project:						
a. Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?		X				I,N,R
b. Involve the burning of any material, including brush, trees and construction materials?	X					I
c. Be expected to result in the generation of noise levels in excess of those currently existing in the area, after construction?	X					Ba,I
d. Involve the application, use or disposal of potentially hazardous materials, including pesticides, herbicides, other toxic substances, or radioactive material?	X					I
e. Be subject to noise levels in excess of levels determined appropriate according to the County Noise Ordinance or other standard?	X					A,Ba,Bc
f. Generate noise levels in excess of levels determined appropriate according to the County Noise Ordinance standard?		X				I

076

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
g. Generate polluted or increased surface water runoff or affect groundwater resources?			X			I
h. Require installation of a septic tank/leachfield sewage disposal system or require hookup to an existing collection system which is at or over capacity?	X					S
5. TRANSPORTATION Will (or could) this project:						
a. Affect access to commercial establishments, schools, parks, etc.?	X					A,I
b. Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?	X					A,I
c. Result in noticeable changes in vehicular traffic patterns or volumes (including bicycles)?	X					I
d. Involve the use of off-road vehicles of any kind (such as trail bikes)?	X					I
e. Result in or increase traffic hazards?	X					S
f. Provide for alternative transportation amenities such as bike racks?	X					I
g. Generate traffic which will adversely affect the traffic carrying capacity of any roadway?	X					S

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
6. LAND USE AND GENERAL PLANS						
Will (or could) this project:						
a. Result in the congregating of more than 50 people on a regular basis?	X					I
b. Result in the introduction of activities not currently found within the community?	X					I
c. Employ equipment which could interfere with existing communication and/or defense systems?	X					I
d. Result in any changes in land use, either on or off the project site?	X					I
e. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?		X				I,Q,S
f. Adversely affect the capacity of any public facilities (streets, highways, freeways, public transit, schools, parks, police, fire, hospitals), public utilities (electrical, water and gas supply lines, sewage and storm drain discharge lines, sanitary landfills) or public works serving the site?	X					I,S
g. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?	X					I,S
h. Be adjacent to or within 500 feet of an existing or planned public facility?	X					A

078

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
i. Create significant amounts of solid waste or litter?	X					I
j. Substantially increase fossil fuel consumption (electricity, oil, natural gas, coal, etc.)?	X					I
k. Require an amendment to or exception from adopted general plans, specific plans, or community policies or goals?	X					B
l. Involve a change of zoning?	X					C
m. Require the relocation of people or businesses?	X					I
n. Reduce the supply of low-income housing?	X					I
o. Result in possible interference with an emergency response plan or emergency evacuation plan?	X					S
p. Result in creation of or exposure to a potential health hazard?	X					S
7. AESTHETIC, CULTURAL AND HISTORIC Will (or could) this project:						
a. Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?		X				A,Bb
b. Obstruct scenic views from existing residential areas, public lands, public water body, or roads?	X					A,I
c. Involve the construction of buildings or structures in excess of three stories or 36 feet in height?	X					I

	IMPACT					
		YES				
	NO	Not Significant	Significant Unless Mitigated	Significant	Cumulative	SOURCE
d. Directly or indirectly affect historical or archaeological resources on or near the site?	X					H
e. Visually intrude into an area having natural scenic qualities?	X					A,I

III. **RESPONSIBLE AGENCIES.** Check what agency has permit authority or other approval for the project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)		X	
State Water Resources Control Board		X	
Regional Water Quality Control Board		X	
State Department of Public Health		X	
San Francisco Bay Conservation and Development Commission (BCDC)		X	
U.S. Environmental Protection Agency (EPA)		X	
County Airport Land Use Commission (ALUC)		X	
CalTrans		X	
Bay Area Air Quality Management District		X	
U.S. Fish and Wildlife Service		X	
Coastal Commission		X	
City		X	
Sewer/Water District:			
Other:			

IV. MITIGATION MEASURES

	Yes	No
Mitigation measures have been proposed in project application.		X
Other mitigation measures are needed.	X	

The following measures are included in the project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines:

1. Prior to the beginning of mining operations within the proposed expansion area, the applicant shall submit, for review and approval by the County Planning Department, a site specific erosion control plan which prevents sediment from entering into the adjacent ESHA's. The approved erosion control plan shall be implemented prior to the beginning of mining operations and shall be maintained throughout the life of mining operations at this location.

2. During the clearing of vegetation from the expansion area, a biological monitor familiar with western leatherwood shall work with the vegetation clearing crew. Heavy equipment shall clear the vegetation from one or more transects to provide the monitor access. The biological monitor shall survey the vegetation along the transect edges for western leatherwood and if none are found will give authorization to continue vegetation clearing.

   If any western leatherwood plants are observed within the quarry expansion area during the vegetation clearing and the plant or plants cannot be avoided, the quarry shall transplant said plants to a previously quarried area, preferably on a north-or east-facing slope because these slopes are relatively cool and moist. Translocation will occur at the time when vegetation is cleared. Topsoil shall be added to the transplantation site at a depth of 3 feet. This transplantation site should be located on a bench of the quarry for ease of transplantation and maintenance.

   Translocation of western leatherwood is an experimental endeavor and different techniques will be utilized in order to discover the best methodology for success at this site. The branches, and as an experiment the trunk(s) of some western leatherwood, should be pruned to reduce water stress. (Observations indicate that western leatherwood sprouts from trimmed and or mowed trunks.) The planting hole for the transplants should be 1.5 times the size of the rootball.

   A front-end loader, back-hoe, Vermeer spade, or other type of suitable heavy equipment should be used to excavate the western leatherwood plant. As large an area as possible should be excavated around the rootball of the plant. Western leatherwood reproduces by underground rhizomes and any rhizomes observed in the excavated rootball should be cleanly severed to reduce the chance of infection.

   If the western leatherwood plant cannot be planted immediately, it shall be covered with wet burlap or similar material to avoid desiccation and kept out of the sun as much as possible. Nevertheless, the leatherwood should be planted the same day as excavated. The rootball should be planted such that the crown is slightly above the level of the soil and soil should be firmly packed by hand around the rootball. A trough should be made at the edge of the planting hole to retain water during watering. After transplantation occurs, the plants should be watered-in. A temporary shade cloth structure should be constructed over the transplanted western leatherwood to avoid over exposure to the sun.

3. The applicant shall revise the proposed reclamation plan's revegetation plan to include seedlings of western leatherwood, which should be planted on the quarried slopes of the Pilarcitos Quarry. The seeds should be germinated in a growing facility and when approximately the size of 1-gallon containers, transplanted onto the quarry slopes. As with translocated plants, seedlings should be planted into 3 feet of topsoil that has been placed on a bench of a north- or east- facing slope. A shade structure should be installed over the seedlings. Experimentation will be required to determine the best method for seedling survival.

4. Prior to the beginning of mining operations within the expansion area, the applicant shall amend the proposed "planting plan" contained within the reclamation plan amendment to include the planting of Douglas fir trees upon the benches created by the quarry operation. Said plan shall include details as to the number, size and location of trees as well as planting and irrigation details.

5. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall implement the sediment pond enhancement plan, including the excavation of deep and shallow areas, the installation of a stand pipe, stabilization of the lower edge of the pond's berm, installation of a sediment trap upslope of the pond's current inlet. A fully detailed plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

6. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall construct habitat ponds in the upper portion of the Nuff Creek drainage as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). A fully detailed grading plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

7. In order to assess the success of the pond restoration outlined above, a five-year monitoring plan shall be implemented. This plan shall include two surveys per year of each created or restored pond; one in late winter/early spring and another in late summer/early fall. The focus of the monitoring shall be to: (1) document colonization/use of the created and enhanced ponds by California red-legged frogs; (2) estimate numbers of adult frogs using the ponds; and (3) monitor breeding activity and success. In addition, the physical features of the ponds, changes in vegetation, and water level shall be assessed during the monitoring visits. A staff gauge shall be placed in the deepest portion of the ponds for water depth to be accurately recorded during monitoring visits. Photographs of the pond and adjacent area shall be taken during each monitoring visit to provide a record of changes in vegetation cover and water levels. The presence of other amphibians shall be noted during monitoring visits and shall include information on species, numbers of individuals or egg masses, and life cycle (i.e., eggs, larvae, metamorphs, and adults). Field observations shall be recorded on a data sheet and summarized in a short annual report. If necessary, the report shall provide recommendations on adaptive management practices to maintain the pond as suitable habitat for California red-legged frogs.

   Eggs, larvae, metamorphs, and/or adult Californian red-legged frogs discovered within the active quarry or expansion area shall be relocated to suitable habitat within a protected portion of the study area by USFWS-approved biologist. If quarry personnel discover a California red-legged frog (or any life cycle stage) within the active quarry or expansion area they shall stop work in the area of discovery and inform the quarry manager. The quarry manager shall contact LSA to determine if relocation is necessary. If relocation is deemed necessary, a USFWS-approved LSA biologist will come to the quarry and relocate the frog, tadpole, or egg mass to a designated mitigation pond or to a suitable upland protected area. An annual report will be completed each year to summarize monitoring activities and findings.

8. The applicant shall revise their proposed reclamation plan amendment to incorporate additional habitat ponds within Expansion Area Two as outlined in the revised Biological Resources Report (LSA Associates, June, 2007).

9. Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall submit, for review and approval by the County and all responsible resource agencies, a plan to implement the water catchments strategy as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). Said plan shall indicate proposed locations of said catchments, methods of construction, and timetable for implementation.

10. At least 15 days prior to the onset of activities, the project proponent shall submit the name(s) and credentials of biologists who would conduct activities associated with California red-legged frog. No project activities shall begin until the project proponent has received written approval from the USFWS.

11. USFWS-approved biologists will conduct a survey for the California red-legged frog at the sediment trap pond and surrounding area two weeks before the onset of quarry operations and other construction in the expansion area, or restoration activities at the sediment pond. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life stages is appropriate. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

12. Before the onset of quarry operations, other construction activities within the expansion area, or restoration activities at the sediment pond the approved biologist(s) shall conduct a training session for all quarry personnel working within the expansion area. At a minimum, the training shall include: (a) a description of the California red-legged frog and the San Francisco gartersnake and their habitat requirements; (b) the general measures that are being implemented to conserve the red-legged frog and San Francisco gartersnakes as they relate to the quarry; and (c) the boundaries within which the quarry expansion may be accomplished.

13. A USFWS-approved biologist shall be present at the expansion area until such time as all removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. After that time, the quarry operator shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the U.S. Army Corps of Engineers (Corps) and/or USFWS.

14. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly.

15. All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from Nuff Creek, the pond, and associated tributaries. The applicant will also prepare a plan to allow a prompt and effective response to any accidental spills into the creek, pond, or other aquatic habitats. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

16. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to complete the quarry expansion. Routes and boundaries shall be clearly demarcated, and these areas shall be located outside ESHAs.

17. To control erosion during and after quarrying operations the project proponent shall implement best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan.

18. When a work site is to be temporarily de-watered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent red-legged frogs from entering the pump.

19. A USFWS-approved biologist shall permanently remove, from within the project site, any individuals of exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

20. Although frog movement to and from the restored pond is likely to occur primarily at night when the when the quarry will not be in operation, a gate will be placed across the road west of the pond at its junction with the main quarry access road. This will restrict traffic on the road adjacent to restored pond to the occasional vehicle trip for road maintenance.

21. A frog-proof barrier will be placed along both sides of the rock chute between the expansion area and the quarry processing area. This will keep dispersing frogs from traversing or sheltering in an area where they are in danger of being crushed by falling rock.

22. All new and existing onsite ponds will be regularly inspected during the breeding season and any adults, tadpoles, or egg masses observed will be captured/collected and relocated to suitable aquatic habitat outside of areas of activity (e.g., constructed/restored ponds).

23. To the maximum extent practicable given rainfall patterns and sediment/stormwater retention requirements, water levels in the ponds within the active quarry and processing areas should be kept dry, or ponding limited to a maximum of 24 hours during the frog breeding season. Ponds should also be regularly maintained to preclude the establishment of aquatic vegetation.

24. A snake-proof barrier (snake fence) shall be installed around the perimeter of the active rock excavation area and will have one-way funnel exit doors placed at various locations to allow snakes and other animals within the quarry area to escape. The active rock excavation area will vary as quarry operations progress and the snake fence shall be moved accordingly. The fence shall be built with silt-fencing and/or wooden boards and buried six inches deep in the substrate. The fence will exclude any potential dispersing snakes from the active quarry area and confine them to ESHAs as they move through the area. The quarry currently has as speed limit of 15 miles per hour for all vehicles within the active quarry. This speed limit combined with driver awareness (through training described under California red-legged frog, above) of the potential for snakes in the quarry will greatly reduce the likelihood of impacts to San Francisco garter snakes.

25. A visual search for gartersnakes will be conducted concurrently with the daytime California red-legged frog monitoring surveys. In addition, two to three cover-boards of half-inch plywood (2.5 x 3 feet) will be placed in permanent locations in open areas near the constructed ponds. Cover-boards are attractive to snakes and provide them with a concealed space to thermoregulate and hide from predators. The cover-boards will be numbered and their locations mapped with a GPS unit. The boards will be periodically checked for snakes. The results of the cover-board monitoring will be included in the red-legged frog annual report.

26. If feasible, the removal of vegetation and overburden within the expansion area shall be scheduled for the period between September 1 and November 30 so as to avoid disturbance to nesting birds. If this is not possible, a nesting raptor survey shall be conducted in the expansion area prior to vegetation removal. If an active raptor nest is found within the expansion area, the nest site and a suitable buffer zone around the nest site shall be established, and no work shall occur within this buffer zone until the young had fledged.

27. If feasible, the removal of vegetation and overburden shall be scheduled for the period between September 1 and March 31 in order to avoid disturbance to nesting birds. If vegetation must be scheduled for removal in the period between April 1 and August 31, then a nesting bird survey shall be conducted in the expansion area. If nesting birds are discovered, the nest and a suitable buffer zone (50 to 100 feet) around the nest shall be established, and no work shall occur within this buffer zone until August 31 or until the young have fledged.

084

28. To provide temporary shelter for woodrats forced out of the expansion area by vegetation removal, artificial shelters constructed of old wine half-barrels shall be placed along the edge of the area to be cleared of vegetation. The wine barrels will be placed with the open end down and holes cut in the sides near ground level will allow woodrats to enter and exit. Wine barrels will be similarly placed within active reclamation areas within the existing quarry in order to provide cover for woodrats that may seek to establish territories in these areas.

29. The CDFG has expressed a primary interest in making an attempt to gather data on survivorship of displaced woodrats to gain a better understanding of impacts to these mammals from development. To this end, a woodrat trapping and marking program will be conducted. Prior to vegetation clearing in the expansion area, a live-trapping program will be conducted for woodrats using Sherman small mammal traps. All trap locations will be numbered and located on a map of the expansion area with the aid of a GPS unit. All woodrats captured will be sexed, measured, weighed, and marked with a numbered ear tag. This will allow for subsequent identification of individual woodrats if they are recaptured. Ear tagging is a humane standard method for marking small mammals (Wilson et al.1996). Numbering and mapping trap locations will provide information on the movements of recaptured animals.

Trapping will continue (in areas still supporting vegetation) during vegetation removal and grading until the entire work area has been cleared of vegetation. Concurrent with clearing and after the expansion area is cleared, peripheral areas (including reclaimed areas within the existing quarry that support woodrat habitat) will be sampled to determine if any of the displaced woodrats (i.e., ear-tagged individuals) are present and reestablishing territories. Trapping will be conducted for at least two periods in these peripheral areas for one year after vegetation clearing in the expansion area. The results of the trapping survey will be summarized in an annual report.

V. MANDATORY FINDINGS OF SIGNIFICANCE

	Yes	No
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X
2. Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?		X
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable?		X
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?		X

On the basis of this initial evaluation:

_____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Current Planning Section.

X I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because of the mitigation measures in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

_____ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Michael J. Schaller
(Sign) Michael J. Schaller

July 10, 2007
Date

Project Planner
(Title)

080

VI. SOURCE LIST

A. Field Inspection

B. County General Plan 1986

a. General Plan Chapters 1-16
b. Local Coastal Program (LCP) (Area Plan)
c. Skyline Area General Plan Amendment
d. Montara-Moss Beach-El Granada Community Plan
e. Emerald Lake Hills Community Plan

C. County Ordinance Code

D. Geotechnical Maps

1. USGS Basic Data Contributions

a. #43 Landslide Susceptibility
b. #44 Active Faults
c. #45 High Water Table

2. Geotechnical Hazards Synthesis Maps

E. USGS Quadrangle Maps, San Mateo County 1970 Series (See F. and H.)

F. San Mateo County Rare and Endangered Species Maps, or Sensitive Habitats Maps

G. Flood Insurance Rate Map – National Flood Insurance Program

H. County Archaeologic Resource Inventory (Prepared by S. Dietz, A.C.R.S.) Procedures for Protection of Historic and Cultural Properties – 36 CFR 800 (See R.)

I. Project Plans or EIF

J. Airport Land Use Committee Plans, San Mateo County Airports Plan

K. Aerial Photography or Real Estate Atlas – REDI

1. Aerial Photographs, 1941, 1953, 1956, 1960, 1963, 1970
2. Aerial Photographs, 1981
3. Coast Aerial Photos/Slides, San Francisco County Line to Año Nuevo Point, 1971
4. Historic Photos, 1928-1937

037

L. Williamson Act Maps

M. Soil Survey, San Mateo Area, U.S. Department of Agriculture, May 1961

N. Air Pollution Isopleth Maps – Bay Area Air Pollution Control District

O. California Natural Areas Coordinating Council Maps (See F. and H.)

P. Forest Resources Study (1971)

Q. Experience with Other Projects of this Size and Nature

R. Environmental Regulations and Standards:

Federal	– Review Procedures for CDBG Programs	24 CFR Part 58
	– NEPA 24 CFR 1500-1508	
	– Protection of Historic and Cultural Properties	36 CFR Part 800
	– National Register of Historic Places	
	– Floodplain Management	Executive Order 11988
	– Protection of Wetlands	Executive Order 11990
	– Endangered and Threatened Species	
	– Noise Abatement and Control	24 CFR Part 51B
	– Explosive and Flammable Operations	24 CFR 51C
	– Toxic Chemicals/Radioactive Materials	HUD 79-33
	– Airport Clear Zones and APZ	24 CFR 51D
State	– Ambient Air Quality Standards	Article 4, Section 1092
	– Noise Insulation Standards	

S. Consultation with Departments and Agencies:

a. County Health Department
b. City Fire Department
c. California Department of Forestry
d. Department of Public Works
e. Disaster Preparedness Office
f. Other

COUNTY OF SAN MATEO
Planning and Building Department

Initial Study Pursuant to CEQA
Project Narrative and Answers to Questions for the Negative Declaration
File Number: PLN 2000-00456
Pilarcitos Quarry Expansion

PROJECT DESCRIPTION

The applicant is proposing to modify their existing permits to mine the area known as the Pilarcitos Quarry. The modification will allow expansion of mining operations onto a 9.2-acre area adjacent and north of the existing mining operations. Current quarry operations involve surface mining of weathered, fractured granite and the production of gravel and sand. No expansion of the processing area or additional equipment is proposed. The applicant is not requesting an increase in the number of truck trips currently allowed for under the existing permits. The applicant is proposing this expansion because the usable material within the existing area of operations is reaching the point of depletion.

No new processing equipment will be added under this permit amendment. Mining in the area currently being worked is in the process of being wrapped up. This area will be restored as required under the existing reclamation plan. Moving the existing quarry operations into the new 9.2-acre area is a discreet function and will not cause or lead to the expansion of operations into additional areas at the quarry. Any expansion of additional areas will be subject to its own environmental review. For these reasons, in assessing whether there is a new significant cumulative effect, the County has concluded that the incremental effects of the project are not considerable when viewed in the context of past, present, and probable future projects, including operations under the existing use permits and the pending application for approval of a grading plan for the remainder of the quarry.

Pilarcitos Quarry is an ongoing sidehill mining operation producing fill material, asphaltic concrete aggregate, landscape materials, and various grades of sand, drain rock and road base from an extensive granite deposit. The operation also includes the recycling of broken concrete, broken asphalt and stone. The process for mining the native rock will involve several steps: (1) a GPS system will be used to accurately mark the boundaries of the extraction site and to locate the top edge of the excavation at a minimum distance of 50 feet from the property line; (2) a bulldozer road will then be constructed from the existing access road on the quarry floor to the top of the planned excavation; (3) a field fence with silt fence mounted on the inside face will then be installed along the boundary between the extraction area and all adjoining environmentally sensitive habitat areas (ESHAs); (4) a bulldozer will then remove surface vegetation from the extraction area; (5) topsoil from the area will then removed and pushed to the side of the excavation area for temporary stockpiling. It will be used for future resoiling of the benches or taken to the process area for stockpiling. Finally, a heavy-duty bulldozer fitted with a long shank and/or a large excavator will create the cut slope extending downward from the initial

point of entry. Where the subsurface material cannot be easily ripped it will be fractured using a sequential blasting system. Blasting in the current operation is done twice monthly.

The raw material excavated from the upper three fourths of the expansion area will be pushed down a side chute to the south. A hopper will be installed at the bottom of the chute and the excavated material will be transported directly to the processing plant by conveyor belt. Material from the lower one fourth of the expansion area will be loaded into large capacity off-road haul trucks for transport to the process plant.

The mining cut will begin a minimum of 50 feet from the property line and will result in the creation of a working terrace that is continuously lowered as mining progresses down slope. A temporary low earth berm will be maintained at the outer edge of the extraction area to prevent rock from rolling away from the work area. The mined slope will be constructed with a vertical rise of 1-foot for each 1.25 feet of horizontal distance. Thirty-foot-wide benches will be constructed at 100-foot intervals to catch loose material if any should fall and to convey drainage laterally to a small sediment trap constructed at the end of each bench. Benches will be sloped from front to back at a two percent gradient and laterally at a two to five percent gradient.

As mining is completed in the expansion area, reclamation activities will be initiated according to the proposed Reclamation Plan amendment. An additional aspect of the proposed project involves improvements and repairs to the existing road running up Nuff Creek Canyon. Two culverts, one on the mainstem of Nuff Creek and the other on a small perennial tributary have been washed out or clogged with sediment. The culverts on the mainstem and tributary will be replaced with three 36-inch diameter and two 24-inch diameter culverts, respectively. The roadbed will be re-graded and stabilized. These road improvements will reduce downstream sedimentation and improve stream flow; and will also allow equipment, required for mitigation pond construction, to access the proposed mitigation areas in the upper watershed.

PROJECT SETTING

Pilarcitos Quarry is located within the drainage of Nuff Creek, San Mateo County. Nuff Creek is a north-trending tributary of Pilarcitos Creek, which empties into the Pacific Ocean approximately 3.25 miles west of the project site, just north of the City of Half Moon Bay. The project site is situated within Section 15, township 5 south, range 5 west, of the Mount Diablo Base and Meridian on the 7.5' USGS Montara Mountain and Half Moon Bay Quads. Access to the Pilarcitos Quarry is via a private road off of San Mateo Road.

The expansion area is located on the steep eastern slopes of the Nuff Creek drainage. The expansion area occupies a slope above the creek. Nuff Creek traverses the western edge of the expansion area and the existing quarry is to the south. The eastern edge of the expansion area occupies the steep upper slopes of the eastern ridge line of the Nuff Creek watershed. The western edge of the expansion area is flanked by a dirt road running along the canyon floor just east of the creek itself.

Within the expansion area Nuff Creek is contained in a steep-sided channel (10-15 feet deep) in the alluvium of the canyon floor. During the survey period the creek exhibited a steady flow of

clear water (2-3 inches in depth) over an unconsolidated sandy bed. Much of the creek bed was inaccessible due to the steep stream banks and dense riparian vegetation.

A graded road on the lower slopes of the expansion area provides access to an equipment storage area located in a drainage on the northern edge of the expansion area. A small constructed sediment pond (approximately 30 by 10 feet) is present behind a gravel berm adjacent to and east of the graded road.

The surficial geology in the project area consists of deeply weathered Cretaceous granitic rocks. This rock is exposed along a steep south-facing cliff face that has been cut above the graded road. Elevations range from approximately 380 feet in the creek bed to approximately 1,000 feet on the upper ridgeline.

The soils in the project area are mapped as four types on the San Mateo Area 1961 Soil Conservation Service maps (USDA 1961). The ridgetops, which lie mostly outside the project area, are mapped as Miramar coarse sandy loam, moderately steep, eroded. The majority of slopes in the expansion area are 41 percent or steeper and are mapped as Miramar coarse sandy loam, very steep, eroded. This soil series is moderately deep over bedrock, with rapid permeability and low water holding capacity. Soils are mapped as Farallone coarse sandy loam, moderately steep, eroded, in small drainages or intermittent streams that feed into the mainstem of Nuff Creek below. Here runoff is slow to medium, permeability is rapid, and the content of loam is influenced by wetness in depressions and drainages. Willows and other hydrophytic plants grow in depressions and drainages in this soil type. The southern slopes of the expansion area, adjacent to the existing quarry, are mapped as Rough Broken Land. This soil series consists of very steep rocky uplands with seldom more than 10 inches of soil material, primarily vegetated by shrubs and a few trees. Vegetation within the expansion area consists of the following categories:

Coastal Scrub Community. The coastal scrub community on the upper portions of slopes in the expansion area is dominated by coyote brush but also includes a large component of poison oak. On the drier west- and south-facing slopes, the scrub includes occasional stands of California sagebrush, California coffeeberry, blue-blossom, and bush monkey-flower. Vegetation on the lower slopes is a mosaic of open areas and plant communities dominated and/or co-dominated by coyote brush, arroyo willow, ceanothus, Douglas fir, and blue gum eucalyptus.

The south-facing slope, parts of which have been disturbed by the construction of roads for the ongoing mining of the existing quarry, supports species associated with drier conditions, including bush monkey-flower, deerweed, yellow bush lupine, paintbrush, fairwell-to-spring, and buckwheat. Patches of relatively bare ground or areas with a sparse cover of shrubs, grasses, and forbs are present on the south-facing slope near the existing quarry, as well as on the south-facing slope of the drainage in the northern portion of the expansion area. According to the biological report, the bare or grassy areas were inaccessible, but a native grass, most likely a needlegrass, and a non-native annual fescue were observed from the road. Weedy species growing along the roads included hare barley, ripgut-brome, yellow sweet-clover, and burclover.

The coyote brush scrub vegetation on the west-facing slope grades into a ceanothus-dominated scrub (blue-blossom and potentially deerbrush), then into a denser, moisture loving shrub and fern community near the base of the slope, adjacent to the riparian vegetation along Nuff Creek. California blackberry and thimbleberry are dominant shrub species that are interspersed with large stands of Chamisso's hedge-nettle, American stinging nettle, and swordfern.

The north-facing slope supports dense stands of Douglas fir that are, in certain locations, edged by arroyo willow and shade tolerant shrubs such as twinberry, western burning bush, and oceanspray.

Sparse Scrub/Non-Native Grassland. Patches of relatively bare ground or areas with a sparse cover of shrubs are present within the coastal scrub community on most of the south-facing slopes. Areas that are currently in the early phase of revegetation are also included here. Some of these bare or grassy areas on steep slopes supported native grasses such as needlegrass, and non-native annual fescue. Deerweed, yellow bush lupine, paintbrush, farewell-to-spring, and coast buckwheat are also present in some of the steep sparsely vegetated areas. Non-native, weedy species growing along the roads in the expansion area include hare barley, ripgut-brome, oxeye daisy, redstem filaree, Italian thistle, and poison hemlock.

Riparian Forest Community. An approximately 150 foot-wide riparian forest community of predominantly red alder occurs along Nuff Creek at the base of the west-facing slope in the expansion area. Mature red alders with a nearly closed canopy reach 30 to 45 feet in height in this area. Where the canopy is almost closed, the understory is mostly composed of ferns such as swordfern, lady fern and five-finger fern; where sunlight penetrates to the forest floor, shrub species including red elderberry, California blackberry, and thimbleberry provide a dense cover mixed with Chamisso's hedge-nettle, meadow rue, and other herbaceous species. Alder saplings are abundant, indicting that the forest is regenerating. Portions of the forest along this reach of Nuff Creek have been invaded by blue gum eucalyptus, an invasive, non-native tree, that, in places, grows taller than the alders.

Central Coast Arroyo Willow Riparian. Arroyo willow thickets are present in various portions of the expansion area. Arroyo willow occurs relatively sparingly along Nuff Creek, but it is the dominant tree along the tributary flowing east to west along the north border of the expansion area, and it occurs with Douglas fir on the north-facing slope. Several large stands of willow are also present in disturbed areas near the roads on the south-facing slope. Some of the thickets are associated with hydrophytic plants such as Chamisso's hedge-nettle, however, other stands consist of plants associated with upland conditions, including bush monkey-flower and yerba buena. Arroyo willow is capable of sending deep roots into the substrate to reach ground water (phreatophytic).

Douglas Fir Stands. Stands of Douglas fir are present on the lower portion of the west-facing slope and from the mid - to upper portions of the north-facing slope. Such trees are commonly found in wetter and more shaded portions of coastal scrubs. A few individuals of evergreen broadleaved trees, madrone and California bay, grow intermixed with the Douglas firs in these stands. The understory is composed of species associated with the Red Alder Riparian Forest community, such as lady fern and swordfern, and/or with species common in the wetter Coastal

Scrub community, including Chamisso's hedge-nettle, cow-parsnip, and American stinging nettle. A few individuals of plants associated with woodlands and forests such as false Solomon's seal and fairy bells are also present.

Sediment Trap. A man-made sediment trap (containing a pond) has been constructed between a cliff-face and a 4-foot high earthen berm along an access road to the top portion of the existing quarry. Its purpose is to receive runoff from the slopes above and to trap sediment. It also captures water that seeps out from the cliff face. The sediment trap is surrounded by woody riparian vegetation consisting of arroyo willow, red alder, and red elderberry and a few annuals including yellow cress. Broadleaved cattails covered approximately 20 percent of its surface in May 2004. An unidentified aquatic plant (not slender-leaved pondweed) covered approximately 10 percent of the bottom of the pond in the sediment trap. Though this plant was not identified it did not have the characteristics of slender-leaved pondweed, a special-status plant. The sediment trap is subject to routine maintenance (sediment removal) by the quarry operator.

SPECIAL-STATUS WILDLIFE

California Red-Legged Frog (Rana aurora draytonii)

The California red-legged frog is listed as a federal threatened species and as a California species of special concern. This species has declined in or disappeared from large portions of its former range in California (Stebbins 2003, Fellers 2005), however, it is still relatively common along the central coast of California including San Mateo County (USFWS 2002). Two California red-legged frogs were seen in the sediment pond just north of the active quarry on June 3, 2004; two were also observed at the pond on July 12, 2006. In addition, four to five California red-legged frogs were observed in a pond adjacent to the northwestern corner of the study area on June 3, 2004.

California red-legged frogs were discovered breeding in several sediment ponds in the active quarry area during 2007. On March 13, 2007 seven California red-legged frog egg masses and one adult frog were observed in the large sediment pond on the bench above the quarry operations area. Adult frogs and tadpoles have been regularly observed at this pond through the spring of 2007. On March 23, an adult California red-legged frog and the remnants of one egg mass were observed in a small pond in a deep pit within the quarry operations area. This small pond is near a rock-crusher and conveyer system. On April 8 three adult frogs and one new egg mass were observed in this pond. Up to 8 adult frogs have been observed in this pond at various occasions between March and early June 2007; however, no tadpoles have been seen.

The California red-legged frog occurs in aquatic habitats such as creeks, ponds, and marshes. An important habitat element is the presence of cover in the form of dense emergent aquatic vegetation such as cattails or bulrushes, over hanging terrestrial vegetation, exposed tree roots, and undercut banks. The California red-legged frog, however, does sometimes occur in ponds with little aquatic vegetation or bank-side cover. Suitable breeding habitat usually includes a minimum water depth of 20 inches (Fellers 2005) and must contain water during the entire development period for eggs and tadpoles. During wet weather, the California red-legged frog often occurs in upland habitats in the vicinity of aquatic sites. In Santa Cruz County California red-legged frogs have been documented to move through upland habitats for distances of over

2 miles and these movements appear to be without regard to topographic features, vegetation communities, or riparian corridors (USFWS 2002).

In 2004 the USFWS proposed a series of 31 critical habitat units for the Californian red-legged frog (USFWS 2004). Under the 2004 proposal the Nuff Creek watershed was within Unit 14, which includes the coastal watersheds within San Mateo and northern Santa Cruz counties. Within any given critical habitat unit a site must support three habitat features, termed the primary constituent elements, to be considered critical habitat for the California red-legged frog (USFWS 2004). These primary constituent elements are defined below:

1. Aquatic habitat with a permanent water source with pools having a minimum depth of 20 inches for breeding and which can maintain water during the entire tadpole rearing season;

2. Upland areas up to 300 feet from the water's edge associated with the above aquatic habitat that will provide for shelter, forage, maintenance of water quality of the aquatic habitat, and dispersal; and

3. Upland barrier-free dispersal habitat that is at least 300 feet in width that connect at least two (or more) suitable breeding locations defined by the aquatic habitat above, all within 1.24 miles of one another.

All three primary constituent elements are present within the Pilarcitos Quarry study area. The 2004 proposed critical habitat designation for the Californian red-legged frog was revised for economic reasons and the USFWS published its final designation of critical habitat in 2006 (USFWS 2006a). Under the final rule the USFWS redefined the areas of critical habitat in California and the Nuff Creek watershed is not within any of these final critical habitat units. The closest unit of critical habitat (SNM-1A) is located approximately 1,400 feet north of the northern edge of the study area (USFWS 2006a).

San Francisco Gartersnake (Thamnophis sirtalis tetrataenia)
The San Francisco gartersnake is listed as both a Federal and State endangered species. It is also a California fully protected species. This snake is a distinctive subspecies of the widely distributed common gartersnake and has a very restricted geographic range being found only on the San Francisco Peninsula (Stebbins 2003). Within this area the San Francisco gartersnake is known to occur from the vicinity of the San Francisco County line near the coast south along the peninsular ridge line at least to the vicinity of Crystal Springs Reservoir. Further south, along the Pacific Coast, the San Francisco gartersnake is present in the drainage of Tunitas and San Gregorio Creeks south to the area around Point Año Nuevo (Barry 1994). South of these areas the San Francisco gartersnake intergrades with the California red-sided gartersnake.

There was a small population at Denniston Creek (vicinity of Princeton) that may now be extinct (Barry 1994) or severely reduced. Records of the San Francisco gartersnake from the Pilarcitos Creek drainage are primarily from the upper headwaters (North Branch) above Pilarcitos Lake (CNDDB 2004); however, there are several recent records from Half Moon Bay.

San Francisco garter snakes favor wet meadows and grasslands near wetlands, and freshwater marshes. An important habitat component of the San Francisco gartersnake is the presence of populations of frogs (Barry 1994 and USFWS 2006b). Young snakes feed largely on Pacific treefrogs and the adults take California red-legged frogs and small to mid-sized American bullfrogs. The American bullfrog is a non-native species that was introduced into California from the eastern United States where it is the largest native frog species.

Nuff Creek does not provide good breeding habitat for frogs because it lacks pools suitable for egg laying and tadpole rearing. The pond in the small sediment trap supports Pacific tree frogs and California red-legged frogs, but this water body may be too isolated from areas where San Francisco garter snakes are known to occur to be regularly used by this species. It is also probably too small to support a resident population of garter snakes, but could plausibly serve as a resource to dispersing individual snakes. California red-legged frogs and egg masses have been found in sedimentation ponds within the active quarry, but these ponds have very little bank vegetation and do not support good terrestrial habitat for San Francisco garter snakes.

Very little is known about the dispersal biology of the San Francisco gartersnake or the ability of this species to colonize isolated areas of suitable habitat; therefore, it is not possible to completely rule out the presence of these snakes in the Nuff Creek watershed. Dispersing individuals may potentially occur in the watershed, but based on the habitat that is present the watershed is unlikely to currently support a viable population of these snakes.

Marbled Murrelet (Brachyramphus marmoratus)
The marbled murrelet is listed as a federal threatened species and as a State endangered species. This small diving sea bird is endemic to the near-shore waters of the eastern Pacific Ocean and the breeding range extends from southern Alaska south to Santa Cruz County, California (AOU 1998). The marbled murrelet is unique among sea birds in that it nests on the horizontal limbs of large coniferous trees and is often associated with, but not necessarily limited to, stands of old growth forest (100 to 200 years old). These birds also will use other relatively flat surfaces in trees provided by such features as deformities in limbs, overlapping branches, clumps of mistletoe, moss, or lichens covering a branch. Both Douglas fir and coast redwood are used as nesting trees.

Nesting sites are often located inland from the coast and nests have been found over 50 miles from the shore (USFWS 1997). The nest often consists of a depression made in moss or other debris on the surface of a large limb. Marbled murrelets lay one egg that is incubated for 30 days and the young birds fledge in about 28 days. During the time the young bird is in the nest the adults make multiple flights per day to and from foraging areas in the ocean to supply the young bird with fish. Flights are made at all times of the day but predominately at dawn, dusk, or at night.

Populations of the marbled murrelet have declined in many portions of its range due to cutting and/or modification of coastal old growth forests and mortality from gill nets and oil spills (USFWS 1997). Critical habitat for this species was designated in 1996 and several critical habitat units are located on lands within San Mateo County. The northern most critical habitat

unit in San Mateo County is located less than 1.5 miles north of the expansion area within the San Francisco Peninsula Watershed.

The status of marbled murrelets in the Nuff Creek drainage is unknown. In San Mateo County, nesting marbled murrelets appear to be concentrated in the southern portion of the County (Sequoia Audubon Society 2001), but there are also nesting records from areas near Nuff Creek. Surveys in designated critical habitat (less than 1.5 miles north of the expansion area) in the upper Pilarcitos Creek drainage suggest that marbled murrelets nest in this area (Avocet Research 2006). There is also an older record of possible nesting less than 5 miles west of the expansion area (Sequoia Audubon Society 2001).

Based on available information it appears that nesting marbled murrelets have the potential to occur in the Nuff Creek watershed. Potential nesting habitat is present in the upper end of the Nuff Creek drainage (Stacy Martinelli, CDFG personal communication, 2006). Murrelets nesting north of Nuff Creek in the upper Pilarcitos Creek watershed potentially could use the Nuff Creek watershed as a flyway between nest sites and the ocean. The stands of Douglas fir in the expansion area itself are too young (probably less than 50 years old) and the individual trees too small to provide suitable nesting habitat for this species. In addition, the stands of Douglas fir west of the expansion area on the other side of Nuff Creek do not contain trees large enough or a dense enough canopy cover to provide suitable murrelet nesting habitat (Stacy Martinelli, CDFG personal communication, 2006). LSA initiated a protocol-level survey for marbled murrelets in the study area in May 2007. The CDFG and USFWS have expressed concern about the potential negative affects of noise (originating from quarry operations) to marbled murrelets, if indeed they nest in the upper Nuff Creek watershed. LSA conducted a noise study to address this concern. The analysis concluded that noise levels in the upper Nuff Creek drainage during quarry operations are ambient; the loudest noise is the flow of water in Nuff Creek.

ANSWERS TO QUESTIONS

1. LAND SUITABILITY AND GEOLOGY

b. Will this project involve construction on slopes of 15% or greater?

Yes, Not Significant. The expansion of the quarry operations will not actually result in the construction of structures. However, grading work will be occurring on slopes of 15% or greater. Of primary concern to the County is that the finished slopes are stable in the long run. The finished cut slopes will be constructed with a vertical rise of one foot for each 0.5 feet of horizontal distance. As work progresses, 30-foot wide benches will be cut into the slope at 100-foot vertical intervals. Before extraction of the bedrock material can occur, the applicant will remove all overburden (i.e., soil). The steep slopes that will be created by the mining operation will be native rock material. Since no topsoil will be placed upon these steep faces, there is little or no threat of landslide as a result of the creation of these steep slopes.

f. Will this project cause erosion or siltation?

Yes, Significant Unless Mitigated. This project will involve enormous amounts of grading on steep slopes. The applicant has identified several Environmentally Sensitive Habitat Areas (ESHA's), which are immediately adjacent to the proposed mining area. It is inevitable that there will be erosion and siltation of the work area over the life of the mining operations. In order to reduce the intrusion of silt and earth material into the adjacent ESHA's, the following measure is proposed:

Mitigation Measure 1: Prior to the beginning of mining operations within the proposed expansion area, the applicant shall submit, for review and approval by the County Planning Department, a site specific erosion control plan which prevents sediment from entering into the adjacent ESHA's. The approved erosion control plan shall be implemented prior to the beginning of mining operations and shall be maintained throughout the life of mining operations at this location.

j. Will this project affect a natural drainage channel or streambed, or watercourse?

Yes, Not Significant. If grading of the slopes and installation of the drainage system is carried out as proposed, then there should be no direct impact upon adjacent drainage courses. No work is proposed in any of the adjacent drainage channels, all of which are surrounded by a 100 ft. buffer. Additionally, implementation of the required erosion control plan will prevent sediment from entering into these drainages and disturbing their course.

2. <u>VEGETATION AND WILDLIFE</u>

a. Will this project affect federal or state listed rare or endangered species of plant life in the project area?

Yes, Significant Unless Mitigated. The Montara manzanita, Santa Cruz manzanita, and western leatherwood do not have formal legal protection (USFWS, CDFG); however, impacts to these plants may be considered significant under the California Environmental Quality Act (CEQA).

None of these three species were identified within the expansion area during the 2004 or 2007 surveys. However, not all of the expansion area could be surveyed on foot because of dense vegetation and steep/inaccessible slopes. The 2004 surveys were conducted within the "typical flowering period" for these species, but the peak flowering period when these species can be most readily identified (even from a distance) is in February and March (LSA observations). The February 2007 survey was scheduled to coincide with the peak flowering period of Montara manzanita, Santa Cruz manzanita, and western leatherwood.

During February 2007, the upper slopes of the expansion area were accessed via an off-site road, which allowed LSA to search areas that were inaccessible during the 2004 surveys. Most of the upper slopes of the expansion area were surveyed, but certain areas of dense vegetation on steep north facing slopes could not be reached. The Montara manzanita and Santa Cruz manzanita would not be expected to occur in these areas because they generally favor more open habitats or chaparral and are not likely to be present in dense north-slope stands of coastal scrub (Hickman 1993). There is a small possibility that a few scattered western leatherwood plants could be present in these inaccessible areas, but it is unlikely due to the lack of observations of this species in any other part of the expansion area. Even though it is unlikely that the western leatherwood is present within the expansion area, its presence in the inaccessible areas cannot be completely ruled out and the following mitigation and salvage measures should be followed.

Mitigation Measure 2: During the clearing of vegetation from the expansion area, a biological monitor familiar with western leatherwood shall work with the vegetation clearing crew. Heavy equipment shall clear the vegetation from one or more transects to provide the monitor access. The biological monitor shall survey the vegetation along the transect edges for western leatherwood and if none are found will give authorization to continue vegetation clearing.

If any western leatherwood plants are observed within the quarry expansion area during the vegetation clearing and the plant or plants cannot be avoided, the quarry shall transplant said plants to a previously quarried area, preferably on a north-or east-facing slope because these slopes are relatively cool and moist. Translocation will occur at the time when vegetation is cleared. Topsoil shall be added to the transplantation site at a depth of 3 feet. This transplantation site should be located on a bench of the quarry for ease of transplantation and maintenance.

Translocation of western leatherwood is an experimental endeavor and different techniques will be utilized in order to discover the best methodology for success at this site. The branches, and as an experiment the trunk(s) of some western leatherwood, should be pruned to reduce water stress. (Observations indicate that western leatherwood sprouts from trimmed and or mowed trunks.) The planting hole for the transplants should be 1.5 times the size of the rootball.

A front-end loader, back-hoe, Vermeer spade, or other type of suitable heavy equipment should be used to excavate the western leatherwood plant. As large an area as possible should be excavated around the rootball of the plant. Western leatherwood reproduces by underground rhizomes and any rhizomes observed in the excavated rootball should be cleanly severed to reduce the chance of infection.

If the western leatherwood plant cannot be planted immediately, it shall be covered with wet burlap or similar material to avoid desiccation and kept out of the sun as much as possible. Nevertheless, the leatherwood should be planted the

same day as excavated. The rootball should be planted such that the crown is slightly above the level of the soil and soil should be firmly packed by hand around the rootball. A trough should be made at the edge of the planting hole to retain water during watering. After transplantation occurs, the plants should be watered-in. A temporary shade cloth structure should be constructed over the transplanted western leatherwood to avoid over exposure to the sun.

Mitigation Measure 3: The applicant shall revise the proposed reclamation plan's revegetation plan to include seedlings of western leatherwood, which should be planted on the quarried slopes of the Pilarcitos Quarry. The seeds should be germinated in a growing facility and when approximately the size of 1-gallon containers, transplanted onto the quarry slopes. As with translocated plants, seedlings should be planted into 3 feet of topsoil that has been placed on a bench of a north- or east- facing slope. A shade structure should be installed over the seedlings. Experimentation will be required to determine the best method for seedling survival.

b. Will this project involve cutting of heritage or significant trees as defined in the County Heritage Tree and Significant Tree Ordinance?

Yes, Significant Unless Mitigated. Portions of the proposed expansion area are dominated by a stand of Douglas fir forest. There is an estimated 25 significant size trees within this area, which will be removed during the first phase of quarry operations. With regard to visual impacts, this should not be significant because the proposed expansion area is not visible from any nearby public viewing point. However, numerous bird and small mammal species use stands of Douglas fir for habitat. Removal of these trees will result in the loss of potential habitat. To mitigate this impact, Staff is recommending the following measure:

Mitigation Measure 4: Prior to the beginning of mining operations within the expansion area, the applicant shall amend the proposed "planting plan" contained within the reclamation plan amendment to include the planting of Douglas fir trees upon the benches created by the quarry operation. Said plan shall include details as to the number, size and location of trees as well as planting and irrigation details.

c. Will this project be adjacent to or include a habitat food source, water source, nesting place or breeding place for a federal or state listed rare or endangered wildlife species?

Yes, Significant Unless Mitigated.
The revised biological report for this project identified potential impacts and mitigation measures for California red-legged frog, San Francisco garter snake, nesting raptors, nesting land birds, Marbled Murrelet and San Francisco Dusky-footed Wood rat. The following is excerpted and summarized from the biological report:

California Red-Legged Frog

Aquatic habitat, upland habitat, and barrier-free dispersal habitat for the California red-legged frog are present within the expansion area. While the proposed action within this area will not impact aquatic habitat or adjacent upland habitat it will have an effect on available dispersal habitat. Existing and future operation of the quarry also has the potential to impact California red-legged frogs as the frogs are attracted to wet areas associated with the sediment ponds and material washing. The various ponds in the currently active quarry, including the quarry operation area, are primarily intended to be used to process material and manage sediment flows from the expansion area. Breeding and tadpole development within the active quarry ponds conflicts with these primary purposes and results in restrictions on their uses that can conflict with other environmental beneficial uses such as water quality protection, sediment management and water storage for aggregate production and dust control. The quarry ponds can also become ecological sinks, attracting breeding adults from other areas and providing limited breeding output.

In order to address ongoing operations, the applicant is pursuing applicable incidental take coverage from the USFWS for the quarry operation. To mitigate for potential impacts to California red-legged frogs from these activities within the currently active quarry, processing plant area, and the proposed expansion, the applicant will implement a series of actions to minimize impacts on the frog to a less than significant level. These actions include: (1) aquatic habitat enhancement and new breeding habitat construction, (2) dispersal habitat protection measures, and (3) protection and management measures for ongoing operations.

Aquatic Habitat Enhancement. Additional breeding habitat will be established within the Nuff Creek drainage: (1) the small sediment trap pond in the expansion area will be modified and enhanced to create or re-establish breeding habitat; (2) three ponds will be constructed in the upper watershed; and (3) following completion of mining in the expansion area, additional pond habitat will be established in the quarry pit as part of the reclamation activities.

Expansion Area Sediment Pond

This section includes a proposal to restore and enhance the small pond in the sediment in the expansion area. Within the Pilarcitos Quarry study area and surrounding landscape, this small sediment pond is not particularly noteworthy as an important aquatic habitat for the California red-legged frog for several reasons: (1) the pond is small in area, (2) it is relatively isolated from other ponds supporting suitable habitat for this species, and (3) the pond appears to provide only periodic breeding and hydration habitat for California red-legged frogs and other amphibians. Over a relatively short time period (1 to 2 years), the pond has filled in with sediment and has likely become too shallow to provide breeding habitat (current maximum water depth is 6 to 8 inches). The adjacent seep,

however, would probably continue to keep the area moist and thus provide potential hydration habitat. If the pond were enhanced and managed properly it could provide a benefit to the California red-legged frog and other pond-breeding amphibians in the Nuff Creek watershed and the surrounding landscape. It also could provide potential habitat for dispersing San Francisco garter snakes.

The existing pond will be enhanced to provide a perennial aquatic habitat for California red-legged frogs. The pond will be designed to provide suitable hydration, foraging, and breeding habitat for this species. The proposed pond will also benefit other pond-breeding amphibians in the local area. The proposed pond will be constructed within the existing sediment trap and will be designed to include deep (3 to 4 feet) areas of permanent water as well as shallow (4 to 6 inches) shelf areas. The deep areas will provide habitat for frogs and tadpoles to escape potential predators and will serve as hydration habitat during dry weather. Deep water will also discourage the growth of emergent aquatic vegetation thus ensuring the presence of deep open water for frogs for longer periods. The shallower shelf habitat will provide rearing habitat for tadpoles. The shallow areas will also provide warmer water temperatures than the deep portions of the pond. Shallow warm water is advantageous to the development of frog tadpoles and facilitates the growth of algae upon which tadpoles feed. The restored and enhanced pond will be approximately 60 feet long and 25 feet wide at it widest point. Water levels in the pond will be supplied by rainfall and the adjacent seep. A drain (stand-pipe) will be installed in the pond so that excess water can be shunted underneath the berm and existing road to the slope above Nuff Creek. This will prevent damage to the berm in the case of extreme rainfall that may fill the pond above its capacity.

Currently there are numerous young alders growing on the existing gravel berm. These young trees will help stabilize the berm and, as they mature, individual trees can be selectively removed if the pond becomes too shaded. The lower edge of the berm adjacent to the existing dirt road will be stabilized with large rocks. Cattails will likely become established around the pond. These plants provide shelter for frogs and a substrate for egg masses, but if they become overgrown they may have to be periodically and selectively removed to maintain the pond as high quality frog habitat.

To prevent infilling of the pond by sediment, a new sediment trap will be installed "upstream" of the current inlet. A berm will be constructed between the new sediment trap and the proposed frog pond. This sediment trap will prevent sediment-laden water (running down the road) from entering the pond. The berm will be constructed from decomposed granite. This will allow water within the new sediment trap to percolate through the constructed berm into the frog pond and the berm itself will act as a sediment filter.

A standpipe will be installed in the trap and excess water will be shunted through a culvert, under the road and down slope into one of the active sediment ponds in

the quarry operations area. The new sediment trap will be monitored and sediment will be removed periodically to prevent overflow of sediment into the restored pond. The new sediment trap will be designed to have a maximum holding time of approximately 24 hours for standing water.

Mitigation Measure 5: Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall implement the sediment pond enhancement plan, including the excavation of deep and shallow areas, the installation of a stand pipe, stabilization of the lower edge of the pond's berm, installation of a sediment trap upslope of the pond's current inlet. A fully detailed plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

Upper Nuff Creek Ponds

New breeding and pond habitat will also be constructed in the upper portion of the Nuff Creek drainage, outside of proposed future expansion areas. These ponds will be designed to compensate/mitigate for managing ponds within the active processing plant and aggregate storage area to preclude California red-legged frog breeding activity.

The largest constructed pond will be located in a relatively flat area on the east side of Nuff Creek. This area currently supports coyote brush and non-native grasses and is an ideal area to locate frog ponds, as it is open and sunny and located adjacent to a 2.72-acre stand of red alder riparian forest with perennially saturated soil and an understory supporting hydrophytic vegetation. Nuff Creek is located just west of the proposed pond construction area. Two additional ponds will be constructed near the old house and where the northeastern most tributary of Nuff Creek enters the flood plain of Nuff Creek. These areas are currently occupied by open stands of coyote brush and/or weedy vegetation with adjacent perennially wet areas that support hydrophytic vegetation.

The proposed ponds will be 12 to 15 feet wide and approximately 35 to 45 feet long. Pond depth will vary from three to four feet with shallow (4 to 6 inches) shelf areas for tadpole rearing, similar to the design parameters described for the expansion area sediment pond habitat enhancement. Each pond is expected to provide breeding habitat for 2 to 4 pairs of frogs.

Mitigation Measure 6: Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall construct habitat ponds in the upper portion of the Nuff Creek drainage as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). A fully detailed grading plan, including equipment to be used and schedule of construction shall be submitted and approved by the County and all other responsible resource agencies prior to the beginning of construction.

Mitigation Measure 7: In order to assess the success of the pond restoration outlined above, a five-year monitoring plan shall be implemented. This plan shall include two surveys per year of each created or restored pond; one in late winter/early spring and another in late summer/early fall. The focus of the monitoring shall be to: (1) document colonization/use of the created and enhanced ponds by California red-legged frogs; (2) estimate numbers of adult frogs using the ponds; and (3) monitor breeding activity and success. In addition, the physical features of the ponds, changes in vegetation, and water level shall be assessed during the monitoring visits. A staff gauge shall be placed in the deepest portion of the ponds for water depth to be accurately recorded during monitoring visits. Photographs of the pond and adjacent area shall be taken during each monitoring visit to provide a record of changes in vegetation cover and water levels. The presence of other amphibians shall be noted during monitoring visits and shall include information on species, numbers of individuals or egg masses, and life cycle (i.e., eggs, larvae, metamorphs, and adults). Field observations shall be recorded on a data sheet and summarized in a short annual report. If necessary, the report shall provide recommendations on adaptive management practices to maintain the pond as suitable habitat for California red-legged frogs.

Eggs, larvae, metamorphs, and/or adult Californian red-legged frogs discovered within the active quarry or expansion area shall be relocated to suitable habitat within a protected portion of the study area by USFWS-approved biologist. If quarry personnel discover a California red-legged frog (or any life cycle stage) within the active quarry or expansion area they shall stop work in the area of discovery and inform the quarry manager. The quarry manager shall contact LSA to determine if relocation is necessary. If relocation is deemed necessary, a USFWS-approved LSA biologist will come to the quarry and relocate the frog, tadpole, or egg mass to a designated mitigation pond or to a suitable upland protected area. An annual report will be completed each year to summarize monitoring activities and findings.

Post-mining Reclamation Ponds

In addition to the sediment pond enhancement in the expansion area and the constructed ponds in the northern portion of the study area, three to four ponds (minimum target of 0.1 acre of pond habitat) will be constructed within the expansion area as part of the reclamation plan. Pond construction and revegetation around the ponds will begin when the expansion area has been mined out (approximately 2 to 3 years from the start of mining). Pond design criteria will be similar to those proposed for the northeast portion of the study area.

Mitigation Measure 8: The applicant shall revise their proposed reclamation plan amendment to incorporate additional habitat ponds within Expansion Area Two as outlined in the revised Biological Resources Report (LSA Associates, June, 2007).

Dispersal Habitat. Landscape features (corridors) that will provide dispersal habitat for frogs moving through the expansion area include: (1) the EHSA and associated buffers along the riparian corridor on the western edge of the expansion area, (2) the other EHSAs and buffers within the expansion area, (3) the adjacent undeveloped lands to the east of the expansion area, and (4) the terraced slopes above the quarry operations area that are currently being revegetated. These corridors will provide shelter and foraging habitat for dispersing frogs and allow them to move to and from the restored pond in relative safety.

To facilitate frog movement through these corridors and increase their value as summering habitat for California red-legged frogs, small water catchments will be constructed at selected seeps that are present in these areas. The catchments will be designed to collect and retain water from seeps located on the slopes south and east of the restored pond and on the slopes east of the expansion area. The design of the catchments will depend on the specific features of the individual seeps (such as substrate, rate of flow, existing cover, etc.). If necessary, a perforated pipe could be inserted into the substrate at the seep to increase and direct surface flow to the catchment. The catchments could be constructed by digging a shallow pit or by placing sandbags or other material to form a low dam. If necessary, catchments can be fenced to exclude potential predators or livestock, and covered to prevent the accumulation of debris.

Mitigation Measure 9: Within one year of the beginning of mining activities in Expansion Area Two, the applicant shall submit, for review and approval by the County and all responsible resource agencies, a plan to implement the water catchments strategy as outlined in the revised Biological Resources Report (LSA Associates, June, 2007). Said plan shall indicate proposed locations of said catchments, methods of construction, and timetable for implementation.

Avoidance and Protection Measures. Before the onset of mining or other construction in the expansion area, or restoration activities at the sediment pond, the following measures shall be implemented to minimize potential adverse effects to the California red-legged frog. These measures are adapted from and incorporate the standard protection measures outlined in the *Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog* (USFWS letter report, dated January 26, 1999):

Mitigation Measure 10: At least 15 days prior to the onset of activities, the project proponent shall submit the name(s) and credentials of biologists who would conduct activities associated with California red-legged frog. No project activities shall begin until the project proponent has received written approval from the USFWS.

Mitigation Measure 11: USFWS-approved biologists will conduct a survey for the California red-legged frog at the sediment trap pond and surrounding area two weeks before the onset of quarry operations and other construction in the expansion area, or restoration activities at the sediment pond. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life stages is appropriate. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

Mitigation Measure 12: Before the onset of quarry operations, other construction activities within the expansion area, or restoration activities at the sediment pond the approved biologist(s) shall conduct a training session for all quarry personnel working within the expansion area. At a minimum, the training shall include: (a) a description of the California red-legged frog and the San Francisco gartersnake and their habitat requirements; (b) the general measures that are being implemented to conserve the red-legged frog and San Francisco gartersnakes as they relate to the quarry; and (c) the boundaries within which the quarry expansion may be accomplished.

Mitigation Measure 13: A USFWS-approved biologist shall be present at the expansion area until such time as all removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. After that time, the quarry operator shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the U.S. Army Corps of Engineers (Corps) and/or USFWS.

Mitigation Measure 14: During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly.

Mitigation Measure 15: All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from Nuff Creek, the pond, and associated tributaries. The applicant will also prepare a plan to allow a prompt and effective response to any accidental spills into the creek, pond, or other aquatic habitats. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

Mitigation Measure 16: The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to complete the quarry expansion. Routes and boundaries shall be clearly demarcated, and these areas shall be located outside ESHAs.

Mitigation Measure 17: To control erosion during and after quarrying operations the project proponent shall implement best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan.

Mitigation Measure 18: When a work site is to be temporarily de-watered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent red-legged frogs from entering the pump.

Mitigation Measure 19: A USFWS-approved biologist shall permanently remove, from within the project site, any individuals of exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

Mitigation Measure 20: Although frog movement to and from the restored pond is likely to occur primarily at night when the when the quarry will not be in operation, a gate will be placed across the road west of the pond at its junction with the main quarry access road. This will restrict traffic on the road adjacent to restored pond to the occasional vehicle trip for road maintenance.

Mitigation Measure 21: A frog-proof barrier will be placed along both sides of the rock chute between the expansion area and the quarry processing area. This will keep dispersing frogs from traversing or sheltering in an area where they are in danger of being crushed by falling rock.

Mitigation Measure 22: All new and existing onsite ponds will be regularly inspected during the breeding season and any adults, tadpoles, or egg masses observed will be captured/collected and relocated to suitable aquatic habitat outside of areas of activity (e.g., constructed/restored ponds).

Mitigation Measure 23: To the maximum extent practicable given rainfall patterns and sediment/stormwater retention requirements, water levels in the ponds within the active quarry and processing areas should be kept dry, or ponding limited to a maximum of 24 hours during the frog breeding season. Ponds should also be regularly maintained to preclude the establishment of aquatic vegetation.

San Francisco Gartersnake

A resident population of San Francisco garter snakes is unlikely to be present in the Nuff Creek drainage due to the lack of extensive patches of suitable breeding habitat; however, this species is known to occur within the upper Pilarcitos Creek drainage less that one mile north of the study area and in the vicinity of Half Moon Bay to the southwest. It is unlikely that San Francisco garter snakes disperse through the Nuff Creek drainage with any regularity, but the possibility of an occasional dispersing snake cannot be ruled out with the available information. Because this species is considered fully protected by the CDFG, take is not allowed; therefore, additional measures are required to assure that no take occurs during quarry operations.

Mitigation Measure 24: A snake-proof barrier (snake fence) shall be installed around the perimeter of the active rock excavation area and will have one-way funnel exit doors placed at various locations to allow snakes and other animals

within the quarry area to escape. The active rock excavation area will vary as quarry operations progress and the snake fence shall be moved accordingly. The fence shall be built with silt-fencing and/or wooden boards and buried six inches deep in the substrate. The fence will exclude any potential dispersing snakes from the active quarry area and confine them to ESHAs as they move through the area. The quarry currently has as speed limit of 15 miles per hour for all vehicles within the active quarry. This speed limit combined with driver awareness (through training described under California red-legged frog, above) of the potential for snakes in the quarry will greatly reduce the likelihood of impacts to San Francisco garter snakes.

Mitigation Measure 25: A visual search for gartersnakes will be conducted concurrently with the daytime California red-legged frog monitoring surveys. In addition, two to three cover-boards of half-inch plywood (2.5 x 3 feet) will be placed in permanent locations in open areas near the constructed ponds. Cover-boards are attractive to snakes and provide them with a concealed space to thermoregulate and hide from predators. The cover-boards will be numbered and their locations mapped with a GPS unit. The boards will be periodically checked for snakes. The results of the cover-board monitoring will be included in the red-legged frog annual report.

Nesting Raptors. No nesting raptors were discovered in the expansion area. The presence of an active raptor nest would pose a constraint to vegetation removal in the expansion area while the nest was active. The possibility exists that a raptor nest could be established within the expansion area at some point prior to beginning of operations. In order to avoid potential impacts to nesting raptors, the following measure is proposed:

Mitigation Measure 26: If feasible, the removal of vegetation and overburden within the expansion area shall be scheduled for the period between September 1 and November 30 so as to avoid disturbance to nesting birds. If this is not possible, a nesting raptor survey shall be conducted in the expansion area prior to vegetation removal. If an active raptor nest is found within the expansion area, the nest site and a suitable buffer zone around the nest site shall be established, and no work shall occur within this buffer zone until the young had fledged.

Nesting Land Birds. Nesting birds protected under the Migratory Bird Treaty Act could pose a constraint to the development of the expansion area. Most of the bird species observed in the expansion area are protected under the Act and impacts to the nest sites, nests, eggs, and young shall be avoided. In order to avoid potential impacts to nesting land birds, the following measure is proposed:

Mitigation Measure 27: If feasible, the removal of vegetation and overburden shall be scheduled for the period between September 1 and March 31 in order to avoid disturbance to nesting birds. If vegetation must be scheduled for removal in the period between April 1 and August 31, then a nesting bird survey shall be

conducted in the expansion area. If nesting birds are discovered, the nest and a suitable buffer zone (50 to 100 feet) around the nest shall be established, and no work shall occur within this buffer zone until August 31 or until the young have fledged.

Marbled Murrelet. The proposed mining activity in the expansion area will not likely have an adverse effect on marbled murrelets due to the lack of suitable nesting habitat for this species within or adjacent to the expansion area. In addition, the expansion area is adjacent to an active quarry and any impacts to murrelets moving up and down the drainage or across drainages (from nesting areas further inland) have most likely been ongoing for the past 30 years as a result of the quarry operation and/or the operation of the Ox Mountain Landfill in the adjacent valley and ridgeline to the west. Murrelets flying up and down Pilarcitos Creek to the east of the expansion area are unlikely to be adversely affected by mining activity in the expansion area because the upper limit of mining is well below the ridge line and the steep intervening ridge would reduce noise from the quarry to ambient levels in the Pilarcitos Creek drainage.

Potential nesting habitat for marbled murrelets occurs at the upper end of the Nuff Creek watershed and the status of this species in the study area is of concern to the CDFG and USFWS. To address these concerns, a marbled murrelet survey has been initiated in the study area. The survey will follow standard protocol for this species to determine presence or probable absence (Mack et al. 2003). Presence/absence surveys require a minimum of five site visits in each of two consecutive years using the recommendations in the 2003 Protocol. LSA, in consultation with the CDFG and USFWS, designed the Pilarcitos Quarry survey (starting in 2007) to include seven site visits at five survey stations over two consecutive years for a total of 14 site visits.

If there are no detections in both year one (2007) and year two (2008), the site can be classified as probable absence (i.e., marbled murrelets are likely not present). If murrelets are found during the first year survey, every reasonable effort will be made to conduct nine survey visits in each of the two survey years for a total of 18 visits unless occupancy is established in fewer visits. Occupancy is generally established by observing murrelets flying in circles above the forest canopy (Mack et al. 2003). The marbled murrelet survey period for California is from April 15 to August 5 (Mack et al. 2003).

The first, second, and third surveys for 2007 were conducted on May 8 and 31, and June 12. No murrelets were observed during these surveys. Subsequent surveys for 2007 are scheduled on June 26, and July 3, 17, and 24.

San Francisco Dusky-footed Woodrat. The coastal scrub and riparian corridors within the expansion area support good to high quality habitat for the dusky-footed woodrat. Impacts to woodrats and their habitat within the expansion area will be partially mitigated by the preservation of the riparian corridors and

buffers, which are ESHAs. Impacts to woodrats in the proposed mining areas will be mitigated as part of the quarry reclamation plan.

The reclamation plan for the Pilarcitos Quarry includes a revegetation plan that will benefit dusky-footed woodrats. The revegetation plan utilizes trees and shrubs that are components of the native vegetation in the Nuff Creek watershed such as California bay, blue blossom, poison oak, California coffeeberry, California blackberry, coyote brush, and thimbleberry. Riparian components include red alder, yellow willow, and arroyo willow. This plant palette is currently in use for the revegetation plan of the terraces above the quarry operations area south of the expansion area. As this vegetation matures it will provide habitat for woodrats. The protected riparian areas, associated buffers, and undisturbed habitat to the east will provide a refuge for the local woodrat population and a source population for colonization of the revegetated areas.

Resident woodrats within the expansion area will be impacted during removal of vegetation and overburden. Some individual woodrats (resident within the expansion area) will likely escape into adjoining undisturbed areas during vegetation removal; however, these escaping individuals will likely not have a high survivorship. Escaping woodrats will presumably be dispersing into habitat occupied by resident woodrats and, as previously noted, woodrats are territorial and generally exclude intruders from their nests. To mitigate against this impact, the following measure is proposed:

Mitigation Measure 28: To provide temporary shelter for woodrats forced out of the expansion area by vegetation removal, artificial shelters constructed of old wine half-barrels shall be placed along the edge of the area to be cleared of vegetation. The wine barrels will be placed with the open end down and holes cut in the sides near ground level will allow woodrats to enter and exit. Wine barrels will be similarly placed within active reclamation areas within the existing quarry in order to provide cover for woodrats that may seek to establish territories in these areas.

Mitigation Measure 29: The CDFG has expressed a primary interest in making an attempt to gather data on survivorship of displaced woodrats to gain a better understanding of impacts to these mammals from development. To this end, a woodrat trapping and marking program will be conducted. Prior to vegetation clearing in the expansion area, a live-trapping program will be conducted for woodrats using Sherman small mammal traps. All trap locations will be numbered and located on a map of the expansion area with the aid of a GPS unit. All woodrats captured will be sexed, measured, weighed, and marked with a numbered ear tag. This will allow for subsequent identification of individual woodrats if they are recaptured. Ear tagging is a humane standard method for marking small mammals (Wilson et al.1996). Numbering and mapping trap locations will provide information on the movements of recaptured animals.

Trapping will continue (in areas still supporting vegetation) during vegetation removal and grading until the entire work area has been cleared of vegetation. Concurrent with clearing and after the expansion area is cleared, peripheral areas (including reclaimed areas within the existing quarry that support woodrat habitat) will be sampled to determine if any of the displaced woodrats (i.e., ear-tagged individuals) are present and reestablishing territories. Trapping will be conducted for at least two periods in these peripheral areas for one year after vegetation clearing in the expansion area. The results of the trapping survey will be summarized in an annual report.

d. Will this project significantly affect fish, wildlife, reptiles, or plant life?

Yes, Significant Unless Mitigated. See Question 2.a,b, and c, above.

f. Will this project infringe on any sensitive habitats?

Yes, Significant Unless Mitigated. See Question 2.c. above.

g. Will this project involve clearing land that is 5,000 sq. ft. or greater (1,000 sq. ft. within a County Scenic Corridor), that has slopes greater than 20% or that is in a sensitive habitat or buffer zone?

Yes, Significant Unless Mitigated. The expansion of the quarry will result in the clearing of well over 5,000 sq. ft. of land. Potential impacts to sensitive habitats and their buffer zones were discussed above. One of the major issues revolving around quarries is the reclamation of mined areas; in particular, revegetation of cut slopes. As part of their proposal, the applicant has submitted a detailed revegetation plan for the expansion area. The mitigation for this impact is to implement the revegetation plan as proposed. Unlike other types of development proposals that the County reviews, the County and State mining regulations require bonding by a mine operator to ensure that reclamation is implemented per the approved plan. Staff believes this requirement obviates the need for a mitigation measure to address this impact.

3. PHYSICAL RESOURCES

a. Will this project result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, oil, trees, minerals or top soil)?

Yes, Not Significant. The project is a quarry and will, by definition, remove natural resources. The quarry property has been designated by the State as a source of regionally significant mineral resources. Continued production of mineral resources from this location has been considered critical by the State.

b. **Will this project involve grading in excess of 150 cubic yards?**

Yes, Not Significant. See Question 1.a.

4. AIR QUALITY, WATER QUALITY, SONIC

a. **Will this project generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on site or in the surrounding area?**

Yes, Not Significant. The quarry currently operates under an existing permit from the Bay Area Air Quality Management District. This permit will remain in effect with no anticipated change due to the expansion of the quarry.

f. **Will this project generate noise levels in excess of levels determined appropriate according to the County Noise Ordinance standard?**

Yes, Not Significant. The quarry's existing noise generation activities (crushing and screening of rock, hauling and loading of material) will continue at the same levels as currently exist. No new or additional amounts of equipment will be utilized in the proposed expansion. The expansion will simply shift operations from one area of the quarry, to another. The existing sound buffers will remain in place. No new noise receptors have located adjacent to the quarry. There is no reason to believe that the proposed expansion will generate new or elevated noise levels.

g. **Will this project generate polluted or increased surface water runoff or affect groundwater resources?**

Yes, Significant Unless Mitigated. See question 1.f above.

5. TRANSPORTATION

c. **Will this project result in noticeable changes in vehicular traffic patterns or volumes (including bicycles)?**

No. The quarry's current operating permit limits the number of truck trips that can leave the site by requiring 2-4 minutes of separation between trucks, depending on the time of day. The applicant is not requesting an alteration to this condition. There will be no change in the current traffic volumes, patterns or hazards as a result of this expansion.

6. LAND USE AND GENERAL PLANS

e. **Will this project serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed**

areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?

Yes, Not Significant. The project is, by definition, an expansion of an existing use into a previously undeveloped area. However, since 1972 when the first EIR for the quarry was written, it has been acknowledge that the Quarry would eventually move into this area. Cursory analysis of the impact of this eventual expansion was conducted at that time. The applicant is simply proposing to implement an expansion that has been foreseen and discussed for nearly 30 years.

7. AESTHETIC, CULTURAL AND HISTORIC

a. Will this project be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?

Yes, Not Significant. The project site is within the boundaries of the San Mateo Road County Scenic Corridor. However, because of intervening topography and vegetation, the quarry site is not visible from San Mateo Road. The shoulders of the two ridges that comprise the Nuff Creek watershed have elevations of 948 ft. and 856 ft., respectively, as they approach San Mateo Road. The proposed expansion area will not be visible from adjacent public areas.

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ATTACHMENT E

BIOLOGICAL RESOURCES REPORT AND MITIGATION AND MONITORING PLAN PILARCITOS QUARRY (EXPANSION AREA 2)

SAN MATEO COUNTY, CALIFORNIA

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LSA

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TABLE OF CONTENTS

INTRODUCTION 1
LOCATION 1
PROJECT DESCRIPTION 1
OVERVIEW OF EXISTING CONDITIONS 3
NOMENCLATURE 3
REGULATORY CONTEXT 4
APPLICABLE FEDERAL LAWS AND REGULATIONS 4
Endangered Species Act (ESA) 4
Clean Water Act 4
Migratory Bird Treaty Act 5
APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS 5
California Coastal Management Program 5
California Endangered Species Act 10
California Fully Protected and Protected Species 10
California Environmental Quality Act 10
Section 401 Water Quality Certification 10
California Fish and Game Code Section 1600 11
NON-GOVERNMENTAL ORGANIZATIONS 11
California Native Plant Society 11
METHODS 12
PRE-FIELD INVESTIGATIONS 12
PLANT SURVEYS 12
WILDLIFE SURVEYS 12
WETLANDS 13
BOTANICAL RESOURCES 14
PLANT COMMUNITIES 14
Coastal Scrub 14
Sparse Scrub/Non-Native Grassland 15
Alder Riparian Forest 16
Arroyo Willow 16
Douglas Fir 17
Pond 17
SPECIAL-STATUS PLANTS 17
SENSITIVE PLANT COMMUNITIES AND HABITATS 19
Northern Maritime Chaparral 19
ZOOLOGICAL RESOURCES 20
WILDLIFE HABITATS 20
Coastal Scrub 20
Arroyo Willow 20
Alder Riparian Forest 20
Douglas Fir 21
Blue Gum 21
Aquatic Habitats 21
Other Habitats Used by Wildlife 22
SPECIAL-STATUS WILDLIFE 22
San Bruno Elfin *(Callophrys mossii bayensis)* 22

Steelhead, Central California Coast Evolutionary Significant Unit (ESU) *(Oncorhynchus mykiss)* 23
California Red-Legged Frog *(Rana aurora draytonii)* 23
San Francisco Gartersnake *(Thamnophis sirtalis tetrataenia)* 24
Pacific Pond Turtle *(Actinemys marmorata)* 25
Marbled Murrelet *(Brachyramphus marmoratus)* 26
Nesting Raptors 27
California Spotted Owl *(Strix occidentalis occidentalis)* 27
Nesting Land Birds 27
Bats 28
San Francisco Dusky-Footed Woodrat (*Neotoma fuscipes annectins*) 28
WETLANDS, RIPARIAN AREAS AND PONDS 30
DEFINITIONS AND REGULATIONS 30
Wetlands 30
U.S. Fish and Wildlife Service Classification System 30
U.S. Army Corps of Engineers 31
California Coastal Act 32
Technical Criteria 33
Vegetation Criteria 33
Soils Criteria 34
Hydrology Criteria 36
Riparian Habitat 36
Buffer Zones 37
WETLANDS, RIPARIAN AREAS AND PONDS IN THE EXPANSION AREA 37
Perennial and Intermittent Streams 38
Riparian Areas 38
Wetlands 38
Pond (within sediment trap) 39
MITIGATION AND MONITORING PLAN 40
MITIGATION PLAN 40
Environmentally Sensitive Habitat Areas 40
Special-status Plant Species 40
Riparian Habitat 42
California Red-Legged Frog 42
San Francisco Gartersnake 47
Wetlands and Riparian Area 49
MONITORING PLAN 50
Environmentally Sensitive Habitat Areas 50
Special-Status Plants 50
Special-Status Animals 50
REPORT CONTRIBUTORS 52
LSA ASSOCIATES, INC. 52
LITERATURE CITED 53

FIGURES
(at end of report)

Figure 1: Regional Location
Figure 2: Study Area Overview
Figure 3: Plant Communities and Habitats
Figure 4 Marbled Murrelet Survey Stations
Figure 5: California Red-Legged Frog Occurrences Occurences and Critical Habitat
Figure 6: Marbled Murrelet Occurences and Critical Habitat
Figure 7: Wetlands, Riparian Areas and Ponds
Figure 8: Proposed Frog Mitigation Ponds

TABLES
(at end of report, after Figures)

Table A: Special-Status Plant Species Evaluated for Expansion Area 2
Table B: Special-Status Animals Species Evaluated for Expansion Area 2

APPENDICES

A: PLANT LIST
B: ANIMAL LIST
C: PILARCITOS QUARRY NOISE STUDY
D: SWAIM BIOLOGICAL SAN FRANCISCO GARTERSNAKE LETTER

INTRODUCTION

West Coast Aggregates, Inc. is planning an expansion of the existing Pilarcitos Quarry in San Mateo County, California. The current quarry operation covers approximately 53 acres and involves surface mining of rock and the production of crushed rock and sand. Proposed expansion area 2, hereafter referred to as the expansion area, is located north of and adjacent to the existing quarry. The entire site, including the existing quarry operation and the expansion area, is referred to as the Pilarcitos Quarry study area (study area). The study area is approximately 593 acres in size.

This report consists of two primary parts. The first describes the regulatory context in regards to biological resources and the biological resources that are present in the expansion area. The second part describes the mitigation and monitoring plan to offset impacts from the proposed quarry operations in the expansion area.

The reserves of aggregate material in the Pilarcitos Quarry are estimated to last approximately 75 years. Expansion area 2 is the first in a series of seven quarry expansions planned over the life of the mining operation. This report is the initial phase of a comprehensive conservation strategy that will be developed to address the entire Pilarcitos Quarry study area. It is anticipated that subsequent expansions will be evaluated in an EIR currently being prepared by the County of San Mateo. It is also anticipated that a comprehensive Habitat Conservation Plan (HCP) will be prepared for the long term quarry expansion in order to address potential impacts to state and federally-listed threatened and endangered species.

LOCATION

Pilarcitos Quarry is located within the drainage of Nuff Creek, San Mateo County, California (Figures 1 and 2). Nuff Creek is a north-trending tributary of Pilarcitos Creek, which empties into the Pacific Ocean approximately 3.25 miles west of the project site, just north of the City of Half Moon Bay. The project site is situated within Section 15, township 5 south, range 5 west of the Mount Diablo Base and Meridian on the 7.5' USGS Montara Mountain and Half Moon Bay Quads. Access to the Pilarcitos Quarry is via a private road off of California State Highway 92.

PROJECT DESCRIPTION

West Coast Aggregates is proposing to annex and mine (disturb) approximately 9.2 acres adjacent to and north of their current operation (Figure 3). The additional aggregate reserves will supply mining material for approximately three years. The amount of material estimated to be extracted from this area is 853,661 tons. The processing plant will remain at its present location and no new mobile equipment will be added.

All of the mitigation measures currently implemented as part of the ongoing operation will continue unchanged. New mitigation measures that will be incorporated as part of the annex project include installation of fencing at the boundaries between the annex area and adjoining sensitive habitat areas. Silt fabric will be installed on the inside face of the fence. The fencing will prevent rock and sediment

from entering the sensitive habitat areas and will temporarily restrict wildlife movement across the active mining area.

The hours of operations will be 6:00 a.m. to 6:00 p.m., 240 days per year. There is existing light located at the processing plant, and there will be no added lighting in expansion areas.

The process for mining the native granite rock involves several steps: 1) a GPS system is used to accurately mark the boundaries of the extraction site and to locate the top edge of the excavation at a minimum of 50 feet from the property line; 2) a bulldozer road is constructed from the existing access road on the quarry floor to the top of the planned excavation; 3) a field fence with silt fence mounted on the inside face is installed along the boundary between the extraction area and all adjoining environmentally sensitive habitat areas (ESHAs); 4) a bulldozer is used to remove surface vegetation from the extraction area; 5) a bulldozer is used to remove topsoil from the area to be mined and push it to the side of the excavation area for temporary stockpiling until it can be used for resoiling the benches or taken to the process area for stockpiling; and 6) a heavy-duty bulldozer fitted with a long shank and/or a large excavator is used to create the cut slope extending downward from the initial point of entry. Where the subsurface material cannot be easily ripped it is first fractured using a sequential blasting system. Blasting in the current operation is done twice monthly.

In the case of expansion area 2, located immediately north of the current work area, the transport of raw material excavated from the upper three fourths of the excavation area can be pushed down a side chute to the south (Figure 3). A hopper will be installed at the bottom of the chute and the excavated material will be transported directly to the process plant by conveyor. This method of transport will apply to material excavated from the upper three fourths of the expanded quarry area. Material from the lower one fourth of the excavation area will be loaded into large capacity off-road haul trucks for transport to the process plant.

The mining cut is begun at the setback line a minimum of 50 feet from the property line and results in the creation of a working terrace that is continuously lowered as mining progresses down slope. A temporary low earth berm is maintained at the outer edge of the extraction area to prevent rock from rolling away from the work area. The mined slope is constructed with a vertical rise of 1 foot for each 1.25 feet of horizontal distance. Thirty-foot-wide benches are constructed at 100-foot intervals to catch loose material if any should fall and to convey drainage laterally to a small sediment trap constructed at the end of each bench. Benches are sloped from front to back at a two percent gradient and laterally at a two to five percent gradient.

As mining is completed in the expansion area, reclamation activities are initiated according to the project's Reclamation Plan (LSA 2006).

An additional aspect of the project involves improvements and repairs to the existing road running up the canyon. Two culverts, one on the mainstem of Nuff Creek and the other on a small perennial tributary have been washed out or clogged with sediment (see Figure 2 for general location). The culverts on the mainstem and tributary will be replaced with three 36-inch diameter and two 24-inch diameter culverts, respectively. The road bed will be re-graded and stabilized. These road improvements will reduce downstream sedimentation and improve stream flow; they will also allow equipment, required for mitigation pond construction, to access the proposed mitigation areas in the upper watershed.

OVERVIEW OF EXISTING CONDITIONS

The expansion area is located on the steep western slopes of the Nuff Creek drainage (Figure 3). The expansion area occupies a slope above the creek and the adjacent drainage to the north. Nuff Creek traverses the western edge of the expansion area and the existing quarry is to the south. The eastern edge of the expansion area occupies the steep upper slopes of the eastern ridge line of the Nuff Creek watershed. The western edge of the expansion area is flanked by a dirt road running along the canyon floor just west of the creek itself.

Within the expansion area, Nuff Creek is contained in a steep-sided channel (10-15 feet deep) in the alluvium of the canyon floor. During the survey period the creek exhibited a steady flow of clear water (2-3 inches in depth) over an unconsolidated sandy bed. Much of the creek bed was inaccessible due to the steep stream banks and dense riparian vegetation.

A graded road on the lower slopes of the expansion area provides access to an equipment storage area located adjacent to a drainage on the northern edge of the expansion area. A western extension of this road provides access to a water storage tank located above the existing quarry. A small constructed sediment pond (approximately 30 by 10 feet) is present behind a gravel berm adjacent to and east of the graded road (Figure 3).

The surficial geology in the project area consists of deeply weathered Cretaceous granitic rocks (Wagner et al. 1991). This rock is exposed along a steep south-facing cliff that has been cut above the graded road. Elevations range from approximately 380 feet in the creek bed to approximately 1000 feet on the upper ridgeline.

The soils in the project area are mapped as four types on the San Mateo Area 1961 Soil Conservation Service maps (USDA 1961). The ridgetops, which lie mostly outside the project area, are mapped as Miramar coarse sandy loam, moderately steep, eroded. The majority of the expansion area is on a slope of 41 percent or steeper and is mapped as Miramar coarse sandy loam, very steep, eroded. This soil series is moderately deep over bedrock, with rapid permeability and low water holding capacity. Soils are mapped as Farallone coarse sandy loam, moderately steep, eroded, in small drainages or intermittent streams that feed into the mainstem of Nuff Creek, below the expansion area. Here runoff is slow to medium, permeability is rapid, and the content of loam is influenced by wetness in depressions and drainages. Willows and other hydrophytic plants grow in depressions and drainages in this soil type. The southern slopes of the expansion area, adjacent to the existing quarry, are mapped as Rough Broken Land. This soil series consists of very steep rocky uplands with seldom more than 10 inches of soil material, primarily vegetated by shrubs and a few trees.

NOMENCLATURE

The scientific and vernacular nomenclature for the species and vegetation types used in this report are from the following sources: vegetation and flora, Hickman (1993), CNPS (2001), and Beidleman and Kozloff (2003); fishes, Nelson et al (2004); amphibians and reptiles, Crother (2000) and Crother et al. (2003); birds, American Ornithologist' Union (1998) and supplements; and mammals, Jones et al. (1997) and Reid (2006). For animals, subspecies names are used only when a specific subspecies is considered a special-status species by the California Department of Fish and Game (CDFG) or United States Fish and Wildlife Service (USFWS).

REGULATORY CONTEXT

APPLICABLE FEDERAL LAWS AND REGULATIONS

Endangered Species Act (ESA)

The United States Fish and Wildlife Service (USFWS) has jurisdiction over formally listed threatened and endangered terrestrial and freshwater species. In addition, the National Marine Fisheries Service (NMFS) has jurisdiction over marine and anadromous fish species under the federal Endangered Species Act (ESA). This act protects listed animal species from harm or "take," which is broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct." The term "harm" is further defined by USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. The term "harass" also is further defined by USFWS as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR §17.3). An activity can be defined as a "take" even if it is unintentional or accidental. Listed plant species are provided less protection. Plants are legally protected from take under the ESA if on federal land or from federal actions, such as issuing a wetland fill permit.

An endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the *Federal Register*.

In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate (formerly category 1 candidate) species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule. Activities that could result in take of a federally listed species require an incidental take authorization resulting from a Section 7 consultation or a Section 10 permit.

Clean Water Act

The U.S. Army Corps Engineers (Corps) is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the United States. Waters of the United States and their lateral limits are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark (OHWM) (33 CFR Part 328.3(e)) or the limit of adjacent wetlands (33 CFR Part 328.3(b)). Any permanent extension of the limits of an existing water of the United States, whether natural or man-made, results in a similar extension of Corps jurisdiction (33 CFR Part 328.5).

Waters of the United States fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters,

and estuaries. Wetlands include marshes, wet meadows, seep areas, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal pools, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated water bodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the United States.

Waters and wetlands that cannot trace a continuous hydrological connection to a navigable water of the United States are not tributary to waters of the United States. These are termed "isolated wetlands." Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce (33 CFR Part 328.3(a)). The Corps may or may not take jurisdiction over isolated wetlands depending on circumstances.

In general, a Corps permit must be obtained before placing fill or grading in wetlands or other waters of the United States. The Corps will be required to consult with the USFWS and/or NMFS under Section 7 of the ESA if the action subject to Clean Water Act permitting could result in take of federally listed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. In addition, it contains a clause that prohibits baiting or poisoning of these birds. As used in this act, the term "take" is defined as meaning, "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most of the native bird species that occur in the region of the project site are covered by this act.

APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS

California Coastal Management Program

The California Coastal Commission (CCC) oversees implementation of the federal Coastal Zone Management Act of 1990, which required coastal states to develop certified Coastal Zone Management Programs. All development in the California Coastal Zone requires either a Coastal Development Permit or an exemption from Coastal Permit requirements. For a permit to be issued by the CCC and the County of San Mateo the development must comply with the policies of the approved Local Coastal Program (LCP) and those ordinances adopted to implement the LCP. Certain biological resources in the Coastal Zone may qualify as environmentally sensitive habitats areas (ESHAs). These ESHAs include, but are not limited to wetlands, riparian, and endangered species habitats. The County of San Mateo adopted policies for a LCP in June 1998, which address protection measures and permitted uses in environmentally sensitive habitats. Environmentally sensitive habitats in San Mateo County are defined as:

> "any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting 'rare and endangered' species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding

or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes (LCP Section 7.1)"

"Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species." The CCC generally refers these sensitive habitat areas as Environmentally Sensitive Habitat Areas (ESHA).

As part of the development review process, permit conditions require the applicant to demonstrate that there will be no significant impact on environmentally sensitive habitats. If it is determined that significant impacts may occur, the applicant is required to fulfill other conditions outlined in Section 7 of the LCP.

The LCP outlines constraints pertaining to sensitive habitats as follows:

Protection of Sensitive Habitats

a. Prohibit any land use or development that would have significant adverse impact on sensitive habitat areas.

b. Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats.

Permitted Uses in Sensitive Habitats

a. Permit only resource dependent uses in sensitive habitats. [Permitted uses in rare and endangered species habitats, riparian corridors, and wetlands are outlined below under *Wetlands and Riparian Areas*. Additional information related to constraints and permitted pertaining to habitats that support rare, endangered, and unique species are outlined below under *Botanical Resources* and *Zoological Resources*.]

b. In sensitive habitats, require that all permitted uses comply with USFWS and CDFG regulations.

Permit Conditions

a. As part of the development review process, require the applicant to demonstrate that there will be no significant impact on sensitive habitats. When it is determined that significant impacts may occur, require the applicant to provide a report (prepared by a qualified professional) which provides: (1) mitigation measures which protect resources and comply with the policies of the Shoreline Access, Recreation/Visitor-Serving Facilities and Sensitive Habitats Components, and (2) a program for monitoring and evaluating the effectiveness of mitigation measures. Develop an appropriate program to inspect the adequacy of the applicant's mitigation measures.

122

b. When applicable, require as a condition of permit approval the restoration of damaged habitat(s) when in the judgment of the Planning Director restoration is partially or wholly feasible.

The LCP defines additional protections and permitted uses for rare and endangered species habitats, riparian habitat and wetlands and specified buffer zones. These criteria are addressed below:

Rare and Endangered Species Habitats

1. Education and research,

2. Hunting, fishing, pedestrian and equestrian trails that have no adverse impacts on the species or its habitat, and

3. Fish and wildlife management to restore damaged habitats and to protect and encourage the survival of rare and endangered species.

If designated critical habitat is present *"permit only those uses deemed compatible by the USFWS in accordance with the provisions of the Endangered Species Act of 1973, as amended."*

Riparian Habitats

Under the San Mateo LCP requirements, a buffer zone of 50 feet from the limit of riparian vegetation is required around the Nuff Creek riparian corridor. A buffer zone of 30 feet from the limit of riparian vegetation is required around the riparian corridor that is associated with the intermittent tributary to Nuff Creek. The LCP outlines constraints pertaining to riparian corridors and buffer zones as follows

Permitted Uses in Riparian Corridors and Buffer Zones

Permit only the following uses:

1. Education and research,
2. Consumptive uses as provided for in the Fish and Game Code and Title 14 of the California Administrative Code,
3. Fish and wildlife management activities,
4. Trails and scenic overlooks on public land(s), and
5. Necessary water supply projects.

When no feasible or practicable alternative exists, permit the following uses:

6. Stream dependent aquaculture, provided that non-stream dependent facilities locate outside of corridor,
7. Flood control projects, including selective removal of riparian vegetation, where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development,
8. Bridges when supports are not in significant conflict with corridor resources,

9. Pipelines,
10. Repair or maintenance of roadways or road crossings,
11. Logging operations which are limited to temporary skid trails, stream crossings, roads and landings in accordance with State and County timber harvesting regulations, and
12. Agricultural uses, provided no existing riparian vegetation is removed, and no soil is allowed to enter stream channels.

Performance Standards [Constraints] in Riparian Corridors

Require development permitted in corridors to:

1. Minimize removal of vegetation,
2. Minimize land exposure during construction and use temporary vegetation or mulching to protect critical areas,
3. Minimize erosion, sedimentation, and runoff by appropriately grading and replanting modified areas,
4. Use only adapted native or non-invasive exotic plant species when replanting,
5. Provide sufficient passage for native and anadromous fish as specified by CDFG,
6. Minimize adverse effects of waste water discharges and entrainment,
7. Prevent depletion of groundwater supplies and substantial interference with surface and subsurface waterflows,
8. Encourage waste water reclamation,
9. Maintain natural vegetation buffer areas that protect riparian habitats, and
10. Minimize alteration of natural streams.

Performance Standards [Constraints] in Buffer Zones

Require uses permitted in buffer zones to:

1. Minimize removal of vegetation,
2. Conform to natural topography to minimize erosion potential,
3. Make provisions (i.e., catch basins) to keep runoff and sedimentation from exceeding pre-development levels,
4. Replant where appropriate with native or non-invasive exotic plant species,
5. Prevent discharge of toxic substances, such as fertilizers and pesticides, into the riparian corridor,
6. Remove vegetation in or adjacent to manmade agricultural ponds if the life of the pond is endangered,

7. Allow dredging in or adjacent to manmade ponds if the San Mateo County Resource Conservation District certified that siltation imperils continued use of the pond for agricultural water storage and supply, and
8. Require motorized machinery to be kept less than 45 dBA at any riparian boundary except for farm machinery and motorboats.

Wetlands

The expansion area includes approximately 1.5 acre of wetland habitat that is potentially subject to Corps jurisdiction (LSA 2007), as well as additional areas that may or may not qualify as wetlands under CCC jurisdiction. According to the LCP a buffer zone of 100 feet landward from the outermost line of wetland vegetation is required around wetlands. The buffer zone may be reduced to no less than 50 feet only where (1) no alternative development site or design is possible, and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the CDFG. The proposed 100-foot buffer adequately protects the wetlands in the expansion area.

The LCP outlines constraints pertaining to wetlands and buffer zones as follows:

Permitted Uses in Wetlands and Buffer Zones

1. Nature education and research,
2. Hunting,
3. Fishing,
4. Fish and wildlife management,
5. Mosquito abatement through water management,
6. Diking dredging, and filling a wetland only if such activity serves to restore or enhance the biological productivity of the wetland,
7. Dredging manmade reservoirs for agricultural water supply where wetlands may have formed, providing spoil disposal is planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation, and
8. Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

Performance Standards [Constraints] in Wetlands

Require that development permitted in wetlands minimize adverse impacts during and after construction. Specifically, require that:

1. All paths be elevated so as not to impede movement of water,
2. All construction takes place during daylight hours,
3. All outdoor lighting be kept at a distance away from the wetland sufficient not to affect the wildlife,

125

4. Motorized machinery be kept to less than 45 dBA at the wetland boundary, except for farm machinery,
5. All construction which alters wetland vegetation be required to replace the vegetation to the satisfaction of the Planning Director including "no action" in order to allow for natural reestablishment,
6. No herbicides be used in wetlands unless specifically approved by the County Agricultural Commissioner and the CDFG, and
7. All projects be reviewed by the CDFG and RWQCB to determine appropriate mitigation measures.

California Endangered Species Act

The CDFG has jurisdiction over state-listed rare plants and threatened and endangered plant and animal species under the California Endangered Species Act. In addition, its provisions protect species proposed for listing under the State Act.

California Fully Protected and Protected Species

California fully protected and protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFG. These take permits do not allow "incidental take", except in limited circumstances, and are more restrictive than the take allowed under Section 2081 for the California Endangered Species Act. Information on fully protected species can be found in the Fish and Game Code (birds at Section 3511, mammals at Section 4700, reptiles and amphibians at Section 5050, and fish at Section 5515). Information on protected (as opposed to fully protected) amphibians can be found in Chapter 5, Section 41; protected (as opposed to fully protected) reptiles at Chapter 5, Section 42.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to "projects" that are proposed to be undertaken or those requiring approval by State and local government agencies. Projects are defined actions that have the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" endangered species. The CDFG maintains a list of species of special concern, defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Species of special concern are not afforded legal protection under the California Endangered Species Act but impacts to these species are typically considered significant under CEQA.

Section 401 Water Quality Certification

Pursuant to Section 401 of the federal Clean Water Act, projects that require a permit from the Corps under Section 404 must also obtain Water Quality Certification from the California Regional Water

Quality Control Board (RWQCB). This regulatory program is administered by one of nine Regional Boards depending on project location. The RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or jurisdictional area.

California Fish and Game Code Section 1600

The California Department of Fish and Game (CDFG) administers the issuance of Streambed Alteration Agreements under Fish and Game Code Section 1600. Streambed Alteration Agreements are required any time project activities would substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as such by CDFG.

NON-GOVERNMENTAL ORGANIZATIONS

California Native Plant Society

The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed lists of special-status plant species considered to be rare, threatened, or endangered in California (CNPS, 2001). Vascular plants included on these lists are defined as follows:

List 1A - Plants considered extinct.
List 1B - Plants that are rare, threatened, or endangered in California and elsewhere.
List 2 - Plants that are rare, threatened, or endangered in California, but more common elsewhere.
List 3 - Plants about which more information is needed (review list).
List 4 - Plants of limited distribution - watch list.

Although CNPS is not a regulatory agency, the species on List 1B and List 2 are, in general, considered to meet CEQA's Section 15380 criteria and adverse effects to these species are considered "significant." List 1A plants are considered extinct by the CNPS because they have not been observed despite focused searches. CDFG does not consider CNPS List 3 and List 4 plant species to be species that require CEQA analysis.

127

METHODS

PRE-FIELD INVESTIGATIONS

Prior to conducting fieldwork, a list of potentially occurring special-status plant and animal species was assembled based on records in the *California Natural Diversity Data Base* (CNDDB) (CDFG 2004), the *Electronic Inventory of Rare and Endangered Plants of California* (6th edition) (CNPS 2004), and LSA's knowledge of such species in the general region of the site (Table A and B).

PLANT SURVEYS

Plant surveys were conducted on April 21 and 28, May 26, June 2, 2004 and on February 5, 2007. The entire Pilarcitos Quarry study area was evaluated during the first two surveys and the expansion area was investigated in more detail on May 26 and June 2, 2004 and February 2007. Accessible areas and roads were traversed on foot to record existing plant communities and document all plant species present, including special-status species. Binoculars (10x40) were used to view dominant species on slopes and ridges, where dense vegetation, steep topography, and unstable substrate prevented direct access on foot. Plant communities were mapped on an aerial photograph.

The majority of the plants encountered were identified to species-level in the field; most of the remainder was keyed to species in LSA's office using a dissecting scope and floristic manuals, including Hickman (1993) and Thomas (1961). A list of species observed in the expansion area is included as Appendix A.

Plant communities are classified in this report according to the classification system in the *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (September 2003 edition), which is based on the classification outlined in Sawyer and Keeler-Wolf (1995). Information on plant communities was also obtained from Holland (1986). Descriptive plant communities or habitats are provided in this report to best describe the flora on the site. A more inclusive or general plant community description is in parentheses. A brief introductory paragraph of the inclusive plant community precedes the description of the specific plant association.

Botanical surveys were conducted by LSA botanists, Eva Buxton and Tim Milliken (2004), and LSA Biologists, Clint Kellner and Eric Lichtwardt (2007).

WILDLIFE SURVEYS

Detailed wildlife investigations were conducted at the Pilarcitos Quarry site on April 21 and 28, May 5 and 26, and June 2, 2004. Miscellaneous observations were also made at other times between 2004 and 2007. The entire property was evaluated during the first two surveys in April, on May 5, and 26, and June 2. The expansion area was investigated in more detail on May 5 and 27, and on June 2 nighttime surveys were conducted. Accessible areas and roads were traversed on foot and all Wildlife species (vertebrate animals) that were seen, heard, or detected by sign (e.g., scat, tracks, and/or nests) were identified and recorded in field notes. LSA Biologist Eric Lichtwardt also visited

the Pilarcitos Quarry study area with Stacy Martinelli and Lucy Triffleman (biologists with the CDFG and USFWS, respectively) on November 14, 2006 to conduct a marbled murrelet *(Brachyramphus marmoratus)* habitat assessment and on June 15, 2007 to approve the marbled murrelet survey station locations.

Protocol-level surveys for the California red-legged frog *(Rana aurora draytonii)* (USFWS 1997) were conducted at the sediment pond within the expansion area. These surveys were conducted prior to the issuance of the revised guidelines for California red-legged frog surveys (UFWS 2005). The surveys involved two daytime surveys and two nighttime surveys of the sediment pond. Most of Nuff Creek within the expansion area is inaccessible due to a deeply incised channel and impenetrably dense vegetation. A short section of the Creek was observable from the road just upstream of a culvert and this area was surveyed with binoculars.

A protocol-level survey (Mack et al. 2003) for the marbled murrelet in the Nuff Creek watershed was initiated on May 8, 2007. Under the protocol, two years of surveys are required. The May 8 survey was the first of seven surveys for 2007; seven surveys will be conducted in 2008 to complete the protocol. Four survey stations have been established in the Nuff Creek drainage and a fifth on the ridge northeast of the study area between upper Nuff Creek and Pilarcitos Creek (Figure 4).

The field investigation focused on evaluating available habitat for various species of special-status animals and assessing the potential occurrence of these species. Binoculars (10x40) were used to aid in the identification of birds, to survey pond edges for frogs, search for raptor nests, and to survey habitats on slopes and ridges where the denseness of the vegetation prevented access. Nighttime broadcast surveys were used to aid in the detection of California spotted owls *(Strix occidentalis occidentalis)*. Recorded owl vocalizations were played on a hand-held tape player at various places from the road parallel to Nuff Creek. Most of the Pilarcitos Quarry property, including the expansion area, was covered during these surveys.

Wildlife surveys were conducted by LSA Biologists Eric Lichtwardt, Matt Ricketts, and Steve Foreman.

WETLANDS

Wetland and riparian habitats on the Pilarcitos Quarry study area and in the expansion area were assessed through a combination of aerial photograph review and field studies. Field assessments were conducted on April 18 and May 4, 11 and 13, 2004. Large areas of the site were inaccessible due to dense vegetation growth, steep topography and unstable substrate. Sample sites therefore were established only in areas that were accessible. Sample sites were established in areas representative of the various habitat characteristics on the property, according to slope, aspect, and vegetation community. Characteristics of vegetation, hydrology and soils observed at the sample sites were relied upon to delineate wetlands and riparian zones that were not accessible.

Field studies and mapping were completed by LSA Wetlands Scientist, Leslie Allen. LSA Botanist, Eva Buxton, provided additional assistance with plant identification and LSA Soil Scientist, Sean Lohmann, provided additional assistance with soil analysis. The delineation report was submitted to the Corps on April 4, 2007 for verification.

BOTANICAL RESOURCES

PLANT COMMUNITIES

Natural plant communities have a relatively consistent floristic composition and are characterized by their dominant species, or species that give the plant community its distinctive appearance. Micro-habitats within a plant community result from a combination of physical and ecological factors such as soil type, slope aspect, exposure to sun and wind, disturbance, and availability of water. These factors determine which species can grow at a given location. Disturbed communities or areas previously cleared of native vegetation often support ruderal (i.e., weedy) vegetation dominated by non-native plant species. In addition, areas undergoing revegetation often support a significant component of weedy species until the native shrubs and trees become established and more dominant. Five plant communities, some of which grade into one another, are present in the expansion area. The pond is not a plant community per se, but supports aquatic vegetation which is discussed in this section of the report. Plant communities and the pond are depicted in Figure 3. The map also depicts plant communities and habitats within a 200-foot-wide area outside the expansion area boundary.

- Coastal Scrub
- Sparse Scrub/Non-native Grassland
- Alder Riparian Forest
- Arroyo Willow
- Douglas Fir
- Pond

Sixty-three (63) plant species were observed within the expansion area during the April, May and June 2004 surveys (Appendix A). Fifty (50) species (79 percent) are native and 13 species (21 percent) are weedy, non-native plants. The non-native species occur along roads and other disturbed portions of the site. A native- to non-native composition ratio of 4:1 (native:non-native) is high for any geographic location and/or plant community in present-day California. Furthermore, the percent relative cover by native plants at Pilarcitos Quarry is estimated at about 90 percent.

Coastal Scrub

Coastal scrub occurs on slopes and ridges in the fog zone along the central and northern California coast, from southern Oregon to Point Sur in Monterey County. Sites of occurrence often are windy with shallow, rocky soils. Vegetation is usually a dense, interwoven thicket of evergreen shrubs up to 6 feet in height, with herbaceous perennials and, typically, only a few annuals. Most growth and flowering in this community occur in late spring to early summer. Gaps within the scrub cover are distributed sporadically and tend to support grasses and forbs (broad-leaved plants). Less exposed slopes may support stands of trees within this community.

The coastal scrub community mapped in the expansion area is dominated by coyote brush *(Baccharis pilularis* ssp. *consanguinea)*, and on the upper slopes also includes a large component of poison oak *(Toxicodendron diversilobum)*. On the drier west- and south-facing slopes, the scrub includes occasional stands of California sagebrush *(Artemisia californica)*, California coffeeberry *(Rhamnus californicus)*, blue-blossom *(Ceanothus thyrsiflorus)*, and bush monkey-flower *(Mimulus aurantiacus)*. Vegetation on the lower slopes is a mosaic of open areas and plant communities dominated and/or co-dominated by coyote brush, arroyo willow *(Salix lasiolepis)*, ceanothus (*Ceanothus* sp.), Douglas fir *(Pseudotsuga menziesii)*, and blue gum *(Eucalyptus globulus)*.

The south-facing slope, parts of which have been disturbed by the construction of roads for the ongoing mining of the existing quarry, supports species associated with drier conditions, including bush monkey-flower, deerweed *(Lotus scoparius)*, yellow bush lupine *(Lupinus arboreus)*, paintbrush (*Castilleja* sp.), fairwell-to-spring (*Clarkia* sp.), and buckwheat *(Eriogonum latifolium)*. Patches of relatively bare ground or areas with a sparse cover of shrubs, grasses, and forbs are present on the south-facing slope near the existing quarry, as well as on the south-facing slope of the drainage in the northern portion of the expansion area. The bare or grassy areas were inaccessible, but a native grass, most likely a needlegrass (*Nassella* sp.), and a non-native annual fescue *(Vulpia myuros)* were observed from the road. Weedy species growing along the roads included hare barley *(Hordeum murinum* ssp. *leporinum)*, ripgut-brome *(Bromus diandrus)*, yellow sweet-clover *(Melilotus indica)*, and burclover *(Medicago polymorpha)*.

The coastal scrub vegetation on the west-facing slope grades into scrub that is dominated by blue-blossom, and possibly deerbrush *(Ceanothus integerrimus)*. The ceanothus-dominated scrub then grades into a denser, moisture-loving shrub and fern community near the base of the slope, adjacent to the riparian vegetation at Nuff Creek. California blackberry *(Rubus ursinus)* and thimbleberry *(Rubis parviflorus)* are dominant shrub species that are interspersed with large stands of Chamisso's hedge-nettle *(Stachys chamissonis)*, American stinging nettle *(Urtica dioica* ssp. *holosericea)*, and swordfern *(Polystichum munitum)*.

The north-facing slope supports dense stands of Douglas fir that are, in certain locations, edged by arroyo willow *(Salix lasiolepis)* and shade tolerant shrubs such as twinberry *(Lonicera involucrata)*, western burning bush *(Euonymus occidentalis)*, and oceanspray *(Holodiscus discolor)*.

Sparse Scrub/Non-Native Grassland

Patches of relatively bare ground or areas with a sparse cover of shrubs are present within the coastal scrub community on most of the south-facing slopes. Areas that are currently in the early phase of revegetation are also included here. Some of these bare or grassy areas on steep slopes supported native grasses such as needlegrass (*Nassella* sp.), and non-native annual fescue *(Vulpia myuros)*. Deerweed *(Lotus scoparius)*, yellow bush lupine *(Lupinus arboreus)*, paintbrush (*Castilleja* sp.), farewell-to-spring (*Clarkia* sp.), and coast buckwheat *(Eriogonum latifolium)* are also present in some of the steep sparsely vegetated areas.

Non-native, weedy species growing along the roads in the expansion area include hare barley *(Hordeum murinum* ssp. *leporinum)*, ripgut-brome *(Bromus diandrus)*, oxeye daisy *(Leucanthemum vulgare)*, redstem filaree *(Erodium cicutarium)*, Italian thistle *(Carduus pycnocephalus)*, and poison hemlock *(Conium maculatum)*.

A few nearly vertical rockfaces are present where road construction has cut into bedrock. These rockfaces are mostly devoid of vegetation, although some support plants including coffee fern *(Pellaea andromedifolia)*, California phacelia *(Phacelia californica)*, fringecup *(Tellima grandiflora)*, and coast buckwheat

Alder Riparian Forest

Riparian communities occur along streams that flow in narrow valleys, and on the edges of ponds and freshwater marshes. Near the coast, typical trees in the canopy are red alder *(Alnus rubra)*, arroyo willow *(Salix lasiolepis)*, Pacific or shining willow *(Salix. lucida* ssp. *lasiandra)* and big-leaf maple *(Acer macrophyllum)*. Willow and alder usually dominate the vegetation community. Farther inland and away from the California coast, red alder is replaced by white alder *(Alnus rhombifolia)* in this plant community. Depending on the amount of light penetrating to the forest floor, ferns, shrubs, and herbaceous perennial species may occur at varying densities. Riparian vegetation may grade into other communities such as mixed evergreen forest (including Douglas Fir Forest), freshwater marsh, or other types of wetland vegetation.

The type of alder riparian forest mapped in the expansion area is Red Alder Riparian Forest. An approximately 150-foot-wide riparian forest community of predominantly red alder occurs along Nuff Creek at the base of the west-facing slope in the expansion area. Mature red alders with a nearly closed canopy reach 30 to 45 feet in height in this area. Where the canopy is almost closed, the understory is mostly composed of ferns such as swordfern, lady fern and five-finger fern *(Adiantum aleuticum)*; where sunlight penetrates to the forest floor, shrub species including red elderberry *(Sambucus racemosa)*, California blackberry, and thimbleberry provide a dense cover mixed with Chamisso's hedge-nettle, meadow rue *(Thalictrum fendleri* var. *polycarpum)*, and other herbaceous species. Alder saplings are abundant, indicting that the forest is regenerating. Portions of the forest along this reach of Nuff Creek have been invaded by blue gum, an invasive, non-native tree that, in places, grows taller than the alders.

Arroyo Willow

Arroyo willow occurs as thickets and scrubby streamside stands that vary in density from relatively open to impenetrable. These thickets are dominated by arroyo willow but often include other species of willow. These thickets are found along and at the mouth of perennial or intermittent streams from the San Francisco Bay Area south to Point Conception. The willow thickets may be an early successional community that develops into riparian woodland or forest. Typically these shrubs grow on fine-grained sand and gravel bars that are close to river channels and, therefore, close to ground water.

Arroyo willow thickets are present in various portions of the expansion area. Arroyo willow occurs relatively sparingly along Nuff Creek, but it is the dominant tree along the tributary flowing east to west in the expansion area, and it occurs with Douglas fir on the north-facing slope. Several large stands of willow are also present in disturbed areas near the roads on the south-facing slope. Some of the thickets are associated with hydrophytic plants such as Chamisso's hedge-nettle; however, other stands consist of plants associated with upland conditions, including bush monkey-flower and yerba buena *(Satureja douglasii)*. Arroyo willow is capable of sending deep roots into the substrate to reach ground water (phreatophytic). Refer to *Wetlands and Riparian Habitats* for a detailed description of the hydrologic conditions that influence willow distribution in the Pilarcitos Quarry study area.

Douglas Fir

Douglas fir forests occur in the North Coast Ranges, north of the San Francisco Bay Area to the Oregon border and also into British Columbia. The trees grow to 250 feet tall and typically occur on moderately deep, well-drained soils. The forest usually includes a lower overstory of broadleaved, evergreen trees and an understory of shrubs and herbaceous plants. Douglas fir can also be found in the South Coast Ranges, in wetter and cooler parts of the Range.

The Douglas fir mapped in the expansion area is best described as Douglas fir stands because it does not form an extensive, closed canopy. Stands of Douglas fir are present in the expansion area on the lower portion of the west-facing slope and from the mid- to upper portions of the north-facing slope. These Douglas fir trees are in the wetter and more shaded portions of the Coastal Scrub community. A few individuals of evergreen broadleaved trees, such as madrone *(Arbutus menziesii)* and California bay *(Umbellularia californica)*, grow with the Douglas firs in these stands. The understory is composed of species associated with the Red Alder Riparian Forest community, such as lady fern and swordfern, and/or with species common in the wetter Coastal Scrub community, including Chamisso's hedge-nettle, cow-parsnip *(Heracleum lanatum)*, and American stinging nettle. A few individuals of plants associated with woodlands and forests, such as false Solomon's seal *(Smilacena racemosa)* and fairy bells *(Disporum hookeri)*, are also present.

Pond

Ponds typically support species that are adapted to year-round or seasonal inundation or soil saturation. The species of emergent or aquatic plants growing under these hydrological conditions depend on the geographical location of the pond and the plant community surrounding it. The pond mapped in the expansion area has developed within a man-made sediment trap, described below.

The man-made sediment trap in the expansion area was constructed between a rocky cliff and an earthen berm along an access road to the top portion of the existing quarry. The purpose of the sediment trap is to receive runoff from the slopes above and retain sediment that is carried in with water. The sediment trap also captures water that seeps out of the steep slope above it. The sediment trap is surrounded by woody riparian vegetation consisting of arroyo willow, red alder, and red elderberry, as well as a few annual aquatic species, including yellow cress *(Rorippa curvisiliqua)*. Broadleaved cattails *(Typha latifolia)* covered approximately 20 percent of the water surface in the sediment trap in May 2004. An unidentified aquatic plant covered approximately 10 percent of the bottom of the pond in the sediment trap. Though this plant was not identified it did not have the characteristics of slender-leaved pondweed *(Potamogeton filiformis)*, a special-status plant (Table A). The sediment trap is subject to routine maintenance (sediment removal) by the quarry operator.

SPECIAL-STATUS PLANTS

Listed plants are legally protected under the California and Federal Endangered Species Acts. Refer to *Regulatory Context* for applicable sections of the Endangered Species acts. In addition, species on CNPS's List 1A, List 1B, and List 2 are usually considered in CEQA documents. The San Mateo County Local Coastal Program (LCP 1998) provides policies for the same special-status species, as well as for "unique" species. For the purposes of this study, special-status plants are briefly defined as follows:

- Plants that are listed or proposed for listing as threatened, rare, or endangered under the California Endangered Species Act and/or threatened or endangered under the Federal Endangered Species Act;
- Plants that are candidates for listing as threatened or endangered under the Federal Endangered Species Act;
- Plants included on Lists 1A, 1B, and 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Pants of California* (CNPS 2001). Plants on lists CNPS Lists 1A, 1B, and 2 are would, in most cases, qualify for listing by the State.

Plants on CNPS lists 3 and 4 were also evaluated in this assessment for informational purposes.

Table A lists 22 special-status plant species that were evaluated for their potential to occur in the expansion area. Species included in the table are those for which *coastal scrub, chaparral, riparian scrub* and *riparian forest, north coast coniferous forest*, and *grassland* are listed as suitable habitats (macro-habitats) in the *CNDDB* (CDFG 2004) and the *Electronic Inventory* (CNPS 2004) for the general region of the Pilarcitos Quarry study area. Species associated with serpentine and alkaline soils were omitted from the table due to the absence of these soils (microhabitats) in the study area, even though the suitable plant community (macrohabitat) is present. Consequently, special-status serpentine-associated plants found in the San Francisco Peninsula Watershed east of the Pilarcitos Quarry study area were excluded from Table A. Such species are endemic to serpentine soils and would not occur on the mostly granitic soils of the Pilarcitos Quarry study area. Plant species associated with other soil types potentially present in the expansion area are included in Table A. The table also includes the protective status, habitat requirements and blooming periods, the potential for each species to occur, an assessment of the potential for occurrence, and survey results. Botanical surveys were timed to coincide with the peak flowering of these species.

The potential occurrence of San Mateo thornmint *(Acanthomintha duttonii)*, Franciscan onion *(Allium peninuslare* var. *franciscanum)*, San Bruno Mountain manzanita *(Arctostaphylos imbricata)*, compact cobwebby thistle *(Cirsium occidentale)*, round-leaved filaree *(Erodium macrophyllum)*, San Francisco campion *(Silene verecunda* ssp.*verecunda)*, fragrant fritillary *(Fritillaria liliacea)*, San Francisco gumplant *(Grindelia hirsutula* var. *maritima)*, San Francisco lessingia *(Lessingia germanorum)*, marsh microseris *(Microseris paludosa)*, and adobe sanicle *(Sanicula maritima)* in the expansion area is very low due to the absence of microhabitat and other considerations (Table A). None of these species were observed during the botanical surveys.

The potential for occurrence of bent-flowered fiddleneck *(Amsinckia lunaris)*, San Francisco Bay spineflower *(Chorizanthe cuspidata* var. *cuspidata)*, Diablo helianthella *(Helianthella castanea)*, Kellogg's horkelia *(Horkelia cuneata* ssp. *sericea)*, Slender-leaved pondweed *(Potamogeton filiformis)*, Hickman's cinquefoil *(Potentilla hickmanii)* in the expansion area is considered low. None of these species were observed during the 2004 surveys. Although some areas in the expansion area were not surveyed, due to the presence of dense impenetrable coastal scrub, it is unlikely that any of these six species are present in these areas because they do not typically occur under the closed canopy of dense scrub. The understory of some dense willow tickets was also not surveyed and the presence of species associated with seeps such as Hickman's cinquefoil cannot be ruled out. However, all potential the habitat for Hickman's cinquefoil is contained within ESHAs and will not be impacted by the proposed expansion.

The following five (5) species occur in the northern Santa Cruz Mountains and could potentially occur in the Nuff Creek watershed: Santa Cruz manzanita *(Arctostaphylos andersonii)*, Montara manzanita *(Arctostaphylos montaraensis)*, Western leatherwood *(Dirca occidentalis)*, California bottle-brush grass *(Elymus californicus)*, and San Mateo tree lupine *(Lupinus eximius)*. These species are considered to be absent from the expansion area, however, because they were not observed during the 2004 or 2007 surveys.

San Mateo tree lupine *(Lupinus eximius)* or Davy's bush lupine, a CNPS List 3 species, blooms between April and July. It was not observed in the expansion area during the surveys. This lupine has been considered as a variety (Hickman 1993) or a subspecies (CNPS 2004) of yellow bush lupine *(L. arborerus)*. Yellow bush lupine grows along the road on the south-facing slope of the expansion area. The two species may be separated based on the color of the flower, more specifically the "wings" of the typical pea family flower. On San Mateo tree lupine the wings are blue, and on yellow bush lupine they are yellow.

California bottle-brush grass *(Elymus californicus)* is a CNPS List 4 species and is generally not considered in CEQA documents. Although not specifically mentioned in the LCP, this native bunchgrass may be considered a "unique" species. It was not observed during the April and late May and early June surveys, however, its blooming period is between May and November and it may have been overlooked during the earlier surveys. California bottle-brush grass is present east of the Pilarcitos Quarry study area in the San Francisco Peninsula Watershed.

San Mateo tree lupine and California bottle-brush grass are CNPS List 3 and 4 species, respectively, and are not generally considered to meet the CEQA definition of rare or endangered species (CEQA Section 15380).

SENSITIVE PLANT COMMUNITIES AND HABITATS

The CDFG tracks plant communities in California that are unique or are becoming rare due to human activities. These communities have no formal legal protection. Upland communities of this type in the general region of the Pilarcitos Quarry study area are Valley Needlegrass Grassland, Serpentine Bunchgrass, and Northern Maritime Chaparral (CNDDB 2004). Populations of needlegrass are likely present in the open, grassy areas within dense scrub; however, due to the small size of and disturbance to most of these open areas the Valley Needlegrass Grassland plant community is not present. Serpentine Bunchgrass is absent, as there is no serpentine soil in the Pilarcitos Quarry study area.

Northern Maritime Chaparral

Northern maritime chaparral does not occur in the expansion area or study area. This type of chaparral is characterized by a relatively open canopy (50 to 80 percent cover) and is associated with sandy substrates within the coastal fog zone. It occurs from Santa Cruz to Sonoma County near the coast, usually as islands within woodlands and forests (including Douglas fir) or adjacent to coastal scrub. It is dominated by "narrowly restricted" manzanita or ceanothus species. The blue-blossom ceanothus, present in the Pilarcitos Quarry study area, is not a "narrowly restricted" species.

ZOOLOGICAL RESOURCES

WILDLIFE HABITATS

Coastal Scrub

Coastal scrub is the most extensive habitat within the expansion area, occurring primarily on south-facing slopes. This habitat is typically low in stature (1 to 2 meters high) but can form a dense closed canopy particularly on north-facing slopes. A number of the animals that were observed on the expansion area are common, wide spread species typical of the various cismontane scrub-dominated communities in California, including coastal scrub. Examples include western fence lizard *(Sceloporus occidentalis)*, California quail *(Callipepla californica)*, Anna's hummingbird *(Calypte anna)*, Ash-throated flycatcher *(Myiarchus cinerascens)*, western scrub jay *(Aphelocoma californica)*, Bewick's wren *(Thryomanes bewickii)*, wrentit *(Chamaea fasciata)*, spotted towhee *(Pipilo maculatus)*, California towhee *(Pipilo crissalis)*, Merriam's chipmunk *(Tamias merriami)*, and dusky-footed woodrat *(Neotoma fuscipes)*. The Allen's hummingbird *(Selasphorus sasin)* occupies coastal scrub and open woodlands along the coast. This migratory species was observed on the site during the field surveys and presumably nests in the expansion area.

Arroyo Willow

This habitat occurs in the expansion area as thickets and woodlands of relatively low stature. Willow forest and woodlands are an important nesting habitat for a variety of migratory and resident birds. Typical species that make extensive use of this habitat but are not necessarily restricted to it include downy woodpecker *(Picoides pubescens)*, chestnut-sided chickadee *(Poecile rufescens)*, Swainson's thrush *(Catharus ustulatus)*, common yellowthroat *(Geothlypis trichas)*, song sparrow *(Melospiza melodia)*, and American goldfinch *(Carduelis tristis)*. On the project site isolated clumps of willows are scattered in the northern coastal scrub on the slopes above the drainage. Many of the animal species typical of either willows or northern coastal scrub were observed, in the expansion area, freely using both habitats.

Alder Riparian Forest

This habitat typically occurs close to the ocean along streams and rivers. Along smaller drainages, such as Nuff Creek, red alder forest frequently forms a closed canopy over the streambed, promoting a cool mesic environment that is important to many native fish and amphibian species. The stands of red alder forest on the project site are found adjacent to Nuff Creek and support many large mature trees with a dense understory of thimbleberry and other plans. There are also smaller clumps of red alder riparian forest with smaller trees at seeps on the slopes of the canyon above the creek. Many wildlife species found in red alder forest occur in other forest types as well. Examples observed on the project site include rough-skinned newt *(Taricha granulosa)*, Nuttall's woodpecker *(Picoides nuttallii)*, and hairy woodpecker *(Picoides villosus)*. This habitat provides nesting habitat for raptors such as Cooper's hawk *(Accipiter cooperii)*, and northern pygmy owl *(Glaucidium gnoma)*, as well as numerous songbird species such as Pacific-slope flycatcher *(Empidonax difficilus)*, and black-headed grosbeak *(Pheucticus melanocephalus)*.

Douglas Fir

Within the drainage of Nuff Creek, Douglas fir grows predominantly on north-facing slopes and the stands that are present contain many large mature trees. Douglas fir forest provides important habitat for a variety of animal species but none of the species observed on the project site are restricted to this forest type. In the expansion area, Douglas fir occurs in an open stand that forms a mosaic with northern coastal scrub, patches of willows, and scattered madrone.

Cavity-nesting birds such as the northern flicker *(Colaptes auratus)* use the larger trees and dead snags in this habitat for nesting. The northern pygmy owl, in turn, often uses abandoned woodpecker holes for nesting. The tops of the trees provide foraging perches for olive-sided flycatchers *(Contopus cooperi)*. Numerous other bird species forage within the foliage and others, such as the brown creeper *(Certhia Americana)*, forage on the trunks. Dead snags also provide roosting places for various species of bats. When dead trees fall the trunks provide many microhabitats for amphibians, reptiles, small mammals, and a diversity of insects and other invertebrates.

Stands of Douglas fir, just inland from the coast, enable fog drip to create cool mesic understory conditions that are important to native amphibians and other wildlife. Band-tailed Pigeons *(Patagioenas faciata)* were frequently observed in this habitat during the field visits and are likely to nest here. The red-tailed hawk *(Buteo jamaicensis)*, red-shouldered hawk *(Buteo lineatus)*, and golden eagle *(Aquila chrysaetos)* use tall Douglas fir trees for nesting, but no nests of these species were discovered on the Pilarcitos Quarry property.

The marbled murrelet *(Brachyramphus marmoratus)* uses mature Douglas firs for nesting. The trees present in the expansion area are not large enough to provide suitable nest sites for marbled murrelets.

Blue Gum

Blue gums, including some very large mature trees, are present in scattered stands along Nuff Creek. A number of large trees are present in the riparian zone in the expansion area. Large blue gum trees are used by raptors such as the great horned owl and red-shouldered and red-tailed hawks as perches and nesting sites. Various species of hummingbirds and songbirds feed on the nectar produced by the flowers of blue gum.

Aquatic Habitats

Aquatic habitats in the expansion area include a perennial stream and a man-made sediment trap (containing a small pond) associated with natural seep. Nuff Creek is a simple aquatic system that provides limited habitat for aquatic animals. The creek forms a relatively straight course down the canyon floor with few meanders. The creek is shallow (approximately 1 to 3 inches) and no deep pools ($\geq$ 4 inches) appeared to be present. The streambed has a relatively uniform substrate consisting of course sand with scattered small rocks in some areas. The sandy bed appears unstable with a fair amount of sediment moving through the system. Significant areas of undercut banks and/or aquatic vegetation which could provide cover for aquatic animal species are limited or absent within the creek.

Nuff creek does not support suitable habitat for steelhead *(Oncorhynchus mykiss)* or any other native freshwater fish. California red-legged frogs may use the creek as a dispersal corridor but it does not

appear to provide suitable breeding habitat for these amphibians. The surface water in the creek is expected to provide a valuable source of water for local terrestrial wildlife.

The small sediment trap pond is located along a graded road and was constructed to capture sediment from the road and associated road cuts. It also seasonally receives water from an upslope seep. Although it is currently filling with sediment and is reported to be periodically excavated to remove accumulated sediments (M. Carpenter, pers. comm.), it has provided habitat for the rough-skinned newt, Pacific tree frog *(Pseudacris regilla)* and California red-legged frog. Rough-skinned newts were observed in the pond on all the site visits in April, May, and June 2004 and Pacific tree frogs were heard calling at the pond after dark. Two California red-legged frogs were seen in the pond on June 3. The ponded water appears to be perennial and supports a patch of cattails and a bed of an unidentified aquatic plant. The suitability of the sediment trap pond for breeding amphibians, however, may be relatively temporary as it is subject to sediment infill and routine maintenance (sediment removal). This pond was revisited during the November 14, 2006 site visit and much more sediment had accumulated in the pond since 2004.

During 2007 the pond contained water approximately 12 inches deep (in one small area) and was densely vegetated with cattails and an unidentified aquatic plant so that, in its current condition, it probably does not provide quality breeding habitat for California red-legged frogs.

Other Habitats Used by Wildlife

Rocky Cliffs. The white-throated swift *(Aeronautes saxatalis)*, cliff swallow *(Petrochelidon pyrrhonota)*, and barn swallow *(Hirundo rustica)* were observed foraging in the air over the expansion area. A single cliff swallow nest was found on the rocky cliff above the graded road in the southeastern corner of the expansion area. The white-throated swift potentially could nest in crevices in this cliff, but the cliff face appeared relatively unstable and may not provide long term nesting habitat for this species. Various species of bats potentially could use similar crevices in the cliff as day roosts, but the unstable nature of the rock my not provide high quality bat roosting habitat.

SPECIAL-STATUS WILDLIFE

Special-status wildlife includes species, subspecies or distinctive populations of animals that are of conservation concern. These species, subspecies or distinctive populations may be listed at the federal or State level.

San Bruno Elfin *(Callophrys mossii bayensis)*

This butterfly is dependent on stonecrop *(Sedum spathulifolium)* as a larval host plant. The San Bruno elfin does not occur in areas where stonecrop is absent or rare. Stonecrop grows on extensive rock outcrops and generally favors steep shady slopes. The rocky outcrops within the expansion area are largely the results of recent excavation and consist of exposed relatively dry south-facing cliffs. These steep rocky areas were searched for populations of stonecrop and none were found. The smaller natural outcrops within the expansion area were also searched for this plant during the 2007 survey and none was found. In addition, other natural rock outcrops (including one relatively large outcrop just east of the existing quarry operations area) adjacent to the expansion area were searched for stonecrop during the 2007 survey and none was found. This plant appears to be absent from the

expansion area and adjacent areas; therefore, the San Bruno elfin is unlikely to occur in the expansion area.

Steelhead, Central California Coast Evolutionary Significant Unit (ESU) *(Oncorhynchus mykiss)*

The central California coast ESU is listed as a federal threatened species and as a California species of special concern. The Central California Coast ESU includes coastal winter run populations of steelhead occurring from the Russian River south to Aptos Creek, Santa Cruz County (Moyle 2002). Steelhead records are documented from Pilarcitos Creek and Apanolio Creek within the Pilarcitos Creek watershed (CNDD 2004) and may occur in other tributary streams. LSA biologists observed juvenile steelhead (parr) in the main stem of Pilarcitos Creek at Half Moon Bay, outside the study area. To the best of our knowledge observations of steelhead in Nuff Creek itself have not been recorded.

For spawning, steelhead require coarse gravel (1 to 13 cm in diameter) in cool flowing water (10 to 150 cm in depth) in riffles or at the tail ends of pools (Moyle 2002). These habitat characteristics do not appear to be present in Nuff Creek. The creek flows under the existing quarry through a culvert over 1,250 feet long. The down stream end of the culvert drops approximately 6 feet to the streambed. These features would prevent steelhead from moving into the portion of the creek upstream of the quarry. Because of these barriers and the apparent lack of suitable spawning habitat it is highly unlikely that steelhead occur in Nuff Creek upstream of the existing quarry; therefore, steelhead would not be expected to occur in the expansion area.

California Red-Legged Frog *(Rana aurora draytonii)*

The California red-legged frog is listed as a federal threatened species and as a California species of special concern. This species has declined in or disappeared from large portions of its former range in California (Stebbins 2003, Fellers 2005), however, it is still relatively common along the central coast of California including San Mateo County (USFWS 2002). Two California red-legged frogs were seen in the sediment pond just north of the active quarry on June 3, 2004; two were also observed at the pond on July 12, 2006. In addition, four to five California red-legged frogs were observed in a pond adjacent to the northwestern corner of the study area on June 3, 2004. Locations of the observations as well as other records within the region are depicted in Figure 5.

California red-legged frogs were discovered breeding in several sediment ponds in the active quarry area during 2007. On March 13, 2007 seven California red-legged frog egg masses and one adult frog were observed in the large sediment pond on the bench above the quarry operations area. Adult frogs and tadpoles have been regularly observed at this pond through the spring of 2007.

On March 23, an adult California red-legged frog and the remnants of one egg mass were observed in a small pond in a deep pit within the quarry operations area. This small pond is near a rock-crusher and conveyer system. On April 8 three adult frogs and one new egg mass were observed in this pond. Up to 8 adult frogs have been observed in this pond at various occasions between March and early June 2007; however, no tadpoles have been seen.

The California red-legged frog occurs in aquatic habitats such as creeks, ponds, and marshes. An important habitat element is the presence of cover in the form of dense emergent aquatic vegetation

such as cattails or bulrushes (*Scirpus* spp.), over hanging terrestrial vegetation, exposed tree roots, and undercut banks. The California red-legged frog, however, does sometimes occur in ponds with little aquatic vegetation or bank-side cover.

Suitable breeding habitat usually includes a minimum water depth of 20 inches (Fellers 2005) and must contain water during the entire development period for eggs and tadpoles. During wet weather, the California red-legged frog often occurs in upland habitats in the vicinity of aquatic sites. In Santa Cruz County California red-legged frogs have been documented to move through upland habitats for distances of over 2 miles and these movements appear to be without regard to topographic features, vegetation communities, or riparian corridors (USFWS 2002).

In 2004 the USFWS proposed a series of 31 critical habitat units for the Californian red-legged frog, the (USFWS 2004). Under the 2004 proposal the Nuff Creek watershed was within Unit 14, which includes the coastal watersheds within San Mateo and northern Santa Cruz counties.

Within any given critical habitat unit a site must support three habitat features, termed the primary constituent elements, to be considered critical habitat for the California red-legged frog (USFWS 2004). These primary constituent elements are defined below:

1. Aquatic habitat with a permanent water source with pools having a minimum depth of 20 inches for breeding and which can maintain water during the entire tadpole rearing season;
2. Upland areas up to 300 feet from the water's edge associated with the above aquatic habitat that will provide for shelter, forage, maintenance of water quality of the aquatic habitat, and dispersal; and
3. Upland barrier-free dispersal habitat that is at least 300 feet in width that connect at least two (or more) suitable breeding locations defined by the aquatic habitat above, all within 1.24 miles of one another.

All three primary constituent elements are present within the Pilarcitos Quarry study area.

The 2004 proposed critical habitat designation for the Californian red-legged frog was revised for economic reasons and the USFWS published its final designation of critical habitat in 2006 (USFWS 2006a). Under the final rule the USFWS redefined the areas of critical habitat in California and the Nuff Creek watershed is not within any of these final critical habitat units. The closest unit of critical habitat (SNM-1A) is located approximately 1,400 feet north of the northern edge of the study area (USFWS 2006a) (Figure 5).

For many years the California red-legged frog was considered a subspecies of the red-legged frog *(R. aurora)* (Stebbins 2003); however, current taxonomic research including morphological and genetic studies indicates that the California red-legged frog (*R. draytonii*) is indeed a distinct species from the northern red-legged frog *(R. a. aurora)* (Shaffer et al. 2004; Fellers 2005).

San Francisco Gartersnake *(Thamnophis sirtalis tetrataenia)*

The San Francisco gartersnake is listed as both a federal and State endangered species. It is also a California fully protected species. This snake is a distinctive subspecies of the widely distributed common gartersnake and has a very restricted geographic range being found only on the

San Francisco Peninsula (Stebbins 2003). Within this area the San Francisco gartersnake is known to occur from the vicinity of the San Francisco County line near the coast south along the peninsular ridge line at least to the vicinity of Crystal Springs Reservoir. Further south, along the Pacific Coast, the San Francisco gartersnake is present in the drainage of Tunitas and San Gregorio Creeks south to the area around Point Año Nuevo (Barry 1994). South of these areas the San Francisco gartersnake intergrades with the California red-sided gartersnake *(Thamnophis sirtalis infernalis)*.

There was a small population at Denniston Creek (vicinity of Princeton) that may now be extinct (Barry 1994) or severely reduced (see Appendix D). Records of the San Francisco gartersnake from the Pilarcitos Creek drainage are primarily from the upper headwaters (North Branch) above Pilarcitos Lake (CNDDB 2004); however, there are several recent records from Half Moon Bay (see Appendix D).

San Francisco grater snakes favor wet meadows and grasslands near wetlands, and freshwater marshes. An important habitat component of the San Francisco gartersnake is the presence of populations of frogs (Barry 1994 and USFWS 2006b). Young snakes feed largely on Pacific treefrogs and the adults take California red-legged frogs and small to mid-sized American bullfrogs *(Rana catesbeiana)*. The American bullfrog is a non-native species that was introduced into California from the eastern United States where it is the largest native frog species.

Nuff Creek does not provide good breeding habitat for frogs because it lacks pools suitable for egg laying and tadpole rearing. The pond in the small sediment trap supports Pacific treefrogs and California red-legged frogs, but this water body may be too isolated from areas where San Francisco gartersnakes are known to occur to be regularly used by this species. It is also probably too small to support a resident population of gartersnakes, but could plausibly serve as a resource to dispersing individual snakes. California red-legged frogs and egg masses have been found in sedimentation ponds within the active quarry, but these ponds have very little bank vegetation and do not support good terrestrial habitat for San Francisco gartersnakes.

Very little is known about the dispersal biology of the San Francisco gartersnake or the ability of this species to colonize isolated areas of suitable habitat; therefore, it is not possible to completely rule out the presence of these snakes in the Nuff Creek watershed. Dispersing individuals may potentially occur in the watershed, but based on the habitat that is present the watershed is unlikely to currently support a viable population of these snakes (see Appendix D).

Pacific Pond Turtle *(Actinemys marmorata)*

The Pacific pond turtle is a California species of special concern. This species inhabits creeks, rivers, ponds, reservoirs, and marshes. The Pacific pond turtle requires aquatic habitats that provide deep water (approximately 2 feet or greater) and basking sites such as partially submerged logs, rocks, or mud banks. They favor still or slowly flowing water with an abundance of aquatic vegetation. Another important habitat requirement is the presence of suitable upland areas for egg laying.

The Pacific pond turtle is not expected to be present in the expansion area due to the lack of suitable aquatic habitat. There do not appear to be any museum records of this turtle from the Pilarcitos Creek watershed (Jennings and Hays 1994). Jennifer Stolz, a biologist with the San Francisco Public Utilities Commission, has reported that Pacific pond turtles have been seen in the upper Pilarcitos watershed (J. Stolz, personal communication, 2006). Nuff Creek itself lacks pools and is too shallow

to provide turtles with adequate foraging or escape habitat. The sediment trap pond is too small and isolated from other areas where this species occurs to support a population of this turtle.

Marbled Murrelet *(Brachyramphus marmoratus)*

The marbled murrelet is listed as a federal threatened species and as a State endangered species. This small diving sea bird is endemic to the near-shore waters of the eastern Pacific Ocean and the breeding range extends from southern Alaska south to Santa Cruz County, California (AOU 1998). The marbled murrelet is unique among sea birds in that it nests on the horizontal limbs of large coniferous trees and is often associated with, but not necessarily limited to, stands of old growth forest (100 to 200 years old). These birds also will use other relatively flat surfaces in trees provided by such features as deformities in limbs, overlapping branches, clumps of mistletoe, moss, or lichens covering a branch. Both Douglas fir and coast redwood are used as nesting trees.

Nesting sites are often located inland from the coast and nests have been found over 50 miles from the shore (USFWS 1997). The nest often consists of a depression made in moss or other debris on the surface of a large limb. Marbled murrelets lay one egg that is incubated for 30 days and the young birds fledge in about 28 days. During the time the young bird is in the nest the adults make multiple flights per day to and from foraging areas in the ocean to supply the young bird with fish. Flights are made at all times of the day but predominately at dawn, dusk, or at night.

Populations of the marbled murrelet have declined in many portions of its range due to cutting and/or modification of coastal old growth forests and mortality from gill nets and oil spills (USFWS 1997). Critical habitat for this species was designated in 1996 and several critical habitat units are located on lands within San Mateo County. The northern most critical habitat unit in San Mateo County is located less than 1.5 miles north of the expansion area within the San Francisco Peninsula Watershed (Figure 6).

The status of marbled murrelets in the Nuff Creek drainage is unknown. In San Mateo County, nesting marbled murrelets appear to be concentrated in the southern portion of the County (Sequoia Audubon Society 2001), but there are also nesting records from areas near Nuff Creek (Figure 6). Surveys in designated critical habitat (less than 1.5 miles north of the expansion area) in the upper Pilarcitos Creek drainage suggest that marbled murrelets nest in this area (Avocet Research 2006). There is also an older record of possible nesting less than 5 miles west of the expansion area (Sequoia Audubon Society 2001).

Based on available information it appears that nesting marbled murrelets have the potential to occur in the Nuff Creek watershed. Potential nesting habitat is present in the upper end of the Nuff Creek drainage (Stacy Martinelli, CDFG personal communication, 2006). Murrelets nesting north of Nuff Creek in the upper Pilarcitos Creek watershed potentially could use the Nuff Creek watershed as a flyway between nest sites and the ocean. The stands of Douglas fir in the expansion area itself are too young (probably less than 50 years old) and the individual trees too small to provide suitable nesting habitat for this species. In addition, the stands of Douglas fir west of the expansion area on the other side of Nuff Creek do not contain trees large enough or a dense enough canopy cover to provide suitable murrelet nesting habitat (Stacy Martinelli, CDFG personal communication, 2006). LSA initiated a protocol-level survey for marbled murrelets in the study area in May 2007 (see Mitigation and Monitoring Plan section of the report).

142

The CDFG and USFWS have expressed concern about the potential negative affects of noise (originating from quarry operations) to marbled murrelets, if indeed they nest in the upper Nuff Creek watershed. LSA conducted a noise study to address this concern and the results are presented in Appendix C. The analysis concluded that noise levels in the upper Nuff Creek drainage during quarry operations are ambient; the loudest noise is the flow of water in Nuff Creek.

Nesting Raptors

Several species of raptors, including the Cooper's hawk *(Accipiter cooperi)* and sharp-shinned hawk *(Accipiter striatus)*, are considered species of special concern (as nesting species) in California. These two species are confirmed or probable nesters in the region surrounding the Nuff Creek watershed (Sequoia Audubon Society 2001). Based on the habitats present in the Nuff Creek watershed, there is a moderate to high potential for both these hawks to nest here, but the field surveys did not provide any evidence that either species is currently nesting in the area. Cooper's and sharp-shinned hawks generally favor dense groves of trees as nest sites; the small open groves of trees present in the expansion area may not be as attractive to theses hawks as the larger groves further up the drainage. A single Cooper's hawk was noted during one of the field surveys, but the bird did not exhibit behavior indicating that it had a nest nearby.

Both the red-tailed hawk and red-shouldered hawk have been observed in the Nuff Creek watershed and both potentially nest in this area. It is unlikely that either species currently nests in the expansion area because no raptor nests were seen in this area during the 2007 field surveys.

Golden eagles *(Aquila chrysaetos)* are regularly observed soaring high above the expansion area and upper Nuff Creek watershed during several of the field surveys, but none of these observations suggest that the birds are nesting in the Nuff Creek watershed and no eagle nests were found during the field surveys.

California Spotted Owl *(Strix occidentalis occidentalis)*

The California spotted owl is a California species of special concern. This subspecies ranges from San Mateo County and the Sierra Nevada south through the higher mountains of southern California to northern Baja California, Mexico. California spotted owls prefer heavy timber in canyon bottoms and the few records (probable) of nesting in San Mateo County are located in areas supporting dense forest, south and southwest of the expansion area. The stands of forest in the expansion area are too open and small in area to support nesting California spotted owls. Nighttime owl surveys conducted on May 5, 27, and June 2, 2004 revealed the presence of the great horned owl *(Bubo virginianus)* and the northern pygmy owl *(Glaucidium gnoma)* in the Nuff Creek drainage. No California spotted owls were detected.

Nesting Land Birds

Most nesting species of native land birds that occur in the expansion area are protected under the Migratory Bird Treaty Act (see above). In addition several species that occur, and presumably nest, in the Nuff Creek watershed are considered special-status species (nesting) and are tracked by the CNDDB. The Nuttall's woodpecker is a resident species that is common in suitable habitat (e.g., oak

woodland and willow riparian woodland), but has a relatively small geographic range confined to cismontane California and northwestern Baja California, Mexico.

The Allen's hummingbird breeds in a narrow zone of coastal scrub and open woodland along the California coast and in coastal southwestern Oregon and on the Channel Islands. The population in coastal California and in coastal southwestern Oregon winters in southern Mexico and the Channel Island birds are non-migratory (Howell 2002). The olive-sided flycatcher is widely distributed in coniferous forest habitats, primarily in western mountains, and in the northern forests in Canada and Alaska. The olive-sided flycatcher also nests in the coastal lowland forest in northern California and the Pacific Northwest. Singing male olive-sided flycatchers were observed in the expansion area and presumably nest in the Douglas firs.

The saltmarsh common yellowthroat *(Geothlypis trichas sinuosa)*, a California species of special concern, has been recorded in the Pilarcitos Creek drainage, just inland from the coast and to the east of the Nuff Creek drainage, in the marshes on the west side of the Crystal Springs Reservoir (CNDDB 2004). These warblers typically occupy salt marsh, freshwater marsh, willow thickets and moist areas with tall grasses. Other subspecies of the common yellowthroat winter in or migrate through coastal San Mateo County. Wintering and/or migrant yellowthroats likely occur in the Nuff Creek drainage. The yellowthroats that were heard singing along Nuff Creek during the field surveys were not seen clearly enough to identify them to the subspecies level. These birds could have been either the saltmarsh subspecies or a migrant subspecies just passing through. Although no saltmarsh common yellowthroats were observed in the expansion area they could occur, at least occasionally, in the willow thickets.

Bats

Several species of bats that are considered of high conservation concern by the Western Bat Working Group potentially could occur in the Nuff Creek drainage. These species include the pallid bat *(Antrozous pallidus)*, Townsend's big-eared bat *(Corynorhinus townsendii)*, western red bat *(Lasiurus blossevillii)*, fringed myotis *(Myotis thysanodes)*, and long-legged myotis *(Myotis volans)*. The pallid bat and Townsend's western big-eared bat are also considered species of special concern by the CDFG.

The old barn south of the existing quarry and the abandon house in the upper canyon are the most likely roosting areas for most of these species. The western red bat is the exception; individuals of this species roost alone in the foliage of trees. Numerous bats of several species (based on size differences) were observed in the predawn hours near the abandoned house during the marbled murrelet survey on May 8 and a single Townsend's big-eared bat was observed in the barn on June 12, 2007. Suitable roost sites for most bats such as old buildings, mines, large hollow trees, and/or stable rocky cliffs with deep crevices are not present in the expansion area; however, the western red bat could use the trees in the expansion area as daytime roosts.

San Francisco Dusky-Footed Woodrat (*Neotoma fuscipes annectins*)

The dusky-footed woodrat *(Neotoma fuscipes)* ranges from interior Central California Coast Ranges north through the San Francisco Bay Region to northwestern Oregon (Reid 2006). Though widespread in California and Oregon, several subspecies of this mammal are of conservation concern (CDFG 2006). The subspecies occurring on the San Francisco Peninsula and around the Bay Area is

the San Francisco dusky-footed woodrat *(N. f. annectens)* (Hall 1981); this subspecies is considered a California species of special concern.

The favored habitat of the dusky-footed woodrat is dense chaparral, coastal scrub, riparian and oak woodland (Reid 2006). Dusky-footed woodrats build large conspicuous nests, constructed primarily out of sticks, but they will also use other natural and manmade objects found in their territory. A nest may be occupied by successive generations of woodrats that continue to add material to the nest. Several woodrat nests were observed in the expansion area and adjacent areas, indicating that the dusky-footed woodrat is present.

Dusky-footed woodrats are generally solitary and territorial. A nest will usually be occupied by a single individual and individual woodrats often have several nests in their territory (Carraway and Verts 1991). During the breeding season pairs will occasionally occupy the same nest for a short time. Young animals disperse out of their natal territory to find a territory of their own.

The thick coastal scrub that covers much of the project site, including the expansion area, supports poison oak in abundance and is ideal habitat for this species. Due to the high quality of woodrat habitat in the Pilarcitos Quarry project area the CDFG has expressed concern regarding potential impacts to these mammals from the proposed quarry expansion.

WETLANDS, RIPARIAN AREAS AND PONDS

DEFINITIONS AND REGULATIONS

Wetlands

Wetlands and riparian habitat on the property were delineated using the Coastal Act's definition of wetlands, CCC regulations, and the CCC *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (CCC 1994). As explained below, other procedures and definitions employed by the Corps to determine Section 404 jurisdiction and USFWS wetland classification system yield similar wetland boundaries. The following describes and compares these three basic definitions for wetlands.

U.S. Fish and Wildlife Service Classification System

The USFWS classification system (Cowardin et al. 1979) defines wetlands as:

> *"lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification, wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year."*

Under the USFWS definition, the term wetland includes a variety of areas that fall into one of the following five basic categories (Cowardin et al. 1979):

1. Areas with hydrophytes and hydric soils, such as those commonly known as marshes, swamps, and bogs;
2. Areas without hydrophytes but with hydric soils. For example, flats where drastic fluctuation in water level, wave action, turbidity, or high concentrations of salts may prevent the growth of hydrophytes;
3. Areas with hydrophytes but nonhydric soils, such as margins of impoundments were hydrophytes have become established but hydric soils have not yet developed;
4. Areas without soils but with hydrophytes such as seaweed-covered portions of rocky shores; and
5. Wetlands without soil and hydrophytes, such as gravel beaches or rocky shores without vegetation.

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act defines wetlands as:

> *"those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

Under this definition, an area must contain, "under normal circumstances," the presence of 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology to be considered a wetland by the Corps for regulatory purposes. The necessary presence of all three characteristics is commonly referred to as the "three-parameter test" (Environmental Laboratory 1987). The Corps definition would consider areas falling under the USFWS broad categories of 1 (all three characteristics) and 3 (considering normal circumstances situations described in the Corps 1987 delineation manual) to be wetlands. The key distinguishing parameter in these two categories from the other three categories is the need for hydrophytic plants to be present and have roots into the substrate (category 4 hydrophytes such as seaweed do not technically have roots; seaweeds are anchored to the substrate by features called holdfasts).

The Corps or Section 404 wetland definition is often criticized as providing too narrow a definition of wetlands and excluding many communities which are functionally considered to be wetlands under the USFWS or CCC definition. While three of the USFWS wetland categories above (2, 4, and 5) are not technically considered to be wetlands under the Corps definition, these three community types are typically subject to Section 404 jurisdiction as "other waters of the United States[1]" as defined under 33 CFR Section 328.3 and are identified in Section 404 jurisdictional determinations by the Corps. The Corps (1987) wetland delineation manual acknowledges this difference and notes:

> *"The [US]FWS system includes <u>all</u> categories of special aquatic sites identified in the EPA Section 404b.(1) guidelines. All other special aquatic sites are clearly within the purview of Section 404; thus, special methods for their delineation are unnecessary."*

The definition of "waters of the United States" further expands the geographic reach of Section 404 to include tributary streams which may not be specifically identified as "special aquatic sites" in the Section 404 regulations.

[1] For any aquatic area, including wetlands, to be subject to Federal jurisdiction under Section 404 of the Clean Water, the use, degradation or destruction of the area must demonstrate or be potentially subject to federal interest such as being potentially subject to interstate or foreign commerce, areas which could be used by interstate or foreign travelers for recreation or other purposes, waters from which fish or shellfish could be taken and sold in interstate or foreign commerce, be an interstate area, provide habitat for migratory birds, or be a tributary to one of the above types of waters (33CFR328.3). Technically, an area may meet Corps criteria as a wetland or possess one or more functional characteristics of a USFWS classification wetland, but lack the interstate or foreign commerce connection necessary for federal jurisdiction as a waters of the United States. In practical terms and for the purposes of this assessment, any areas meeting the technical or functional characteristics of a wetland or "other waters" is assumed to have the applicable interstate or foreign commerce connection.

These "other waters" community types and corresponding USFWS category types include:

- all waters subject to the ebb and flow of the tide (categories 2, 4, and 5)
- lakes, rivers, ponds, perennial and intermittent streams (categories 2 and 5)
- mudflats, sandflats, playas, and salt pans (categories 2, 4, and 5)

California Coastal Act

The California Coastal Act (1976) defines wetlands in Section 30121 as:

> *"lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats and fens."*

CCC Administrative Regulations (Section 13577 (b)) provide a slightly broader and more explicit definition:

> *"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats."*

Under the CCC definition, the boundary between a wetland and an adjacent upland is determined by the extent of one or more of the key wetland characteristics of hydrology, hydric soils and hydrophytic vegetation. This definition is similar to the USFWS definition and classification system and incorporates all five of the broad wetland categories defined by Cowardin et al. (1979) and discussed above.

The County of San Mateo Local Coastal Program (LCP) definition of wetlands differs only slightly from the definitions cited in the California Coastal Act (1976) and CCC Administrative Regulations (Section 13577 (b)). The LCP defines a wetland as:

> *"an area where the water table is at, near or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and manmade impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric."*

Technical Criteria

The USFWS, Corps, and CCC definitions, while different, share a common element. All three rely on the presence of hydrology to define the characteristics of the wetland or community through creation of physical or physiological stresses which govern the presence or absence of hydrophytic plants. All three definitions also consider the characteristic parameters of wetlands to include hydrophytic vegetation, hydric soils, and wetland hydrology. The Corps definition under Section 404 is the most restrictive, requiring the presence of all three parameters for an area to be legally classified as a wetland. However, when the functional characteristics of all areas potentially subject to Section 404 jurisdiction under the Clean Water Act, or other water of the United States, are taken in totality, the USFWS, Corps, and CCC procedures (CCC 1994) essentially cover and address all five of the basic functional wetland community types described by the USFWS (Cowardin et al. 1979).

All three of the wetland systems also define the boundary between uplands and wetlands in a similar manner. Cowardin et al. (1979) defines the upland limit of wetlands to be: 1) between land with predominantly hydrophytic[2] cover and land with predominantly mesophytic[3] or xerophytic[4] cover; the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not. The CCC has generally accepted the USFWS classification system as a guide for wetland identification (CCC 1981). The Corps employs similar criteria, generally substituting the term "prevalent" for "predominant." The terms prevalent and predominant have generally been interpreted to mean greater than 50 percent of the parameter in question.

The USFWS system primarily describes a hierarchical classification system which provides information on the characteristics and, to some extent, the likely functions of the wetland. While the system describes the upper (upland/wetland) and lower (wetland/deepwater habitat) limits of wetlands, the classification system (Cowardin et al. 1979) does not provide detailed criteria for determining the boundary lines between wetland and upland environments. In some cases, the dividing lines are clear; in many other cases, the demarcation occurs across a broad transitional zone or continuum. Because of the need to define regulatory boundaries, the Corps has developed rigorous procedures and criteria for assessing and defining wetland boundaries (Environmental Laboratory 1987) and USACE (2006). These procedures rely on technical criteria developed by other sources: the USFWS for plants and the National Technical Committee for Hydric Soil/Soil Conservation Service for hydric soils. Hydrology criteria were developed from a variety of sources.

Vegetation Criteria

Hydrophytic species typically have morphological, physiological, and/or reproductive adaptation(s) which allow the plants to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. The USFWS National Wetland Inventory has developed indicator status categories to define hydrophytic species (Reed 1988). The categories are based on the estimated probability that plants would or would not occur in wetlands. These categories are listed below:

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2 Hydrophytic plant - plants growing in water or substrate that is at least periodically deficient in oxygen as a result of excessive water content.

3 Mesophytic plant - plants growing where moisture and aeration conditions lie between extremes.

4 Xerophytic plant - plants adapted to growing in dry environments in which an appreciable portion of the rooting zone dries to the wilting coefficient at frequent or long intervals.

Obligate Wetland (OBL). Occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67% to 99%), but occasionally found in nonwetlands.

Facultative (FAC). Equally likely to occur in wetlands or nonwetlands (estimated probability 34% to 66%).

Facultative Upland (FACU). Usually occur in nonwetlands (estimated probability 67% to 99%), but occasionally found in wetlands (estimated probability 67% to 99%).

Obligate Upland (UPL). Occurs almost always (estimated probability >99%) under natural conditions in nonwetlands.

Plant species occurring in the obligate or facultative wetland categories represent species that would normally be found in wetlands (i.e., hydrophytic species) and in most wetlands comprise the dominant character of the community. Facultative species have about an equal opportunity of being found in wetlands as in uplands. The term facultative in biological considerations means the ability to grow in variable conditions. Facultative species are considered positive indicators of wetland conditions because they can grow in wetlands. Facultative species, however, are a poor character to define upland/wetland boundaries or the presence of wetlands in the absence of other evidence such as hydric soils or wetland hydrology because of their broad tolerance and adaptability to a variety of conditions. Facultative species are probably better classified as mesophytic species rather than true hydrophytic species. In cooler and moister coastal areas in particular, facultative species frequently comprise the dominant species in upland areas. Facultative upland and upland plants are rarely present in wetlands and are not considered to be indicators of wetland conditions.

For the Pilarcitos Quarry assessment, dominance by plants in the obligate and facultative wetland categories as defined by Reed (1988) was generally considered to be a positive indicator of wetlands. Facultative species were identified as wetland plants if hydric soils or wetland hydrology was present.

Soils Criteria

Hydric soils are defined by criteria set forth by the National Technical Committee for Hydric Soils (SCS and NTCHS 1991). These criteria are based on the depth and duration of soil saturation. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

The following criteria reflect those soils that meet this definition:

1. All Histosols except Folists, or

2. Soils in Aquic suborder, Aquic subgroups, Albolis suborder, Salorthids great group, Pell great groups of Vertisols, Pachic subgroups, or Cumulic subgroups that are:

a. Somewhat poorly drained and have a frequently occurring water table at less than 0.5 foot (ft) from the surface for a significant period (usually more than 2 weeks) during the growing season, or

b. poorly drained or very poorly drained and have either:

(1) a frequently occurring water table at less than 0.5 ft from the surface for a significant period (usually more than 2 weeks) during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils

(2) a frequently occurring water table at less than 1.0 ft from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is equal to or greater than 6.0 in/horizon (h) in all layers within 20 in, or

(3) a frequently occurring water table at less than 1.5 ft from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or

3. Soils that are frequently ponded for a long duration (7 days to one month for a single event) or very long duration (greater than 1 month for a single event) during the growing season, or

4. Soils that are frequently flooded for a long duration (7 days to one month for a single event) or very long duration (greater than 1 month for a single event) during the growing season,

Hydric soils are commonly identified in the field by using indicators of saturated soil, technically known as redoximorphic features. These features are caused by anaerobic, reduced soil conditions that are brought about by prolonged soil saturation. The most common redoximorphic features are distinguished by soil color, which is strongly influenced by the frequency and duration of soil saturation. Hydric soils tend to have dark (low chroma) colors which are often accompanied by reddish mottles (iron mottles), reddish stains on root channels (oxidized rhizospheres), or grey colors (gleying).

Soil chroma is a measure of the brightness of a soil color. Low chroma soils, particularly dark brown and black soils, tend to have high organic matter contents. High organic matter is often a characteristic of wetlands, but is also common in non-wetland or upland communities such as grasslands. Chroma and mottling can also be reflective of historic soil development under aquic conditions and may be relic characteristics, lasting perhaps hundreds of years. Soils formed in alluvial and marine environments often exhibit such visual characteristics. Therefore, while chroma and mottling are useful field characteristics, they do not provide absolute evidence of active hydric soils in areas where natural conditions have been altered or where the soils may have developed under aquatic conditions.

The San Mateo County Soil Survey (SCS 1961) describes soils on the Pilarcitos Quarry property derived from decomposed granite. These soils are coarse and drain water rapidly. Their low capacity to hold water inhibits development of typical hydric soil indicators. For the purposes of this study, these local soil conditions were taken into account and soils were identified as hydric by a noticeably higher content of moisture and organic matter relative to upland soils.

Hydrology Criteria

Wetland hydrology occurs in those areas where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987). Cowardin et al. (1979) describes several water regime modifiers to describe wetland and deepwater habitats. For nontidal, palustrine wetlands such as those that occur on the Pilarcitos Quarry study area, the modifiers range from permanently flooded to temporarily flooded, intermittently flooded and artificially flooded. However, the USFWS classification system does not provide specific technical guidance to define each modifier.

The Corps Manual (1987) defines a similar suite of hydrologic zones for the purposes of defining wetland hydrology. These hydrologic zones are based on the duration of inundation and/or soil saturation during the growing season. The Corps Manual considers areas experiencing a duration of continuous soil saturation or inundation greater than 12.5 percent of the growing season to have wetland hydrology. Areas saturated or inundated between 5 and 12.5 percent of the growing season (irregularly inundated or saturated) can be either wetlands or uplands. Areas saturated or inundated for less than 5 percent of the growing season are not wetlands.

For coastal California regions such as the Half Moon Bay area, the growing season is essentially all year. The percent figures above translate to a minimum of 45.6 days of continuous saturation or inundation to positively be a wetland. Irregularly inundated or saturated conditions range from approximately 18 days to 45 days. Thus, areas with a minimum of 18 days of continual saturation or inundation can be, but are not necessarily wetlands.

Because it is often impracticable to specifically measure inundation duration periods, the Corps procedures define a number of indicators that can be used to assess wetland hydrology. These indicators include recorded data such as stream gages and, more commonly used, field indicators such as visual observation of soil saturation, watermarks, drift lines, matted vegetation, sediment deposits, and drainage patterns.

Riparian Habitat

The term "riparian" refers to organisms or habitats living on or adjacent to a water supply such as a river, stream, lake or pond. Riparian habitats often are transitional communities, lying between the aquatic habitats and the drier, upland communities. Riparian vegetation typically establishes and thrives because of the prolonged period of water associated with the pond or stream rather than as a result of prolonged saturation. Many riparian species also are referred to as phreatophytes: plants that use large amounts of water and habitually send roots down to and absorb water from the water table. Many of these same riparian species also can tolerate prolonged inundation or saturation and as such also are referred to as hydrophytic species.

For the purposes of interpreting Coastal Act policies, the CCC makes a specific distinction between riparian and wetland habitats (CCC 1994). The CCC defines riparian vegetation as:

> *"that association of plant species which grows adjacent to freshwater courses, including perennial and intermittent streams, lakes, and other freshwater bodies."*

The San Mateo County Local Coastal Program (LCP) further defines riparian corridors and riparian vegetation for the purposes of defining buffer zones (County of San Mateo 1998). Riparian vegetation

is defined as requiring at least a 50 percent cover of some combination of the following species: red alder, jaumea, pickleweed, big leaf maple, narrowleaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder. Based on this definition, the LCP distinguishes riparian vegetation composed of a predominance of native riparian species from vegetation in drainages dominated by introduced species, such as eucalyptus and Cape ivy, that are prevalent on sections of the watercourses on the Pilarcitos Quarry study area. In addition to red alder, arroyo willow, horsetail, and creek dogwood seven other riparian species named by the CCC (CCC 1994) were useful for determining riparian boundaries on the Pilarcitos Quarry study area: Pacific or shining willow, California blackberry, California bay, currant, twinberry, salmonberry, and lady fern.

Buffer Zones

The LCP identifies the following buffer zone requirements for wetlands (LCP 7.18):

> *Buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less than 50 feet only where (1) no alternative development site or design is possible; and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem.*

The LCP identifies the following buffer zone requirements for riparian corridors (LCP 7.11):

(a) *On both sides of riparian corridors, from the "limit of riparian vegetation," extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.*

(b) *Where no riparian vegetation exists along both sides of the riparian corridors, extend the buffer zones 50 feet from the bank edge for perennial streams and 30 feet from the midpoint of intermittent streams.*

(c) *Along lakes, ponds, and other wet areas, extend the buffer zones 100 feet from the high water point, except for man-made ponds and reservoirs used for agricultural purposes for which no buffer zone is designated.*

WETLANDS, RIPARIAN AREAS AND PONDS IN THE EXPANSION AREA

Wetland and riparian zone boundaries were mapped according to the Coastal Act definition of wetlands, the CCC regulations and the CCC (1994) Procedural Guidance, and by using the technical criteria for wetland vegetation, hydrology and soils. The distribution and extent of wetland and riparian habitats, along with applicable LCP buffer zones, in the expansion area of the Pilarcitos Quarry property is illustrated on Figure 7. The map also depicts wetland and riparian habitats within a 200-foot-wide area outside the expansion area boundary.

Facultative plant species are common in most drainages and on many slopes of the Pilarcitos Quarry study area. Therefore, dominance by plants in the obligate and facultative wetland categories was considered to be a positive indicator of wetlands and, when occurring with hydrologic indicators, a hydric soil was assumed. Facultative species were identified as wetland plants only if wetland

hydrology or areas with hydric soils were present. Common wetland plants included arroyo willow (FACW), Chamisso's hedge-nettle (OBL), American stinging nettle (FACW), giant horsetail (*Equisetum telmateia* ssp. *braunii* (OBL)) and thimbleberry (FACW).

Following is a brief summary of the habitats identified on Figure 7.

Perennial and Intermittent Streams

The western boundary of the expansion area includes approximately 1,650 linear feet of the main stem of Nuff Creek, a perennial coastal stream. This segment of the stream channel ranges in width from 5 to 10 feet at ordinary high water. The banks are steep with slopes of 45 to 80 percent and as high as 35 feet from the channel bottom. At the time of the survey, the running water was only 1 to 3 inches deep. The expansion area also includes a small (approximately 1,050 linear feet) tributary to Nuff Creek that flows intermittently in an east to west direction. Much of the channel bottom is filled with silt and gravel from the adjacent graded road, making the channel dimensions difficult to determine. Upstream from the graded road the channel is very narrow, ranging in width from 2 inches to 1 foot at ordinary high water. At the time of the survey there was no running water in the channel, but the soil was moist.

Riparian Areas

The expansion area encompasses approximately 6 acres of riparian habitat. Approximately 75 percent of the riparian habitat occurs along the mainstem of Nuff Creek along the western boundary of the expansion area. Blue gum eucalyptus and red alder dominate the overstory of this riparian corridor. The composition of understory vegetation along Nuff Creek is described in this report under *Botanical Resources*. The remaining 25 percent of riparian habitat in the expansion area is associated with the narrow tributary to Nuff Creek that flows from a ridge at the eastern boundary of the expansion area into the left bank of Nuff Creek. Arroyo willow is the dominant plant species. Approximately 300 linear feet of the channel is located adjacent to and downslope from the northern edge of the graded road. In this area the channel is heavily silted in with gravel from the road grading activity above it.

Wetlands

The expansion area encompasses approximately 1.5 acre of wetlands that exhibit evidence of wetland hydrology and are vegetated by coastal plant species that meet the wetland vegetation criterion. All of the wetlands delineated in the expansion area occur where surface runoff or seep flow is dispersed along the toe of slopes just above the graded road. None of the wetlands are associated with defined stream channels or dominated by emergent wetland vegetation. Shrubs such as thimbleberry dominate one wetland, and a mix of red alder, arroyo willow and various herbaceous species dominates others.

Arroyo willow is listed in the CCC and LCP as a riparian species, which indicates a direct association with perennial or intermittent streams; however, on the Pilarcitos Quarry study area, arroyo willow can be found growing solitarily or in thickets in drainages, on exposed slopes, and in highly disturbed areas. Where arroyo willow is directly associated with a perennial or intermittent streams, it is mapped as riparian habitat on Figure 7. Where arroyo willow is not directly associated with a

perennial or intermittent stream but is associated with observable wetland hydrology, it is included in the wetland boundaries mapped on Figure 7.

Pond (within sediment trap)

One feature in the expansion area is identified on Figures 3 and 7 as a pond. This small pond formed by water collecting in a sediment trap that was constructed to catch sediment from a road that leads to the quarry water storage tank. The sediment trap lies between the face of a vegetated cliff and a 4-foot high gravel berm at the road edge. The face of the cliff exhibits evidence of freshwater seepage and is the likely source of water that appears to remain for extended periods. Cattails grow in approximately 20 percent of the ponded area, while red alder, arroyo willow and red elderberry grow on the banks and hang over the basin.

The jurisdictional status of the sediment trap with respect to the Section 404/401 regulations and through the Coastal Act and LCP is unclear at this time. Normally, sediment basins and other features constructed on dry land for the purposes of water quality improvement or sediment control are considered to be exempt under Corps Section 404 regulations; however, these exemptions are not automatic and are based on a case by case review. Because the basin appears to have been constructed within an existing seep or wetland area, the Corps may still claim jurisdiction.

Similarly, the San Mateo LCP does not specifically address exemptions or standards for such water quality features. The only exemption mentioned in the LCP for artificial ponds is in Policy 7.16 (8) which states "*dredging manmade reservoirs for agricultural water supply where wetlands may have formed, providing spoil disposal is planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation.*" This policy appears to apply only to agricultural water supply ponds and not other constructed ponds or basins.

Coastal Commission guidance or policy also is not clear with respect to artificial features that exhibit and develop wetland characteristics. Their procedural guidance (CCC 1994) does not specifically exempt constructed ponds or basins; however, the CCC also encourages the use of bio-filtration techniques such as basins, wet swales, and similar types of measures for water quality protection and improvement. Since these sorts of features can readily develop wetland characteristics, it would appear logical for the CCC to exempt such features from wetland and environmentally sensitive habitat requirements.

Regardless of the jurisdictional status or wetland status of this pond, it is occupied California red-legged frog habitat. Under the LCP, habitat of rare and endangered (e.g., federally listed threatened species) species are considered ESHAs; therefore, the sediment pond would qualify as an ESHA.

MITIGATION AND MONITORING PLAN

This section describes the mitigation and monitoring plan for potential impacts to special-status species in the expansion area. The mitigation and monitoring plan is designed to offset potential impacts to biological resources from the proposed expansion and serve as a model for mitigating and monitoring future quarry expansions within the study area. Reclamation (including revegetation) of the expansion area is described in the Mining and Reclamation Plan for the quarry (LSA 2006b).

The following table summarizes the impacts to vegetation and habitats within the expansion area.

Vegetation or Habitat	Area Impacted
Arroyo Willow	0.08 acre
Rocky Cliff	0.03 acre
Sparse Scrub and Non-native Grassland	0.74 acre
Douglas Fir	2.83 acres
Coastal Scrub	5.56 acres
Total Acres Impacted	**9.24 acres**

MITIGATION PLAN

Environmentally Sensitive Habitat Areas

The expansion area contains the following environmentally sensitive habitat areas as defined by the LCP: 1) riparian corridors, 2) wetlands and 3) a sediment pond that supports a federally threatened species. Riparian corridors and wetlands and their respective buffer will be excluded from the mining area in compliance with the LCP. The pond in the sediment trap will be restored and enhanced in an effort to increase its value for California red-legged frogs (see below). As noted above in the Regulatory Context section of this report, under the LCP restoration and the enhancement of rare endangered species habitat is an allowable action within an ESHA.

Special-status Plant Species

The Montara manzanita, Santa Cruz manzanita, and western leatherwood do not have formal legal protection (USFWS, CDFG); however, impacts to these plants may be considered significant under the California Environmental Quality Act (CEQA). Special-status species and their habitats are protected under the LCP.

None of these three species were identified within the expansion area during the 2004 or 2007 surveys. However, as discussed previously, not all of the expansion area could be surveyed on foot because of dense vegetation and steep/inaccessible slopes. The 2004 surveys were conducted within the "typical flowering period" for these species, but the peak flowering period when these species can be most readily identified (even from a distance) is in February and March (LSA observations). The February 2007 survey was scheduled to coincide with the peak flowering period of Montara manzanita, Santa Cruz manzanita, and western leatherwood.

During February 2007, the upper slopes of the expansion area were accessed via an offsite road which allowed LSA to search areas that were inaccessible during the 2004 surveys. Most of the upper slopes of the expansion area were surveyed, but certain areas of dense vegetation on steep north facing slopes could not be reached. The Montara manzanita and Santa Cruz manzanita would not be expected to occur in these areas because they generally favor more open habitats or chaparral and are not likely to be present in dense north-slope stands of coastal scrub (Hickman 1993). There is a small possibility that a few scattered western leatherwood plants could be present in these inaccessible areas, but it is unlikely due to the lack of observations of this species in any other part of the expansion area.

Even though it is unlikely that the western leatherwood is present within the expansion area, its presence in the inaccessible areas cannot be completely ruled out and the following mitigation and salvage measures should be followed. During the clearing of vegetation from the expansion area a biological monitor familiar with western leatherwood will work with the vegetation clearing crew. Heavy equipment will clear the vegetation from one or more transects to provide the monitor access. The biological monitor will survey the vegetation along the transect edges for western leatherwood and if none are found will give authorization to continue vegetation clearing.

If any western leatherwood plants are observed within the quarry expansion area during the vegetation clearing and the plant or plants cannot be avoided the quarry shall implement the mitigation outlined below. This mitigation plan will consist of a salvage and recovery plan and/or a plan to collect and grow seed of western leatherwood for transplantation onto slopes of the quarry. This mitigation will entail experimentation because western leatherwood has never been transplanted and current research indicates that survival of seedlings can be poor. Nevertheless, William Graves, a professor of horticulture at Iowa State University has achieved breakthroughs in working with western leatherwood and some of the information in this discussion comes from his experience. This mitigation plan should be prepared by a qualified person experienced in the development and implementation of native plant restoration, mitigation, and management plans.

Any western leatherwood plants observed during the vegetation clearing will be flagged for translocation to a previously quarried area, preferably on a north- or east-facing slope because these slopes are relatively cool and moist. Translocation will occur at the time when vegetation is cleared. Topsoil shall be added to the transplantation site at a depth of 3 feet. This transplantation site should be located on a bench of the quarry for ease of transplantation and maintenance.

Translocation of western leatherwood is an experimental endeavor and different techniques will be utilized in order to discover the best methodology for success at this site. The branches, and as an experiment the trunk(s) of some western leatherwood, should be pruned to reduce water stress. (Observations indicate that western leatherwood sprouts from trimmed and or mowed trunks.) The planting hole for the transplants should be 1.5 times the size of the rootball.

A front-end loader, back-hoe, Vermeer spade, or other type of suitable heavy equipment should be used to excavate the western leatherwood plant. As large an area as possible should be excavated around the rootball of the plant. Western leatherwood reproduces by underground rhizomes and any rhizomes observed in the excavated rootball should be cleanly severed to reduce the chance of infection.

If the western leatherwood plant cannot be planted immediately, it shall be covered with wet burlap or similar material to avoid desiccation and kept out of the sun as much as possible. Nevertheless, the leatherwood should be planted the same day as excavated. The rootball should be planted such that the crown is slightly above the level of the soil and soil should be firmly packed by hand around the rootball. A trough should be made at the edge of the planting hole to retain water during watering. After transplantation occurs, the plants should be watered-in. A temporary shade cloth structure should be constructed over the transplanted western leatherwood to avoid over exposure to the sun.

Seedlings. Seedlings of western leatherwood could be planted on the quarried slopes of the Pilarcitos Quarry either in addition to or instead of using translocated plants. The seeds should be germinated in a growing facility and when approximately the size of 1-gallon containers, transplanted onto the quarry slopes. As with translocated plants, seedlings should be planted into 3 feet of topsoil that has been placed on a bench of a north- or east- facing slope. A shade structure should be installed over the seedlings. Experimentation will be required to determine the best method for seedling survival.

Riparian Habitat

Riparian vegetation is a sensitive plant community that occurs in the expansion area as Red Alder Riparian Forest and Central Coast Arroyo Willow Riparian (Sawyer and Keeler-Wolf 1995). Riparian vegetation qualifies as an ESHA according to the LCP and therefore the proposed expansion will avoid all riparian areas including a 50- to 100-foot buffer zone around areas supporting this vegetation type. In the expansion area, riparian vegetation consisting of native trees represents a valuable biological resource and removal may result in significant impacts. Refer to *Wetlands and Riparian Areas*, below, for information regarding constraints to the project that pertain to riparian vegetation.

California Red-Legged Frog

Aquatic habitat, upland habitat, and barrier-free dispersal habitat for the California red-legged frog are present within the expansion area. While the proposed action within this area will not impact aquatic habitat or adjacent upland habitat it will have an effect on available dispersal habitat. Existing and future operation of the quarry also has the potential to impact California red-legged frogs as the frogs are attracted to wet areas associated with the sediment ponds and material washing. The various ponds in the currently active quarry, including the quarry operation area, are primarily intended to be used to process material and manage sediment flows from the expansion area. Breeding and tadpole development within the active quarry ponds conflicts with these primary purposes and results in restrictions on their uses that can conflict with other environmental beneficial uses such as water quality protection, sediment management and water storage for aggregate production and dust control. The quarry ponds can also become ecological sinks, attracting breeding adults from other areas and providing limited breeding output.

In order to address ongoing operations, the applicant is pursuing applicable incidental take coverage from the USFWS for the quarry operation. To mitigate for potential impacts to California red-legged frogs from these activities within the currently active quarry, processing plant area, and the proposed expansion, the applicant will implement a series of actions to minimize impacts on the frog to a less than significant level. These actions include: 1) aquatic habitat enhancement and new breeding habitat construction, 2) dispersal habitat protection measures, and 3) protection and management measures for ongoing operations.

Aquatic Habitat Enhancement. Additional breeding habitat will be established within the Nuff Creek drainage: 1) the small sediment trap pond in the expansion area will be modified and enhanced to create or re-establish breeding habitat; 2) three ponds will be constructed in the upper watershed; and 3) following completion of mining in the expansion area, additional pond habitat will be established in the quarry pit as part of the reclamation activities.

Expansion Area Sediment Pond

This section includes a proposal to restore and enhance the small pond in the sediment in the expansion area. Within the Pilarcitos Quarry study area and surrounding landscape, this small sediment pond is not particularly noteworthy as an important aquatic habitat for the California red-legged frog for several reasons: 1) the pond is small in area, 2) it is relatively isolated from other ponds supporting suitable habitat for this species, and 3) the pond appears to provide only periodic breeding and hydration habitat for California red-legged frogs and other amphibians. Over a relatively short time period (1 to 2 years), the pond has filled in with sediment and has likely become too shallow to provide breeding habitat (current maximum water depth is 6 to 8 inches). The adjacent seep, however, would probably continue to keep the area moist and thus provide potential hydration habitat. If the pond were enhanced and managed properly it could provide a benefit to the California red-legged frog and other pond breeding amphibians in the Nuff Creek watershed and the surrounding landscape. It also could provide potential habitat for dispersing San Francisco gartersnakes.

The existing pond will be enhanced to provide a perennial aquatic habitat for California red-legged frogs. The pond will be designed to provide suitable hydration, foraging, and breeding habitat for this species. The proposed pond will also benefit other pond breeding amphibians in the local area. The proposed pond will be constructed within the existing sediment trap and will be designed to include deep (3 to 4 feet) areas of permanent water as well as shallow (4 to 6 inches) shelf areas. The deep areas will provide habitat for frogs and tadpoles to escape potential predators and will serve as hydration habitat during dry weather. Deep water will also discourage the growth of emergent aquatic vegetation thus ensuring the presence of deep open water for frogs for longer periods. The shallower shelf habitat will provide rearing habitat for tadpoles. The shallow areas will also provide warmer water temperatures than the deep portions of the pond. Shallow warm water is advantageous to the development of frog tadpoles and facilitates the growth of algae upon which tadpoles feed. The restored and enhanced pond will be approximately 60 feet long and 25 feet wide at it widest point. Water levels in the pond will be supplied by rainfall and the adjacent seep. A drain (stand-pipe) will be installed in the pond so that excess water can be shunted underneath the berm and existing road to the slope above Nuff Creek. This will prevent damage to the berm in the case of extreme rainfall that may fill the pond above its capacity.

Currently there are numerous young alders growing on the existing gravel berm. These young trees will help stabilize the berm and, as they mature, individual trees can be selectively removed if the pond becomes too shaded. The lower edge of the berm adjacent to the existing dirt road will be stabilized with large rocks. Cattails will likely become established around the pond. These plants provide shelter for frogs and a substrate for egg masses, but if they become overgrown they may have to be periodically and selectively removed to maintain the pond as high quality frog habitat.

To prevent infilling of the pond by sediment, a new sediment trap will be installed "upstream" of the current inlet. A berm will be constructed between the new sediment trap and the proposed frog pond. This sediment trap will prevent sediment-laden water (running down the road) from entering the

pond. The berm will be constructed from decomposed granite. This will allow water within the new sediment trap to percolate through the constructed berm into the frog pond and the berm itself will act as a sediment filter.

A standpipe will be installed in the trap and excess water will be shunted through a culvert, under the road and down slope into one of the active sediment ponds in the quarry operations area. The new sediment trap will be monitored and sediment will be removed periodically to prevent overflow of sediment into the restored pond. The new sediment trap will be designed to have a maximum holding time of approximately 24 hours for standing water.

Upper Nuff Creek Ponds

New breeding and pond habitat will also be constructed in the upper portion of the Nuff Creek drainage, outside of proposed future expansion areas (Figure 8). These ponds will be designed to compensate/mitigate for managing ponds within the active processing plant and aggregate storage area to preclude California red-legged frog breeding activity.

The largest constructed pond will be located in a relatively flat area on the east side of Nuff Creek (Figure 8). This area currently supports coyote brush and non-native grasses and is an ideal area to locate frog ponds, as it is open and sunny and located adjacent to a 2.72-acre stand of red alder riparian forest with perennially saturated soil and an understory supporting hydrophytic vegetation. Nuff Creek is located just west of the proposed pond construction area. Two additional ponds will be constructed near the old house and where the northeastern most tributary of Nuff Creek enters the flood plain of Nuff Creek (Figure 7). These areas are currently occupied by open stands of coyote brush and/or weedy vegetation with adjacent perennially wet areas that support hydrophytic vegetation.

The proposed ponds will be 12 to 15 feet wide and approximately 35 to 45 feet long. Pond depth will vary from three to four feet with shallow (4 to 6 inches) shelf areas for tadpole rearing, similar to the design parameters described for the expansion area sediment pond habitat enhancement. Each pond is expected to provide breeding habitat for 2 to 4 pairs of frogs.

Post-mining Reclamation Ponds

In addition to the sediment pond enhancement in the expansion area and the constructed ponds in the northern portion of the study area, three to four ponds (minimum target of 0.1 acre of pond habitat) will be constructed within the expansion area as part of the reclamation plan. Pond construction and revegetation around the ponds will begin when the expansion area has been mined out (approximately 2 to 3 years from the start of mining). Pond design criteria will be similar to those proposed for the northeast portion of the study area.

Dispersal Habitat. Landscape features (corridors) that will provide dispersal habitat for frogs moving through the expansion area include; 1) the EHSA and associated buffers along the riparian corridor on the western edge of the expansion area, 2) the other EHSAs and buffers within the expansion area, 3) the adjacent undeveloped lands to the east of the expansion area, and 4) the terraced slopes above the quarry operations area that are currently being revegetated. These corridors will provide shelter and foraging habitat for dispersing frogs and allow them to move to and from the restored pond in relative safety.

To facilitate frog movement through these corridors and increase their value as summering habitat for California red-legged frogs, small water catchments will be constructed at selected seeps that are present in these areas. The catchments will be designed to collect and retain water from seeps located on the slopes south and east of the restored pond and on the slopes east of the expansion area. The design of the catchments will depend on the specific features of the individual seeps (such as substrate, rate of flow, existing cover, etc.). If necessary, a perforated pipe could be inserted into the substrate at the seep to increase and direct surface flow to the catchment. The catchments could be constructed by digging a shallow pit or by placing sandbags or other material to form a low dam. If necessary, catchments can be fenced to exclude potential predators or livestock, and covered to prevent the accumulation of debris.

Avoidance and Protection Measures. Before the onset of mining or other construction in the expansion area, or restoration activities at the sediment pond, the following measures will be implemented to minimize potential adverse effects to the California red-legged frog. These measures are adapted from and incorporate the standard protection measures outlined in the *Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog* (USFWS letter report, dated January 26, 1999):

1) At least 15 days prior to the onset of activities, the project proponent shall submit the name(s) and credentials of biologists who would conduct activities associated with California red-legged frog. No project activities shall begin until the project proponent has received written approval from the USFWS.

2) USFWS-approved biologists will conduct a survey for the California red-legged frog at the sediment trap pond and surrounding area two weeks before the onset of quarry operations and other construction in the expansion area, or restoration activities at the sediment pond. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life stages is appropriate. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

3) Before the onset of quarry operations, other construction activities within the expansion area, or restoration activities at the sediment pond the approved biologist(s) shall conduct a training session for all quarry personnel working within the expansion area. At a minimum, the training shall include: a) a description of the California red-legged frog and the San Francisco gartersnake and their habitat requirements; b) the general measures that are being implemented to conserve the red-legged frog and San Francisco gartersnakes as they relate to the quarry; and c) the boundaries within which the quarry expansion may be accomplished.

4) A USFWS-approved biologist shall be present at the expansion area until such time as all removal of red-legged frogs, instruction of workers, and habitat disturbance has been completed. After that time, the quarry operator shall designate a person to monitor on-site compliance with all minimization measures. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the U.S. Army Corps of Engineers (Corps) and/or USFWS.

5) During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly.

6) All fueling and maintenance of vehicles and other equipment, and staging areas, shall be located at least 20 meters from Nuff Creek, the pond, and associated tributaries. The applicant will also prepare a plan to allow a prompt and effective response to any accidental spills into the creek, pond, or other aquatic habitats. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

7) The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to complete the quarry expansion. Routes and boundaries shall be clearly demarcated, and these areas shall be located outside ESHAs.

8) To control erosion during and after quarrying operations the project proponent shall implement best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan.

9) When a work site is to be temporarily de-watered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent red-legged frogs from entering the pump.

10) A USFWS-approved biologist shall permanently remove, from within the project site, any individuals of exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

11) Although frog movement to and from the restored pond is likely to occur primarily at night when the when the quarry will not be in operation, a gate will be placed across the road west of the pond at its junction with the main quarry access road. This will restrict traffic on the road adjacent to restored pond to the occasional vehicle trip for road maintenance.

12) A frog-proof barrier will be placed along both sides of the rock chute between the expansion area and the quarry processing area. This will keep dispersing frogs from traversing or sheltering in an area where they are in danger of being crushed by falling rock.

Additional measures will be implemented to address ongoing operations in the processing plant and aggregate storage areas. These measures include:

1) All employees will be required to take training similar to item 3 above. The training, at a minimum, shall include: a) a description of the California red-legged frog and the San Francisco gartersnake and their habitat requirements; b) the general measures that are being implemented to conserve the red-legged frog and San Francisco gartersnakes as they relate to the quarry; and c) the boundaries within which the quarry expansion may be accomplished. (Note: this measure has already been implemented at the quarry).

2) Onsite ponds will be regularly inspected during the breeding season and any adults, tadpoles, or egg masses observed will be captured/collected and relocated suitable aquatic habitats outside of the plant area (e.g., constructed/restored ponds).

3) To the maximum extent practicable given rainfall patterns and sediment/stormwater retention requirements, water level in the ponds within the active quarry and processing areas should be kept dry or ponding limited to a maximum of 24 hours during the frog breeding season. Ponds should also be regularly maintained to preclude the establishment of aquatic vegetation.

Summary. The pond restoration and enhancement program outlined above (in combination with the protective measures) are expected to increase the value of the Nuff Creek watershed for California red-legged frogs by significantly increasing the amount and distribution of breeding habitat within the watershed. The proposed created and enhanced ponds would provide a more permanent aquatic habitat, greatly increase breeding habitat, and could serve as a model for future aquatic habitat creation and restoration in the Nuff Creek watershed.

San Francisco Gartersnake

A resident population of San Francisco gartersnakes is unlikely to be present in the Nuff Creek drainage due to the lack of extensive patches of suitable breeding habitat (see Appendix D); however, this species is known to occur within the upper Pilarcitos Creek drainage less that one mile north of the study area and in the vicinity of Half Moon Bay to the southwest. It is unlikely that San Francisco gartersnakes disperse through the Nuff Creek drainage with any regularity, but in fact very little is known about the dispersal biology of this species and the possibility of an occasional dispersing snake cannot be ruled out with the available information.

The ESHAs and associated buffers within the expansion area should provide ample dispersal habitat for gartersnakes through the quarry. In addition, the restoration and enhancement of the sediment pond and the creation of ponds in the northeastern portion of the study area (as California red-legged frog habitat) could also benefit dispersing San Francisco gartersnakes and over time create sufficient breeding habitat to establish a resident population.

Because this species is considered fully protected by the CDFG, take is not allowed; therefore, additional measures are required to assure that no take occurs during quarry operations. A snake-proof barrier (snake fence) will be installed around the perimeter of the active rock excavation area and will have one-way funnel exit doors placed at various locations to allow snakes and other animals within the quarry area to escape. The active rock excavation area will vary as quarry operations progress and the snake fence will have to be moved accordingly. The fence will be built with silt-fencing and/or wooden boards and buried six inches deep in the substrate. The fence will exclude any potential dispersing snakes from the active quarry area and confine them to ESHAs as they move through the area. The quarry currently has as speed limit of 15 miles per hour for all vehicles within the active quarry. This speed limit combined with driver awareness (through training described under *California red-legged frog*, above) of the potential for snakes in the quarry will greatly reduce the likelihood of impacts to San Francisco gartersnakes.

Before pond restoration work is started, a USFWS-approved biologist(s) will conduct a training session on the identification and natural history of San Francisco gartersnakes for all quarry personnel (see discussion under *California red-legged frog*, above).

Nesting Raptors. No nesting raptors were discovered in the expansion area. The presence of an active raptor nest would pose a constraint to vegetation removal in the expansion area while the nest was active. If an active raptor nest is found within the expansion area the nest site and a suitable buffer zone around the nest site would have to be avoided until the young had fledged. If feasible, the removal of vegetation and overburden should be scheduled for the period between September 1 and November 30 so as to avoid disturbance to nesting birds. If this is not possible a nesting raptor survey should be conducted in the expansion area prior to vegetation removal.

Nesting Land Birds. Nesting birds protected under the Migratory Bird Treaty Act could pose a constraint to the development of the expansion area. Most of the bird species observed in the expansion area are protected under the Act and impacts to the nest sites, nests, eggs, and young would have to be avoided. If feasible, the removal of vegetation and overburden should be scheduled for the period between September 1 and March 31 so as to avoid disturbance to nesting birds. If vegetation is scheduled to be removed in the period between April 1 and August 31 a nesting bird survey should be conducted in the expansion area. If nesting birds are discovered the nest and a suitable buffer zone (50 to 100 feet) around the nest should be avoided until August 31 or the young have fledged.

Marbled Murrelet. The proposed mining activity in the expansion area will not likely have an adverse effect on marbled murrelets due to the lack of suitable nesting habitat for this species within or adjacent to the expansion area. In addition, the expansion area is adjacent to an active quarry and any impacts to murrelets moving up and down the drainage or across drainages (from nesting areas further inland) have most likely been ongoing for the past 30 years as a result of the quarry operation and/or the operation of the Ox Mountain Landfill in the adjacent valley and ridgeline to the west. Murrelets flying up and down Pilarcitos Creek to the east of the expansion area are unlikely to be adversely affected by mining activity in the expansion area because the upper limit of mining is well below the ridge line and the steep intervening ridge would reduce noise from the quarry to ambient levels in the Pilarcitos Creek drainage.

Potential nesting habitat for marbled murrelets occurs at the upper end of the Nuff Creek watershed and the status of this species in the study area is of concern to the CDFG and USFWS. To address these concerns, a marbled murrelet survey has been initiated in the study area. The survey will follow standard protocol for this species to determine presence or probable absence (Mack et al. 2003). Presence/absence surveys require a minimum of five site visits in each of two consecutive years using the recommendations in the 2003 Protocol. LSA, in consultation with the CDFG and USFWS, designed the Pilarcitos Quarry survey (starting in 2007) to include seven site visits at five survey stations (Figure 4) over two consecutive years for a total of 14 site visits.

If there are no detections in both year one (2007) and year two (2008), the site can be classified as probable absence (i.e., marbled murrelets are likely not present). If murrelets are found during the first year survey, every reasonable effort will be made to conduct nine survey visits in each of the two survey years for a total of 18 visits unless occupancy is established in fewer visits. Occupancy is generally established by observing murrelets flying in circles above the forest canopy (Mack et al. 2003). The marbled murrelet survey period for California is from April 15 to August 5 (Mack et al. 2003).

164

The first, second, and third surveys for 2007 were conducted on May 8 and 31, and June 12. No murrelets were observed during these surveys. Subsequent surveys for 2007 are scheduled on June 26, and July 3, 17, and 24.

San Francisco Dusky-footed Woodrat. The coastal scrub and riparian corridors within the expansion area support good to high quality habitat for the dusky-footed woodrat. Impacts to woodrats and their habitat within the expansion area will be partially mitigated by the preservation of the riparian corridors and buffers, which are ESHAs. Impacts to woodrats in the proposed mining areas will be mitigated as part of the quarry reclamation plan.

The reclamation plan for the Pilarcitos Quarry includes a revegetation plan that will benefit dusky-footed woodrats. The revegetation plan utilizes trees and shrubs that are components of the native vegetation in the Nuff Creek watershed such as California bay, blue blossom, poison oak, California coffeeberry, California blackberry, coyote brush, and thimbleberry. Riparian components include red alder, yellow willow, and arroyo willow. This plant palette is currently in use for the revegetation plan of the terraces above the quarry operations area south of the expansion area. As this vegetation matures it will provide habitat for woodrats. The protected riparian areas, associated buffers, and undisturbed habitat to the east will provide a refuge for the local woodrat population and a source population for colonization of the revegetated areas.

Resident woodrats within the expansion area will be impacted during removal of vegetation and overburden. Some individual woodrats (resident within the expansion area) will likely escape into adjoining undisturbed areas during vegetation removal; however, these escaping individuals will likely not have a high survivorship. Escaping woodrats will presumably be dispersing into habitat occupied by resident woodrats and, as previously noted, woodrats are territorial and generally exclude intruders from their nests. To provide temporary shelter for woodrats forced out of the expansion area by vegetation removal, artificial shelters constructed of old wine half-barrels will be placed along the edge of the area to be cleared of vegetation. The wine barrels will be placed with the open end down and holes cut in the sides near ground level will allow woodrats to enter and exit. Wine barrels will be similarly placed within active reclamation areas within the existing quarry in order to provide cover for woodrats that may seek to establish territories in these areas.

Wetlands and Riparian Area

Riparian Areas and Streams. According to the LCP, all perennial and intermittent streams and their tributaries are ESHAs. The expansion area includes approximately 1,800 linear feet of Nuff Creek, which is a perennial stream, and approximately 1,050 linear feet of an intermittent tributary to Nuff Creek. Both stream channels are shaded by dense riparian vegetation; therefore, constraints to the expansion pertaining to streams are accounted for in this report as constraints pertaining to riparian areas. All riparian areas within the expansion area will be avoided and best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan, will be implemented to prevent erosion into the creek.

Wetlands. The expansion area includes wetland habitat that may or may not qualify as CCC or Corps jurisdictional wetlands. As noted above the LCP requires a buffer zone of 100 feet landward from the outermost line of wetland vegetation around wetlands. The buffer zone may be reduced to no less than 50 feet only where (1) no alternative development site or design is possible, and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional

biologist to the satisfaction of the County and the CDFG. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem. Based on this survey, there is no wetland designated in the expansion area requiring a buffer zone of greater than 100 feet. All wetland areas will be avoided and best management practices, as identified by the quarry's Storm-water Pollution Prevention Plan, will be implemented to prevent erosion into these areas.

MONITORING PLAN

Environmentally Sensitive Habitat Areas

All the ESHAs in the expansion area will be protected; therefore, a specific monitoring plan for these areas has not been developed. Nonetheless, the edges and buffers of the ESHAs will be checked periodically for invasive non-native plant species and damage from erosion, and adaptive management practices will be suggested to address these problems. The periodic assessment of the ESHAs within the expansion area can be conducted concurrently with the California red-legged frog monitoring (see below).

Special-Status Plants

Because no special-status plants were found or are expected to occur in the expansion area a plant monitoring plan has not been developed.

Special-Status Animals

California red-legged Frog. In order to assess the success of the pond restoration outlined above, a five year monitoring plan will be implemented. This plan will include two surveys per year of each created or restored pond; one in late winter/early spring and another in late summer/early fall. The focus of the monitoring will be to: 1) document colonization/use of the created and enhanced ponds by California red-legged frogs; 2) estimate numbers of adult frogs using the ponds; and 3) monitor breeding activity and success. In addition, the physical features of the ponds, changes in vegetation, and water level will be assessed during the monitoring visits. A staff gage will be placed in the deepest portion of the ponds for water depth to be accurately recorded during monitoring visits. Photographs of the pond and adjacent area will be taken during each monitoring visit to provide a record of changes in vegetation cover and water levels. The presence of other amphibians will be noted during monitoring visits and will include information on species, numbers of individuals or egg masses, and life cycle (i.e., eggs, larvae, metamorphs, and adults). Field observations will be recorded on a data sheet and summarized in a short annual report. If necessary, the report will provide recommendations on adaptive management practices to maintain the pond as suitable habitat for California red-legged frogs.

Eggs, larvae, metamorphs, and/or adult Californian red-legged frogs discovered within the active quarry or expansion area will be relocated to suitable habitat within a protected portion of the study area by USFWS-approved biologist. If quarry personnel discover a California red-legged frog (or any life cycle stage) within the active quarry or expansion area they will stop work in the area of discovery and inform the quarry manager. The quarry manager will contact LSA to determine if relocation is necessary. If relocation is deemed necessary, a USFWS-approved LSA biologist will come to the quarry and relocate the frog, tadpole, or egg mass to a designated mitigation pond or to a suitable upland protected area.

An annual report will be completed each year to summarize monitoring activities and findings.

San Francisco Gartersnake. A resident population of San Francisco gartersnakes is probably not present in the Nuff Creek drainage, but as noted above the potential for individual snakes dispersing through the watershed is unknown. The creation of the California red-legged frog aquatic habitat in the upper watershed could also provide suitable habitat for San Francisco gartersnakes and may attract dispersing individuals. A visual search for gartersnakes will be conducted concurrently with the daytime California red-legged frog monitoring surveys. In addition, two to three cover-boards of half inch plywood (2.5 x 3 feet) will be placed in permanent locations in open areas near the constructed ponds. Cover-boards are attractive to snakes and provide them with a concealed space to thermoregulate and hide from predators. Turning boards can be a productive way of monitoring various species of snakes (including gartersnakes) in habitats where snakes are difficult to find by standard visual encounter surveys. For example, no snakes have been observed during numerous field surveys of the upper Nuff Creek watershed by experienced snake hunters, with the exception of numerous individuals (adults, subadults, and juveniles) of the of the western terrestrial gartersnake *(Thamnophis elegans)* found under a single discarded board in the grassy area where the proposed frog ponds will be located. The cover-boards will be numbered and their locations mapped with a GPS unit. The boards will be periodically checked for snakes. The results of the cover-board monitoring will be included in the red-legged frog annual report.

San Francisco Dusky-footed Woodrat. The CDFG has expressed a primary interest in making an attempt to gather data on survivorship of displaced woodrats to gain a better understanding of impacts to these mammals from development. To this end, a woodrat trapping and marking program will be conducted. Prior to vegetation clearing in the expansion area, a live-trapping program will be conducted for woodrats using Sherman small mammal traps. All trap locations will be numbered and located on a map of the expansion area with the aid of a GPS unit. All woodrats captured will be sexed, measured, weighed, and marked with a numbered ear tag. This will allow for subsequent identification of individual woodrats if they are recaptured. Ear tagging is a humane standard method for marking small mammals (Wilson et al.1996). Numbering and mapping trap locations will provide information on the movements of recaptured animals.

Trapping will continue (in areas still supporting vegetation) during vegetation removal and grading until the entire work area has been cleared of vegetation. Concurrent with clearing and after the expansion area is cleared, peripheral areas (including reclaimed areas within the existing quarry that support woodrat habitat) will be sampled to determine if any of the displaced woodrats (i.e., ear-tagged individuals) are present and reestablishing territories. Trapping will be conducted for at least two periods in these peripheral areas for one year after vegetation clearing in the expansion area. The results of the trapping survey will be summarized in an annual report.

167

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169

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FIGURES

Figure 1: Regional Location
Figure 2: Study Area Overview
Figure 3: Plant Communities and Habitats
Figure 4 Marbled Murrelet Survey Stations
Figure 5: California Red-Legged Frog Occurrences Occurences and Critical Habitat
Figure 6: Marbled Murrelet Occurences and Critical Habitat
Figure 7: Wetlands, Riparian Areas and Ponds
Figure 8: Proposed Frog Mitigation Ponds

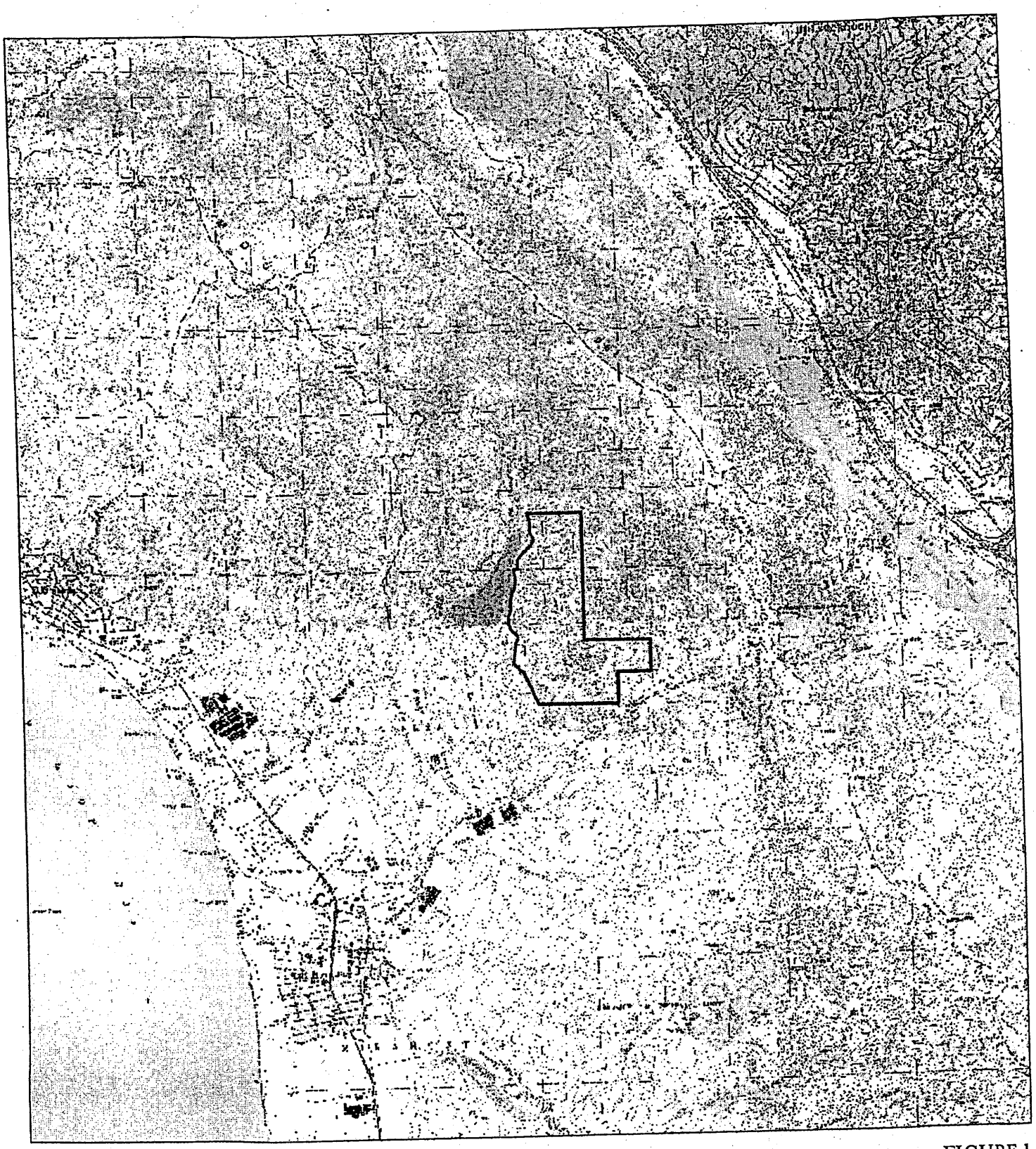

FIGURE 1

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Pilarcitos Quarry

San Mateo County
Regional Location

PILARCITOS QUARRY STUDY AREA

0 0.5 1
MILES

1 inch equals 1 miles

Source: USGS 7.5' Quads: Montara Mountain, San Mateo, Halfmoon Bay and Woodside
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LSA

N

0 500 1,000

FEET

- Road Construction and Repair Areas
- Active Quarry Area
- Study Area
- Expansion Area 2

Source: AirPhoto USA: August 1, 2002

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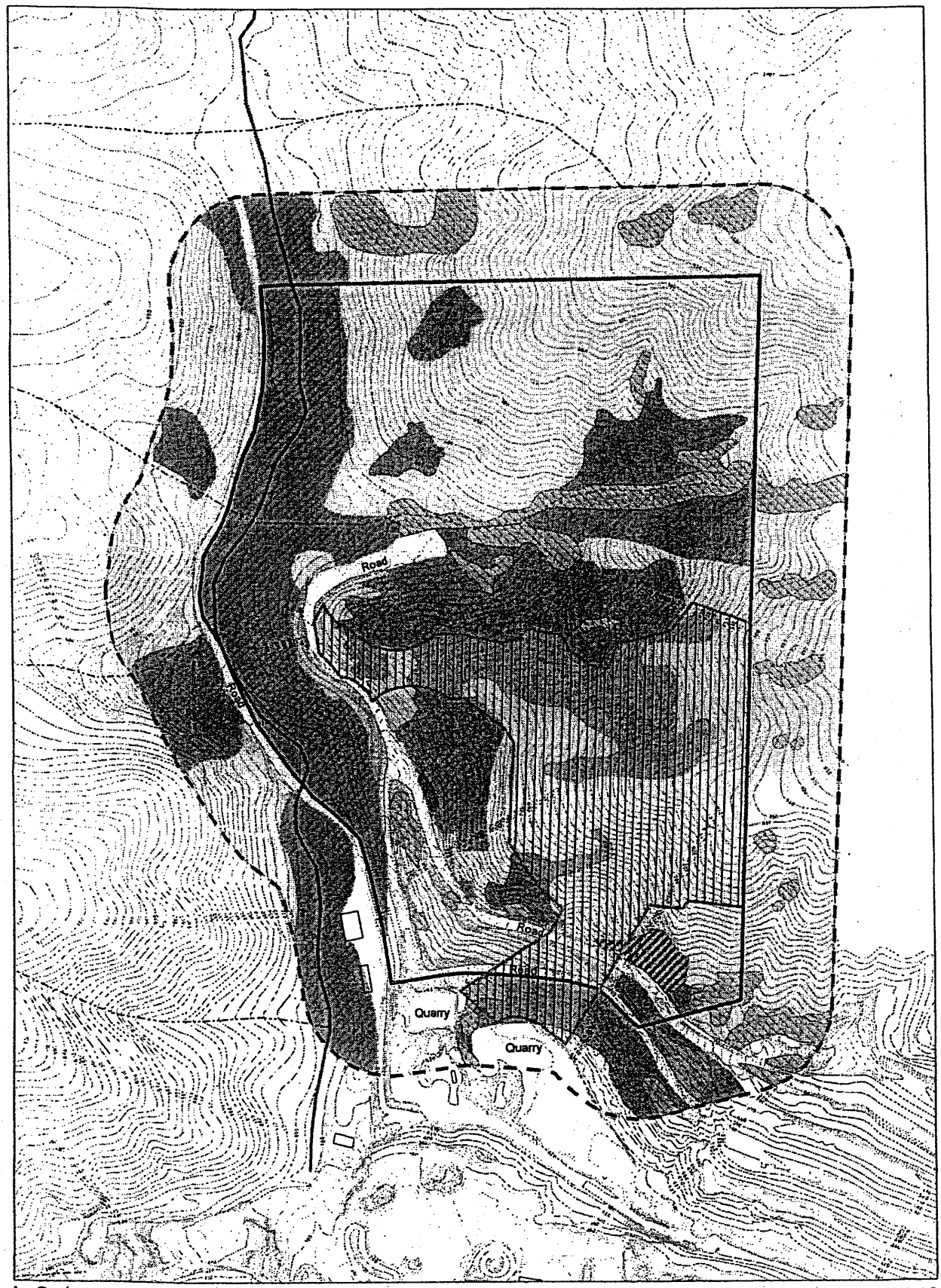
FIGURE 2

Pilarcitos Quarry

Study Area Overview



LSA

FIGURE 3

Pilarcitos Quarry

Proposed Expansion Area 2
Plant Communities and Habitats

- Proposed Quarry Expansion
- Expansion Area 2
- 200 Foot Area Around Expansion Area 2
- Perennial Stream
- Intermittent Stream
- Rocky Cliff
- Coastal Scrub
- Sparse Scrub and Non-native Grassland
- Red Alder Riparian Forest/Stand
- Arroyo Willow Thicket
- Douglas Fir Stand
- Pond (within Sediment Trap)

0 100 200
FEET
1 inch equals 200 feet

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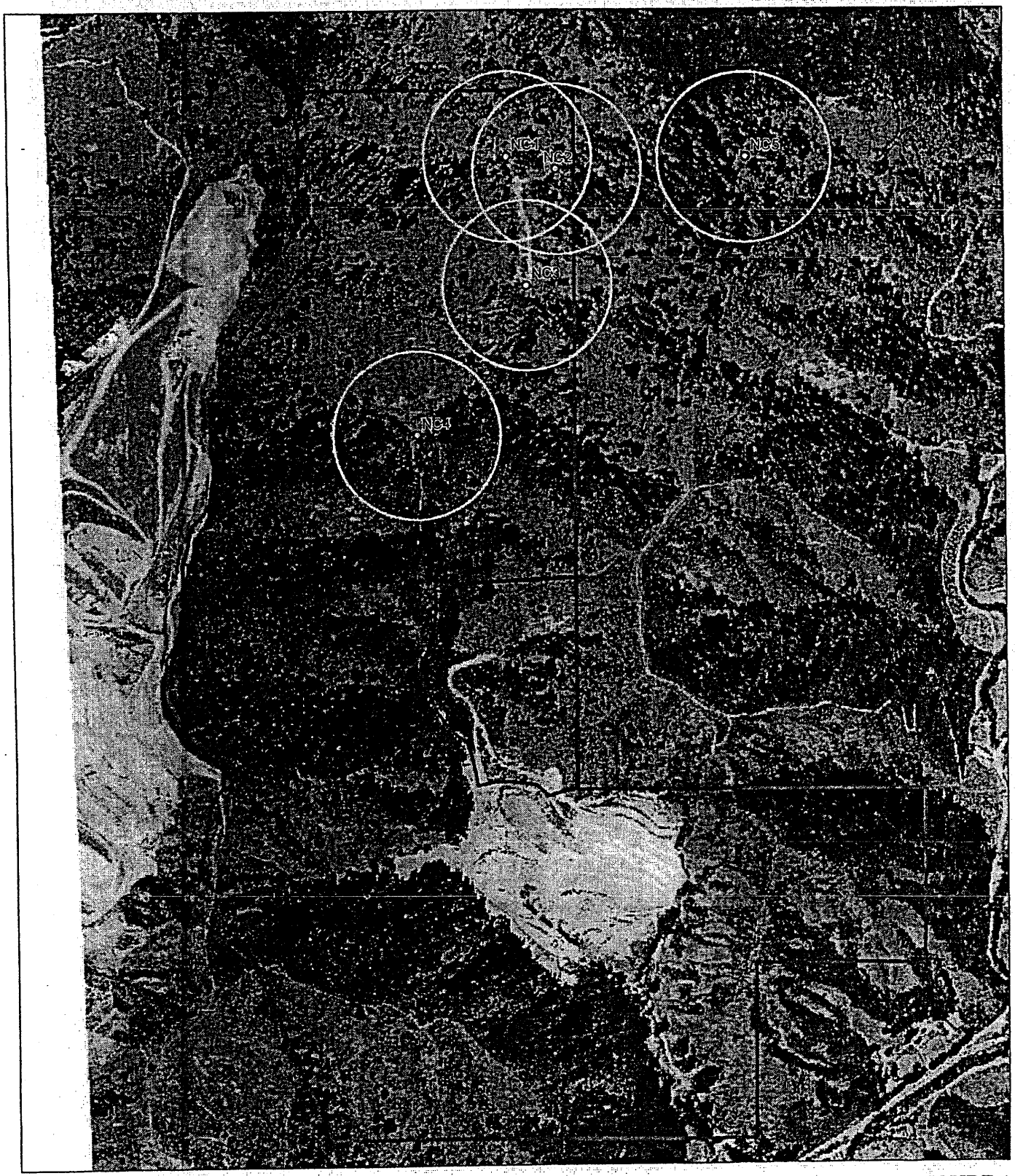

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N

0 500 1,000
FEET

Source: AirPhoto USA: August 1, 2002
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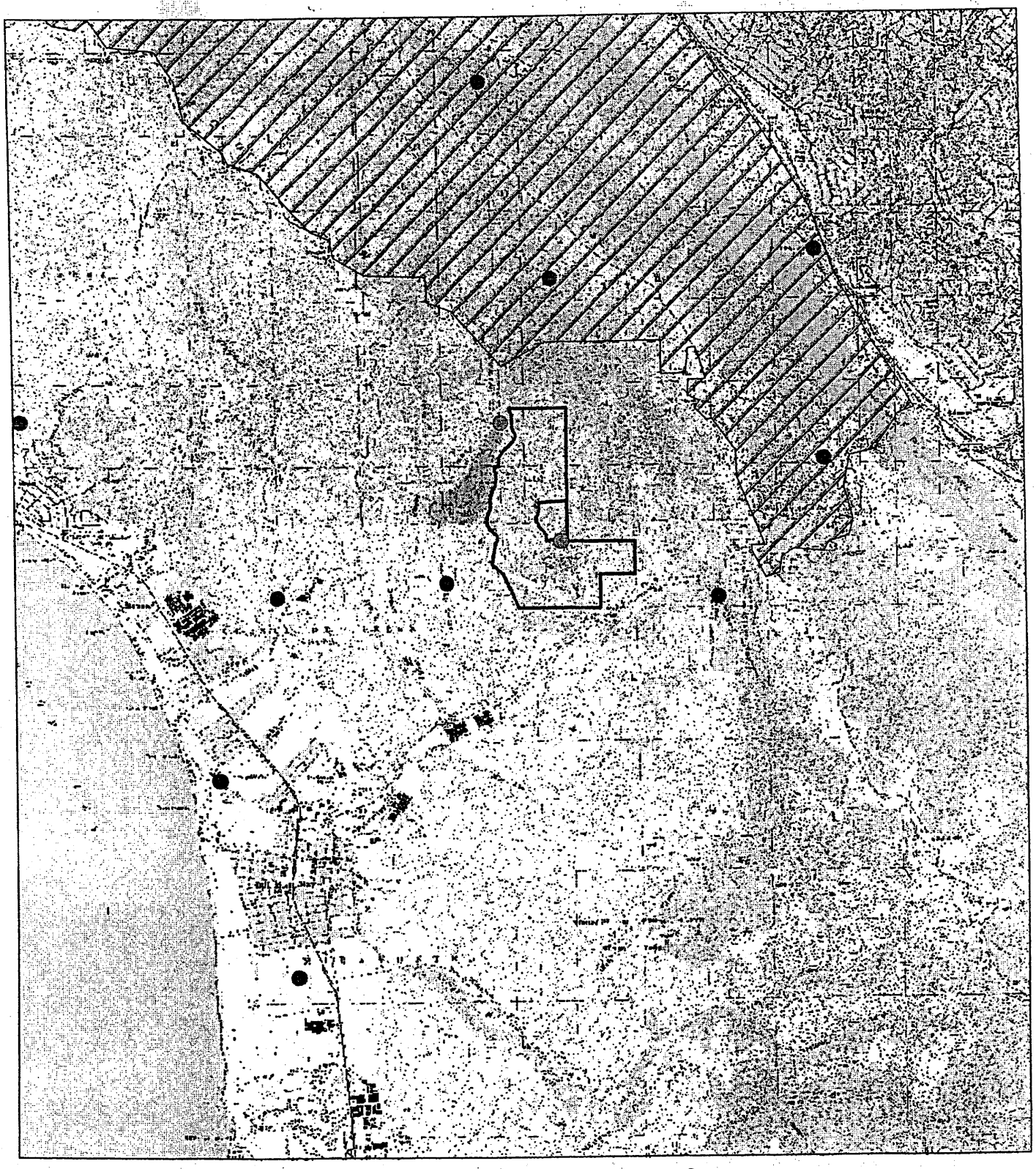
- Marbled Murrelet Survey Station
- Marbled Murrelet Survey Boundary
- Study Area
- Expansion Area 2

FIGURE 4

Pilarcitos Quarry

Marbled Murrelet
Survey Stations



LSA

CNDDB CALIFORNIA RED-LEGGED FROG OCCURRENCES

CALIFORNIA RED-LEGGED FROG OBSERVATIONS

CALIFORNIA RED-LEGGED FROG FINAL CRITICAL HABITAT (APRIL 13, 2006)

PILARCITOS QUARRY STUDY AREA

EXPANSION AREA 2

0 0.5 1
MILES

1 inch equals 1 miles

Source: USGS 7.5' Quads: Montara Mountain, San Mateo, Halfmoon Bay and Woodside

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FIGURE 5

Pilarcitos Quarry

California Red-legged Frog Occurrences and Critical Habitat

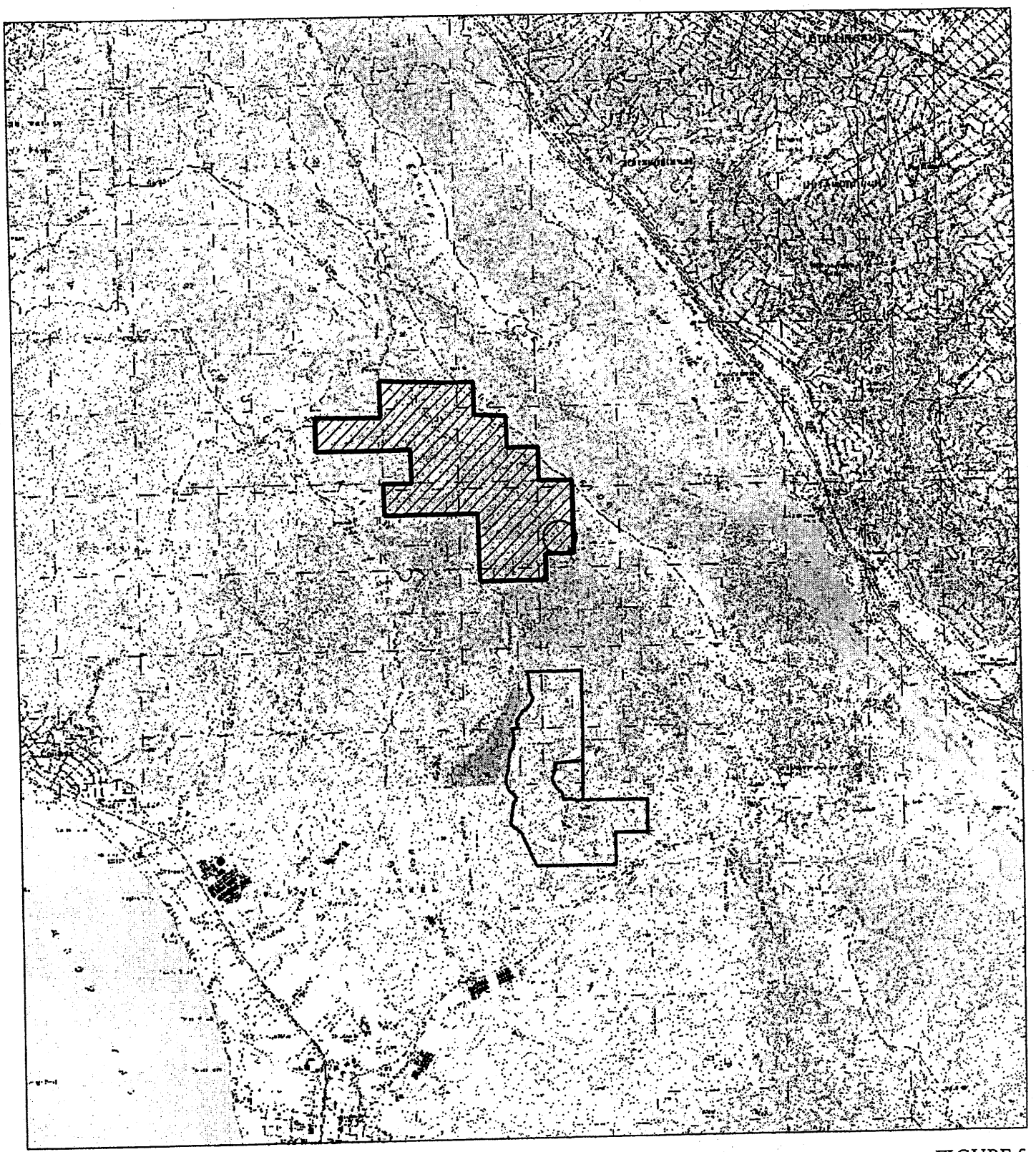

FIGURE 6

179

Marbled Murrelet Occurrences and Critical Habitat

Source: USGS 7.5' Quads: Montara Mountain, San Mateo, Halfmoon Bay and Woodside. Critical Habitat Designation from Federal Register Vol. 61 No. 102 (5/1996)

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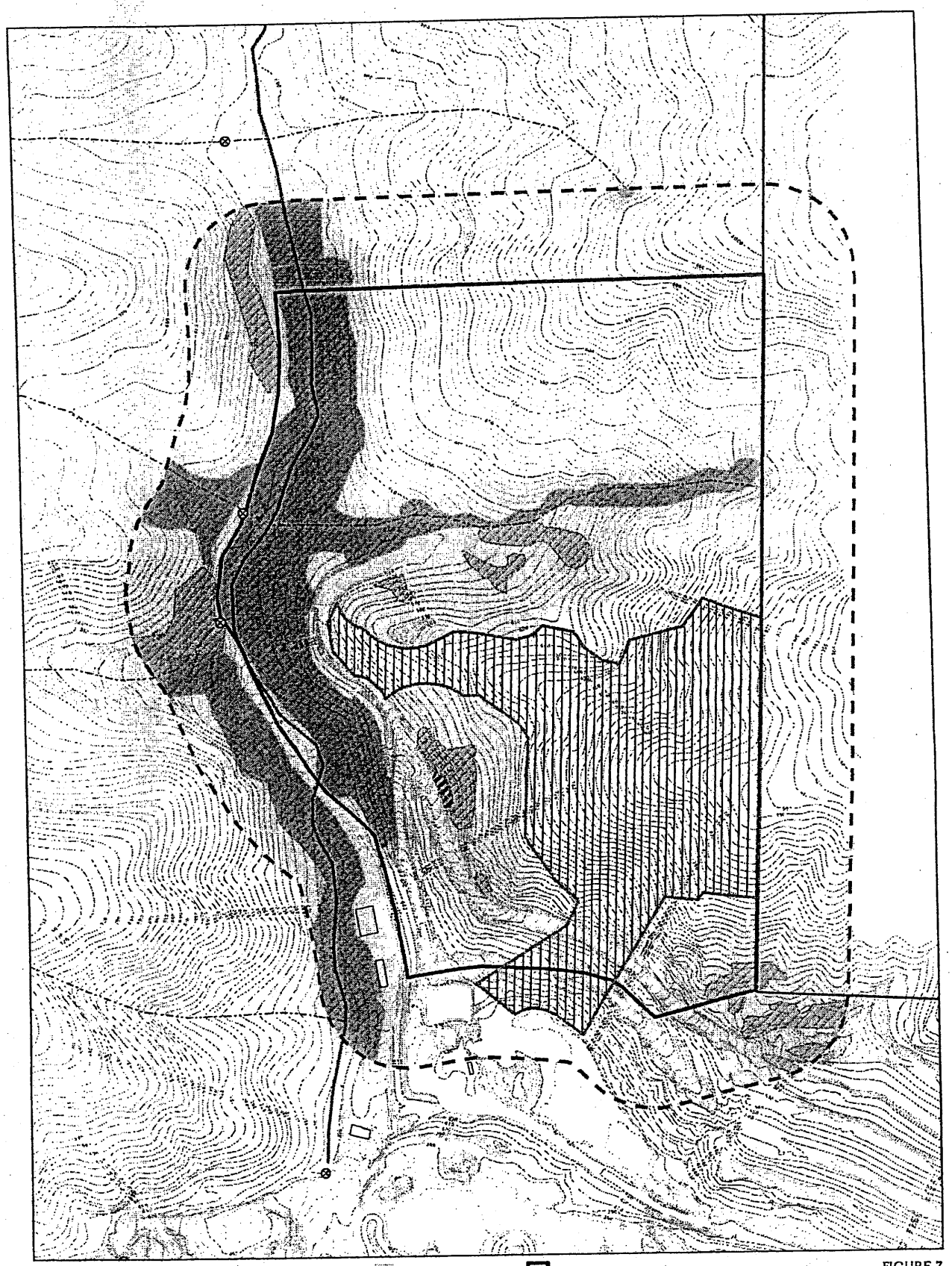

LSA

Perennial Stream → 50 Foot Buffer
Intermittent Stream → 30 Foot Buffer
Wetland → 100 Foot Buffer
Riparian → 50 Foot Buffer
Pond (within Sediment Trap)

Expansion Area 2
200 Foot Area Around Expansion Area 2
Proposed Quarry Expansion
Culvert

N

0 50 100 200
Feet

1 inch equals 201 feet

FIGURE 7

Pilarcitos Quarry

Proposed Expansion Area 2
Wetlands, Riparian Areas, and Ponds

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LSA

FIGURE 8

Proposed Mitigation Pond

Study Area

Expansion Area 2

0 500 1,000

FEET

Pilarcitos Quarry

Proposed Mitigation Ponds

Source: AirPhoto USA, August 1, 2002

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TABLES

Table A: Special-Status Plant Species Evaluated for Expansion Area 2
Table B: Special-Status Animals Species Evaluated for Expansion Area 2

Table A – Special-status Plant Species Evaluated for Expansion Area 2.

Species	Status[1] Fed/State/ CNPS	Habitat Requirement and Blooming Period	Potential for Occurrence
San Mateo thornmint *(Acanthomintha duttonii)*	FE/SE/List 1B	Chaparral, grassland, coastal scrub. April-June	No suitable substrate in expansion area. Extant populations only known from very uncommon vertisol clays in relatively open areas.
Franciscan onion *(Allium peninsulare* var. *franciscanum)*	SoC/--/List 1B	Cismontane woodland, grassland; on clay soils, often on serpentine on dry hillsides. May-June	No suitable substrate expansion area.
Bent-flowered fiddleneck *(Amsinckia lunaris)*	SoC/--/List 1B	Coastal bluff scrub, cismontane woodland, grassland. March-June	Marginally suitable habitat present, but species not observed. Vegetation dense; patches of open areas and grassland very small and/or severely disturbed. Closest known occurrences on San Bruno Mountain and east side of Crystal Springs Reservoir.
Santa Cruz manzanita *(Arctostaphylos andersonii)*	SoC/--/List 1B	Broad-leaved upland forest, chaparral, north coast coniferous forest; on open sites. November-April	Suitable habitat present on site, but species not observed in expansion area 2. Known populations about 4 miles and 5 miles northwest and southeast of site.
San Bruno Mountain manzanita *(Arctostaphylos imbricate)*	SoC/SE/List 1B	Chaparral, coastal scrub; on sandstone or Franciscan graywacke. February-May	No suitable substrate in expansion area. Known only from a few occurrences near San Bruno Mountain.
Montara manzanita *(Arctostaphylos montaraensis)*	SoC/--/List 1B	Maritime chaparral, coastal scrub; on slopes and ridges. January-March	Suitable habitat present, but species not observed in expansion area 2. Known populations 2.5 and 3.5 miles northwest of site.

Species	Status[1] Fed/State/ CNPS	Habitat Requirement and Blooming Period	Potential for Occurrence
San Francisco gumplant *(Grindelia hirsutula var. maritime)*	SoC/--/List 1B	Coastal scrub, coastal bluff scrub, grassland; on sandy or serpentine slopes and sea bluffs. August-September	Marginally suitable habitat in expansion area. One population recorded from ocean bluff, 7.5 miles north of Half Moon Bay. Most known occurrences in general region are north of site, on San Francisco South U.S. quadrangle.
Diablo helianthella *(Helianthella castanea)*	SoC/--/List 1B	Coastal scrub, riparian woodland, grassland, broad-leaved upland forest, chaparral, cismontane woodland; usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. April-June	Marginally suitable habitat present, but species not observed. Oak woodland and chaparral communities are not present. Riparian woodland (forest) canopy cover dense. Small, south-facing grassland patches within dense coastal scrub vegetation are likely too exposed (*i.e.*, hot and dry) to provide habitat for this "shade-loving" species.
Kellogg's horkelia *(Horkelia cuneata* ssp. *Sericea)*	SoC/--/List 1B	Closed-cone coniferous forest, coastal scrub, chaparral; on old dunes, coastal sand hills in openings. April-September	Marginally suitable habitat present in expansion area. Openings within dense scrub vegetation are small. Substrate on site not derived from old dune but instead decomposing granite.
San Francisco lessingia *(Lessingia germanorum)*	FE/SE/List 1B	Coastal scrub; on remnant dunes in open areas on soils relatively free of competing plants. June-November	No suitable habitat in expansion area. Substrate not derived from dunes.
San Mateo tree lupine *(Lupinus eximius)*	--/--/List 3	Chaparral, coastal scrub; at elevations of 270-1500 feet. April-July	Suitable habitat present in expansion area. Shrub lupines not in flower (thus unidentifiable) observed on site during April survey. This portion of San Mateo County is center of distribution for this plant.
Marsh microseris *(Microseris paludosa)*	SoC/--/List 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, grassland. April-June	Species considered extirpated from San Mateo County (CNPS). One known population at Pescadero State Beach extirpated "long ago" (CNDDB).

Species	Status[1] Fed/State/ CNPS	Habitat Requirement and Blooming Period	Potential for Occurrence
San Francisco Bay spineflower *(Chorizanthe cuspidata var. cuspidate)*	SoC/--/List 1B	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; on sandy soils on terraces and slopes. April-August	Marginally suitable habitat in expansion area. Substrate on site not derived from sand dunes. Openings in dense scrub on site small and often disturbed. --- Plant observed on Peninsula watershed lands a few miles to the east.
Compact cobwebby thistle *(Cirsium occidentale)*	SoC/--/List 1B	Chaparral, coastal scrub, coastal prairie, coastal dunes; mostly on dunes and on clay in chaparral and in grasslands. April-June	No suitable substrate present. Not known from San Mateo County. One historic record from east of Lake Merced in San Francisco County.
Western leatherwood *(Dirca occidentali)s*	--/--/List 1B	Broad-leaved upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest and woodland; on brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. January-April	Suitable habitat present in expansion area, but species not observed. Occurs in relative abundance on slopes on west side of Crystal Springs, a few miles east-northeast of site.
California bottle-brush grass *(Elymus californicus)*	--/--/List 4	Broad-leaved upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. May-November	Suitable habitat present in expansion area, bur species not observed. Several occurrences recorded from Crystal Springs watershed, 1 to 3 miles north-northeast of site.
Round-leafed filaree *(Erodium macrophyllum)*	--/--/List 1B	Cismontane woodland, grassland; in clay soils. March-May	No suitable substrate present in expansion area. One historic record from Pescadero (1896).
Fragrant fritillary *(Fritillaria liliacea)*	SoC/--/List 1B	Coastal scrub, coastal prairie, grassland; on various soils, often on serpentine. February-April	No suitable substrate in expansion area. In San Mateo County, all occurrences known from serpentine soil in grasslands.

Species	Status[1] Fed/State/ CNPS	Habitat Requirement and Blooming Period	Potential for Occurrence
Slender-leafed pond weed *(Potamogeton filiformi)s*	--/--/List 2	Marshes and swamps; in shallow, clear water of lakes and drainage channels. May-July	Potentially suitable habitat in Nuff Creek and in pond in sediment trap. Only one occurrence recorded in San Mateo County, at Palo Alto (1899).
Hickman's cinquefoil *(Potentilla hickmanii)*	FE/SE/List 1B	Coastal bluff scrub, meadows and seeps, marshes and swamps; in freshwater marshes, seeps, and small streams in open or forested areas along coast. April-August	Potentially suitable habitat in mesic areas on site, but not observed during surveys.
Adobe sanicle *(Sanicula maritime)*	SoC/SR/List 1B	Meadows and seeps, grassland, chaparral, coastal prairie; in moist clay or ultramafic soils. February-May	No suitable substrate on site. Only one record in general region of site, from Potrero Hills in San Francisco (1895).
San Francisco campion *(Silene verecunda* ssp. *Verecunda)*	SoC/--/List 1B	Coastal scrub, grassland, coastal bluff scrub, chaparral, coastal prairie; often on mudstone or shale, one site on serpentine. March-August	No suitable substrate on site. No known occurrences in vicinity of site. One occurrence on San Bruno Mountain.

1 FE – Federally endangered
SoC – Federal Species of Concern
SE – State endangered
SR – State rare

Table B. Special-status Animals Evaluated for Expansion Area 2.

Species	Status* (Federal/State/other)	Habitat Requirements	Potential for Occurrence
San Bruno elfin (*Callophrys mossii bayensis*)	FE/--	Occur on steep shaded slopes with an abundance of stonecrop (*Sedum spathulifolium*), the larval host plant.	Not likely to occur due to the apparent absence of stonecrop.
Steelhead (Central California Coast ES) (*Oncorhynchus mikiss*)	FT/CSC	Coastal creeks with cold water, deep (1 meter or greater) pools and runs, gravel (1-13 cm) beds for spawning.	Not likely to occur, there is no suitable pool or breeding habitat present and the creek upstream of the existing quarry is isolated from downstream areas by a culvert over 1200 feet long with a 6 foot drop on the downstream end.
California red-legged frog (*Rana aurora draytonii*)	FT/CSC	Creeks, ponds, marshes. Requires creeks with deep pools 0.7 meters (2 feet) deep, undercut banks, aquatic vegetation.	Present/two individuals observed in small pond within expansion area 2. Four to 5 were also seen in a small pond adjacent to the north west corner of the site.
Pacific pond turtle (*Actinemys marmorata*)	--/CSC	Creeks, ponds, marshes. Requires creeks with fairly deep pools (ca. 2 feet) and aquatic vegetation, basking sites.	Not likely to occur, there is no suitable habitat for this species on the project site.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE/SE	Marshes, pond edges, and creeks with abundant emergent vegetation, and an abundance of suitable prey (i.e., frogs).	Not likely to occur, Nuff Creek is too shallow and shaded, and lacks fringing marshy vegetation; no quality breeding habitat for prey (i.e., frogs)
Cooper' hawk (*Accipiter cooperi*)	--/CSC (nesting)	Open woodland, wooded suburban areas.	Likely to occur, most of the forested habitat on the site is suitable provides nesting habitat.
Sharp-shinned hawk (*Accipiter striatus*)	--/CSC (nesting)	Open woodlands, forests, wooded suburban areas during migration.	Likely to occur, most of the forested habitat on the site is suitable provides nesting habitat.
Marbled murrelet (*Brachyramphus marmoratus*)	FT/SE (nesting)	Nests in large coniferous trees such as redwood or Douglas fir in dense old forest stands. Feeds and winters at sea.	Not likely to nest on the site, the Douglas fir stands on the site do not appear to contain large old trees and the stands appear to be too open and fragmented to provide good nesting habitat.

Species	Status* (Federal/State/other)	Habitat Requirements	Potential for Occurrence
California spotted owl (*Strix occidentalis occidentalis*)	--/CSC/ Audubon: Watch list, USBC: Watch list	Dense stands of old coniferous trees or oaks in canyon bottoms, generally in fairly extensive stands of forest with a closed canopy.	Not likely to nest, lack of extensive closed canopy forest.
Allen's hummingbird (*Selasphorus sasin*)	--/--/Audubon: Watch list, USBC: Watch list (nesting)	Coastal scrub in ravines and canyons.	Observed on the site/expected to nest.
Nuttall's woodpecker (*Picoides nuttallii*)	--/--/Audubon: Watch list, USBC: Watch list (nesting)	Oak, coniferous, and riparian woodlands.	Observed on the site/expected to nest
Olive-sided flycatcher (*Contopus cooperi*)	--/--/Audubon: Watch list, USBC: Watch list, USFWS: BCC (nesting)	Coniferous forest with openings and high open perch site (e.g., dead tips of trees).	Singing males observed on the site/expected to nest
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	--/CSC/BCC	Salt and freshwater marshes, cattails, bulrushes, tall grasses and willow thickets provide nesting habitat.	Likely to occur, this subspecies has been recorded west of Nuff Creek along Pilarcitos Creek, near the coast, and east of the site in marshes on the west side of Crystal Springs Reservoir. Yellowthroats heard singing along Nuff Creek may be the saltmarsh subspecies.
Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*)	--/CSC/WBWG: High Priority	Variety of habitats from humid coastal forests to interior arid areas. Uses old buildings, mine tunnels, and caves as day roosts.	May forage on the site but no suitable day roots present in the expansion area. One was observed in the old barn just south of the expansion area
Pallid bat (*Antrozous pallidus*)	--/CSC/WBWG High Priority	Various habitats in arid and semi arid areas.	May forage in the more open areas of the canyon and/or upper slopes. Could roost in the abandoned building in the northern portion of the site.
Western red bat (*Lasiurus blossevillii*)	--/--/ WBWG: High Priority	Occupies wooded areas, riparian corridors, roosts during the day among the tree foliage.	May forage on the site or pass through during migration, trees on the site provide suitable day roosts.

Species	Status* (Federal/State/other)	Habitat Requirements	Potential for Occurrence
Fringed myotis (*Myotis thysanodes*)	--/--/ WBWG: High Priority	Occurs in a variety of forested and open habitats. Uses old buildings, rock crevices, mine tunnels.	May forage on the site occasionally but suitable day roots in the expansion area appear to be limited.
Long-legged myotis (*Myotis volans*)	--/--/ WBWG: High Priority	Variety of habitats from humid coastal forests to interior arid areas. Uses old buildings, mine tunnels, and caves as day roosts.	May forage on the site but suitable day roots appear to be limited.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	--/CSC	Chaparral, dense stands of northern coastal scrub, oak woodlands.	Present in areas supporting dense shrub cover.

***Status**
FE = Federally listed as Endangered
FT = Federally listed as Threatened
SE = State listed as Endangered
CSC = California Species of Concern
WBWG = Western Bat Working Group
USBC Watch List = The United States Bird Conservation Watch List. Includes the Partners in Flight (PIF) Watch List
USFWS: BCC = Fish and Wildlife Service: Birds of Conservation Concern
-- = No status

APPENDIX A

PLANT LIST

Plant Species Observed in Expansion Area 2 of the Pilarcitos Quarry Site in Late Spring

Scientific Name	Common Name	Native
Alnus rubra	Red alder	Yes
Angelica hendersonii	Henderson angelica	Yes
Aquilegia formosa	Red columbine	Yes
Arbutus menziesii	Pacific madrone	Yes
Artemisia californica	California sagebrush	Yes
Artemisia douglasiana	Mugwort	Yes
Athyrium felix-femina	Ladyfern	Yes
Baccharis pilularis	Coyote brush	Yes
Bromus diandrus	Ripgut brome	No
Bromus hordeaceus	Soft-chess	No
Ceanothus thyrsiflorus	Blue-blossom	Yes
Clarkia sp.	Farewell-to-spring	Yes
Claytonia perfoliata	Miners' lettuce	Yes
Cortaderia jubata	Pampas grass	No
Delairia odorata	Cape-ivy	No
Disporum hookeri	Fairy bells	Yes
Eriogonum sp.	Buckwheat	Yes
Eschscholzia californica	California poppy	Yes
Eucalyptus globulus	Bluegum eucalyptus	No
Euonymus occidentalis	Burning bush	Yes
Galium aparine	Bedstraw	No
Heracleum lanatum	Cow parsnip	Yes
Holodiscus discolor	Ocean spray	Yes
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	No
Hordeum murinum ssp. *leporinum*	Hare barley	No
Juncus sp.	Rush	Yes
Lactuca saligna	Lettuce	No
Lathyrus sp.	Wild pea	Yes
Lonicera involucrata	Twin-berry	Yes
Lotus scoparius	Deerweed	Yes
Lupinus arboreus	Yellow bush lupine	Yes
Lupinus succulentus	Arroyo lupine	Yes
Lythrum hyssopifolium	Loose-strife	No
Marah fabaceus	Wild cucumber	Yes
Medicago polymorpha	Burclover	No
Melilotus indica	Yellow sweet-clover	No
Mimulus auriantiacus	Bush monkey-flower	Yes
Mimulus guttatus	Marsh monkey-flower	Yes
Myosotis latifolia	Forget-me-not	No
Nasella sp.	Needlegrass	Yes
Oemleria cerasiformis	Oso berry	Yes
Pellea andromedifolia	Coffee-fern	Yes
Pentagramma triangularis	Gold-back fern	Yes
Phacelia californica	California phacelia	Yes
Polypodium glycyrrhiza	Licorice fern	Yes
Polystichum munitum	Swordfern	Yes

Pseudotsuga menziesii	Douglas fir	Yes
Rhamnus californicus	California coffee-berry	Yes
Ribes sanguineum	Red-flowering current	Yes
Rorippa curvisiliqua	Yellow cress	Yes
Rubus parviflorus	Thimbleberry	Yes
Rubus ursinus	California blackberry	Yes
Salix lasiolepis	Arroyo willow	Yes
Salix lucida ssp. *lasiandra*	Yellow willow	Yes
Sambucus racemosa	Red elderberry	Yes
Satureja douglasii	Yerba buena	Yes
Smilacina racemosa	Fat Solomon's seal	Yes
Stachys chamissonis	Chamisso's hedgenettle	Yes
Thalictrum fendleri var. *polycarpum*	Meadow-rue	Yes
Toxicodendron diversilobum	Poison oak	Yes
Typha latifolia	Broadleaved cattails	Yes
Umbellularia californica	California bay laurel	Yes
Urtica dioica ssp. *holosericea*	American stinging nettle	Yes
Vulpia myuros	Annual fescue	No

50 native species (79 %)
13 non-native species (21 %)

APPENDIX B

ANIMAL LIST

ANIMAL (WILDLIFE) SPECIES OBSERVED IN THE PILARCITOS QUARRY STUDY AREA

LSA biologists observed the following species of vertebrates in or adjacent to the Pilarcitos Quarry Study Area. The codes refer to the species presumed seasonal occurrence on the site and probable breeding/nesting status. **Last update April 3, 2007.**

Seasonal Occurrence/Nesting Codes:

M = Migrant: Uses the site for brief periods of time, primarily during the spring and fall months.

R = Year-round resident: resident/expected to nest/breed on-site or in the vicinity.

S = Spring/summer resident: May nest on-site or in the vicinity.

T = Transient: May use the site regularly but unlikely to nest on-site.

W = Winter visitor: Regularly present during winter; does not nest locally.

* = Non-native species.

AMPHIBIANS		
Rough-skinned newt	*Taricha granulosa*	R
Ensatina	*Ensatina eschscholtzii*	R
Pacific treefrog	*Pseudacris regilla*	R
California red-legged frog	*Rana aurora draytonii*	R
LIZARDS and SNAKES		
Western fence lizard	*Sceloporus occidentalis*	R
Southern alligator lizard	*Elgaria multicarinata*	R
Terrestrial garter snake	*Thamnophis elegans*	R
Aquatic garter snake	*Thamnophis atratus*	R
BIRDS		
Common goldeneye	*Bucephala clangula*	W
Bufflehead	*Bucephala albeola*	W
California quail	*Callipepla californica*	R
Turkey vulture	*Cathartes aura*	R
Cooper's hawk	*Accipiter cooperii*	R
Red-shouldered hawk	*Buteo lineatus*	R
Red-tailed hawk	*Buteo jamaicensis*	R
Golden eagle	*Aquila chrysaetos*	R
American kestrel	*Falco sparverius*	R

Western gull	*Larus occidentalis*	T
Caspian tern	*Sterna caspia*	T
Band-tailed pigeon	*Patagioenas fasciata*	R
Mourning dove	*Zenaida macroura*	R
Great horned owl	*Bubo virginianus*	R
Northern pygmy-owl	*Glaucidium gnoma*	R
White-throated swift	*Aeronautes saxatalis*	S
Anna's hummingbird	*Calypte anna*	R
Allen's hummingbird	*Selasphorus sasin*	S
Nuttall's woodpecker	*Picoides nuttallii*	R
Downy woodpecker	*Picoides pubescens*	R
Hairy woodpecker	*Picoides villosus*	R
Northern flicker	*Colaptes auratus*	R
Olive-sided flycatcher	*Contopus cooperi*	S
Western wood-pewee	*Contopus sordidulus*	S
Pacific-slope flycatcher	*Empidonax difficilis*	S
Black phoebe	*Sayornis nigricans*	R
Ash-throated flycatcher	*Myiarchus cinerascens*	S
Hutton's vireo	*Vireo huttoni*	R
Steller's jay	*Cyanocitta stelleri*	R
Western scrub-jay	*Aphelocoma californica*	R
Common raven	*Corvus corax*	R
Violet-green swallow	*Tachycineta thalassina*	S
Northern-rough-winged swallow	*Stelgidopteryx serripennis*	S
Cliff swallow	*Petrochelidon pyrrhonota*	S
Barn swallow	*Hirundo rustica*	S
Wrentit	*Chamaea fasciata*	R
Chestnut-backed chickadee	*Parus rufescens*	R
Bushtit	*Psaltriparus minimus*	R
Brown creeper	*Certhia americana*	R
Bewick's wren	*Thryomanes bewickii*	R
Winter wren	*Troglodytes troglodytes*	R
Golden-crowned kinglet	*Regulus satrapa*	R
Ruby-crowned kinglet	*Regulus calendula*	W
Swainson's thrush	*Catharus ustulatus*	S
Hermit thrush	*Catharus guttatus*	W
Varied thrush	*Ixoreus naevius*	W
American robin	*Turdus migratorius*	R
California thrasher	*Toxostoma redivivum*	R
European starling*	*Sturnus vulgaris*	R
Orange-crowned warbler	*Vermivora celata*	S
Townsend's warbler	*Dendroica townsendi*	W
MacGillivray's warbler	*Oporornis tolmiei*	S
Common yellowthroat	*Geothlypis trichas*	S
Wilson's warbler	*Wilsonia pusilla*	S
Spotted towhee	*Pipilo maculatus*	R

California towhee	*Pipilo crissalis*	R
Fox sparrow	*Passerella iliaca*	W
Song sparrow	*Melospiza melodia*	R
Golden-crowned sparrow	*Zonotrichia atricapilla*	W
Dark-eyed junco	*Junco hyemalis*	R
Black-headed grosbeak	*Pheucticus melanocephalus*	S
Lazuli bunting	*Passerina amoena*	S
Purple finch	*Carpodacus purpureus*	R
Lesser goldfinch	*Carduelis psaltria*	R
American goldfinch	*Carduelis tristis*	R
MAMMALS		
Virginia opossum*	*Didelphis virginiana*	R
Broad-footed mole	*Scapanus latimanus*	R
Merriam's chipmunk	*Tamias merriami*	R
Botta's pocket gopher	*Thomomys bottae*	R
SF Dusky-footed woodrat	*Neotoma fuscipes annectens*	R
Myotis bat	*Myotis* sp.	R
Townsend's big-eared bat	*Corynorhinus townsendii*	R
Common gray fox	*Urocyon cinereoargenteus*	R
Bobcat	*Lynx rufus*	R
Coyote	*Canis latrans*	R
Raccoon	*Procyon lotor*	R
Mule deer	*Odocoileus hemionus*	R

APPENDIX C

PILARCITOS QUARRY NOISE STUDY

LSA

LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CA 94801

510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
COLMA
FT. COLLINS
IRVINE
PALM SPRINGS
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

MEMORANDUM

DATE: January 5, 2007

TO: Steve Foreman
Eric Lichtwardt

FROM: Catherine Barber

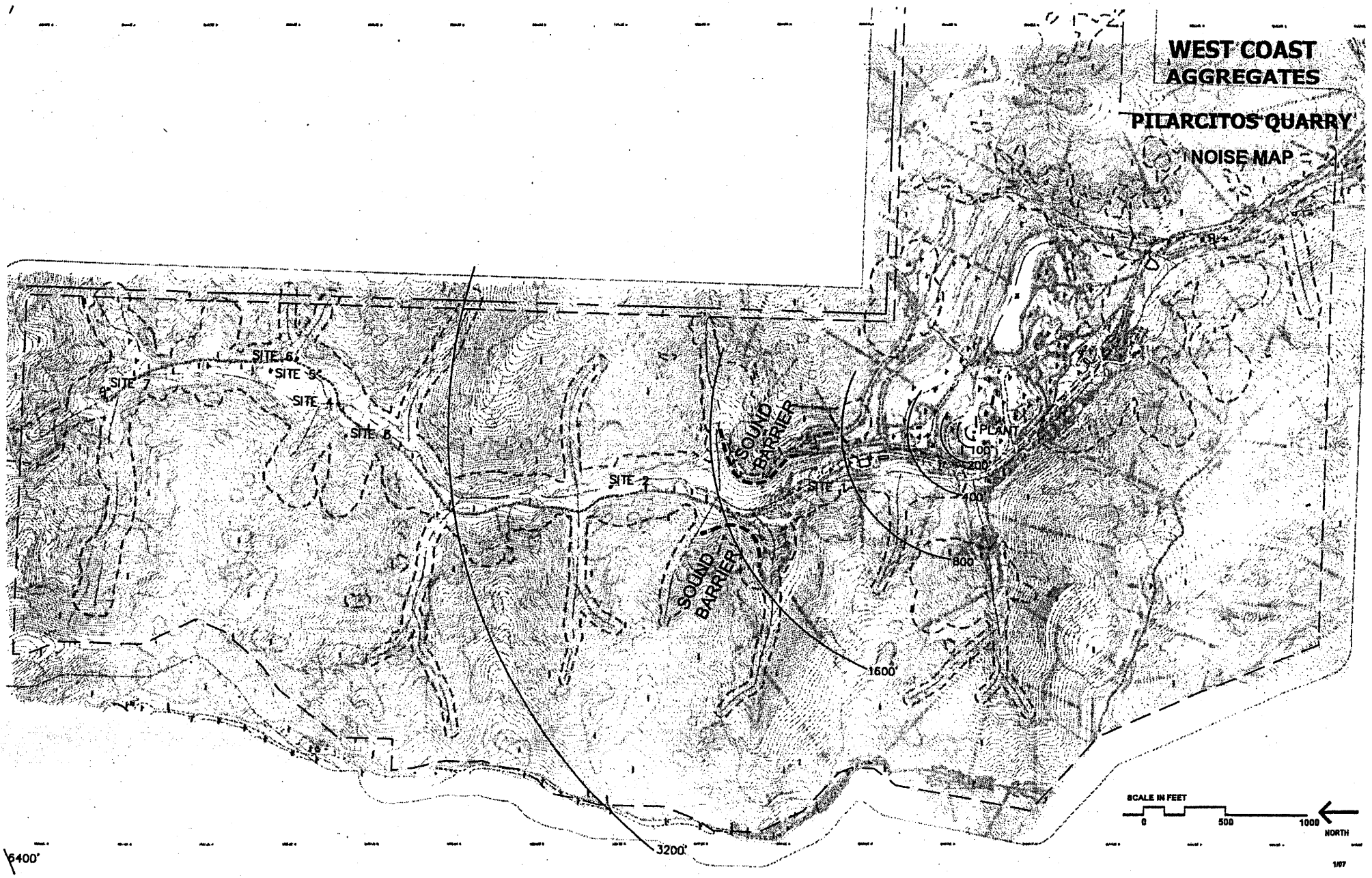
SUBJECT: Pilarcitos Quarry - Noise Study

During the morning of January 3, 2007 Malcolm Carpenter, Managing Principal, and I conducted sound level readings at the Pilarcitos Quarry. The quarry is located near the mouth of the elongated canyon associated with Nuff Creek. Weather conditions were clear to partly cloudy with a light breeze and temperature in the range of 54-61 degrees F. The primary objective of our work was to determine sound levels from quarry operations that might adversely affect bird life in the area. In particular, wildlife experts suspect that there may be suitable habitat for marbled murrelets at the far north end of the canyon.

For our readings we used a Model 210 hand held, Type 2 Sound Level Meter manufactured by Quest Technologies. A wind screen was installed; the meter was calibrated and set for readings within the 40-110 dBA range using the slow response setting. Data was collected at the rock processing plant and at seven field locations in Nuff Canyon. The rock processing plant is considered to be a point source. Readings were recorded at ten second intervals over a period of 20 minutes at each location. The location of the rock processing plant and each of the seven data collection sites in the canyon were mapped (Figure 1). We also mapped concentric contours representing a consistent doubling of distance from the rock plant, and we noted on the map a significant sound barrier created by steep spur ridges that encroach into the canyon effectively blocking sound from the rock plant (Figure 1).

CONCLUSION

Rock processing activities (loading, crushing, screening and conveying) were measured at a constant sound level reading of 81 dBA. We then applied the rules of thumb that a) sound levels decrease 6 dB with each doubling of distance from a point source and b) that sound levels may be decreased by 12 dB to reflect the attenuating effect of a solid barrier. The sound levels recorded at all of our seven field points were within the expected range and all points farther than 1,600 feet from the rock plant were found to be lower than 40 dBA except in the case of locations 4 and 6 where the background sound levels are slightly higher due to the noise of water flowing in Nuff Creek (Figure 1).


WEST COAST AGGREGATES
PILARCITOS QUARRY
NOISE MAP
SITE 6
SITE 5
SITE 7
SITE 4
SITE 8
SITE 2
SITE 1
SOUND BARRIER
SOUND BARRIER
PLANT
100'
200'
400'
800'
1600'
3200'
6400'
SCALE IN FEET
0
500
1000
NORTH
1/07

APPENDIX D

SWAIM BIOLOGICAL SAN FRANCISCO GARTERSNAKE LETTER

SBI
Swaim Biological Inc.
4435 First Street #312
Livermore, CA 94551
(925) 455-8770
(925) 455-6106 (fax)

September 29, 2006

Mr. Steve Foreman
LSA Assoicates, Inc
157 Park Place
Pt. Richmond, CA 94801

RE: Potential for the San Francisco garter snake (*Thamnophis sirtalis tetrateania*) to occur the Pilarcitos Quarry expansion area 2 in Half Moon Bay, San Mateo County, California

Dear Mr. Foreman:

This letter presents the results of my site assessment for the San Francisco garter snake (Thamnophis sirtalis tetrataenia) at the Pilarcitos Quarry in Half Moon Bay, San Mateo County, California. The conclusions in this letter are based on a site visit on August 18, 2006, a review of SFGS localities in the region, and a review of recent high resolution aerial photograps of the region. These photographs provide documentation of the distribution of aquatic habitats in the project area and vicinity. This letter is intended to supplement the Biological Resources Report Pilarcitos Quarry Expansion Area 2 (LSA 2006). The LSA (2006) report describes in detail the habitats in the expansion area and reports on the presence of the California red-legged frog (*Rana draytonii*) on the site.

The Pilarcitos Quarry is located north of Highway 92 near the eastern boundary of Half Moon Bay, San Mateo County. The site is within the drainage of Nuff Creek. Nuff Creek is a tributary of Pilarcitos Creek, which empties into the Pacific Ocean approximately 3.25 miles west of the project site, just north of the City of Half Moon Bay.

Although there are very few records of SFGS from the Half Moon Bay Area, the focused survey efforts in the area have also been minimal. Nearby records include a small population at Denniston Creek (see Attachment) which may be extinct (Barry 1994) or severely reduced (Swaim 2006, in prep.). SFGS were also reported from the Half Moon Bay sewage treatment plant area there is a recent CNDDB observation from Half Moon Bay records of the San Francisco garter snake from the Pilarcitos Creek drainage are in the upper headwaters (North Branch) above Pilarcitos Lake (CNDDB 2004).

Resident breeding populations of the SFGS are typically associated with an aquatic habitat where ranid frogs are breeding and suitable upland habitat (grassland or grassland with a sparse shrub cover) is adjacent to or in close proximity to the aquatic habitat. Seasonal foraging by SFGS can and does occur in ponds that do not support ranid frogs, when the pond is near an aquatic habitat with breeding ranid frogs. Ranid

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frogs include both the native California red-legged frog (CRLF) and the introduced bullfrog (Rana catesbiana).

Two aquatic habitats are present on the site, including a small pond in a sediment trap and Nuff Creek. LSA (2006) reported an observation of two adult CRLF in this pond and breeding Pacific treefrog (*Hyla regilla*). Although not specifically detected, this pond potentially supports a small breeding population of CRLF. The small sediment trap located along the graded road was constructed to capture sediment from the road and associated road cuts. It seasonally receives water from an upslope seep. LSA reported it provides habitat for the rough-skinned newt (*Taricha granulosa*), Pacific tree frog (*Pseudacris regilla*) and California red-legged frog. Rough-skinned newts were observed by LSA in the pond on all the site visits in April, May, and June 2004 and Pacific tree frogs were heard calling at the pond after dark. Two California red-legged frogs were seen in the pond on June 3. The ponded water appears to be perennial and supports a stand of cattails and a bed of an unidentified aquatic plant.

The portion of the Nuff Creek present within the expansion area is not expected to support CRLF breeding. Nuff Creek lacks pools suitable for egg laying and tadpole rearing. Although the ponded water in the small sediment trap within the expansion area does support Pacific treefrogs and California red-legged frogs, the pond is not closely associated with suitable upland habitat for SFGS. The potential for a resident breeding population of the SFGS in the Expansion Area is low.

It is possible that SFGS from existing populations outside the expansion area occasionally move through the site, with the most likely course of travel along drainages with riparian vegetation. The attached map shows the ponds within two kilometers of the expansion area to demonstrate where potential SFGS habitat may be present in the region. All of these ponds are at least one kilometer from the expansion area.

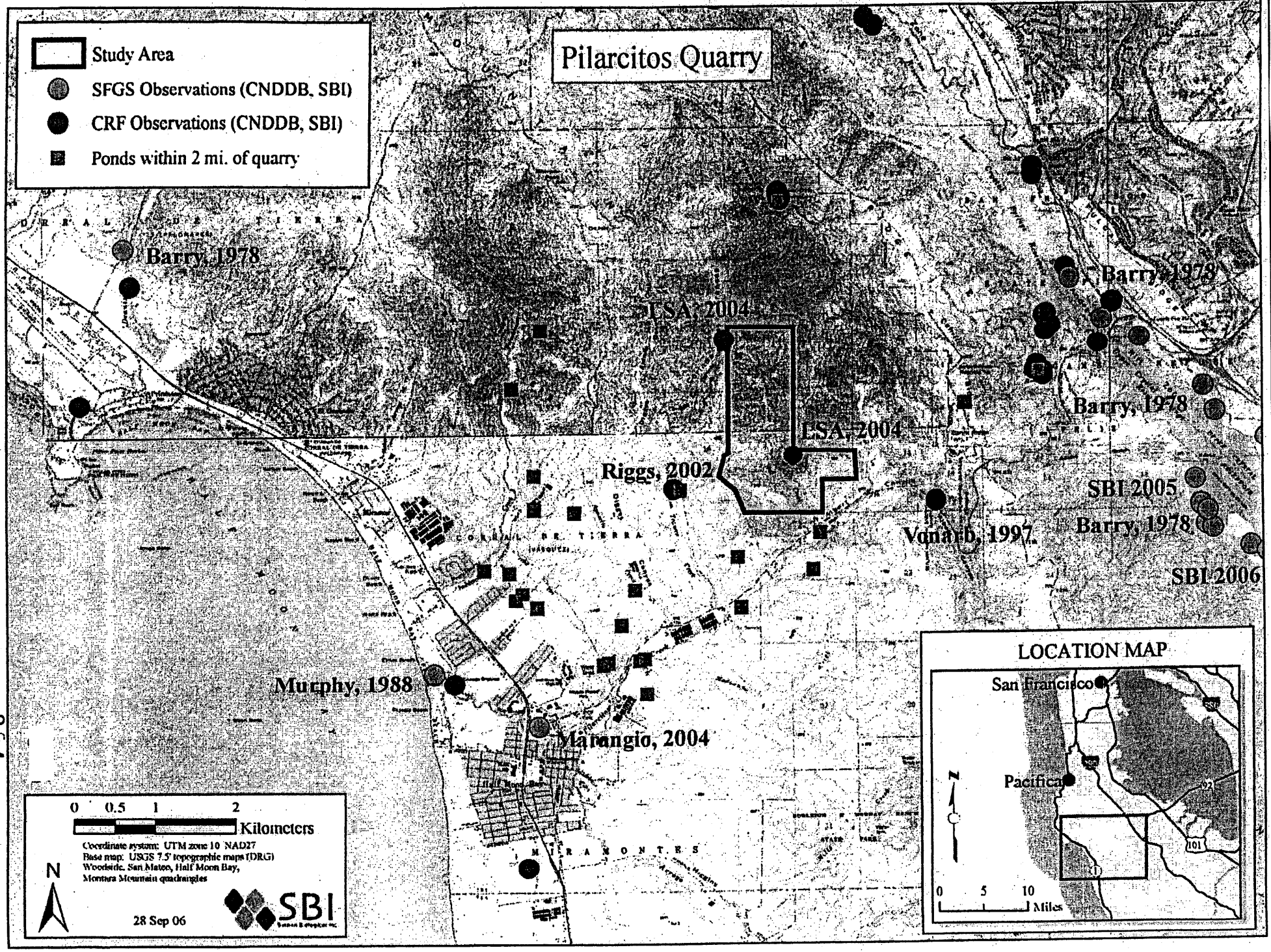
Please call if you have any questions regarding this assessment or need further information.

Sincerely,

Karen E. Swaim
Herpetologist/President

SBI
Swaim Biological Inc.
4435 First Street #312
Livermore, CA 94551
(925) 455-8770
(925) 455-6106 (fax)

Attachment 1: SFGS in the Vicinity.


Study Area
SFGS Observations (CNDDB, SBI)
CRF Observations (CNDDB, SBI)
Ponds within 2 mi. of quarry
Pilarcitos Quarry
Barry, 1978
LSA, 2004
LSA, 2004
Barry, 1978
Barry, 1978
Riggs, 2002
SBI 2005
Barry, 1978
Vonarb, 1997
SBI 2006
Murphy, 1988
Marangio, 2004
LOCATION MAP
San Francisco
Pacifica
0 5 10 Miles
0 0.5 1 2 Kilometers
Coordinate system: UTM zone 10 NAD27
Base map: USGS 7.5' topographic maps (DRG)
Woodside, San Mateo, Half Moon Bay,
Montara Mountain quadrangles
N
28 Sep 06
SBI

204

ATTACHMENT F

West Coast Aggregates, Inc.

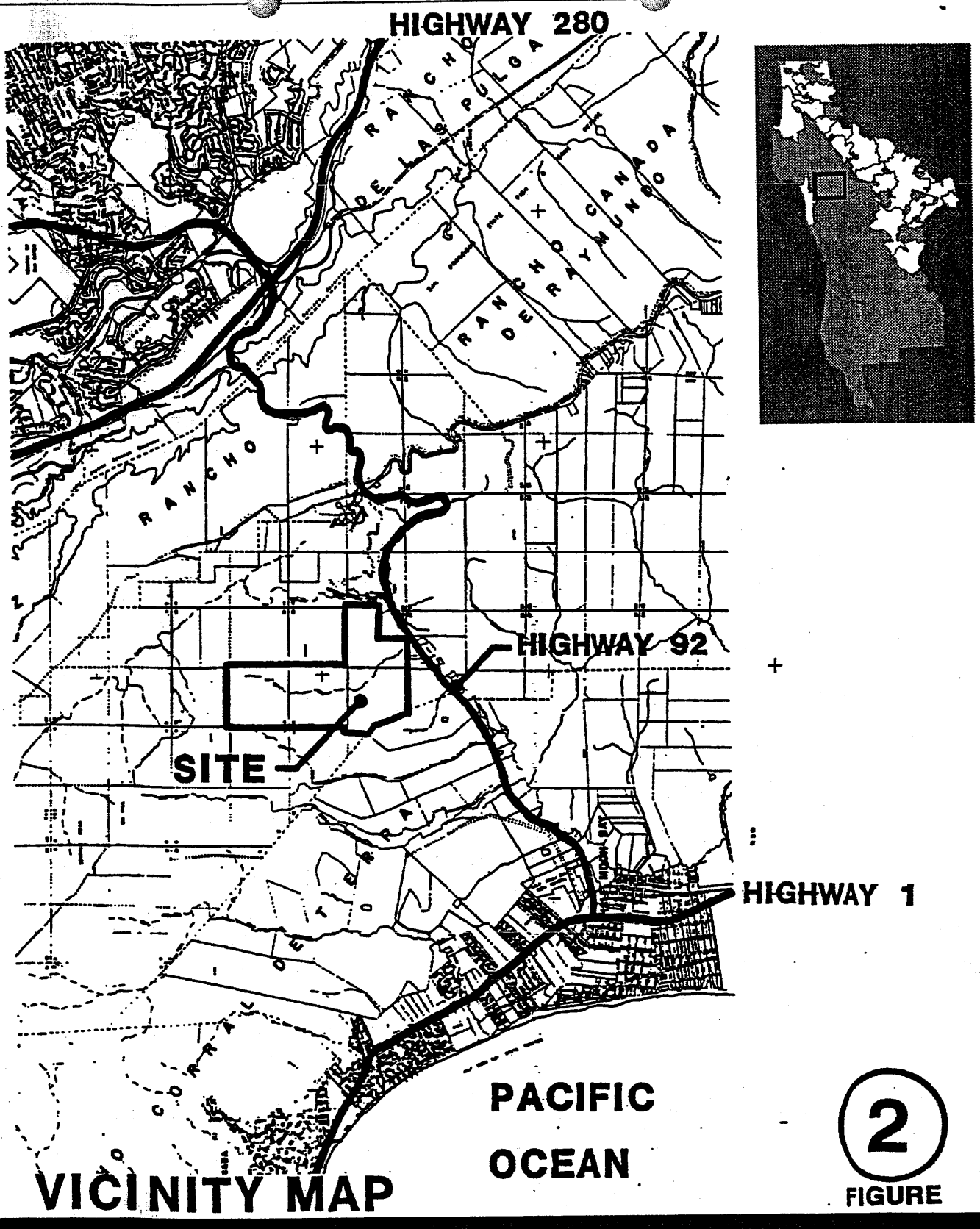
MINING AND RECLAMATION PLAN

PILARCITOS QUARRY
SAN MATEO COUNTY, CA

CA MINE 91-41-0005

Prepared by:
LSA Associates, Inc.
1190 El Camino Real Colma, CA 94014
Phone: (650) 985-2590 • Fax: (650) 985-2578
Email: Info.Colma@lsa-assoc.com

FEBRUARY 2005
Updated
OCTOBER 2006



VICINITY MAP

FIGURE 2

San Mateo County Planning Commission Meeting

Owner/Applicant: **Richard Deatley**

Attachment: **B**

File Numbers: **PLN2000-00456**

206

TABLE OF CONTENTS

		Page
1.000	**INTRODUCTION**	**1**
1.010	Authority and Purpose for this Plan	1
1.020	Quarry Location	2
1.030	Project Summary	2
1.031	Permit History	2
1.032	CEQA Considerations	2
1.033	Designation of Valuable Mineral Resources	3
1.034	Area of Operation	3
1.035	Level of Production	4
1.036	Recycle Component	4
1.037	Temporary Storage of Boulders	4
1.038	Type of Material Being Mined	4
1.039	Estimated Life of the Operation	4
1.040	Phasing of Mining and Reclamation	7
1.041	Method of Aggregate Transport	7
1.042	Ultimate Site Condition	7
2.000	**OWNER, OPERATOR AND OPERATOR'S AGENT**	**10**
2.010	Relationship Between Property Owner and Quarry Operator	10
2.020	Applicant for Quarry Permit	10
2.030	Name of Mineral Property	10
2.040	Owners of Surface Rights	10
2.050	Owners of Mineral Rights	10
2.060	Lessee	10
2.070	Operator	10
2.080	Agent of Process	10
3.000	**DESCRIPTION OF QUARRY PROPERTY AND ENVIRONS**	**11**
3.010	Site Area and Area Subject to Mining	11
3.020	Topography	11
3.021	Geographic Description	11
3.022	Elevation Variation on Site	11
3.023	Visual Screening Provided by Topography	12
3.024	Permanent Elevation Benchmark	12
3.030	Pattern of Ownership Surrounding the Quarry	12
3.040	Geology, Seismicity and Soils.	15
3.041	Geology	15
3.042	Seismicity	15
3.043	Soils	15
3.043.1	Miramar Coarse Sandy Loam	15

Page

3.043.2	Farallone Coarse Sandy Loam and Farallone Loamy Coarse Sand	16
3.044	Geologic and Soils Impact Mitigation Included as Part of the Plan	16
3.050	Current Land Use	16
3.060	General Plan and Zoning Regulations	19
3.061	General Plan	19
3.062	Zoning	19
3.070	Access and Traffic Considerations	20
3.071	Access	20
3.072	Traffic	20
3.073	Traffic Related to Recycle Operations	22
3.074	Traffic Impact Mitigation Included as Part of the Plan	23
3.080	Service and Utility Requirements	23
3.081	Fire and Emergency Services	23
3.082	Power and Phone Services	23
3.083	Domestic Water and Sewer Service	23
3.084	Water for Quarry Operations	23
3.085	Water for Fire Suppression	23
3.086	Water for Reclamation	24
3.087	Service and Utility Impact Mitigation Included as Part of the Project	24
3.090	Climate and Air Quality	24
3.091	Climate	24
3.092	Air Quality	24
3.093	Dust Emissions	24
3.094	Air Quality Impact Mitigation Included as Part of the Project	25
3.100	Drainage, Sediment Control, and Pollution Prevention	25
3.101	Drainage	25
3.102	Groundwater Resources	27
3.103	Sediment Control.	27
3.104	Pollution Prevention	27
3.105	Drainage and Sediment Impact Mitigation Included as Part of the Project	28
3.200	Biotic Resources	28
3.201	Updated Biological Information	28
3.202	Vegetation	28
3.203	Non-Native Vegetation	29
3.204	Wildlife	29
3.205	Biological Impact Mitigation Included as Part of the Project	29
3.300	Visual Effects	32
3.301	Views From Off-Site	32
3.302	Views Within the Site	32

208

		Page
3.303	Visual Impact Mitigation Included as Part of the Project	32
3.400	Noise Considerations	34
3.401	Noise Sources	34
3.402	Noise Receptors	34
3.403	Noise Impact Mitigation Included as Part of the Project	34
4.000	**MINING PLAN**	**35**
4.010	Area Affected by Mining	35
4.020	Access to the Quarry Site and Work Area	35
4.030	Starting Date, Estimated Life and First Phase Duration	35
4.040	Operation Schedule and State of Readiness	35
4.050	Description of Quarried Material and Level of Production	36
4.051	Geology of the Site	36
4.052	Mineral Commodity Being Mined	36
4.053	Composition of Mined Material	36
4.054	Anticipated Quantity of Materials to be Mined	36
4.055	Anticipated Quantity of Overburden	36
4.056	Topsoil Salvage	36
4.057	Recycle Operations	36
4.060	Description of Mining Method and On-Site Processing	37
4.061	Description of Mining Operation	37
4.062	Mining Method	37
4.063	Depth of Maximum Cut	38
4.064	On-Site Processing	38
4.065	Water Used for Dust Control	38
4.066	Water Used for Aggregate Washing	38
4.067	Operating Conditions	39
4.067.1	Off-Street Parking	39
4.067.2	Access Roads	39
4.067.3	Noise Control	39
4.067.4	Fencing, Posting and Security	39
4.067.5	Visual Screening	39
4.067.6	Setbacks to Mining	39
4.067.7	Use of Explosives	39
4.067.8	Finished Slopes	40
4.067.9	Drainage and Sediment Control	40
4.068	Ongoing Maintenance Procedures	40
4.069	Mining Phases Relative to Reclamation	41
5.000	**RECLAMATION PLAN**	**49**
5.010	Areas Covered by Reclamation	49
5.020	Ultimate Physical Condition of the Site	49

Page

5.030	Possible Future Uses Following Mining	49
5.031	Extensive Agriculture	49
5.032	Wildlife Management, Nature Education and Research	50
5.033	Intensive Agriculture	50
5.034	Commercial Recreation Site	50
5.040	Evidence that Property Owners Have Been Advised of Potential Future Uses	50
5.050	Statement of Responsibility to Perform Reclamation	50
5.060	Means to Guarantee Reclamation	50
5.070	Reclamation Procedures and Sequences	51
5.071	Backfilling and Grading	51
5.072	Stabilization of Slopes	51
5.072.1	Slope Benching	51
5.072.2	Slope Drainage	51
5.072.3	Revegetation	52
5.072.4	Resoiling and Revegetation of Bench Surfaces	52
5.072.5	Revegetation of Intervening Slope Surfaces	53
5.072.6	Revegetation of the Creekbed	53
5.072.7	Resoiling and Revegetation of the Canyon Floor Surface	53
5.072.8	Planting of Shrubs and Trees	53
5.072.9	Equipment Removal	53
5.073	Waste Dump Stabilization	56
5.074	Rehabilitation of Pre-Mining Drainage	56
5.075	Removal of Structures	56
5.076	Control of Contaminants	57
5.077	Treatment of Streambeds	57
5.078	Access Control and Control of Residual Hazards	57
5.079	Topsoil Reuse and Test Planting	57
5.0710	Short Term Phasing	57
5.080	Reclamation Monitoring	58
5.081	Monitoring Criteria – Topography	58
5.081.1	Reclamation Limits	58
5.081.2	Removal of Stockpiles	58
5.081.3	Final Slope Contouring	58
5.081.4	Final Canyon Floor Contouring	58
5.081.5	Erosion Repair	58
5.081.6	Colluvium Removal	59
5.082	Monitoring Criteria – Vegetation	59
5.082.1	Revegetation Plan	59
5.082.2	Vegetative Coverage and Density	59
5.082.3	Species Richness	59
5.082.4	Weed Control	59

		Page
5.082.5	Visual Screening	59
5.083	Monitoring Criteria – Drainage and Erosion Control	59
5.083.1	Sediment Pond System	59
5.083.2	Sediment Traps	60
5.083.3	Restored Open Drainage	60
5.083.4	Access Road Maintenance	60
5.090	Effect of Reclamation on Future Mining Potential	60
6.000	**RECLAMATION COSTS AND GUARANTEE**	**65**
6.010	Financial Assurance	65
6.020	Reclamation Cost Assumptions	65
6.030	Reclamation Cost Estimate	65
6.040	Summary of Reclamation Methods	65
6.040.1	Group 1 Tasks: Structure and Equipment Removal	66
6.040.2	Group 2 Tasks: Grading and Sitework	72
6.040.3	Group 3 Tasks: Revegetation	78
6.040.4	Group 4 Tasks: Monitoring and Maintenance	84

FIGURES

		Page
1	Regional Location Map	5
2	Vicinity Map	6
3	Site and Work Area Map	8
4	Detailed Map of Process Area	9
5	Ownership Map	14
6	Geology Map	17
7	Soil Map	18
8	Planning Constraints	21
9	Drainage Map	26
10	Vegetation Map	30
11	Environmentally Sensitive Habitat Areas	31
12	Site Photos	33
13a	Grading Plan – Initial New Area	42
13b	Final Grading Plan – Current and New Area	43
13c	Phasing Diagram – Initial New Area	44
13d	Master Grading Plan – Entire Site	45
14a	Drainage Plan –Initial New Area	46
14b	Final Drainage Plan – Current and New Area	47
15	Section Through Initial New Area	48
16a	Revegetation Plan – Initial New Area	61
16b	Revegetation Plan – Current and New Area	62
17	Creek Restoration Section	63
18	Master Revegetation Plan – Entire Site	64

TABLES

		Page
1	Use of Areas within the Mining Property	3
2	Summary of Mining and Reclamation at New Mining Site	7
3	Description of Mining Property	11
4	List of Property Owners within 300 Feet of the Pilarcitos Quarry - Current as of August 2006	12
5	Detailed Revegetation Program	54
6	Task 1-1	67
7	Task 1-2	69
8	Task 1-3	71
9	Task 2-1	73
10	Task 2-2	75
11	Task 2-3	75
12	Task 2-4	77
13	Task 3-1	82
14	Task 3-2	83
15	Task 4-1	85
16	Task 4-2	85
17	Cost Summary	86

213

APPENDICES

		Page
A.	Property Owner Notification of Future Uses	A-1
B.	Statement of Responsibility to Perform Restoration	B-1
C.	Financial Assurance	C-1
D.	Sources of Information Used in Plan Preparation	D-1
E.	RM-CZ Zoning Regulation	E-1
F.	Regulatory Compliance Summary	F-1
G.	SWPPP Best Management Practices	G-1
H.	Biological Assessment	H-1
I.	Recycle Manifest	I -1
J.	Permit Application	J-1
K.	Erosion Control Plan	K-1

214

I.000 INTRODUCTION

1.010 AUTHORITY AND PURPOSE FOR THIS PLAN

This document has been prepared pursuant to the State Surface Mining and Reclamation Act (SMARA) of 1975 as revised, and the San Mateo County Surface Mining and Reclamation Ordinance. The San Mateo County Permit reference is file PLN2000-00-00456. The State Mine Identification Number is 91-41-0005. A Regulatory Compliance Summary, cross-referencing the Plan to County and SMARA regulations, is included as Appendix F.

This document describes an existing on-going mining operation, known as the Pilarcitos Quarry and the planned continued mining of an extensive granite deposit existing within the 593-acre mining property. The Pilarcitos Quarry provides fill material, sand, drain rock, State specification Class II Aggregate Base, State Specification Aggregate Sub-base, asphaltic concrete aggregate, and Portland cement aggregate made from the granite rock deposit. The quarry also recycles broken concrete, broken asphalt and stone. The Mining and Reclamation Plan consists of text and graphic descriptions of grading, drainage, revegetation and various potential subsequent uses for the site. General Open Space/Rangeland is the preferred end use. The express objective of the Mining and Reclamation Plan is to describe the processes that will minimize environmental impacts during and resulting from mining, to maximize the amount of reclamation that can be done concurrent with mining, and to leave the site, following mining, in a condition that is safe, stable, and readily adaptable to alternate land uses.

The purpose for this proposed Plan amendment is to protect the valuable granite deposit against encroachment by incompatible land uses and to establish the necessary entitlement to mine the remaining deposit estimated to last some 75 years. The permit to mine would continue to be administered by San Mateo County which currently requires mining permits to be renewed every five years. The County also administers Coastal Development Permits renewed concurrently. Biologists from LSA Associates, Inc. have conducted a comprehensive environmental assessment of the entire mining property. This assessment, included in Appendix H, updates the environmental knowledge about the site. County approval of this Mining and Reclamation Plan will insure a reliable long term, local supply of aggregate resource for the County and sub-region.

A total of nine distinct mining locations are described in the Plan with each buffered from known sensitive habitat areas. Because the mining sites are distinct and separate from one another they can be addressed as separate projects or as one. In the present case one of the nine areas, located adjacent to and immediately north of the current mining area, is considered to be a short term project and is currently being processed by the County pursuant to a Mitigated Negative Declaration. The remaining eight areas are considered to be long term projects occurring over a 75-year period. These will be addressed in an Environmental Impact Report. Both the short term and long term areas are included in the mapping presented in this document. It is intended that the rock processing equipment and aggregate stockpiles would continue to be located in the

current center of operations with the raw aggregate from each future mining site brought in by conveyor to minimize disturbance to the overall site. Detail is given about the mining site located adjacent to and immediately north of the current mining area. It is intended that the plan for mining and reclamation in this area be considered the template for mining and reclamation in each of the other future areas. It is further intended that reclamation in each site be well underway before each new site is opened for mining.

1.020 QUARRY LOCATION

Pilarcitos Quarry is located in the coastal mountains of San Mateo County east of the City of Half Moon Bay. It is shown on the Montara Mountain and Half Moon Bay USGS 7.5' quadrangles at about latitude 37° 30' and longitude 122° 23' 30" in Township T5S, Range R5W, MDBM. The site consists of a canyon associated with the Nuff Creek drainage, extending northward from California State Highway 92 beginning at a point on Highway 92 about 2.9 miles from its intersection with California State Highway 1. (See Figure 1).

1.030 PROJECT SUMMARY

1.031 Permit History. Quarrying was done under County-approved use permits prior to 1960 and has been continuous at the Pilarcitos site since 1960 when the operation was taken over by PCA (Pacific Cement & Aggregates, Inc.) later known as Lone Star Industries. Piombo Corporation took over the Lone Star lease in 1981. The name was later changed to Piombo Construction Company which took over quarry operations in 1992. West Coast Aggregates, Inc. has been the operator since 1993.

In 1982 San Mateo County adopted a new Surface Mining and Reclamation Ordinance pursuant to the State Mining and Reclamation Act. The Ordinance requires that a plan be prepared for reclamation of all areas that have been, or will be, quarried after January 1, 1976. In the present case the current mining area and all future mining sites are subject to reclamation.

San Mateo County issues renewable permits for mining with a ten year term on initial permits and five year terms for continuing operations. West Coast Aggregates, Inc. is currently working under a five year permit that expires on February 12, 2008. All future permits would be for five year terms unless the County ordinance is revised.

1.032 CEQA Considerations. Quarry excavations to date have been centered on the west-facing slopes near the southerly end of Nuff Canyon. Aggregate processing and stockpiling take place on the canyon floor. Nuff Creek runs through a culvert beneath the process area.

An Environmental Impact Report (EIR), covering the entire 593-acre quarry property, was certified by San Mateo County in 1973. A detailed plan for mining in the current center of operations was included in the 1973 EIR but only conceptual level information

was provided regarding future mining. A Supplemental EIR, addressing the addition of recycle operations, was certified in 1994.

The 1973 EIR contemplated mining operations extending north along the west-facing slopes and west to the east-facing slopes throughout the Nuff Canyon property over a 50 to 75 year period. There is evidence in the field that exploratory excavations were conducted farther north on the west-facing slopes in the 1960's to verify the presence of suitable aggregate. Those exploratory sites are included in the Plan amendment.

This Plan contains a Master Grading Plan and a Master Revegetation Plan detailing the proposed extent of mining and reclamation in all of the future mining areas in Nuff Canyon. This document will serve as the template for all future mining and reclamation activities.

1.033 Designation of Valuable Mineral Resources. The 593 acre Pilarcitos Quarry property was designated pursuant to the state Surface Mining and Reclamation Act (SMARA), as a source of regionally significant mineral resources. The quarry was given Sector designation HH, and is identified as California Mine I. D. # 91-41-0005. Designation requires that local agencies adopt policies in their General Plans to protect and conserve designated resources so that incompatible land uses are not allowed that would jeopardize the continued availability of the resource. West Coast Aggregates, Inc. is requesting approval of a comprehensive mining and reclamation plan covering the entire quarry property so that the mineral resource is clearly identified and protected.

1.034 Area of Operation. Pilarcitos Quarry is located in an elongated canyon in the coastal mountains northeast of the City of Half Moon Bay. (See Figure 2). Current operations affect about 53.31 acres (See Figure 4). Processing equipment, storage of quarried materials and truck loading activities are all located in the canyon bottom. Spur ridges along both sides of the canyon are planned to be mined in the future. Proposed quarrying activities will ultimately affect an estimated 256 acres of the total 593 acre site. The preferred next mining site is located immediately north of the current center of operations and involves about 7.36 acres. Table 1, below, shows how the next new increment relates to the overall site.

TABLE 1: USE OF AREAS WITHIN THE MINING PROPERTY

DESCRIPTION	AREA (ACRES)
Area of Current Ongoing Quarry Operation	53.31
Proposed Initial Addition Subject to Mining[1]	7.36
Future Work Areas Subject to Mining (Estimated)[2]	195.76
Ridges and Habitat Areas not Subject to Mining (Estimated)[3]	336.57
Total Property Area	**593.00**

1. The initial expansion area is being processed by the County pursuant to a Mitigated Negative Declaration.
2. Future expansion areas are being processed by the County pursuant to an Environmental Impact Report.
3. The open space areas include all of the Environmentally Sensitive Habitat Areas associated with drainage channels and wetlands as well as the primary ridgelines forming the watershed of Nuff Creek.

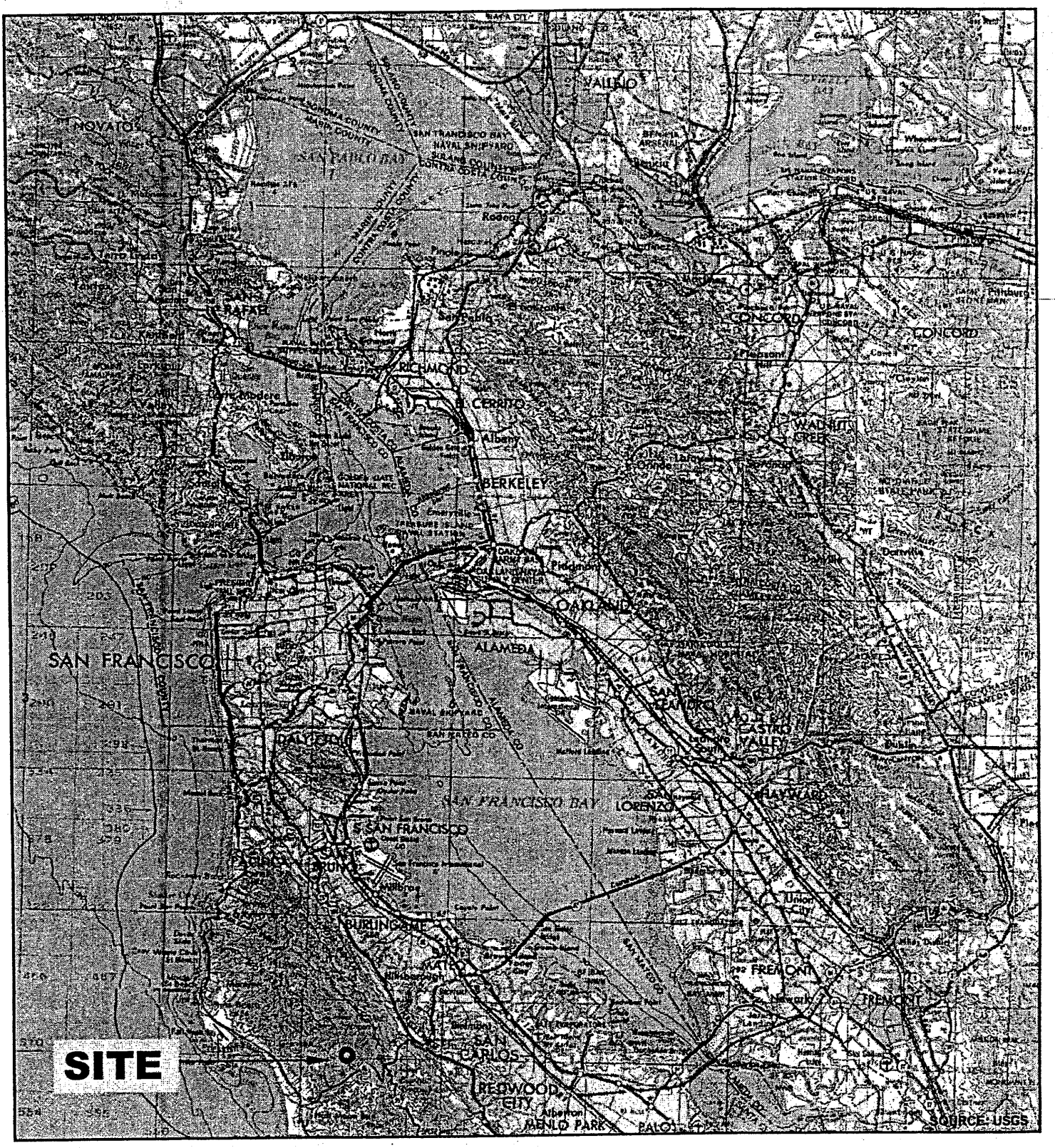
1.035 Level of Production. From 840,000 to 1,100,000 tons of aggregate will be shipped each year. Recycle material that is processed is included in the total thereby reducing the amount of native rock that is processed.

1.036 Recycle Component. West Coast Aggregates, Inc. is permitted to import from 50,000 to 100,000 tons of broken concrete, broken asphalt and stone each year. Loads of recycle are accepted only between 9:00 A. M. and 3:00 P. M. weekdays.

1.037 Temporary Storage of Boulders. Large boulders are found at various locations within the coastal zone in San Mateo County. It is proposed that the Pilarcitos Quarry be approved to receive and temporarily store such boulders in cases where the boulders must be removed during grading operations and stored until they can be later used in landscaping or other constructive uses on the same site from which they were taken.

1.038 Type of Material Being Mined. Bedrock in the spur ridges is weathered, fractured granite. The principal products of mining are trench backfill, road base materials, and various grades of drain rock and sand.

1.039 Estimated Life of the Operation. Reserves of aggregate material in the mining property are estimated to last approximately 75 years at the rate of production identified in Section 1.035.



NORTH

0 3 6

SCALE IN MILES

REGIONAL LOCATION

WEST COAST AGGREGATES, PILARCITOS QUARRY

1

FIGURE

2_9

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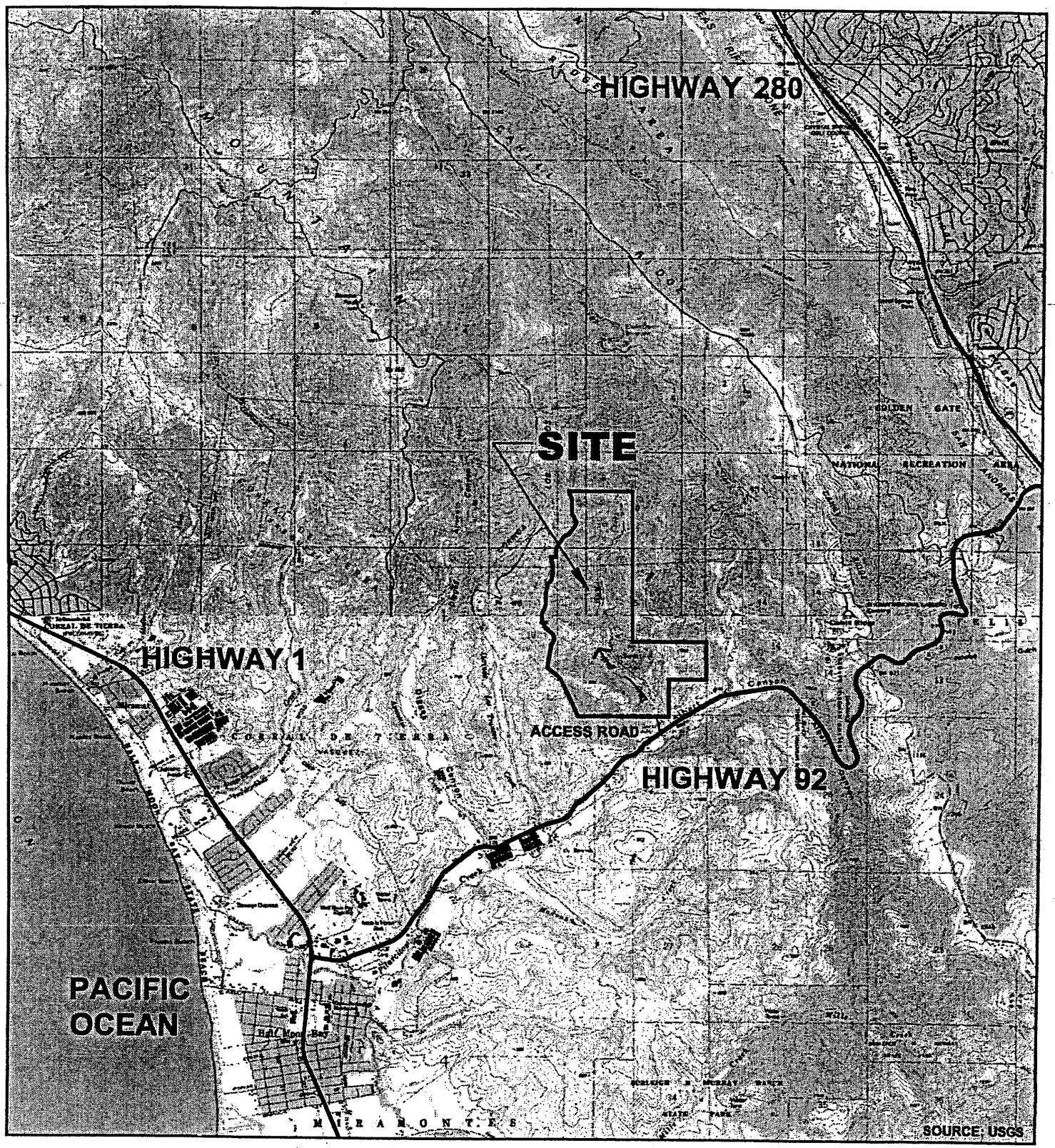


NORTH

0 0.5 1.0

SCALE IN MILES

VICINITY MAP

WEST COAST AGGREGATES, PILARCITOS QUARRY

2

FIGURE

220

1.040 Phasing of Mining and Reclamation. Mining activities are presently concentrated in the southerly 1/3 of the mining property. Future mining areas are identified on Figure 3. Mining typically begins near the top of each spur ridge and progresses towards the toe. Drainage and sediment control facilities are expanded to accommodate each new area. The benched slopes are reclaimed as soon as possible following mining but generally a separation of one or two benches is maintained between mining and reclamation activities for safety purposes. Mining is typically conducted on two spur ridges simultaneously so that mining can continue on one ridge while reclamation is being completed on the other. It is intended that the process plant, stockpiles and loading of aggregate will remain in their current location and that a conveyor system will be installed to transport rock from each of the extraction areas to the process plant. When all mining has been completed, the process plant, stockpiles and other structures will be removed and Nuff Creek will be restored as an open creek through the valley floor.

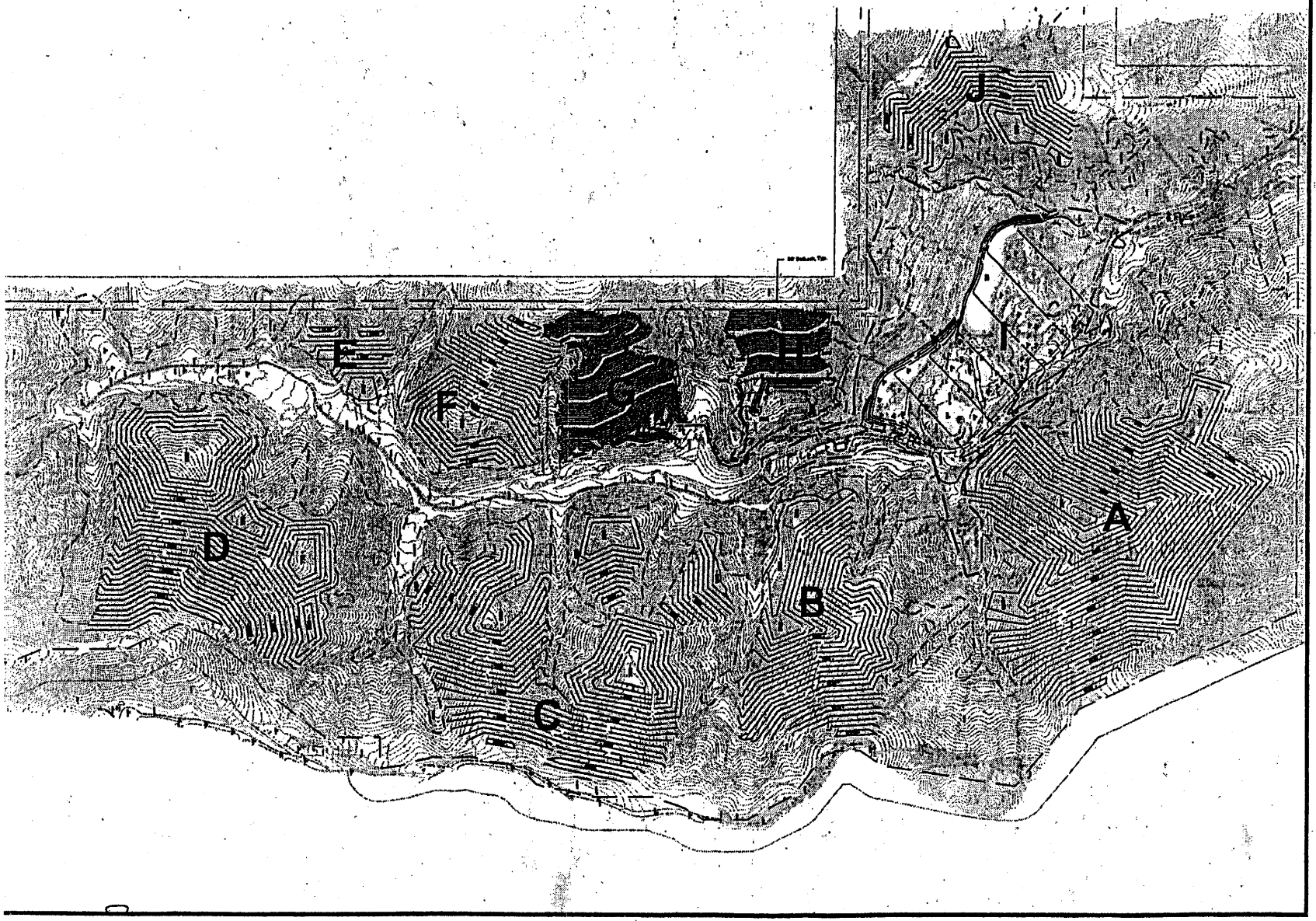
TABLE 2: SUMMARY OF MINING AND RECLAMATION IN NEW MINING SITE

MINING SUMMARY	**QUANTITY (CUBIC YARDS)**
A Topsoil Salvage (Material available from expansion area)	5,937
B Gold Track (Subsurface granular material not washed)	112,804
C Gross Resource (Rock intermixed with sediment)	450,366
Subtotal Mineral Resource (B + C)	**563,170**
D Sediment Removed by Wash Process (Estimated 12%)	54,044
E Net Salable Aggregate (B + C – D)	**509,126**
F Total Excavation Quantity (A + B + C)	569,107
RECLAMATION SUMMARY	**QUANTITY (CUBIC YARDS)**
Topsoil Re-Used on Benches and Quarry Floor	5,937
Sediment Re-Used on Quarry Floor	54,044

NOTE: This table details mining and reclamation of the preferred next mining site located adjacent to and immediately north of the current center of operations. It is intended that each future site would be similarly detailed before mining is begun in each new area. The Site and Work Area Map, Figure 3, indicates the total estimated volume that would be excavated at each distinct mining site.

1.041 Method of Transporting Processed Aggregate from the Site. Quarry materials are loaded directly from storage to haul trucks. The loaded trucks are weighed to avoid overloads and sprayed to minimize dust. A single haul road leads down the canyon from the quarry to State Highway 92 where truck access is controlled by a "Stop" sign.

1.042 Ultimate Site Condition. At the completion of mining and reclamation the 7,000 foot long valley floor will have the configuration of a "box canyon" contained by steep side slopes. The gently sloping canyon floor is quite narrow through the central portion of the canyon but is wider at the north and south ends. These will be the primary future use areas. The portion of Nuff Creek that currently runs in a culvert beneath the rock processing and stockpiling area will be restored as an open creek. The preferred end use following mining and reclamation is general open space/rangeland. Existing vegetation and topographic configuration at the southerly end of the canyon where the quarry access road slopes up from Highway 92 will not be disturbed. The existing vegetative cover and topographic configuration will continue to obscure views into the canyon.



WEST COAST AGGREGATES

PILARCITOS QUARRY

SITE AND WORK AREA MAP

AGGREGATE RESOURCE INVENTORY

SITE	AREA (IN ACRE)	QUANTITY (IN TON)
A	49.88	25,646,656
B	24.15	4,971,493
C	42.10	9,405,606
D	35.14	9,479,833
E	4.32	261,919
F	14.76	4,240,293
G	12.81	1,503,804
H	7.36	853,661
I	53.31	1,190,250
J	12.61	1,413,054
TOTAL	256.43	58,966,570

— — CURRENT WORK AREA BOUNDARY (53.31 AC) (PLN2000-00-00456)

— · · — PROPERTY LINE

— — — — ESHA BOUNDARY

3

FIGURE

PAGE 8

SCALE IN FEET

0 600 1200

NORTH

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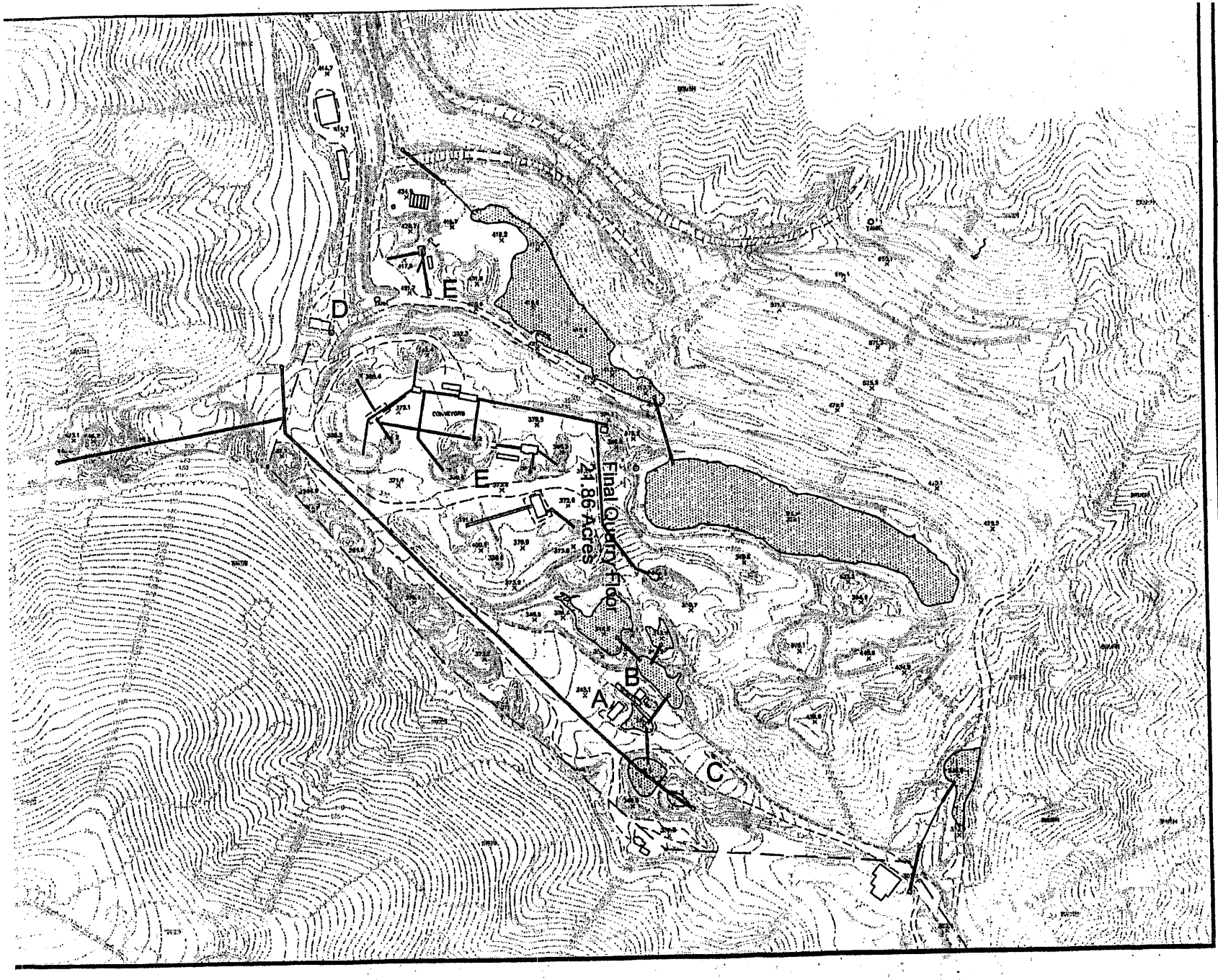
10 / 2006



WEST COAST AGGREGATES

PILARCITOS QUARRY

DETAILED MAP OF PROCESS AREA

LEGEND

- A — BUSINESS OFFICE
- B — SCALE, SCALE HOUSE AND TOILET
- C — SPRAY BAR
- D — MAINTENANCE SHOP
- E — PROCESSING PLANT AND CONVEYORS
- MAINTENANCE ROADS ACCESS WAYS
- SEASONAL SPRINGS
- SURFACE DRAINAGE
- SEDIMENT POND
- EXISTING TOPOGRAPHY
- OVERHEAD UTILITIES
- CULVERTED DRAIN
  - ENERGY DISSIPATOR
  - INLET
- WELLS

4

FIGURE
PAGE 9

SCALE IN FEET
0 200 400

NORTH

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10 / 2006

2.000 OWNER, OPERATOR AND OPERATOR'S AGENT

2.010 Relationship Between Property Owner and Quarry Operator. West Coast Aggregates, Inc. (WCA) is the quarry operator. As such, WCA is the applicant for approval of the Mining and Reclamation Plan, is responsible for renewing Use Permits and Coastal Development Permits at five year intervals, and performing site reclamation. The operator's statement of responsibility is contained in Appendix B. The property owners are the Babuin and Devincenzi families. The applicant has provided evidence, in Appendix A, that the property owners acknowledge the potential future uses for which the reclaimed site will be suited.

2.020 Applicant for Quarry Permit
West Coast Aggregates, Inc.
1852 West 11th, PMB 345
Tracy, CA 95376
Phone: (209) 835-5020

2.030 Name of Mineral Property
Pilarcitos Quarry

2.040 Owners of Surface Rights

Gloria Babuin	Laura Devincenzi
1949 Edinburgh Street	575 Alhambra Road
San Mateo, CA 94403	San Mateo, CA 94402

2.050 Owners of Mineral Rights
Babuin and Devincenzi

2.060 Lessee
West Coast Aggregates, Inc.

2.070 Operator
West Coast Aggregates, Inc.

2.080 Agent of Process
Malcolm C. Carpenter
LSA Associates, Inc.
1190 El Camino Real
Colma, CA 94014
Phone: (650) 985-2590
FAX: (650) 985-2578
e-mail: malcolm.carpenter@lsa-assoc.com

3.000 DESCRIPTION OF QUARRY PROPERTY AND ENVIRONS

3.010 SITE AREA AND AREA SUBJECT TO MINING

Pilarcitos Quarry is located in an elongated canyon in the coastal mountains northeast of the City of Half Moon Bay. (See Figure 2). Current operations affect about 53.31 acres (See Figure 4). Processing equipment, storage of quarried materials and truck loading activities are all located in the canyon bottom. Spur ridges along both sides of the canyon are planned to be mined in the future. Proposed quarrying activities will ultimately affect an estimated 256 acres of the total 593 acre site.

It is anticipated that spur ridges at nine different locations along both sides of the canyon will eventually be mined pursuant to appropriate environmental and permit review by San Mateo County. The quarry property, including its access road from Highway 92, involves five land parcels all owned by the Babuin and Devincenzi families.

TABLE 3: DESCRIPTION OF MINING PROPERTY

Assessor's Parcel Number	Relation to Quarry Operation	Legal
048-340-080	Northernmost part of Nuff Canyon. Area planned for future mining	SW ¼ of Section 10
048-350-030	Central portion of Nuff Canyon. Includes the mining expansion area immediately north of current operations in 2004.	NW ¼ of Section 15
048-350-070	South part of Nuff Canyon. Includes the center of current mining operations (2004)	Portion of Lot 4, Section 1,2 and the E ½ of the SW ¼ of Section 15
056-340-040	Quarry access road from Highway 92	60 foot wide access
056-380-030	South part of Nuff Canyon. Includes the center of current mining activities.	N ½ of the SE ¼ of Section 15, and the SW ¼ of Section 15.

3.020 TOPOGRAPHY

3.021 Geographic Description. Pilarcitos Quarry is located in steep mountainous terrain associated with the extensive north-south trending Coast Range in San Mateo County which divides the Pacific Ocean coastal plains from the southerly part of San Francisco Bay. California Highway 92, one of the few east-west routes through the Coast Range, follows the course of Pilarcitos Creek up a broad valley known as Albert Canyon. Pilarcitos quarry is in an elongated side canyon associated with the Nuff Creek drainage tributary to Pilarcitos Creek.

3.022 Elevation Variation on Site. An overall elevation differential of 1200 feet is found within the quarry property. At the entry road from Highway 92 to the current center of operations (2006), the elevation differential is approximately 200 feet. The

canyon floor, on which the quarry processing, storage and loading facilities are located, slopes gradually upward from the entry road and the current center of operations occupies a widened portion of the canyon floor at about elevation 325-400 Mean Sea Level (msl). At the extreme northwest corner of the quarry property one of the spur ridges reaches an elevation of 1400 feet above sea level.

3.023 Visual Screening Provided by Topography. Slopes surrounding the quarry operation rise steeply on the north, west and east sides of the canyon floor. Continued quarrying will focus on the removal of spur ridges at nine different locations from the side walls of the canyon. The initial expansion described in this Plan involves a spur ridge located adjacent to and immediately north of the present center of operations. A minimum setback of 50 feet from the property boundaries to the extraction areas on the spur ridges typically results in the ridge tops concealing the mining operation and the extraction areas not being highly visible from surrounding roads and properties.

3.024 Permanent Elevation Benchmark. A permanent benchmark (El. 337.5) is noted on the concrete slab at the truck scale office.

3.030 PATTERN OF OWNERSHIP SURROUNDING THE QUARRY

Rural lands in large holdings are typically found through the Coast Range except where public roads exist. Ownership patterns in the quarry vicinity are typical. Relatively small parcels of 1/2 to 10 acres front directly on Highway 92 while the more remote parcels, such as the quarry property, consist of 160 acres or more. In the case of Pilarcitos Quarry, its largest neighbor is the vast Ox Mountain Ranch currently operated by Browning-Ferris Industries as a sanitary landfill for disposal of County solid waste.

Table 4 lists all owners of property within 300 feet of the mining property boundary. Exhibit 4 keys the Assessor's Parcel Numbers to a site map.

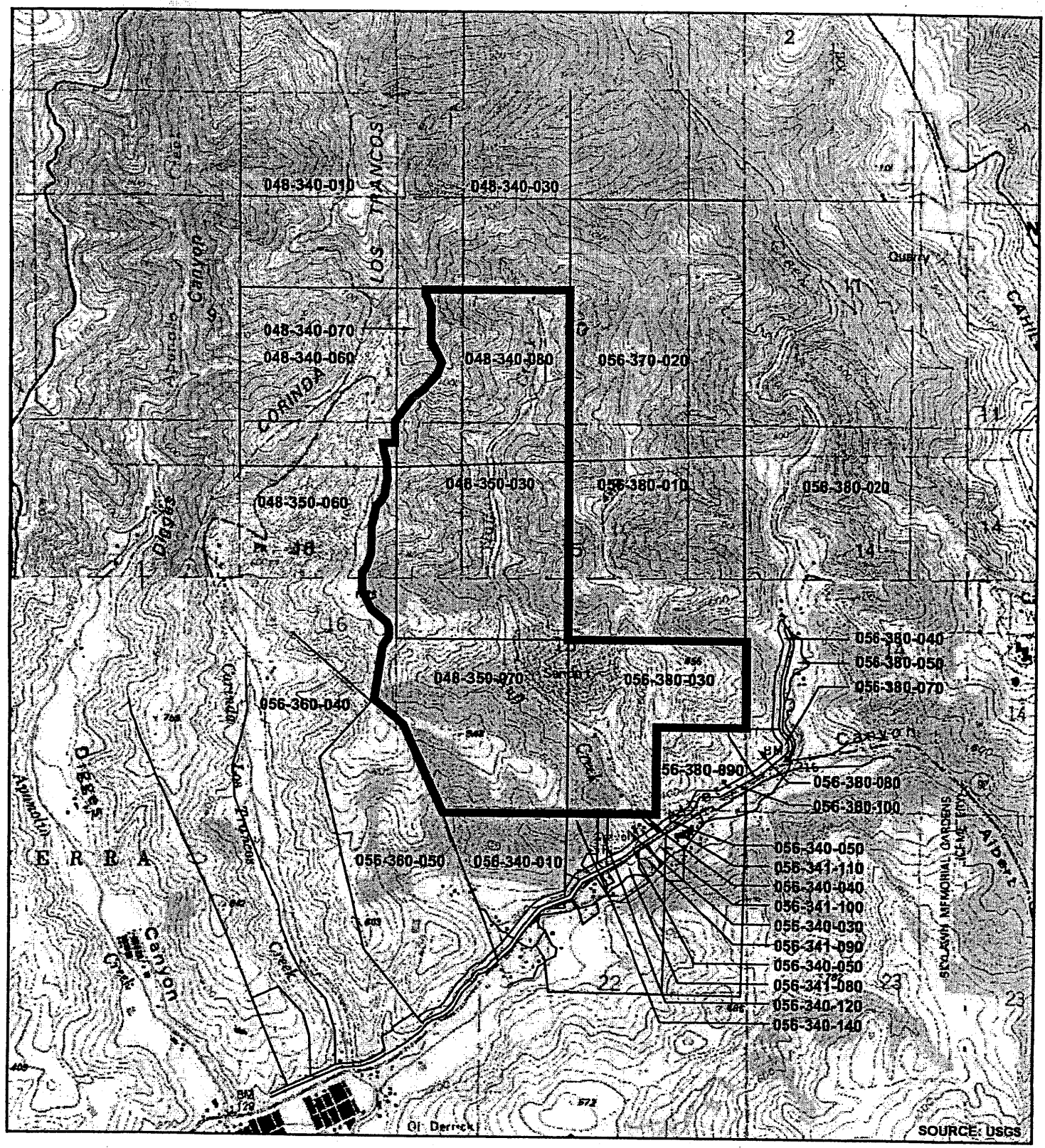
TABLE 4: LIST OF PROPERTY OWNERS WITHIN 300 FEET OF THE PILARCITOS QUARRY - CURRENT AS OF 12/04

Assessor's Parcel No.	Listed Owner
048-340-060	Saguaro National Insurance Co. P.O. Box 42165 Houston, TX 77242
048-340-010 056-370-020	Saguaro National Insurance Co. N/A Ox Mountain Ranch P.O. Box 42165 Houston, TX 77242
048-340-030 056-360-040	OX Mountain Ranch P.O. Box 42165 Houston, TX 77242
048-340-070	Browning-Ferris industries, Inc.

048-350-060	225 Shoreway Rd. San Carlos, CA 94070
056-360-050	Louis & Lillian Kastl 12150 San Mateo Road Half Moon Bay, CA 94019
056-340-010	Sarah Ibarra 668 Filbert St. Half Moon Bay, CA 94019
056-340-140	Robert and Cheryl Canadas 11850 San Mateo Road Half Moon Bay, CA 94019
056-340-030 056-340-050	Loring E. & Mary G. Lintt 11750 San Mateo Road Half Moon Bay, CA 94019
056-341-110	Ronald Mickelson 11691 San Mateo Road Half Moon Bay, CA 94019
056-380-010 056-380-020 056-380-040 056-380-050	Cleo Sare 11621 San Mateo Road Half Moon Bay, CA 94019
056-380-070 056-380-080 056-380-090 056-380-100	Janet A. Wherry & Valerie Feeley 570 El Camino Real, #150-4 Redwood City, CA 94063
056-340-120	Judith Brooks 11820 Highway 92 Half Moon Bay, CA 94019
056-341-100	Wayne Smith 11721 San Mateo Road Half Moon Bay, CA 94019
056-341-090	Bruce Lintt 11751 San Mateo Road Half Moon Bay, CA 94019
056-340-040	Gloria Babuin, Louis J. Devincenzi & L R T 575 Alhambra Road San Mateo, CA 94402
056-341-080	Harold C. Canadas 11821 San Mateo Road Half Moon Bay, CA 94019

NOTE: See Table 3 for listing of parcels within the mining property

227



0 1000 2000

NORTH SCALE IN FEET

OWNERSHIP MAP

WEST COAST AGGREGATES, PILARCITOS QUARRY

5 FIGURE

NOTE: SEE TABLE 4 FOR OWNER INFORMATION

228

3.040 GEOLOGY, SEISMICITY AND SOILS

3.041 Geology. Pilarcitos Quarry is identified by the State Division of Mines and Geology as a significant aggregate production operation. In their 1983 report classifying mineral resources in the San Francisco Bay Area, the Division of Mines and Geology classified the Pilarcitos Quarry MRZ-2. This classification is given when adequate information is available to indicate that significant deposits are present, or that a high likelihood for their presence exists. Available resources are described as plutonic bedrock including granite, granodiorite and quartz diorite. Field inspection reveals that rock near the ground surface is typically fractured and weathered, but that less fractured rock is located at depth.

Maps prepared for the Seismic Safety Element of the San Mateo County General Plan (See Figure 6), indicate that colluvium, derived from mass wasting on the lower portions of steep slopes, lies in deposits at the base of the steep slopes bordering the quarry canyon floor. Colluvium is typically unconsolidated and, therefore, subject to slow downslope movement. Landslides can be induced in colluvium by earthquake activity. In the immediate vicinity of quarry activities the colluvium has been excavated or re-graded and, therefore, poses no hazard to temporary structures. Installation of silt basins and culverts in conjunction with the quarry process facilities, mitigate the potential for sediments to be carried downstream.

3.042 Seismicity. The potential for occurrence of an earthquake is the most significant geologic hazard that could affect the quarry operation. The current center of quarry operations (2006) lies roughly 4 1/3 miles east of the extension of the active Seal Cove fault trace, 2 1/2 miles west of the active San Andreas fault system, and about 1 1/4 miles west of the inactive Pilarcitos fault trace. No fault traces have been detected within the quarry property.

A large magnitude earthquake associated with the San Andreas Fault system, of 7.5 - 8.3 on the Richter Scale, could trigger landslides capable of blocking highway access in the vicinity. Landslides within the quarry property would not affect any public roads and would not be expected to adversely affect quarry operations. However, extreme ground movement could cause damage to berms associated with the temporary silt basins constructed along the canyon floor and landslides could block open portions of Nuff Creek. Quarry extraction equipment could be mobilized to quickly repair sediment facilities and to remove landslide materials. Failure of excavated slopes is not expected since loose and weathered material has been removed and the slopes have been properly benched.

3.043 Soils. Two principal soil types are found within the quarry property boundary. None are classified as prime agricultural soils by the U.S. Department of Agriculture, Soil Conservation Service. Each of the soil types contains constituents of the granite bedrock from which it has weathered. Depth of each is about six inches.

3.043.1 Miramar Coarse Sandy Loam. This soil type is found on the ridge tops and steep side slopes of the quarry property. It varies in quality from Class 4 soil on

some of the flatter ridgetops to Class 7 on the steepest sidehills. While it makes good fertilized rangeland, the Miramar soil is hard when dry and does not readily support larger scale vegetation. It has a high erosion potential when steeper slopes are disturbed. Drainage from this soil type is rapid. The soil is formed from the weathering, in place, of quartz diorite. It has a typically thin grey-brown colored topsoil layer which in many locations is no greater than six inches. Beneath the topsoil is grey-brown or brown subsurface material extending down 10 feet or so to bedrock. Both the surface soil and subsurface material are slightly acid with a pH of about 6.5. The subsurface material from about two feet of depth and deeper is typically plastic and sticky when wet. Water penetration is very slow.

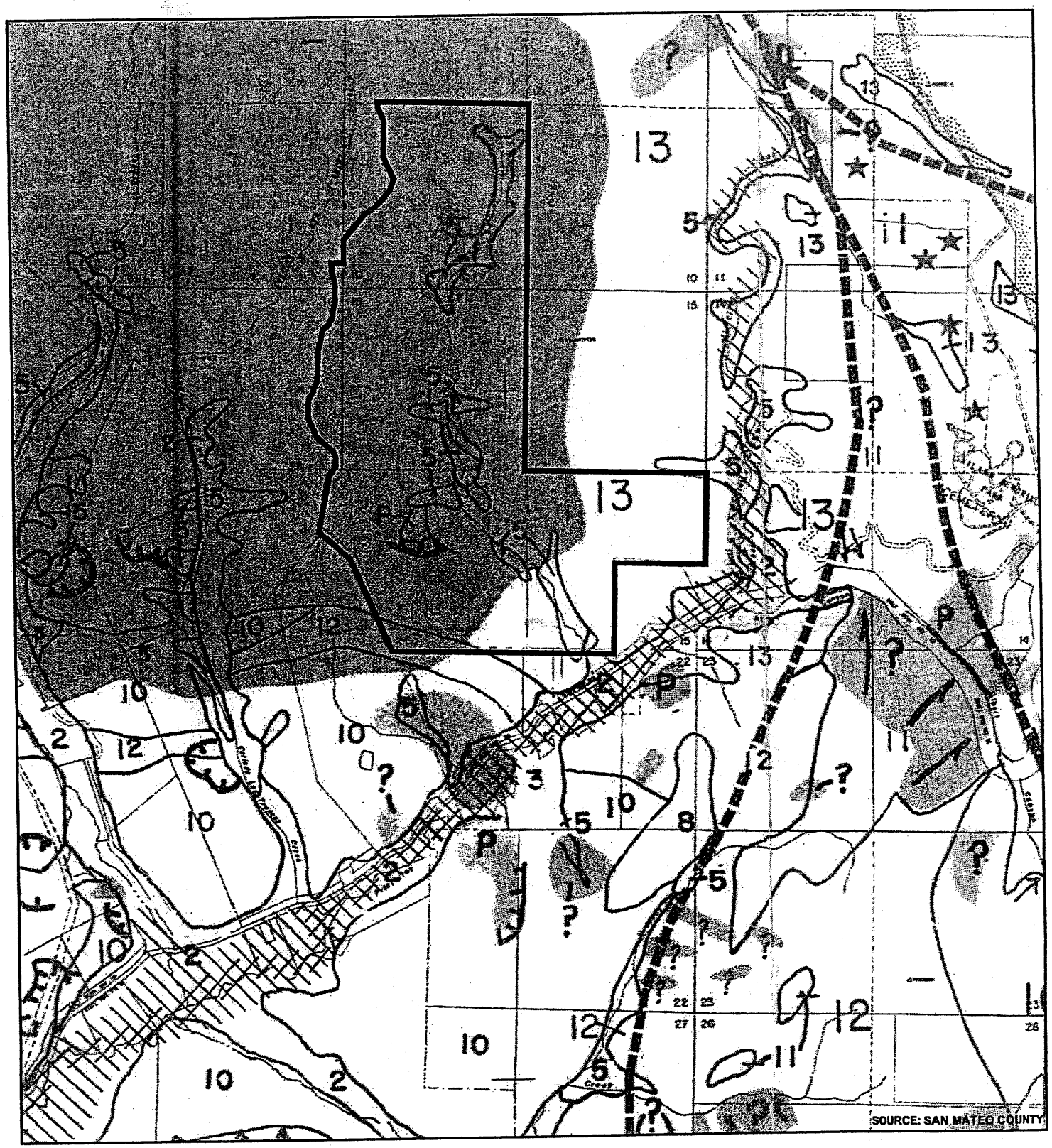
3.043.2 Farallone Coarse Sandy Loam and Farallone Loamy Coarse Sand are related soils found in the canyon floor along the course of Nuff Creek. These granular soils are alluvial in nature, having been formed from weathered granite washed into the valley. Soil quality varies from Class 3 to Class 4, however, with cultivation, fertilization and good erosion-control practice these soils can support brussels sprouts or flowers.

Native vegetation is predominantly Coyote brush and bush lupine in the drier areas, and willow and alder along the stream banks. Because the slope of the canyon floor is relatively gradual, the Farallone soils have low to moderate erosion potential and the rate of runoff is slow. In comparison to the soils found on the steep surrounding slopes, the Miramar soil is quite deep. The dark grey topsoil layer extends to four feet in locations. The subsurface soil at the center of the canyon may be as deep as 80 feet over bedrock. Both the surface soil and subsurface material are characterized by high mica content and are slightly acidic with a pH of about 6.4. The subsurface material contains a high proportion of quartz derived from the weathered granite. Water tends to drain easily through these soils.

3.044 Geologic and Soils Impact Mitigation Included as Part of the Plan. Quarried slopes will be benched to create stable slopes with intermediate catchment points for rock that may become loose and fall downslope. Miramar Coarse Sandy Loam topsoil will be salvaged from future mining areas and reutilized in resoiling the benches and quarry floor. Sediment from the aggregate wash process will be spread on the quarry floor prior to resoiling and revegetation.

3.050 CURRENT LAND USE

An area of approximately 53 acres is presently disturbed by the quarry operation. A little over 1/2 the area is comprised of slopes being actively quarried while the remainder is the portion of the valley floor occupied by silt basins, and by aggregate processing, storage and loading facilities. The preferred initial expansion would add approximately 7.36 acres adjacent to and immediately north of the current center of quarry operations. The surrounding rural land within the quarry property provides watershed to Nuff Creek.



GEOLOGY MAP

WEST COAST AGGREGATES, PILARCITOS QUARRY

6
FIGURE

NORTH

0 1000 2000
SCALE IN FEET

5 COLLUVIUM

13 GRANITIC ROCKS

p PROBABLE LANDSLIDE DEPOSIT

231

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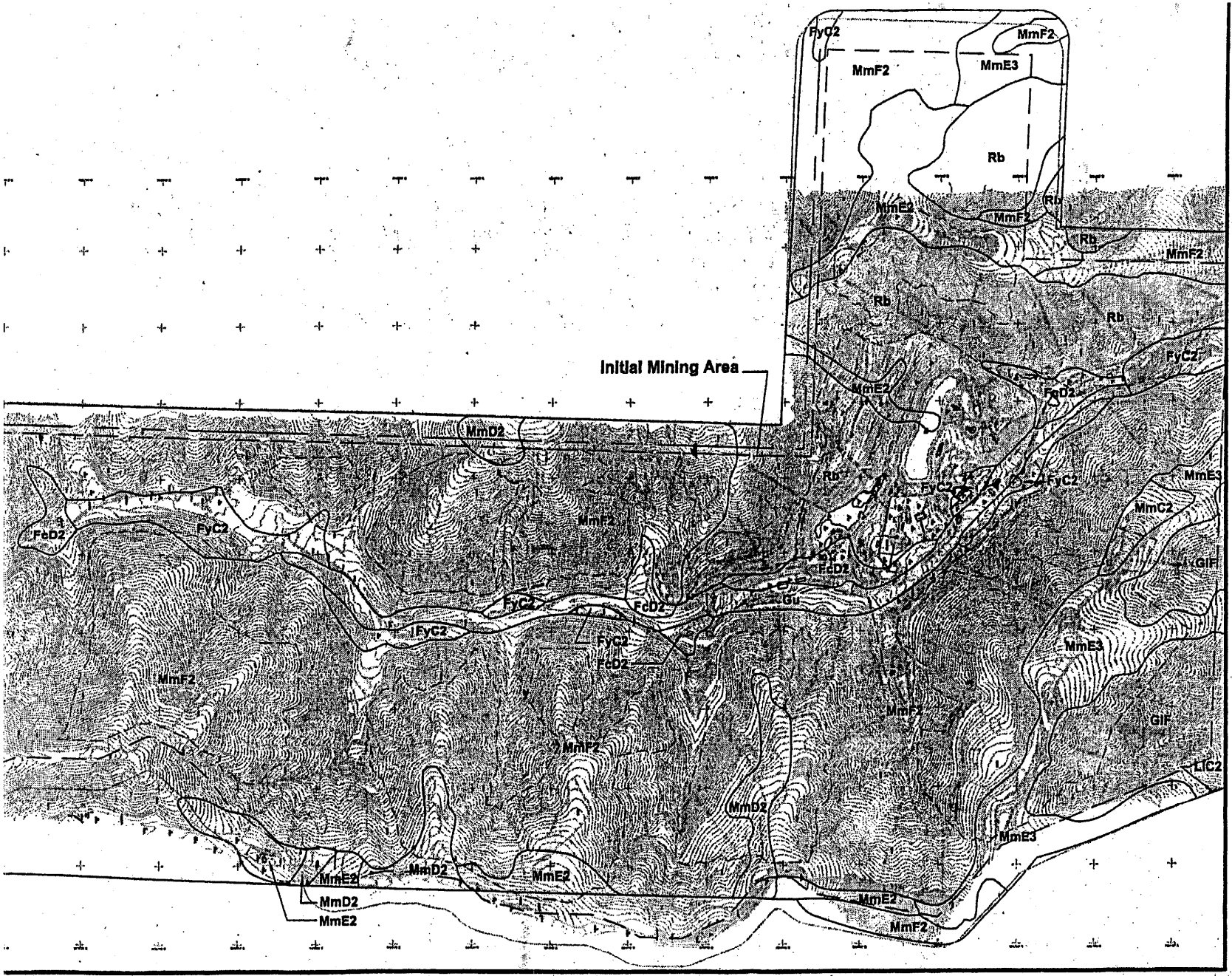

WEST COAST AGGREGATES

PILARCITOS QUARRY

SOIL MAP

LEGEND

FcD2	SOIL TYPE
FyB	SOIL TYPE
FyC2	SOIL TYPE
GIF	SOIL TYPE
Gu	SOIL TYPE
LIC2	SOIL TYPE
MmC2	SOIL TYPE
MmD2	SOIL TYPE
MmE2	SOIL TYPE
MmE3	SOIL TYPE
MmF2	SOIL TYPE
Rb	SOIL TYPE
ShF	SOIL TYPE

SOIL IN MINING AREA

FcD2	FARALLONE COARSE SANDY LOAM, MODERATELY STEEP, ERODED
MmD2	MIRAMAR COARSE SANDY LOAM, MODERATELY STEEP, ERODED
MmF2	MIRAMAR COARSE SANDY LOAM, VERY STEEP, ERODED

7

FIGURE
PAGE 18

SCALE IN FEET
0 300 600 1200
NORTH

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10 / 2006

Much of the rural land to the north, west and east beyond the quarry property boundary is part of the extensive Ox Mountain Ranch currently being used as a sanitary landfill. The next major canyon east of the quarry site is actively farmed. Most of the relatively smaller ownerships of 1/2 to 10 acres fronting on Highway 92, south of the quarry, contain residences and agricultural uses including tree farming and flower growing.

3.060 GENERAL PLAN AND ZONING REGULATIONS

3.061 General Plan. Pilarcitos Quarry is located within the Coastal Zone pursuant to the California Coastal Act of 1976. San Mateo County adopted a Local Coastal Program for its coastal zone properties in 1980. This program contains maps, text and policies for land use in the Coastal Zone and functions as a part of the County General Plan. All of the property associated with the quarry is designated General Open Space in the Land Use component of the Coastal Plan. This designation is typically given to rural lands outside the immediate influence of an urban center that are not suited to intensive agriculture. The quarry land and the adjacent Ox Mountain landfill site both bear this designation. In the present case, even though the quarry use preceded adoption of the Coastal Plan, there is no part of the quarry property that meets the definition of prime agricultural land or prime agricultural soil as defined by the Coastal Plan. The plan for mining and reclamation avoids sensitive habitat areas.

Highway 92 is designated as a scenic road in the Visual Resources component of the Local Coastal Plan and is also in the State Scenic Highway Master Plan. A scenic road corridor, generally coinciding with the ridge profiles that are visible from the road, has been mapped. The southernmost part of the quarry property, outside of the boundary of the current quarry work area, is included in the scenic road corridor. Specific policies aimed at protecting the visual character of the corridor are met by the existing operation and proposed future mining sites. The quarry entrance road slopes up from Highway 92 and follows a curving alignment following Nuff Creek. The combination of topography, road alignment, and existing trees, screen from view the interior of the site.

Nuff Creek is designated a sensitive habitat in the Coastal Plan. The Reclamation Plan includes specifications for reestablishing an open creek incorporating native plant species (See Exhibit 14). A condition of the quarry permit requires the removal of exotic plants (especially pampas grass and eucalyptus saplings). With the exception of the sensitive habitat and visual resource considerations, other elements of the Local Coastal Plan have little or no applicability to the quarry property. The quarry does not have a high demand for public services or utilities and relies on the County Sheriff and Half Moon Bay Fire Protection District for emergency services. Since the quarry operation is involved in resource extraction in a relatively remote canyon, the components of housing, energy development, agriculture, hazards, shoreline access and recreational use do not apply.

3.062 Zoning. County records indicate that quarrying operations were conducted at the Pilarcitos location prior to 1960 by Use Permit under the provisions of the A-1/S-11 Agriculture District zoning. In December of 1973 San Mateo County rezoned the rural lands west of Skyline Boulevard and the Pilarcitos Quarry was given the RM

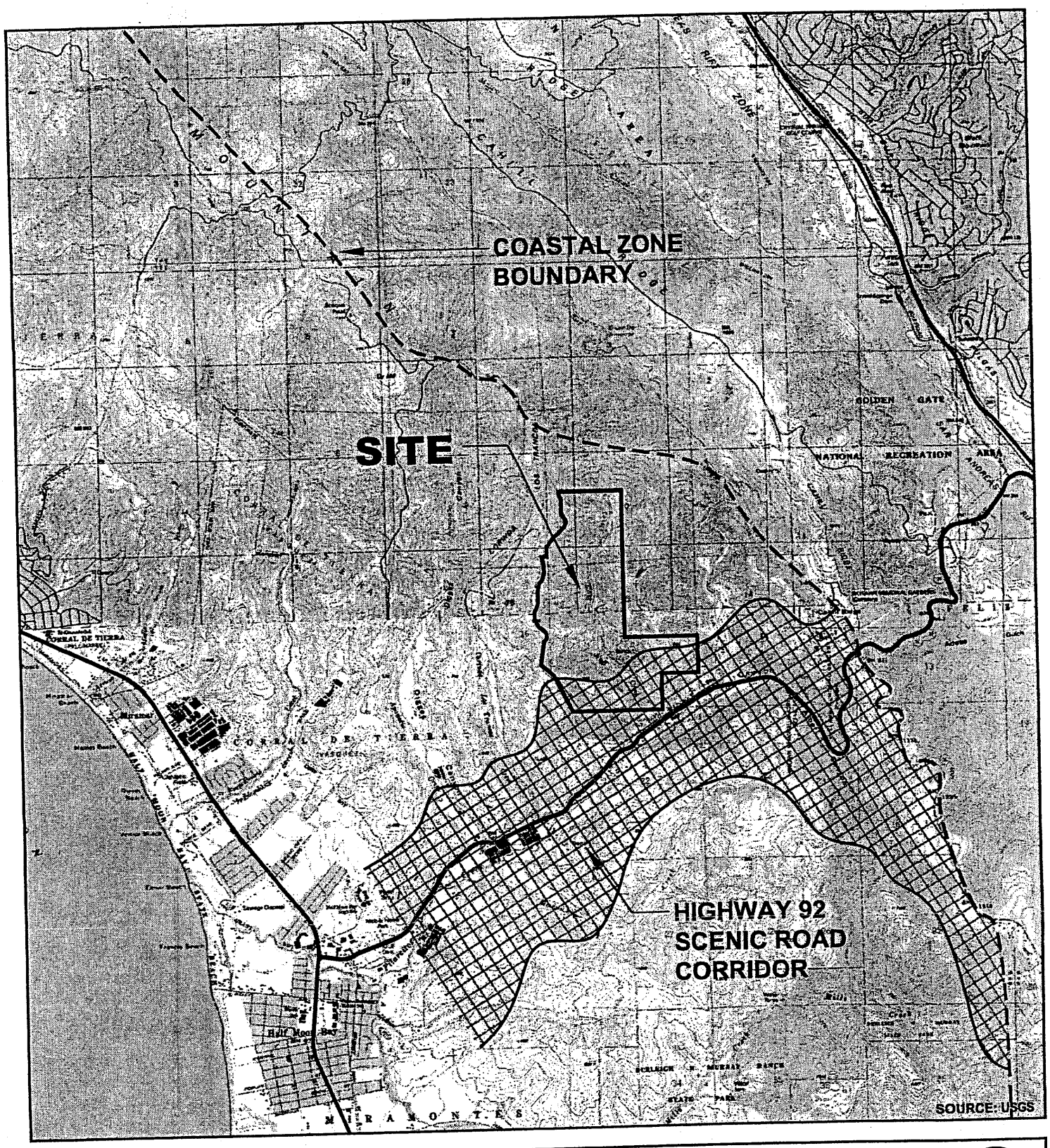
(Resource Management) designation. Quarries are allowed by permit in the RM district. The RM designation was changed to PAD (Planned Agricultural District) and then back to RM during the early 1980's; the current zoning designation of the quarry property is RM-CZ/CD (Resource Management/Coastal Zone/Coastal Development District).

The RM (Resource Management) district is used to guide the use of land in the General Open Space category of the Local Coastal Plan. This zoning district (See Appendix E) promotes agricultural uses and recreational uses but requires Conditional Use Permits for other uses. In the present case the quarry operator is seeking approval of an amended reclamation plan in conjunction with the amended quarry permit and amended coastal permit.

3.070 ACCESS AND TRAFFIC CONSIDERATIONS

3.071 Access. State Highway 92 runs in an east-west direction through Albert Canyon past the Pilarcitos Quarry entry road. It is one of the few routes through the coastal mountains and therefore very important for commuters traveling between Highway 1, at the coast, and Highways 280 and 101 in the central Bay Area. For purposes of traffic analysis, Highway 92 is characterized as a two-lane, rural highway. It has 12-foot wide lanes and narrow shoulders. There is a continuous passing lane on the uphill grade east of the quarry and infrequent passing lanes winding through hilly terrain on the downhill grade past the summit. In the vicinity of the Pilarcitos Quarry, however, Highway 92 follows the canyon bottom and the quarry access road enters along a flat, straight segment providing good sight distance in each direction. The quarry access road, located about 2.9 miles east of Highway 1, is paved where it joins the highway. The paving extends about 1,600 feet up a rising, curving lane to the quarry scale house and office and the access road is landscaped along both sides with pines and eucalyptus trees. This alignment obscures lines of sight into the quarry itself. Unpaved roads serve the quarry processing and loading areas. Access to Highway 92 is regulated by a stop sign. During times when there are large projects and many loaded trucks leaving the site, the regulation of truck departures is provided by a clock and flag man located on the access driveway near the junction with Highway 92.

3.072 Traffic. The most critical traffic consideration relative to the quarry operation is the relationship between quarry haul trucks and passenger cars using Highway 92. Peak commuter use occurs in the westbound direction in the afternoon and in the eastbound direction in the morning. West of the quarry, Highway 92 is relatively flat. East of the quarry entrance road, Highway 92 is relatively flat for a distance of about 0.6 miles and then winds steeply towards the summit at Skyline



PLANNING CONSTRAINTS

WEST COAST AGGREGATES, PILARCITOS QUARRY

8
FIGURE

0 0.5 1.0
NORTH SCALE IN MILES

QUARRY SITE

L.C.P. LAND USE DESIGNATION: GENERAL OPEN SPACE
ZONING DISTRICT: RM-CZ-CD (See Appendix E)

235

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Boulevard (Highway 35) a distance of about 2.3 miles. Highway 92 then continues its winding course down about 2.1 miles to a signal by the Crystal Springs Reservoir at the bottom of the hill. Motorists can travel south or north from the signal to connect with Highway 280. A continuous passing lane for eastbound traffic begins about 0.6 miles east of the quarry entrance road and continues for about 1.2 miles to a point about 0.5 miles short of the summit. There are no turnouts for eastbound traffic east of the summit.

Traveling westbound from the signal at the Crystal Springs Reservoir there are two turnouts for passing. One is about 0.75 miles from the signal and the other about 1.95 miles from the signal. There are no turnouts for passing in the westbound direction between the summit and the quarry entrance road.

Over the years of operation about 80 percent of the quarry's business has been oriented toward the central bay. This means that the majority of quarry haul trucks are loaded as they travel east from the quarry and that most trucks travelling west to the quarry are empty. Empty westbound trucks were found to be capable of traveling the same speed as other traffic. The average travel time for a passenger vehicle traveling eastbound between the quarry entrance road and Highway 280 has been measured in the field at about seven minutes during A.M. peak periods. Traffic studies have concluded that large, loaded trucks travel at speeds 30-40 percent slower than other vehicles. The long passing lane that begins just east of the quarry driveway allows commuters to pass the slower moving eastbound trucks thus delays are negligible. Conditions of the quarry's current operating permit restrict the frequency of trucks departing the quarry driveway during most of the day to one every two minutes (30 trucks per hour). Only one truck every four minutes is allowed between 7:00 AM and 9:00 A. M. (15 trucks per hour). The two-minute rule would theoretically allow a total of 240 trucks to leave the quarry during a typical eight-hour day and up to 30 trucks during a single hour. In actual practice the quarry averages about 146 loaded trucks per day on an annual basis (about 18 trucks/hour).

Although quarry truck traffic is spread out over the day, there is typically more activity in the morning than in the afternoon. On a heavy use day the quarry experiences 16 per cent of its total activity during the morning peak hour. Using the annual average truck trip figure (146 trips/day) the traffic level during a high volume day would be equivalent to about 23 trucks traveling eastward in a one hour period.

3.073 Traffic Related to Recycle Operations. West Coast Aggregates, Inc. recycles broken concrete, broken asphalt and stone in conjunction with their ongoing quarry operation pursuant to a permit amendment approved in 1994. Materials come from Half Moon Bay and other nearby coastal communities as well as from San Mateo and other central peninsula cities. Generally the same number of trucks are on the road whether they are bringing recycle materials to the quarry or taking them to a landfill. Approximately 80 per cent of the trucks coming to the quarry site with recycle materials leave with a load of aggregate product. Therefore, the recycle operation, run in conjunction with the ongoing quarry, tends to reduce overall highway truck trips.

3.074 Traffic Impact Mitigation Included as Part of the Plan. Potential impacts to Highway 92 travel is mitigated by regulating the time span between loaded trucks leaving the quarry driveway and entering the highway. When large jobs requiring a large number of truck loads are scheduled, a clock and flagman will be used to insure that the departure timing regulation is met. Hauling will also be done at night to serve large jobs and to avoid peak commute times.

3.080 SERVICE AND UTILITY REQUIREMENTS

3.081 Fire and Emergency Services. Pilarcitos Quarry is located in a part of the County that is relatively removed from developed urban centers. For the most part no regular urban services are required. Emergency response and fire protection is provided by the Half Moon Bay Fire District which enjoys a cooperative agreement with the California Department of Forestry. Police services, if required, are provided by the County Sheriff's Department. The quarry operators maintain fire extinguishers and first aid provisions for incidental emergencies.

3.082 Power and Phone Services. Excavation and loading equipment used for quarry operations are diesel powered and fueled from supplies brought by truck to a storage tank at the site. The storage tank is located within a containment structure that will capture any inadvertent spills. Quarry crushers, screens, conveyers, and aggregate washing facilities are electrically operated from power brought to the site via P.G.& E. overhead power lines. Pacific Bell provides phone service to the homes and businesses along Highway 92, and to the quarry office.

3.083 Domestic Water and Sewer Service. No public water or sewer system is utilized. Toilet facilities for employees are located at the quarry office and consist of flush toilets on a septic system. Water for drinking purposes and toilet facilities is obtained from an on-site well located near the truck scales producing a sustained water supply of about 35 gallons per minute. This on-site well has been used historically for the entire quarry operation including water spray for the process plant and water for dust control on the internal quarry roads. Water is pumped from the well into a two-tank storage system containing approximately 13,000 gallons from which water is drawn as needed. The tanks are typically maintained in a filled condition.

3.084 Water for Quarry Operations. Water for dust control is obtained from two sources. One is the two-tank storage system described above. The other is from a new well established in 2004 that is located near the process plant. Maximum water use during dry summer months is estimated to be approximately 11,000 gallons per day for dust control. Water used in the aggregate washing plant is obtained from the sediment pond system or from the second well and is continuously recycled through the plant.

3.085 Water for Fire Suppression. Water for fire fighting purposes can be pumped directly from the two existing wells located at the center of quarry operations. Water temporarily impounded in the on-site sediment ponds is an alternative source during an emergency situation.

3.086 Water for Reclamation. The existing on-site wells are used as a source of water for temporary irrigation of revegetated areas. After plant materials are established the temporary drip irrigation systems are removed. The on-site wells will be retained for possible use as a source of water for livestock or irrigation following mining and reclamation. General open space/rangeland has been identified as the preferred end use.

3.087 Service and Utility Impact Mitigation Included as Part of the Project. The quarry operation is self-sufficient. All services and utilities are in place and can be extended as the area of mining changes over time. Water use from two private wells does not exceed the annual recharge of the Nuff Canyon groundwater basin (See Section 3.102).

3.090 CLIMATE AND AIR QUALITY

3.091 Climate. Weather is strongly influenced by the proximity to the Pacific Ocean and it is modified locally by the mountainous terrain of the quarry site. During the summer months there is persistent morning fog. During the winter months the climate is cool and wet. Extreme high or low temperatures are rare. Mean maximum temperatures range from about 56 degrees (F) in January to about 68 degrees (F) in July. Average annual rainfall over the quarry property has been estimated at 28 inches (Rantz, 1974). The most frequent winds throughout the year blow from the north and northwest resulting in air flow down the canyon in which the quarry is located.

3.092 Air Quality. Ambient air quality at the quarry site is excellent. The remote location of the quarry away from urban centers is one factor and the natural movement of air from the influence of the ocean is another that guarantees rapid dispersion of equipment exhaust and dust.

3.093 Dust Emissions. Uncontrolled dust from the mining operation could be an annoyance to quarry workers, however the mining property is so large that no discernible effect is expected on non-mining properties. Dust particles smaller than 10 microns (PM^{10}) can be inhaled into human lungs and are capable of causing health problems. Dust control measures, therefore, have been focused on controlling PM^{10} emissions.

Dust can be generated by the action of moving rock and soil materials, by movement of aggregate through crushers, screens and along conveyers, by loading from storage to haul trucks and by the movement of vehicles over the unpaved surfaces on the quarry floor. In addition to these sources, dust can be blown by wind acting on aggregate storage piles. The ambient moisture level in the aggregate is sufficiently high that dust is not normally a problem. This coupled with moisture that is added during the wash process mitigates dust. Additional mitigation is provided by water sprayed from a water truck on ground surfaces and storage piles, and the requirement that all loaded trucks pass under a spray bar, located just south of the scale house, before they leave the quarry site. All operations are regulated by permits from the Bay Area Air Quality Management District (BAAQMD).

3.094 Air Quality Impact Mitigation Included as Part of the Project. The high ambient moisture level in the ground minimizes dust. The aggregate washing process adds moisture to the material being processed. Water spray is used to suppress fugitive dust on internal roads, on aggregate storage piles, and on loads of loose aggregate leaving the quarry site. Excavation equipment is maintained to meet factory specifications for control of engine emissions. Current permits are maintained from the Bay Area Air Quality Management District.

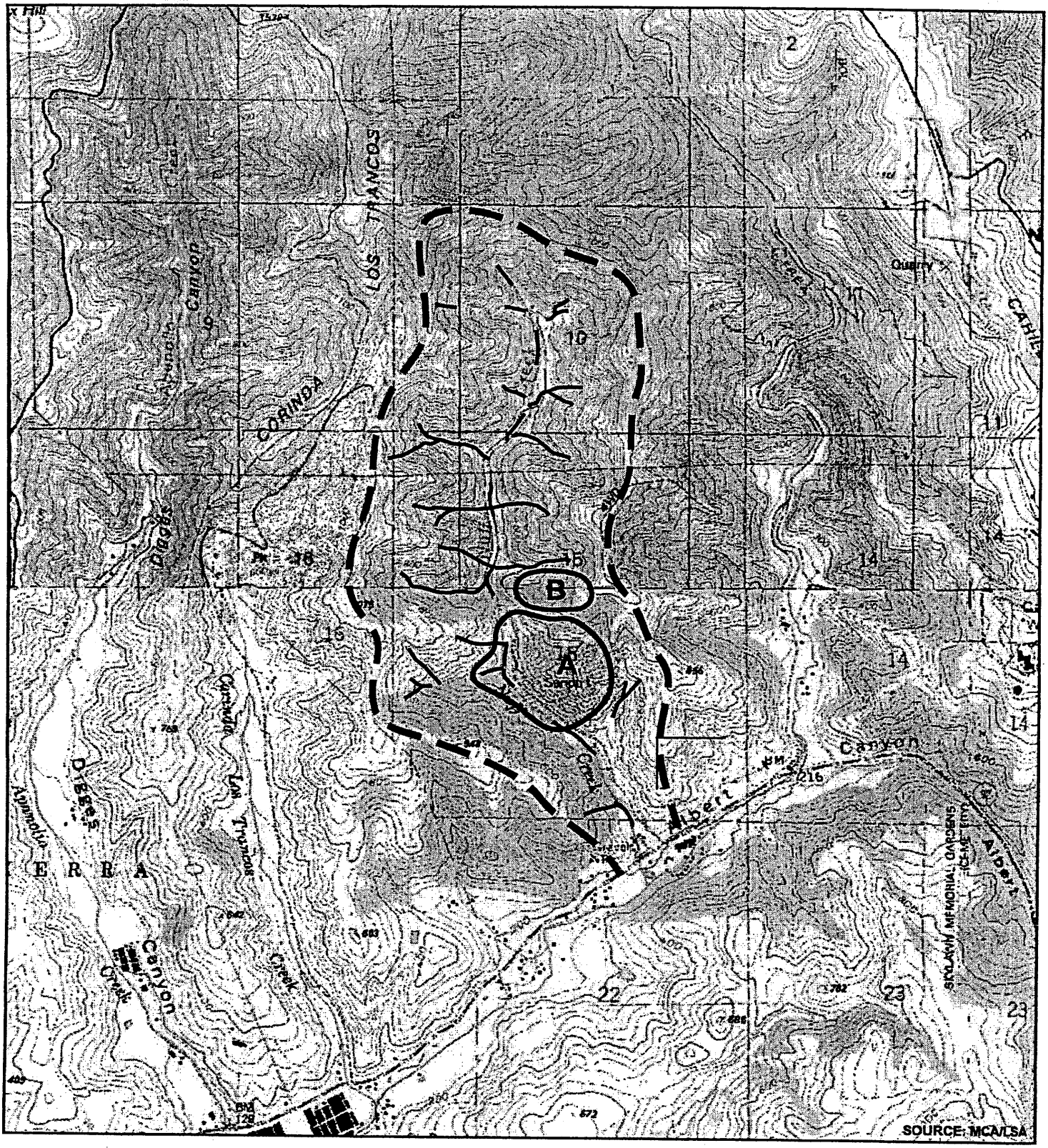
3.100 DRAINAGE, SEDIMENT CONTROL, AND POLLUTION PREVENTION

3.101 Drainage. All of the property that is subject to quarry activity is part of the Nuff Creek watershed. This is shown on the Drainage and Watershed Map, Figure 9. The entire Nuff Creek watershed above Highway 92 measures approximately 690 acres. The quarry property, at 593 acres, comprises about 86% of the total watershed. The northerly 0.9 miles of the quarry property and the southerly 0.25 miles drain more or less naturally by sheet flow and down steep ravines in the sides of the canyon to Nuff Creek. Earth berms have been constructed to protect the creek for a short distance above and below the current center of operations. A culvert has been installed beneath the quarry floor for a distance of approximately 1,400 feet through the current center of operations to maximize the usable area for rock processing and to eliminate the possibility of sediment entering the creek.

An area of approximately 53.31 acres (See Figure 4) is currently disrupted by quarry activities. The total drainage involved, including unaffected slopes above the preferred next new (7.36-acre) mining area, is estimated at 89.31 acres. Using standard runoff calculations for this area, the 20-year/1-hour design storm required by SMARA for sediment and erosion control facilities, would yield a flow of about 51.65cubic feet per second (cfs). Runoff has been estimated using an adjusted "C" value of 0.69 for the disturbed quarry area and a "C" value of 0.56 for the undisturbed areas. Rainfall intensity "i" is estimated at 0.964 inches for the 20-year/1-hour design storm. When the future work area disturbance is added in, the total future disturbed area is estimated at 62.44 acres and the total undisturbed area at 26.87 acres. The Rational Formula Q = CiA results in a future runoff rate of 56.04 cubic feet per second (cfs).

All of the flow from the current work area is channeled through a series of interconnected sediment basins located on the canyon floor. The sediment basins are regularly cleaned to maintain capacity for runoff and sediment. Nuff Creek continues its flow south of the quarry work area along a very deep and wide channel through a culvert beneath Highway 92 where it ultimately joins Pilarcitos Creek. The total watershed of Nuff Canyon above the quarry outfall, measuring approximately 405 acres, is conservatively estimated to yield about 226 cfs from the 20-year/1-hour design storm.

239



0 1000 2000

NORTH SCALE IN FEET

DRAINAGE

WEST COAST AGGREGATES, PILARCITOS QUARRY

9

FIGURE

A	DRAINAGE MODIFIED BY CURRENT QUARRY OPERATION
B	PROPOSED INITIAL EXPANSION AREA
	NUFF CREEK WATERSHED
	DRAINAGE COURSES

210

3.102 Groundwater Resources. In December, 2003, Geoconsultants, Inc. analyzed the watershed to determine the effect of groundwater pumping on the Nuff Creek aquifer. The analysis concluded that roughly 14 inches of the total average rainfall (28 inches) is lost to evapotranspiration and replenishment of moisture in the near surface soils. Of the remaining 14 inches, about nine leaves as surface runoff and five inches (0.42 feet) are available for aquifer recharge. Therefore, up to 248 acre feet of water could be pumped each year without depleting the renewable groundwater resources on the property. This is equivalent to about 154 gallons per minute.

3.103 Sediment Control. A series of interconnected sediment basins has been constructed on the quarry floor in the current work area to remove sediment from the quarry slope runoff. The sediment basins are typically at least six feet deep, contained by earthen berms having two feet of storage depth, two feet of settling depth and two feet of freeboard above the outlet. Using a 20-year/1-hour design storm as required by SMARA for sediment and erosion control facilities, it is estimated that a total sediment pond area of 137,500 square feet should be provided for the current disturbed area to remove sediment from the runoff water. At the present time the constructed pond capacity is substantially larger than the minimum needed to accommodate these quantities. When quarrying begins at other portions of the site as planned, the sediment basin capacity will be adjusted accordingly by adding new ponds at each site. Ponds are typically fitted with two outflow pipes so one pipe can carry outflow while the other is being serviced.

3.104 Pollution Prevention. Pilarcitos Quarry operates under a general permit issued by the State Water Resources Control Board pursuant to the National Pollution Discharge Elimination System (NPDES). The quarry has been assigned Facility #2 41S009925. Both a Storm Water Pollution Prevention Plan (SWPPP) and a Hazardous Materials Business Plan (HazMat) have been prepared. The SWPPP addresses the elimination of pollution from stormwater runoff and the HazMat addresses the proper handling of fuels, lubricants and other hazardous materials. The SWPPP Best Management Practices are included as Appendix G. Runoff from the exposed quarry slopes is directed through a series of sediment traps and sediment basins before it is allowed to enter the creek. The sediment basins provide runoff detention as well as sediment control.

Petroleum products are stored in secondary containment. Fueling and equipment maintenance is performed on a concrete pad at the maintenance building. Equipment and materials necessary to clean up spills are kept on hand for easy access.

Incoming loads of recycle material are inspected by the scale operator. Loads containing wood, plastic and vegetation are rejected as are loads that smell of chemicals or petroleum. No debris from building demolition is accepted in order to avoid the possibility of asbestos residue. The driver of each load must sign a manifest alleging that the load is free of contaminants. A sample manifest is included as Appendix I. The location where recycle material is unloaded is enclosed by a berm to prevent runon and runoff of rainwater.

3.105 Drainage and Sediment Impact Mitigation Included as Part of the Project. The risk of polluting Nuff Creek is minimized by maintaining a system of sediment traps and basins to capture runoff water and to remove sediment before stormwater is allowed to leave the site. These sediment control facilities are designed to accommodate the 20-year, 1-hour design storm and are cleaned to maintain design capacity. Recycle material brought to the site is inspected to insure that only clean material is imported. Nuff Creek is culverted beneath the quarry floor through the center of operations but will be restored as an open creek when mining has been concluded.

3.200 BIOTIC RESOURCES

3.201 Updated Biological Information. A comprehensive biological assessment was conducted in 2004, and updated in 2006, and can be used to supplement the information presented in the earlier 1973 EIR (See Appendix H). Environmentally sensitive habitat areas have been identified on the Grading Plans, Figures 13a, b and d, and on the Environmentally Sensitive Habitat Map, Figure 11. Vegetative Patterns are shown on the Vegetation Map, Figure 10.

3.202 Vegetation. Patterns of vegetation within the quarry property are clearly influenced by the availability of sunlight and moisture. A marked difference in density of cover can be seen on each side of the deep, north-south oriented canyon through the site as shown on the Vegetation Map, Figure 10. Brush cover is much thicker and more trees are found on the east facing side slopes than on the west facing side slopes. Similarly, the south facing slopes of the spur ridges have less growth than the north facing slopes. In only a few locations do the ridge tops and upper slopes have grass cover free of brush invasion. Most notable of the tree species on the site are the mature Douglas fir (*Pseudotsuga menzesii*), found in the ravines and on the east facing slopes, and the riparian species such as arroyo willow (*Selix lasiiolepis*), yellow willow (*Selix lasiandra*) and red alder (*Alnus rubra*), found on the lower slopes and along Nuff Creek in the canyon floor. Although coast redwoods (*Sequoia sempervirons*) are not currently prominent on the quarry property, the climate and exposure is favorable for this native coastal species. A comprehensive biological assessment was conducted in 2004 and has been used to supplement the information presented in the earlier 1973 EIR (See Appendix H).

Dense brush cover on the east facing side of the canyon consists primarily of wild blackberry (*Rubus ursinus*), wild geranium, poison oak (*Rhus diversiloba*), coffeeberry (*Rhamnus californica*), lupine (*Lupinus albifrons*), ceonothus (*ceonothus thyrsiflorus*),, coyote brush (*Baccharis pilularis*) and willow. On the west facing side of the canyon the brush cover is typically not as dense and contains lower growing species including monkey flower (*Diplacus aurantiacus*), ceonothus, coyote brush and sage (*Salvia mellifern*). Native herbaceous species include bedstraw (*Galium sp.),* wild cucumber (*Marah fabaceus*), and mugwart (*Artemesia douglasiana*). Non-native species include German ivy (*Senecio mikanioides*) and poison hemlock (*Conium*).

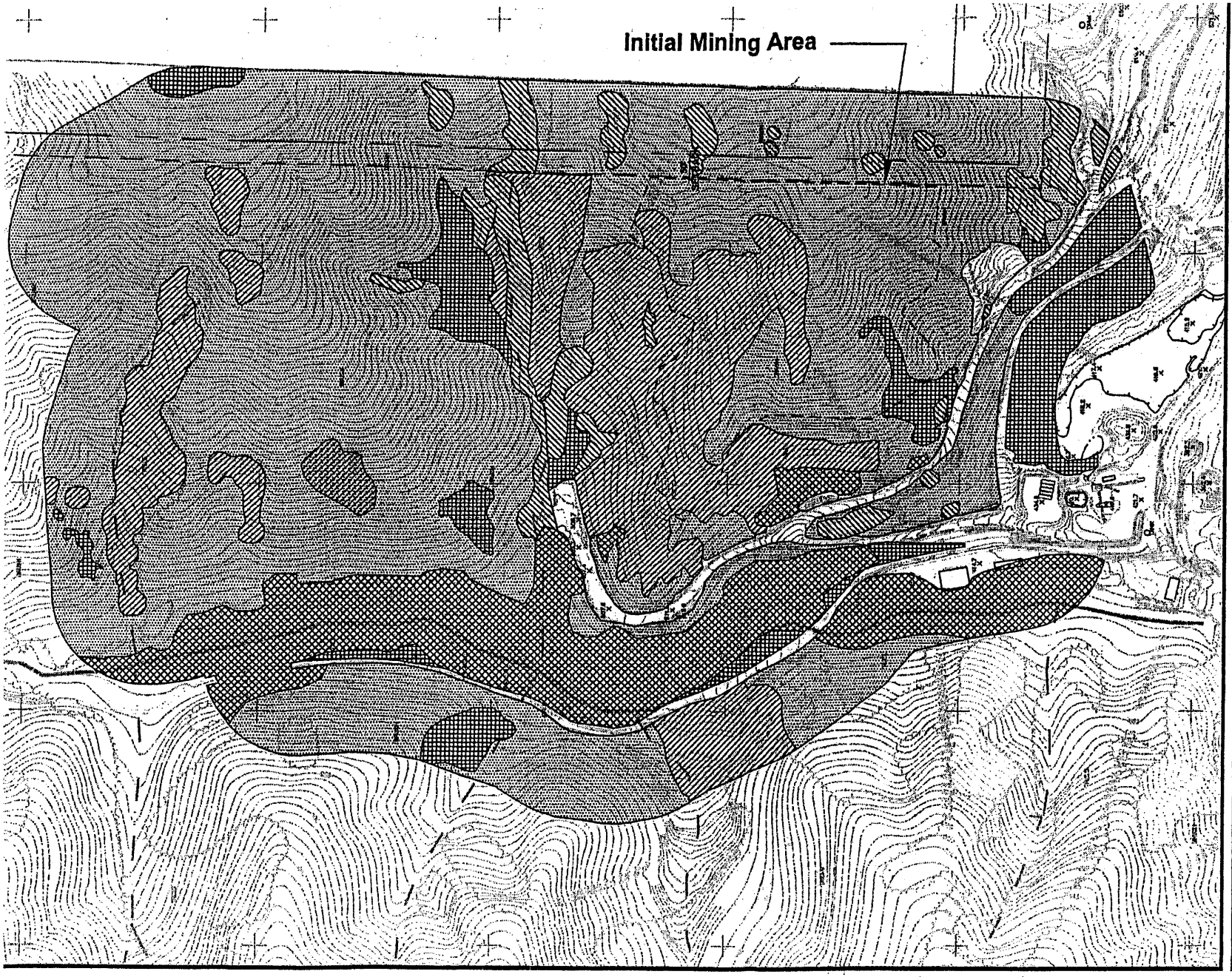
Douglas fir, alder, willow, ceonothus and lupine have been used in previous test plantings on the disturbed quarry slopes and have been utilized in quarry revegetation

efforts to date. Temporary drip irrigation has been utilized at the outset of new plantings to help establish plantings and has been discontinued after two years.

3.203 Non-Native Vegetation. Monterey cypress (*Cupressus macrocarpa*) have naturalized on the site in a few locations. Non-native Monterey pine (*Pinus radiata*) were planted some time in the past to serve as a visual screen along the quarry access road. Eucalyptus trees, introduced to many areas of the coast for wind protection, exist in the canyon floor throughout the site and are heavily concentrated near the mouth of the canyon where they form part of the visual buffer between Highway 92 and the site interior. Pampas grass (*Cortaderia jubata*) has colonized from outside sources on some of the quarried slopes. The quarry operator continues to remove accessible Pampas grass and eucalyptus saplings in compliance with permit conditions.

3.204 Wildlife. As documented in the project EIR and recent biological assessment, there are several habitats associated with the patterns of vegetative cover. In general the relatively open slopes with grass and light brush cover are used for browsing and hunting while the areas covered by dense brush and trees provide nesting and wildlife cover. Although the numerous side canyons have only intermittent drainage courses in them, Nuff Creek runs year round and is an important source of drinking water for all wildlife species. The 1973 project EIR reported that deer, coyote, fox, bobcat, skunk, mice and ground squirrels are the major mammals found in the area. Revegetation efforts in the future may be hindered by the presence of deer.

3.205 Biological Impact Mitigation Included as Part of the Project. Environmentally Sensitive Habitat Areas (ESHA) and buffer zones have been identified and are shown on the Vegetation Map, Figure 10. Grading plans for the proposed initial expansion area and all future mining sites have been designed to avoid encroaching into the buffer zones and protective fencing is proposed to stop loose rock from rolling downslope into the sensitive areas. A conveyor system will be installed as an alternative to hauling rock by truck or loader to the process plant. Native plant species are used in the revegetation of land disturbed by quarry operations. Invasive Pampas grass and eucalyptus are removed in compliance with permit conditions.



WEST COAST AGGREGATES

PILARCITOS QUARRY

VEGETATION MAP

LEGEND

- PERENNIAL STREAM
- INTERMITTENT STREAM
- RED ALDER RIPARIAN FOREST/STAND
- SPARSE SCRUB AND HERBACEOUS VEGETATION
- DOUGLAS FIR STAND
- ARROYO WILLOW THICKET
- COYOTE BRUSH SCRUB
- PROPOSED INITIAL EXPANSION AREA

NOTE:
See Biological Assessment for Vegetation Map of the entire site.

10

FIGURE
PAGE 30

SCALE IN FEET
0 100 200 400
NORTH

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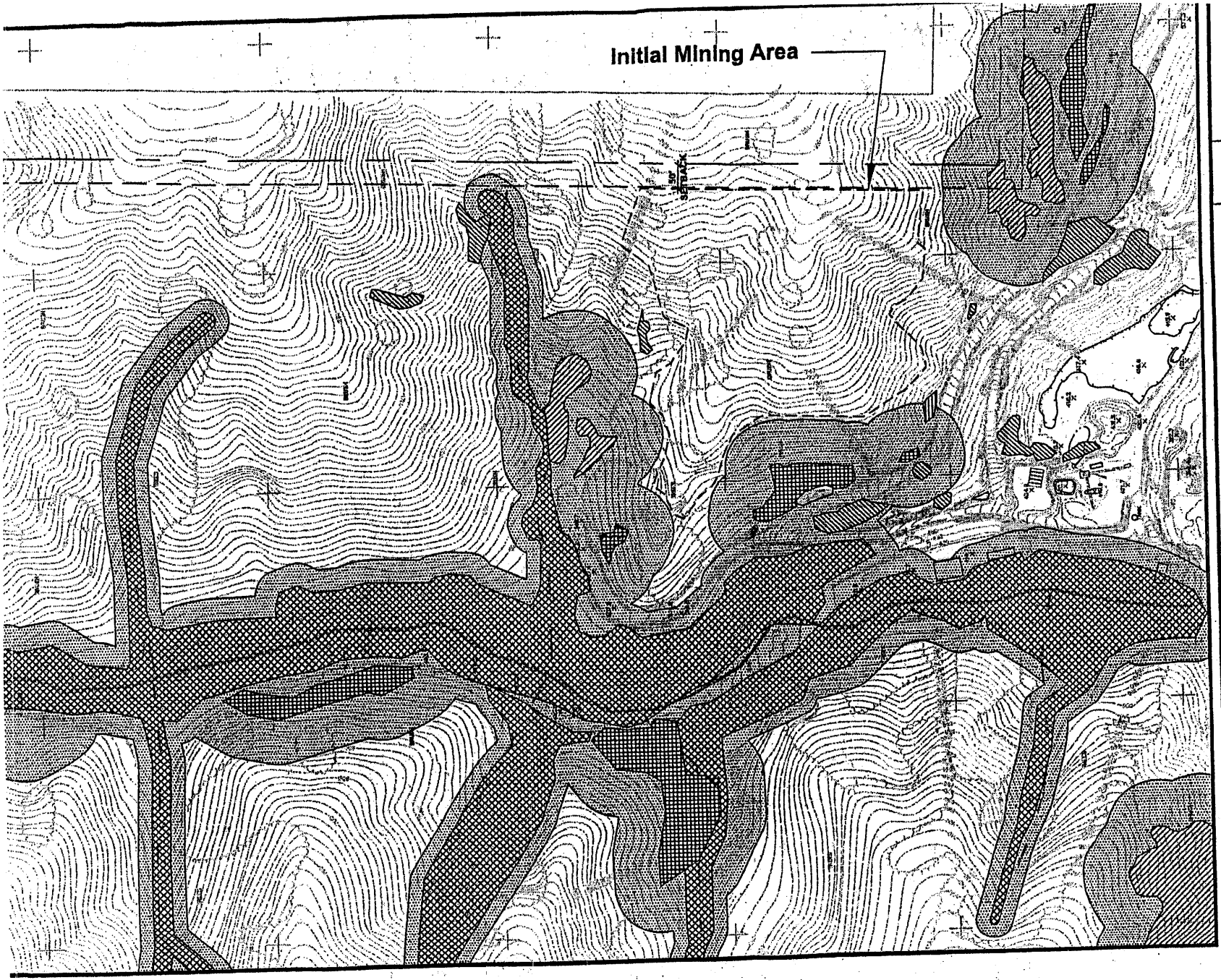

WEST COAST AGGREGATES

PILARCITOS QUARRY

ENVIRONMENTALLY SENSITIVE HABITAT AREAS

LEGEND

- PERENNIAL STREAM
- INTERMITTENT STREAM
- RIPARIAN
- WETLAND
- WILLOW–WETLAND
- WILLOW–DRY
- WILLOW–OTHER
- BUFFER
- PROPOSED INITIAL EXPANSION AREA

NOTE:
See Biological Assessment for Environmentally Sensitive Habitat Area of the entire site.

11

FIGURE
PAGE 31

SCALE IN FEET
0 100 200 400
NORTH

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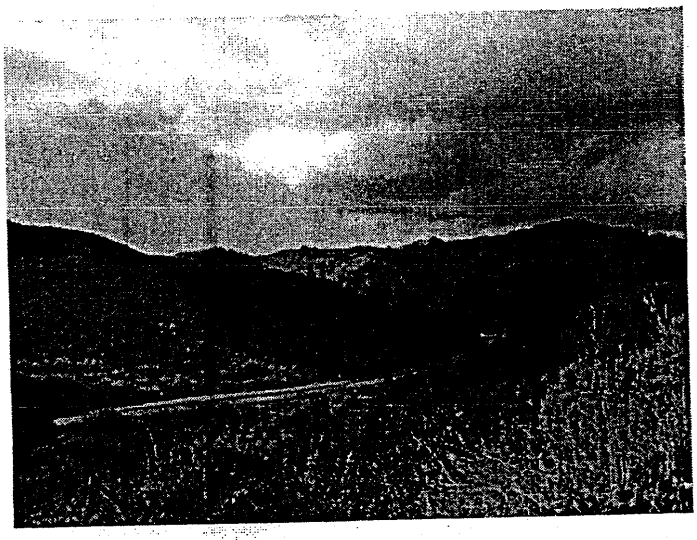
3.300 VISUAL EFFECTS

3.301 Views from Off-Site. Due to its north-south orientation, the deep canyon in which the Pilarcitos Quarry is operated has a limited opening at the south toward Highway 92. Topographic features combined with the existing dense forest of eucalyptus, cypress, fir and pine at the canyon mouth effectively screen views from the highway into the canyon and toward the slopes that are subject to quarrying. Therefore, the Highway 92 scenic corridor, shown in Figure 2, is protected. At no point on Highway 92, is it possible to look directly into the present quarry area, although glimpses through the trees may be possible. This will hold true even if Highway 92 is widened in the future. Views into the quarry are possible from private properties on the south side of Albert Canyon stretching up toward Skyline Boulevard; however, these properties are sparsely developed and remain planned for agriculture or open space use. From the upper elevations of these private lands one can distinguish the disturbed land associated with the Ox Mountain landfill adjacent to the quarry property. Land disturbed by quarrying in the future, where visible from private properties, will be similarly distinguishable from adjacent vegetated slopes. Visitors to Skylawn Cemetery, located approximately 1 1/2 miles east from the quarry property, can see the uppermost slopes of the quarry property, however, the valley floor and the side slopes subject to quarrying are obscured by intervening ridges.

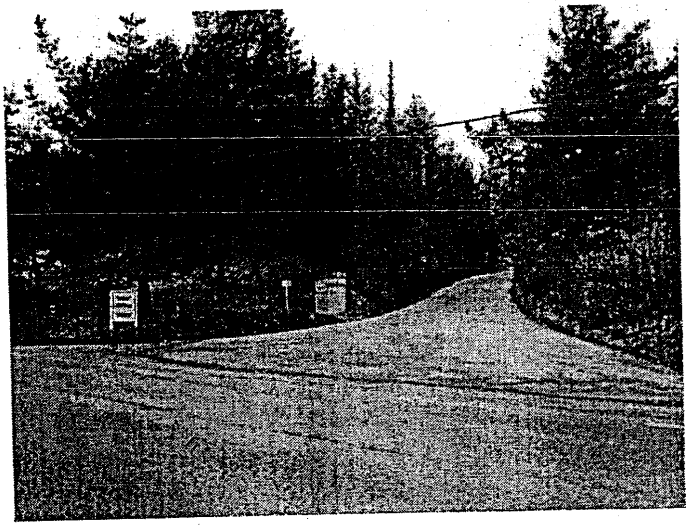
3.302 Views Within the Site. Access to the deep canyon in which the quarry activity is located is along a rising curving lane extending northward from Highway 92 through an area forested by eucalyptus, Douglas fir and Monterey pine. After following the entrance road for about 1/3 of a mile the center of quarry operations is reached and the canyon widens considerably. At this location the canyon floor slopes gradually upward in a northerly direction and is occupied by aggregate storage piles, sediment ponds, quarry process equipment, several small office structures and a truck scale.

The portion of Nuff Creek through the quarry work area is temporarily culverted; beneath the quarry floor however, the creek bed above and below the center of operations is delineated by dense growth of willow, alder, poison oak, berry vines and eucalyptus. Directly north and east of the center of operations are the slopes where extraction activities are currently located. Benches have been constructed in the completed slope above a broader terrace where excavation equipment is currently working. Contrasting visually with these working slopes on the east side of the canyon floor are the brush covered slopes to the north and the more heavily wooded slopes to the west. The spur ridges projecting downward from both sides into the canyon constrict the view north of the center of operations.

3.303 Visual Impact Mitigation Included as part of the Project. Existing topography and vegetative buffers effectively screen the quarry operation. Mining is proposed on spur ridges. Setbacks are provided from the primary ridge line so that mining begins below the crest on the spur ridges.



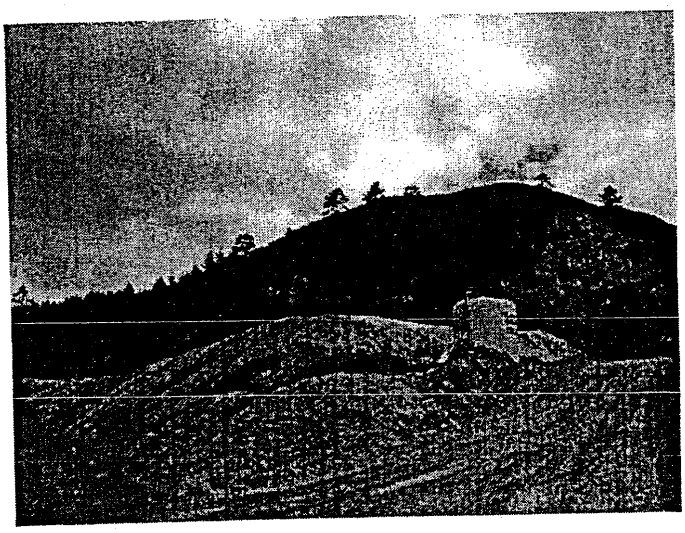
View From Highway 1



View From Entrance



View of Mining Operation



View of Expansion Area

SITE PHOTOS

WEST COAST AGGREGATES, PILARCITOS QUARRY

12
FIGURE

217

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3.400 NOISE CONSIDERATIONS

3.401 Noise Sources. Both stationary and moving noise sources are associated with the quarry. Crushers, screens and conveyors are fixed by location at a point in the valley floor about 2/3 mile north of Highway 92. These are typically the noisiest part of a quarry operation, producing a peak sound level of approximately 84 dBA registered at a distance of 100 feet from the equipment. Bulldozers working at the extraction area and loaders working in the stockpile area constitute moving noise sources producing sound on an intermittent basis at a peak level of approximately 80 dBA registered at a distance of 100 feet from the equipment. The nearest edge of the extraction area is approximately 1/2 mile north of Highway 92. Haul trucks traveling at 25 mph along the access road are moving noise sources producing sound on an intermittent basis at a peak level of approximately 77 dBA measured 100 feet from the haul route. The quarry operator warns truckers to avoid using engine brakes along the haul road so that the loud noise produced by engine brakes will not impact surrounding properties located near Highway 92.

3.402 Noise Receptors. The nearest noise receptors to the quarry operation and haul route are residences located along Highway 92. Highway related sound levels are typically greater than the quarry related sounds. This is due to the closer proximity of the highway (less than 200 feet versus quarry sources which are 1/2 to 2/3 mile away) and because intervening topography at the mouth of the canyon acts as a barrier to direct line noise transmission.

3.403 Noise Impact Mitigation Included as Part of the Project. Noise impacts from quarry operations are naturally attenuated due to distance from the quarry operations to the nearest receptors. The quarry operator can refuse to serve truckers who ignore the warning to avoid using engine brakes while traveling along the quarry access road.

4.000 MINING PLAN

4.010 AREA AFFECTED BY MINING

Pilarcitos Quarry is located in an elongated canyon in the coastal mountains northeast of the City of Half Moon Bay. (See Figure 2). Current operations affect about 53 acres (See Figure 4). Processing equipment, storage of quarried materials and truck loading activities are all located in the canyon bottom. Spur ridges along both sides of the canyon are planned to be mined in the future. Quarrying activities will ultimately affect an estimated 256 acres of the total 593 acre site. The preferred next mining site is located immediately north of the current center of operations and involves about 7.36 acres.

4.020 ACCESS TO THE QUARRY SITE AND WORK AREAS

Access to the quarry site is by way of a private haul road leading from Highway 92. The haul road connects to the highway along a flat, straight segment about 2.65 miles east of Highway 1. Where it joins the highway the haul road is paved. Access control is provided by a stop sign on the haul road. The paved segment of the haul road extends for about 1,600 feet up a rising, curving lane that is landscaped along both sides with Douglas fir and Monterey pine. The haul road within the quarry processing and loading areas is a gravel road approximately 24 feet wide. Temporary roads provide access for bulldozers and loaders moving between the hillside extraction area and the quarry floor.

4.030 STARTING DATE, ESTIMATED LIFE AND FIRST PHASE DURATION

Pilarcitos Quarry is an ongoing operation with an estimated life of 75 years. Current operations involve one of ten distinct spur ridges projecting from the eastern and western primary ridgelines that define Nuff Canyon. Future phases will involve the remaining nine spur ridges. At the planned rate of extraction the preferred next mining site located immediately north of the current center of operations would provide additional resources to be mined during the current five-year permit term.

4.040 OPERATION SCHEDULE AND STATE OF READINESS

Pilarcitos Quarry is an ongoing operation. It is expected that the quarry will continue to do most of its hauling on weekdays between the hours of 6:00 A.M. and 6:00 P.M. and that night hauling will continue to be done to complete large jobs. No hauling is done on federal holidays. Hauling on Saturdays or Sundays is only allowed with prior written approval from the County Planning Director. The quarry operates year round unless there is too much rain. On average the quarry is operated 240 days per year.

249

4.050 DESCRIPTION OF QUARRIED MATERIAL AND PRODUCTION LEVEL

4.051 Geology of the Site. Granite rock underlies the entire quarry property. A very thin layer (0-6 inches) of surface soil overlies the weathered rock on each of the spur ridges subject to mining. Very little clay content is present. Investigation at various locations on the site in the past has not resulted in finding massive deposits of unweathered rock near the ground surface.

Experience in mining at the current center of operations indicates that the upper 50-100 feet of depth contains easily ripped, weathered granite, while at depths below 100 feet the excavation equipment meets with greater resistance and pockets of harder rock are encountered.

4.052 Mineral Commodity Being Mined. Granite rock is being mined at Pilarcitos Quarry.

4.053 Composition of Mined Materials. Surface rock is recovered as general fill or processed sand. The uniformity of granule size facilitates compaction and makes the product a desirable fill. Processed sand meets specifications for use in Portland cement. Rock at depth is less weathered and can be recovered in larger blocks suitable for processing as road base and drain rock. Normal production results in approximately the following breakdown: 10% general fill; 40% sand; and 50% various grades of road base and drain rock.

4.054 Anticipated Quantity of Materials to be Mined. Pilarcitos Quarry is an ongoing mining operation expected to be mined at the rate of 840,000 to 1,100,000 tons per year. It is anticipated that production will remain at this level at least through the end of the current permit term. All of the subsurface rock is utilized. A rough estimate of reserves with the proposed 7.36-acre next mining site added, is 3.3 million tons (See Mining and Reclamation Summary, Table 2). Reserves within the overall quarry property are estimated at approximately 59 million tons.

4.055 Anticipated Quantity of Overburden. All earth materials will be used. An estimated 5,937 cubic yards of surface topsoil will be salvaged from the initial 7.36-acre expansion area for reuse during site reclamation. And, an estimated 54,044 cubic yards of intermixed sediments will be washed from the gross mineral resource and reused to facilitate the revegetation of benches, slopes and the final quarry floor.

4.056 Topsoil Salvage. The thickness of the surface soil layer on the spur ridges is generally six inches or less. From the modified plan area resulting from the initial 7.36-acre addition, an estimated 5,937 cubic yards of topsoil will be salvaged and used for re-soiling during reclamation. Salvaged topsoil will be stored on the working terrace and then spread over the completed benches as part of mining. Salvaged topsoil will also be stored along the west side of the canyon floor near the process plant.

4.057 Recycle Operations. Broken concrete, broken asphalt and stone is brought to the mining site by paving contractors and is dumped at the recycle materials

pile located along the west side of the canyon floor south of the process plant. Loaders are used to transport the recycle material to the process plant. At the process plant the material is crushed, screened and blended with the on-site mineral resource. It is anticipated that 50,000 to 100,000 tons of recycle material will be brought in each year.

4.060 DESCRIPTION OF MINING METHOD AND ON-SITE PROCESSING

4.061 Description of the Mining Operation. Pilarcitos Quarry is an ongoing, side-hill mining operation producing fill material, asphaltic concrete aggregate, landscape materials and various grades of sand, drain rock and road base from an extensive granite deposit. The operation also includes the recycling of broken concrete, asphalt and stone. Native rock is harvested from the spur ridges located along the side slopes of the canyon, and rock processing, stockpiling and loading activities take place on the canyon floor. On average the quarry operates 240 days per year. Excavation and rock processing is typically done between the hours of 6:00 AM and 6:00 PM and shipping of rock is typically completed by 4:00 PM. However, the process plant is run later when there is a need to build up stockpiles, and shipping is done during night hours for highway jobs and to supply aggregate to construction sites located in congested downtown areas.

4.062 Mining Method. The mining procedure described here is intended to be the prototype for mining of each subsequent work area in the site. The process for mining the native granite rock involves several steps. First a GPS system is used to accurately mark the boundaries of the extraction site and to locate the top edge of the excavation a minimum of fifty feet from the property line. Second, a bulldozer road is constructed from the existing access road on the quarry floor to the top of the planned excavation. Third a field fence with silt fence mounted on the inside face is installed along the boundaries between the extraction area and all adjoining environmentally sensitive habitat areas (ESHA). Fourth, a bulldozer is used to remove surface vegetation from the extraction area. Fifth, a bulldozer is used to remove topsoil from the area to be mined and push it to the side of the excavation area for temporary stockpiling waiting reuse for resoiling the benches. Soil may also be taken to the process area for stockpiling. Finally, a heavy-duty bulldozer fitted with a long shank and/or a large excavator is used to create the cut slope extending down from the initial point of entry. Where the subsurface material cannot be easily ripped it is first fractured using a sequential blasting system. Blasting in the current operation is done twice monthly. Transport of raw material from the excavation site to the process plant is done in several ways. When feasible it is pushed down the side slope and collected by loaders at the toe of the slope. In the case of the 7.36-acre area located immediately north of the current work area the material excavated from the upper 3/4 of the excavation area can be pushed down a side chute to the south. When constrained by environmentally sensitive habitat, excavated material is transported directly to the process plant by loaders, by large capacity off-road haul trucks, or by placing it on a conveyor system. This method of transport will apply to material excavated from the lower 1/4 of the 7.36-acre excavation area.

The mining cut is begun at the setback line a minimum of fifty feet from the property line and results in the creation of a working terrace that is continuously lowered as mining progresses downslope. A temporary low earth berm is maintained at the outer edge of the extraction area to prevent rock from rolling away from the work area. The mined slope is constructed with a vertical rise of one foot for each 1.25 feet of horizontal distance. Thirty foot wide benches are constructed at 100 foot intervals to catch loose material if any should fall and to convey drainage laterally to a small sediment trap constructed at the end of each bench. Benches are sloped from front to back at a two percent gradient and laterally at a two to five percent gradient. (See Grading Plans, Figures 13a, 13b and 13c).

4.063 Depth of Maximum Cut. The benched face in the current work area will extend from the canyon floor at about elevation 300 to the top of the cut at about elevation 700; a vertical distance of 400 feet. The maximum depth below original ground surface is approximately 275 feet. In the 7.36-acre expansion area the benched face will extend from the top of the cut at elevation 890 to a bottom at elevation 590; a vertical distance of 300 feet. The maximum depth below original ground surface is about 105 feet.

4.064 On-Site Processing. Typically the raw aggregate is fed into a hopper and then by conveyor to a jaw crusher for size reduction and then through several banks of metal screens to sort the crushed material by size. A conveyor system transports the screened material to stockpiles from where the materials are loaded into customer's trucks. Material smaller than 3/8-inch size is typically diverted to a surge pile and is then fed through a wash plant to remove intermixed sediment. The clean material is fed through a cone crusher and screened again to produce several grades of sand. Blending of materials can be done depending on how the conveyors are configured in order to meet specifications required by the State, County or other agencies.

4.065 Water Used for Dust Control. An on-site well located southeast of the maintenance shed building, producing about 35 gallons/minute, is used as the principal source of water for drinking and dust control. The well is located more than 100 feet from Nuff Creek. Well water is pumped into storage tanks and is drawn from the tanks through a simple pipe system as needed. Maximum water use occurs during summer months when the harvested rock, stored aggregate and haul roads tend to dry out. Water sprays at transfer points in the crushing, screening and conveying process utilize up to 1,000 gallons per day. Approximately 11,000 gallons per day is used to wet down loaded haul trucks and to supply the water truck that sprays the aggregate storage piles and the access roads.

4.066 Water Used for Aggregate Washing. Water used in the aggregate washing process is continuously recycled through the plant. Sediment removed by the wash process is transported through a slurry pipe to holding ponds for drying. Five percent or less of the process water is lost through evaporation depending on the time of year. Make-up water is pumped from the sediment pond system and/or from a second on-site well, generating about 100 GPM, located southeast of the process plant.

When water is needed from the well, it is pumped into the sediment pond system at night, and then directly into the wash plant during daytime operations.

4.067 OPERATING CONDITIONS

4.067.1 Off-Street Parking. Parking for employees is provided at the quarry office, at the scale house and at the maintenance building. Parking for business visitors is provided at the quarry office. Truck drivers are required to stay in their trucks at all times while their trucks are being loaded and weighed.

4.067.2 Access Roads. The primary access road to the quarry is paved. Spills are cleaned from the road whenever they occur. Internal roads leading through the processing and loading areas are not paved because they are subject to relocation from time to time. The unpaved roads are maintained in a smooth rut free condition by applying water and reworking the surface on a routine basis.

4.067.3 Noise Control. Noise related to mining activities is minimized by natural attenuation due to the distance between the mining operation and potential receptors. Haul truck drivers are asked to avoid using engine brakes on the access road.

4.067.4 Fencing, Posting and Security. Unauthorized Vehicular access is controlled by a lockable gate on the paved access road from Highway 92 into the quarry. The Operator minimizes unauthorized pedestrian access by maintaining field fencing at the perimeter property boundaries. Signs are posted requiring all visitors to check in at the quarry office. To protect Environmentally Sensitive Habitat Areas from rock fall and equipment encroachment a field fence with integral silt fencing is installed at the edge of the ESHA buffers prior to the startup of mining.

4.067.5 Visual Screening. Highway 92 runs in an east-west direction through Albert Canyon, a narrow valley associated with Pilarcitos Creek. In the vicinity of the quarry there are no significant side roads leading away from Highway 92 so most of the developed properties are immediately adjacent to the highway. Side canyons typically rise up away from Highway 92. The Pilarcitos Quarry is located in a side canyon rising up to the north of Highway 92. Public views from Highway 92 towards the quarry are screened by the existing mature vegetation and natural difference in elevation between Highway 92 and the quarry.

4.067.6 Setbacks to Mining. A minimum distance of fifty feet is maintained between any external property line and the closest edge of excavation. Buffers of varying widths are established around identified Environmentally Sensitive Habitat Areas. Mining excavations do not penetrate any of the environmental buffers.

4.067.7 Use of Explosives. Explosives are used to fracture rock for harvesting. A sequential blasting technique is used whereby a matrix of holes are drilled into the mineral deposit, a detonator and explosive material is placed into the bottom of each hole and the upper portion of the hole filled with gravel. A state-licensed blaster monitors the placement of explosives in the matrix of holes and, using an electronic

controller, detonates the matrix such that the explosion in each hole occurs a millisecond apart from the explosion in the other holes. This procedure causes the explosive energy to be directed laterally resulting in fracturing the rock.

4.067.8 Finished Slopes. Finished cut slopes in the expansion area will be constructed with a vertical rise of one foot for each 1.25 feet of horizontal distance. As work progresses, 30-foot wide benches are cut into the slope at 100 vertical intervals. A bulldozer is used to scarify the intervening slopes. The scarification process leaves niches that facilitate resoiling and the establishment of erosion control seeding.

4.067.9 Drainage and Sediment Control. Each bench is crowned in the middle, sloped from front to back at a two percent gradient and laterally at a two to five percent gradient to promote positive drainage. Using this design the amount of runoff to the natural drainage courses on each side of the spur ridge is about the same after mining and reclamation as it is prior to disturbance.

Before mining commences a field fence is installed at the outer boundary of the work area and a silt fence is attached to the inside face of the field fence. This fencing protects against rock and sediment entering protected habitat areas and it prevents frogs, snakes and other species of concern from entering the mining area.

Mining begins at the top of each spur ridge. As the excavation precedes downslope the finished benches and intervening slopes are constructed and a temporary working terrace is formed allowing room for equipment to maneuver and raw aggregate to be handled. A temporary berm is constructed at the perimeter of the working terrace to prevent runoff, rock, and sediment from leaving the work area. A temporary sediment pond is constructed on the working terrace and is relocated as the working terrace moves downslope. A final sediment pond is constructed when mining reaches the bottom of each spur ridge.

Runoff from the completed benches is directed to small sediment traps located at the ends of the benches. The traps are designed as shallow pits excavated into the benches with space for sediment to settle out and a drain inlet with its opening set at the level of the bench surface. Sediment accumulates in the shallow pit and clean water rises to the drain inlet. The outfall area below each trap is clad with six to nine inch diameter drain rock. The drain rock functions as an energy dissipater serving to slow and spread the runoff as it continues downslope through the silt fence and then on to the natural drainage courses at each side of the spur ridges being mined. Sediment traps on the benches and sediment ponds in the quarry floor collect sediment so that runoff water is clean before it reaches Nuff Creek.

4.068 Ongoing Maintenance Procedures. An integral part of the mining operation is the routine maintenance of drainage and sediment facilities, repair to the access roads, and cleanup of rock spills. Equipment used in the quarry operation is available for these functions. Laborers remove sediment from the sediment traps by hand. Backhoes and excavators are used to clean the sediment ponds, depending on pond size and desired pond depth. Ponds are inspected after each storm and cleaned

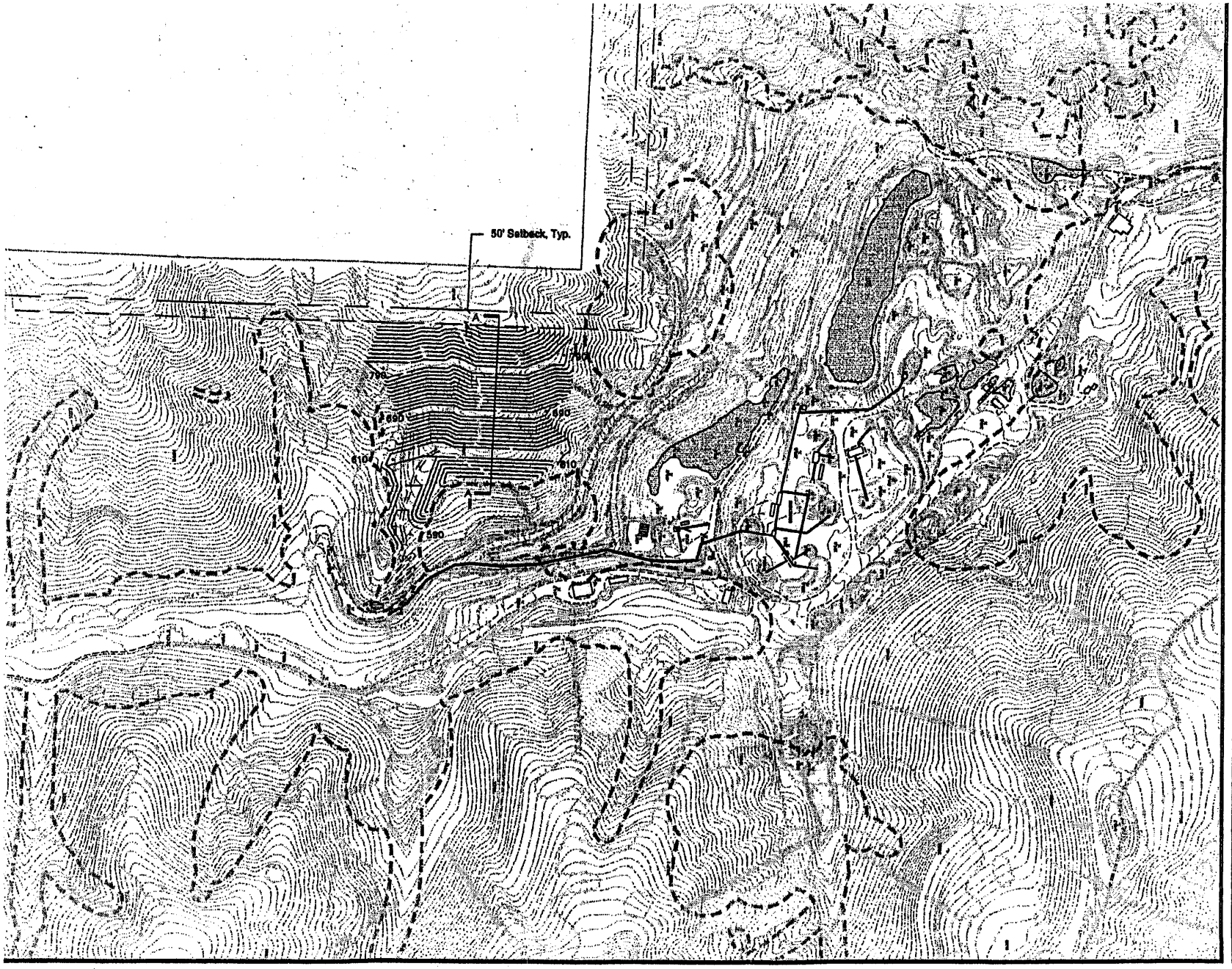
out on a regular basis. A road grader is used to smooth the haul road and access roads so that they can be safely and easily traversed by haul trucks and so runoff does not erode the travel surface. Spills at the junction of the haul road with Highway 92 and loose materials tracked onto the highway by truck tires are cleaned up whenever they occur.

4.069 MINING PHASES RELATIVE TO RECLAMATION

There are nine planned future excavation areas on the mining property, consisting of the spur ridges that project inward from the primary ridges defining Nuff Canyon (See Figure 3). The preferred initial new mining site involves expanding the current area of excavation onto the spur ridge located adjacent to and immediately north of the current center of operations in order to insure that sufficient aggregate resource will remain available during the current permit period. The current work area, with the expansion area added, is defined as a short term mining phase. Future phases of work, involving the remaining planned excavation areas, will begin as the resource is depleted in each prior location with the entire project expected to last 75 years. It is intended that all of the future mining areas will be approved for mining subject to County renewal of the mining permit and Coastal Development Permit at five-year intervals. Then as mining begins in each of the remaining mining areas, each area, in turn, will become the current short term mining phase. At this time it is anticipated that the office, scale, maintenance buildings and all of the rock processing equipment will remain at its current location throughout the remaining life of the mining operation. Aggregate material will be transported to the process area by loaders and by conveyors. This approach will minimize the impact on sensitive habitat areas and eliminate the need to culvert additional portions of Nuff Creek. Final reclamation of the quarry floor, including restoration of Nuff Creek, will occur after all mining has been completed.

Reclamation is designed to be concurrent with the excavation effort to the maximum extent practicable. As mining progresses from top to bottom of each excavation area the slopes are benched and sloped to drain towards the periphery of the excavation areas. Revegetation can proceed as soon as each bench is completed and positive drainage established. For safety purposes revegetation follows the completion of mining by one or two benches so that planting activities do not interfere with extraction activities. Therefore, the short term reclamation phase is the work done immediately following mining. Long term reclamation, involving the removal of all buildings and equipment, and restoration of Nuff Creek as an open drainage feature, can only be done when the mining work has been completed in all of the excavation areas.

Reclamation of the quarry floor area consists of eliminating the product stockpiles, removing all equipment, restoring open drainage channels, resoiling, and then reseeding the floor area and planting willow and alder along the restored open drainage channels. Reclamation of the floor area may take up to two years following the termination of mining, depending on what subsequent use might be made of the site.



WEST COAST AGGREGATES

PILARCITOS QUARRY

GRADING PLAN INITIAL NEW AREA

LEGEND

- PROPERTY LINE
- MAINTENANCE ROADS ACCESS WAYS
- SECTION LOCATIONS
- SEASONAL SPRINGS
- SURFACE DRAINAGE
- SEDIMENT POND
- LIMITS OF GRADING ON SLOPES
- EXISTING TOPOGRAPHY
- FINISHED GROUND SURFACE
- ESHA BOUNDARY

See Figure 15 for Section

13a

FIGURE
PAGE 42

SCALE IN FEET
0 300 600

NORTH

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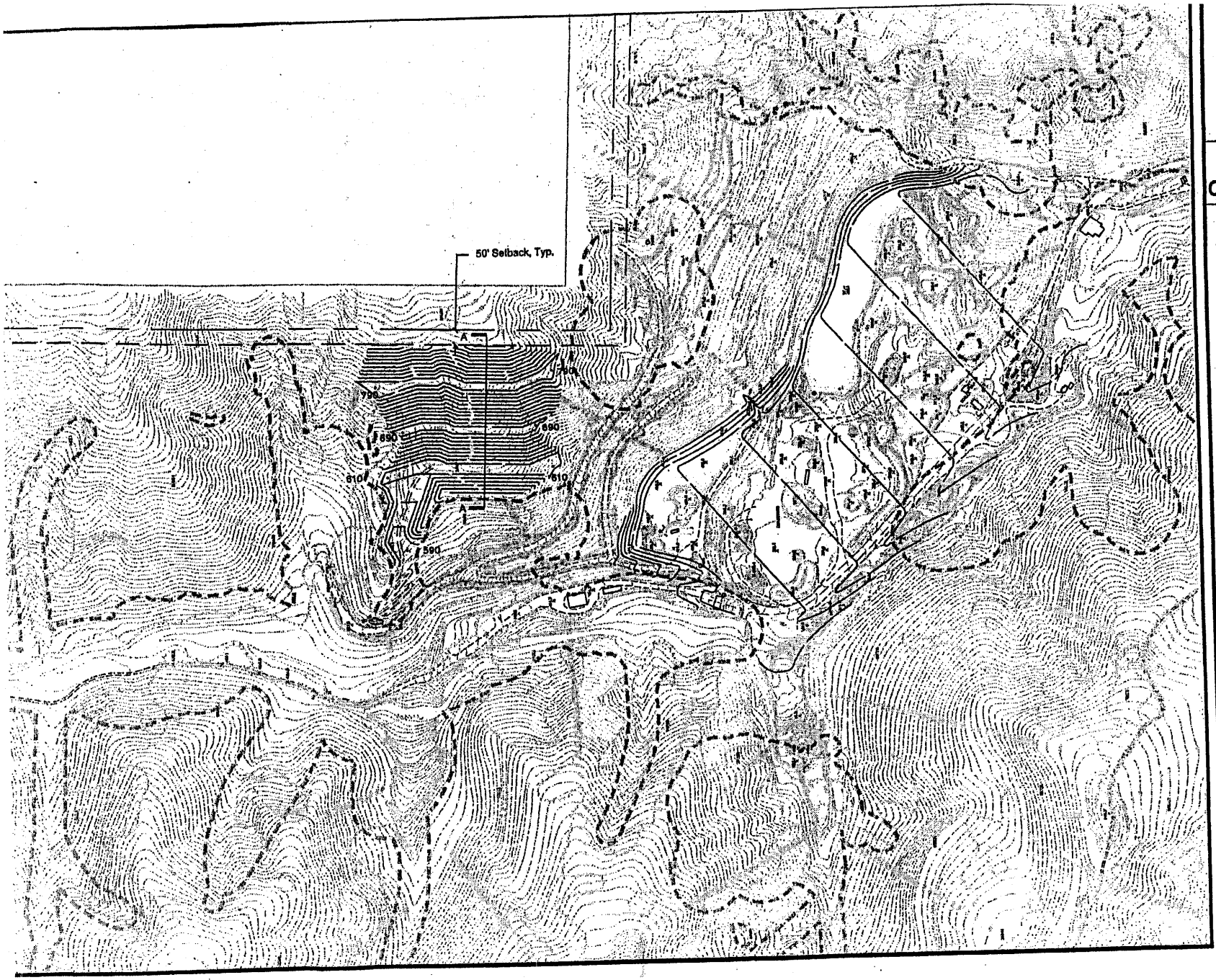

WEST COAST AGGREGATES

PILARCITOS QUARRY

FINAL GRADING PLAN CURRENT AND NEW AREA

LEGEND

- PROPERTY LINE
- MAINTENANCE ROADS ACCESS WAYS
- SECTION LOCATIONS
- SEASONAL SPRINGS
- SURFACE DRAINAGE
- SEDIMENT POND
- LIMITS OF GRADING ON SLOPES
- EXISTING TOPOGRAPHY
- FINISHED GROUND SURFACE
- ESHA BOUNDARY

See Figure 15 for Section

13b

FIGURE
PAGE 43

SCALE IN FEET
0 300 600

NORTH

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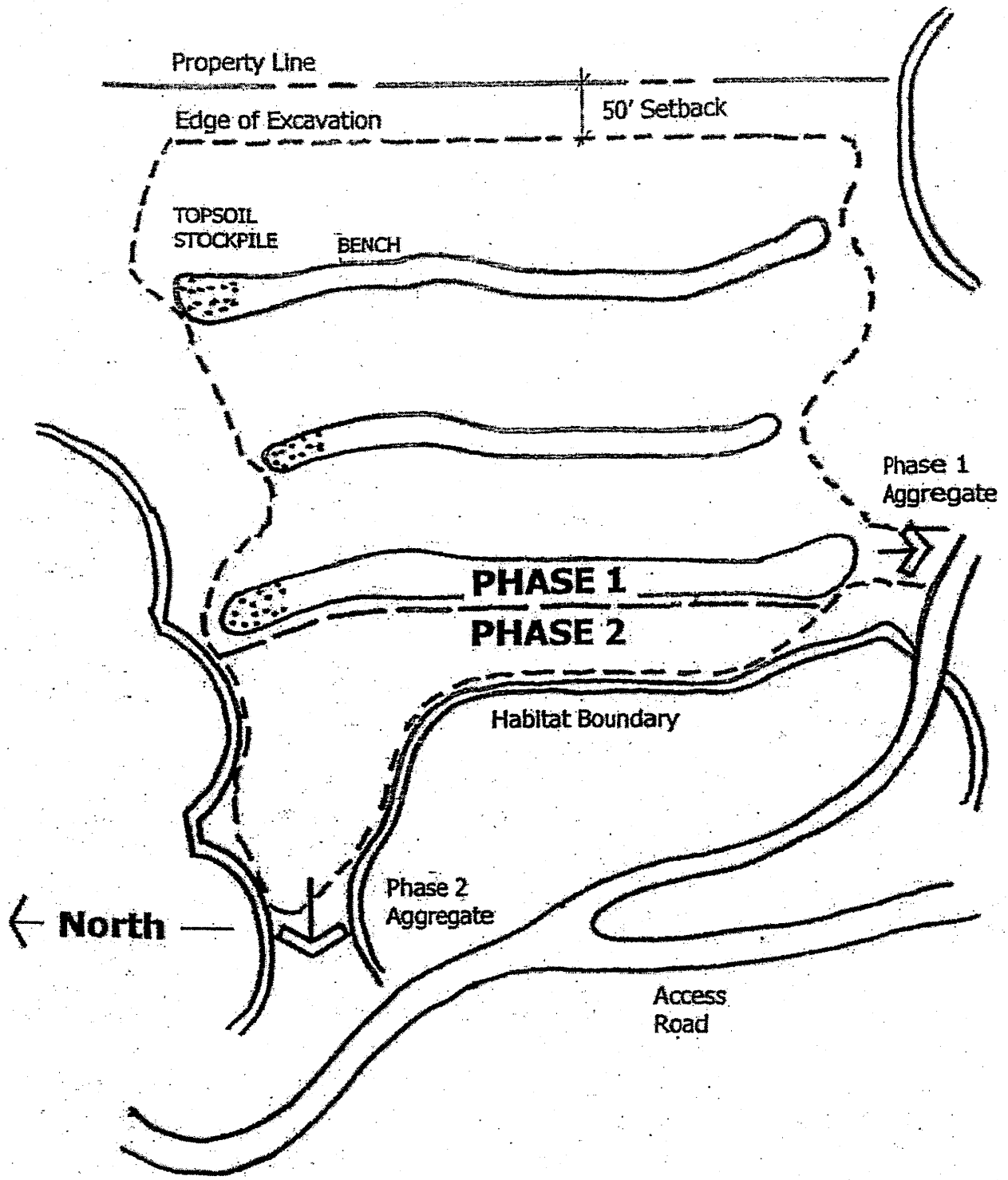
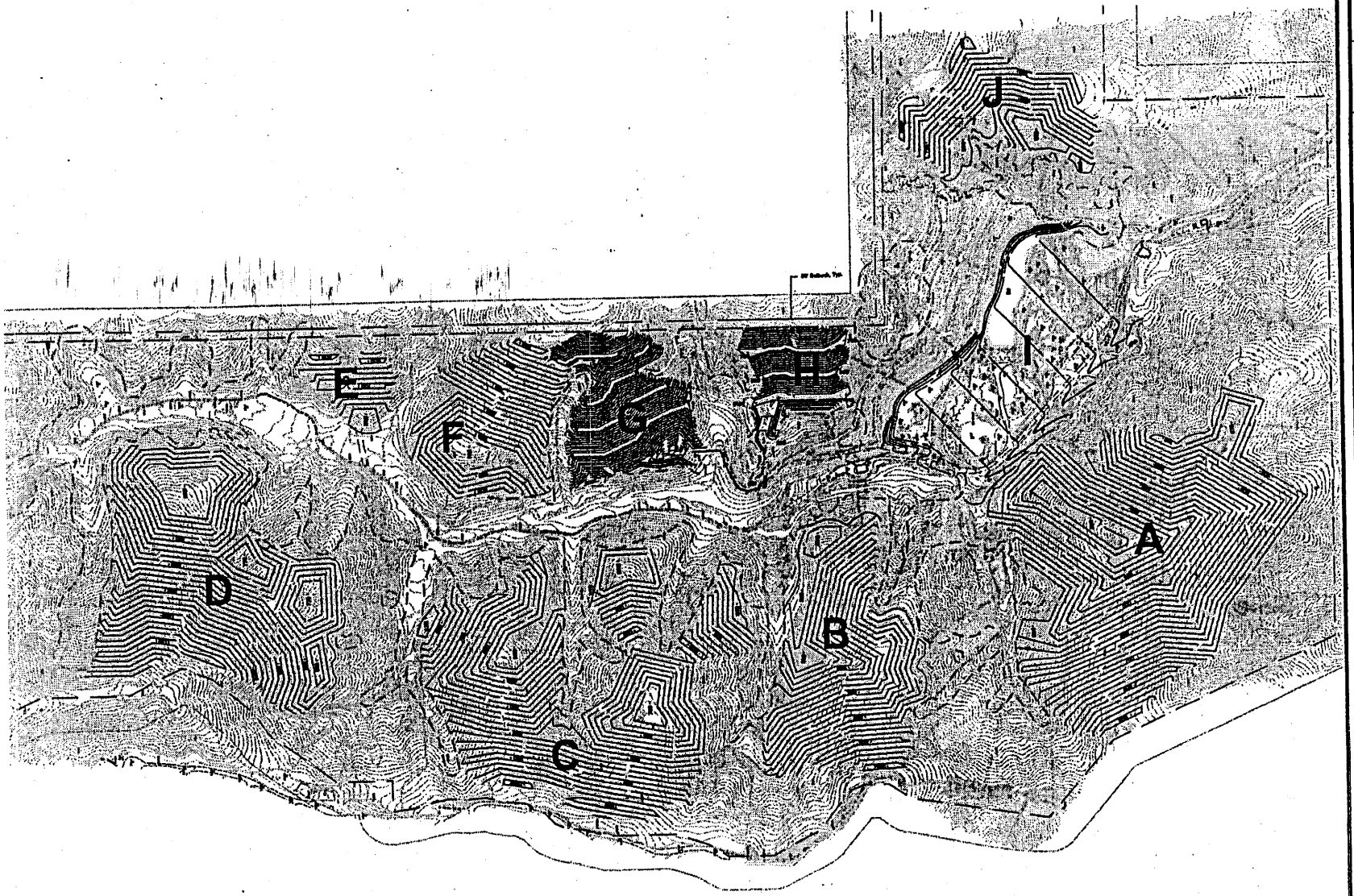


PHASING DIAGRAM - INITIAL NEW AREA

WEST COAST AGGREGATES, PILARCITOS QUARRY

13c
FIGURE

258



WEST COAST AGGREGATES

PILARCITOS QUARRY

MASTER GRADING PLAN ENTIRE SITE

LEGEND

- PROPERTY LINE
- MAINTENANCE ROADS ACCESS WAYS
- EXISTING TOPOGRAPHY
- FINISHED GROUND SURFACE
- ESHA BOUNDARY

13c

FIGURE

PAGE

SCALE IN FEET

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NORT

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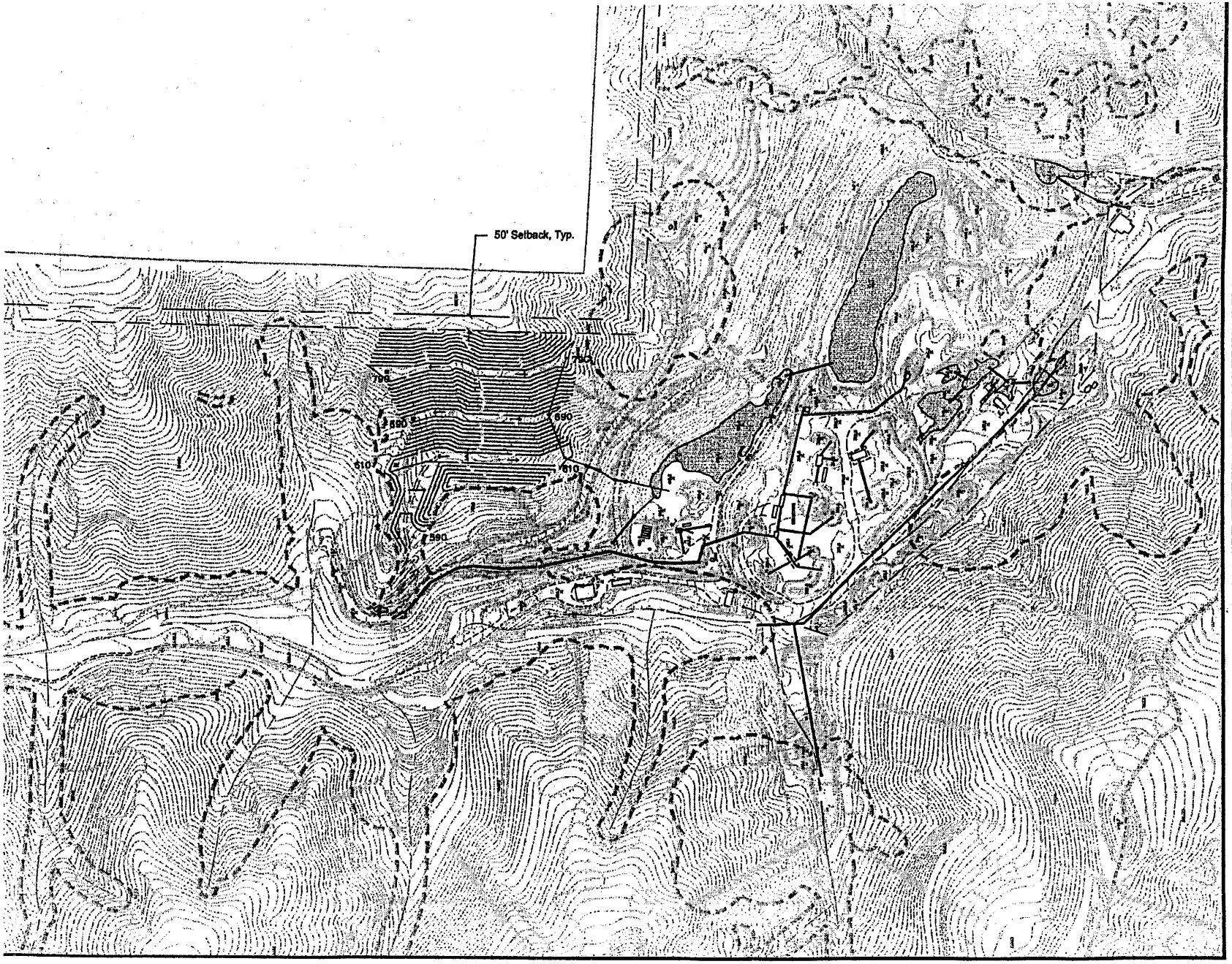

WEST COAST AGGREGATES

PILARCITOS QUARRY

DRAINAGE PLAN INITIAL NEW AREA

LEGEND

- NATURAL DRAINAGE COURSE
- DIRECTION OF FLOW
- CULVERTED DRAIN
  - ENERGY DISSIPATOR
  - INLET
- OVERHEAD UTILITIES
- SEDIMENT TRAP & CONTROLLED OUTLET (SEE APPENDIX K)

14a

FIGURE
PAGE 46

SCALE IN FEET
0 300 600

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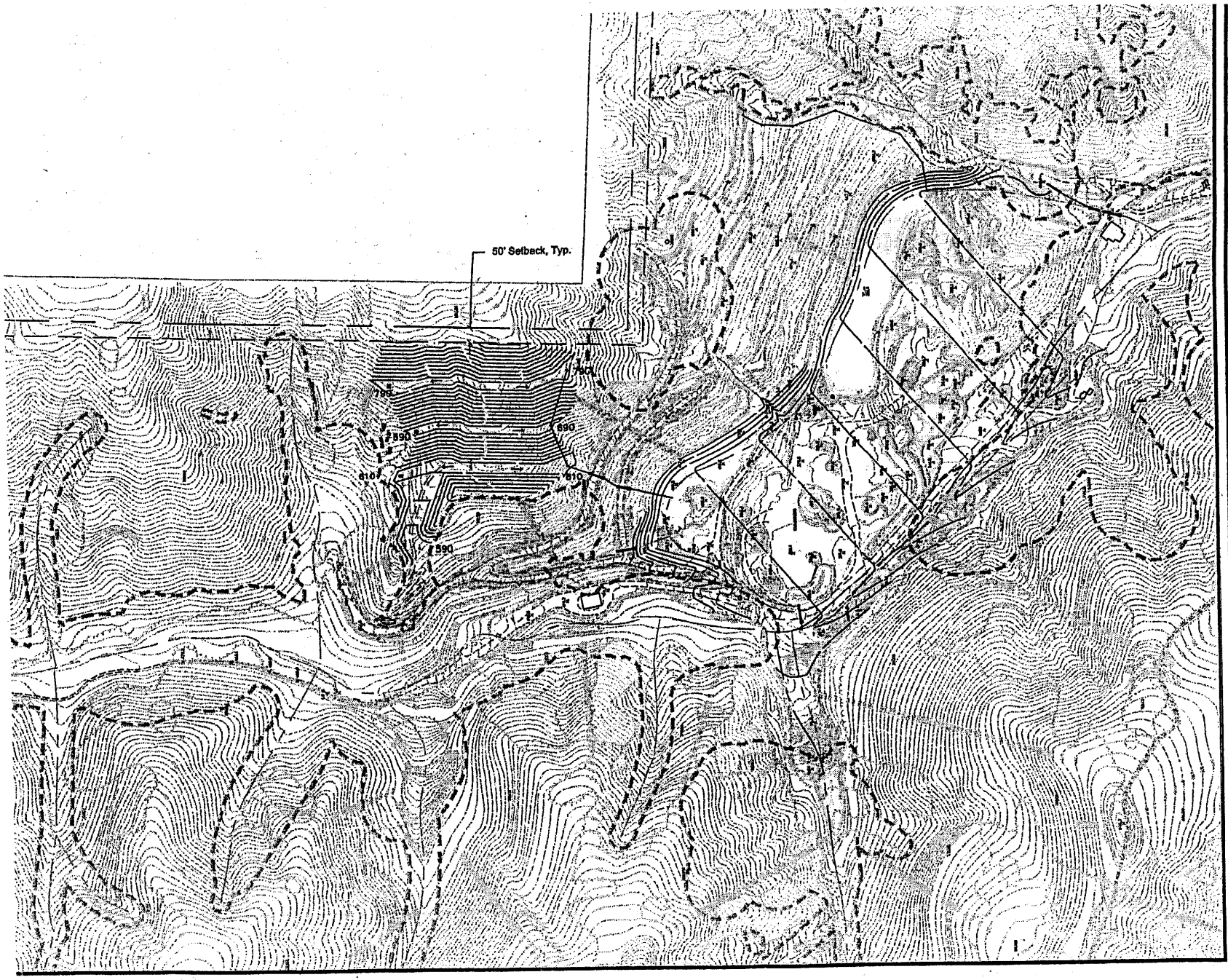

WEST COAST AGGREGATES

PILARCITOS QUARRY

FINAL DRAINAGE PLAN CURRENT AND NEW ARE

LEGEND

NATURAL DRAINAGE COURSE

DIRECTION OF FLOW

CULVERTED DRAIN

ENERGY DISSIPATOR

INLET

SEDIMENT TRAP & CONTROLLED OUTLET (SEE APPENDIX K)

14

FIGUR

PAGE

SCALE IN FEET

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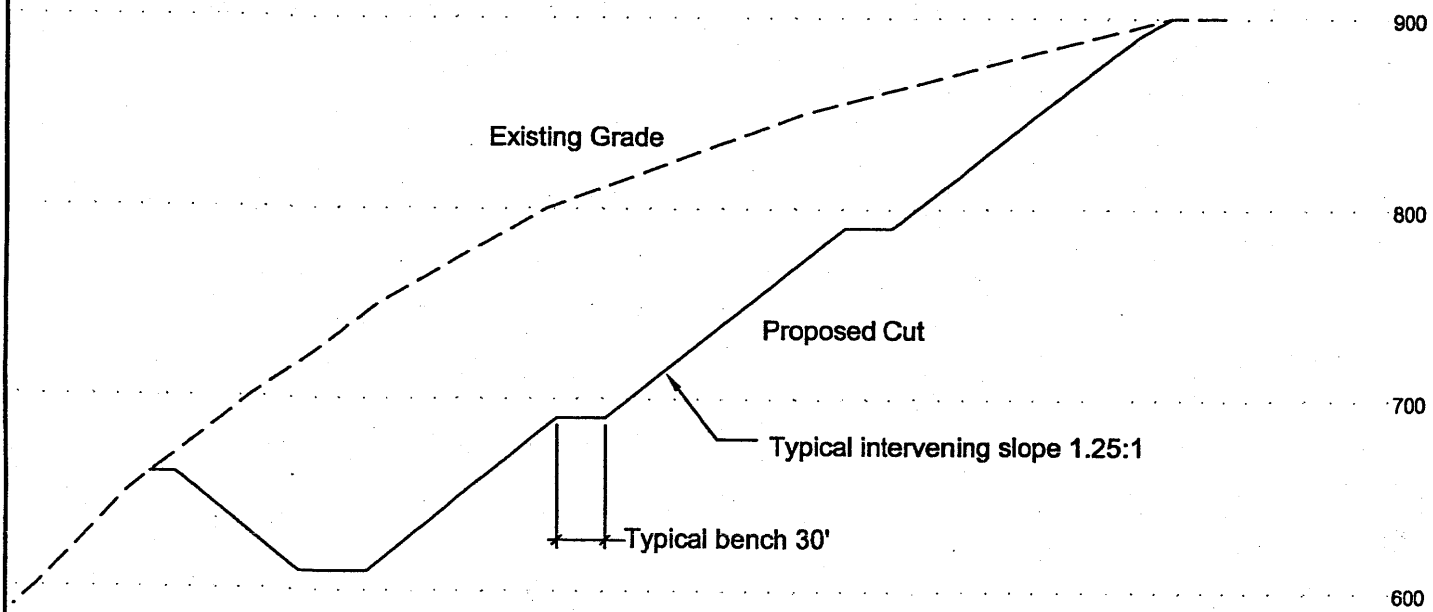


SECTION A-A'

SCALE IN FEET

0 50 100 150

SECTION THROUGH INITIAL NEW AREA

WEST COAST AGGREGATES, PILARCITOS QUARRY

15 FIGURE

262

5.000 RECLAMATION PLAN

5.010 AREAS COVERED BY RECLAMATION

Reclamation of all mined slopes and all portions of the canyon floor affected by mining operations is planned. The Master Revegetation Plan, Figure 18, illustrates overall site reclamation. The current work area will be closely monitored into the future, particularly as to the success of revegetation on resoiled slopes. The revegetation of the initial 7.36-acre work area is intended to be the prototype for reclamation of subsequent work areas in the site.

5.020 ULTIMATE PHYSICAL CONDITION OF THE SITE

At the completion of mining and reclamation the benched slopes in the current mining area and in all of the future work sites will have been revegetated with native groundcover and shrubs. In the current work area, Nuff Creek will have been restored as an open drainage feature and native riparian vegetation will have been planted along the margins. No mining work will have extended into the identified Sensitive Habitat Areas associated with Nuff Creek and its contributory drainages. At the completion of mining and reclamation the conveyor system will have been removed, the conveyor corridor re-graded, and native plant materials installed. The canyon floor has already been disturbed in the current work area and, with the exception of the creek restoration work described above, will have been resoiled and planted with an erosion control seed mix. The size of the canyon floor, its generally flat condition and the continuing sense of seclusion that will be provided by the vegetative cover and topography at the canyon mouth will make the floor area desirable for a wide variety of future uses. The existing well located southeast of the processing plant will be capped and closed. The existing well located at the shop building will be retained as a source of water for fire suppression and irrigation. The quarry haul road will be retained and will continue to serve as the principal access to the site. The ultimate site condition is represented by the Master Revegetation Plan, Figure 18.

5.030 POSSIBLE FUTURE USES FOLLOWING MINING

5.031 Extensive Agriculture. General open space/rangeland is the preferred end use. Following reclamation, the canyon floor will be relatively flat having a gradual upslope of about five per cent. This gradual slope will minimize erosion potential. The predominant soil type will be the Farallone sandy loam. With cultivation and fertilization the resulting soil will be suitable for reseeding to rangeland. Sufficient water for agricultural purposes can be developed from the existing on-site sources. General open space/rangeland is consistent with existing planning and zoning designations and could be established without a Use Permit. This use would not generate significant traffic and the demand for utilities and public services would be less than at present.

5.032 Wildlife Management, Nature Education and Research. Ponds could be created in each of the ten distinct mining sites shown on the Master Revegetation Plan, Figure 18. Habitat conditions specifically aimed at supporting the California Red-legged frog and San Francisco garter snake could be constructed throughout this chain of ponds resulting in a relatively large (593-acre), self-contained study area. This use would be consistent with existing planning and zoning designations and could easily be combined with the general open space/rangeland end use.

5.033 Intensive Agriculture. Following reclamation the canyon floor in the existing work area could be reutilized as a Christmas Tree Farm or other intensive agricultural use. It is anticipated that the lessee or future owner would implement a specific cultivation and fertilization program based on the type of crop selected. Intensive agricultural uses are consistent with existing planning and zoning designations and could be established without a Use Permit. Intensive Agriculture would not typically generate significant traffic and the demand for utilities and public services would be less than at present.

5.034 Commercial Recreation Site. Following reclamation the canyon floor in the current work area would be generally flat and could be made suitable for a variety of commercial recreation uses. Existing topography and vegetative cover at the mouth of Nuff Canyon will continue to obscure views into the center of the site such that the character of surrounding properties would not be adversely affected. The effect on sensitive habitat resources would have to be carefully assessed. Among the types of uses that might be considered are a pay campground or recreation vehicle park providing lodging near coastal beaches. Boat and recreational vehicle storage might also be appropriate. A destination hotel providing proximity to the coast could be considered in conjunction with equestrian facilities serving both visitors and coastal residents. These uses would be consistent with existing planning and zoning designation, however a Use Permit would be required. Water and sewer facilities would have to be upgraded; however the present electrical service to the property is probably adequate. Additional weekend and summer traffic would probably be generated by this type of use; however weekday truck traffic would be decreased.

5.040 EVIDENCE THAT PROPERTY OWNERS HAVE BEEN ADVISED OF POTENTIAL FUTURE USES

A letter listing the potential future uses and identifying the preferred end use has been countersigned by the property owners and is included in Appendix A.

5.050 STATEMENT OF RESPONSIBILITY TO PERFORM RECLAMATION

The operator accepts responsibility for reclaiming the mined lands in the manner described in this plan. A letter addressed to the Board of Supervisors has been prepared by the quarry operator and is included in Appendix B.

5.060 MEANS TO GUARANTEE RECLAMATION

264

Reclamation work is guaranteed by the permit conditions and by a performance bond.

5.070 RECLAMATION PROCEDURES AND SEQUENCES

Reclamation will consist of two phases extending over a 75-year period. Phase One consists of ongoing reclamation being implemented concurrent with mining. This phase is renewable subject to County renewal of the mining and Coastal Development permits at five-year intervals. It is intended that the process plant and aggregate storage piles will remain in their current locations while all of the future mining is conducted. Phase Two involves all of the work that cannot be done until mining has been completed. These activities include removing the process plant, aggregate stockpiles, office and maintenance buildings, and restoring Nuff Creek as an open drainage feature through the floor of the quarry. The main access road into the valley floor and the main access roads to the reclaimed slopes will be retained for future site access and property maintenance. The Shop Building will be retained for use as an agricultural barn consistent with the planned end use (See the Master Revegetation Plan, Figure 18).

5.071 Backfilling and Grading. Final grading contours for the initial new area and the current work area are shown on the Grading Plan, Figure 13b. The Master Grading Plan for the entire site is shown on Figure 13d. Mined slopes will be left in a benched configuration. The canyon floor at the current center of operations will have been widened by removal of the spur ridge which projects into the canyon at the current work area. All stockpiles of aggregate will have been removed or graded out over the canyon floor. Open drainage channels will be reestablished. The sediment pond system and the pit created by removal of rock from the canyon floor will have been backfilled using earth material from the berms surrounding the sediment ponds, sediments removed from the aggregate wash system, and earth material removed during restoration of the open creek.

5.072 Stabilization of Slopes. Three major factors contribute to slope stability; the benching of mined slopes, drainage to carry runoff away from the mined slope and revegetation to control erosion. The benching and drainage is completed as a part of the mining operation. Benches provide a place to catch any loose rock that may fall as the mined slope weathers, they constitute a conveyance for drainage to the periphery of the mined area, and they provide access to the slope and a planting bed for slope revegetation. Resoiling and revegetation are the primary reclamation activities related to slope stability.

5.072.1 Slope Benching. All of the mined slopes are constructed with 30 foot wide horizontal benches cut at intervals not exceeding 100 feet (See Figures 13a and 13b). The slopes between benches in the current work area have typically been constructed at a gradient of 1.25:1. or flatter near the top of cuts where the rock material is weathered and at a steeper gradient in less weathered rock as mining progresses downslope. Grading for the future mining areas is shown with 30 foot wide benches every 100 feet of vertical distance resulting in an average 1.4:1 slope gradient.

5.072.2 Slope Drainage. Runoff from disturbed land in the current work area is drained by sheet flow and in ditches along the edges of the access roads to the

sediment pond system in the quarry floor. The outfall pipe from the sediment pond system on the quarry floor then conveys clean water to Nuff Creek. (See Figure 14-b).

The constructed benches are sloped into the hill at a two percent gradient and laterally toward the periphery at a two to five percent gradient. Runoff from the current work area is conveyed laterally along the benches and then downslope along rock channels and through pipes to the sediment pond system in the quarry floor. A temporary sediment pond has been constructed in the base of the ravine south of the current work area. When revegetation of the mined slopes has been completed the sediment pond will be removed and replaced with a filter berm constructed of large rock. The filter berm will dissipate the drainage velocity and impede residual loose material that might wash from the reclaimed quarry slopes.

A temporary sediment pond will be constructed on the working terrace of each future spur ridge being actively mined to prevent sediment from entering the environmentally sensitive habitat areas. As the final graded configuration is completed on each bench, runoff will be conveyed laterally along the benches, through small sediment traps and then downslope along rock channels or in pipes. The benches will be crowned in the center so that the amount of water reaching the natural ravines on either side of the spur ridges will be about the same following mining as it is before mining.

5.072.3 Revegetation. An important part of slope stabilization is the reestablishment of vegetative cover to bind loose earth material. Revegetation is also an important mitigation measure for habitat restoration and the visual effects of mining. The Pilarcitos Quarry Master Revegetation Plan, Figure 18, has been designed to compliment the normal growth pattern of native vegetation documented in the Vegetation Map, Figure 10. Depending on slope exposure the plan proposes evergreen trees such as Douglas fir (Pseudotsuga menziesii) and shrubs such as Coyote brush (Baccharis pilularis), Blueblossom (Ceonothus thyrsiflorus), and Bush lupine (Lupinus arboreus) on the mined slopes, riparian trees such as Arroyo willow (Salix lasiolepis) and Red alder (Alnus rubra) along drainage courses, and grassland seeding on the valley floor.

Planting on mined slopes is scheduled so that planting follows by one or two benches the actual mining process so that there are no equipment conflicts. Specifications for planting and a complete planting list are included in the detailed revegetation program.

5.072.4 Resoiling and Revegetation of Bench Surfaces. Benches are ripped to a depth of 12 inches following mining. Four to six inches of stockpiled topsoil is spread over the loosened surface before the bench is seeded with a grassland seed mix for initial erosion control. Bench resoiling is performed as part of the mining operation using topsoil that is temporarily stockpiled on the working terrace adjacent to the active excavation or on the quarry floor. The erosion control seed mix will be hand broadcast and covered with a layer of straw for protection while vegetation is being established. Straw certified as weed free will be used at a rate of one ton per acre. The procedure outlined in Section 5.072.8 will then be followed for installation of woody plants.

5.072.5 Revegetation of Intervening Slope Surfaces. Intervening slopes are scarified by excavation equipment as mining progresses downslope. Grassland seed mix is hand broadcast over the intervening slopes at the same time the erosion control seed mix is applied to the benches.

5.072.6 Revegetation of the Creekbed. Restoration of the open creek will be done during the summer when drainage in the creek is minimal and there is no drainage from the ravines on the sides of the canyon. Nuff Creek will continue to flow through the existing culvert while the open channel configuration is being restored. After the new channel is built, the sideslopes resoiled, and rip-rap installed in the bed, the creek will be redirected into the new channel. The tributary drainage channels designed to take drainage from the current work area to Nuff Creek will also be formed at the same time. Excavation equipment will be used to form the channels. Earth material removed from the excavation will be used to resoil the sideslopes and to construct a four foot high berm along the upper edge of the channel to prevent uncontrolled runoff. Any residual material will be spread over the quarry floor. Six inch diameter rock will be placed in the low flow creek for erosion control and wildlife basking. A grassland seed mix will be hand broadcast over the sideslopes and covered with a layer of straw for initial erosion control. The procedure outlined in Section 5.072.7 will then be followed for installation of woody plants.

5.072.7 Resoiling and Revegetation of the Canyon Floor Surface. The quarry floor is prepared for revegetation after removal of all process equipment, removal of the culvert containing Nuff Creek, and removal of the sediment pond system. Remaining aggregate stockpiles and berms surrounding the sediment ponds will be graded out over the quarry floor. The irregular ground surface will be contour graded to slope gradually toward Nuff Creek. The final ground surface will be ripped to a depth of 24 inches. Four to six inches of stockpiled topsoil and recovered sediment will be spread over the loosened surface.

5.072.8 Planting of Shrubs and Trees. Planting holes will typically be dug by hand using a shovel, geology pick, or wrecking bar to a size 1.5 times the size of the plant root ball. The hole will then be backfilled with a planting mix made of one part organic mulch and two parts available planting medium (salvaged topsoil, granular surface material and sediments). Plants will be protected against wildlife browse by surrounding the plant with an 18 inch high cylinder of chicken wire staked to the ground using wooden surveyor's stakes or short lengths of reinforcing bar.

5.072.9 Equipment Removal. All equipment used at the site is portable or movable. At the completion of mining all production equipment, vehicles, storage sheds, machinery and temporary culverts will be removed from the site. It is anticipated that this will be completed within two years following the completion of active mining. All of the non-functioning machinery, used conveyor belts, tires and other residue, generally referred to as boneyard debris, will be removed from the site and recycled or disposed of at a qualified landfill.

TABLE 5: DETAILED REVEGETATION PROGRAM

PLANT COMMUNITY	CODE	PLANT SPECIES	PLANTING SPECIFICATIONS
GRASSLAND AND GROUNDCOVER	GR	California brome (Bromus carinatus)	• Broadcast seed at 10 lbs./ac. with 300 lbs./ac. slow release organic fertilizer on mined slopes and quarry floor between September and December. • Broadcast seed on restored creek slopes at 10 lbs./ac. with 300 lbs/ac. slow release organic fertilizer between September and December.
	GC	California poppy (Eschsolzia californica)	• Broadcast seed at 2 lbs./ac. along with brome on the mined slopes and floor. • Broadcast seed at 1 to 3 lbs./ac. along with brome on the restored creek banks.
	GR	Purple needle grass (Nasella pulchra)	• Broadcast seed at 4 lbs./ac. with brome on the mined slopes and quarry floor. • Broadcast seed at 2 lbs./ac. along with brome on the restored creek banks.
	GR	Zorro fescue (Vulpia macrostachys)	• Broadcast seed at 6 lbs./ac. with brome on the mined slopes and quarry floor. • Broadcast seed at 2 lbs./ac. along with brome on the restored creek banks.
	GR	Deerweed (Lotus scoparius)	• Broadcast seed at 2 lbs./ac. along with brome on the mined slopes and quarry floor.
	GR	Silver lupine (lupinus albifrons)	• Plant seed spots randomly at 2 lbs./ac. in rocky dry locations near the mined benches.
RIPARIAN TREES AND SHRUBS	T	Red alder (Alnus rubra)	• Plant 20% 1 gal. and 80% tube stock in clusters of three at 40 foot spacing along the new area access road and lower benches, alternating randomly with California bay trees. • Plant 20% 1 gal. and 80% tube stock in clusters of three at 40 foot spacing, mid slope along the restored creek, alternating randomly with California bay trees.
	T	Yellow willow (Salix lasiandra)	• Use local cuttings whenever possible. Plant wattles at 10 foot spacing along the new area access road and lower benches, at locations where springs or seeps provide a water source, alternating randomly with arroyo willow. • Use local cuttings whenever possible. Plant wattles at 10 foot spacing at the edge of the low flow channel along the restored creek, alternating randomly with arroyo willow.

RIPARIAN TREES AND SHRUBS (Continued)	T	Arroyo willow (Salix lasiolepis)	• Use local cuttings whenever possible. Plant wattles at 10 foot spacing along the new area access road and lower benches, at locations where springs or seeps provide a water source, alternating randomly with yellow willow. • Use local cuttings whenever possible. Plant wattles at 10 foot spacing at the edge of the low flow channel of the restored creek, alternating randomly with yellow willow.
	T	California bay (Umbellularia californicum)	• Plant 20% 1 gal. plants and 80% tube stock in clusters of three at 40 foot spacing along the new area access road and lower benches, alternating randomly with Alder. • Plant 20% 1 gal. plants and 80% tube stock in clusters of three at 40 foot spacing, mid slope along the restored creek, alternating randomly with Alder.
	S	Coyote brush (Baccharis pilularis)	• Plant tube stock at 4 foot spacing along the top of the restored creek bank alternating randomly with Blueblossom.
	S	Blueblossom (Ceanothus thyrsiflorus)	• Plant tube stock at 4 foot spacing along the top of the restored creek bank, alternating randomly with Coyote brush.
	S	Coffeeberry (Rhamnus californicus)	• Plant tube stock at 4 foot spacing along the top of the restored creek bank, alternating randomly with thimbleberry and blackberry.
	S	Thimbleberry (Rubus parviflorus)	• Plant tube stock at 4 foot spacing along the top of the restored creek bank alternating randomly with coffeeberry and blackberry.
	S	Blackberry (Rubus ursinus)	• Plant tube stock at 4 foot spacing along the top of the restored creek bank alternating randomly with thimbleberry and coffeeberry.
BRUSH ASSOCIATION	S	California sagebrush Artemisia californica)	• Plant tube stock on west-facing benches in off-set rows with five foot spacing, alternating randomly with other shrub species.
	S	Coyote brush (Baccharis pilularis)	• Plant tube stock on west-facing benches in off-set rows with five foot spacing, alternating randomly with other shrub species.
	S	Blueblossom (Ceanothus thyrsiflorus)	• Plant tube stock on west-facing benches in off-set rows with five foot spacing, alternating randomly with other shrub species.
	S	Bush lupine (Lupinus alboreus)	• Plant tube stock on west-facing benches in off-set rows with five foot spacing, alternating randomly with other shrub species.

BRUSH ASSOCIATION (Continued)	S	Coffeeberry (Rhamnus californicus)	• Plant tube stock on west-facing benches in off-set rows with five foot spacing, alternating randomly with other shrub species.
EVERGREEN ASSOCIATION	T	Douglas fir (Pseudotsuga taxifolia)	• Plant 20% 1 gal. and 80% tube stock in clusters of three at 40 foot spacing on the lower benches, alternating randomly with other tree species.
	T	Coast redwood (Sequia sempervirens)	• Plant 20% 1 gal. and 80% tube stock in clusters of three at 40 foot spacing on the lower benches, alternating randomly with other tree species.
	T	California bay (Umbellularia californicum)	• Plant 20% 1 gal. and 80% tube stock in clusters of three at 40 foot spacing on the lower benches, alternating randomly with other tree species.
	S	Swordfern (Polistichum munitum)	• Plant in clusters of 3 with 10 foot spacing on the lower benches from custom grown tube stock.
	S	Thimbleberry (Rubus parvifolia)	• Plant tube stock randomly at 80 foot spacing on the lower benches.

5.073 Waste Dump Stabilization. Not applicable.

5.074. Rehabilitation of Pre-Mining Drainage. The mining plan has been designed such that runoff from the current mining area flows westerly from the disturbed slopes through a series of sediment ponds in the canyon floor. When the final benches are completed the runoff flows laterally in a southward direction along the benches and then into the sediment pond system. The sediment pond system in the canyon floor will be removed during reclamation and replaced with an open drainage channel. Nuff Creek and all of its tributary drainage course will be avoided during mining of future sites. Natural sheet flow to each side of the spur ridges subject to mining will be replaced by the excavated benches, crowned in the center, so that the amount of runoff reaching each side ravine will be about the same after mining and it is before mining.

Nuff Creek, to which the side canyons are tributary, has been culverted through the current work area to develop space for process equipment, loading and aggregate storage. When mining has been completed Nuff Creek will be reestablished as an open drainage feature (See Creek Restoration, Figure 17).

5.075 Removal of Structures. The Shop Building, located at the north end of the current work area, will be retained for use as an agricultural barn following mine reclamation. The nearby well will also be retained as a source of water for fire suppression and agricultural irrigation. The well located near the aggregate wash plant will be capped. These facilities are shown on the Detailed Plan for the Process Area, Figure 4. All of the other structures will be removed including the scale house, toilet building, truck spray facility, and quarry office. The quarry office is housed in a portable trailer that will be hauled from the site. The other structures will be demolished and the debris recycled or hauled to a landfill.

5.076 Control of Contaminants. No mineral contaminants are associated with the type of rock being mined. Used batteries are recycled. Used oil is routinely collected in drums and hauled from the site for recycling. Equipment fuel tanks are located within concrete bunkers to prevent spills from reaching any waterway. All fuels and lubricants and their containment facilities used in the mining operation will be removed from the site as part of the final site reclamation. Absorbent booms are available to place in the sediment ponds if they become accidentally contaminated by oil or fuel spills. Earth fill from the fueling and equipment maintenance area may become accidentally contaminated by oil or fuel spills. The fill is periodically excavated and hauled to a proper disposal site while the mining operation is active. New fill is then put in its place. As part of the final reclamation effort the earth fill will be excavated and hauled to a proper disposal site. Sewage facilities consist of flush toilets on septic systems. The existing toilet building and concrete septic tank located near the truck scales will be removed. The toilet facilities and concrete septic tank located at the Shop Building will be retained consistent with the future use of the building as an agricultural barn.

5.077 Treatment of Streambeds. See section 5.064, above.

5.078 Access Control and Control of Residual Hazards. Due to its box canyon configuration Nuff Canyon is readily accessible only from the south. A lockable gate prevents unauthorized vehicular access. Four strand barbed wire fencing will be installed at the property line above each of the spur ridges as each new mining site comes on line. The fencing will discourage trespassers from entering the property and falling down the steep, mined slopes. Fencing will also help protect newly revegetated areas from being grazed by wildlife.

5.079 Topsoil Reuse and Test Planting. The Miramar coarse sandy loam found on the slopes to be mined consists of a very thin mantle that is rated very low for fertility. Vegetation was stripped from the current work area many years ago and the topsoil was not salvaged. Topsoil will be salvaged from all future mining sites and stockpiled temporarily on the quarry floor and on the working terrace adjacent to the active excavation. When the final benches have been constructed each bench surface will be ripped to a depth of 12 inches and a layer of four to six inches of topsoil will be spread over the surface. Bench resoiling is done immediately following the mining activity. Topsoil that is stored along the west side of the canyon floor near the process plant will be reused for resoiling the valley floor. Sediment removed from the sediment pond system will be spread over the quarry floor before the salvaged topsoil is added.

Resoiling and revegetation has been completed successfully on the upper benches, generally above elevation 600, in the current work area. Temporary irrigation was utilized to encourage plant rooting. This successful test planting has facilitated the design of final revegetation for the remainder of the site that is shown on the Master Revegetation Plan, Figure 18, and the Creek Restoration Plan, Figure17.

5.0710. Short Term Phasing. There are two phases of reclamation at the Pilarcitos Quarry. The first phase can be considered the short term phase. The second phase,

consisting of reclamation tasks that cannot be done until mining has been completed on the entire mining property, can be considered the long term phase. The short term phase consists of final benching and bench drainage that are completed as part of mining, and resoiling and revegetation activities that are reclamation tasks. During the short term phase, mining and reclamation are done concurrently to the maximum extent practicable.

5.080 RECLAMATION MONITORING

The quarry operator will monitor reclamation improvements following completion to insure that the success criteria have been met. Improvements will be maintained and repairs made for a period of at least two years following completion. Inspections will be made before and after the rainy season each year. Repairs will be completed by October 1 each year.

5.081 Monitoring Criteria - Topography

5.081.1 Reclamation Limits. Property lines, mining setbacks, boundaries of sensitive habitat areas, and other limits to mining areas are established by survey and by using a GPS system. A permanent benchmark exists on the concrete slab at the truck scale. Barbed wire field fencing, established at the mining limits, will be inspected and repaired if breaches are found.

5.081.2 Removal of Stockpiles. All stockpiled aggregate will be removed or graded out over the canyon floor. All stockpiles of unprocessed recycle material will be removed from the property. Inspection will be done to confirm that the stockpiles are gone prior to re-soiling.

5.081.3 Final Slope Contouring. The Final Grading Plans, Figures 13a and 13b, shows all final grades. Final slopes will have an overall gradient of 1.4:1 or flatter. Thirty foot wide benches will be established at 100 foot intervals or closer. Benches will be sloped into the hill and laterally for drainage at a minimum two-percent gradient. Benches will be inspected and loose rock debris will be removed to maintain positive drainage.

5.081.4 Final Canyon Floor Contouring. The canyon floor in the current work area will have some topographic irregularities related to positioning of the rock processing facilities and the sediment pond system. These irregularities will be graded out and the sediment pond system removed as part of the final phase of reclamation. The canyon floor will be graded to a smooth configuration gradually sloping toward Nuff Creek. An earthen berm, as detailed on the Creek Restoration Plan, Figure 17, will be installed to protect Nuff Creek against uncontrolled runoff. The berm will be inspected and breaches repaired.

5.081.5 Erosion Repair. Periodic inspection of the final mined slope and canyon floor will be performed during the two-year maintenance period. Final grades will be re-contoured if erosion rills are found more frequently than every fifty feet laterally and if

individual rills become deeper than one foot. Straw wattle will be installed during site maintenance to mitigate areas where erosion is detected.

5.081.6 Colluvium Removal. The lower slopes in Nuff Canyon are subject to sloughing and small landslides. The access road throughout Nuff Canyon will be periodically inspected and loose material will be removed, spread out and incorporated into the access roads.

5.082 Monitoring Criteria - Vegetation

5.082.1 Revegetation Plan. A Master Revegetation Plan, Figure 18, has been prepared duplicating the natural pattern of vegetation in the area prior to mining. Figure 16 shows that part of the revegetation plan covering the current work area and the preferred initial new area located immediately adjacent to the current work area. Different plant communities are represented corresponding to sun and water exposure. Inspection of revegetated areas will be done to make sure that plants have been installed in accordance with the plan.

5.082.2 Vegetative Coverage and Density. Planting coverage shall be considered successful when at least 80 percent of the ground surface is covered by plant materials. Plant density is expressed in terms of numbers of individual plants per acre.

5.082.3 Species Richness. Plant variety is desired in reclaimed areas to complement the remaining natural vegetated slopes. Planted areas shall be considered successful when at least 60 percent of the plant species listed in the planting plan are present and viable in each plant community.

5.082.4 Weed Control. Planted areas will be inspected and noxious weeds removed to promote success of desired plants. Eucalyptus saplings smaller than six inches in diameter will be removed and Pampas grass will be removed from accessible areas so that it is generally not in evidence and nowhere dominant in the reclaimed areas.

5.082.5 Visual Screening. Existing vegetation at the canyon opening near Highway 92 will be retained to provide continuing visual screening of the mined area. The driveway entrance area at Highway 92 will be inspected and dead or dying trees replaced to maintain the visual buffer.

5.083 Monitoring Criteria – Drainage and Erosion Control

5.083.1 Sediment Pond System. The sediment pond system on the canyon floor in the current work area will be retained until all of the slope reclamation has been completed. All of the ponds in the current work area will be removed as part of final grading. The surrounding berms will be graded out over the canyon floor and the residual sediment will be re-utilized for resoiling. Inspection will be done to insure that no depressions or trapped water remains.

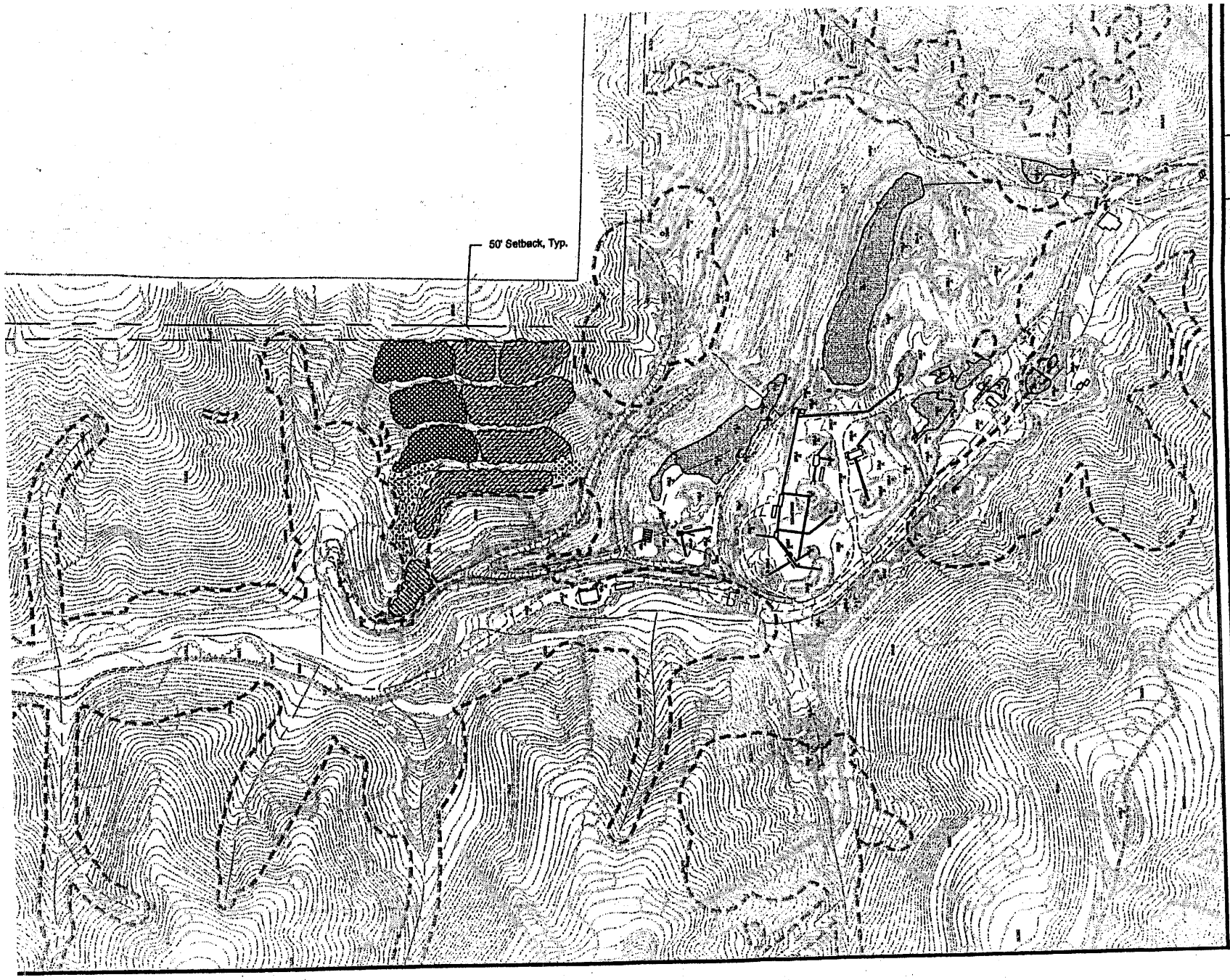
5.083.2 Sediment Traps. Sediment traps will have been installed as part of mining as each bench is completed. The sediment traps will remain in order to insure that residual loose material does not enter the natural drainage ravines. Inspection will be done and accumulated sediment will be removed.

5.083.3 Restored Open Drainage. Nuff Creek and its primary tributary west of the process plant, will be restored as open drainage features. The cross section of the tributary channel is a simple v-channel with a three foot wide bottom and 2:1 side slopes. The Nuff Creek channel cross section is shown on the Creek Restoration Plan, Figure 17. Drainage from the mined slopes in the current work area will drain along the benches and be collected in an open channel connected to Nuff Creek. The channels will be inspected and rock lining and rock check dams installed if erosion is detected within the channels.

5.083.4 Access Road Maintenance. A road grader will be used to periodically smooth the haul road and access roads so that runoff does not erode the travel surface. The access road throughout Nuff Canyon will be inspected and repairs made to maintain a smooth travel surface.

5.090 EFFECT OF RECLAMATION ON FUTURE MINING POTENTIAL

Mining at the Pilarcitos Quarry involves extraction of rock resource from a series of spur ridges that project from the sides of the long canyon in which the quarry operation is located. In each of the nine distinct future mining sites the extraction activity will begin towards the top of the spur ridge, generally near the property boundary, and progress downwards towards the canyon floor. Access roads onto the mined slopes are retained only for maintenance of drainage facilities and to perform revegetation work. There is no intent to re-mine any of the spur ridges once the resource has been depleted at any one work area, therefore, reclamation has no effect on future mining potential.



WEST COAST AGGREGATES

PILARCITOS QUARRY

REVEGETATION PLAN INITIAL NEW AREA

LEGEND

- RIPARIAN
- EVERGREEN
- BRUSH
- GRASSLAND
- ESHA BOUNDARY

See Figure 15 for Section

16a

FIGUR

PAGE

SCALE IN FEET

0 300 600

NOR

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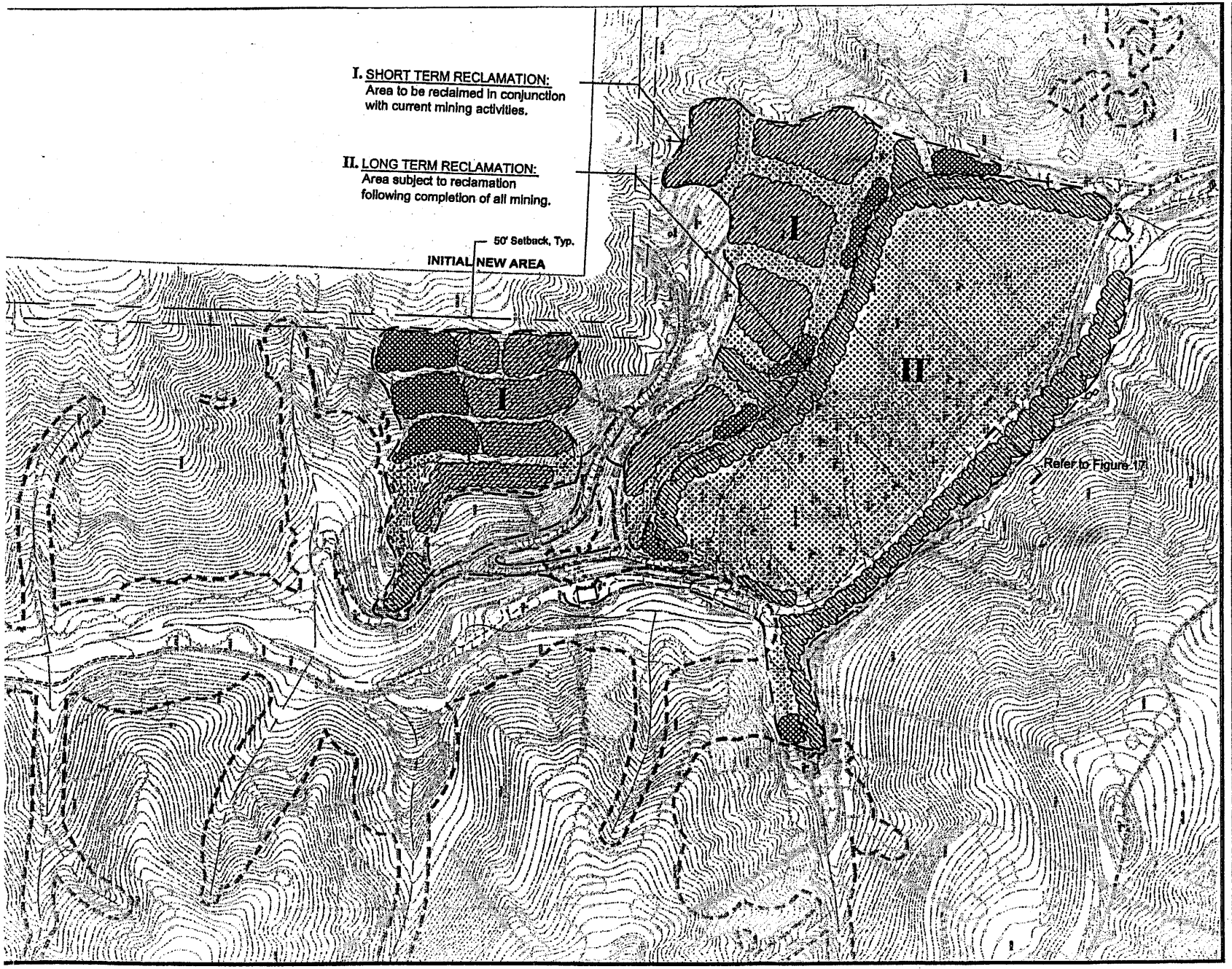

WEST COAST AGGREGATES

PILARCITOS QUARRY

REVEGETATION PLAN CURRENT AND NEW AREA

LEGEND

- RIPARIAN
- EVERGREEN
- BRUSH
- GRASSLAND
- RECLAMATION SEQUENCE
  - I: SHORT TERM
  - II: LONG TERM
- ESHA BOUNDARY

16b

FIGURE
PAGE 62

SCALE IN FEET
0 300 600
NORTH

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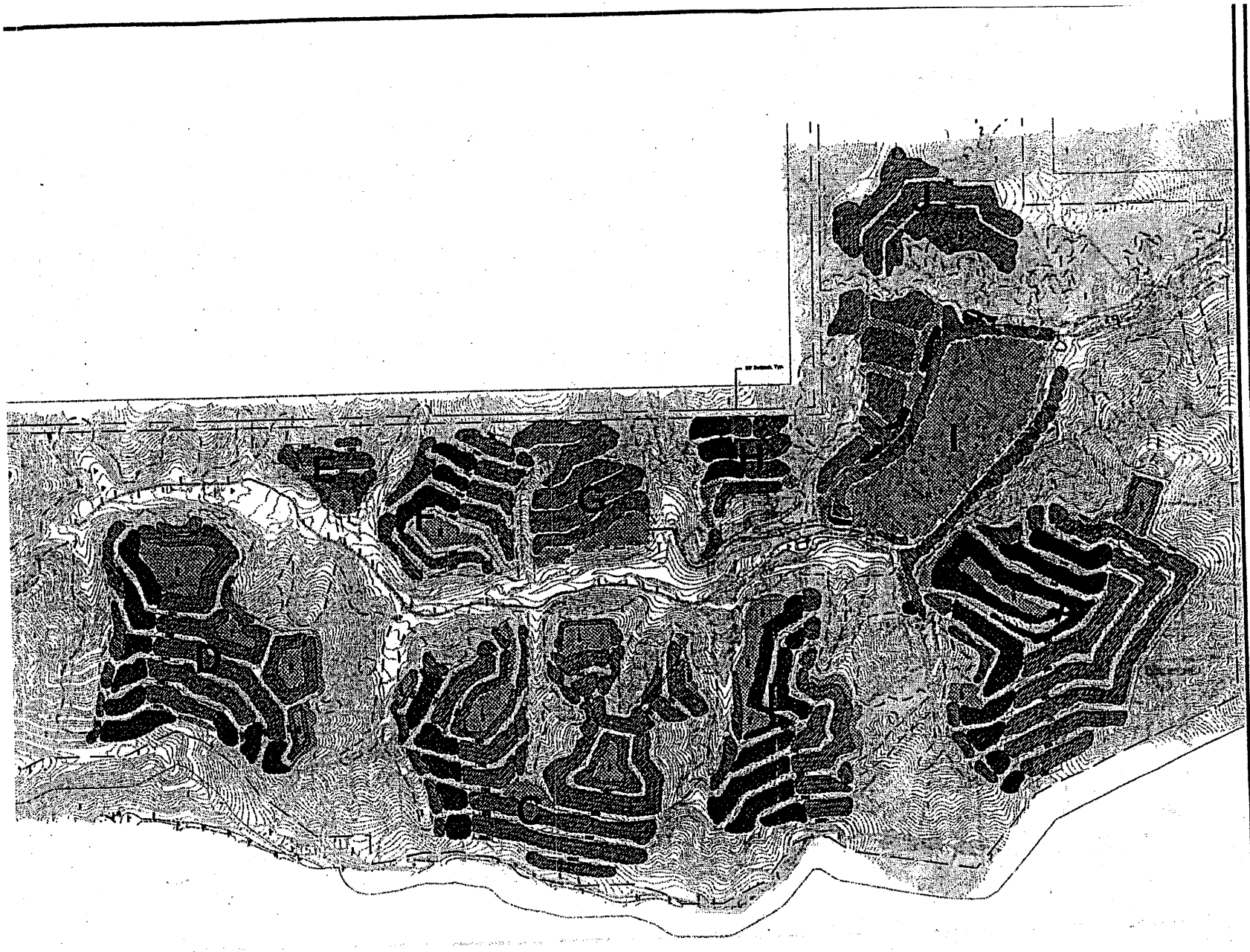

WEST COAST AGGREGATES

PILARCITOS QUARRY

MASTER REVEGETATION PLAN ENTIRE SITE

LEGEND

- RIPARIAN
- EVERGREEN
- BRUSH
- GRASSLAND
- PROPERTY LINE
- ESHA BOUNDARY

18

FIGURE
PAGE

SCALE IN FEET

0 600 1200

NORT

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6.000 RECLAMATION COSTS AND GUARANTEE

6.010 Financial Assurance. A Performance Bond payable to San Mateo County and, in the alternative, the Department of Conservation, Office of Mine Reclamation, will be provided to the County in the amount of the estimated cost of reclamation. This estimate covers both the cost of reclaiming the current quarry work area and the preferred initial 7.36-acre addition. It will be amended to include future mining areas as they come on line. As items of reclamation work are completed to the standards set forth in the approved Plan and verified by County staff, the operator intends to retrieve the existing assurance and substitute a new one with the face value reduced accordingly.

6.020 Reclamation Cost Assumptions. Reclamation is intended to be concurrent with mining so that costs can be spread over the life of the operation. Costs have been derived based on work being done by outside contractors and includes the following assumptions:

- Work on various reclamation tasks will be done simultaneously and phased to be concurrent with mining.
- Operating capacities of equipment have been obtained from the Caterpillar Company estimated production reference manual.
- Equipment rental costs have been obtained from local equipment rental companies.
- Labor costs are current union scale and represent fully loaded hourly rates.
- Removal of sediment control facilities will be done as part of the final grading configuration and is considered to be a mining cost
- Construction of access roads and quarry benches are considered to be mining costs. Unless shown as removed in the final site grading plan the access roads will be retained for access to perform reclamation work, ongoing maintenance, and access for future uses following reclamation.

6.030 Reclamation Cost Estimate. Reclamation tasks are grouped into four categories of related work. Group 1 tasks include removing all equipment and structures related to mining. Group 2 tasks involve resoiling the valley floor and benches. Group 3 tasks involve creek restoration and revegetation. Group 4 tasks involve monitoring and maintenance activities. The description of each task includes a listing of the equipment, labor materials and processes necessary to complete the task. Reclamation costs are presented in the various task tables and summarized in one final table.

6.040 Summary of Reclamation Methods

- **Bulldozer** will be used to demolish sheds and small structures, to rip compacted ground surfaces, to spread residual stockpiles and excess earth material removed during creek restoration, and to spread soil during resoiling work.

- **Crane** will be used to load the truck scale and some rock processing equipment onto flat bed trucks.
- **Truck Tractor** with hitch will be used to haul the portable trailer office and portable rock processing plant components to another West Coast Aggregates, Inc. facility. **Truck Tractor** with lowboy trailer will be used to transport excavation equipment to another West Coast Aggregates, Inc. facility.
- **Pickup Truck** will be used to transport laborers and to load and haul tools.
- **Loader** fitted with a bucket and thumb will be used to load scrap masonry, metal and wood debris into end dump trucks. **Loader** with a bucket will be used to transport soil for resoiling.
- **Excavator** fitted with a cable arm and hook or alternately with a bucket and thumb will be used to load tanks and some boneyard equipment onto flat bed trucks. **Excavator** fitted with a bucket will be used to remove earth cover from culverted drainage.
- **Flat Bed Truck** will be used to for transport of the truck scale to another West Coast Aggregates, Inc. facility, to transport equipment to recycle or to another West Coast Aggregates, Inc. facility, and to transport materials for revegetation work.
- **End Dump Truck** will be used for transport of scrap metal and wood debris to recycle or a landfill.
- **Water Truck** will be used to wet work areas for dust control.
- **Cutting torch** will be used to cut up metal debris.
- **Generator** will be used to provide temporary power at remote locations.

6.040.1 Group 1 Tasks: Structure and Equipment Removal

Overall Description. All portable excavation equipment, debris and excess structures related to mining will be removed. This task includes removal of boneyard debris (damaged and non-functional machinery, miscellaneous metal, tires and wood) that typically accumulates at mining sites. The Shop Building will be retained for use as an agricultural equipment barn following reclamation.

Task 1-1: Remove toilet structure, scale house, warehouse and sheds

Description:	Demolish structures, sort metal from wood and masonry, and remove from site. Haul metal debris to recycle and remainder to landfill.
Operation:	Remove mining related structures from the site.
Quantity:	Estimate 40 CY (60 tons) masonry, 40 CY (40 tons) wood, 20 CY (25 tons) metal
Equipment:	1 Bulldozer to demolish structures and break up foundations 1 Loader with bucket and thumb to sort and load debris 1 End Dump truck to haul debris 1 Pickup truck to transport laborers and tools 2 cutting torches to cut metal debris
Duration:	1 Bulldozer for one day 1 Loader for two days 1 End Dump truck for one day to haul 4 dump loads and 2 recycle loads 1 Pickup truck for two days
Labor:	1 Bulldozer operator for one day 1 Loader operator for two days 1 End Dump truck driver for one day 2 laborers for two days to assist with sorting and loading of debris
Fees:	Assume 4 dump fees at $100.

279

TABLE 6 COST ESTIMATE FOR TASK 1-1					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	8.0	8.0	$200.00	$1,600.00
Loader w/bucket and thumb	1.0	16.0	16.0	$168.75	$2,700.00
End Dump truck (cost includes labor)	1.0	8.0	8.0	$70.00	$560.00
Pickup truck	1.0	16.0	16.0	$16.25	$260.00
SUBTOTAL					**$5,120.00**
LABOR (L)					
Bulldozer operator	1.0	8.0	8.0	$51.30	$410.40
Loader operator	1.0	16.0	16.0	$51.30	$820.80
End Dump truck operator (cost included w/equip)	1.0	8.0	8.0	$0.00	$0.00
Laborer	2.0	16.0	32.0	$45.80	$1,465.60
SUBTOTAL					**$2,696.80**
TOTAL COST					**$7,816.80**
MANAGEMENT					
Mobilization (5% E)					$256.00
Supervision (5% L)					$134.84
Contingency (7% E+L)					$547.18
Profit & Overhead (8.2% E+L)					$640.98
GRAND TOTAL COST					**$9,395.79**

230

Task 1-2: Remove boneyard debris, and old equipment

Description: Remove scrap metal, scrap wood, spent parts, and equipment that cannot be re-used.

Operation: Remove debris and old equipment from the site.

Quantity: Estimate 30 tires, 10 CY (10 tons) wood, 100 CY (150 tons) metal parts

Equipment:
- 1 Excavator with cable arm and hook or bucket and thumb to load tires and machinery onto a flat bed truck
- 1 Loader with bucket and thumb to load wood and scrap metal into an end dump truck
- 1 Flat Bed truck to transport tires and equipment
- 1 End Dump truck to transport scrap wood and metal
- 1 Pickup truck to transport laborers and tools
- 1 Generator to provide power to remote locations
- 1 set of miscellaneous tools including impact wrench and drill to disassemble equipment

Duration:
- 1 Excavator for 1 day
- 1 Loader for 1 day
- 1 Flat bed truck for 1 day to haul 1 load of tires and 2 loads of equipment to recycle
- 1 End Dump truck for 1 day to haul 1 load of wood to dump and 4 loads of metal to recycle
- 1 Pickup truck for 1 day

Labor:
- 1 Excavator operator for 1 day
- 1 Loader operator for 1 day
- 1 Flat Bed truck driver for 1 day
- 1 End Dump truck driver for 1 day
- 2 Laborers for 1 day to assist with disassembly and loading

Fees: Assume 1 dump fee at $100

231

TABLE 7 COST ESTIMATE FOR TASK 1-2					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Excavators w/cable and hook	1.0	8.0	8.0	$102.50	$820.00
Loader w/bucket and thumb	1.0	8.0	8.0	$168.75	$1,350.00
Flat Bed truck	1.0	8.0	8.0	$45.00	$360.00
End Dump truck (cost includes labor)	1.0	8.0	8.0	$70.00	$560.00
Pickup truck	1.0	8.0	8.0	$16.25	$130.00
SUBTOTAL					**$3,220.00**
LABOR (L)					
Excavator operator	1.0	8.0	8.0	$51.30	$410.40
Loader operator	1.0	8.0	8.0	$51.30	$410.40
Flat Bed truck operator	1.0	8.0	8.0	$45.80	$366.40
End Dump truck operator (cost included w/equip)	1.0	8.0	8.0	$0.00	$0.00
Laborers	2.0	8.0	16.0	$45.80	$732.80
SUBTOTAL					**$1,920.00**
TOTAL COST					**$5,140.00**
MANAGEMENT					
Mobilization (5% E)					$161.00
Supervision (5% L)					$96.00
Contingency (7% E+L)					$359.80
Profit & Overhead (8.2% E+L)					$421.48
GRAND TOTAL COST					**$6,178.28**

232

Task 1-3: Remove Excavation Equipment, Process Equipment, Scale, Portable Office and Fuel Tanks

Description: Remove excavation equipment, conveyor system, portable office structure, fuel tanks, truck scale, and rock processing plant equipment.

Operation: Load and haul portable, reusable equipment from the site.

Quantity: Assume 6 large excavation machines, one conveyor system (1,750' long), one rock crushing and screening plant, one rock washing plant, one office trailer, and four fuel and oil tanks.

Equipment:
- 3 Truck Tractors with hitches to transport portable office and portable components of rock processing and rock washing plants
- 6 Truck Tractors with lowboy trailers to transport excavation equipment
- 1 Crane to load truck scale, tanks, conveyor, non-portable components of rock processing and rock washing plants onto flat bed truck
- 1 Excavator with cable and hook and/or forks to load equipment
- 4 Flat bed trucks to transport truck scale, tanks, conveyor system, and non-portable components of rock and wash plants
- 2 Pickup trucks to transport laborers and tools
- 2 generators to provide power to remote locations
- 2 sets of miscellaneous tools to disassemble equipment

Duration:
- 3 Truck Tractors with hitches for 1 day
- 6 Truck Tractors with lowboy trailers for 1 day
- 1 Crane for 2 days
- 1 Excavator for 2 days
- 4 Flat Bed trucks for 2 days
- 2 Pickup trucks for 2 weeks
- 2 generators for 2 weeks
- 2 sets of miscellaneous tools for 2 weeks

Labor:
- 9 Truck Tractor Operators for 1 day
- 1 Crane operator for 2 days
- 4 Flat Bed Truck Operators for 2 days
- 4 Laborers for 2 weeks to assist with disassembly and loading

233

TABLE 8 COST ESTIMATE FOR TASK 1-3					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Truck tractors w/hitches	3.0	8.0	24.0	$43.75	$1,050.00
Truck tractors w/lowboy trailers	6.0	8.0	48.0	$54.10	$2,596.80
Crane (cost includes labor)	1.0	16.0	16.0	$148.50	$2,376.00
Excavator w/cable and hook or fork	1.0	16.0	16.0	$102.50	$1,640.00
Flat bed trucks	4.0	16.0	64.0	$45.00	$2,880.00
Pickup trucks	2.0	80.0	160.0	$16.25	$2,600.00
Generators (each)	2.0	80.0	160.0	$22.00	$3,520.00
SUBTOTAL					**$6,022.80**
LABOR (L)					
Truck tractor operators	9.0	8.0	72.0	$45.80	$3,297.60
Crane operator (cost includes w/equip)	1.0	16.0	16.0	$0.00	$0.00
Flat bed truck operators	4.0	16.0	64.0	$45.80	$2,931.20
Laborers	4.0	80.0	320.0	$45.80	$14,656.00
SUBTOTAL					**$20,884.80**
TOTAL COST					**$26,907.60**
MANAGEMENT					
Mobilization (5% E)					$301.14
Supervision (5% L)					$1,044.24
Contingency (7% E+L)					$1,883.53
Profit & Overhead (8.2% E+L)					$2,206.42
GRAND TOTAL COST					**$32,342.94**

6.040.2 Group 2 Tasks: Grading and Sitework

Task 2-1: Excavate and Prepare Nuff Creek for Restoration

Description: Nuff Creek and its primary tributary from the west are in culverts beneath the quarry floor. Open channel configurations will be constructed, the sideslopes resoiled, rip-rap placed in the channel beds, and the creek redirected to the new channel. (See Task 2-3 for resoiling)

Operation: Restore pre-mining drainage.

Quantity: Creek cross section measures 185.5 sq. ft. Excavation is 185.5 sq. ft./LF. X 2,000 LF ÷ 27 = 13,740 CY.
Tributary creek cross section measures 27 sq. ft. Excavation is 27 sq. ft. X 750 LF ÷ 27 = 750 CY.
Excavation total = 14,490 CY
Rip-rap placed in Nuff Creek channel bottom = 10 feet wide X 2,000 LF ÷ 27 = 740 CY
Rip-rap placed in tributary channel bottom = 3' wide X 750 LF ÷ 27 = 83 CY.
Total rip rap = 813 CY

Equipment
1 Excavator with 12 CY bucket to remove earth material and place next to open channel at 80 loads/hour = 7,680 CY/day
1 Excavator with 5 CY bucket to place rip-rap in channel bottoms at 40 loads/hour = 1,600 CY/day.
4 End Dump Trucks (15 CY) to transport rip-rap for channel bottoms w/ 2 hour turnaround/load
1 Pickup truck to transport laborers to help with rip-rap placement.
1 Water Truck to wet work area for dust control.

Duration:
1 Excavator (12 CY) for 2 days to excavate and shape channels. (14,490 CY/7,680 = 1.9)
1 Excavator (5 CY) for 1 day to place rip-rap. (813 CY ÷ 1,600 = 0.5)
4 End Dump Trucks for 3.5 days to haul rip-rap. (813 ÷ 4 ÷ 60 = 3.4)
1 Pickup Truck for 1 day to transport 2 laborers.
1 Water Truck for 4 days.

Labor:
1 Excavator (12 CY) Operator for 2 days
1 Excavator Operator (5 CY) for 1 day
4 End Dump Truck Operators for 3.5 days.
2 Laborers for 1 day.

285

TABLE 9 COST ESTIMATE FOR TASK 2-1					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Excavator	2.0	24.0	48.0	$102.50	$4,920.00
End Dump trucks (cost includes labor)	4.0	28.0	112.0	$70.00	$7,840.00
Pickup truck	1.0	8.0	8.0	$16.25	$130.00
Water truck	1.0	32.0	32.0	$187.50	$6,000.00
SUBTOTAL					**$18,890.00**
LABOR (L)					
Excavator operator	2.0	24.0	48.0	$51.30	$2,462.40
Bottom Dump truck operators (labor cost included w/equipment)	4.0	28.0	112.0	$0.00	$0.00
Laborer	2.0	8.0	16.0	$45.80	$732.80
SUBTOTAL					**$3,195.20**
TOTAL COST					**$22,085.20**
MANAGEMENT					
Mobilization (5% E)					$944.50
Supervision (5% L)					$159.76
Contingency (7% E+L)					$1,545.96
Profit & Overhead (8.2% E+L)					$1,810.99
GRAND TOTAL COST					**$26,546.41**

Task 2-2: Re-Grade and Scarify Compacted Ground

Description: The Quarry Floor processing, stockpiling and loading areas will have become compacted by equipment movement. Any remaining stockpiles will need to be spread out and the ground scarified before resoiling and revegetation is started. Benches surfaces will need to be ripped before soil is added.

Operation: Spread stockpiled material and rip to ground to a depth of 18 inches.

Quantity: Assume 5,000 CY stockpiled material; 25 acres of ground area.

Equipment: 2 Loaders (7 CY) to distribute stockpiled material. 2 minute turnaround per load.
2 Bulldozers to spread stockpiled material and rip ground surface. Bulldozer traveling at 2 mph to traverse one acre per hour.
1 Water Truck to wet the work area for dust control.

Duration: 2 Loaders for 1.5 days.
2 Bulldozers for 1.5 days.
1 Water truck for 1.5 days.

Labor: 2 Loader Operators for 1.5 days.
2 Bulldozer Operators for 1.5 days.
1 Laborer for 1.5 days to operate Water Truck.

Task 2-3: Resoil Quarry Floor and Nuff Creek Sideslopes

Description: Resoil side slopes of restored creek and areas disturbed by mining.

Operation: Transport soil from creek restoration work and spread to six inch depth over areas to be revegetated.

Quantity: 22 acres of quarry floor (17,747 CY)
2,000 feet of Nuff Creek channel (18' sideslopes = 36 X 2,000 = 1.65 acres = 1,333 CY)
750 feet of westerly tributary channel (7' sideslopes = 14 X 750 = 0.24 acres = 195 CY)
TOTAL 19,275 CY

Equipment: 8 Loaders (5 CY) to transport soil w/ 3 min. turnaround/load.
1 Bulldozer to spread soil and track walk slopes. Bulldozer traveling at 2 mph to traverse one acre per hour.
1 Water Truck to wet the work area for dust control.

Duration: 8 Loaders for 3 days.
1 Bulldozer for 3 days.
1 Water truck for 3 days.

Labor: 8 Loader Operators for 3 days.
1 Bulldozer Operator for 3 days.
1 Laborer to operate Water Truck for 3 days.

287

TABLE 10
COST ESTIMATE FOR TASK 2-2

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Loaders	2.0	12.0	24.0	$168.75	$4,050.00
Bulldozers	2.0	12.0	24.0	$312.50	$7,500.00
Water trucks	1.0	12.0	12.0	$187.50	$2,250.00
SUBTOTAL					**$13,800.00**
LABOR (L)					
Loader operators	2.0	12.0	24.0	$51.30	$1,231.20
Bulldozer operators	2.0	12.0	24.0	$51.30	$1,231.20
Laborer	1.0	12.0	12.0	$45.80	$549.60
SUBTOTAL					**$3,012.00**
TOTAL COST					**$16,812.00**
MANAGEMENT					
Mobilization (5% E)					$690.00
Supervision (5% L)					$150.60
Contingency (7% E+L)					$1,176.84
Profit & Overhead (8.2% E+L)					$1,378.58
GRAND TOTAL COST					**$20,208.02**

TABLE 11
COST ESTIMATE FOR TASK 2-3

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Loaders	8.0	24.0	192.0	$168.75	$32,400.00
Bulldozer	1.0	24.0	24.0	$312.50	$7,500.00
Water trucks	1.0	24.0	24.0	$187.50	$4,500.00
SUBTOTAL					**$39,900.00**
LABOR (L)					
Loader operators	8.0	24.0	192.0	$51.30	$9,849.60
Bulldozer operator	1.0	24.0	24.0	$51.30	$1,231.20
Laborers	1.0	24.0	24.0	$45.80	$1,099.20
SUBTOTAL					**$12,180.00**
TOTAL COST					**$52,080.00**
MANAGEMENT					
Mobilization (5% E)					$1,995.00
Supervision (5% L)					$609.00
Contingency (7% E+L)					$3,645.60
Profit & Overhead (8.2% E+L)					$4,270.56
GRAND TOTAL COST					**$62,600.16**

Task 2-4: Resoil Preferred Initial New 7.36-Acre Area Benches

Description: Resoil bench surfaces to promote revegetation.
Operation: Transport stockpiled soil and spread to six inch depth over bench surfaces.
Quantity: 1.10 acres of bench surface (889 CY)
Equipment: 1 Bulldozer to spread soil
Duration: 1 Bulldozer for one day
Labor: I Bulldozer operator for one day

TABLE 12 COST ESTIMATE FOR TASK 2-4					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	8.0	8.0	$312.50	$2,500.00
SUBTOTAL					**$2,500.00**
LABOR (L)					
Bulldozer operator	1.0	8.0	8.0	$51.30	$410.40
SUBTOTAL					**$410.40**
TOTAL COST					**$2,910.40**
MANAGEMENT					
Mobilization (5% E)					$125.00
Supervision (5% L)					$20.52
Contingency (7% E+L)					$203.73
Profit & Overhead (8.2% E+L)					$238.65
GRAND TOTAL COST					**$3,498.30**

290

6.040.3 Group 3 Tasks: Revegetation

Task 3-1: Erosion Control/Grassland Seeding

Description: Apply erosion control seed mix to all disturbed areas.

Operation: Broadcast an erosion control seed mix with fertilizer on quarried benches and intervening slopes, quarry floor and Nuff Creek sideslopes.

Quantity:

Benches:	1.16 ac.
Slopes:	6.20 ac.
Floor	22.00 ac.
Creek:	1.89 ac.
Total:	31.25 ac.

Equipment: 4 Hand held belly grinders for 2 days for seed distribution (allow $25/day/unit = $200)

Duration: Allow one acre per hour per laborer for careful application.

Labor: 4 Laborers for 2 days

Materials:
300 lbs./ac. slow release organic fertilizer/ac. at $2/lb. X 31.25 ac. = $18,750.
10 lbs./ac. brome at $18/lb. X 31.25 ac. = $5,625.
2 lbs./ac. poppy at $18/lb. X 31.25 ac. $1,125.
2lbs./ac. needle grass at $40/lb. X 1.89 ac. = $151.
4 lbs./ac. needle grass at $40/lb. X 29.36 ac. = $4,698.
6 lbs./ac. fescue at $18/ac. X 29.36 ac. = $3,171.
2 lbs./ac. fescue at $18/lb. X 1.89 ac. = $68.
2 lbs./ac. lupine at $70/lb. X 7.36 ac. = $1,030.
2 lbs./ac. deerwood at $40/lb. X 29.36 ac. = $2,349.

Task 3-2 Woody Revegetation

Description: Plant shrub and tree species on disturbed areas.

Operation: Plant shrub and tree species per plant list on benches, creek sideslopes and quarry floor.

Quantity:

Benches:	1.16 ac. and 1,680 lin. ft.
Floor	22.00 ac.
Creek:	1.89 ac. and 2,750 lin. ft.

Equipment:
Hand held tools for preparing plant holes included
4 Pickup Trucks for 4 days to transport laborers
2 Flatbed Trucks for two days to transport plant materials and supplies

Materials:

Benches (770 installations)
Shrub planting on benches: five foot alternate spacing results in 565 liner size plants.
Fern and Thimbleberry planting as specified results in 151 liner size plants.
Tree planting on benches: clusters of 3 at 40 foot spacing results in 42 liner size trees and 12 one gallon size trees.

Total for benches =	758 liner size at $10 each =	$7,580
	12 one gallon size at $20 each =	$240
		$7,820

Creek Slopes (1,097installations, including 2006 wattle installations)
Tree planting on sides slopes: 40 foot cluster spacing results in 164 liner size plants and 42 one gallon size trees.
Shrub planting at top of slope: four foot spacing results in 685 liner size plants.

Total for creek banks =	849 liner size at $10 each =	$8,490
	42 one gallon size at $20 each =	$840
	206 wattle installations from on-site cuttings.	

Access Road Planting (129 installations)
Tree planting with 40 foot cluster spacing results in 20 liner size and 4 one gallon size trees.
Brush planting results in 105 liner size plants.

Total for access roads =	125 liner size at $10 each =	$1,250
	4 one gallon size at $20 each =	$80
		$1,330

Chicken Wire Plant Protection
Allow 18" diameter = 60" length X 18" high wire cage per plant
Assume stake and wire per plant at $3 X 1,295 installations = $3,885

Planting Mix
Allow 0.5 cu. ft. per one gallon plant = 1 CY and 0.25 cu. ft. per liner plant = 37 CY
Assume $20/CY for mix X 38 CY = $760.

Labor: 12 laborers for 4 days (Assume each laborer will install one plant every ten minutes including plant mix and wire net: 12 X 48 X 4 = 2,304 installations) Laborers will operate pickup trucks.
2 Flatbed Truck Operators for two days

NOTES TO REVEGETATION ESTIMATE

A. Quarry floor measures 21.86 acres (rounded to 22.00 acres).
B. New 30' wide benches measure 1.16 acres and total length is 1,680 feet. Of the total, 735 feet is evergreen and 945 feet is brush community.
C. New mined slopes (excluding benches) measure 6.20 acres.
D. Restored creek measures 1.89 acres and total length is 1,375 feet. Two sides to be planted makes overall length 2,750 feet.
E. Switchback portion of access road is to be planted with riparian trees along both sides. Straight line distance is 160 feet x 2 sides = 320 feet total length.
F. Straight portion of access road is to be planted with shrub species along south side. Straight line distance is 260 feet.
G. All areas are to receive erosion control grassland seeding prior to tree and shrub planting. Total area is 31.25 acres.
H. Assume equal percentages of each shrub and tree species listed when specification is to alternate randomly with other species.

BENCH PLANTING			
	LINER	1 GALLON	TOTAL
Evergreen Trees			
Douglas Fir	14	4	18
Redwood	14	4	18
Bay	14	4	18
Subtotal	**42**	**12**	**54**
Evergreen Shrubs			
Sword fern	145	0	145
Thimbleberry	6	0	6
Subtotal	**151**	**0**	**151**
Brush Shrubs			
Sagebrush	113	0	113
Coyote brush	113	0	113
Blue blossom	113	0	113
Lupine	113	0	113
Coffeeberry	113	0	113
Subtotal	**565**	**0**	**565**
TOTALS	**758**	**12**	**770**

Bench area = 1.16 acres

Density = $\frac{770 \text{ plants}}{1.16 \text{ acres}}$ = 664 plants per acre

CREEK PLANTING			
	LINER	1 GALLON	TOTAL
Shrubs at Top of Slope			
Coyote brush	137	0	137
Blue blossom	137	0	137
Coffeeberry	137	0	137
Thimbleberry	137	0	137
Blackberry	137	0	137
Subtotal	**685**	**0**	**685**
Trees at Mid-Slope			
Bay	82	21	103
Alber	82	21	103
Subtotal	**164**	**42**	**206**
Trees at Water's Edge			
Willow wattle	N/A	N/A	103
Willow wattle	N/A	N/A	103
Subtotal			**206**
TOTALS	**849**	**42**	**891 plus 206 wattles = 1,097**

Density = $\frac{1,097 \text{ plants}}{1.89 \text{ acres}}$ = 580 plants per acre

293

ACCESS ROAD PLANTING			
	LINER	1 GALLON	TOTAL
Riparian Trees			
Alder	5	1	6
Yellow Willow	5	1	6
Arroyo Willow	5	1	6
Bay	5	1	6
Subtotal	**20**	**4**	**24**
Brush Planting			
Sagebrush	21	0	21
Coyote brush	21	0	21
Blue blossom	21	0	21
Lupine	21	0	21
Coffeeberry	21	0	21
Subtotal	**105**	**0**	**105**
TOTALS	**125**	**4**	**129**

294

TABLE 13 COST ESTIMATE FOR TASK 3-1					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Belly grinders	4.0	16.0	64.0	$3.13	$200.32
SUBTOTAL					**$200.32**
LABOR (L)					
Laborers	4.0	16.0	64.0	$45.80	$2,931.20
SUBTOTAL					**$2,931.20**
MATERIAL (M)					
Organic fertilizer (lbs)	9375.00			$2.00	$18,750.00
Brome (lbs)	312.50			$18.00	$5,625.00
Poppy (lbs)	62.50			$18.00	$1,125.00
Needle grass (lbs)	3.78			$40.00	$151.20
Needle grass (lbs)	117.44			$40.00	$4,697.60
Fescue (lbs)	176.16			$18.00	$3,170.88
Fescue (lbs)	3.78			$18.00	$68.04
Lupine (lbs)	14.72			$70.00	$1,030.40
Deerweed (lbs)	58.72			$40.00	$2,348.80
SUBTOTAL					**$36,966.92**
TOTAL COST					**$40,098.44**
MANAGEMENT					
Mobilization (5% E)					$10.02
Supervision (5% L)					$146.56
Contingency (7% E+L+M)					$2,806.89
Profit & Overhead (8.2% E+L+M)					$3,288.07
GRAND TOTAL COST					**$46,349.98**

TABLE 14 COST ESTIMATE FOR TASK 3-2					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Pickup truck	4.0	32.0	128.0	$16.25	$2,080.00
Flatbed truck	2.0	16.0	32.0	$45.00	$1,440.00
SUBTOTAL					**$3,520.00**
LABOR (L)					
Laborers	12.0	32.0	384.0	$45.80	$17,587.20
Flatbed truck operators	2.0	16.0	32.0	$45.80	$1,465.60
SUBTOTAL					**$19,052.80**
MATERIAL (M)					
Liner size shrub plants (ea)	1,506.0			$10.00	$15,060.00
Liner size trees (ea)	226.0			$10.00	$2,260.00
One gallon size trees (ea)	58.0			$20.00	$1,160.00
Wattle (on-site cuttings)	206.0			$0.00	$0.00
Stake and wire per plant (ea)	1,295.0			$3.00	$3,885.00
Planting mix (cy)	38.0			$20.00	$760.00
SUBTOTAL					**$23,125.00**
TOTAL COST					**$45,697.80**
MANAGEMENT					
Mobilization (5% E)					$176.00
Supervision (5% L)					$952.64
Contingency (7% E+L+M)					$3,198.85
Profit & Overhead (8.2% E+L+M)					$3,747.22
GRAND TOTAL COST					**$76,897.51**

6.040.4 Group 4 Tasks: Monitoring and Maintenance

Task 4-1: Monitoring

Description: Planting will be monitored for a period of at least two years following installation or until success criteria has been achieved. Assume two years total for cost estimate.

Operation: Field inspection of planting and erosion conditions monthly for the first year and quarterly for the second.

Quantity: 12 inspections year one; 4 inspections year two.

Equipment: One Pickup Truck for inspector.

Duration: 1 Pickup Truck for 16 days.

Labor: 1 Inspector for 16 days.

Task 4-2: Maintenance

Description: Replace dead plants and attend to erosion problems once each year. Remove weeds.

Operation: Allow for 10 percent plant replacement in year one; All replacement to be liner size.
Allow for installation of 2,000 lin. ft. of straw wattle roll each year

Quantity: 186 liner size plants
4,000 lin. ft. straw wattle roll
Weeding one time each year

Equipment: 1 Flat Bed truck to transport materials.
4 Pickup Trucks for laborers.

Duration: 1 Flat Bed Truck for two days.
4 Pickup Trucks for two days. One day each year for replanting and one day each year for weed control.

Labor: 1 Flat bed Truck Operator for two days.
12 laborers for two days.

Materials: 186 liner size plants at $10 = $1,860
4,000 lin. ft. straw wattle roll at $2 = $8,000.

297

TABLE 15
COST ESTIMATE FOR TASK 4-1

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Pickup truck	1.0	128.0	128.0	$16.25	$2,080.00
SUBTOTAL					**$2,080.00**
LABOR (L)					
Inspector	1.0	128.0	128.0	$125.00	$16,000.00
SUBTOTAL					**$16,000.00**
TOTAL COST					**$18,080.00**
MANAGEMENT					
Mobilization (5% E)					$104.00
Supervision (5% L)					$800.00
Contingency (7% E+L+M)					$1,265.60
Profit & Overhead (8.2% E+L+M)					$1,482.56
GRAND TOTAL COST					**$21,732.16**

TABLE 16
COST ESTIMATE FOR TASK 4-2

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Flat Bed truck	1.0	16.0	16.0	$45.00	$720.00
Pickup trucks	4.0	16.0	64.0	$16.25	$1,040.00
SUBTOTAL					**$1,760.00**
LABOR (L)					
Flat Bed truck operator	1.0	16.0	16.0	$45.80	$732.80
Laborers	12.0	16.0	192.0	$45.80	$8,793.60
SUBTOTAL					**$9,526.40**
MATERIAL (M)					
Liner size plants (ea)	186.0			$10.00	$1,860.00
Straw wattle rolls (l.f.)	4,000.0			$2.00	$8,000.00
SUBTOTAL					**$9,860.00**
TOTAL COST					**$21,146.40**
MANAGEMENT					
Mobilization (5% E)					$88.00
Supervision (5% L)					$476.32
Contingency (7% E+L+M)					$1,480.25
Profit & Overhead (8.2% E+L+M)					$1,734.00
GRAND TOTAL COST					**$24,924.97**

TABLE 17
COST SUMMARY

TASK	DESCRIPTION	COST
1-1	Remove Toilet Structure, Scale House, Warehouse and Sheds	$ 9,395.79
1-2	Remove Boneyard Debris and Old Equipment	$ 6,178.28
1-3	Remove Excavation Equipment, Process Equipment, Scale, Portable Office and Fuel Tanks	$ 32,342.94
2-1	Excavate and Prepare Nuff Creek for Restoration	$ 26,546.41
2-2	Re-Grade and Scarify Compacted Ground	$ 20,208.02
2-3	Resoil Quarry Floor	$ 62,600.16
2-4	Resoil Expansion Area Benches	$ 3,498.30
3-1	Erosion Control/Grassland Seeding	$ 46,349.98
3-2	Woody Revegetation	$ 76,897.51
4-1	Monitoring	$ 21,732.16
4-2	Maintenance	$ 24,924.97
GRAND TOTAL		**$ 330,674.52**

299

APPENDIX G

SWPPP BEST MANAGEMENT PRACTICES

APPENDIX G: SWPPP

POLLUTANT SOURCES AND ASSOCIATED BEST MANAGEMENT PRACTICES

The sources of pollutants that could possible enter storm water at this facility are indicated in the Table. Although the table lists many difference sources, only those sources identified by check marks in the left column are present at this facility. Those actions that are implemented to minimize pollutant contact with storm water at each source identified on the table.

POTENTIAL SOURCES OF POLLUTANTS AND ASSOCIATED BEST MANAGEMENT PRACATICES FOR ROCK, SAND AND GRAVEL PRODUCTION

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Aggregate stockpiles	Sediment		√	Storage area graded to prevent storm water run-on
		√		Run-off treated in silt retention pond or device
			√	Aggregate stored in elevated silos
		√		Stockpiles placed on slightly sloped ground or raised bunkers to facilitate collection and treatment of run-off drainage
		√		Drainage feature(s) constructed to facilitate collection and treatment of drainage
		√		Run-off directed into numerous sediment ponds
Aggregate processing area	Sediment	√		Reduce spillage
			√	Elevated bins at storage area prevent water contact
		√		Run-off treated in silt retention pond or device
			√	Outside process area is placed on slightly sloped concrete to facilitate collection and treatment of run-off drainage
		√		Drainage feature(s) constructed to facilitate collection and treatment of drainage
		√		Excess lubrication leaked from bearings is regularly cleaned up

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Aggregate Handling	Sediment	√		Comply with BAAQMD
		√		Minimize handling of materials
Vehicle/ Equipment Maintenance	Petroleum Hydrocarbons Sulfuric Acid Lead Oil and Grease Anti-freeze Solvents Paints	√		Vehicle/equipment maintenance performed only in one designated area
		√		Vehicle/equipment maintenance performed inside garage/building
		√		Outdoor maintenance area paved
		√		Clearly labeled drums and containers placed in convenient locations
		√		Waste receptacles monitored and arrangements for pickups made promptly
		√		Waste oil, waste anti-freeze, spend solvents, filters and batteries recycled
		√		Procedures established to ensure draining of engine fluids and transfer to waste containers without spillage
		√		Drip pans placed under vehicles/ equipment when draining fluids or when leaks are suspected
		√		Area equipped with dry spill cleanup equipment and covered standby drums
		√		Employees instructed on proper cleanup procedures for minor spills
Air Compressor s	Petroleum Hydrocarbons	√		Drip pan under compressors
		√		Blowdown contained and disposed of properly
		√		Seals regularly inspected and maintained
		√		One kept indoors and one outdoors
Battery Storage Area (new and discharged batteries)	Sulfuric Acid Lead	√		Batteries stored inside building
		√		Batteries stored on pallet/rubber made tub
			√	Signs posted to warn employees of a strong acid, and to specify containment and cleanup procedures in case of spills
		√		Area equipped with dry spill cleanup equipment
		√		Prompt recycling of batteries; and inventory minimization
Used Brake Pads	Sediment Asbestos Heavy Metals		√	Brake shoes stored inside building
			√	Prompt recycling of shoes and disposal of discarded parts
		√		Brake work is done off-site

302

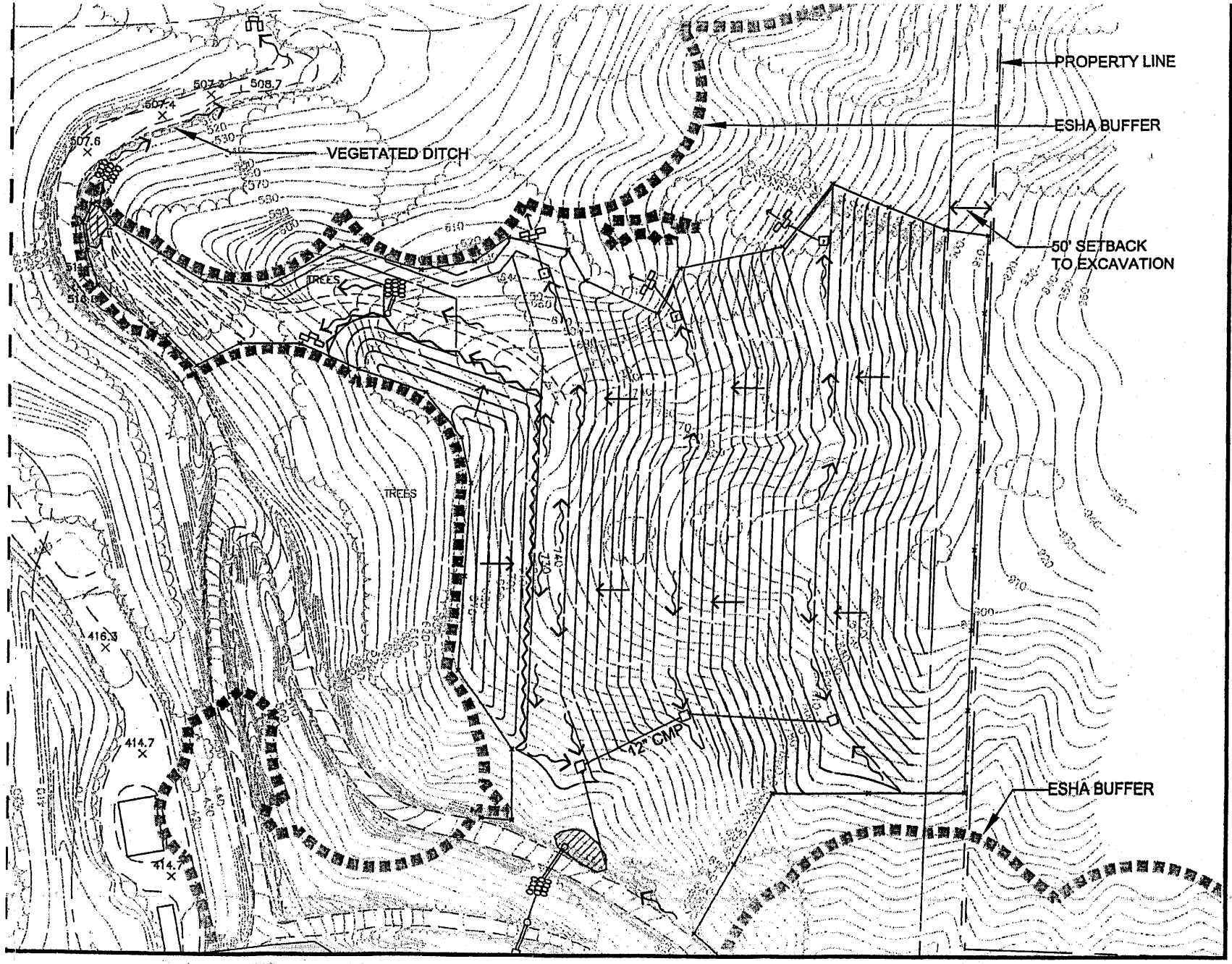
SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Lubricant Storage	Petroleum Hydrocarbons	√		All lubricant containers clearly labeled
		√		All lubricant materials containers closed
		√		Lubricant materials stored in designated areas only
		√		Lubricant material storage areas secured to prevent unauthorized access
		√		Lubricant material storage maintained in accordance with applicable Federal, State and local regulations and codes
		√		Condition of containers and storage area inspected regularly
		√		Leaking or deteriorated containers placed in new containers
		√		Signs posted to identify storage areas
		√		Lubricant material kept indoors or undercover
		√		Material safety data sheets kept at the facility for all hazardous materials. Lubricant materials inventory minimized where practical
		√		Secondary containment and storage tank covered to prevent rain contact
		√		Sign posted to instruct employees that all hazardous material spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor
		√		Spill cleanup equipment clearly labeled and stored where accessible
		√		Proper security measures implemented to prevent vandalism
Above-ground Fuel Storage Tank(s) and Fueling Area	Petroleum Hydrocarbons	√		Tank has secondary containment to prevent release of fuel even with total tank failure
			√	Secondary containment and storage tank covered to prevent rain contact
			√	Secondary containment equipped with locked drainage valve to release uncontaminated rain water. The valve is always in the locked closed position except after designated employees have visually inspected the accumulated water and have not detected any sheen or fuel

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Continued: Above-ground Fuel Storage Tank(s) and Fueling Area	*Continued:* Petroleum Hydrocarbons	√		Accumulated rain water in the containment area disposed of in accordance with local, State, and Federal regulations if any evidence of fuel were detected on the water
			√	Vehicle fueling area is paved
			√	Vehicle fueling area is covered
			√	Vehicle fueling area drainage is to oil/water separator and sanitary sewer
		√		Sign posted to instruct employees that all fuel spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor
		√		Sign posted to instruct employees to not leave filling hose unattended during fueling. Nozzle has auto shut-off mechanism
		√		Spill cleanup equipment clearly labeled and stored near the fuel pumps at Main Shop
		√		Proper security measures implemented to prevent vandalism
Hazardous Materials Storage Area (Examples: lube oil, paint, solvent, batteries, antifreeze, soaps and cleaners)	Petroleum Hydrocarbons, Solvents Acids Bases Antifreeze Heavy Metals Pesticides	√		All hazardous materials containers clearly labeled
		√		All hazardous materials containers closed
		√		Hazardous materials stored in designated areas only
		√		Hazardous material storage maintained in accordance with applicable Federal, State and local regulations and codes
		√		Container conditions are routinely inspected and resolved.
		√		Leaking or deteriorated containers placed in new containers
		√		Signs posted to identify storage areas
		√		Hazardous material kept indoors or undercover (most)
		√		Material safety data sheets kept at the facility for all hazardous materials. Hazardous materials inventory minimized where practical
		√		Secondary containment and storage tank covered to prevent rain contact

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Continued: Hazardous Materials Storage Area (Examples: lube oil, paint, solvent, batteries, antifreeze, soaps and cleaners)	*Continued:* Petroleum Hydrocarbons, Solvents Acids Bases Antifreeze Heavy Metals Pesticides		√	Secondary containment equipped with locked drainage valve to release uncontaminated rain water. The valve is always in the locked closed position except after designated employees have visually inspected the accumulated water and have not detected any sheen or fuel
		√		Sign posted to instruct employees that all hazardous material spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor
		√		Spill cleanup equipment clearly labeled and stored where accessible
		√		Proper security measures implemented to prevent vandalism
		√		All hazardous materials are stored in secondary containers
Hazardous Waste Storage (Examples: used oil filters, drain/waste oil, discharged batteries, used antifreeze, fluorescent lamps, spent solvent)	Petroleum Hydrocarbons, Solvents Acids Bases Antifreeze Heavy Metals Pesticides	√		All hazardous waste containers clearly labeled
		√		All hazardous materials containers closed
		√		Hazardous materials stored in designated areas only
		√		Hazardous material storage maintained in accordance with applicable Federal, State and local regulations and codes
		√		Inspections of condition of containers and area are inspected regularly - routine inspection
		√		Leaking or deteriorated containers placed in new containers
		√		Remove and dispose of properly all hazardous wastes in accordance with applicable regulations
		√		Signs posted to identify storage areas
		√		Hazardous material kept indoors or undercover
		√		Waste oil tank placed in secondary containment to prevent release of fuel even with total tank failure
		√		Secondary containment and storage tank covered to prevent rain contact

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Continued: Hazardous Waste Storage (Examples: used oil filters, drain/waste oil, discharged batteries, used antifreeze, fluorescent lamps, spent solvent)	*Continued:* Petroleum Hydrocarbons, Solvents Acids Bases Antifreeze Heavy Metals Pesticides		√	Secondary containment equipped with locked drainage valve to release uncontaminated rain water. The valve is always in the locked closed position except after designated employees have visually inspected the accumulated water and have not detected any sheen or fuel
			√	Accumulated rain water in the containment area disposed of in accordance with local, State, and Federal regulations if any evidence of contamination were detected on the water
		√		Sign posted to instruct employees that all hazardous material spills must be cleaned up promptly, specify procedures for cleanup, and require notification of supervisor
		√		Spill cleanup equipment clearly labeled and stored where accessible
		√		Proper security measures implemented to prevent vandalism
		√		Used oil filters are drained and stored in approved UN container
Municipal Garbage Dumpster	Biodegradable Organic Materials (e.g.: BOD, COD, N, N+N)	√		Dumpster with lid used to keep out rain water and prevent debris from blowing away
		√		Water tight dumpster used to keep free liquids in garbage contained
		√		Dumpster located away from storm drain inlet or other storm water conveyance feature
			√	Sign posted to instruct employees to immediately clean up spilled debris
			√	Dumpster placed under roof
Paved Vehicle / Equipment Parking or Outside Storage Areas	Petroleum Hydrocarbons Oil & Grease Antifreeze Sediment		√	Yard swept routinely
			√	Vehicles/equipment regularly inspected
			√	Run-off collected and passed through holding pond
			√	Leaks from vehicles/equipment promptly repaired once discovered
			√	Drip pans and absorbent materials used temporarily to collect leakage until repaired

SOURCE	POTENTIAL POLLUTANTS	EXISTING	NOT APPLICABLE	BEST MANAGEMENT PRACTICES
Unpaved Vehicle / Equipment Parking or Outside Storage Areas	Petroleum Hydrocarbons Oil & Grease Antifreeze Sediment		√	Yard swept routinely
		√		Vehicles/equipment regularly inspected
		√		Run-off collected and passed through holding pond
		√		Leaks from vehicles/equipment promptly repaired once discovered
		√		Drip pans and absorbent materials used temporarily to collect leakage until repaired
Boneyard / Surplus Equipment Storage	Petroleum Hydrocarbons Oil & Grease Antifreeze Acids Metals Sediment		√	Fuel tanks drained
		√		Batteries removed (recycled)
			√	Drip pans used where feasible
		√		Equipment regularly inspected
			√	Leaks repaired or liquids drained
			√	Surplus storage minimized
			√	Equipment covered
		√		Primarily used for non-motorized equipment, used screens and scrap metal. All materials will be kept away from creek edge.
Storm Water Collection and On-site Containment	Sediment Petroleum Hydrocarbons Metals pH		√	Collect and store runoff for reuse on site
		√		Impede flow velocity to drop out sediments
		√		Raise spillover points at drainage inlets to promote drop out of sediments after drying collect and recycle sediment
		√		Water truck
Off-site Trackout	Sediment Petroleum Hydrocarbons pH		√	Eliminate "trackout" from site
			√	Wheel was and/or lengthened on-site egress to dry wheels
			√	Route traffic around mud areas where feasible
			√	Pave encroachment and egress areas used by commercial traffic
			√	Present clear written management policy regarding trackout
			√	Regularly sweep egress and scale house areas



WEST COAST AGGREGATES

PILARCITOS QUARR

SITE-SPECIFIC EROSION CONTROL PL

LEGEND

- BOUNDARY FENCE PROTECTING ESHA (SEE DETAIL A)
- SHEET FLOW RUNOFF
- SURFACE DRAINAGE ALONG A VEE DITCH OR BENCH
- STRAW BALE CHECK DAM (SEE DETAIL B)
- SEDIMENT TRAP ON BENCH (SEE DETAIL
- SEDIMENT BASIN WITH BAFFLE (SEE DETAIL
- CULVERTED DRAIN
  - INLET
  - RIP-RAP
- STRAW WATTLE (SEE DETAIL E)
- OUTLET TO RIP-RAP ENERGY DISSIPATOR

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SCALE IN FEET

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10 /

NOTES TO THE EROSION CONTROL PLAN

Protect Conserved Vegetation

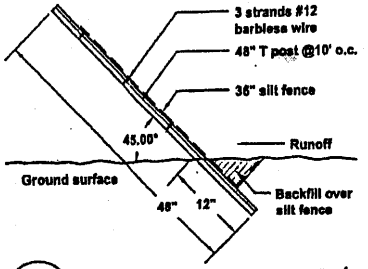
1. Install fence at boundary of excavation area. This will mark the boundary and keep equipment away from vegetation to be retained.
2. Install temporary low earth berm at sides and toe of active work area. This will provide additional protection by preventing earth material and rock from rolling towards protected areas.
3. Use water spray during topsoil salvage. This will minimize potential insect infestation on vegetation to be retained.

Protect Undisturbed Watershed

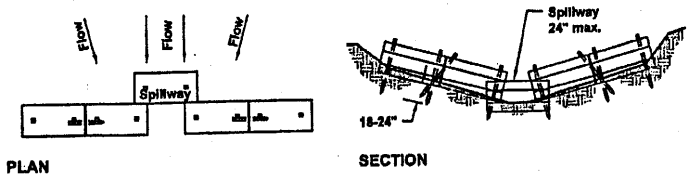
1. Incorporate silt fence with the excavation area boundary fence. This will prevent sediment from entering adjacent undisturbed areas.
2. Install a silt trap at the ends of the benches in the excavation area. These will capture sediment and control the release of water into undisturbed drainage courses.
3. Install straw bale check dams at silt trap outlets. This will slow runoff and re-introduce water to natural drainage courses at a nearly normal rate.
4. Install sediment pond at the toe of the new work area. This will capture and treat runoff from the access road before water is released.
5. Re-establish vegetation on excavated areas as soon as possible following mining. See Mining and Reclamation Plan revegetation plan.

Stabilize Newly Planted Areas

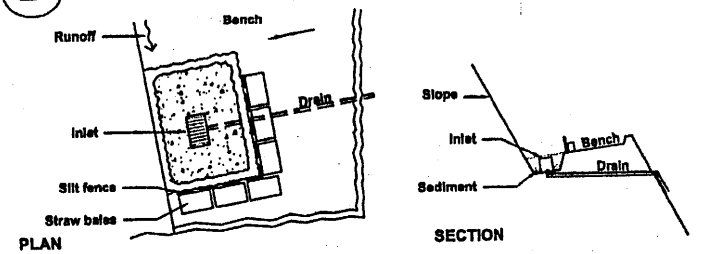
1. Use a bulldozer to trackwalk intervening slopes. This will provide niches for topsoil and erosion control seeding.
2. Spread topsoil over all areas to be revegetated.
3. Spread layer of clean straw over reseeded areas. This will protect seed while it is germinating and will promote a more even distribution of surface runoff.
4. Inspect site following storms and install straw wattle rolls above areas where runoff appears to be concentrating. This will minimize loss of newly placed topsoil.
5. Inspect site following storms and install straw bale check dams where runoff appears to be eroding man-made drainage ditches. This will slow runoff and minimize further erosion.



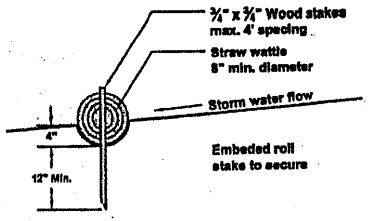
A ESHA BOUNDARY FENCE (NTS)



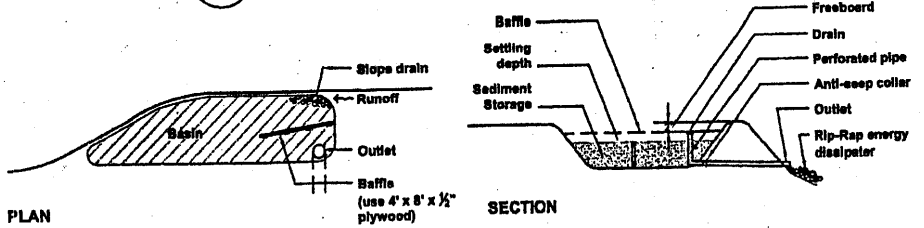
B STRAW BALE CHECK DAM (NTS)



C SEDIMENT TRAP INLET (NTS)



E STRAW WATTLE SILT BARRIER (NTS)



D TYPICAL SEDIMENT BASIN WITH BAFFLE (NTS)

WEST COAST AGGREGATES

PILARCITOS QUARRY

SITE-SPECIFIC EROSION CONTROL PLA

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10 / 2

COUNTY OF SAN MATEO
ENVIRONMENTAL SERVICES AGENCY
PLANNING AND BUILDING DIVISION

DATE: June 14, 2006

TO: Planning Commission

FROM: Michael Schaller, Project Planner

SUBJECT: SUPPLEMENTAL STAFF REPORT: Consideration of an amendment to an existing Coastal Development Permit, a Resource Management District-Coastal Zone Permit, and Surface Mining Permit and Reclamation Plan, and certification of a Mitigated Negative Declaration, to allow the minor expansion of Pilarcitos Quarry, located at 11700 San Mateo Road, in the unincorporated Half Moon Bay area of San Mateo County. This project is appealable to the California Coastal Commission.

County File Number: PLN 2000-00456 (West Coast Aggregates)

RECOMMENDATION

That the Planning Commission approve the requested permits, County File Number PLN 2000-00456, by adopting the required findings and conditions of approval identified in Attachment A.

BACKGROUND

This item was conceptually approved by the Planning Commission on May 10, 2006. At that time, the Commission directed staff to:

1. Transmit the conceptually approved Reclamation Plan Amendment to the State Office of Mine Reclamation for its review and approval.

2. Review the materials submitted by the applicant in response to the comments submitted for the May 10, 2006, public hearing.

As stated during the hearing, staff referred the Reclamation Plan Amendment to the State Office of Mine Reclamation (OMR) prior to the hearing as part of the normal processing of this application. Staff received comments from OMR on May 3, 2006. Unfortunately, there was insufficient time for staff to review these comments in detail prior to the hearing. The following is a break down of OMR's comments and the applicant's responses, with staff's analysis following.