

Appendices C and D
Responses to Comments 1 and 2 with Comment Letters and
Attachments



August 19, 2016

GIS, Environmental, & Engineering Services

71410

Mr. Michael Wheeler
Humboldt County Planning and Building Department
Current Planning Division
3015 H Street
Eureka, CA 95501

**RE: Response to Comments
Mining and Reclamation Plan Amendment
R. Brown and Sons Quarry
CA Mine ID# 91-12-0035; SMP 1 4-001 X; CUP 14-013XM; RP 14-001XM**

Dear Mr. Wheeler:

R. Brown and Sons Quarry is in receipt of agency responses received during the County's initial scoping for the proposed mine expansion. Comments were received from the following agencies:

North Coast Unified Air Quality Management District	Letter dated April 22, 2016
Department of Forestry and Fire Protection	Email dated May 2, 2016
California Department of Fish and Wildlife	Email dated May 13, 2016
Department of Forestry and Fire Protection	Letter dated May 18, 2016
Office of Mine Reclamation	Letter dated June 1, 2016

Copies of comment letters/emails are included in Attachment A. Each comment is addressed in this letter. Revisions to the Reclamation Plan Amendment and Initial Study, as well as other supporting documents, will be made once the County has approved the comments and proposed revisions.

**North Coast Unified Air Quality Management District (NCUAQMD)
Letter dated April 22, 2016**

NCUAQMD Comment No. 1: *The expansion of your quarry west of Willow Creek triggers requirements of State ATCM 93105 due to its proximity to an identified ultramafic vein. Specifically, this agency requires you comply with ATCM 93105 condition (f) and condition (b). ATCM 93105: Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.*

(f) Requirements for Quarrying and Surface Mining Operations

(b) Test Methods

If test method 435 reveals the existence of naturally occurring asbestos in the quarry, immediately notify this agency.

Response: A geologic evaluation was initially prepared for the site by Cooksley Geophysics, Inc., in August 2004. The geologic evaluation was updated to include the expansion area in compliance with the requirements of ATCM 93105. The geologic evaluation is included, along with the 2004 document, as Attachment B. No change to the Reclamation Plan was required.

Department of Forestry and Fire Protection (CALFIRE)
Email dated May 2, 2016 (Standard Conditions)

CALFIRE Comment 1: *FIRE SAFE General:* *CALFIRE has responsibility for enforcement of Fire Safe Standards as required by Public Resources Code (PRC) 4290 and 4291. However CALFIRE is not the lead agency in planning development and project permitting. CALFIRE provides input as a contributing agency, generally limited to plan review, and is not the approving agency for these projects.*

Response: Comment noted and acknowledged.

CALFIRE Comment 2: *FIRE SAFE Local Responsibility Areas:* *Should this project include Local Responsibility Area (LRA) lands, CALFIRE has no direct fire safe input on those parcels. However, in those areas with LRA parcels adjacent to State Responsibility Area (SRA) land, CALFIRE recommends that local standards be applied that are consistent with those CALFIRE makes for SRA lands.*

Response: Comment noted and acknowledged.

CALFIRE Comment 3: *FIRE SAFE State Responsibility Areas:* *Should this project include State Responsibility Area (SRA) lands, the following are CALFIRE's Fire Safe minimum input and recommendation for any and all development.*

Response: The proposed project is not a development project. No new buildings, roads, or streets are planned as part of this project. Comment noted and acknowledged.

CALFIRE Comment 4: *Resource Management.* *If this project reduces the amount of timberland, by policy, the Board of Forestry and CALFIRE cannot support any project that will reduce the timberland base of California. "Timberland" means land which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees regardless of current zoning (PRC 4526). However, if the zoning and intended use are consistent with the county's general plan; and if no land other than timberland can be identified to site the project; then CALFIRE may choose not to oppose the project.*

Response: The project will not reduce the amount of timberland in the state. Final reclamation at cessation of mining is to restore the site to timberland by the planting of timber species. Mining is an allowed use under the TPZ zone in Humboldt County. The project site cannot be moved since it is an expansion of an existing operation.

CALFIRE Comment 5: *Resource Management.* *If **any** commercial timber operations are involved with a project, the timber operations cannot be conducted without a CAL FIRE permit. Commercial timber operations include the cutting or removal of trees offered for sale, barter, exchange, or trade or the conversion of timberlands to land uses other than the growing of timber (PRC 4527). Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.*

Response: Although the conversion of property from timberland to mining is limited to the duration of the life of the mine, CALFIRE has requested that a timberland conversion permit be obtained for the property. A Timberland Conversion Permit (TCP) for the

property was submitted to CALFIRE on June 7, 2016. A copy of this application (minus attachments) is including as Attachment C.

CALFIRE Comment 6: *Resource Management.* *If any timberlands are being converted to a non-timber growing use by this project, the conversion operations cannot be conducted without a CAL FIRE permit (PRC 4621). Conversion of timberland takes place when trees are removed and the land use changes, even without the sale, barter, exchange, or trade of the trees. Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.*

Response: Although the conversion of property from timberland to mining is limited to the duration of the life of the mine, CALFIRE has requested that a TCP be obtained for the property. A TCP for the property was submitted to CALFIRE on June 7, 2016. A copy of this application (minus attachments) is including as Attachment C.

CALFIRE Comment 7: *Resource Management.* *If timberland is in the view shed of a project, the current and future owners should be overtly notified that changes will occur to their views due to timber management activities. Further, no project should be allowed to negatively affect access to timberland for timber management purposes; neither on the project parcel(s) nor any other timberland parcels.*

Response: The owner of the project is aware that the surrounding view shed may change due to timber activities in the future. The project will not negatively affect access to timberland for timber management purposes, neither on the project parcel(s) nor on any other timberland parcels.

CALFIRE Comment 8: *Resource Management.* *If timber harvesting has occurred and post-harvest restocking and prescribed erosion control maintenance obligations have not been met on a parcel, future owners should be overtly notified (14 CCR 1042). The current owner of a parcel is responsible for restocking requirements and maintenance of roads whether or not they were involved in the actual harvest plan.*

Response: Comment noted. Previous harvest activities were conducted on the property prior to the enactment of the Z'berg-Nejedly Forest Practice Act of 1973.

CALFIRE Comment 9: *Resource Management.* *If the project involves the development of parcels zoned as Timber Production Zone (TPZ), CALFIRE cannot support the project. Dividing TPZ land into parcels of less than 160 acres requires a Joint Timber Management plan prepared by a Registered Professional Forester (RPF), recorded as a deed restriction for a minimum of 10-years on all affected parcels, and approved by a four – fifths vote of the full board (Govt. Code 51119.5). TPZ may be rezoned using a “Ten Year Phase Out,” which precludes the need for a Timberland*

Response: The property will not be subdivided. The conversion of the parcel from timber to mining is for short-term duration over the life of the mine. Reclamation returns the property to timberland. Mining is an allowed use under the TPZ zone in Humboldt County. The County has stated that the project will not require a rezone of the parcel and Humboldt County will allow the use.

California Department of Fish and Wildlife (CDFW)
Email dated May 13, 2016

CDFW Comment 1: *The unnamed spring that serves as the water source for dust abatement purposes is jurisdictional for CDFW and requires a Lake or Streambed Alteration Agreement (LSAA) with CDFW pursuant to FGC 1602.*

Response: CDFW met with representatives of R. Brown and Sons Quarry on June 13, 2016. Following the site visit, CDFW determined that the onsite spring was not a jurisdictional feature and would not require a Lake or Streambed Alteration Agreement with CDFW pursuant to FGC 1602. R. Brown and Son's Quarry completed onsite work to the satisfaction of CDFW that met the requirements for onsite storage and use. A letter summarizing the onsite activities submitted to CDFW is included in Attachment D. Please note the spring location was incorrect on Figure 7 in the initial document; this has been amended in the revised document.

CDFW Comment 2: *The revegetation plan should mimic the current native plant community on-site. Referral materials indicate that only tree species will be used to revegetate the site, with some grasses used for erosion control. CDFW recommends adding appropriate native shrubs and forbs to the reclamation/revegetation plan. The planting palette can be flexible, but should mimic reference conditions (i.e. native plants observed during the botanical survey of the expansion area or native plant communities observed on adjacent undisturbed parcels). A phased reclamation plan would allow for adaptive management of re-vegetation strategies (i.e. to assess the potential for various species to recolonize the site and to plan future revegetation accordingly).*

Response: The project site is xeric due to the permeability of the underlying materials, which makes it very difficult to establish vegetation. Multiple botanical surveys were conducted for the project in 2014 and 2015. Additional plant species identified at the project site, other than those listed in Table 1 of the Mining and Reclamation Plan Amendment, included:

- Pacific madrone (*Arbutus menziesii*)
- Pine (*Pinus ponderosa*)
- True Oak (*Quercus chrysolepis*)
- Poison Oak (*Toxicodendron diversilobum*)
- Oceanspray (*Holodiscus discolor*)
- *Sedum* sp. with Hooker's fairybell (*Disporum hookeri*)
- Sword fern (*Polystichum munitum*)

Pacific madrone and Ponderosa pine will be added to the plant list at reclamation. The additional forbs and oak are anticipated to seed in naturally.

CDFW Comment 3: *The reclamation plan states that,*

"In order to quickly establish vegetation to prevent erosion of sloped areas, fast-growing naturalized grasses are included in the species lists. These are annual species which, although not native, are not considered invasive and naturally occur throughout the region/' (page 19).

*CDFW disagrees with this statement—the grass seed mix proposed in Table 2 contains two species, *Trifolium birtum*, or rose clover, and "*Lolium sp.*" (common name listed as annual ryegrass, likely referring to *Lolium multiflorum* or *L. perenniale*, which are both now known as *Festuca perennis*), which are listed by the California Invasive Plant Council as *invasive*, with an inventory rating of "moderate". CDFW recommends replacing these species with regional native seed, or non-native seed that is known not to persist or spread, such as barley (*Hordeum vulgare*), or wheat (*Triticum aestivum*).*

Response: As discussed in the response to CDFW Comment 2 (above), the site is xeric, making it difficult for vegetation to establish. Rose clover and rye grass have been removed from the grass seed mix. Tomcat clover (*Trifolium willdenovii*), which is native to California, will be used in the grass seed mix in place of rose clover. In response to a request from OMR, the seed mix has been modified to include:

Common Name	Latin Name
Blue wild rye	<i>Elymus glaucus</i>
California brome	<i>Bromus carinatus</i>
Idaho fescue	<i>Festuca idahoensis</i>
Bluegrass	<i>Poa secunda</i>
Yarrow	<i>Achillea millefolium</i>
Coyote brush	<i>Baccharis pilularis</i>
Bush monkeyflower	<i>Mimulus aurantiacus</i>
Spanish lotus	<i>Acmispon americanus</i>
Tomcat clover	<i>Trifolium willdenovii</i>

The table in Section 4.7.3 of the Reclamation Plan has been revised to reflect these changes.

CDFW Comment 4: *Tree removal and vegetation clearing associated with the Project should be conducted outside of the bird breeding season (generally no vegetation removal during March 1 - August 15) in order to avoid 'take' as defined and prohibited by Fish and Game Code (FGC) §3503, 3503.5, 3513, and by the Federal Migratory Bird Treaty Act (16 U.S. Code 703 etseq). There are many bird species with potential nesting habitat in the expansion area, and it is not practical or feasible to accurately survey such a large area for many of the small tree-top nesting warblers (such as black-throated gray and hermit warblers, both of which were observed on-site during the May 13 site visit). An appropriate seasonal work window will help minimize impacts to nesting birds as a result of the Project.*

Response: Tree removal and vegetation clearing will be conducted outside of the bird-breeding season, after August 15 or before March 1 of each year.

CDFW Comment 5: *The County should ensure that appropriate stream buffers are implemented/maintained for any streams (whether perennial, intermittent, or ephemeral) during expansion. Buffer distances as observed on the May 13 site visit are currently adequate, but minimal. Future operations should not encroach on any Streamside Management Area.*

Response: Comment noted. Additional buffer areas have been added.

**Department of Forestry and Fire Protection (CALFIRE)
Letter dated May 18, 2016**

CALFIRE Comment 10: *Notice of Inspection.* *The proposed project area is approximately 64 acres and zoned as Timber Production Zone (TPZ). During the inspection it was observed that commercial tree species such as Douglas-fir, western red cedar, ponderosa pine, sugar pine, and pacific madrone are growing on the proposed expansion site. (See attached photos). The project proposes to clear the timber from the site to facilitate mining operations, which will leave the site unstocked for approximately 30 years. It is CAL FIRE's determination that this activity constitutes a conversion of timberland and will therefore require a timberland conversion permit and THP. The timberland conversion permit is necessary due to the site being converted to a land use other than the growing of timber (PRC 4527), while the THP is necessary to serve as an operational document for the removal of trees from the project area.*

Response: A TCP application was submitted to CALFIRE, Sacramento, on June 7, 2016. CALFIRE staff reviewing the application determined a Timber Harvesting Plan (THP) was not required because trees removed would not be used in a commercial purpose pursuant to PRC 4527 and will be piled onsite to be chipped for reclamation activities, and because the Reclamation Plan adequately addressed vegetation removal and replanting.

CALFIRE Comment 11: *Notice of Inspection.* *A Registered Professional Forester (RPF) is required to submit the timberland conversion permit and THP.*

Response: Although the TCP was prepared by a Registered Professional Forester (RPF No. 2032), this was not required. In addition, PRC Section 4622 specifically states that a THP associated with a conversion permit need not be prepared by a Registered Professional Forester.

**Office of Mine Reclamation (OMR)
Letter dated June 1, 2016**

OMR Comment 1: *The County should consider the proposed expansion of the mine as a substantial deviation from the original approved reclamation plan pursuant to CCR Section 3502(d)(1), thereby requiring updated reclamation performance standards for the entire operation. However, should the County decide otherwise, it is recommended that the performance standards for the existing disturbance be clearly delineated from those standards applicable to the proposed expansion.*

Response: The operator appreciates OMR's comments regarding the expansion area. The expansion adds 39 acres to an existing 25-acre facility, for a total mine area of 64 acres. The facility is currently in compliance with its existing Reclamation Plan. The County has the discretion to address only the amendment to the Reclamation Plan without revision of the existing plan areas. Because of the final contours, much of the area under the current Reclamation Plan will be reclaimed to current standards and conditions under the amended Reclamation Plan. Comment noted.

OMR Comment 2: *Pursuant to SMARA Section 2772(c)(2), a reclamation plan is required to include a description of the quantity and type of minerals to be mined. Rather than relying on production rates referenced in CUP-99-01, the amended reclamation plan should include a description of the maximum annual production.*

Response: The maximum annual production is estimated to be approximately 50,000 tons per year. This value may fluctuate based on changes in the economy. The mine expansion will result in up to 3 million tons of material being available for removal. This statement has been added to the Reclamation Plan under Section 1.10.

OMR Comment 3: *During the site visit, the mine operator explained that mining would proceed from the top of the expanded quarry to the bottom. OMR recommends that the reclamation plan be revised to include a description of the proposed top-down excavation techniques, which would facilitate concurrent reclamation pursuant to SMARA Section 2772(c)(6), as the quarry develops over time.*

Response: Material removal is described on page 12 of the Mining and Reclamation Plan Amendment. Upper benches will be completed first. The upper benches will be excavated and material removed. The removal of the upper benches first will allow the establishment of planned buffers on the upper property boundary and east and west property lines of the facility. The text in the Reclamation Plan has been clarified.

OMR Comment 4: *In light of promoting concurrent reclamation, OMR recommends that the Lead Agency consider requiring the operator to initiate reclamation in the disturbed areas within the 100-foot buffer, as depicted in Figure 13, prior to expansion of the mining operation.*

Response: According to the operator, natural revegetation has colonized the area noted. Additional site preparation will damage natural revegetation. The operator commits to providing additional planting in the area and additional erosion control Best Management Practices (BMPs).

OMR Comment 5: *CCR Section 3709(a) requires that all equipment, supplies, and other material is stored in a designated area and shown on the reclamation plan maps and waste is disposed of according to state and local health and safety ordinances. OMR recommends that the county ensure these topics are addressed in the amended reclamation plan.*

Response: Minimal equipment, supplies, and other materials are stored or used onsite. All materials are stored in the local onsite trailer or at offsite locations. All fueling and equipment maintenance is performed using mobile equipment. As discussed on page 13 of the Mining and Reclamation Plan Amendment, the project does not anticipate producing

any mine waste with the exception of a small amount of nonspec rock in a small area located at the toe of the current site. This rock will be removed and stored in the topsoil stockpile to await reuse during reclamation. Otherwise, the quarry currently processes and markets all materials removed from the site. The operator confirms that all materials are stored and disposed of according to federal, state, and local health and safety ordinances and regulations. Text to this effect has been added to the Reclamation Plan under Section 3.3.

OMR Comment 6: *The reclamation plan (Section 1.12, page 3) states that the primary end use will be timber production with two home sites. As discussed during the site visit, a residential end use would require additional geotechnical and geologic risk analyses with regards to stability and treatment of final slopes; and, appropriate engineering of proposed fills, if any. Unless the end use is changed to open space, the Lead Agency should consider requiring the slopes to meet California Building Code and/or Humboldt County grading ordinances for home site areas. The current submittal only includes an on-site kinematic analysis for local (shallow) slope stability. The soil and rock parameters utilized for the global slope stability analysis were, in part, taken from a technical report for separate project located 5 miles from the quarry site. The County should require technical studies that consider a residential end use and utilize site-specific soil and rock parameters that are derived from an on-site geotechnical and geologic analysis.*

Response: The home sites have been removed from the proposed land use following reclamation. No additional geotechnical and geologic risk analyses are required.

OMR Comment 7: *CCR section 3704(f) requires that "cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability factor of safety that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use." OMR recommends that the Lead Agency require final slopes be evaluated by an appropriately licensed professional at the time of mine closure to verify that the mined slopes conform to SMARA requirements and meet the anticipated residential end use.*

Response: The operator is not opposed to the addition of this condition.

OMR Comment 8: *CCR Section 3706(d) states that surface runoff shall be controlled to ensure that surrounding land is protected from erosion and that erosion control methods are designed to handle runoff from not less than the 20-year/1-hour intensity storm event. The County should ensure that the flow calculations used to develop the Storm Water Pollution Prevention Plan (SWPPP) meet the requirements of CCR Section 3706(d). Additionally, the SWPPP should be incorporated into the reclamation plan by reference in order to satisfy the requirements of Section 3706.*

Response: The SWPPP has been incorporated by reference as requested and included as an appendix to the Reclamation Plan. The SWPPP was designed to meet the requirements of the Industrial General Permit (IGP). The design standard for the IGP for flow-related systems is 0.2 inches per hour, or two times the 85th percentile for the site. The nearest site records for the 85th percentile intensity are from Woodley Island in Humboldt County. The calculated 85th intensity for this location is approximately 0.1 inches/hour; therefore, the design intensity for the IGP is 0.2 inches/hour. The 20-year/1-hour storm for Salyer, located near the site, is estimated to be 0.8 inches/hour. The SWRCB and U.S. EPA determined that the IGP design criteria would be protective of water quality under the Porter-Cologne Water Quality Control Act and the Federal Clean Water Act.

The site is quite rocky and porous with an estimated runoff coefficient of less than 10 percent. There is limited soil onsite that could erode and affect surface water quality. There are no retention basins onsite. Current BMPs in place onsite include rock check dams in all stormwater conveyance channels. These check dams create small ponding areas that slow the flow of water and encourage percolation. The site does not discharge stormwater, even during peak events, as all stormwater generated onsite percolates prior to discharge. Erosion control BMPs are in place and working. Although there is a discrepancy in the design criteria under the SMARA and the IGP, stormwater at the site appears to be well controlled with no erosion or water quality impacts. The site is in full compliance with the IGP.

OMR Comment 9: *CCR Section 3705(a) requires that the density, cover, and species richness of naturally occurring habitats shall be documented in baseline studies in order to establish a self-sustaining vegetative cover similar to the surrounding habitat. This information must be included in reclamation plans prior to approval, not at some undefined time in the future as discussed under "Reference Sites" on page 20. Since the mature forest habitat will not be readily reestablished after mining, baseline data could be collected in the area that had been disturbed outside the eastern reclamation boundary that has revegetated naturally that was viewed during the site visit. This area could serve as a reference site to provide realistic, achievable performance standards.*

Response: Three habitats were discussed under the reclamation task. These include:

- Forest
- Grassland/Herbaceous
- Riparian

Currently, only the forest community and a limited area of grassland herbaceous community exist onsite. The riparian community exists only in buffers along the perennial stream located on the west edge of the site. The riparian plantings discussed in the Reclamation Plan will encourage vegetation in two small areas of the site, one along the west boundary where a stormwater diversion trench is located and the other adjacent to a spring located in the southeast center of the site. These locations currently do not support vegetation, but should be able to support a limited riparian community following reclamation of the site.

The site is xeric and vegetation density and diversity is limited. The property was heavily logged in the late 1960s or early 1970s before the advent of the current forest practice rules, prior to the current operator's acquisition of the property. The condition of the site prior to this event is unknown. Most of the onsite roads and landings currently used for material access and material storage were constructed at that time.

Specific baseline areas were evaluated in August 2016. Two forested sites and one previously disturbed site (herbaceous) were evaluated and are included on Figure E-1 in Attachment E. The sites represent:

1. The area of previous disturbance on the eastern buffer area.
2. The timbered area due north of the previously disturbed area.
3. An area previously undisturbed below the quarry area planned for topsoil storage.

The baseline report is included in Attachment E.

OMR Comment 10: *Additionally, there is a section on page 18 incorrectly titled "Baseline Studies." This should be changed to read "Test Plots" as the revegetation plots described are for the purpose of determining the effectiveness of using mine waste as a growth media. It can be combined with the other section on test plots on page 20.*

Response: Comment noted; change made to Reclamation Plan.

OMR Comment 11: *CCR Section 3711 establishes mandatory standards for topsoil salvage, maintenance, and redistribution. The reclamation plan amendment describes topsoil replacement, but does not address topsoil stockpile management. Some topsoil should be available for salvage in the undisturbed expansion area. It was explained during the site visit that no mine waste will be generated but that various unknown materials (such as soils and organic material brought onsite from Caltrans operations as suggested on page 17) will be imported to use for growth media. The plan should elaborate and describe how each of these requirements will be met, for example:*

- *The top 6-12 inches of topsoil shall be salvaged in the expansion area and stockpiled separately from other mined materials.*
- *The location(s) of the topsoil (and/or other growth media) stockpile(s) shall be depicted on the site map(s).*
- *The topsoil (and/or other growth media) stockpiles shall be clearly signed in the field to prevent inadvertent use.*
- *The topsoil (and/or other growth media) stockpiles shall be protected from wind and water erosion by planting with an erosion control mix.*

Response: Little to no topsoil is available to harvest onsite. The site is xeric with poor to no vegetation cover due to shallow soil strata. Rock is available at the surface. The operator will make the effort to obtain waste soil from Caltrans to stockpile onsite for future reclamation efforts. The text has been modified under Reclamation Plan Section 3.2.3 to include the following:

“Where available, topsoil will be salvaged in the expansion area and stockpiled separately from other mined materials at the location shown on Figure 17. The topsoil (and/or other growth media) stockpiles will be clearly signed in the field to prevent inadvertent use. In addition, the locations of soil stockpiles in areas not used for other materials will prevent inadvertent use. The topsoil (and/or other growth media) stockpiles will be protected from wind and water erosion by planting with an erosion control mix as well as keeping the stockpiles in a low profile with moderate slopes.”

CCR Section 3705(e) addresses the need for a soil analysis if the soil is altered or other than native topsoil. If soil analysis suggests that fertility levels are inadequate to implement the revegetation program, fertilizer or other soil amendments may be needed for the growth media. Soil amendments and fertilizers can also be applied experimentally in the test plots.

Response: Comment noted. If soil analysis suggests that fertility levels are inadequate to implement the revegetation program, fertilizer or other soil amendments may be required for the growth media. Soil amendments and fertilizers may also be applied experimentally in the test plots. Soil amendments and mulches considered for use include chipped vegetative material

and imported compost, which will be evaluated during the test plot work. This has been added to the Reclamation Plan in Section 4.6 “Soil Analysis.”

OMR Comment 12: *The amended revegetation plan proposes to develop three vegetative communities including grassland, coniferous forest, and riparian forest. Location and extent of each habitat type should be depicted on a site map. Acreages of each habitat type should be provided. This will be necessary in the calculation of the Financial Assurance Cost Estimate (FACE). No understory cover is proposed for the forest or riparian habitat types to complement the tree plantings. The revised seed mix (as shown below) should be applied to these habitats in order to provide cover and erosion control while the trees are getting established and to discourage invasion by weedy species.*

Response: The comment is correct – the amended revegetation plan proposes to develop three vegetative communities onsite at the time of final reclamation. These include grassland, coniferous forest, and riparian forest. The location, extent, and acreage of each proposed habitat type at reclamation are shown on Figure E-2. This text and the figure have been added to the amended Reclamation Plan under Section 4.7.1 “Revegetation Overview” and as an appendix.

OMR is correct – no understory cover is proposed for the forest or riparian habitat types to complement the tree plantings. The site is xeric with poor to no vegetation cover due to shallow soil strata. The introduction of additional competitor species, such as grasses, will negatively affect the establishment of conifer and other larger hardwoods at the site. Commercially available herbicides will be used to control unwanted vegetation for the first three to five years following planting. Following successful establishment of conifers and hardwood plugs, native understory will be allowed to seed. Invasive weeds will be controlled during annual inspections using commercially available herbicides at the time of application. Grass seed will not be applied to these areas until after year five if needed.

OMR Comment 13: *OMR recommends several changes to the proposed grass seed mix on page 20. The non-native weedy species rose clover (*Trifolium hirtum*) and annual ryegrass (*Lolium* sp.) should be removed. Locally occurring native grasses, herbs, and shrubs should be added to provide for more diversity representing the local vegetation. Application rates should be shown as pounds of pure live seed per acre (PLS) and should total between 20-50 pounds PLS per acre.*

Recommended Seed Mix

Common name	Latin name
Blue wild rye	<i>Elymus glaucus</i>
California brome	<i>Bromus carinatus</i>
Idaho fescue	<i>Festuca idahoensis</i>
Bluegrass	<i>Poa secunda</i>
Yarrow	<i>Achillea millefolium</i>
Coyote brush	<i>Baccharis pilularis</i>
Bush monkeyflower	<i>Mimulus aurantiacus</i>
Spanish lotus	<i>Acmispon americanus</i>
Tom Cat Clover	<i>Trifolium willdenovii</i>

Response: Rose clover and annual ryegrass have been removed from the seed mix. Tomcat clover (*Trifolium willdenovii*), which is native to California, will be used in the grass seed mix in place of rose clover. The mix of grasses and forbs shown in Table 2 (Section 4.7.3) has been updated to include the additional plants requested by OMR and tomcat clover. Table 2 includes an application rate of 22 pounds per acre as pure live seed (PLS).

OMR Comment 14: *OCR Section 3705(b) requires test plots to be conducted simultaneously with mining. The discussion of test plots on page 20 should be expanded for more detail. The upper benches can serve as test plot areas as mining proceeds from top to bottom. Several treatments could be applied to determine the most successful planting procedures. For example, different growth media mixes, amendments, and the addition of chipped vegetation left over from timber harvest operations both in the growth media and as mulch layer could be tested.*

Response: The operator agrees that unusual treatments may be necessary to develop successful regeneration techniques for the site. The upper benches will serve as test plot areas as mining proceeds from the top down. If simple regeneration efforts are unsuccessful, additional treatments, such as the use of mulches and ripping, will be applied. The individual treatments will be determined at the time of reclamation planting. Treatments may include:

- Chip mulch
- Commercially available mulches
- Ripping
- Fertilizers
- Weed mats/fabrics
- Plant solar protection (cartons)
- Plant deer protection (Vexar tubes)

Text to this effect has been added under Section 4.7.6 “Test Plots” in the Reclamation Plan.

OMR Comment 15: *CCR Section 3705(k) requires that noxious weeds be managed when they threaten the success of the proposed revegetation; spread to nearby areas; or produce a fire hazard. Scotch broom (*Cytisus scoparius*) and Klamath weed (*Hypericum perforatum*) are particularly aggressive noxious weeds at the site. A weed management plan should be described that includes a monitoring program with threshold values (weed cover per unit area) that trigger control procedures. To be successful, weed control should occur both during operations and reclamation. If left untreated for 25 years, invasive species will be much more costly and difficult to eradicate. The section on "Invasive Species" on page 21 should be revised to include these additional details.*

Response: The operator is aware that Scotch broom (*Cytisus scoparius*) and Klamath weed (*Hypericum perforatum*) can be particularly aggressive noxious weeds at the site, as are a number of species of thistle. Neither Scotch broom (*Cytisus scoparius*) nor Klamath weed (*Hypericum perforatum*) have been identified onsite to date. The operator is diligent with manual vegetation control for these species. Manual and chemical controls will be continued, both during operation and during reclamation, to ensure populations of invasive plants are not established

onsite. The operator is agreeable to the control of these plants being a condition of project approval and has include text addressing their specific control in Section 4.8.1 "Invasive Species" of the Reclamation Plan.

OMR Comment 16: *CCR Section 3705(m) requires that the reclamation plan include success criteria that can be quantified by cover, density, and species-richness. Without the baseline data from reference sites of each habitat type, as mentioned under "Environmental Setting," it is impossible to develop realistic success criteria, also known as performance criteria or performance standards. On pages 21-22, the only performance criterion that meets the SMARA requirements is for "herbaceous cover of 65% for headwall habitat." Baseline data must be collected and quantitative performance criteria provided for cover, density, and species richness for each habitat type.*

Response: Comment noted. Three habitats were discussed under the reclamation task. These include:

- Forest
- Grassland/herbaceous
- Riparian

Currently, only the forest community and a limited area of grassland herbaceous community exist onsite. The riparian community exists only in buffers along the perennial stream located on the west edge of the site. The riparian plantings discussed in the reclamation plan will encourage vegetation in two small areas of the site, one along the west boundary where a stormwater diversion trench is located and the other adjacent to a spring located in the southeast center of the site. These locations currently do not support vegetation, but should be able to support a limited riparian community following reclamation of the site.

The site is xeric with limited vegetation density and diversity. The land was heavily logged in the late 1960s or early 1970s before the advent of the current forest practice rules, prior to the current operator's acquisition of the site. The condition of the site prior to this event is unknown. Most of the onsite roads and landings currently used for material access and material storage were constructed at that time.

Baseline data were obtained for the forested areas of the site and presented in the response to Comment 9. Performance criteria for cover, density, and species richness are included in Table 3 in Section 4.8.5 "Performance Criteria" of the Reclamation Plan. Table 3 is also included in the response to Comment 17 herein.

OMR Comment 17: *The survival rates for trees can be translated into density figures. For example, if 100 trees per acre are planted with a survival rate requirement of 50%, the density criterion would be 50 trees per acre. However, smaller sample sizes are easier to measure, such as 50 meter by 1 meter belt transect. Values for density and species richness should be for a specific area, usually the same as the plot size used for sampling purposes. A summary table is often used, as shown in the example below.*

Performance Criteria Summary Table (example only)

<i>Coniferous forest</i>	
<i>Cover</i>	<i>15% cover of tree canopy 65% cover of herbaceous and shrub species</i>
<i>Density</i>	<i>20 trees per 50 m x 1 m transect</i>
<i>Species richness</i>	<i>2 species native trees per 50 m x 1 m transect</i>
<i>Riparian habitat</i>	
<i>Cover</i>	<i>1 5% cover of tree/ shrub canopy 65% cover of herbaceous and shrub species</i>
<i>Density</i>	<i>15 trees per 50 meter x 1 meter transect</i>
<i>Species richness</i>	<i>2 species native trees per 50 meter x 1 meter transept</i>
<i>Grassland habitat</i>	
<i>Cover</i>	<i>65% cover of herbaceous and shrub species</i>
<i>Density</i>	<i>N/A</i>
<i>Species richness</i>	<i>4 species per 1 meter x 1 meter quadrat</i>

Response: Comment noted. The performance criteria have been revised into table format for each habitat type and included as Table 3 in Section 4.8.5 “Performance Criteria” of the Reclamation Plan.

Table 3 added to the plan follows:

Table 3 PERFORMANCE CRITERIA SUMMARY	
Habitat	Performance Criteria
Forest Habitat	
Cover	10% cover of tree canopy 10% cover of herbaceous and shrub species
Density	25 trees from Table 1 per 20-foot by 100-foot plot
Species richness	3 species of trees from Table 1 per 20-foot by 100-foot plot
Riparian Habitat	
Cover	10% cover of tree/shrub canopy
Density	10 trees per 50 linear feet of ditch
Species richness	2 species per 50 linear feet of ditch
Grassland Habitat	
Cover	40% cover of herbaceous and shrub species
Density	N/A
Species richness	6 species per 1-meter by 1-meter plot

OMR Comment 18: CCR Section 3705(m) also requires that the sampling methods are set forth in the plan with a sample size that provides an 80-percent confidence level at a minimum. The section on "Monitoring and Maintenance" on pages 20-21 needs to be revised to describe the sampling methods that will be employed for each habitat type.

Response: The area for the riparian habitat type will be so small that 100 percent of the areas planted will be evaluated.

In the forestry and grassland/herbaceous areas, initial test plots will be evaluated on 100 percent of the area treated. The information will be used to determine the statistical methods needed to meet the 80 percent confidence level on accuracy of results. Vegetation results can be non-normally distributed. If this is the case, to avoid detailed calculations, the minimum 15 sample plots will be used per Publication 123. If the number of sample plots does not provide the necessary accuracy due to high variability, additional planted area (plots) will be sampled to determine compliance with the performance standards stated above.

Monitoring will occur annually, during the spring to early summer months, until performance standards have been achieved for that area. Plots will be located randomly within each area/habitat type being monitored. For forest habitat areas, 20-foot by 100-foot plots will be used. For grassland areas, 1-meter by 1-meter plots will be used.

OMR Comment 19: *SMARA Section 2774 addresses the requirements with respect to lead agency approvals of reclamation plans, plan amendments, and financial assurances. Once OMR has provided comments, a proposed response to the comments must be submitted to the Department at least 30 days prior to lead agency approval. The proposed response must describe whether you propose to adopt the comments. If you do not propose to adopt the comments, the reason(s) for not doing so must be specified in detail. At least 30 days prior notice must be provided to the Department of the time, place, and date of the hearing at which the amended reclamation plan is scheduled to be heard. If no hearing is required, then at least 30 days' notice must be given to the Department prior to its approval. Finally, within 30 days following approval of the amended reclamation plan, a final response to these comments must be sent to the Department. The final response may consist of the approved reclamation plan and any conditions of approval for the permit that pertain to reclamation. Please ensure that your agency allows adequate time in the approval process to meet these SMARA requirements.*

Response: Comment noted.

Please contact me at 530-223-2585 with any questions.

Sincerely,

VESTRA Resources, Inc.



Wendy Johnston
Project Manager

Attachments

Attachment A
Comment Letters/Emails



State of California • Natural Resources Agency
Department of Conservation
Office of Mine Reclamation
801 K Street • MS 09-06
Sacramento, CA 95814
(916) 323-9198 • FAX (916) 445-6066

Edmund G. Brown Jr., Governor
Pat Perez, Assistant Director

June 1, 2016

VIA EMAIL: mwheeler@co.humboldt.ca.us
ORIGINAL SENT BY MAIL

Mr. Michael Wheeler
Humboldt County Planning and Building Department
Current Planning Division
3015 H Street
Eureka, CA 95501

Dear Mr. Wheeler:

R. BROWN AND SONS QUARRY
MINING AND RECLAMATION PLAN AMENDMENT
CA MINE ID# 91-12-0035; SMP 14-001X; CUP 14-013XM; RP 14-001XM

The Department of Conservation's Office of Mine Reclamation (OMR) has reviewed the project submittal to amend the reclamation plan for the R. Brown and Sons Quarry. The purpose of this letter is to provide Humboldt County Planning and Building Department (County) with OMR's comments regarding the reclamation plan pursuant to the Surface Mining and Reclamation Act (SMARA), Public Resources Code (PRC) Section 2710 et seq., including PRC §2774.

The applicant, Brown Construction Company, is proposing to expand mining from the currently permitted 25 acres onto an additional 39 acres for a total of 64 acres. Mining will continue for a period of 25 years. The project site is located approximately 3 miles west of Willow Creek. OMR staff conducted a site visit on May 12, 2016 to observe site conditions.

The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code Section 2710 et seq.) and the State Mining and Geology Board Regulations (California Code of Regulations (CCR) Title 14, Division 2, Chapter 8, Subchapter 1) require that specific items be addressed or included in reclamation plans. The following comments, prepared by a restoration ecologist and a geologist, are offered to assist in your review of this project. The reclamation plan amendment should be revised and/or supplemented to address these items.

The County should consider the proposed expansion of the mine as a substantial deviation from the original approved reclamation plan pursuant to CCR Section 3502(d)(1), thereby requiring updated reclamation performance standards for the entire operation. However; should the County decide otherwise, it is recommended that the performance standards for the existing disturbance be clearly delineated from those standards applicable to the proposed expansion.

Mining Operation and Closure

(Refer to SMARA Sections 2770, 2772, and 2773 and CCR Sections 3502, 3709, and 3713)

Pursuant to SMARA Section 2772(c)(2), a reclamation plan is required to include a description of the quantity and type of minerals to be mined. Rather than relying on production rates referenced in CUP-99-01, the amended reclamation plan should include a description of the maximum annual production.

During the site visit, the mine operator explained that mining would proceed from the top of the expanded quarry to the bottom. OMR recommends that the reclamation plan be revised to include a description of the proposed top-down excavation techniques, which would facilitate concurrent reclamation pursuant to SMARA Section 2772(c)(6), as the quarry develops over time.

In light of promoting concurrent reclamation, OMR recommends that the Lead Agency consider requiring the operator to initiate reclamation in the disturbed areas within the 100-foot buffer, as depicted in Figure 13, prior to expansion of the mining operation.

CCR Section 3709(a) requires that all equipment, supplies, and other material is stored in a designated area and shown on the reclamation plan maps and waste is disposed of according to state and local health and safety ordinances. OMR recommends that the county ensure these topics are addressed in the amended reclamation plan.

Geotechnical Requirements (Refer to CCR Sections 3502 and 3704)

The reclamation plan (Section 1.12, page 3) states that the primary end use will be timber production with two home sites. As discussed during the site visit, a residential end use would require additional geotechnical and geologic risk analyses with regards to stability and treatment of final slopes; and, appropriate engineering of proposed fills, if any. Unless the end use is changed to open space, the Lead Agency should consider requiring the slopes to meet California Building Code and/or Humboldt County grading ordinances for home site areas. The current submittal only includes an on-site kinematic analysis for local (shallow) slope stability. The soil and rock parameters utilized for the global slope stability analysis were, in part, taken from a technical report for separate project located 5 miles from the quarry site. The County should require technical studies that consider a residential end use and utilize site-specific soil and rock parameters that are derived from an on-site geotechnical and geologic analysis.

CCR section 3704(f) requires that "cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability factor of safety that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use." OMR recommends that the Lead Agency require final slopes be evaluated by an appropriately licensed professional at the time of mine closure to verify that the mined slopes conform to SMARA requirements and meet the anticipated residential end use.

Hydrology and Water Quality (Refer to SMARA Sections 2772 and 2773 and CCR Sections 3502 3503, 3706, 3710, and 3712)

CCR Section 3706(d) states that surface runoff shall be controlled to ensure that surrounding land is protected from erosion and that erosion control methods are designed to handle runoff from not less than the 20-year/1-hour intensity storm event. The County should ensure that the flow calculations used to develop the Storm Water Pollution Prevention Plan (SWPPP) meet the requirements of CCR Section 3706(d). Additionally, the SWPPP should be incorporated into the reclamation plan by reference in order to satisfy the requirements of Section 3706.

Environmental Setting and Protection of Fish and Wildlife Habitat (Refer to CCR Sections 3502, 3503, 3703, 3704, 3705, 3706, 3710, and 3713)

CCR Section 3705(a) requires that the density, cover, and species richness of naturally occurring habitats shall be documented in baseline studies in order to establish a self-sustaining vegetative

cover similar to the surrounding habitat. This information must be included in reclamation plans prior to approval, not at some undefined time in the future as discussed under "Reference Sites" on page 20. Since the mature forest habitat will not be readily reestablished after mining, baseline data could be collected in the area that had been disturbed outside the eastern reclamation boundary that has revegetated naturally that was viewed during the site visit. This area could serve as a reference site to provide realistic, achievable performance standards.

Additionally, there is a section on page 18 incorrectly titled "Baseline Studies." This should be changed to read "Test Plots" as the revegetation plots described are for the purpose of determining the effectiveness of using mine waste as a growth media. It can be combined with the other section on test plots on page 20.

Resoiling

(Refer to CCR Sections 3503, 3704, 3705, 3707, and 3711)

CCR Section 3711 establishes mandatory standards for topsoil salvage, maintenance, and redistribution. The reclamation plan amendment describes topsoil replacement, but does not address topsoil stockpile management. Some topsoil should be available for salvage in the undisturbed expansion area. It was explained during the site visit that no mine waste will be generated but that various unknown materials (such as soils and organic material brought onsite from Caltrans operations as suggested on page 17) will be imported to use for growth media. The plan should elaborate and describe how each of these requirements will be met, for example:

- The top 6 -12 inches of topsoil shall be salvaged in the expansion area and stockpiled separately from other mined materials.
- The location(s) of the topsoil (and/or other growth media) stockpile(s) shall be depicted on the site map(s).
- The topsoil (and/or other growth media) stockpiles shall be clearly signed in the field to prevent inadvertent use.
- The topsoil (and/or other growth media) stockpiles shall be protected from wind and water erosion by planting with an erosion control mix.

CCR Section 3705(e) addresses the need for a soil analysis if the soil is altered or other than native topsoil. If soil analysis suggests that fertility levels are inadequate to implement the revegetation program, fertilizer or other soil amendments may be needed for the growth media. Soil amendments and fertilizers can also be applied experimentally in the test plots.

Revegetation

(Refer to SMARA Section 2773 and CCR Sections 3503 and 3705)

The amended revegetation plan proposes to develop three vegetative communities including grassland, coniferous forest, and riparian forest.

- Location and extent of each habitat type should be depicted on a site map.
- Acreages of each habitat type should be provided. This will be necessary in the calculation of the Financial Assurance Cost Estimate (FACE).
- No understory cover is proposed for the forest or riparian habitat types to complement the tree plantings. The revised seed mix (as shown below) should be applied to these habitats in order to provide cover and erosion control while the trees are getting established and to discourage invasion by weedy species.

OMR recommends several changes to the proposed grass seed mix on page 20. The non-native weedy species rose clover (*Trifolium hirtum*) and annual ryegrass (*Lolium* sp.) should be removed. Locally occurring native grasses, herbs, and shrubs should be added to provide for more diversity representing the local vegetation. Application rates should be shown as pounds of pure live seed per acre (PLS) and should total between 20-50 pounds PLS per acre.

Recommended Seed Mix

Common name	Latin name
Blue wild rye	<i>Elymus glaucus</i>
California brome	<i>Bromus carinatus</i>
Idaho fescue	<i>Festuca idahoensis</i>
Bluegrass	<i>Poa secunda</i>
Yarrow	<i>Achillea millefolium</i>
Coyote brush	<i>Baccharis pilularis</i>
Bush monkeyflower	<i>Mimulus aurantiacus</i>
Spanish lotus	<i>Acemison americanus</i>

CCR Section 3705(b) requires test plots to be conducted simultaneously with mining. The discussion of test plots on page 20 should be expanded for more detail. The upper benches can serve as test plot areas as mining proceeds from top to bottom. Several treatments could be applied to determine the most successful planting procedures. For example, different growth media mixes, amendments, and the addition of chipped vegetation left over from timber harvest operations both in the growth media and as a mulch layer could be tested.

CCR Section 3705(k) requires that noxious weeds be managed when they threaten the success of the proposed revegetation; spread to nearby areas; or produce a fire hazard. Scotch broom (*Cytisus scoparius*) and Klamath weed (*Hypericum perforatum*) are particularly aggressive noxious weeds at the site. A weed management plan should be described that includes a monitoring program with threshold values (weed cover per unit area) that trigger control procedures. To be successful, weed control should occur both during operations and reclamation. If left untreated for 25 years, invasive species will be much more costly and difficult to eradicate. The section on "Invasive Species" on page 21 should be revised to include these additional details.

CCR Section 3705(m) requires that the reclamation plan include success criteria that can be quantified by cover, density, and species-richness. Without the baseline data from reference sites of each habitat type, as mentioned under "Environmental Setting," it is impossible to develop realistic success criteria, also known as performance criteria or performance standards. On pages 21-22, the only performance criterion that meets the SMARA requirements is for "herbaceous cover of 65% for headwall habitat." Baseline data must be collected and quantitative performance criteria provided for cover, density, and species richness for each habitat type.

The survival rates for trees can be translated into density figures. For example, if 100 trees per acre are planted with a survival rate requirement of 50%, the density criterion would be 50 trees per acre. However, smaller sample sizes are easier to measure, such as 50 meter by 1 meter belt transect. Values for density and species richness should be for a specific area, usually the same as the plot size used for sampling purposes. A summary table is often used, as shown in the example below.

Performance Criteria Summary Table (example only)

Coniferous forest	
Cover	15% cover of tree canopy 65% cover of herbaceous and shrub species
Density	20 trees per 50 m x 1 m transect
Species richness	2 species native trees per 50 m x 1 m transect
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Cover	15% cover of tree/shrub canopy 65% cover of herbaceous and shrub species
Density	15 trees per 50 meter x 1 meter transect
Species richness	2 species native trees per 50 meter x 1 meter transect
Grassland habitat	
Cover	65% cover of herbaceous and shrub species
Density	N/A
Species richness	4 species per 1 meter x 1 meter quadrat

CCR Section 3705(m) also requires that the sampling methods are set forth in the plan with a sample size that provides an 80-percent confidence level at a minimum. The section on "Monitoring and Maintenance" on pages 20-21 needs to be revised to describe the sampling methods that will be employed for each habitat type.

Administrative Requirements

(Refer to SMARA Sections 2772, 2773, 2774, 2776, and 2777)

SMARA Section 2774 addresses the requirements with respect to lead agency approvals of reclamation plans, plan amendments, and financial assurances. Once OMR has provided comments, a proposed response to the comments must be submitted to the Department at least 30 days prior to lead agency approval. The proposed response must describe whether you propose to adopt the comments. If you do not propose to adopt the comments, the reason(s) for not doing so must be specified in detail. At least 30 days prior notice must be provided to the Department of the time, place, and date of the hearing at which the amended reclamation plan is scheduled to be heard. If no hearing is required, then at least 30 days' notice must be given to the Department prior to its approval. Finally, within 30 days following approval of the amended reclamation plan, a final response to these comments must be sent to the Department. The final response may consist of the approved reclamation plan and any conditions of approval for the permit that pertain to reclamation. Please ensure that your agency allows adequate time in the approval process to meet these SMARA requirements.

If you have any questions on these comments or require any assistance with other mine reclamation issues, please contact Beth Hendrickson at (916) 445-6175.

Sincerely,



Beth Hendrickson, Manager
Environmental Services Unit



Paul Fry, Manager
Engineering Geology Unit

Mr. Michael Wheeler
June 1, 2016
Page 6

cc:
Jennifer Olson
Environmental Scientist
California Department of Fish and Wildlife
619 2nd Street
Eureka, CA 95501
jennifer.olson@wildlife.ca.gov

**DEPARTMENT OF FORESTRY AND FIRE PROTECTION**

P.O. Box 513, Salyer, CA 95563
(530) 629-3242
Website: www.fire.ca.gov



May 18, 2016

R BROWN CONSTRUCTION
P O BOX 406
WILLOW CREEK, CA 95573

NOTICE OF INSPECTION

Harvest Document: N/A
Inspection Date: May 12, 2016
Inspection Type: Other
Inspection Number: 1
Person Contacted: Wendy Johnston & Kevin Brown

On May 12, 2016 an inspection was conducted at the R BROWN Rock Quarry near Willow Creek, CA. The inspection was triggered by questions on whether a timberland conversion permit and/or a Timber Harvest Plan (THP) will be necessary to facilitate expansion of mining operations at the existing site. In attendance was Wendy Johnston (Vestra), Kevin Brown (landowner), Christian Figueroa (consulting geologist), David Lindberg (consulting geologist), Brandon Badeker & Leah Gardner (Office of Mine Reclamation), Michael Wheeler (County of Humboldt), and Jen Olson (CDFW).

The proposed project area is approximately 64 acres and zoned as Timber Production Zone (TPZ). During the inspection it was observed that commercial tree species such as Douglas-fir, western red cedar, ponderosa pine, sugar pine, and pacific madrone are growing on the proposed expansion site (See attached photos). The project proposes to clear the timber from the site to facilitate mining operations, which will leave the site unstocked for approximately 30 years. It is CAL FIRE's determination that this activity constitutes a conversion of timberland and will therefore require a timberland conversion permit and THP. The timberland conversion permit is necessary due to the site being converted to a land use other than the growing of timber (PRC 4527), while the THP is necessary to serve as an operational document for the removal of trees from the project area.

A Registered Professional Forester (RPF) is required to submit the timberland conversion permit and THP.

If you have any questions about this matter, please contact Chris Poli at (530) 629-3242.

Chris Poli
2016.05.19 13:46:54 -07'00'

Signature

CHRIS POLI
Forester I
Humboldt-De/ Norte Unit
P.O. Box 513
Salyer, CA 95563
(530) 629-3242
(707) 599-0609

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Johnston, Wendy L.

From: Wheeler, Michael [MWheeler@co.humboldt.ca.us]
Sent: Tuesday, May 17, 2016 7:37 AM
To: Johnston, Wendy L.; Brent, Heather@CALFIRE
Cc: K B; christian@tvce.biz
Subject: RE: Brown Quarry

Also:

From: McCray, Kurt@CALFIRE
Sent: Friday, April 22, 2016 2:21 PM
To: HUU CEQA@CALFIRE
Cc: Poli, Chris@CALFIRE
Subject: 316-061-011-000, CUP Reclamation Plan Modification, Brown, Willow Creek, Planner: Wheeler

A Timberland Conversion Permit and Timber Harvest Plan is required by California Public Resource Code for this project.

Kurt McCray, Unit Forester
CAL FIRE
Humboldt-Del Norte Unit
(707) 726-1251 (office)
(707) 599-6437 (cell)
Kurt.mccray@fire.ca.gov

From: Johnston, Wendy L. [<mailto:WJohnston@Vestra.com>]
Sent: Tuesday, May 17, 2016 7:34 AM
To: Brent, Heather@CALFIRE
Cc: Wheeler, Michael; K B; christian@tvce.biz
Subject: Brown Quarry

Heather

Good morning

Are you planning on sending a formal agency letter to the County in response to the site visit that requests the Conversion Permit and THP?

If not would you mind sending an email so that I have it in the records for the Browns

The TCP/THP looks to be a significant additional cost to the project so a paper trail of some kind is appreciated

Regards

Wendy

Wendy Johnston
VESTRA Resources, Inc.
5300 Aviation Drive
Eureka, California 96002
Phone: 530.223.2585
Fax: 530.223.1145
Cell: 530.949.9704

Johnston, Wendy L.

From: Brent, Heather@CALFIRE [Heather.Brent@fire.ca.gov]
Sent: Tuesday, May 17, 2016 8:20 AM
To: Johnston, Wendy L.
Cc: Wheeler, Michael; K B; christian@tvce.biz; Poli, Chris@CALFIRE
Subject: RE: Brown Quarry

Yes, in addition to the items that Michael forwarded this morning, we will have an inspection report that says essentially the same thing, that a conversion permit and THP are necessary.

Heather Brent
707-677-0761 o
707-599-6896 c

Every Californian should conserve water. Find out how at:

SaveOurWater.com · Drought.CA.gov

From: Johnston, Wendy L. [WJohnston@Vestra.com]
Sent: Tuesday, May 17, 2016 7:33
To: Brent, Heather@CALFIRE
Cc: Wheeler, Michael; K B; christian@tvce.biz
Subject: Brown Quarry

Heather

Good morning

Are you planning on sending a formal agency letter to the County in response to the site visit that requests the Conversion Permit and THP?

If not would you mind sending an email so that I have it in the records for the Browns

The TCP/THP looks to be a significant additional cost to the project so a paper trail of some kind is appreciated

Regards

Wendy

Wendy Johnston
VESTRA Resources, Inc.
5300 Aviation Drive
Redding, California 96002
Tel: 530.223.2585
Fax: 530.223.1145
Cell: 530.949.9704

From: [Solinsky, Bill@CALFIRE](mailto:Solinsky_Bill@CALFIRE)
To: [Miller, Kathryn](mailto:Miller_Kathryn)
Cc: [Johnston, Wendy L.](mailto:Johnston_Wendy.L;); "K B"
Subject: RE: Brown & Sons Quarry/Initial Study and Proposed MND
Date: Thursday, June 16, 2016 10:30:16 AM

Wendy,

A THP would just be needed if trees will be commercialized, and not if just small trees and stumps will be removed.

Thanks, Bill

From: Miller, Kathryn [mailto:kmiller@Vestra.com]
Sent: Thursday, June 16, 2016 10:10 AM
To: Solinsky, Bill@CALFIRE
Cc: Johnston, Wendy L.; 'K B'
Subject: Brown & Sons Quarry/Initial Study and Proposed MND

The Initial Study/Proposed MND is attached.
Have a good day.

Kathryn Miller

VESTRA Resources, Inc.

5300 Aviation Drive

Redding, California 96002

Tel: 530.223.2585

Fax: 530.223.1145

kmiller@vestra.com

From: Johnston, Wendy L.
Sent: Thursday, June 16, 2016 10:02 AM
To: Solinsky, Bill@CALFIRE
Cc: Miller, Kathryn; K B
Subject: RE: R Browns and Sons Quarry

Bill

The clearing house does not have the MND yet -- The document in there is from the 15 year renewal request we did for them last year on the current cells. This document is to amend the rec plan to include and additional 39 acres of mineral removal area.

Apparently the Humboldt County process is to scope the document as a draft **first** to all agencies, revise the documents and then resubmit a final with all comments included -- the MND is then revised and submitted to SCH

Kind of backwards but that is their process

I will have Kathy (via this email) send you the draft MND we sent to the county

I have received comments from Cal fire, CDFW, Air District and OMR and i will be revising the Reclamation plan in the next couple of weeks to address all of the comments
IF you need to see the comments (i.e. like the doc was on the SCH) let me know and I will send them on to you -- that is easy
None of them are substantial and CDFW flipped on the jurisdictional issue on the spring after our meeting on Monday -- that was going to be a big fight if they did not back down
We will complete the requested Geologist evaluation for the serpentine for the Air District this week and after that I think finally will be easy

I am waiting to hear from you if I need to complete the THP as well as the TCP
(as that will take a bit) The last time we spoke you thought that we did not need the THP due to the nature of the removal and association with the mine plan.

Regards
Wendy

From: Solinsky, Bill@CALFIRE [<mailto:Bill.Solinsky@fire.ca.gov>]
Sent: Thursday, June 16, 2016 9:49 AM
To: Johnston, Wendy L.
Subject: R Browns and Sons Quarry

Wendy,

Is there a link to the Mitigated Neg Dec for my review, or could you please send me a copy. The State Clearinghouse indicated in 2000 it was the 15-renewal. Is this TCP for another 15-renewal and are we tiering off of the MND?

Thanks, Bill

Johnston, Wendy L.

From: Wheeler, Michael [MWheeler@co.humboldt.ca.us]
Sent: Monday, May 16, 2016 7:04 AM
To: Johnston, Wendy L.; K B
Subject: FW: Brown CUP renewal and expansion

fyi

From: Olson, Jennifer@Wildlife [<mailto:Jennifer.Olson@wildlife.ca.gov>]
Sent: Friday, May 13, 2016 1:02 PM
To: Wheeler, Michael
Cc: Gardner, Leah@DOC; Badeker, Brandon@DOC
Subject: Brown CUP renewal and expansion

Good afternoon Michael,

Thank you for referring the Brown Conditional Use Permit and Reclamation Plan modification/expansion (APPS 10412, Project) to the California Department of Fish and Wildlife (CDFW) for review and comment. The Project consists of expansion of an existing upland rock quarry surface mining operation onto 39 acres, in addition to the existing 25-acre mining area, on APN 316-061-011 in the Willow Creek area.

CDFW offers the following comments on this Project in our role as a Trustee and Responsible Agency pursuant to the California Environmental Quality Act (CEQA; California Public Resource Code section 21000 *et seq.*). These are informal comments intended to assist the Lead Agency in making informed decisions early on (pre-consultation).

1. The unnamed spring that serves as the water source for dust abatement purposes is jurisdictional for CDFW and requires a Lake or Streambed Alteration Agreement (LSAA) with CDFW pursuant to FGC 1602.
2. The revegetation plan should mimic the current native plant community on-site. Referral materials indicate that only tree species will be used to revegetate the site, with some grasses used for erosion control. CDFW recommends adding appropriate native shrubs and forbs to the reclamation/revegetation plan. The planting palette can be flexible, but should mimic reference conditions (i.e. native plants observed during the botanical survey of the expansion area or native plant communities observed on adjacent undisturbed parcels). A phased reclamation plan would allow for adaptive management of re-vegetation strategies (i.e. to assess the potential for various species to recolonize the site, and to plan future revegetation accordingly).
3. The reclamation plan states that,

"In order to quickly establish vegetation to prevent erosion of sloped areas, fast-growing naturalized grasses are included in the species lists. These are annual species which, although not native, are not considered invasive and naturally occur throughout the region." (page 19)

CDFW disagrees with this statement—the grass seed mix proposed in Table 2 contains two species, *Trifolium hirtum*, or rose clover, and "*Lolium sp.*" (common name listed as annual ryegrass, likely referring to *Lolium multiflorum* or *L. perenne*, which are both now known as *Festuca perennis*), which are listed by the California Invasive Plant Council as invasive, with an inventory rating of "moderate". CDFW recommends replacing these species with regional native seed, or non-native seed that is known not to persist or spread, such as barley (*Hordeum vulgare*), or wheat (*Triticum aestivum*).

4. Tree removal and vegetation clearing associated with the Project should be conducted outside of the bird breeding season (generally no vegetation removal during March 1 – August 15) in order to avoid 'take' as

defined and prohibited by Fish and Game Code (FGC) §3503, 3503.5, 3513, and by the Federal Migratory Bird Treaty Act (16 U.S. Code 703 *et seq*). There are many bird species with potential nesting habitat in the expansion area, and it is not practical or feasible to accurately survey such a large area for many of the small tree-top nesting warblers (such as black-throated gray and hermit warblers, both of which were observed on-site during the May 13 site visit). An appropriate seasonal work window will help minimize impacts to nesting birds as a result of the Project.

5. The County should ensure that appropriate stream buffers are implemented/maintained for any streams (whether perennial, intermittent, or ephemeral) during expansion. Buffer distances as observed on the May 13 site visit are currently adequate, but minimal. Future operations should not encroach on any Streamside Management Area.

Thank you for the opportunity to comment on this Project. Feel free to contact me with any questions.

Sincerely,

Jennifer Olson

Jennifer Olson
Environmental Scientist - Coastal Conservation Planning
California Department of Fish and Wildlife
619 2nd Street
Eureka, CA 95501
(707) 445-5387
jennifer.olson@wildlife.ca.gov

Johnston, Wendy L.

From: Olson, Jennifer@Wildlife [Jennifer.Olson@wildlife.ca.gov]
Sent: Friday, May 20, 2016 9:27 AM
To: Johnston, Wendy L.
Cc: Wheeler, Michael; K B; Gardner, Leah@DOC; Badeker, Brandon@DOC; Arnold, Jane@Wildlife
Subject: RE: Brown CUP renewal and expansion

Hi Wendy,

I referred your question on the unnamed spring to our Senior Environmental Scientist Specialist who covers Lake or Streambed Alteration Agreements and water rights (Jane Arnold), and I believe you two spoke over the phone earlier this week. We regulate spring diversions via LSAAs, due to both their potential habitat value and for their hydrologic contributions to downstream receiving waters (even when that flow is subsurface), particularly during the summer low-flow season.

In regards to comment #5, these are standard measures that CDFW's Habitat Conservation Planning Branch recommends for Projects that may impact nesting birds. Our preference is always for tree removal to occur outside of the nesting season, despite what may be allowed for timber harvest projects under the Forest Practice rules. From an environmental impact standpoint, waiting until the nesting season to remove trees creates an ecological trap in that the habitat appears available and suitable for nesting, and birds invest a great deal of energy in selecting and defending territories, building nests, laying eggs, etc, only to lose that reproductive opportunity for the season when the trees (and their nests, eggs, and/or chicks) are removed. From a Fish and Game Code standpoint, take of nests is prohibited. However, if there are areas within the Project expansion that are proposed for tree removal within the nesting season, and a qualified ornithologist can accurately survey for nests within 7-days prior to tree removal, and can confidently determine that there are no active nests present, then tree removal could be conducted within that 7-day work window.

CDFW generally defines a qualified ornithologist as "someone knowledgeable in avian distribution, habitat, and biology, who can correctly identify bird species found in northern California, who has conducted previous field surveys of nesting birds, and is knowledgeable in survey protocols and State and Federal permits needed for any potential take of listed birds."

There are some areas within the proposed quarry expansion that may be difficult to survey due to tree height and potential bird species present, but a qualified ornithologist will be able to discern whether an accurate nest-search is feasible in a given area. If a qualified ornithologist is of the opinion that a given area cannot be accurately surveyed due to site-specific conditions, timber removal in that area should be conducted outside of the avoidance window of March 1 - August 15.

I hope this clarifies our comments.

Best,

Jennifer Olson

Jennifer Olson
Environmental Scientist - Coastal Conservation Planning
California Department of Fish and Wildlife
619 2nd Street
Eureka, CA 95501
(707) 445-5387
jennifer.olson@wildlife.ca.gov

From: Johnston, Wendy L. [mailto:WJohnston@Vestra.com]
Sent: Wednesday, May 18, 2016 10:13 AM
To: Olson, Jennifer@Wildlife

Johnston, Wendy L.

From: Wheeler, Michael [MWheeler@co.humboldt.ca.us]
Sent: Tuesday, May 17, 2016 7:36 AM
To: Johnston, Wendy L.; Brent, Heather@CALFIRE
Cc: K B; christian@tvce.biz
Subject: RE: Brown Quarry

Here's what I got from them already:

From: Salazar, Kim@CALFIRE [<mailto:Kim.Salazar@fire.ca.gov>]
Sent: Monday, May 02, 2016 1:33 PM
To: Moxon, Delilah
Subject: APN: 316-061-011-000

STATE OF CALIFORNIA THE RESOURCES AGENCY

EDMUND G. BROWN, JR., Governor

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Humboldt – Del Norte Unit
118 Fortuna Blvd.
Fortuna, CA 95540
Website: www.fire.ca.gov
(707) 726-1272



Ref: 7100 Planning
Date: May 2, 2016

Rob Wall, Director
Humboldt County Community Development Services Department
3015 H Street
Eureka, CA 95501

Attention: Michael Wheeler
Applicant: R. Brown Construction Company

APN: 316-061-011-000
Area: Willow Creek Area
Case Number(s): CUP14-013XM
RP14-001XM

Humboldt County Application #: 10412

Type of Application: Conditional Use Permit, Reclamation Plan Modification

Date Received: 4/30/2016

Due Date: 5/13/2016

Project Description: Modification of a recent 15-year renewal of a previously approved Conditional Use Permit for an upland rock quarry surface mining operation. The modification seeks to expand the area of mining operation by adding an additional 39 acres to be mined (In addition to the existing 25 acre mining area). This includes areas that will be mined for rock and areas that will be used for topsoil and overburden storage. The Reclamation Plan is revised to show that the total area to be reclaimed is 64 acres. Rock of various sizes will continue to be mined, with an estimated volume of 4 million tons of hard rock over the life of the mine. Mining and overburden fill have already occurred on approximately 25 acres of the parcel.

Mr. Wall,

The California Department of Forestry and Fire Protection (CALFIRE) provides these standard project review comments on the above project.

FIRE SAFE

General:

CALFIRE has responsibility for enforcement of Fire Safe Standards as required by Public Resources Code (PRC) 4290 and 4291. However CALFIRE is not the lead agency in planning development and project permitting. CALFIRE provides input as a contributing agency, generally limited to plan review, and is not the approving agency for these projects.

Local Responsibility Areas:

Should this project include Local Responsibility Area (LRA) lands, CALFIRE has no direct fire safe input on those parcels. However, in those areas with LRA parcels adjacent to State Responsibility Area (SRA) land, CALFIRE recommends that local standards be applied that are consistent with those CALFIRE makes for SRA lands.

State Responsibility Areas:

Should this project include State Responsibility Area (SRA) lands, the following are CALFIRE's Fire Safe minimum input and recommendation for any and all development.

1. In Humboldt County, developments must meet minimum fire safe standards by constructing the project in conformance with County Code Title III, Division 11, Fire Safe Regulations Ordinance, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Regulations Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space.
2. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas shall comply with the 2007 California Building Code (CBC) Section 701A.3.2. This requires roofing assemblies, attic and eave ventilation, exterior siding, decking and deck enclosure, windows and exterior doors, and exposed under floor areas that are approved "ignition resistive" in design.
3. All development, especially commercial or industrial development, should be designed to comply with the most current versions of the following standards:
 - a) California Fire Code (CFC) — for overall design standards
 - b) Public Utilities Commission (PUC) General Order 103 — for design of water systems
 - c) National Fire Protection Association Standards (NFPA) for fire flow minimums and other design questions not specifically covered by CFC and PUC
 - d) Housing and Community Development Codes and Standards —for mobile home parks and recreational camps
4. For Department of Real Estate reporting purposes, fire protection coverage in SRA is generally described as follows:
 - During the declared fire season (usually June through October) CALFIRE responds to all types of fires and emergencies in SRA. During the remainder of the year (winter period), CALFIRE responds to emergency requests with the closest available fire engine, if a response can reasonably be expected to arrive in time to be effective. A fire engine is usually available somewhere in the Unit, but may have an extended response time.
 - There are many hazards confronting fire protection agencies in most subdivisions on SRA lands. Steep terrain and heavy wildland fuels contribute to fire intensity and spread. The distances from fire stations and road grades encountered usually create an excessive response time for effective structure fire suppression purposes.
 - Subdivisions increase fire risks from additional people and increase probable dollar losses in the event of fire due to added structures and improvements.
5. If the project expects to produce densities consistent with a major subdivision, the impacts on all infrastructures should be mitigated. Local government more appropriately provides the responsibility for high-density area protection and services. Annexation or inclusion into Local Responsibility Area should be studied as well.
6. CALFIRE does not support development in areas where there is no local agency fire service for structure fires and emergency medical response. Fire services should be extended into service gap areas as a condition of development. New development can adversely impact existing fire services. Careful consideration must be given where development may overload the local fire service's ability to respond.

RESOURCE MANAGEMENT

CALFIRE has enforcement responsibility for requirements of the Z'berg—Nejedly Forest Practice Act of 1973. CALFIRE is also the lead agency for those parts of projects involving the scope of the Forest Practice Act. The following basic input will cover the majority of projects. **Each project will be reviewed with additional input sent at a later date, if needed.**

The following comments reflect the basic Resource Management policies of the Board of Forestry and Fire Protection and CALFIRE on CEQA review requests. These policies apply to both Local and State Responsibility Areas.

1. If this project reduces the amount of timberland, by policy, the Board of Forestry and CALFIRE cannot support any project that will reduce the timberland base of California. "Timberland" means land which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees regardless of current zoning (PRC 4526). However, if the zoning and intended use are consistent with the county's general plan; and if no land other than timberland can be identified to site the project; then CALFIRE may choose not to oppose the project.
2. If **any** commercial timber operations are involved with a project, the timber operations cannot be conducted without a CAL FIRE permit. Commercial timber operations include the cutting or removal of trees offered for sale, barter, exchange, or trade or the conversion of timberlands to land uses other than the growing of timber (PRC 4527). Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.
3. If **any** timberlands are being converted to a non-timber growing use by this project, the conversion operations cannot be conducted without a CAL FIRE permit (PRC 4621). Conversion of timberland takes place when trees are removed and the land use changes, even without the sale, barter, exchange, or trade of the trees. Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.
4. If timberland is in the viewshed of a project, the current and future owners should be overtly notified that changes will occur to their views due to timber management activities. Further, no project should be allowed to negatively affect access to timberland for timber management purposes; neither on the project parcel(s) nor any other timberland parcels.
5. If timber harvesting has occurred and post-harvest restocking and prescribed erosion control maintenance obligations have not been met on a parcel, future owners should be overtly notified (14 CCR 1042). The current owner of a parcel is responsible for restocking requirements and maintenance of roads whether or not they were involved in the actual harvest plan.
6. If the project involves the development of parcels zoned as Timber Production Zone (TPZ), CALFIRE cannot support the project. Dividing TPZ land into parcels of less than 160 acres requires a Joint Timber Management plan prepared by a Registered Professional Forester (RPF), recorded as a deed restriction for a minimum of 10-years on all affected parcels, and approved by a four – fifths vote of the full board (Govt. Code 51119.5). TPZ may be rezoned using a "Ten Year Phase Out," which precludes the need for a Timberland Conversion Permit. CALFIRE opposes immediate rezoning of TPZ land.

If CALFIRE staff develops additional comment on this project, it will be forwarded in an additional response letter.

By: Planning Battalion
CALFIRE Humboldt – Del Norte Unit

For **Hugh Scanlon**, Unit Chief

From: Johnston, Wendy L. [mailto:WJohnston@Vestra.com]
Sent: Tuesday, May 17, 2016 7:34 AM
To: Brent, Heather@CALFIRE
Cc: Wheeler, Michael; K B; christian@tvce.biz
Subject: Brown Quarry

Heather

Good morning

Are you planning on sending a formal agency letter to the County in response to the site visit that requests the Conversion Permit and THP?

not would you mind sending an email so that I have it in the records for the Browns

ne TCP/THP looks to be a significant additional cost to the project so a paper trail of some kind is appreciated

Regards

Wendy

Wendy Johnston
VESTRA Resources, Inc.
5300 Aviation Drive
Redding, California 96002
Tel: 530.223.2585
Fax: 530.223.1145
Cell: 530.949.9704



**North Coast Unified Air Quality
Management District**
707 L Street, Eureka, CA 95501
Telephone (707) 443-3093 FAX (707) 443-3099
<http://www.ncuaqmd.org>



April 22, 2016

COPY

Mr. Roger D. Brown
Owner
R. Brown Construction
P.O. Box 406
Willow Creek, CA 95573

Re: Quarry expansion - Conditional Use permit (CUP14-013XM)

Dear Mr. Brown:

The expansion of your quarry west of Willow Creek triggers requirements of State ATCM 93105 due to its proximity to an identified ultramafic vein. Specifically, this agency requires you comply with ATCM 93105 condition (f) and condition (h). **ATCM 93105: Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.**

- (f) Requirements for Quarrying and Surface Mining Operations
- (h) Test Methods

If test method 435 reveals the existence of naturally occurring asbestos in the quarry, immediately notify this agency.

The full ATCM can be found at: <http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm>

Please call if you have any questions.

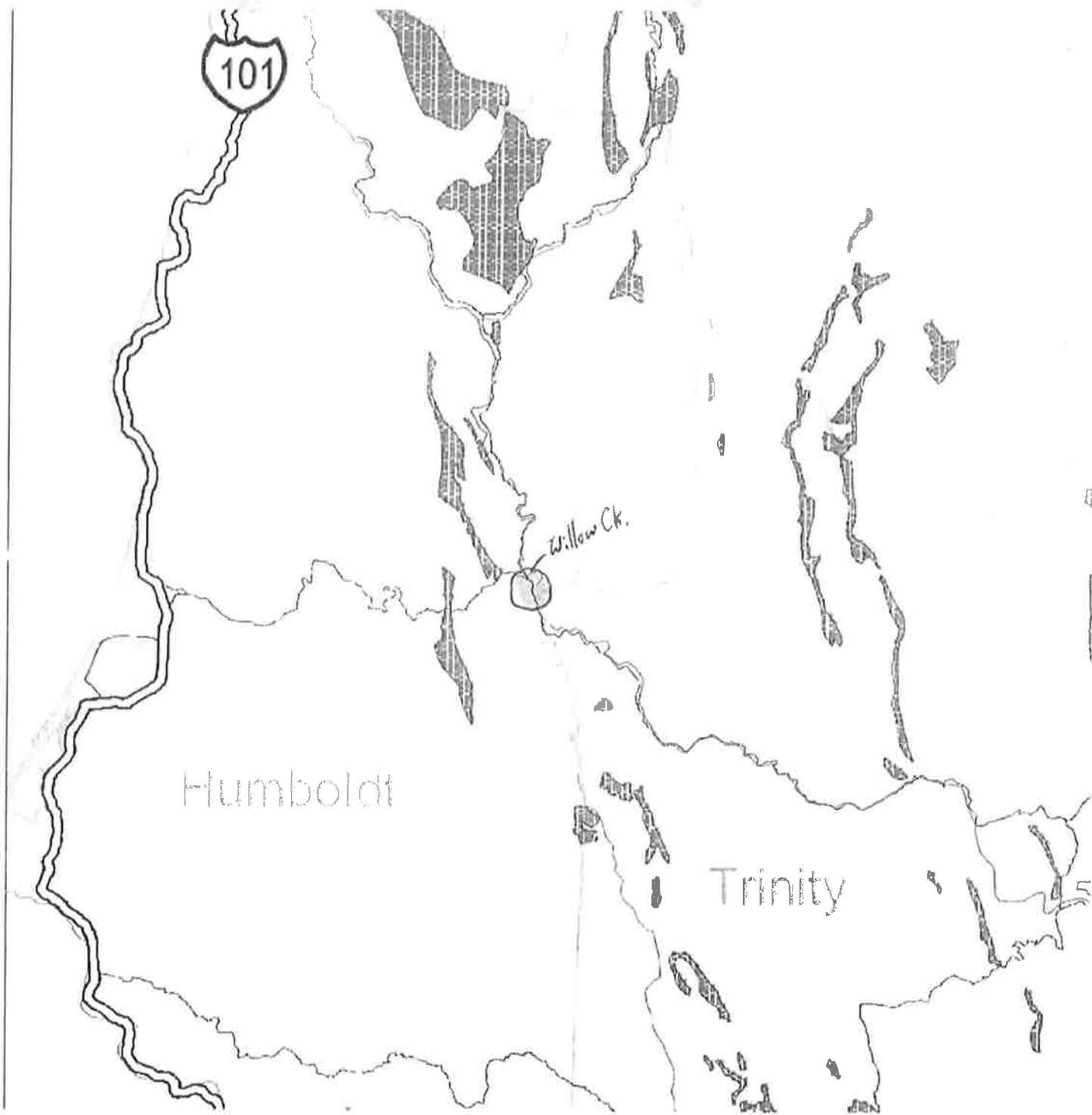
Respectfully,

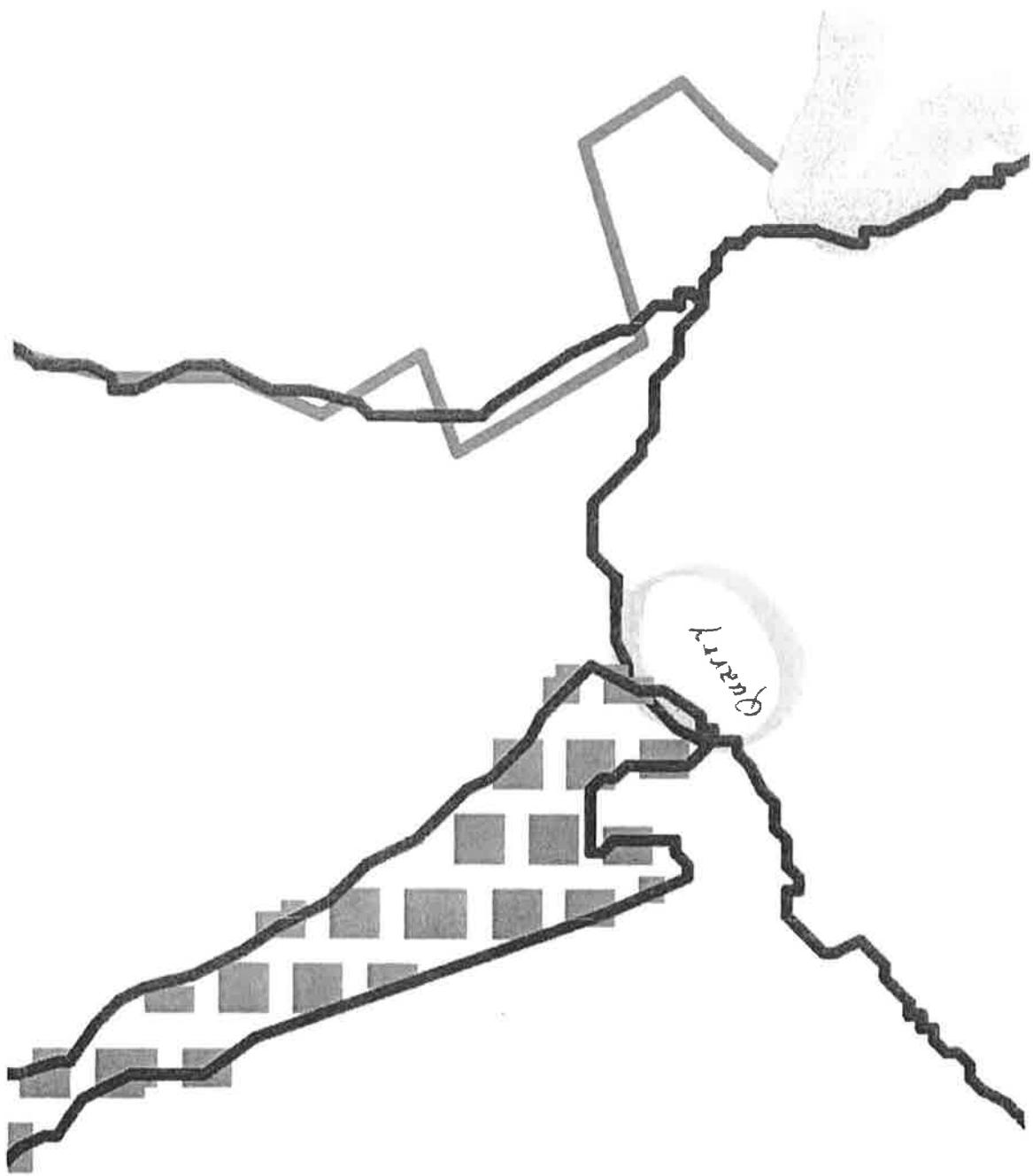
Al Steer
Compliance & Enforcement Manager
North Coast Unified AQMD
(707) 443-3093 Ext 119
alsteer@ncuaqmd.org
<http://www.ncuaqmd.org>

COPY

Cc: Humboldt County Planning, Michael Wheeler

Ultramafic Veins





Attachment B
Geologic Evaluation (ATCM 93105)



August 17, 2016

GIS, Environmental, & Engineering Services

71410

Mr. Al Steer
North Coast Unified Air Quality Management District
707 L Street
Eureka, CA 95501

**RE: Asbestos Geologic Evaluation
R. Brown and Sons Quarry
Willow Creek, Humboldt County, California
Conditional Use Permit CUP14-013XM**

Dear Mr. Steer:

R. Brown Construction is in receipt of your letter dated April 22, 2016, requesting compliance with Airborne Toxic Control Measure (ATCM) 93105: *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*. The rationale for the request is the proposed quarry expansion would be in close proximity to a previously mapped serpentinite body.

In response to your letter, R. Brown Construction has prepared this Asbestos Geologic Evaluation as described in ATCM, Subsection 93106 (f)(7). Subsection 93106 (f)(7) allows the local air quality management district (AQMD) to consider the results of a geologic evaluation of property located within or proximal to an ultramafic rock unit to provide a general exemption to the Asbestos ATCM. The results of the recent onsite geologic evaluation are included in this letter.

INTRODUCTION

The R. Brown and Sons Quarry is located approximately three miles west of the town of Willow Creek, California, along California State Highway 299. The current mining area and proposed expansion area are located in Sections 1, Township 6 North, Range 4 East, Humboldt Base Meridian. The latitude and longitude at the center of the project are 40° 55' 45.95" (40.9294) and -123° 40' 40.37" (-123.6779), respectively. The general site location is shown on Figure 1. The proposed Use Permit Amendment addresses mining and reclamation activities within portions of Assessor's Parcel No. (APN) 316-061-011, which is 77 acres in size and shown on Figure 2.

The original Reclamation Plan for the R. Brown and Sons Quarry was completed, underwent California Environmental Quality Act (CEQA) review, and was approved by Humboldt County in 1999. Since 1999, the mine has operated under Reclamation Plan No. RP-99-01 and Conditional Use Permit CUP-99-01. A request to renew and extend the Conditional Use Permit time limit was submitted to the Humboldt County Planning Department in July 2014. The request was approved on October 16, 2014, with revised Conditional Use Permit CUP-14-013X, Surface Mining Permit SMP-14-01X, and Reclamation Plan RP-14-001X. The project proponent wishes to expand the R. Brown and Sons Quarry to include additional area not previously disturbed.

As mapped by the North Coast Unified Air Quality Management District (District), the proposed expansion approaches a known serpentinite body. However, the placement of the property on the map provided by the

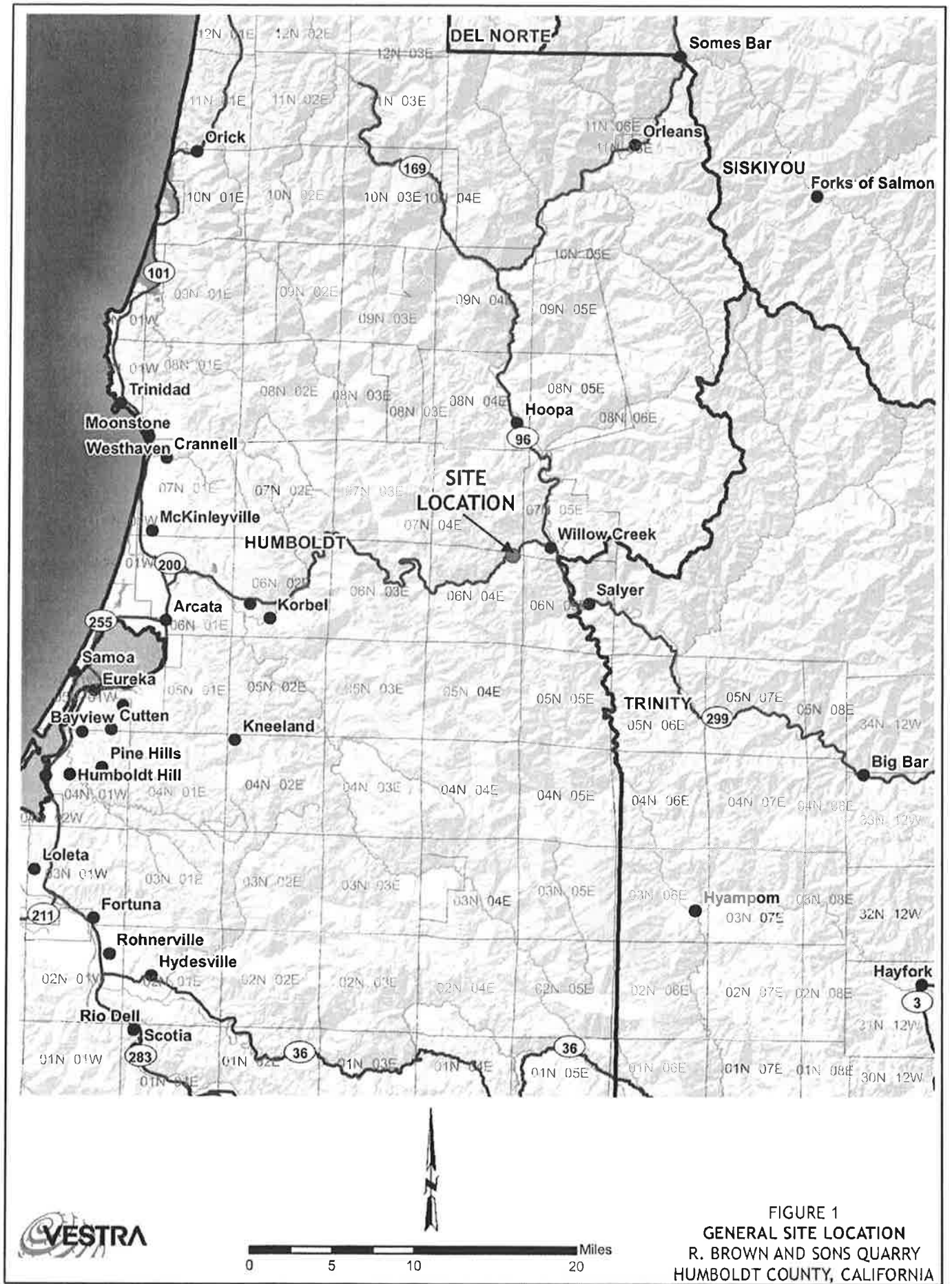
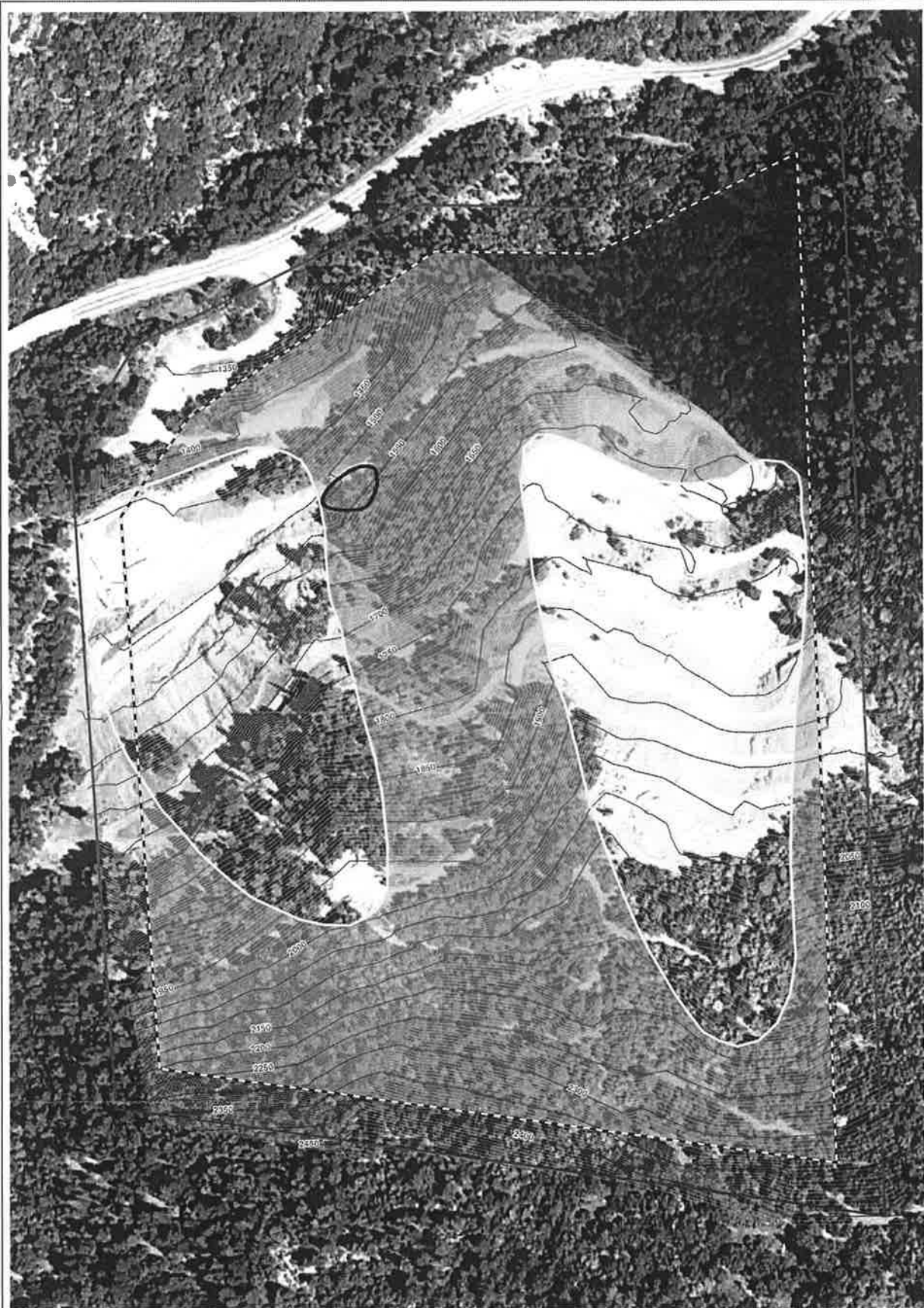


FIGURE 1
 GENERAL SITE LOCATION
 R. BROWN AND SONS QUARRY
 HUMBOLDT COUNTY, CALIFORNIA



- Major Contour Lines
- Existing Contour Lines
- Current Permitted Area
- Target Buffer Area
- Approximate Parcel Boundary
- Serpentine Body
- Proposed Expansion Area
- Reserved Area - No Activity
- Single Rock Removal Only



SOURCE: NAIP 2014 AERIAL PHOTOGRAPH

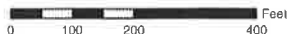


FIGURE 2
GENERAL SITE LAYOUT
AND PROPOSED EXPANSION AREA
R. BROWN AND SONS QUARRY
HUMBOLDT COUNTY, CALIFORNIA

District is incorrect. The area of the proposed expansion is shown on Figure 2. The project proponent performed a detailed geologic evaluation of the property in 2004 at the request of the AQMD. The evaluation concluded that within the area of Brown's current quarrying operations and areas to be quarried within the next ten years, no ultramafic or serpentine-bearing lithologies, or any asbestos or asbestos-form minerals, were observed. This is also true for stockpiles, roadbeds, and berms within areas of current operation at the time of the site examination. This report is hereby incorporated by reference and included as Attachment A.

To update this report, personnel visited the site on June 13, 2016, and have compiled additional geologic maps prepared at a finer scale than those referenced by the District in their letter dated April 22, 2016. The additional information is the basis for this revised geologic evaluation.

SITE GEOLOGY

The quarry is located within the Eastern Belt of the Franciscan Complex of California. Rocks in the vicinity consist of metasedimentary rocks of Permian to late Jurassic age. These rocks are of diverse origin and are believed to be accreted terranes emplaced on the western margin of North America by subduction of the Farallon Plate. Tectonic blocks of ultramafic rocks, largely altered to serpentinite, occur throughout the Eastern Belt. These blocks range from a few meters to tens of kilometers long and are the metamorphosed remains of lower oceanic crust abducted onto the continent during subduction.

The Caltrans New Technology and Research Program within the Office of Infrastructure Research contracted with the Department of Conservation's California Geological Survey (CGS) to prepare landslide inventory maps of the Highway 299 corridor between Blue Lake and Willow Creek in order to give the slides along the corridor a regional perspective and provide background information for current and future projects. The available map series includes a map of landslides along the highway corridor superimposed on a bedrock geologic map at a scale of 1:12,000 (California Geological Survey, Special Report 195). The R. Brown and Sons Quarry is located within the Caltrans study corridor.

R. Brown and Sons Quarry is underlain entirely by semi-consolidated to unconsolidated colluvium derived from Quaternary landslide deposits. These, in turn, are derived from rocks of the Western Paleozoic and Triassic Belt Mélange (TRPz) that constitute the in-place bedrock uphill of the quarry. In the area of the quarry, the unit consists of fine-grained volcanic rocks, heavily sheared greywacke, blocks of chert and siliceous argillite, and occasional small lenses of limestone, conglomerate, and serpentinite. The serpentinite units are discontinuous and occur in a matrix of highly sheared greywacke and chert. Portions of the geologic and landslide maps included in Special Report 195 are shown along with the boundary of the quarry in Attachment B.

ASBESTOS EVALUATION

As mapped, the nearest in-place serpentinite body is located approximately 0.6 mile north of the property boundary. Coarser-scale maps, such as the U.S. Geological Survey (USGS) data cited by the District, show the lens immediately adjacent to the property. It should be noted that this map was produced at a scale of 1:62,500. The map is also the basis of the GIS data cited by the District in their letter (Blake et al., 2002). The map provided by the District in their letter also has the quarry property incorrectly mapped approximately one-half mile east of its actual location (see Figure 1). The combination of incorrect location and coarse-scale map data incorrectly shows the property to be immediately adjacent to an ultramafic block.

The site was visited on June 13, 2016, to confirm the data from the compiled maps and evaluate the site for the presence of asbestiform mineral-bearing rocks. The overall site geology was found to be consistent from the maps and unit descriptions in Special Report 195. Only one small body of ultramafic rock was observed within the property, exposed for approximately 70 feet along a cut bank, on a haul road to the southeastern pit. The location and extent of this body are shown on Figure 2 and photographs are included in Attachment C. Review of the available detailed maps and onsite exposures does not suggest the presence of any other ultramafic rocks within the property.

The serpentinite body adjacent to the haul road has been observed previously and is discussed in some detail within the attached 2004 Geologic Evaluation. No other ultramafic rocks were observed onsite, either in situ or within colluvium. Roadways, berms, and other structures do not contain ultramafic rock. Product exported from the site does not contain serpentinite, as it is generally a poor aggregate material.

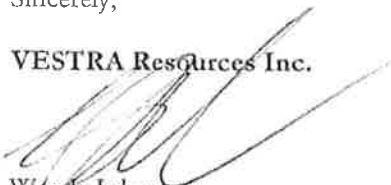
The proposed mine expansion will involve the disturbance of the small observed serpentinite body; however, this material would not be exported from the site or used in the construction of onsite structures. The operators intend to remove the material and set it aside, away from the production area, for future use as reclamation material, where it will be covered in non-ultramafic-bearing colluvium. Appropriate dust-mitigation measures will remain in place during the expansion. Because of the small volume of serpentinite present, and the fact that it will not be exported from the site, the risk of generating asbestos-bearing dust is considered minimal. Continued mitigation of dust by the application of water from trucks, and removal of the small serpentinite body and covering with colluvium will be in accordance with North Coast Unified Air Quality Management District regulations by meeting General Permit and operating conditions.

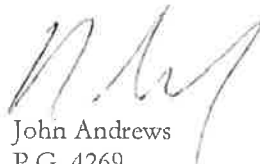
In addition to following appropriate dust-mitigation practices throughout their operation, the owners have conducted annual air quality monitoring for silica and total respirable particulates during peak production season since 1999. Recent sample results are included in Attachment D. These results show the site to be in compliance.

If you have any questions, please contact me at (530) 223-2585.

Sincerely,

VESTRA Resources Inc.

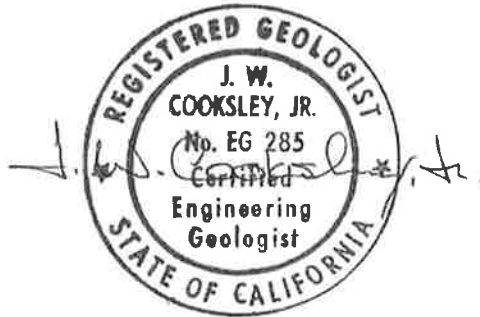

Wendy Johnston
Project Manager


John Andrews
P.G. 4269

CC: Kevin Brown/R. Brown Construction

Asbestos Geologic Evaluation
Attachment A
2004 Geologic Evaluation

**INVESTIGATION OF GEOLOGY
OF THE
BROWN CONSTRUCTION COMPANY'S
AGGREGATE QUARRY
PURSUANT TO COMPLIANCE WITH
THE CALIFORNIA AIR RESOURCES BOARD SECTION 93105
"ASBESTOS AIRBORNE TOXIC CONTROL MEASURE
FOR CONSTRUCTION, GRADING,
QUARRYING AND SURFACE MINING OPERATIONS"**



COOKSLEY GEOPHYSICS, INC

**CGI JOB NUMBER 04-005
August 2004**

**22070 Palo Way, Suite 3
Palo Cedro, CA 96073
Phone: (530) 547-5615, Fax: (530) 547-5964**

SUMMARY AND CONCLUSIONS

Cooksley, Geophysics, Inc. (CGI) of Palo Cedro, CA, was retained by R. Brown Construction Company (Brown) of Willow Creek, CA, to perform a geologic evaluation of the potential occurrence of naturally-occurring asbestos, serpentine or ultramafic lithologies as defined in California Air Resources Board Section 93105 "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations." This work was performed at a quarry operated by Brown located three miles west of Willow Creek, CA.

The site contains two pits from which Brown has removed material (one was in operation at the time of CGI's site visit), along with stockpiles, roads and berms constructed to support the quarrying operation.

Within the area of Brown's current quarrying operations and, as reported by Brown, areas to be quarried within the next ten years, no ultramafic or serpentine-bearing lithologies, or any asbestos- or asbestos-form minerals, were observed. This is also true for stockpiles, road beds and berms within areas of current operation at the time of CGI's site examination

Based on the results of CGI's field examination, current and proposed operations at Brown's project site do not meet the criteria in subsections (b)(1) or (b)(2) of California Air Resources Board Section 93105 "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations" and can therefore be considered for an exemption under subsection (c)(1).

There are occurrences of serpentinite within the project site and, specifically, in a road cut along the current haul road and along old logging roads. If future operations disturb these areas containing serpentinite, Brown will be required to use mitigation procedures to ensure containment of newly disturbed serpentinite.

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EXAMINATION OF STOCK PILES AND BERMS10

INTRODUCTION

Cooksley, Geophysics, Inc. (CGI) of Palo Cedro, CA, was retained by R. Brown Construction Company (Brown) of Willow Creek, CA, to perform a geologic evaluation of the potential occurrence of naturally-occurring asbestos, serpentine or ultramafic lithologies as defined in California Air Resources Board Section 93105 "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations" at a quarry currently operated by Brown.

This evaluation included 1) review of literature covering local and regional geology; 2) discussions with Brown personnel; 3) a two-day site visit during which detailed field examinations of the geologic setting of the project area was conducted along with inspections of the quarry area, stock piles, the route of the access road, and berms along the roads; 4) review of geologic data collected during the site visit; and 5) preparation of this report.

The project site is located in Humboldt County, CA, approximately three miles west of the town of Willow Creek. It is situated in the Sec. 1, T6N, R4E, Humboldt County (Figure 1). The north boundary of the property adjoins Highway 299. The site consists of two pits; one in the west-central portion of the property and a second in the southeastern portion. The southeastern pit was being mined at the time of CGI's examination (Figure 2).

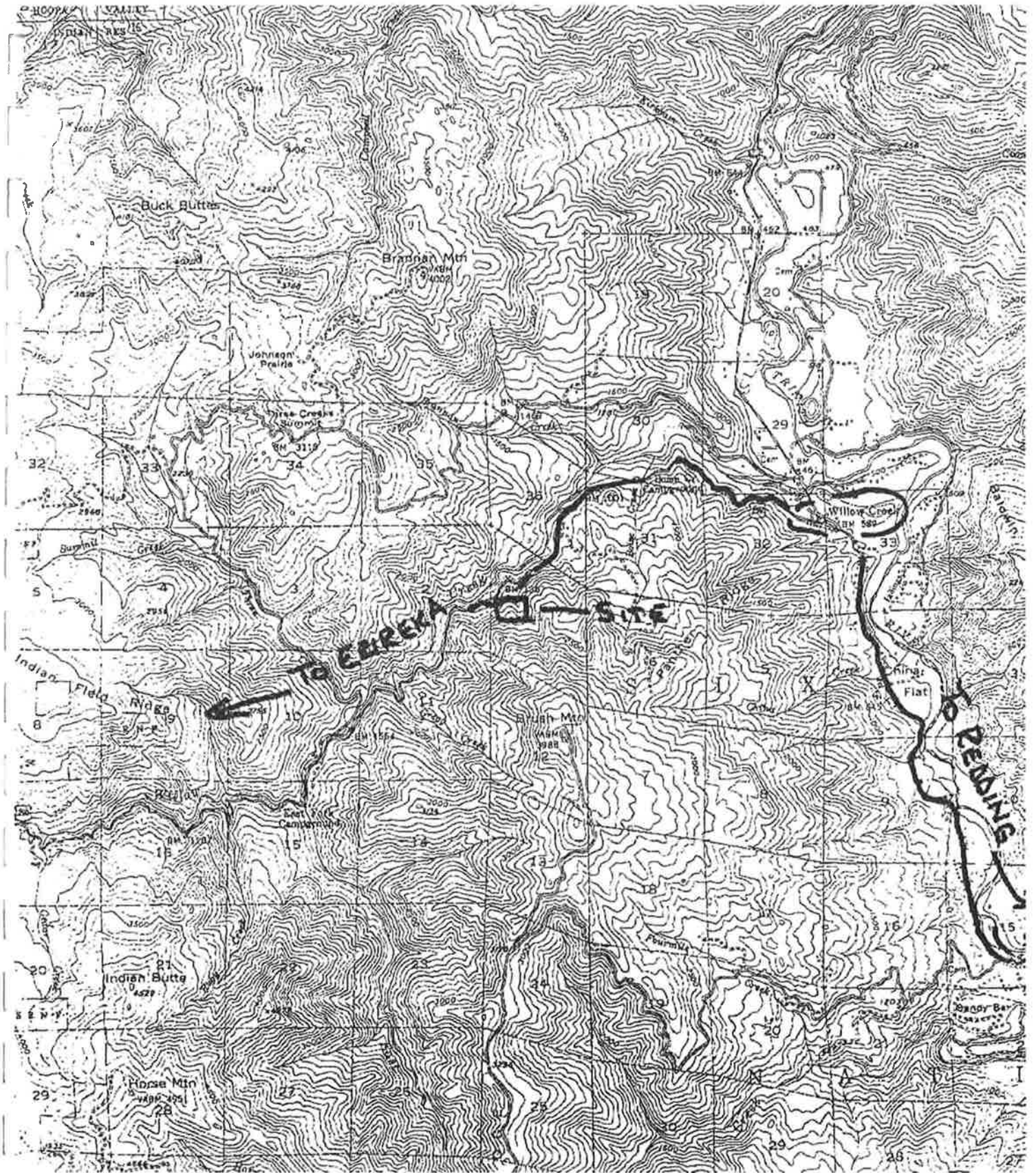


Figure 1
Location Map

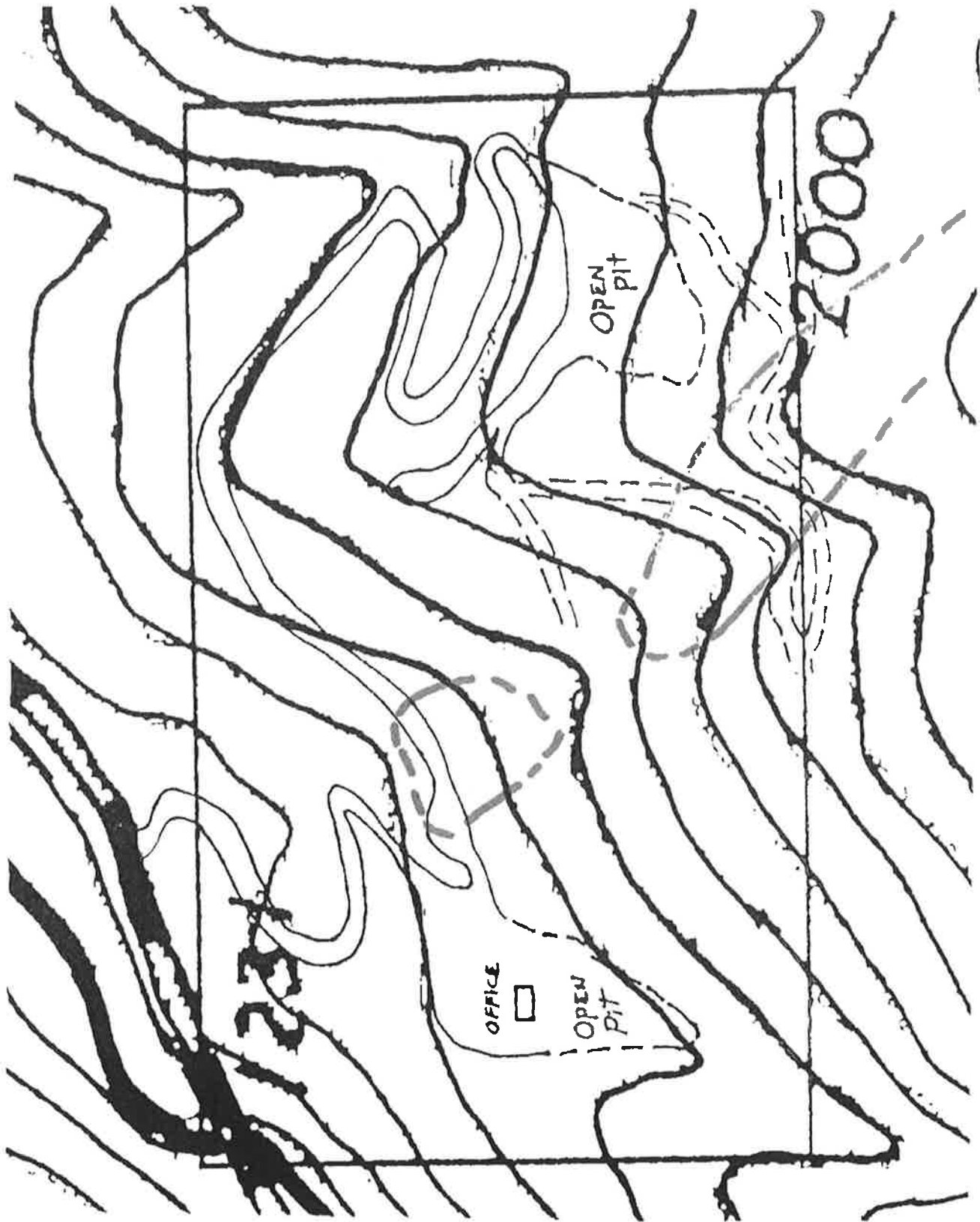


Figure 2

Location of roads, operating pits and the occurrences of serpentinite (in green) at Brown construction Company's Willow Creek aggregate operation.

GEOLOGIC SETTING

Bedrock at the quarry consists of thin- to moderately bedded, black to dark gray siliceous siltstone, chert and silty shale. There are occasional mineral crystals in the siltstone that appear to be remnant phenocrysts, indicating the shale and siltstone are the erosional products of a fine-grained tuff (Figures 3 and 4). Bedding is contorted with frequent changes in strike and dip over very short distances (< 20 feet) and the rocks are broken by several sets fractures and shear zones. Within the area of Brown's current quarrying operations and, as reported by Brown, areas to be quarried within the next ten years, no ultramafic or serpentine-bearing lithologies, or any asbestos- or asbestos-form minerals, were observed. Deposits of locally transported material (colluvium and alluvium) overlie the bedrock. These deposits consist of a mixture of angular to sub-rounded, pebble- to boulder-sized material of mixed lithologies, including most of the rock types found in and adjacent to the quarry. Most of the material mined at the pits is colluvium and alluvium, with minor sub-crop.



Figure 3: View looking west across upper pit. Outcrop of siliceous volcanics (foreground) and aggregate stockpiles (lower right and upper left).



Figure 4: View east across upper pit.

Adjacent to the pits are several occurrences of colluvium and deeply weathered sub-crop consisting of serpentinite mixed with other rock types occurring in the vicinity. One of these is exposed along approximately 100 feet of a cut bank on the haul road to the southeastern pit. The others are exposed along older logging roads southwest of the southern pit (outside of the area disturbed by current mining). These exposures consist of deeply weathered serpentinite and/or colluvium developed from serpentinite.

The exposure along the haul road consists of weakly bedded colluvium containing layers of predominantly serpentinite mixed with thin layers composed of other lithologies. The colluvium is covered by soil (Figures 5 and 6). The haul road and berms in this vicinity have been covered by material from the pits and do not contain any serpentinite. The wall of the road cut has not been disturbed for several years and, as a consequence of seasonal precipitation and periodic watering by Brown's water truck, is a stable slope not prone to slumping and does not create dust upon the passing of vehicles. Any future road work in this vicinity or disturbance of the road cut containing exposures of serpentinite must include mitigation steps to prevent the occurrence of dust. These procedures include application of water during surface disturbance to eliminate dust, and covering newly exposed serpentinite with non-serpentinite bearing material (in road cuts, along road beds and berms).

Exposures of serpentinite along the old logging roads southwest of the pit are in areas reportedly not in current use by Brown. However, if Brown does perform any surface disturbance within these areas, proper mitigation procedures must be implemented.



Figure 5: View southeasterly across haul road at road cut exposing colluvium developed over deeply weathered serpentinite. Note layers of dominantly serpentinite (gray) mixed with layers of dominantly other rock types (iron oxide stained).

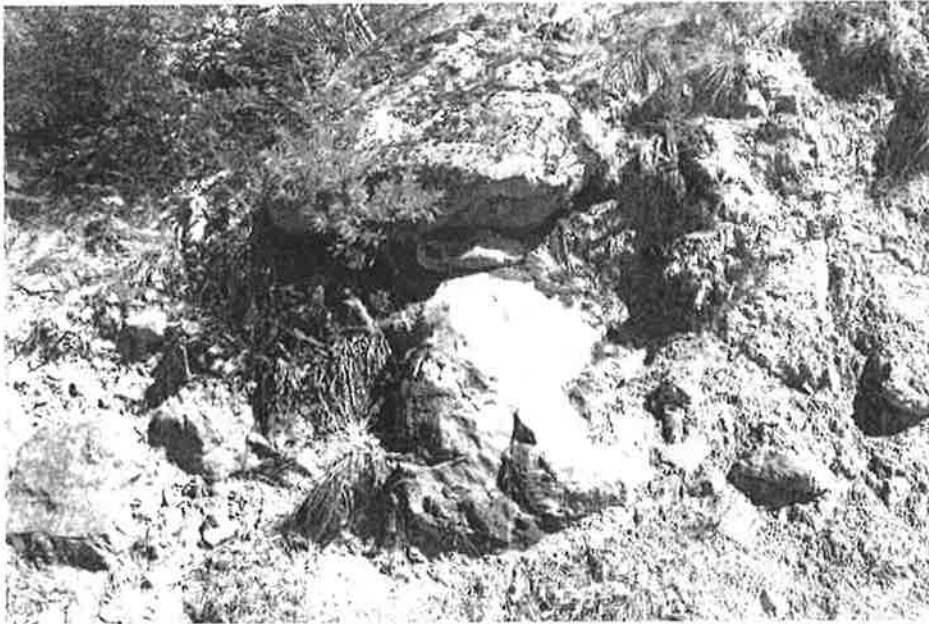


Figure 6: Detail of serpentinite boulders in colluvium, located at east (left) end of same road cut as in Figure 5.

There are also areas of undisturbed soil containing clasts of serpentinite trending in a northwesterly-southeasterly direction between the road-cut exposures. Along this trend vegetation is very sparse, typical of the type of vegetation growing on soils developed on serpentinite. Any new roads or surface disturbances in these areas must incorporate proper mitigation.

EXAMINATION OF STOCKPILES AND BERMS

During the course of CGI's site visit, stockpiles and road berms were also examined for the presence of ultramafic or serpentine-bearing lithologies, or any asbestos- or asbestos-form minerals. Stockpiles in and near the current quarrying operation (Figures 3 and 4) consist of material derived directly from the quarry. The various stockpiles are classified by size, and range from fine pebble to large boulder. All of this material is run-of-mine (i.e. no crushing) with little to no screening. The berms along the haul road also consist of material derived from the quarrying operations. No ultramafic or serpentine-bearing lithologies, or any asbestos- or asbestos-form minerals, were identified in the stockpiles or berms.

Asbestos Geologic Evaluation
Attachment B
Site Area Bedrock Geologic Map

Asbestos Geologic Evaluation
Attachment C
Recent Site Photographs



Serpentinite lens and colluvium along haul road



Cut bank along haul road showing full extent of serpentinite



Stockpiled material

Asbestos Geologic Evaluation
Attachment D
Asbestos Air Monitoring Results

STATE
COMPENSATION
INSURANCE
FUND

IN REPLY REFER TO:

690-82-09

August 17, 2010

Roger Brown
Owner
R. Brown Construction Company, Inc.
P.O. Box 406
Willow Creek, California 95573

Dear Roger,

My report of the industrial hygiene survey performed at R. Brown Construction Company, Inc. is attached. This evaluation is one of the services provided to you as a State Fund policyholder. A private industrial hygiene consultant would cost \$5,808.00 for this service.

Thank you for taking the time to show me your operation. Contact me at (510) 693-1634 or trhagerty@scif.com if you have any questions. To obtain additional safety services contact your Loss Control Representative, Doug Baker, at 707-476-1146.

Sincerely,

Terese Hagerty, MS, CIH #4440
Industrial Hygiene Consultant
Safety and Health Services

c: Doug Baker, Loss Control Representative

RBrownR12010.doc

STATE
COMPENSATION
INSURANCE
FUND

IN REPLY REFER TO:

R. Brown Construction Company, Inc.
Willow Creek, California

Report Prepared By: Terese Hagerty, MS, CIH
Industrial Hygiene Consultant

2440 Sixth Street • Eureka, CA 95501-0788
(707) 443-9721 Toll Free 1-877-865-4724
Fax (707) 443-0644 Legal Fax (707) 441-4800
Mailing Address: P.O. Box 4974 • Eureka, CA 95502-4974

Report of Industrial Hygiene Survey

Company	R. Brown Construction Company, Inc.	Policy Number	690-82-09
Requested By	Roger Brown	Survey Date	July 20, 2010
		Report Date	August 17, 2010
Report By	Terese Hagerty, MS, CIH Industrial Hygiene Consultant	Loss Control Representative	Doug Baker
Purpose	To determine the employee's exposure to airborne dust and quartz silica		
Operations	Sand and Gravel Processing (surface mining)		
Survey	Employee Air Monitoring		

This report is based on conditions observed during the survey. It does not include all potential health hazards that may exist. The regulations mentioned are those considered most critical for protecting safety and health. Consult the appropriate regulations to obtain complete compliance requirements. Specific products are not endorsed by State Fund.

Executive Summary

At your request, an industrial hygiene survey was conducted on July 20, 2010 at R. Brown Construction Company's quarry, located two miles west of Willow Creek on highway 299. The purpose of the survey was to determine employee exposure to respirable particulate and respirable quartz silica.

All of the employees who were monitored were not overexposed to either respirable particulate or respirable quartz silica.

Findings

Personal air monitoring was conducted for three employees, Gary Baugh – main crusher operator, Gary Cartwright – stick picker and crusher operator, and Gary Harris – loader operator. They were monitored for respirable particulates and respirable quartz to determine their exposures compared to MSHA and Cal/OSHA regulations.

The MSHA PEL for respirable particulate is not a fixed concentration, but rather a function of the percentage of quartz in the sample, to account for the toxicity of this mineral. The formula for calculating the PEL is $10/(\%+2)$. The MSHA PEL is calculated for each employee using the percent of quartz in the employee's sample. The reported respirable particulate concentration is then compared to each employee's calculated PEL to determine compliance. None of the employees exceeded their calculated PEL for respirable particulate.

The Cal/OSHA Mining Safety Orders exposure limit for quartz references the current American Conference of Governmental Industrial Hygienists' (ACGIH) threshold limit value (TLV) for quartz. The 2009 TLV is 0.025 mg/m³ (milligrams per cubic meter of air). None of the employees were overexposed to quartz silica.

Quartz silica is a suspected human carcinogen. The human health effects of respirable quartz are silicosis, a progressive lung disease; reduced lung function; lung fibrosis and cancer.

Recommendation	
IH1	Provide the affected employees with the monitoring results in Appendix A at the end of this report.

Please contact me at (510) 693-1634 or trhagerty@scif.com if you have any questions regarding this report.

Terese Hagerty, MS, CIH #4440
Industrial Hygiene Consultant
Safety and Health Services

The current regulations require that employees be informed of any potential exposures to chemicals or physical agents, such as noise, and that they have access to records of workplace monitoring. Any monitoring results reported reflect the exposures that existed on the day of the survey. These results may or may not be reflective of exposures on other days. Exposures will vary inter-day and intra-day. A variety of factors can influence the exposures on a particular day, including production levels, changes in equipment performance, and specific tasks performed. This report does not include all potential health and safety hazards that may exist. The regulations mentioned are important for protecting safety and health, but are not a comprehensive listing. Consult the appropriate regulations to obtain complete compliance requirements. State Fund does not endorse specific products.

Appendix A – Monitoring Results

**R. Brown Construction Company
 July 20, 2010**

Table 1 – Personal Air Monitoring Results for Respirable Dust and Respirable Quartz

Exposure Limits

MSHA PEL: 10/(% silica+2) mg/M³

ACGIH TLV: Respirable Quartz: 0.025 mg/M³

ACGIH TLV: Respirable Particulates Not Otherwise Specified (PNOS): 3 MG/m³

Employee/ Location	Sample Time (minutes)	Percent Quartz Silica	Respirable Particulates Results mg/M ³	MSHA Respirable Particulate PEL	Respirable Quartz Results mg/M ³	Cal/OSHA Respirable Quartz PEL Mg/m ³
Gary Baugh/ Crusher Operator	470	9.8%	0.14	0.84	0.013	0.025
Gary Cartwright/ Stick picker – Crusher Operator	470	9.5%	0.13	0.89	0.013	0.025
Gary Harris / Loader Operator	460	No Quartz in Sample*	LT 0.010	No Percent Quartz in Sample	LT 0.010	0.025

Table Notes:

*The analytical laboratory could not calculate percent quartz for the sample because they did not find any particulates. "Any sample(s) with a weight below the analytical limit of quantitation of 100 ug cannot have a weight percent of quartz...reported."

Less Than (LT) indicates less than the analytical method reporting limit used by the analytical laboratory

Results and exposures limits are reported in milligrams per cubic meter of air (mg/m³).

The Mine Safety & Health Administration (MSHA) Permissible Exposure Limit (PEL) is the maximum allowed employee exposure to an airborne contaminant expressed as an 8-hour time weighted average (TWA). For MSHA, the respirable dust PEL is calculated using the following formula: 10/(%silica+2). This standard is based on the 1973 American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value (TLV), which is referenced in 30 CFR Section 56.5001, *Exposure Limits for Airborne Contaminants*. The respirable particulate result reported in Table 1 for each employee is compared to the MSHA PEL calculated from the percent quartz found on the sample filter.

The Cal/OSHA Mine Safety Orders, Section 7090, Environmental Controls, references the current ACGIH TLV for respirable quartz. For Cal/OSHA compliance, the respirable quartz result is compared to the current 2009 TLV of 0.025 mg/M³.

Appendix B – Sampling and Analytical Methods

Insured R. Brown Construction Company

Industrial Hygienist Terese Hagerty, MS, CIH #4440

Date July 20, 2010

Air Contaminant	Media/ Instrument	Reference Method
Respirable Particulates	Higgins Dewel cyclone + 5u PVC filter / AIRCHECK®50 air sampling pump at 2.2 l/min	Gravimetry – NIOSH 0600
Respirable Quartz	Higgins Dewel cyclone + 5u PVC filter / AIRCHECK®50 air sampling pump at 2.2 l/min	X-ray diffraction – NIOSH 7500

Calibration Method BIOS DryCal Primary Flow Meter – Sampling pumps were calibrated for performance prior to, during and following the survey. Calibrations were monitored during the survey.

Workplace sampling, laboratory analysis, and calculation of exposure were all conducted in accordance with generally accepted industrial hygiene principles and practices. Further survey data and calculations are on file and available from the State Fund Industrial Hygiene staff.



690-82-10

December 8, 2011

Roger Brown
Owner
R. Brown Construction Company
PO Box 406
Willow Creek, California 95573

Dear Roger,

My report of the industrial hygiene survey performed at R. Brown Construction Company is attached. This evaluation is one of the services provided to you as a State Fund policyholder.

Thank you for taking the time to show me your operation. Contact me at 510-693-1634 or trhagerty@scif.com if you have any questions. To obtain additional safety services contact your Loss Control Representative, Mark Andrews, at 707-476-1132.

Sincerely,

A handwritten signature in cursive script that reads "Terese Hagerty".

Terese Hagerty, MS, CIH #4440
Industrial Hygiene Consultant
Safety and Health Services
State Fund Insurance

c: Mark Andrews, Loss Control Representative

R. Brown Construction2011R.doc

Report of Industrial Hygiene Survey			
Company	R. Brown Construction Company	Policy Number	690-82-10
Requested By	Roger Brown	Survey Date	November 1, 2011
		Report Date	December 8, 2011
Report By	Terese Hagerty, MS, CIH Industrial Hygiene Consultant	Loss Control Representative	Mark Andrews
Purpose	Determine the employee's exposure to airborne dust and quartz silica		
Operations	Sand and gravel surface mining		
Survey	Employee air monitoring		

Executive Summary

At your request, an industrial hygiene survey was conducted on November 1, 2011 at the R. Brown Construction Company's quarry. The quarry is located two miles west of Willow Creek on highway 299. The purpose of the survey was to determine the employee's exposures to respirable particulate and respirable quartz silica.

All of the employees who were monitored were not overexposed to either respirable particulate or respirable quartz silica. Please inform the affected employees of their monitoring results.

Background

R. Brown Construction owns a small quarry. They use the rock from their quarry for their construction work. The quarry is operated when they need rock.

The Mine Safety & Health Administration (MSHA) requires quarry employees to be tested annually for respirable quartz silica and respirable dust.

Findings

Personal air monitoring was conducted for three employees, Gary Baugh – foreman, Gary Cartwright – crusher operator, and Mike Dickson – loader operator. They were monitored for respirable particulates and respirable quartz to determine their exposures compared to MSHA and Cal/OSHA regulations.

Their airborne sample results, to respirable quartz silica and respirable particulate, were representative of their exposures on the day of the survey. The water truck was driven a round the quarry several times that day, dispensing water on the ground to control airborne dust levels.

The MSHA Permissible Exposure Limit (PEL) for respirable particulate is not a fixed concentration, but rather a function of the percent of quartz in the sample, to account for the toxicity of this mineral. The formula for calculating the PEL is $10/(\%+2)\text{mg}/\text{M}^3$. The MSHA PEL is calculated for each employee using the percent of quartz in the employee's sample. The reported respirable particulate concentration is then compared

State Compensation Insurance Fund

to each employee's calculated PEL to determine compliance. None of the employees exceeded their calculated PEL for respirable particulate.

The Cal/OSHA Mine Safety Orders PEL for quartz references the current American Conference of Governmental Industrial Hygienists' (ACGIH) threshold limit value (TLV) for quartz. None of the employees were overexposed to the Cal/OSHA quartz PEL.

Quartz is a suspected human carcinogen. The human health effects for respirable quartz are silicosis, a progressive lung disease; reduced lung function; lung fibrosis, and cancer.

Recommendation	
1	Provide the affected employees with the monitoring results in Appendix A at the end of this report.

Please contact me at 510-693-1634 or trhagerty@scif.com if you have any questions regarding this report.



Terese Hagerty, MS, CIH #4440
Industrial Hygiene Consultant
Safety and Health Services
State Fund Insurance

c: Mark Andrews, Loss Control Representative

The current regulations require that employees be informed of any potential exposures to chemicals or physical agents such as noise and that they have access to records of workplace monitoring. Any monitoring results reported reflect the exposures that existed on the day of the survey. These results may or may not be reflective of exposures on other days. A variety of factors can influence the exposures on a particular day, including production levels, changes in equipment performance, and specific tasks performed. This report does not include all potential health and safety hazards that may exist. The regulations mentioned are important for protecting safety and health, but are not a comprehensive listing. Consult the appropriate regulations to obtain complete compliance requirements. State Fund does not endorse specific products.

Appendix A – Monitoring Results

**R. Brown Construction Company
 November 1, 2011**

Table 1 – Personal Air Monitoring Results for Respirable Dust and Respirable Quartz

Exposure Limits

MSHA PEL: 10/(% silica+2) mg/M³

ACGIH TLV: Respirable Quartz: 0.025 mg/M³

ACGIH TLV: Respirable Particulates Not Otherwise Specified (PNOS): 3 mg/M³

Employee / Location	Sample Time (minutes)	Percent Quartz Silica	Respirable Particulate Result mg/M ³	MSHA Respirable Particulate PEL mg/M ³	Respirable Quartz Result mg/M ³	*Cal/OSHA Quartz PEL mg/M ³
Gary Baugh / Forman	334	Result below the limit of detection	LT 0.14	Result below the limit of detection	LT 0.014	0.025
Gary Cartwright / Crusher	335	Result below the limit of detection	LT 0.14	Result below the limit of detection	LT 0.014	0.025
Mike Dickson / Loader	338	LT 8.1	0.17	LT 0.1	LT 0.14	0.025

Table Notes:

The analytical laboratory could not calculate the percent quartz for the sample, because "any sample(s) with a weight gain below the analytical limit of quantitation of 100 micrograms (ug) cannot have weight percent quartz reported".

Less Than (LT) indicates less than the analytical method reporting limit used by the analytical laboratory. The substance may or may not be present below the analytical report limit.

The Mine Safety & Health Administration (MSHA) Permissible Exposure Limit (PEL) is the maximum allowed employee exposure to an airborne contaminant expressed as an 8-hour time-weighted average (TWA). MSHA calculates the respirable dust PEL using the following formula 10/(% silica+2)mg/M³. This standard is based on the 1973 American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value (TLV), which is referenced in 30 CFR Section 56.5001, *Exposure Limits for Airborne Contaminants*. The respirable particulate result reported in Table 1, for each employee, is compared to the MSHA PEL calculated from the percent quartz in the sample.

*The Cal/OSHA Mine Safety Orders, Section 7090, *Environmental Controls*, references the current ACGIH TLV for quartz. For Cal/OSHA compliance, the quartz is compared to the current 2011 TLV of 0.025 mg/M³.

Appendix B – Sampling and Analytical Methods

Insured R. Brown Construction Company

Industrial Hygienist Terese Hagerty, MS, CIH #4440

Date November 1, 2011

Air Contaminant	Media / Instrument	Reference Method
Respirable Particulate	Higgins Dewel cyclone +5u PVC filter / AIRCHECK®50 air sampling pump at 2.2 L/M	Gravimetry – NIOSH 0600
Respirable Quartz	Higgins Dewel cyclone +5u PVC filter / AIRCHECK®50 air sampling pump at 2.2 L/M	X-ray diffraction – NIOSH 7500

Calibration Method BIOS DryCal Primary Flow Meter – Sampling pumps were calibrated for performance prior to, during and following the survey.

Workplace sampling, laboratory analysis, and calculation of exposure were all conducted in accordance with generally accepted industrial hygiene principles and practices. Further data and calculations are on file and available from State Fund Industrial Hygiene staff.



7

Ms. Melissa Markee
Vestra
5300 Aviation Dr
Redding, CA 96002

October 12, 2015

DOH ELAP #11626
AIHA-LAP #100324

Account# 29875

Login# L357537

Dear Ms. Markee:

Enclosed are the analytical results for the samples received by our laboratory on October 05, 2015. All test results meet the quality control requirements of AIHA-LAP and NELAP unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Nicole Tormey at (888) 432-5227, if you would like any additional information regarding this report. Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

A handwritten signature in cursive script that reads "Mary G. Unangst".

Mary G. Unangst
Laboratory Director

Enclosure(s)

Galson Laboratories, Inc. is now a part of SGS, the world's leading inspection, verification, testing, and certification company. As part of our transition to SGS, you will begin to see some formatting changes with reports that will improve the presentation of data and allow for the transition to the new logo.



LABORATORY ANALYSIS REPORT

Client : Vestra
 Site : R. Brown Construction
 Project No. : 71410
 Date Sampled : 30-SEP-15
 Date Received : 05-OCT-15
 Account No. : 29875
 Login No. : L357537
 Date Analyzed : 06-OCT-15 - 08-OCT-15
 Report ID : 903417
 6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Respirable Dust and Crystalline Silica: Quartz

Sample ID	Lab ID	Analyte	Air Vol l	mg	%	mg/m3	Dust PEL mg/m3
931569	L357537-1	Dust Quartz	441.7 441.7	<0.050 <0.0050	ND	<0.11 <0.011	5.0
931570	L357537-2	Dust Quartz	435.504 435.504	0.092 0.0091	9.8	0.21 0.021	0.84
931571	L357537-3	Dust Quartz	NA NA	<0.050 <0.0050	ND NA	NA NA	NA

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: Dust 0.050mg 0:0.0050mg
 Analytical Method : mod. NIOSH 0600/7500/mod. OSHA ID-142; Grav./XRD
 OSHA PEL : see 1910.1000 (Table Z-3)
 Collection Media : PVC PW 37mm
 Submitted: PAH/JDL/AJD
 Approved : CRI/KRK
 Date : 11-OCT-15
 Supervisor: KRK/CRI
 NYS DOH #: 11626
 QC by : AMD
 < -Less Than mg -Milligrams kg -Kilograms ppm -Parts per Million
 > -Greater Than ug -Micrograms m3 -Cubic Meters NS -Not Specified
 NA -Not Applicable ND -Not Detected l -Liters mppcf -Million Particles per Cubic Foot

X



LABORATORY ANALYSIS REPORT

Client : Vestra
 Site : R. Brown Construction
 Project No. : 71410
 Date Sampled : 30-SEP-15
 Date Received : 05-OCT-15
 Account No. : 29875
 Login No. : L357537
 Date Analyzed : 06-OCT-15 - 08-OCT-15
 Report ID : 903417

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

MSHA Silica Summary

Sample ID	Lab ID	SWA mg/m3	TLV mg/m3	Error Factor	TIV*EF mg/m3	SWA/ TIV*EF	Citation Level
931569	L357537-1	<0.041	5.0	1.2	5.0	<0.0069	BELOW
931570	L357537-2	0.076	0.84	1.2	1.0	0.075	BELOW
931571	L357537-3	NA	NA	1.2	NA	NA	BELOW

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: Dust 0.050mg Q:0.0050mg
 Analytical Method : Mod. NIOSH 0600/7560/mod. OSHA ID-142; Grav./XRD
 OSHA PEL : see 1910.1000 (Table Z-3)
 Collection Media : PVC PW 37mm
 Submitted: PAH/JDL/AJD
 Approved : KRI/KRK
 Date : 11-OCT-15
 NYS DOH #: 11626
 Supervisor: KRK/KRI
 QC by : AMD

< -Less Than mg -Milligrams kg -Kilograms ppm -Parts per Million
 > -Greater Than ug -Micrograms m3 -Cubic Meters NS -Not Specified
 NA -Not Applicable ND -Not Detected l -Liters mpvcf -Million Particles per Cubic Foot

2



LABORATORY ESTIMATE REPORT

Client Name : Yasca
Site : R. Brown Construction
Project No. : 7410
Pace Sampled : 01-SSP-15 Account No. : 28415
Date Reported: 05-OCT-15 Login No. : 1357337
Data Analyzed: 06-OCT-15 - 08-OCT-15

1301 Kierkville Road
East Syracuse, NY 13057
(315) 432-5227
Fax: (315) 437-0571
www.galslabs.com

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

The laboratory does not have control over sampling; reported concentrations are based on client-supplied information (e.g. air volume, sampling time, etc.).

Rounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LODs for each analyte represent the demonstrated LOD concentrations prior to correction for detection efficiency (if applicable). Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

1357337 (Report ID: 503417)

Statistical analytical accuracy of the sampling media is -0.005 ± 0.007 mg (average bias weight change $\pm 95\%$ confidence interval of ± 0.02). The estimated uncertainty associated with the media, technology, and SOPs referenced in this report and does not account for any uncertainty associated with the sampling process. SOEs: 05W-002-5 (12), 05W-002-6 (13), 05W-002-7 (14), 05W-002-8 (15), 05W-002-9 (16), 05W-002-10 (17), 05W-002-11 (18), 05W-002-12 (19), 05W-002-13 (20), 05W-002-14 (21), 05W-002-15 (22), 05W-002-16 (23), 05W-002-17 (24), 05W-002-18 (25), 05W-002-19 (26), 05W-002-20 (27), 05W-002-21 (28), 05W-002-22 (29), 05W-002-23 (30), 05W-002-24 (31), 05W-002-25 (32), 05W-002-26 (33), 05W-002-27 (34), 05W-002-28 (35), 05W-002-29 (36), 05W-002-30 (37), 05W-002-31 (38), 05W-002-32 (39), 05W-002-33 (40), 05W-002-34 (41), 05W-002-35 (42), 05W-002-36 (43), 05W-002-37 (44), 05W-002-38 (45), 05W-002-39 (46), 05W-002-40 (47), 05W-002-41 (48), 05W-002-42 (49), 05W-002-43 (50), 05W-002-44 (51), 05W-002-45 (52), 05W-002-46 (53), 05W-002-47 (54), 05W-002-48 (55), 05W-002-49 (56), 05W-002-50 (57), 05W-002-51 (58), 05W-002-52 (59), 05W-002-53 (60), 05W-002-54 (61), 05W-002-55 (62), 05W-002-56 (63), 05W-002-57 (64), 05W-002-58 (65), 05W-002-59 (66), 05W-002-60 (67), 05W-002-61 (68), 05W-002-62 (69), 05W-002-63 (70), 05W-002-64 (71), 05W-002-65 (72), 05W-002-66 (73), 05W-002-67 (74), 05W-002-68 (75), 05W-002-69 (76), 05W-002-70 (77), 05W-002-71 (78), 05W-002-72 (79), 05W-002-73 (80), 05W-002-74 (81), 05W-002-75 (82), 05W-002-76 (83), 05W-002-77 (84), 05W-002-78 (85), 05W-002-79 (86), 05W-002-80 (87), 05W-002-81 (88), 05W-002-82 (89), 05W-002-83 (90), 05W-002-84 (91), 05W-002-85 (92), 05W-002-86 (93), 05W-002-87 (94), 05W-002-88 (95), 05W-002-89 (96), 05W-002-90 (97), 05W-002-91 (98), 05W-002-92 (99), 05W-002-93 (100), 05W-002-94 (101), 05W-002-95 (102), 05W-002-96 (103), 05W-002-97 (104), 05W-002-98 (105), 05W-002-99 (106), 05W-002-100 (107).

We perform a quantitative secondary engine confirmation on all clients testing greater than 0.025 mg secondary engine quantitative concentration is not possible below 0.025 mg.

1357337 (Report ID: 503417)

Accuracy and mean recovery does presented below is based on a 95% confidence interval (x₂). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Quartz	7/12.3%	98.3%

< -Less Than mg -Milligrams m3 -Cubic Meters ug -Micrograms ug -Parts per Million
> -Greater Than ug -Micrograms j -Liters NS -Not Specified ND -Not Detected NA -Not Applicable

8

Attachment C
TCP Application (w/o Attachments)



June 7, 2016

GIS, Environmental, & Engineering Services

71410

William D. Solinsky, RPF
Forester III, THP Administration
CAL FIRE
P.O. Box 944246
Sacramento, CA 94244-2460

**RE: Timberland Conversion Permit Application (Revision 1)
Proposed R. Brown and Sons Quarry Expansion
Willow Creek, California**

Dear Mr. Solinsky:

Attached please find the revised application for a Timberland Conversion Permit (TCP) on the form you provided last week. The TCP is requested to cover a 39-acre expansion area of the R. Brown and Sons Quarry in Willow Creek, California. CAL FIRE staff have determined that a TCP/Timber Harvesting Plan (THP) will be required for future quarry operations. The Quarry is located in Section 1, Township 6 North, Range 04 East, HB&M, approximately three miles west of Willow Creek on Highway 299 West. The general site location is shown on Figure 1. The boundary of Assessor's Parcel No. (APN) 316-061-011 is depicted on Figure 2. The mine is currently operating.

The original Reclamation Plan (RP-99-01) for the R. Brown and Sons Quarry was completed, underwent California Environmental Quality Act (CEQA) review, and was approved by Humboldt County in 1999. A request to renew and extend the Conditional Use Permit was submitted to the Humboldt County Planning Department in July 2014. The request was approved on October 16, 2014, with revised Conditional Use Permit CUP-14-013X, Surface Mining Permit SMP-14-001X, and Reclamation Plan RP-14-001X. No TCP was required for the initial mine operations. Reclamation Plan No. RP-99-01, Reclamation Plan Addendum RP-14-001X, Conditional Use Permits CUP-99-01, and Conditional Use Permit CUP-14-013X are included in Appendix A.

In March 2016, R. Brown and Sons Quarry submitted a Mining and Reclamation Plan Addendum (see Appendix A) to Humboldt County to expand the mining operation to connect the original two cells and provide additional resources and improve final reclamation grade and contour. The original mine areas and proposed expansion area are depicted on Figure 3. Humboldt County has initiated CEQA scoping. During a site visit with interested agencies, CAL FIRE representatives determined that a TCP and THP would be required.

R. Brown and Sons will continue operating under the original conditions outlined in UP-185-78, CUP-99-01, and SMP-14-001X, as well as Reclamation Plan RP-14-001X, on APN 316-061-011. This document amends Reclamation Plan No. 99-01 to include an approximately 39-acre expansion, along with modification of final contours and updates to meet current SMARA standards. Should

Mr. William Solinsky
June 7, 2016
Page 2 of 2

discrepancies exist between the two documents, the Reclamation Plan Amendment will supersede Reclamation Plan No. 99-01 and RP-14-001X. CEQA review will be limited to the expansion area and revised topography, and will not include review of previously permitted mining operations.

Mining operations were initiated on the site in 1999. The remaining mining activity is estimated to be completed in 2047, at which time the site will be reclaimed as timberland. The site is zoned TPZ.

The Humboldt County General Plan permits mining as an allowed use in TPZ and has determined that rezoning is not required for the mine expansion.

Thank you for time and review of this situation. Please call me at 530-223-2585 if you have questions on the enclosed.

Sincerely,

VESTRA Resources, Inc.



Wendy Johnston, RPF 2032
Project Manager

CC: Kevin Brown/R. Brown and Sons (w/o attachments)
Michael Wheeler/Humboldt County Planning Department (w/o attachments)
Heather Brent/CAL FIRE (w/o attachments)
Chris Poli/CAL FIRE (w/o attachments)

TCP Application

w/o attachments

TIMBERLAND CONVERSION PERMIT APPLICATION AND PLAN

APPLICATION

1. Pursuant to Public Resources Code §§4621-4628 and those regulations contained in Title 14, California Code of Regulations, §§1100 et seq., I (we)

R. Brown & Sons Quarry

Name (s)	
406 Brown Way, Willow Creek, CA	95573
Address (s)	Zip

hereby apply to the Director of Forestry and Fire Protection for a Timberland Conversion Permit to exempt the timberland described herein, and shown on the attached map or plat as a part of this application, from forest practice stocking requirements for a conversion to a non-timber growing use and/or to enable final immediate zoning from TPZ.

2. Property Description of area to be converted and/or rezoned from TPZ.

Subdivision(s)	Section	TWP	RNG	B&M
SW 1/4	1	6N	4E	Humboldt
S 1/2 of NE 1/4	1	6N	4E	Humboldt
SE 1/4 and S 1/2 of NE 1/4	1	6N	4E	Humboldt

3. Acres of timberland to be converted 39 acres (temporarily)

4. The owner(s) of record of this timberland is (are) Roger D. & Nancy A. Brown Trust,
P.O. Box 406, Willow Creek, CA 95573

5. The recorded interest in this timberland is held under deed dated 06/29/2005,
recorded in Vol. 25 at page 78 of official records in Humboldt
County. Assessor's Parcel Number 316-061-011-000

6. This timberland is assessed in the name(s) of : Roger D. & Nancy A. Brown Trust

7. I (we) intend to use this timberland in the future for Mining of hard rock

8. Conversion will begin about June, 2017 and be completed by
June, 2047

9. Is all or part of conversion area in a Timberland Production Zone (TPZ) and is this an application for an immediate rezone?

Yes No. If yes, show the area in TPZ with diagonal black lines on the conversion plat or map, and complete the following items a through e.

a. Is a check or money order for \$100 payable to the California Department of Forestry and Fire Protection enclosed with this rezoning application as required?
 Yes No

b. Has application for immediate rezoning from TPZ been made to the county or city having property tax jurisdiction?
 Yes No

c. If applied for, has the county or city tentatively approved immediate rezoning from TPZ? Yes No. If yes, give date _____, 20____

d. Is there any other property zoned TPZ within one mile of the boundary of the TPZ area proposed for immediate rezoning? Yes No

e. Are there any proximate non-TPZ lands (on or off the property containing the TPZ proposed for rezoning) suitable for the proposed conversion use?
 Yes No. If no, explain why such non-TPZ lands are not suitable.

*Humboldt County General Plan permits mining as an allowed use in TPZ and has determined that rezoning is not required for the mine expansion.

10. a. Is a check or money order for the basic \$700.00 CDF timberland conversion fee (payable to the California Department of Forestry and Fire Protection) enclosed with this application? Yes No (See Title 14, §1104.3 CCR)

b. Is a check or money order for the \$1,250.00 Fish and Game impact fee (§711.4(d)(3), Fish and Game Code) payable to the State of California enclosed?
 Yes No *Paid through CEQA (PENDING)

I will submit the fee when notified seven days in advance of filing the Notice of Determination and issuance of the permit.

11. Is any of the conversion area in a Coastal Zone as provided for by the California Coastal Act of 1976? Yes No. If yes, show the area in the Coastal Zone by horizontal black lines on the conversion plat or map and complete the following item a.

a. Has the Coastal Zone permit for the proposed conversion use been issued?
 Yes No If Yes, date of issuance N/A .

12. What element(s) of the county or city general plan applies(y) to the area within the timberland proposed for conversion is located?
The area is designated as "Timberland" in the Humboldt County Land Use Element (see Figure 5)
13. What is the zoning classification for all or part of the proposed conversion area that is neither TPZ nor Coastal Zone (use the designated zone term such as Agriculture – Forest, not a letter – number designation)? SW corner of parcel zoned "Unclassified" (see Figure 4)
14. Does the county, city or a district have permit, zoning, or other approval jurisdiction for the project that is the purpose of the conversion? X Yes No. If yes, complete the following items a. through d.
- Name of local government entity Humboldt County
 - Name the type of permit, zoning or approval required Use Permit, Reclamation Plan Amendment; see Appendix A
 - Has the local government prepared an environmental impact report or negative declaration? If yes, which document was prepared and was it submitted to the State Clearinghouse as required by the California Environmental Act (CEQA) and regulations? X Yes No. Type of Document Mitigated Negative Declaration State Clearinghouse Number? PENDING* (the Timberland Conversion Permit cannot be issued until this is done and local government adopts the documents). *Lead agency is Humboldt County. County will file the CEQA document as soon as initial scoping is complete.
 - Has the local government granted the necessary permits, zoning or approvals required for this project? Yes X* No.
If no, explain in the appropriate section of the Timberland Conversion Plan.
*Review in process; see attached Mining and Reclamation Plan Amendment.
15. a. Timberland Base. How many acres of commercial timberland will be removed from the timberland base in the county where the conversion will happen? Provide the number of acres of commercial timberland existing in the county and the percentage of that to be converted, and include a discussion of the cumulative effects of such a proposed change. See Continuation Sheet, attached.
- b. Effects on Adjacent Timberlands. What is the land use and zoning of the contiguous parcels around the conversion area? Include a map of the area and the contiguous parcels. See Continuation Sheet, attached; also refer to Figure 4.
16. All property owners must sign the following affidavit unless the owner is a partnership, corporation, or other organization, in which case the signer must be a partner, corporate officer, or organization officer respectively. An owner's agent may sign the affidavit, if power of attorney designating the agency, and signed by all the owners, a partner, or corporate or organization officer, for these respective kinds of ownerships accompanies the application. If the affidavit or power of attorney is signed in a state other than California, the signature(s) must be notarized.

AFFIDAVIT

I (We) own the herein described property, and declare a bona fide intent as defined in §1100(b), Title 14, California Code of Regulations to successfully complete conversion of the herein described timberland for the stated purpose in accordance with the conversion plan and plat or map, all hereby acknowledged as a part of this application, and in accordance with the timberland conversion permit, timber harvesting plan, and conditions required through the California Environmental Quality Act and related regulations.

I (We) understand that a failure to comply with the specifications contained in the permit and Timberland Conversion Plan can result in enforcement actions by the Department of Forestry and Fire Protection.

I (We) understand that if the conversion fails or is abandoned, that I (we) can be required to restock with trees those areas that do not comply with forest practice stocking requirements. I (We) understand that if I (we) fail to do so, the Director of Forestry and Fire Protection can have the restocking done, including necessary site preparation, and charge me (us) with the costs.

I (We) declare under penalty of perjury that I (we) have fully read this application, conversion plan and plat or map, and that the information given herein is correct to the best of my (our) knowledge.

Executed on June 8, 2016, at Willow Creek

State of California

Signature(s) of Property Owner(s)

Title(s)

Brown Owner/President

Roger Brown
(Please print name)

TIMBERLAND CONVERSION PLAN
INSTRUCTIONS

Applicants must complete the General section of this plan and such additional sections as may be appropriate for the specific future use to which the timberlands are to be converted. You may insert supplemental pages including maps to provide complete answers or explain a use not covered. Code the supplemental or continued answers by using the appropriate question number, such as General-7, Grazing-5, etc. Additional information may be required as appropriate.

The Timber Harvesting Plan, upon approval by the Director of Forestry and Fire Protection for the timber operations for this timberland conversion, thereby becomes a part of this conversion plan.

In addition to the Timber Harvesting Plan itself, either the Director or the environmental review process may describe measures to reasonably ensure the success of the conversion or to provide additional environmental protection. When the applicant agrees to these stipulations as conditions for the issuance of the Timberland Conversion Permit, they shall become a part of the Timberland Conversion Plan, either incorporated therein or attached as a supplement thereto.

GENERAL

Timberland Owner(s)

1. The responsible person who may be contacted if different from those given in the application section.

Kevin Brown P.O. Box 406, Willow Creek, CA 95573 530-629-3702
(Name) (Address) (Phone)

2. Have you received professional advice or assistance in planning this conversion?
 X Yes _____ No. List name and address of people professionally trained in land management who are advising you on this conversion.

Wendy Johnston, RPF VESTRA Resources, Inc. 5300 Aviation Drive, Redding, CA 96002
(Individual Name) (Firm or Agency Name) (Address)
Registered Professional Forester (RPF) No. 2032 / Environmental Scientist Phone: 530-223-2585
(Profession or Occupation)

3. Do you have or can you obtain sufficient financial resources to carry out this conversion? X Yes _____ No

Should the conversion fail or be abandoned do you have or can you obtain sufficient financial resources to return the land to timber production? X* Yes _____ No

*Financial Assurance Mechanisms for reclamation are required by the County and State of California Office of Mine Reclamation

4. How will the timber be logged? (Will all or only some trees be cut? Will area be tractor-logged or cable-logged, etc?) Describe: Soft and hard wood will be removed with an excavator or track dozer as mining progresses. Material will be piled to be chipped for use in reclamation.

5. Slope percent ranges in gradient generally 30 % to 60%. Slopes face generally toward the (direction, N, NE, etc) North
6. Erosion Control Plan. Describe special measures to be taken during and after logging, including road and skid road construction, methods to prevent erosion, protect soil, and protect local streams, ponds, or lakes on or near the conversion area, monitoring by whom and when, action planning in case the monitoring finds additional needs for erosion control actions, when reporting to CDF will be necessary, include who will be responsible for which tasks, and include a map locating the erosion controls. EXPLAIN IN DETAIL: See Continuation Sheet, Item 6; also refer to the Mining and Reclamation Plan included in Appendix A.

7. a. Is an erosion control plan required by a local government entity?
 * Yes No *An SWPPP is required by Order No. 2014-0057-DWQ/NPDES CAS000001.
- b. If yes, the approved erosion control plan must be enclosed and incorporated into this plan.
8. Describe methods of slash disposal and woody vegetation treatment, and any additional land treatment measures that will be taken: See Continuation Sheet, Item 8; also refer to the Mining and Reclamation Plan included in Appendix A.

9. If conversion fails, or is abandoned for any reason, how will the area be returned to timber growing use to meet the purpose of the Forest Practice Act? Describe land preparation, seeding or planting measures, pest control measures, and weed abatement/competition control. Explain when the services of a Pest Control Advisor would be required: See Mining and Reclamation Plan (Appendix A). OMR requires a bond be posted (see Use Permit Addendum, attached) to cover third-party-completed reclamation. The 2016 FACE and Financial Assurance Mechanisms are included in Appendix A.
- 10 Area on which conversion will be completed within 5 years: N/A acres.
 Date by which logging will be completed: 2040 (likely)
 Date by which final conversion to new use will be completed: Year 1 through Year 30
 NOTE: Conversion Permits are issued for 5 years and may be extended for just cause.

11. What assurances can you give that this conversion is feasible: The mine is a successful operation and is attempting to expand. Past reclamation activities are successful.

12. Describe the specific plans for development of the new use: See the proposed Mining and Reclamation Plan Amendment (attached as Appendix A).

List and attach any documents and sketches illustrating or showing proposed new use:

- a. Appendix A: Proposed Mining and Reclamation Plan Amendment
- b. Appendix A: County Use Permit
- c. Appendix A: Current Mining and Reclamation Plan
- d. Appendix A: 2016 FACE
- e. Appendix B: SWPPP
- f. Appendix C: CEQA Initial Study
- g.
- h.

N/A
AGRICULTURE-GRAZING

The following additional information is needed for lands to be devoted to agricultural purposes including grazing:

1. Has the suitability of the soil for the intended agricultural use been determined through examination by and consultation with farm advisors, Natural Resources and Conservation Service district specialists, or other qualified professionals? _____
Yes _____ No. If "Yes" give name and title of specialists and describe findings: _

2. Describe the soils now supporting timber or other woody vegetation: (clay, loam, sand, decomposed granite, etc.) _____

Give soil series if known: _____

3. Describe soil treatments necessary or desirable for the new use: (ripping, discing, soil conditioners, fertilizers, mulch, etc., and rate of application) _____

4. How will other woody vegetation left after logging be eliminated? (Check method)

Mechanical clearing _____ Chemical eradication _____ Burn _____
Other (specify) _____

5. How will natural woody growth be prevented from revegetating the area? (Check method) Mechanical removal _____ Reburn _____ Chemical eradication _____
Other (specify) _____

6. What kind and rate of application of seed or kind and spacing of planting stock will be used? _____

7. If conversion is for grazing, what kind and number of livestock are being grazed now on this property? _____

What kind and number of livestock will be grazed after conversion is completed? _____

8. What water developments exist right now on the property? _____

9. What additional water developments are planned for conversion? _____

10. What length of fence exists now in connection with the conversion area? _____

11. How much additional length of fence will be added in connection with conversion?

12. Describe buildings or improvements now on property where conversion is planned, such as a residence, barn or other farm structures: _____

12. Describe buildings or improvements to be added in connection with conversion: _____

N/A
SUBDIVISION

Applicable only for lands in Timberland Production Zone. See item 8, informational page.

The following additional information is needed for lands to be devoted to real estate subdivisions:

1. Has "Combined Notice of Intention" per §11010, Business and Professions Code been filed with State Division of Real Estate? _____ Yes _____ No
If yes, date filed _____

2. Is area approved for subdivision? _____ Yes _____ No
If yes, by which local governing authority? _____

3. Name the fire protection jurisdiction in which the subdivision will be (name of incorporated city, fire district, or other, name and describe) _____

4. Will meeting fire protection standards of the fire protection jurisdiction, or of the safety element of the county or city general plan and county or city ordinance be a condition for county or city approval of the final subdivision map?

_____ Yes _____ No (if not, this may be made a condition of the Timberland Conversion Permit.)

5. Provide a copy of proposed general development plan and indicate plan is included by marking an "X" here: _____

N/A
RECREATION

The following additional information is needed for lands to be devoted to recreational development:

1. Provide evidence of county or district zoning and approval with this plan, and list copies of document(s) submitted herewith showing such approval:

- a. _____
- b. _____
- c. _____

2. Are documents attached with this conversion plan: _____ Yes _____ No

3. Does your plan comply with local health and sanitation requirements and have approval? _____ Yes _____ No. If yes, by which local governing authority?

4. Will your plan meet county road standards and have county approval of the roads?

_____ Yes _____ No

5. Provide copy of development plan and indicate plan is included by marking an "X" here: _____

N/A
WATER DEVELOPMENT PROJECTS

The following additional information is needed for lands to be devoted to reservoirs or other water development projects:

1. Is the reservoir to be built and operated for private use or by a government agency?

2. If for a public agency, show name of agency: _____

3. If privately owned and operated, do you have a permit, certificate, or similar document(s) from the State (California) Department of Water Resources?
 Yes No

4. Is a reservoir to be built under the Agricultural Conservation program?
 Yes No. If so, have you filed the application? Yes No
 Attach copy of application, document of approval, or copy of evidence of professional planning and design and indicate it is attached by marking an "X" here: _____

5. Provide a map showing the high water line in relation to your property and indicate map is included by marking an "X" here: _____

6. Is a permit to appropriate water required from the State Water Resources Control Board? Yes No

7. If 6 above is "Yes", has application been made? Yes No

8. If 7 above is "Yes", give date of application: _____

MINING

The following information is needed for lands to be devoted to mining purposes:

1. Describe kind of material that will be mined or removed: Hard rock

2. Has an assay or feasibility report been made to determine the quality and the economics of the venture? Yes No
 If yes, summarize findings: The mine has operated successfully since 1999 and demand for material is increasing.

3. Describe the nature and extent, if necessary, of surface disturbance: Substantial disturbance resulting in removal of rock. See proposed Mining and Reclamation Plan Amendment (Appendix A).

4. Provide map of proposed development and indicate map is included by marking an "X" here: X (Figure 3)

5. Is a county approved reclamation plan required by the Surface Mining and Reclamation Act and county ordinance for this mine? X Yes No

6. If 5 above is "Yes", has the county approved a Reclamation Plan for the mine? X* Yes No (If No, issuance of the conversion permit may be delayed until the county approves the reclamation plan.)

*A proposed Mining and Reclamation Plan Amendment for the site is under review. No Timberland Conversion Permit was required for the initial 2000 permit.

OTHER

Complete applicable detail for intended conversion purpose:

1. Describe soils. Give soil series if known: See attached Mining and Reclamation Plan Amendment (Section 2.5).

2. Describe any cultural practices to be followed for soil and vegetation management: See attached Mining and Reclamation Plan Amendment (Sections 2.5, 2.6, and 2.8).

3. Describe any water development: A spring is currently used for onsite dust abatement. Proponent is in discussion with CDFW regarding whether the spring is jurisdictional.

4. Describe other management practices intended to maintain the converted use: See attached Mining and Reclamation Plan Amendment.

5. Provide other pertinent information – attach separate sheets if necessary: See attached Mining and Reclamation Plan, Mining and Reclamation Plan Amendment, and the environmental Initial Study attached as Appendix C.

Continuation Sheet/Brown & Sons Quarry TCP Application and Plan

Application

Item 15.a. Timberland Base.

A total of 39 acres will be removed from timber production for the life of the mine project, approximately 30 years. Following mine closure and reclamation, the site will be returned to timber.

The total number of acres of commercial timberland existing in Humboldt County is approximately 1,020,300 acres. The temporary loss of 39 acres of low site timberland (0.0038 percent) is considered de minimis.

Item 15.b. Effects on Adjacent Timberlands.

The land use of the property and adjoining parcels is "Timberland." On the south side of the highway, a majority of adjacent land is managed by the U.S. Forest Service. On the north side of Willow Creek, all lands are zoned "AR20-5," which is defined as "Agricultural, Rural, 20-5 Acres per Dwelling." See Figure 4.

Timberland Conversion Plan

Item 6

The site is an active rock quarry. As such, stormwater discharges are covered under NPDES permit CAS000001/Order 2014-0057-DWQ *General Permit for Storm Water Discharges Associated with Industrial Activities*. The permit requires stormwater monitoring and use of BMPs onsite through the preparation of a SWPPP (attached as Appendix B). Roads are already constructed onsite and maintained per the SWPPP and County Use Permit. Logging and conversion of the site will be gradual and trees removed only when required as mining moves into a new area.

The mining activities onsite are regulated by the County, OMR, and RWQCB. The site is inspected annually by the County to determine compliance with the Mining and Reclamation Plan and Financial Assurance Cost Estimates, which are also overseen by OMR. Stormwater discharges are monitored by the RWQCB through the NPDES permit system. Due to the porosity of the onsite material and BMPs installed, offsite discharge is rare.

Item 8

Trees and brush will be removed with an excavator as mining advances. Trees and brush will be stockpiled for chipping to be used at the time of reclamation. Reclamation will proceed from the top to the bottom and is regulated via County Use Permit and the Mining and Reclamation Plan.

The proposed Mining and Reclamation Plan Amendment (the subject of this conversion permit) is included as Appendix A. Included with and attached to the proposed Amendment are the current Mining and Reclamation Plan, County Use Permit, and 2016 Financial Assurance Cost Estimate for reclamation of the site.

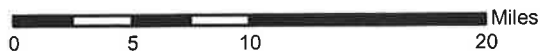
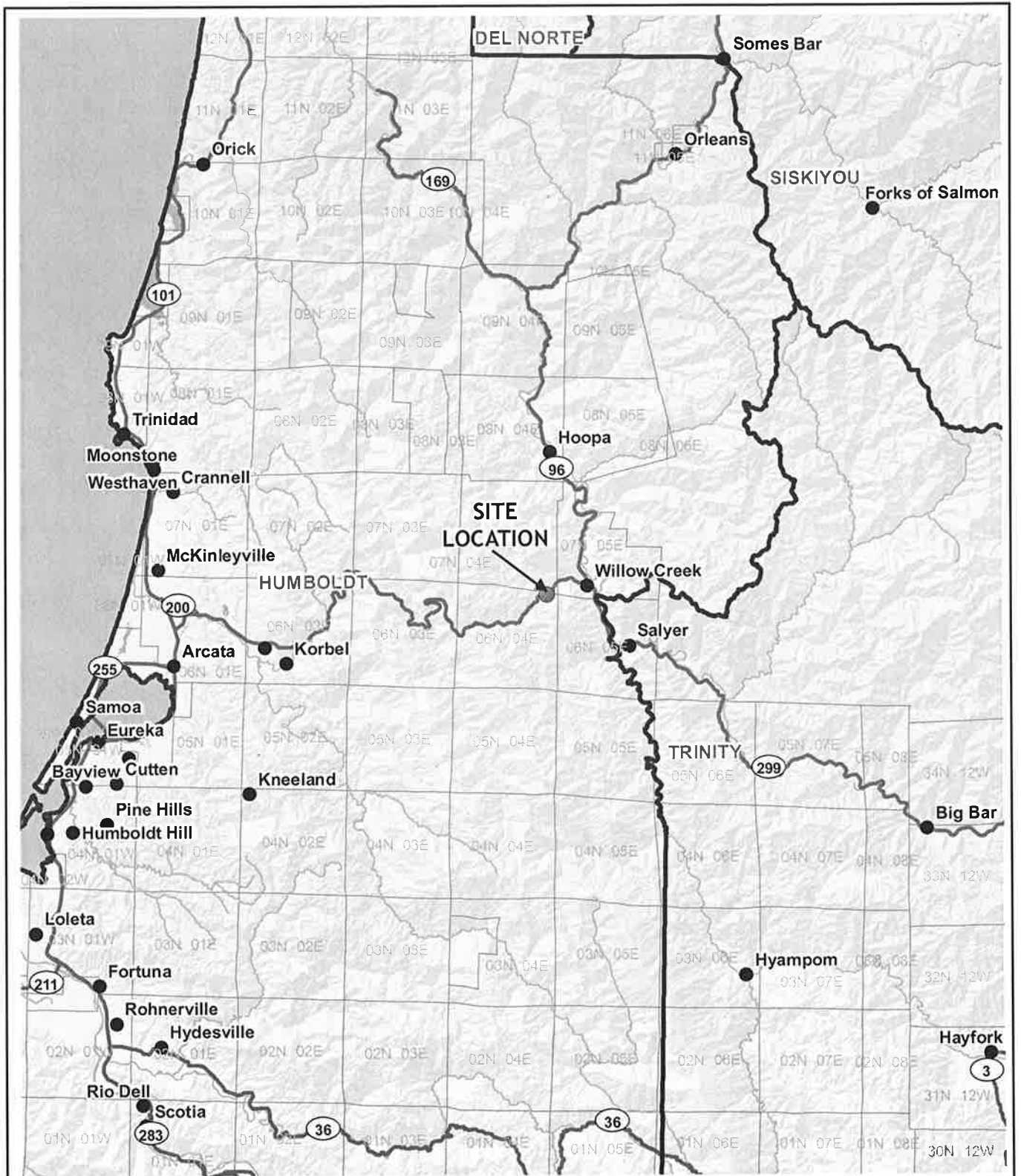
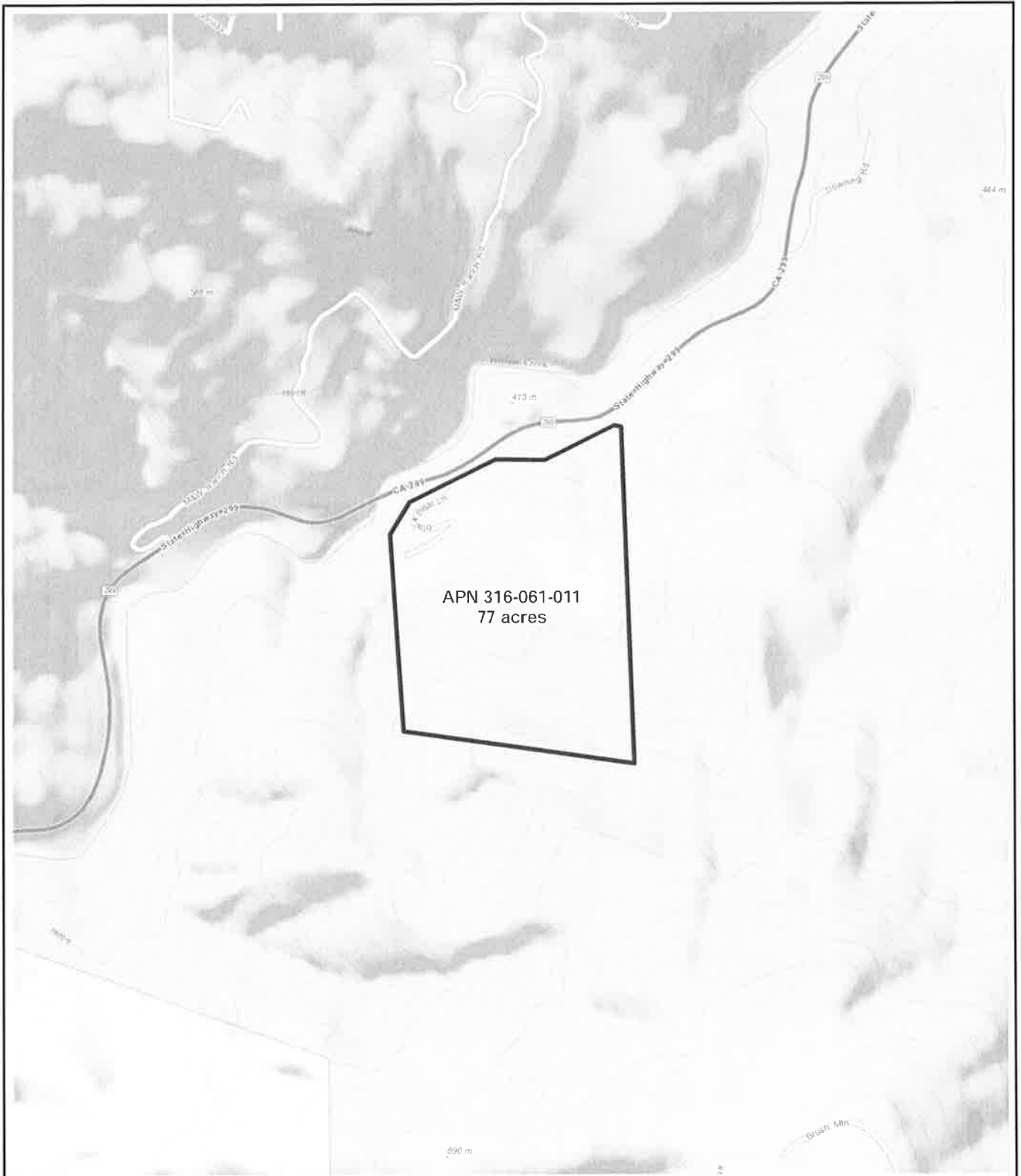

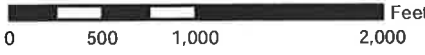


FIGURE 1
GENERAL SITE LOCATION
R. BROWN AND SONS QUARRY
HUMBOLDT COUNTY, CALIFORNIA

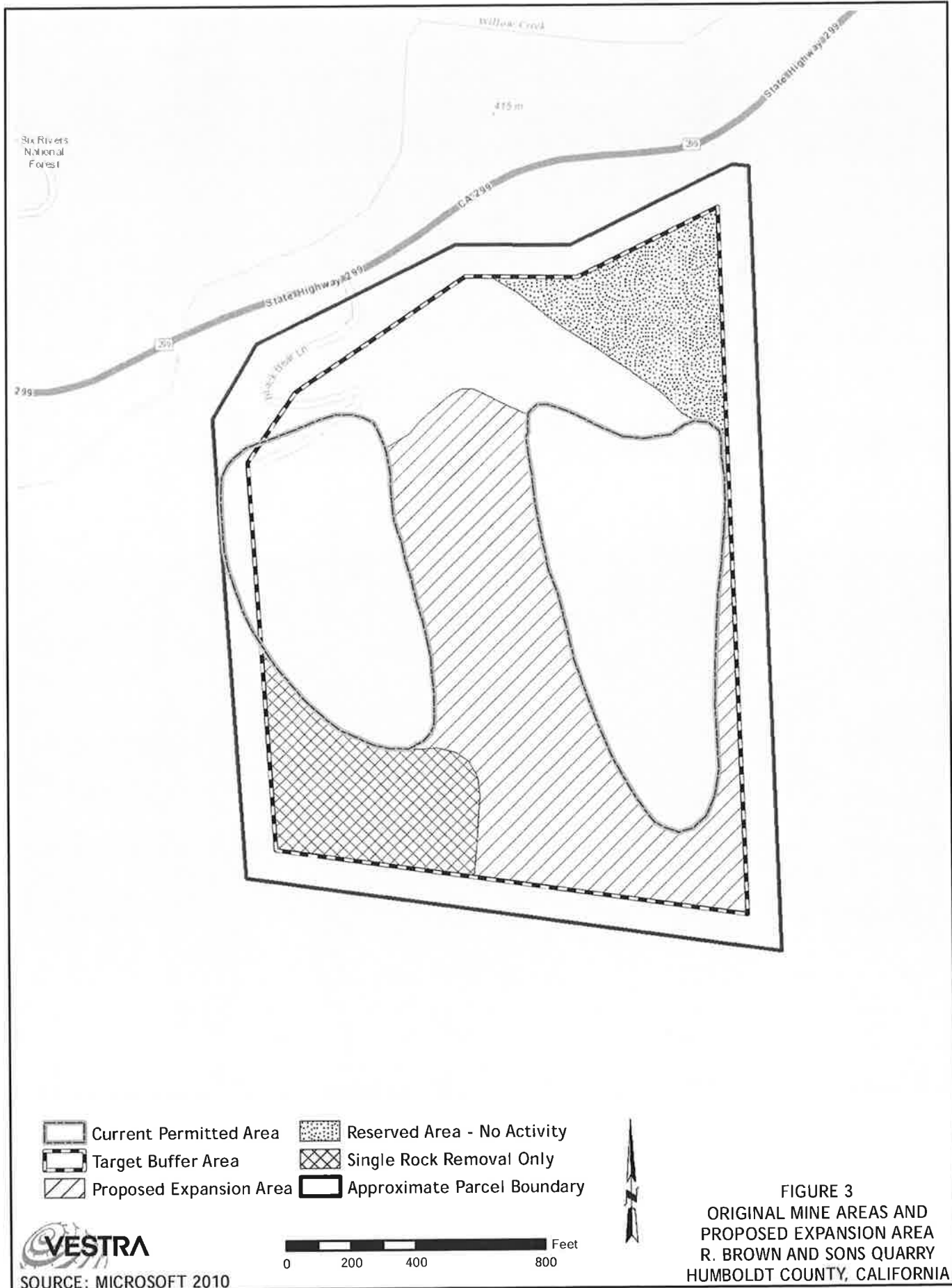


 Approximate Parcel Boundary



SOURCE: MICROSOFT 2010

FIGURE 2
PROPERTY BOUNDARY
R. BROWN AND SONS QUARRY
HUMBOLDT COUNTY, CALIFORNIA





- Approximate Parcel Boundary
- AG-B-5(5) - Agriculture Exclusive Special Building Site 5(5)
- AG-B-7(1) - Agriculture Exclusive Special Building Site 7(1)
- AE-B-5(40) - Agriculture Exclusive Special Building Site 5(40)
- AE - Agriculture Exclusive
- TPZ - Timber Production Zone
- U - Unclassified



SOURCE: MICROSOFT 2010



FIGURE 4
HUMBOLDT COUNTY
ZONING DESIGNATIONS
R. BROWN AND SONS QUARRY
HUMBOLDT COUNTY, CALIFORNIA





- | | |
|---|--|
|  Approximate Parcel Boundary |  AS - Agricultural Suburban |
|  AL - Agricultural Land |  HWY 299 |
|  AR - Agricultural Rural |  P - Public Lands |
|  AR20-5 - Agricultural Rural 20-5 Acres per Dwelling |  T - Timberland |

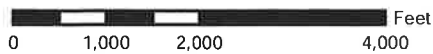


FIGURE 5
 HUMBOLDT COUNTY
 LAND USE ELEMENT
 R. BROWN AND SONS QUARRY
 HUMBOLDT COUNTY, CALIFORNIA

SOURCE: MICROSOFT 2010

Attachment D
CDFW Completion Letter



5300 Aviation Drive | Redding, CA 96002
Phone 530.223.2585 | Fax 530.223.1145
Info@vestra.com | www.vestra.com

June 14, 2016

GIS, Environmental, & Engineering Services

71410

Jennifer Olson
CEQA Coordinator
California Department of Fish and Wildlife
Eureka Field Office
619 Second Street
Eureka, CA 95501

Jane Arnold
Water Rights Coordinator
California Department of Fish and Wildlife
Eureka Field Office
619 Second Street
Eureka, CA 95501

**RE: Spring Overflow Alteration
R. Brown and Sons Quarry
Humboldt County, California**

Dear Ms. Olson and Ms. Arnold:

Pursuant to our discussions on the R. Brown and Sons Quarry site on June 13, 2016, the Browns have completed the requested burial of the overflow pipe in the infiltration gallery located approximately 50 feet from the primary storage tank. The trench was excavated using the PC400 excavator and measures 4 feet wide by 5 feet deep by 30 feet long. The trench is filled with 2-inch by 4-inch drain rock. The overflow pipe now runs in the ground 12 feet along the previous roadbed. The other overflow pipe has been disconnected.

Photographs of the work are included in Attachment A.

Please call me at 530-223-2585 if you have any questions concerning this work.

Sincerely,

VESTRA Resources, Inc.

A handwritten signature in black ink, appearing to read "W. Johnston".

Wendy Johnston
Project Manager

CC: Kevin Brown/R. Brown and Sons Quarry

Attachment A
Photographs

Spring Overflow Alteration



Photo 1: Excavating dry well



Photo 2: Excavation before pipe placement



Photo 3: Moist soil at depth of 5 feet



Photo 4: Depth of trench

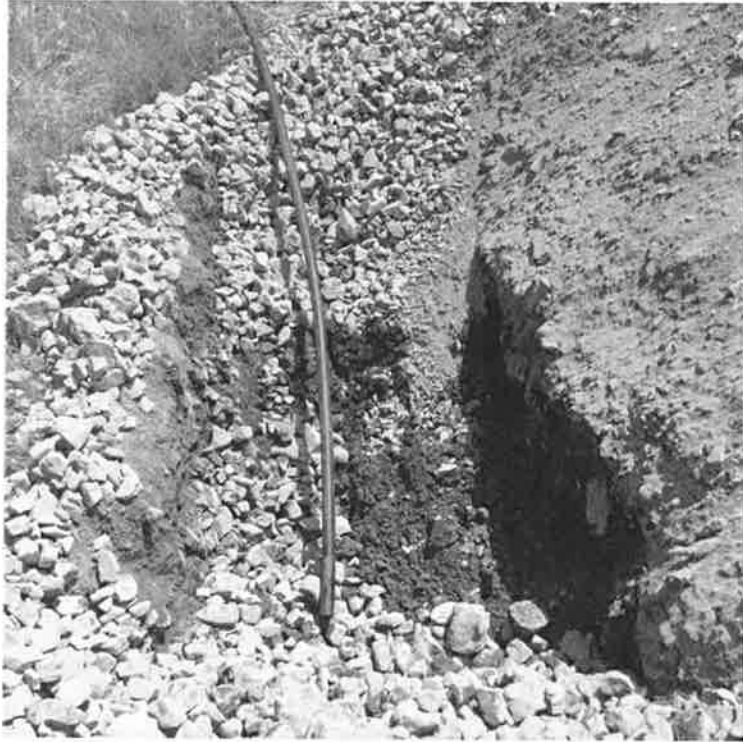


Photo 5: Pipe installation



Photo 6: Pipe installation



Photo 7: Completed pipe installation

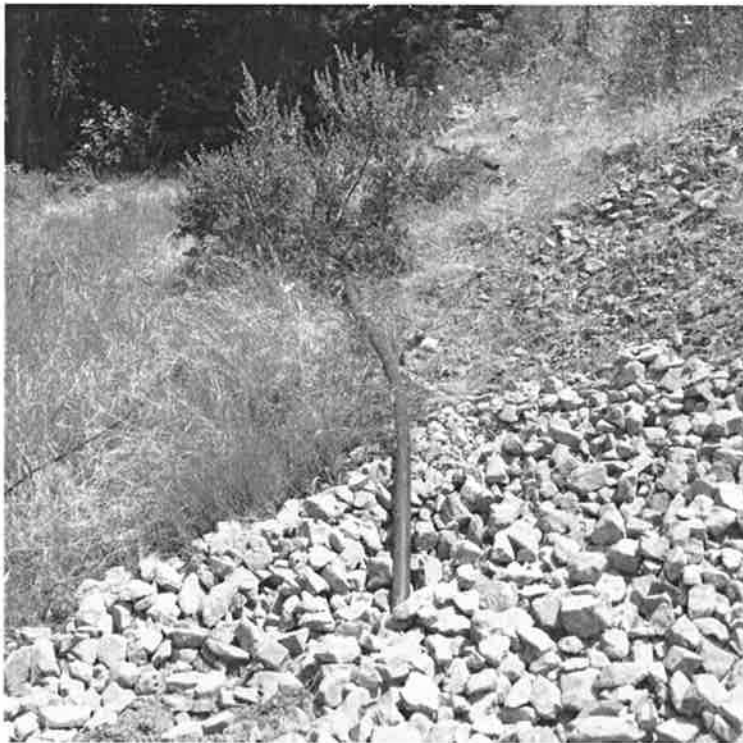
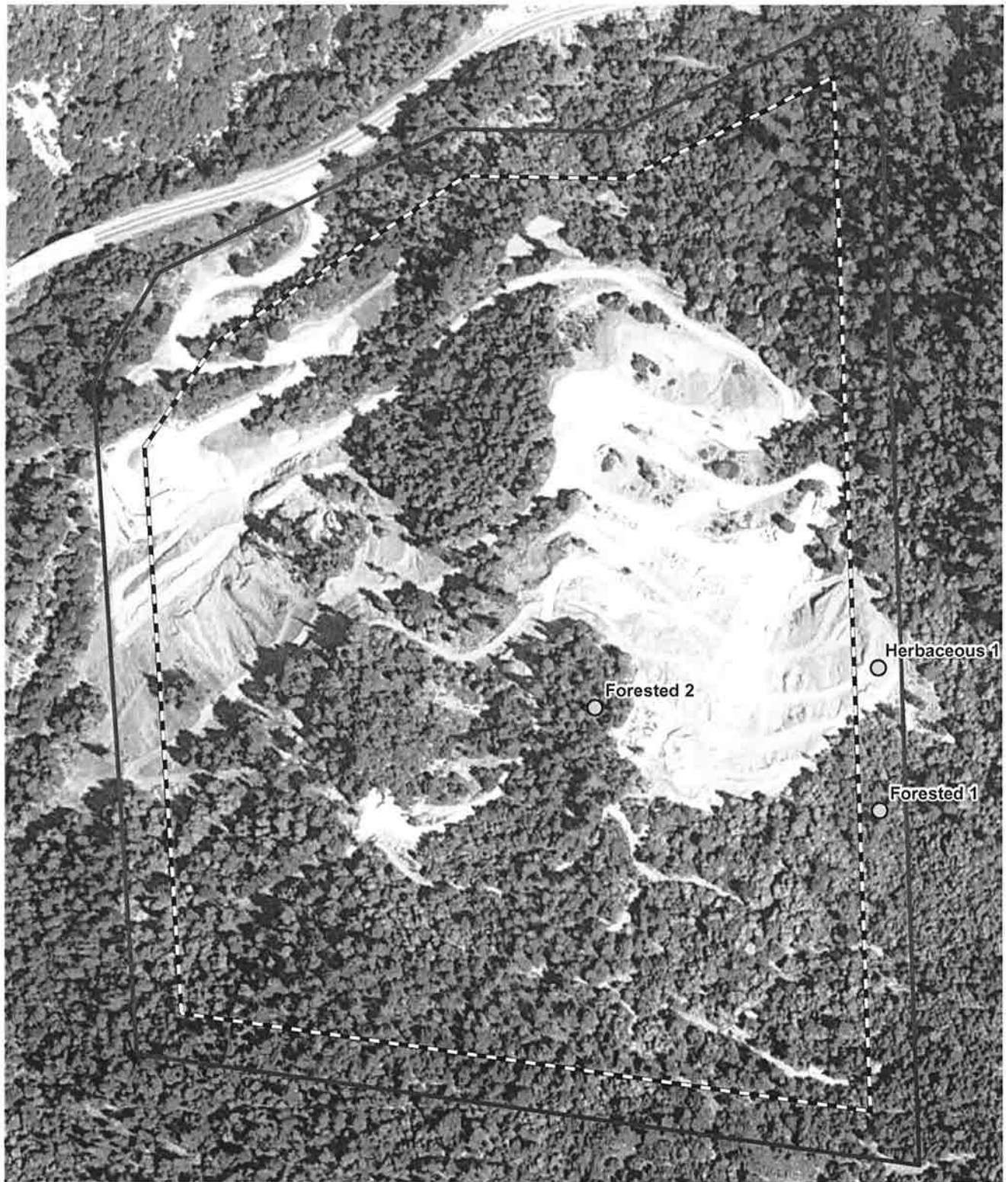


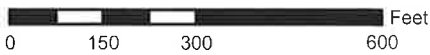
Photo 8: Completed pipe installation



Photo 9: Completed pipe underground



- Vegetation Plot
- ▭ Target Buffer Area
- ▭ Approximate Parcel Boundary



SOURCE: NAIP 2014 AERIAL PHOTOGRAPH

FIGURE E-1
 VEGETATION PLOTS
 R. BROWN AND SONS QUARRY
 HUMBOLDT COUNTY, CALIFORNIA

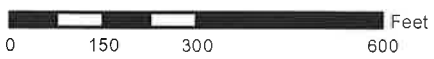


FIGURE E-2
PROPOSED HABITAT TYPES
R. BROWN AND SONS QUARRY
HUMBOLDT COUNTY, CALIFORNIA



SOURCE: NAIP 2014 AERIAL PHOTOGRAPH

Jeff Stackhouse
 Biological Consulting
 10 Raffaelli Ave
 Ferndale, Ca 95536
 (530) 945-9620

Date: August 5, 2016
Invoice Number: 2016-005

Work Completed: Installed baseline vegetation plots pursuant to Surface Mining and Reclamation Act (SMARA) Requirements at Brown Quarry in Willow Creek, CA.

Vegetation Monitoring Report:

Site: "Herbaceous 1"

Location: 40° 55.772", -123° 40.463"

Plot Size: 30x30ft (Transect running East to West)

Densitometer Readings: 0% at 0ft; 0% at 15ft; 0% at 30ft

Plot Data: Total Plant Cover: 30%; Percent Litter: 25%; Percent Bare Ground: 15%; Percent Exposed Gravel/Cobble: 30%

Taxa Data:

Shrub	Percent Cover	Density/Plot
Poison Oak (<i>Toxicodendron diversilobum</i>)	7	39
Gooseberry (<i>Ribes roezlii</i>)	2	2
Madrone (<i>Arbutus menziesii</i>)	1	5
Douglas Fir (<i>Pseudotsuga menziesii</i>)	>1	7
Canyon Live Oak (<i>Quercus chrysolepis</i>)	2	3
Black Cap Raspberry (<i>Rubus occidentalis</i>)	>1	1
Herbs	Percent Cover	
California Fescue (<i>Festuca californica</i>)	5	
Blue Wildrye (<i>Elymus glaucus</i>)	10	
Wild Iris (<i>Iris</i> spp.)	1	
Klamath weed (<i>Hypericum perforatum</i>)	1	
Aster spp.	>1	
Apiaceae spp.	>1	
Idaho Fescue (<i>Festuca idahoensis</i>)	>1	
Common whipplea (<i>Whipplea modesta</i>)	>1	

Site: "Forested 1"

Location: 40° 55.690", -123° 40.463"

Plot Size: 60x60ft (Transect running East to West)

Densitometer Readings: 77% at 0ft; 62% at 30ft; 82% at 60ft

Plot Data: Total Plant Cover: 10%; Percent Litter: 80%; Percent Bare Ground: 5%; Percent Exposed Gravel/Cobble: 5%

Taxa Data:

Trees	Percent Cover	Density/Plot
Tan oak (<i>Notholithocarpus densiflorus</i>)	4	56
Red Alder (<i>Alnus rubra</i>)	1	6
Douglas Fir (<i>Pseudotsuga menziesii</i>)	>1	4
Canyon Live Oak (<i>Quercus chrysolepis</i>)	1	4
Herbs/Shrub	Percent Cover	
Poison Oak (<i>Toxicodendron diversilobum</i>)	1	
Trillium spp.	>1	
Oregon Grape (<i>Mahonia aquifolium</i>)	2	
Sword Fern (<i>Polystichum munitum</i>)	2	

Site: "Forested 2"

Location: 40° 55.737", -123° 40.612"

Plot Size: 60x60ft (Transect running East to West)

Densitometer Readings: 76.5% at 0ft; 77.4% at 30ft; 79% at 60ft

Plot Data: Total Plant Cover: 20%; Percent Litter: 50%; Percent Bare Ground: 25%; Percent Exposed Gravel/Cobble: 5%

Taxa Data:

Trees	Percent Cover	Density/Plot
Tan oak (<i>Notholithocarpus densiflorus</i>)	1	21
Ponderosa pine (<i>Pinus ponderosa</i>)	>1	1
Douglas Fir (<i>Pseudotsuga menziesii</i>)	>1	5
Canyon Live Oak (<i>Quercus chrysolepis</i>)	34	1
Madrone (<i>Arbutus menziesii</i>)	3	2

Sugar Pine (<i>Pinus lambertiana</i>)	3	>1
Incense Cedar (<i>Calocedrus decurrens</i>)	9	>1
Herbs/Shrub	Percent Cover	
Poison Oak (<i>Toxicodendron diversilobum</i>)	2	
Iris spp.	>1	
Oregon Grape (<i>Mahonia aquifolium</i>)	5	
Coffeeberry (<i>Frangula californica</i>)	2	
California Fescue (<i>Festuca californica</i>)	7	

Photo Points

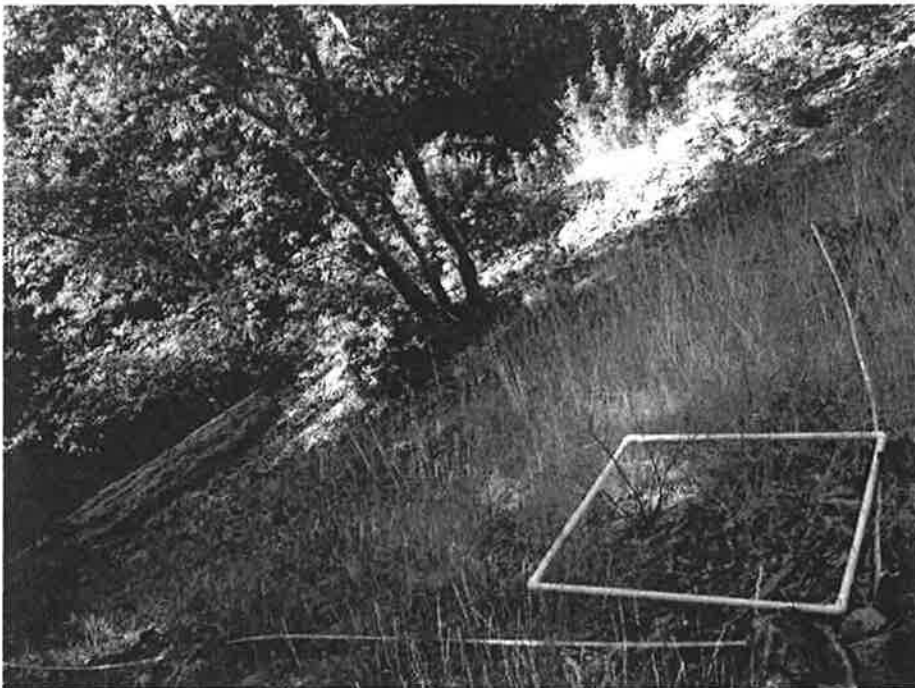


Photo 1: Herbaceous 1



Photo 2: Forested 1



Photo 3: Forested 2