



RECLAMATION PLAN

**RUSS #1 QUARRY
CA MINE ID #91-12-0065
(Humboldt County)
October 2010**

Amended October 2025

Prepared by:

**Humboldt County Department of Public Works
Natural Resources Division
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OPERATOR

Humboldt County Department of Public Works (HCPW)
1106 Second Street
Eureka, CA 95501

OWNER/SURFACE RIGHTS

James & Katie Russ
PO Box 235
Ferndale, CA 95536

GENERAL MINING OPERATION INFORMATION

Mined Mineral Commodity

Gravel

Estimated Total Production

The site was originally permitted in 1995 for the removal of 20,000 cubic yards (yd³). Records indicate that during this 15-year time period, approximately 25,000 yd³ has been removed from the site. During the 15-year permit period beginning in 2010 the site was not extracted from. This permit renewal proposes extractions as large as 25,000 yd³, occurring every 3-7 years, with a maximum of 30,000 yd³ being removed from the site over 15 years.

Total Acres to be Disturbed

3.25 acres

Total Acres to be Reclaimed

3.25 acres

Maximum Anticipated Depth of Mining

23 feet (ft)

Date of Start Up

Ongoing, the site has been utilized as an aggregate resource by HCPW since 1995.

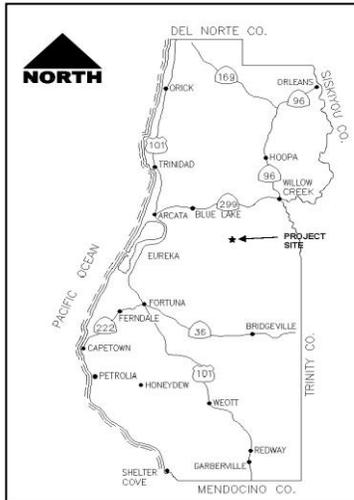
Estimated Proposed Date of Closure

December 31, 2040

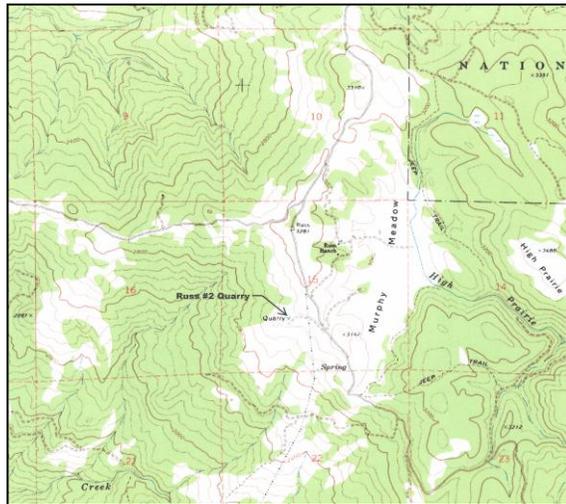
LOCATION

Russ #1 Quarry is located ten miles south of Highway 299 and 7.75 miles southeast of Korbel on Snow Camp Road, ½ mile south of Ward Road (County). The site lies 400 feet (ft) west of the County road and is accessed via a private, gated road. The quarry is located in Section 15, Township 5 North, Range 3 East, H.B. & M. and can be seen on the Maple Creek 7.5' USGS quadrangle map. The quarry is located within Assessor Parcel #313-132-001. See attached maps.

Location Map



Vicinity Map



SITE DESCRIPTION

The site was originally a rock knoll about 400 ft west of the top of the ridge, at an elevation of approximately 3,100 ft. An open area known as Murphy Meadow lies east of the ridgeline approximately 0.5 miles from the quarry site. The Russ Ranch headquarters (2,850 ft from the quarry) is located at Murphy Meadows as well and consists of a single residence, barns, and outbuildings. The site is within the Mad River watershed near the headwaters of Maple Creek. The site faces to the west in an area of moderately steep, rolling terrain with good drainage and a mix of open prairie and oak, madrone, and fir forest. This is an upland site with no water resources associated with the quarry.

Looking East from the Quarry Floor (2010)



The quarry was originally developed in an open prairie area from a naturally occurring 65 ft high outcropping near the top of Snow Camp Ridge. The ridge separates Maple Creek on the west from High Prairie Creek to the east. As mentioned above, Maple Creek is a tributary to the Mad River, whereas High Prairie Creek is a tributary to Redwood Creek. Although the extent of the deposit is unknown, it is estimated that mining by the landowner prior to HCPW operations netted 10,000-20,000 (yd³), resulting in the quarry floor and face that existed when the site was first permitted in 1995. Currently, the quarry face is approximately 300 ft long x 13 ft high. Due to the inconsequential height of the existing face, a catch bench has not been installed. The quarry floor is about 1.33 acres in size, and of that area, the combined area of gravel stockpiles is about 0.32 acres. The current area of disturbance associated with this project is 2.93 acres.

Looking Southwest towards Primary Stockpile (2010)



DESCRIPTION OF ENVIRONMENTAL SETTING

Aesthetics

The quarry is located near the ridgeline and is visible from Snow Camp Road when traveling west. It is also visible from Kneeland Road, approximately 12 air miles to the southwest. There are no residences or other structures visible from the quarry site.

Access Road into the Quarry (2010)



Air Quality & Naturally Occurring Asbestos

In 2002 the California Air Resources Board approved an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Final Regulation Order Section 93105). The Russ #1 Quarry is not located in an ultramafic rock unit and does not appear to contain asbestos, serpentine, or ultramafic rock. If in the event naturally occurring asbestos (NOA) is discovered at the site, the North Coast Unified Air Quality Management District will be notified/consulted immediately. Stringent dust control measures will be applied during quarrying, processing/sorting, and stockpiling operations and during activities associated with final reclamation. If NOA is left exposed it will be encapsulated by re-soiling during final reclamation.

The North Coast Unified Air Quality Management District is in non-attainment for Particulate Matter smaller than 10 microns in diameter (PM10) according to State of California Standards. Sources of PM10 in the project vicinity are from road and natural airborne dust, vehicle emissions, forest fires, and fires associated with forest management.

Biological Resources – Vegetation

There are no species of plants listed by the US Fish & Wildlife Service (USFWS) as threatened or endangered in the Maple Creek 7.5' quadrangle. The California Natural Diversity Database (CNDDDB) contains records for fifteen sensitive plant species (ranked 1B.1, 1B.2, 2.1, 2.2, 2.3, 4.1, and 4.2) by the California Native Plant Society in the area covered by the Maple Creek 7.5' quadrangle.

**Rare/Sensitive Plant/Lichen Species
(Habitat in Project Area/Vicinity)**

SCIENTIFIC NAME	COMMON NAME	LISTING STATUS	CNPS RANK
<i>Astragalus umbraticus</i>	Bald Mountain Milk Vetch	Fed: None Cal: None	2.3
<i>Bensoniella oregona</i>	Bensoniella	Fed: None Cal: Rare	1B.1
<i>Carex arcta</i>	Northern clustered sedge	Fed: None Cal: None	2.2
<i>Epilobium oreganum</i>	Oregon fireweed	Fed: None Cal: None	1B.2
<i>Erythronium oregonum</i>	giant fawn lily	Fed: None Cal: None	2.2
<i>Erythronium revolutum</i>	coast fawn lily	Fed: None Cal: None	2.2
<i>Glyceria grandis</i>	American manna grass	Fed: None Cal: None	2.3
<i>Iliamna latibracteata</i>	California globe mallow	Fed: None Cal: None	1B.2
<i>Lycopodium clavatum</i>	Running-pine	Fed: None Cal: None	4.1
<i>Microseris borealis</i>	Northern microseris	Fed: None Cal: None	2.1
<i>Mitella caulescens</i>	Leafy-stemmed mitrewort	Fed: None Cal: None	4.2
<i>Montia howellii</i>	Howell's montia	Fed: None Cal: None	2.2
<i>Sanguisorba officinalis</i>	Great burnet	Fed: None Cal: None	2.2
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	Fed: None Cal: None	4.2
<i>Sidalcea oregana ssp. eximia</i>	Coast sidalcea	Fed: None Cal: None	1B.2

(1B.X = Rare, Threatened or Endangered in California and elsewhere)

(2.X = Plants Rare, Threatened, or Endangered in California, but more common elsewhere)

(4.X = Plants of limited distribution - a watch list)

Bald Mountain milk-vetch – Bald Mountain milk-vetch, a dicot, is a perennial herb and is found naturally in moist prairies, open woodlands, roadsides, thickets, and stream banks. Plants tend to colonize in these areas. Bald Mountain milk-vetch has been documented 1.60 miles northeast of

the quarry. The quarry does not contain habitat for Bald Mountain milk-vetch, however there is habitat in the vicinity.

Bensoniella – *Bensoniella* occurs in seeps, wetland, and moist edge habitats along streams and meadows in montane coniferous forests. Populations in both California and Oregon are all within the coastal summer fog belt. *Bensoniella* requires intermediate conditions of both sunlight and moisture and prefers soils derived from ancient sedimentary rock. This species will most often be found at elevations of 3,000-4,600 ft. *Bensoniella* has been documented 1.31 miles east of the quarry although the quarry does not contain habitat for this species.

Northern clustered sedge – *Northern clustered sedge* can be found in seeps, wetland, and North coast coniferous forests. This species will most often be found at elevations between sea level and 6,500 ft. *Northern clustered sedge* has been documented 4.77 miles southeast of the quarry although the site does not contain habitat for this species.

Oregon fireweed – *Oregon fireweed* occurs in seeps, wetland, damp meadows and North coast coniferous forests. This species will most often be found at elevations between sea level and 6,500 ft. *Oregon fireweed* has been documented 5.48 miles southeast of the quarry although the site does not contain habitat for this species.

Giant fawn lily – *Giant fawn lily* can be found in north coast coniferous forest. This plant prefers somewhat shady conditions and rich, well-drained soil. Flowers bloom in early spring. They typically grow in colonies in wooded areas. *Giant fawn lily* has been documented 5.08 miles northeast of the quarry. The quarry does not contain habitat for this species, however there is habitat in the vicinity.

Coast Fawn Lily – *Coast fawn lily* can be found in bogs, wetlands, and broad-leafed upland forest, as well as North coast coniferous forest. *Coast fawn lily* has been documented 0.74 miles south of the quarry. The quarry does not contain habitat for coast fawn lily, however there is habitat some distance from the site.

American manna grass – *American manna grass* is widespread, growing in many areas of the US. The species can be found in wet areas such as seeps, wetlands, shorelines, streams, as well as North coast meadows. This grass is recommended for use in stormwater management, including detention ponds and bio-filtration swales that are wet year round. While found in full sun, it occasionally occurs in partial shade as well. It has been found to grow in poorly drained sands, loams, and clays with acid, neutral or slightly alkaline pH. The species prefers elevation below 4,000 ft. *American manna grass* has been documented 2.14 miles southeast of the quarry although the site does not contain habitat for this species.

California globe mallow – *California globe mallow* occurs in North coast coniferous forests and along stream banks. This species will most often be found at elevations between sea level and 6,500 ft. *California globe mallow* has been documented 4.03 miles northwest of the quarry although the site does not contain habitat for this species.

Running-pine – *Running-pine* occurs in North coast coniferous forests, in mesic sites with partial shade and light. Although globally widespread, like many club mosses, it is confined to undisturbed sites, disappearing from farmed areas and sites with regular burning. As a result, it is endangered in many areas. *Running-pine* has been documented 2.89 miles northwest of the quarry although the site does not contain habitat for this species.

Northern microseris – Northern microseris can be found near seeps, wetlands, meadows, and lower montane coniferous forests. The quarry does not contain habitat for Northern microseris although the species has been documented 2.17 miles southeast of the site.

Leafy-stemmed mitrewort – Leafy-stemmed mitrewort can be found near seeps, wetlands, and in meadows, broadleaved and North coast coniferous forests. This species will most often be found at elevations between sea level and 6,800 ft. Leafy-stemmed mitrewort has been documented in areas surrounding the quarry, although the quarry proper does not contain habitat for this species.

Howell's montia – Howell's montia can be found in moist to wet habitat, including vernal pools, and wetlands in North coast coniferous forests. This species will most often be found at elevations between sea level and 1,600 ft. The species has been documented 1.24 miles northwest of the site. The quarry does not contain habitat for Howell's montia.

Great burnet – Great burnet can be found near seeps, wetlands, and in meadows, broadleaved, riparian and North coast coniferous forests. The species has been documented 2.16 miles southeast of the site. The quarry does not contain habitat for Great burnet.

Maple-leaved checkerbloom – Maple-leaved checkerbloom occurs in coastal prairie and scrub, broadleaved and North coast Coniferous forest. The species has been documented 2.66 miles southwest of the site. The quarry does not contain habitat for maple-leaved checkerbloom.

Coast sidalcea – Coast sidalcea prefers moist habitats and can be found near seeps, wetlands, and in meadows and North coast coniferous forests. This species can be found at elevation to 10,000 ft. Coast sidalcea has been documented in areas surrounding the quarry, although the quarry proper does not contain habitat for this species.

It should be noted that HCPW has contracted with a qualified botanist to perform a botanical survey of the quarry and surrounding area. The subsequent findings can be found in Attachment-1.

Biological Resources – Wildlife

The following species of wildlife are listed by USFWS as threatened or endangered for listing for the Maple Creek 7.5’ quadrangle.

USFWS Species List for Maple Creek Quadrangle

SCIENTIFIC NAME	COMMON NAME	STATUS	CRITICAL HABITAT?
Fish			
<i>Acipenser medirostris</i>	GREEN STURGEON	THREATENED	YES
<i>Eucyclogobius newberryi</i>	tidewater goby	ENDANGERED	YES
<i>Oncorhynchus kisutch</i>	S. OR/N. CA Coho salmon	THREATENED	Yes
<i>Oncorhynchus mykiss</i>	Northern California steelhead	Threatened	Yes
<i>Oncorhynchus tshawytscha</i>	CA coastal Chinook salmon	Threatened	Yes
Birds			
<i>Brachyramphus marmoratus</i>	marbled murrelet	Threatened	Yes
<i>Coccyzus americanus</i>	western yellow-billed cuckoo	Candidate	No
<i>Strix occidentalis caurina</i>	northern spotted owl	Threatened	Yes

There is no habitat for the listed fish species within the quarry (upland location).

Marbled Murrelet – Marbled murrelet habitat does not exist in the immediate project vicinity. The California Department of Fish & Game Biogeographic Information System (BIOS, October, 2010) contains one recorded marbled murrelet occurrence 9.57 southwest of the site in the Iaqua Buttes Quadrangle. No occurrences have been reported in the immediate vicinity of the project.

Western Yellow-Billed Cuckoo – There is no habitat for western yellow-billed cuckoos in the quarry or vicinity (dense willow and cottonwood stands on river floodplains).

Northern Spotted Owl – Northern spotted owl habitat exists in the project vicinity. The California Department of Fish & Game Biogeographic Information System (BIOS, October, 2010) contains four records of northern spotted owl occurrences within a 1.75-mile radius of the project area. No occurrences have been reported in the immediate vicinity of the project.

The CNDDDB (October 2010) contains records for eight animal species ranked by the Department of Fish & Game as Species of Special Concern (SSC) or on the Watch List (WL) in the area covered by the Maple Creek 7.5' quadrangle.

**Rare/Sensitive Wildlife Species
(Habitat in Project Area/Vicinity)**

SCIENTIFIC NAME	COMMON NAME	LISTING STATUS
Amphibians		
<i>Rhyacotriton variegates</i>	SOUTHERN TORRENT SALAMANDER	Fed: None Cal: None
<i>Ascaphus truei</i>	PACIFIC TAILED FROG	Fed: None Cal: None
<i>Rana boylei</i>	FOOTHILL YELLOW-LEGGED FROG	Fed: None Cal: None
Fish		
<i>Oncorhynchus clarkii clarkii</i>	COAST CUTTHROAT TROUT	Fed: None Cal: None
<i>Oncorhynchus mykiss irideus</i>	summer-run steelhead trout	Fed: None Cal: None
Birds		
<i>Accipiter cooperii</i>	Cooper's hawk	Fed: None Cal: None
Animals		
<i>Arborimus pomo</i>	Sonoma tree vole	Fed: None Cal: None
<i>Martes pennanti (pacifica)</i>	Pacific fisher	Fed: Candidate Cal: None

Southern torrent salamander – Southern torrent salamanders can be found in riparian and lower montane coniferous forests near seeps and streams. There is no habitat in or adjacent to quarry area for Southern torrent salamander.

Pacific tailed frog – Pacific tailed frogs can be found in or near aquatic environments such as fast flowing streams with cobblestone bottoms. They may be found in riparian and North coast coniferous forests. There is no habitat in or adjacent to quarry area for Pacific tailed frog.

Foothill yellow-legged frog – Foothill yellow-legged frogs prefer streams and rivers versus still ponds and typically favor flowing water that has rocky substrate and sunny banks. They can also be found in rivers and streams that contain shallow areas with flowing water. They can be found in a multitude of forest environments that include these features. There is no habitat in or adjacent to quarry for the Foothill yellow-legged frog.

There is no habitat in or adjacent to the quarry for Coast cutthroat trout or summer-run steelhead trout.

Cooper's hawk – Habitat does not exist in the immediate project vicinity for the Cooper's hawk. CNDDDB (BIOS, October, 2010) contains one recorded occurrence of the Cooper's hawk 2.40 miles southwest of the site along the middle-reach of Maple Creek. The quarry proper does not contain habitat for Cooper's hawk, although there is habitat in the vicinity.

Sonoma Tree Vole – There is no habitat for Sonoma tree vole in or directly adjacent to the quarry although there is habitat in the vicinity (old growth and large second growth forests of Douglas fir, redwood, and montane hardwood-conifer).

Pacific fisher – The quarry does not contain habitat for fishers, although there is habitat in the vicinity of the quarry (undisturbed late-successional forest with rotting logs or tree cavities for nesting).

Cultural Resources

Archaeological site maps included in the Environmental Data Bank located at the Natural Resource Division of HCPW indicates that there are no known or recorded archaeological resources or historical sites at the project site. The portion of Snow Camp Road east of the site is shown on the 1865 Doolittle Map of Humboldt County as a trail connecting two major east-west trails, which ran between Humboldt Bay and the Trinity County mines and northern Sacramento Valley, respectively. It is assumed that prior to that time; the connector trail that ran along the ridge top was probably a Native American trail.

Geology

The site lies within a region of Franciscan sandstone consisting primarily of massive greywacke with minor amount of shale, thin-bedded chert, greenstone, and glaucophane schist. Plate 1 on the 1979 Humboldt County Seismic Safety map indicates that a section of a potentially active seismic fault, known as the Bald Mountain Fault, runs in a northeast/southwest direction approximately ¼ mile south of the site. Although the active fault exists in close proximity to the site, operation of this quarry is not expected to have geologic impacts. The site has been subjected to numerous 6.5 magnitude or greater earthquakes in the past with no evidence of land sliding or slope failures.

Soils

The Pacific Southwest Forest and Range Experiment Station, in cooperation with the UC Berkeley and CDF produced a soil-vegetation map (26B-4) of the project area in 1960. This map designates the soil at the project site as being in the Kneeland soil series. Kneeland series soil is characterized by having a depth of 3-4 ft, less than 30% slope, moderate permeability with good drainage and moderate erosion characteristics. The soil is clay loam, strongly acidic with parent material of sandstone. It is rated as being unsuited for timber production with a high suitability for extensive range use.

Noise

Ambient noise levels in the quarry vicinity range from 30 to 65 dBA, and result from wind, birds, livestock, and vehicular traffic on Snow Camp Road. Noise contribution from quarry activities are in the low-80s dBA range, which is typical for this type of activity, with the loudest noise coming from equipment backup horns, dump truck tailgates, and the crusher.

GENERAL LEAD AGENCY INFORMATION

Lead Agency

Humboldt County Community Development Services Department, Planning Division

Staff Contact

Anita Punla, Senior Planner

Phone Number

(707) 445-7541

Address

3015 H Street
Eureka, CA 95501

Surface Mining/Conditional Use Permit Number

CUP-46-94/SMP-08-94

Date Issued

10/6/1995

Expiration Date

10/6/2025 *Proposing renewal to 2040

DESCRIPTION OF MINING ACTIVITIES

HCPW will perform extractions as large as 25,000 yd³, occurring every 3-7 years, with a maximum of 30,000 yd³ being removed from the site over 15 years. Crushing and stockpiling are included in the mining activities.

Quarrying

The mining method proposed is identical in nature to operations conducted by HCPW over the past 30 years (1995 and 2010 permit period). Extraction will occur by ripping and breaking up the rock with a bulldozer or excavator. The material will then be pushed into temporary surge piles for processing. In the event localized hard rock is encountered, small-scale separation with charges may be performed. The quarry face will be maintained at a minimum of 1:1 slope, with a maximum height of 23 ft. The proposed mining activity will include the retreat of the working face to the northeast approximately 122 ft. The alignment of the quarry face will remain consistent.

Mining and crushing will occur during daylight hours (sunrise to sunset), primarily on weekdays. The average time period from extraction to stockpiling will be about 6-8 weeks.

Aggregate Processing

A portable crusher assembly, consisting of jaw and cone crushers, conveyors, and a generator trailer will be temporarily located on the quarry floor. Quarried rock will be transported to the crusher via front-end loader. Processed rock will be sorted and placed onsite in stockpiles and will later be utilized for road maintenance and winter storm damage repair projects. Once

crushing activities are completed, the crusher assembly will be dismantled and removed from the area.

Crusher in Operation (Charles Bar 2008)



Dust Suppression

Wetting the quarry access road and quarry floor will occur during hours of operation to control fugitive dust and minimize wind erosion. Furthermore, a dust suppression system will be utilized during processing operations to further reduce fugitive dust. Offsite water is delivered to a large water storage tank via a water truck. Refilling is based on demand, typically every 2-3 days. An electric or portable gas-powered pump supplies water to strategically located misters, typically installed at the screen deck and conveyor head-pulleys. Misters may also be utilized on the cone and/or jaw, depending on the volume of dust generated by the material being processed.

Traffic Control

Traffic control will consist of placing warning signs along Snow Camp Road in both directions from the quarry access road. It will not be necessary to detour or otherwise restrict traffic. Minor traffic delays may occur as vehicles slow down when encountering trucks entering or exiting Snow Camp Road from the quarry. Delays will be temporary, ending when extraction and processing activities are completed and trucks/equipment are removed from the area.

Fueling and Maintenance

All fueling, lubing, and equipment maintenance will be performed in a responsible manner. The designated staging/storage area for equipment, fuels, lubricants, and solvents related to quarrying activities will be restricted to a single location within the quarry site. Equipment will be inspected for leaks prior to starting each shift, following lunch breaks, and at end of shift each workday. Maintenance involving the removal/repair of hydraulic cylinders/hoses or of reservoirs containing hazardous products will be performed over impervious fabric resistant to Total Petroleum Hydrocarbons (TPH). A minimum of two sealed 5-gallon spill kits will be kept onsite at all times during extraction/processing operations. One sealed 5-gallon spill kit will be kept onsite during off-haul activities from the stockpile area. All activities related to fueling, lubing, and maintenance will be performed in the designated staging area unless equipment has been immobilized due to a mechanical failure. In these instances, every effort will be made to guard against and control spills. The functional condition of fuel transfer pumps, hose assemblies, and emergency shutoff switches will be evaluated prior to usage. Personnel tasked with fueling will

remain near the emergency shutoff switch during fueling operations. Topping off of fuel tanks will not occur. Fuels and lubricants will not be stored onsite after-hours or on weekends.

Either an electric or gasoline powered water pump may be used to supply water to the crushing equipment, dust suppression system. When a gasoline powered water pump is utilized, it will be situated over a drip pan or impervious fabric resistant to TPH and will be securely stored or removed from the site at end of shift each workday.

Hazardous Material Management

If leaks or spills occur in the area of operation during any extraction, processing, or stockpiling operations, they will be controlled immediately. All contaminated soil will be recovered from the site and stored in DOT approved containment vessels. All stored contaminated/hazardous material will be removed in a timely manner and disposed of at an approved disposal facility.

Annual Winterization Activities

The access road will be graded to course stormwater towards the inboard edge of the road each fall prior to the commencement of winter rains. Roadside ditches will be cleared of rocks and organic matter to assure functionality of two ditch relief culverts. The quarry floor will be finish graded to control stormwater by diverting it towards the center of the site. If natural percolation is not adequate to facilitate absorption of stormwater, a saturation trench will be constructed at the toe of the quarry face to enhance percolation and/or evaporate onsite stormwater. If in the event a trench is constructed, each end will be finish graded to a 10:1 slope to create escape routes for livestock and animals that may become trapped. If the existing stormwater containment berm around the exterior of the site has been damaged or breeched during extraction or end-haul activities, it will be reconstructed as necessary to control stormwater runoff prior to the commencement of winter rains. Any rebuilt sections of the berm will be straw mulched to reduce offsite sediment transport of fines associated with the activity. Stormwater control measures will be adequate to contain stormwater onsite during a 20-year/1 hour intensity/magnitude storm event. Stormwater discharging from the site would be to Maple Creek a tributary to the Mad River, 6.47 miles downstream of the site.

Interim Management Plan

An Interim Management Plan will be filed if and when the site is in idle status.

Monitoring and Reporting

Monitoring consists of regular site inspections of the quarry by HCPW personnel for slope stability, stormwater management, berm integrity, and maintenance of the access road. Humboldt County Planning Division staff also inspects the quarry annually. Reporting consists of annual reports to the local lead agency and CA Department of Conservation as required by SMARA.

INTERIM AND FINAL RECLAMATION

As of fall, 2025, no reclamation has been undertaken due to the diminutive size of the site and the frequency of excavation and end-haul events. Since quarrying activities have generated little topsoil, interim efforts will be made to import material to offset the need to locate and haul in soil from outlying areas following end-of-project and final reclamation. Final reclamation will be undertaken following termination of HCPW quarrying operations. See Reclamation Activities, Revegetation, Pg. 19 for specifics regarding revegetation.

Further interim and final reclamation will take place as mining operations progress towards the conclusion of operations.

Public safety will not be compromised by interim reclamation of this site. The site is not located on public land and public access is blocked. Measures to protect water quality and ensure slope stability are included in the reclamation activities.

Post Reclamation Land Use

Assessor Parcel # 313-132-001 is zoned Agriculture Exclusive, Timber Production Zone, with a Humboldt County General Plan land use designation of Timber/Agricultural grazing. HCPW's method of extraction will remove existing quarry rock in a manner that will not affect the opportunity to mine on adjacent parcels. Reclamation of the quarry site will not preclude reestablishing an active quarry if sufficient rock material surplus still remains at the quarry site.

When consulted regarding post reclamation land use, the landowner indicated that he intends to utilize the site for livestock grazing. He has also indicated he may consider the site a viable aggregate resource for his ranch and timber operations if sufficient material remains following HCPW closure of the site. Where borrowing activity is a compatible use on land zoned agricultural grazing and timber production, the landowner may reinitiate quarrying activity only after an evaluation by the lead agency and concurrence by OMR.

The reclamation plan has been designed with the intention of reclaiming the site to simulate productivity to the surrounding area to the greatest extent possible.

Reclamation Activities

Reclamation activities will consist of the following:

1. Finished Grading.
2. Resoiling.
3. Revegetation.
4. Monitoring and Maintenance
5. Post-Reclamation Monitoring

1 – Finished Grading: The quarry face, which will be approximately 23 ft high at end-of-project, will be finish graded to a 1:1 (min) slope or as deemed appropriate by the engineer. The quarry floor will maintain a slope of $\pm 1\%$ toward a centralized detention area near the base of the quarry face to facilitate percolation of surface water. Furthermore, the floor will be ripped on the contour to a depth of 0.5-1 ft to decompact the ground and facilitate percolation of surface water as well. See attached Proposed Final Reclamation Site Plan and Cross-Section drawing.

The existing access road (0.30 mile) to the quarry will not be decommissioned or altered as it serves as an access road to a large portion of ranch property in the Maple Creek drainage. HCPW intends to grade the roadway and maintain the ditch (see Pg. 16) in preparation for the first winter following closure of the mine site.

2 – Resoiling: Although the site will someday be reclaimed and utilized for agricultural grazing, no material suitable for resoiling and revegetation has been stockpiled at the site, the reason being the nature of the deposit. When operations first began in 1995, the site was simply a large

outcropping of exposed rock elevated above the surrounding meadowland. All material sourced from the site was useable and contained no topsoil. During the most recent extraction, which occurred in 1998, all remaining exposed rock was removed from the site.

Weed management measures will include biannual site surveys by a qualified botanist or other qualified individuals to assess the soil stock piles for weed species establishment. May or early June are appropriate months to complete a weed inventory as most weedy species are in flower and are identifiable. Weed eradication should occur during or soon after weed inventorying is conducted as many weeds can be completely eradicated while in flower or fruit. Recommendations stipulated by the California Exotic Pest Plant Council (CalEPPC) for eradication of particular weed species will be followed

4 – Revegetation: Graded and resoiled areas will be revegetated to facilitate the proposed end use of agricultural grazing.

A qualified botanist has determined specific species suitable for revegetation based on a botanical survey of the surrounding area and concurrence with the landowner, and typical seed mixes utilized in the area. Fast growing sterile hybrids (annuals) may be used to facilitate initial vegetative cover and assist with erosion control. No noxious weed species will be included in the seed mix. All work will be performed under direct supervision of the botanist or other qualified individual(s). The seed mix deemed appropriate for this specific site is as follows:

- ❑ 30% perennial rye (*Lolium perenne*)
- ❑ 20% Festulolium, a hybrid cross between the genera *Lolium* and *Festuca*
- ❑ 20% annual rye (*Lolium multiflorum*)
- ❑ 20% fawn fescue (*Festuca arundinacea*)
- ❑ 10% white clove (*Trifolium repens*)

Areas to be seeded include the top of the quarry face, catch bench, quarry floor, areas of the face capable of supporting plant growth, the perimeter containment berm, and any other areas that have been disturbed by the operation where there is sufficient topsoil to root the above-mentioned species. A seed application density of 25 pounds (lbs) per acre will be applied to the areas identified for resoiling and revegetation. Seed application will be by hydroseeding; mulch and tackifier will be included in the hydroseed mix.

Revegetation success for grass cover will be based on aerial coverage of 80% one year after planting, and 97% two years after planting. Wherever these goals are not met, the area will be evaluated, and subsequent planting/mulching and soil amending will be performed. See Post-Reclamation Monitoring on Pg. 17 for additional information regarding revegetation success.

5 – *Monitoring and Maintenance:*

Containment Berms & Discharge: Areas of the quarry floor have been reformed to assist in directing sheet-flow towards the quarry face. Containment berms have been enlarged and will be maintained around the perimeter of the quarry. Berms are significant in size and designed to withstand a 20-year/1 hour intensity/magnitude storm event. Internal ditches and a shallow retention basin have been constructed to enhance dissipation/percolation of onsite stormwater. Best management practices (BMP) in the form of (multiple) straw wattles have been installed and maintained at designated discharge points to minimize the release of sediment-laden stormwater from the site during the largest of storm events. Straw bales, spaced sufficiently to meter the release of stormwater from the site have been installed upstream of the wattles to minimize

downstream erosion associated with high-flow velocity. Furthermore, rock dissipaters have been installed in existing drainage courses below each discharge point to further check flow velocity and minimize erosion. End-of-project, reclamation activities will include monitoring and maintenance of all erosion and sediment control (ESC) devices by HCPW. Inspections will occur each fall prior to the commencement of winter storms and subsequent monitoring will occur throughout the remainder of each winter period for a minimum of three years or until the landowner begins borrowing operations. Any sections rebuilt or reconstructed during reclamation will be seeded with native grasses and straw mulch to reduce offsite sediment transport of fines associated with the berm itself.

Slope Stabilization and Erosion Control: The final slope will be graded to a minimum of 1:1 or as deemed appropriate by the HCPW engineer. The final grade will be designed to provide a stable slope for the geology of the site. It is expected that final slopes will consist primarily of rock, but if exposed areas of loose material exist along slopes, they will be mulched and tackifying agents will be applied during hydroseeding. Erosion in those areas of the quarry face will be controlled by installing rice straw/coir wattles across the slope at 10 ft intervals (slope distance) and will be staked per manufacturer's recommendations. Wattles will be maintained and/or replaced as needed to ensure continued sediment control until revegetation is concluded.

6 – Post-Reclamation Monitoring: Post-reclamation monitoring will consist of three elements; successful revegetation, slope stability, and erosion control.

Monitoring for revegetation success will be determined by assessing percent of aerial cover in sample plots located on the regraded quarry face and floor. A qualified botanist, who will also perform the cover assessments, will determine the number, size and location of the plots. In addition, photographs will be taken at established photo points to document revegetation status.

Monitoring for slope stability and erosion control will be accomplished by visual observation of the regraded quarry face, looking for evidence of rill wash, gullying, and soil movement down slope.

If revegetation and slope stability objectives are not met after three years, monitoring and reactive retreatment activities will be extended until the objectives have been met for two consecutive years.

Time Schedule: Final grading and resoiling, and seedbed preparation will be completed during late summer or fall, and will take two-three weeks to complete. Seeding and mulching will be done prior to the first rainfall event of the season. The site will be revisited in two-week intervals during the first winter to monitor for vegetation growth and evidence of erosion.

Additional details for each of the reclamation activities outlined above are provided under the Performance Standards section of this Reclamation Plan.

RECLAMATION PERFORMANCE STANDARDS

Grazing & Wildlife Habitat

Objective: Restore the disturbed area to grazing capabilities for livestock and habitat for use by local wildlife for cover and foraging.

Task: The site will be regraded to resemble the topography to the surrounding area to the greatest extent possible. The site will be revegetated with a seed mix known to be good forage for livestock as well as local wildlife.

Backfilling, Regrading, Slope Stability, Recontouring

Objective: Final slopes to have slope stability factor of safety, suitable for proposed end use, and conforming to surrounding topography.

Task: The 23 ft high quarry face will be regraded to a minimum of 1:1 (horizontal: vertical) slope. A catch bench will not be constructed along the quarry face unless deemed necessary by the engineer following a reevaluation prior to the commencement of reclamation. The quarry floor will be maintained at a grade of approximately 1% slope toward the center or near the base of the quarry face. All area within the area-of-operation will be graded to a form that simulates adjacent topography. The entire quarry floor will be scarified to a minimum depth of 1 ft.

Revegetation

Objective: Establish a vegetative cover suitable for the proposed end use, livestock/wildlife grazing, wildlife habitat, and of adequate cover to control erosion and sediment transport: 80% aerial coverage one year after treatment, 97% aerial coverage two years post-treatment.

Tasks: Disturbed areas will be hydroseeded with a mix of several annual forage and erosion control grasses. Seed will be applied at a density of 25 lbs per acre. Seeded areas will be hydro-mulched with wood/fiber mulch and tackifier to ensure topsoil stability and encourage rapid plant growth. Revegetated areas will be monitored for planting success. Areas where adequate cover is not obtained will be reseeded and re-mulched. Monitoring will continue until revegetation goals have been achieved.

Drainage

Objective: Protect the beneficial uses of local waterways.

Tasks: Final grading of the quarry face and floor will direct stormwater runoff towards the center of the quarry and/or to a percolation trench at the base of the face where runoff will collect onsite and percolate into the ground or evaporate. Rip the quarry floor to a minimum depth of 12 inches to decompact soil and facilitate percolation of surface water. Barricade a portion of the decompacted area to eliminate traffic, which would compact the soil and reduce percolation. Maintain an earthen berm capable of containing stormwater onsite. The entire site will be revegetated, resulting in continued erosion control and containment of fine sediment.

Prime Agricultural Land

The quarry is not located on a parcel considered to be prime agricultural land.

Other Agricultural Land

Objective: Reclaim the site to a sustainable level of agricultural production comparable to the surrounding area.

Task: Finished grading will result in slopes capable of holding adequate topsoil for forage production. The soil utilized for resoiling/revegetation will be partially native with additional

material imported from local sources, being of the same or similar soil type as the surrounding area. A botanical survey and consultation with the property owner has determined the species of plants with which to revegetate the site, and seeding will be done at the appropriate rate to establish grazing land of similar character and quality to the pastures in the surrounding area. Regrowth will be monitored and areas with survival below 80-97% will be replanted. Monitoring and follow-up will continue for three years, or until the site has achieved the 97% survival goal.

Building, Structure, and Equipment Removal

Objective: Removal of all buildings, equipment and supplies not required for the post-reclamation end use.

Task: There are no buildings or structures on the site and no permanent structures are needed for mining operations. All equipment and materials associated with the project will be removed when final reclamation is complete.

Surface and Groundwater Protection

Objective: Protect surface and groundwater from siltation and pollutants.

Tasks: Finished grading will confine stormwater to the site by retaining the perimeter berm and sloping the quarry floor and face so that runoff accumulates and percolates or evaporates within the quarry site. High intensity/magnitude storm events will result in surface flows capable of overtopping the containment system. Stormwater released from the site will be metered and treated prior to release. Drainage courses below all discharge points will be constructed to impede flow velocity.

No equipment, structures, or materials will be left on the site that would contaminate groundwater.

Topsoil Salvage

Objective: Apply topsoil in a manner that results in stable slopes and produces maximum revegetation success.

Tasks: Soil suitable for topsoiling will be stockpiled onsite for future use in final reclamation. County Road maintenance in the area generates several hundred cubic yards of suitable material annually, which will be stockpiled onsite for final reclamation use. Excess material derived from local County Road construction projects and deemed suitable will be transported to the site as well. Imported topsoil will be of a series and type similar to that of the surrounding area, and suitable for the proposed end use. It is estimated that the accumulated resoiling material at end-of-project will be sufficient in volume to exceed the minimum depths required for successful production of the species to be planted (~6-10 inches). Soil will be prepared for revegetation by tracking-in. A forage seed mix commonly used in Humboldt County will be applied to stabilize soil and minimize sediment transport. Straw/coir wattles will be installed on the quarry face slope to minimize soil erosion until vegetation is established.

Tailing and Mine Waste Management

This operation will not result in the production of tailings or mine waste.

Closure of Surface Openings

This is a surface mining operation with no openings to underground workings.

SEDIMENT AND EROSION CONTROL PLAN

Erosion and Sediment Control Principles

This section provides basic information on the principles of erosion and sediment control that shall be applied at the Russ #1 Quarry project site. This section is further intended to highlight certain principles that are particularly critical to achieving effective control and onsite containment of stormwater and sediment.

- Design the project to fit the natural topography, soils, and drainage patterns through such practices as limiting disturbance of steeper slopes, avoiding disturbance of natural drainage features, and using soil during resoiling activities with a high infiltration rate, whereas, the characteristics of the site can be used to minimize stormwater runoff, erosion, and sediment transport.
- Emphasize erosion control rather than sediment control. Erosion control minimizes the entrainment of sediment while sediment control removes entrained sediment from runoff. Erosion control is more efficient and cost-effective because it is nearly impossible to entirely remove sediment from runoff once it is entrained. Examples of erosion control include covering disturbed soils and controlling surface runoff using measures such as earthen berms, retention basins, and percolation trenches. Another example might be to place wattles at intervals across steep slopes to impede surface flow velocity and reduces erosion. Another illustration of the relative effectiveness of erosion control is straw mulch, which can reduce sediment concentrations in runoff over 90%.

Since it is nearly impossible to entirely prevent erosion, it will also be necessary to incorporate sediment control devices such as a retention pond or percolation trench, and earthen berm around the perimeter of the site to assure stormwater is contained onsite. Sediment controls vary in their effectiveness, but typically reduce sediment concentrations 50 to 75%. However, sediment controls have little effect on the very fine sediment that causes turbidity, thus erosion control should be the first line of defense in managing and controlling sediment.

- Minimize the extent and duration of area exposed. Restricting disturbance to only those areas utilized for quarrying operations is probably the single most effective form of erosion control. Additionally, exposing areas only as long as necessary reduces the risk of erosion substantially. This can be accomplished by planning the project so that areas are disturbed only when activity is imminent, that disturbed areas are finish graded to contain stormwater onsite, and those areas disturbed outside the limits of containment are straw mulched and/or seeded as soon as grading is completed.
- Minimize stormwater surface flow velocity. While erosion of exposed soil begins with a single raindrop or the first gust of wind, the largest volumes of eroded materials are typically associated with concentrated runoff, which forms rills and gullies. Therefore, one of the most effective ways to minimize erosion is to reduce the possibility of concentrated runoff by intercepting and conveying it in a non-erosive manner. This includes the use of wattles and

mulch, but also includes berms, retention basins, and percolation trenches. Seasonal ditches may be used to intercept and control the flow of stormwater as well.

- Retain sediment on site. Sediment retention is less effective than erosion control measures such as cover, but it is nevertheless a vital part of the project because it is impossible to completely prevent erosion and the entrainment of sediment created by runoff. Sediment can be controlled by allowing stormwater to settle out in a retention basin and/or saturation trench or by filtering runoff from small areas through vegetation or by utilizing silt fences, etc. Note that settling and filtration typically only remove sand-sized and coarse silt particles. Fine silts and clays cannot be removed in this manner, unless the runoff is released to vegetated areas or through chemical treatment, such as alum, or chitosan introduction, or electroflocculation.
- Thoroughly monitor the site and maintain all ESC device measures prior to the onset of and throughout the wet season. Maintenance and vigilance are the most vital components of effective ESC device management. Certain measures require regular maintenance, monitoring and inspection. The site also needs to be constantly examined to ensure that all areas are protected, that the measures are working together to provide maximum sediment and erosion control.
- Schedule all quarrying and processing activities during the dry season. The climate in the North Coast region is unique in that there are generally well-defined wet and dry seasons. As a result, events occurring only during the dry season are a very effective form of erosion control. If end-hauling or other activities do occur in the wet season, the need for regular monitoring and maintenance is even more imperative.

Desired Goals from Implementing Erosion & Sediment Control Measures

Control potential sources of stormwater pollution before they come in contact with any watercourse to control material pollution, manage waste and non-stormwater existing at the site by implementing effective handling, storage, use, and disposal practices by:

- Effectively controlling the infiltration of polluted run-off into Maple Creek during quarrying, processing, or end-haul activities.
- Effectively controlling stormwater onsite to the greatest extent possible.
- Effectively control sediment discharge from the project site, which could result in a release of sediment into Maple Creek.

Erosion & Sediment Control Measures

1. Soil Stabilization and Erosion Control

- ✓ Contour finished slopes per engineer's design and criteria to assure a stability factor of safety and slope stability.
- ✓ Preserve existing vegetation where appropriate and where feasible.
- ✓ Control erosion at concentrated flow paths by installing rice straw/coir wattles, straw bales, straw mulch, silt fence, diffusers, and by ditching. Applies to the quarry face, access road, discharge points, and any disturbed areas outside the perimeter containment berm only.
- ✓ Control erosion of newly disturbed areas by straw mulching and/or seeding. This applies to areas outside the perimeter containment berm as well.

2. Sediment Control

The primary form of sediment control is onsite stormwater containment.

- ✓ Maintain a perimeter berm capable of effectively controlling a 20-year/1 hour intensity/magnitude storm event.
- ✓ Maintain appropriate BMPs at discharge points. Inspect all location prior to the onset of winter weather and replace, repair, or redesign as necessary to ensure maximum efficiency.
- ✓ Maintain a ($\pm 1\%$) slope towards a detention area at the center of the quarry floor or near the base of the quarry face.
- ✓ Annually and prior to the wet season, install a saturation trench at the base of the face (as necessary) whereas, stormwater will collect and percolate into the ground or evaporate.
- ✓ Ensure that an appropriate seed mix containing forage species shall be planted on disturbed areas outside the perimeter berm. No plant species listed as problematic and/or invasive by the California Native Plant Society and the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be used for erosion control. No plant species listed as a “noxious weed” by the governments of the State of California or the United States shall be utilized within the construction site. See Pg. 19 for a list of probable species determined to be appropriate for the site.

3. Tracking Control

- ✓ Trackout is not an issue owing to the fact that both the County Road and quarry access road are surfaced with gravel. The access road leading to the quarry will be wetted during the hours of operation to enhance surface armoring and to minimize the accumulation of dust since fine particulate on gravel roads contributes to wind erosion and offsite sediment discharge during first of the season storm events.

4. Wind Erosion Control

- ✓ Wind erosion will be controlled with water. The access road, quarry face and floor, and stockpiles will be wetted during quarrying and processing activities. The crushing equipment is fitted with dust suppression equipment to control fugitive dust as well.

5. Inspections and Maintenance

- ✓ Inspection of all ESC devices and structures will occur prior to the onset of and throughout the wet season and will occur intermittently throughout the winter. Inspections will require an evaluation of the site to ensure that all areas are protected and that all ESC elements are working together to provide maximum protection.
- ✓ Deficiencies requiring maintenance or repair will be evaluated and addressed in a timely manner. Deficiencies that may result in a discharge will be addressed immediately. Certain ESC elements or devices may need to be replaced or require indiscriminate maintenance over the course of the winter to assure adequate protection and to minimize the chance for discharge from the site.

STATEMENT OF RESPONSIBILITY

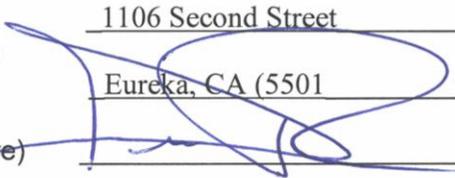
I, the undersigned, hereby agree to accept full responsibility for reclamation of all mined lands as described and submitted herein and in conformance with the applicable requirements of Article 1 and 9 (commencing with Sections 3500 *et seq.* and 3700 *et seq.*, respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, the Surface Mining and Reclamation Act of 1975, as amended (Section 2710 *et seq.* of the Public Resources Code), and with any modifications requested by the administering agency as conditions of approval.

Signed this 25 day of, January 20 11

MINE OPERATOR OR OPERATOR'S AGENT

(Printed Name) Art Reeve

(Mailing Address) 1106 Second Street
Eureka, CA (5501)

(Signature) 

MINE NAME Russ #1 Quarry

CA MINE ID # 91-12-0065

The original must be given to the lead agency and one copy to be forwarded by the lead agency to:

Department of Conservation
Office of Mine Reclamation
801 K Street, MS 09-06
Sacramento CA 95814-3529

ATTACHMENT 1 – Rare Plant Survey

Introduction

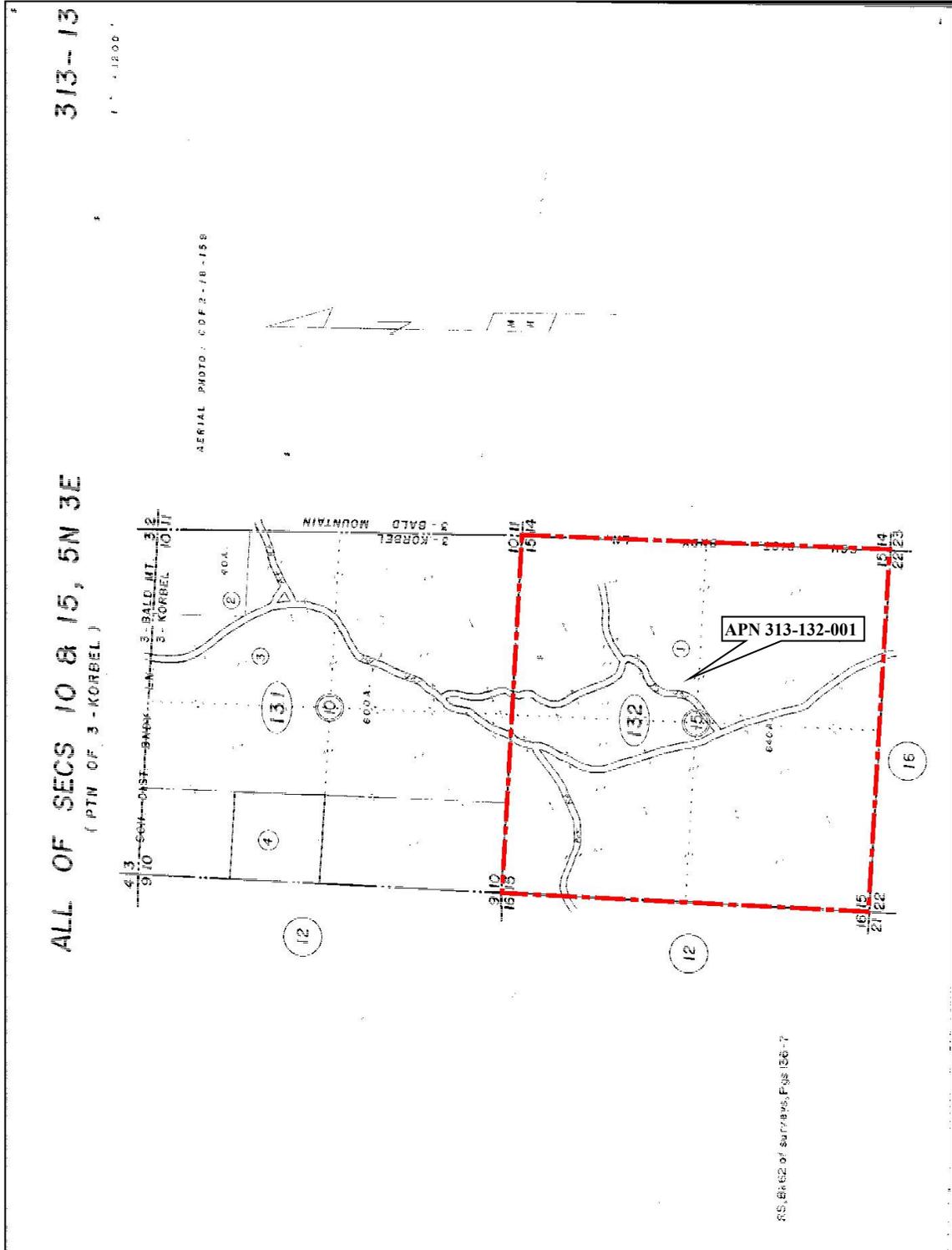
Suzanne Isaacs, nursery manager and botanist for Humboldt Fish Action Council (HFAC) has prepared the following rare plant survey in response to a request by Humboldt County Public Works. The county quarry site is on Snow Camp Road across from Russ Ranch in Humboldt County, California. A survey was conducted August 30th, 2010 to determine the presence of federal, state, or California Native Plant Society (CNPS) listed plants including but not limited to leafy-stemmed miterwort (*Mitella caulescens*), coast sidalcea (*Sidalcea oregana ssp exima*), bensoniella (*Bensoniella oregona*). No listed plants were encountered.

1. Russ Quarry;

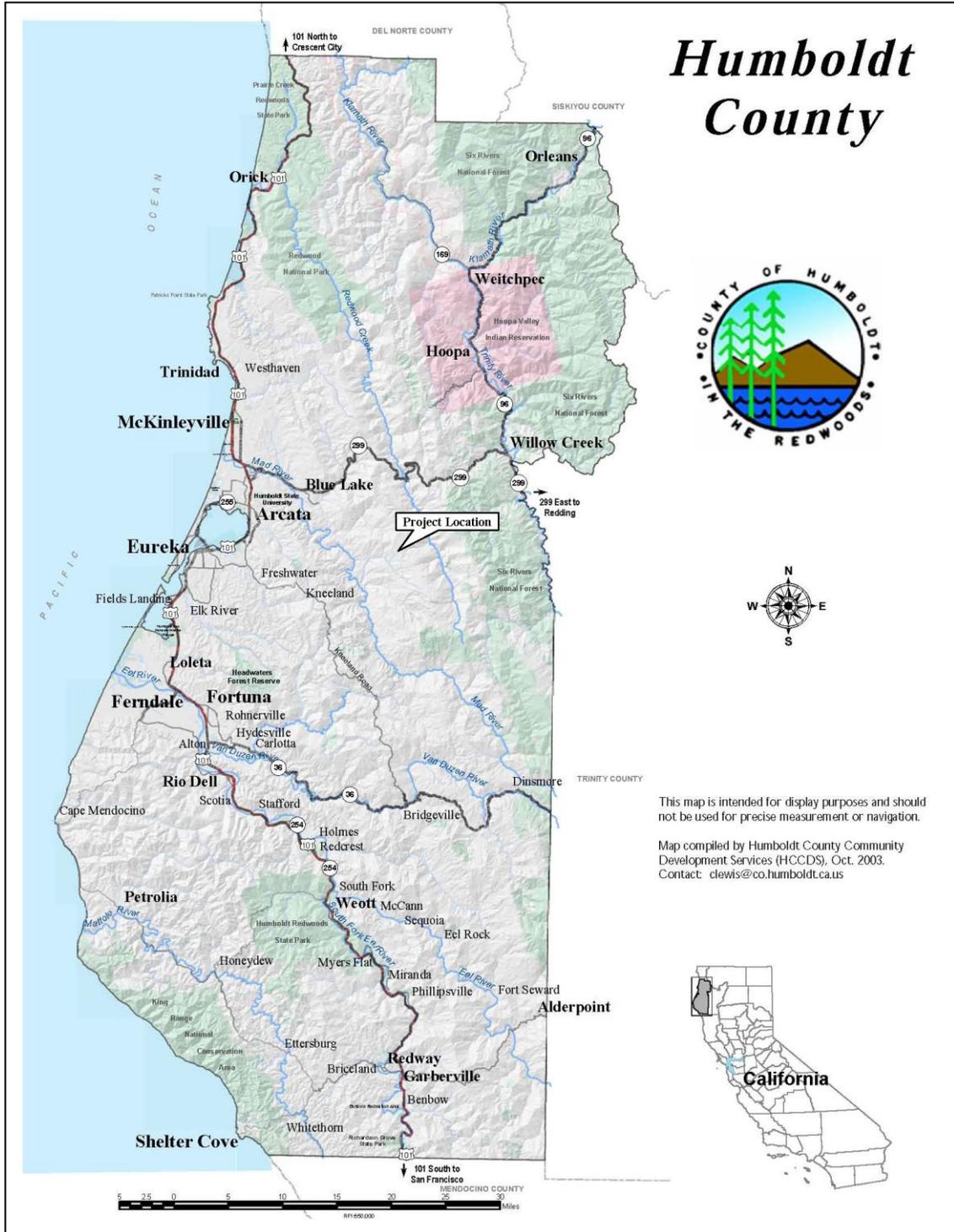
- **1.1:** **Area Description:** The quarry area surveyed has a southern aspect. The entire periphery of the quarry site was surveyed on foot where the disturbed ground of the active quarry abuts intact vegetation.
- **1.2:** **Vegetation:** No special status species were found. The vegetation surrounding the quarry site, according to the California Manual of Vegetation, is characterized as the Oregon white oak series intermixed with the California oat grass series. The white oak series occurs on dry slopes and coastal terraces. The dry southern aspect of the Russ Quarry site precludes the wetter conditions necessary for two of the three plant species specifically surveyed for.

Suzanne Isaacs,
Humboldt Fish Action Council (HFAC)
Nursery Manager and
Revegetation Specialist

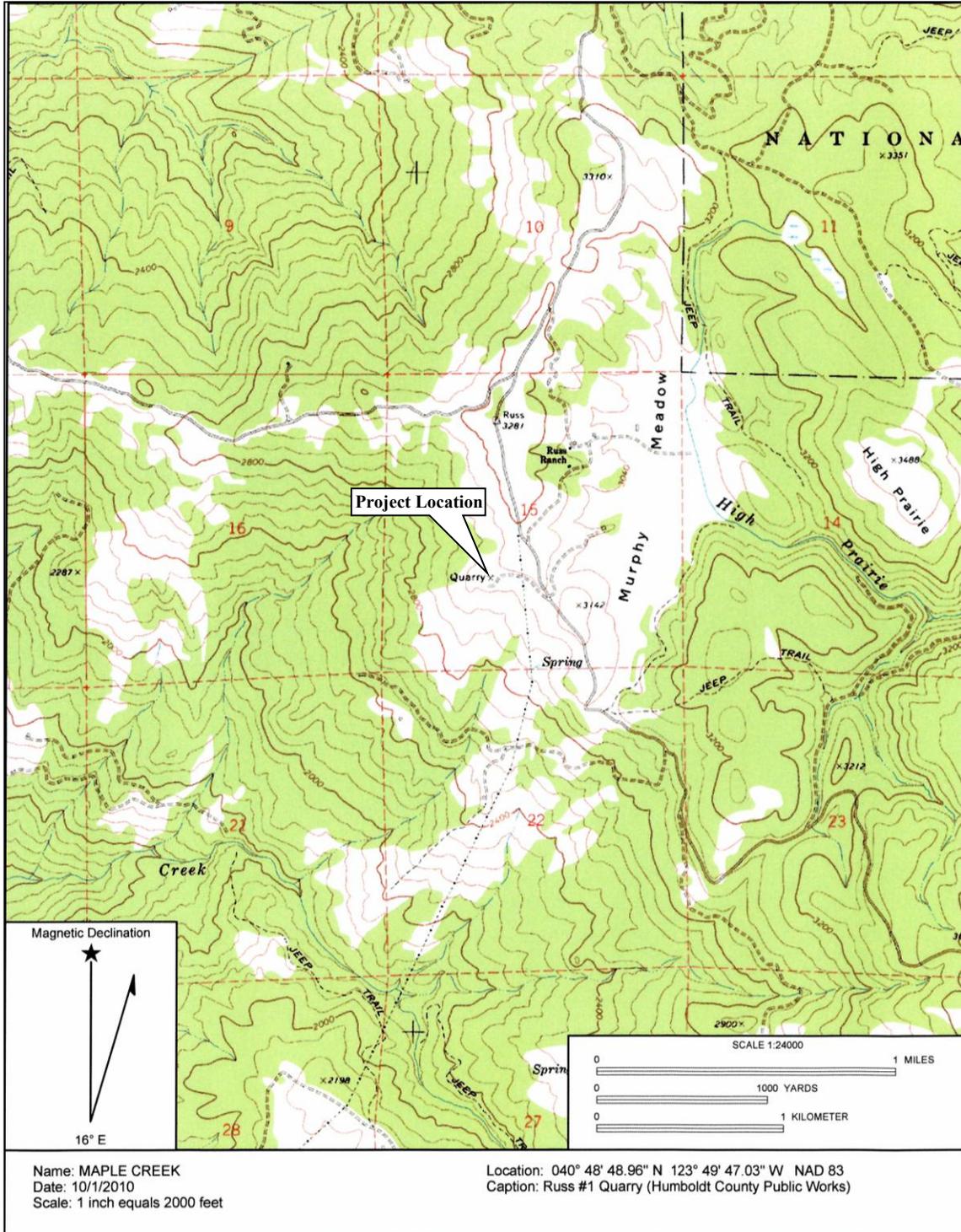
ATTACHMENT 2 – Assessors Parcel Map



ATTACHMENT 3 – Location Map



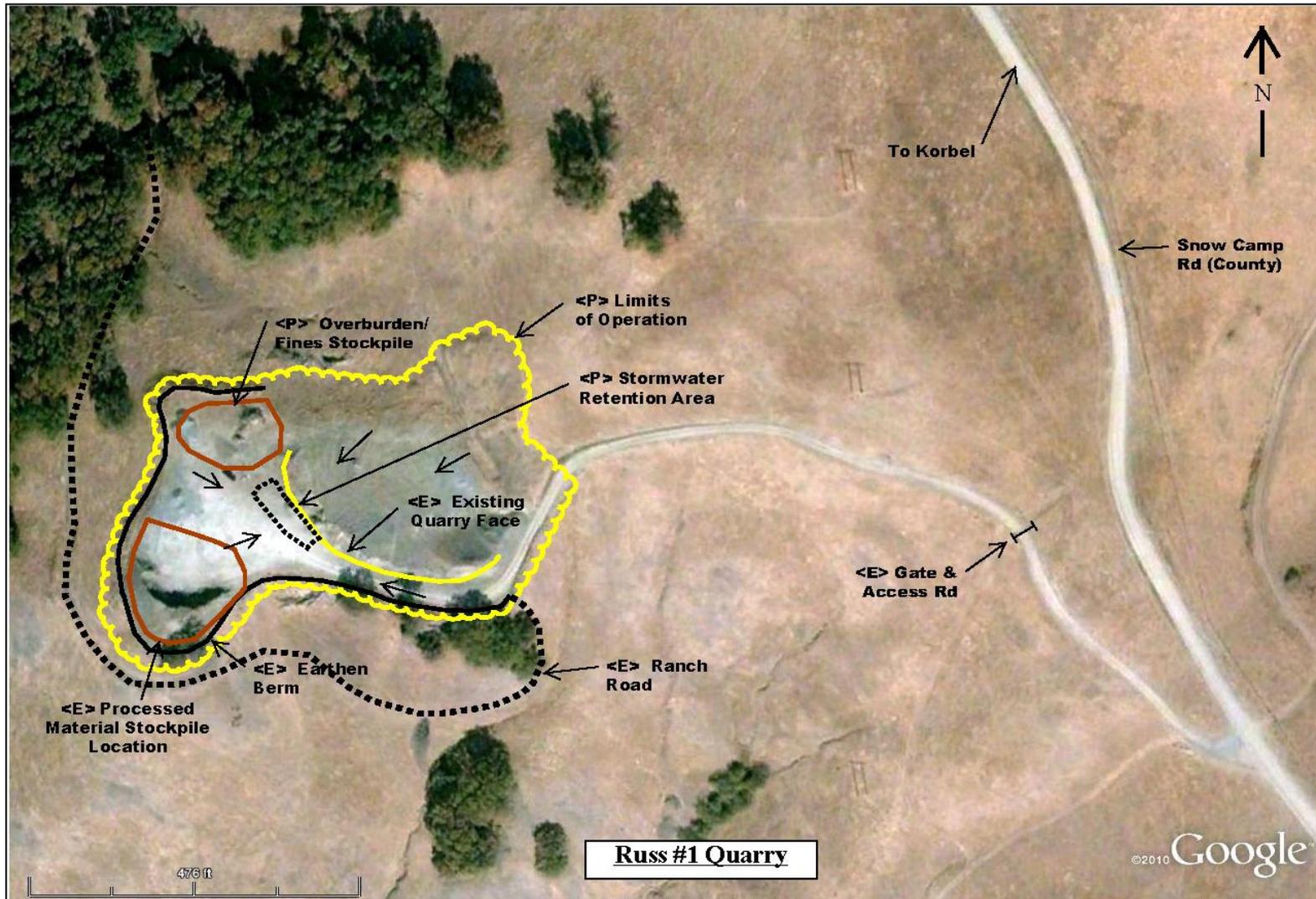
ATTACHMENT 4 A – Vicinity Map



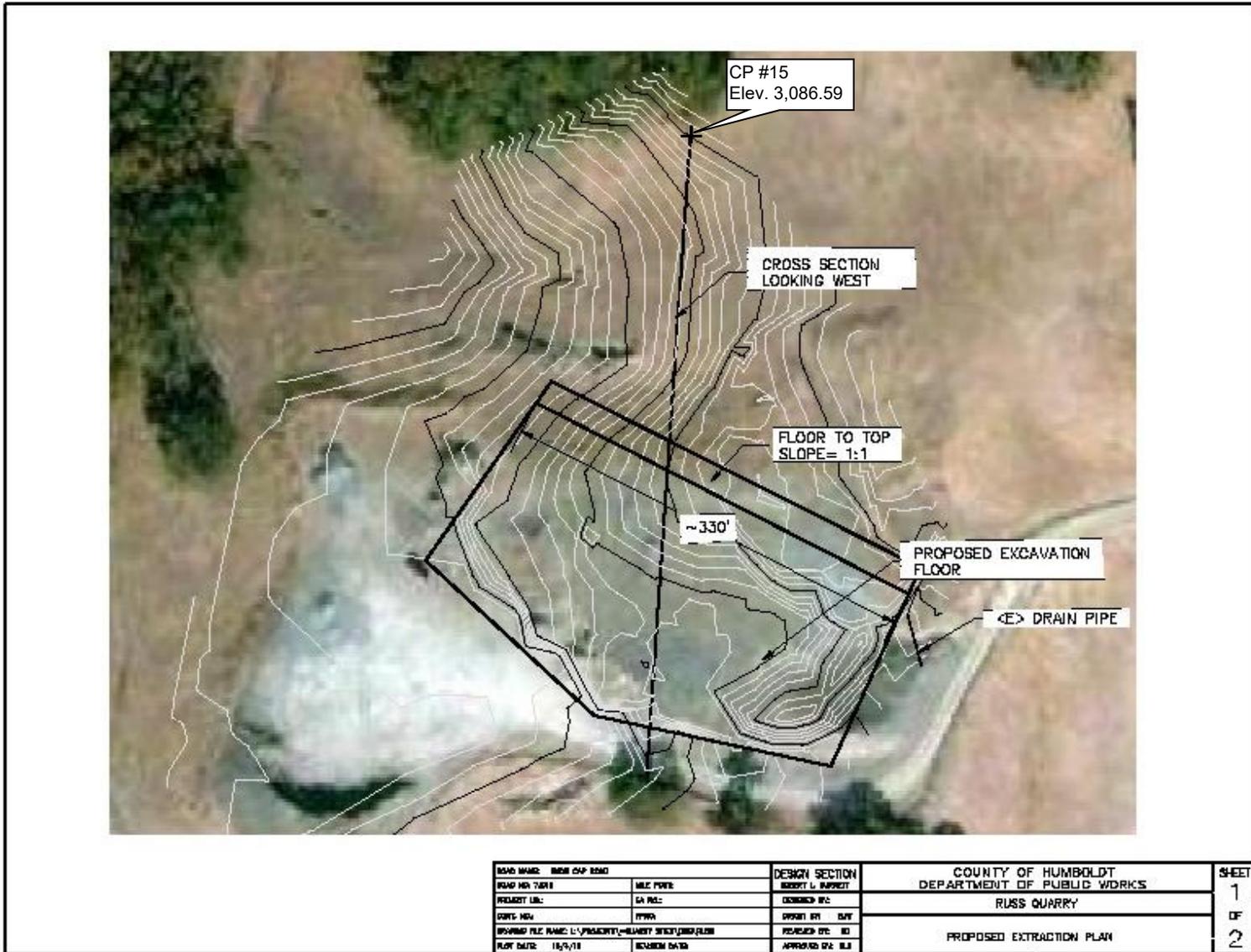
ATTACHMENT 4 B – Vicinity Map



ATTACHMENT 5 – Site Map



ATTACHMENT 6 – Proposed Final Reclamation Plan



ATTACHMENT 7 – Proposed Final Cross-Section

