This section describes watershed and groundwater features within the Project area, and addresses potential issues associated with storm drainage and flooding, groundwater extraction, water supply, site drainage design considerations, and storm water quality.

There were several comments received during the public review period and scoping meeting for the Notice of Preparation regarding these topics. In addition to the oral comments received at the public scoping meeting regarding this topic, written comments regarding this topic were received from the following agencies and individuals: Central Valley Regional Water Quality Control Board (January 25, 2012), Central Valley Flood Protection Board (February 7, 2012), Eric Cassano (February 13, 2012), City of Shasta Lake (February 22, 2012), U.S. Department of Agriculture (February 10, 2012), Western Shasta Resource Conservation District (January 26, 2012), Bill Jeffers and Cliff Jacoby (February 13, 2012), Robert Atwood (February 3, 2012), Cinnamon Kern (February 4, 2012), Rose Flame (February 14, 2012), Debbie Mynatt (February 10, 2012), Gary Fodge (January 18, 2012), Cliff Jacoby (January 24, 2012), Lisa Grill (February 14, 2012), Robert McGill (February 13, 2012), Rob and Sheryl Sampley (January 25, 2012), Heidi Strand (February 8, 2012), and Stephanie Thomas (February 6, 2012).

Information for this section was derived from the following sources:

- Hydrogeological Conditions and Ground-Water Potential within the Mt. Gate CWSD Boundary (Lawrence & Associates, March 1992) (**Appendix X**);
- Moody Flats Quarry Stormwater, Erosion Control, and Drainage Plan (EMKO Environmental, Inc., May 2010) (**Appendix I**);
- Addendum to the Stormwater, Erosion Control and Drainage Plan, Moody Flats Quarry (EMKO Environmental, Inc., August 2012) (**Appendix J**);
- Update to the Hydrology and Water Quality Analysis of the Proposed 3M Moody Flats Quarry (EMKO Environmental, Inc., August 2012) (**Appendix M**);
- Field Investigation Report, Hydrology Analysis, 3M Redding Hard-Rock Aggregate Quarry (Brown and Caldwell, June 2009) (**Appendix N**);
- Addendum, Field Investigation Report, Hydrology Analysis, 3M Redding Hard-Rock Aggregate Quarry (Brown and Caldwell, January 2010) (**Appendix N-1**);
- Addendum 2, Field Investigation Report, Hydrology Analysis, 3M Redding Hard-Rock Aggregate Quarry (Brown and Caldwell, May 2011) (**Appendix N-2**);
- Update to the SB 610 Water Supply Assessment for the Moody Flats Quarry Project (EMKO Environmental, Inc., August 2012) (**Appendix S**); and
- Shasta County General Plan (Shasta County, 2004);

3.9.1 EXISTING SETTING

DRAINAGE

The Moody Flats Quarry site is unimproved land dominated by Montane Hardwood-Conifer and Montane Hardwood vegetative habitats. Moody Creek, Rancheria Creek, and Salt Creek transverse the center and eastern portions of the Project site. A Union Pacific Railroad line runs through the eastern portion of the property and Digger Bay Road cuts through the western portion of the

property. The northwest corner of the property is located within the mapped boundaries of the Whiskeytown-Shasta-Trinity National Recreation Area.

Elevations onsite range from approximately 800 feet above mean sea level (ft msl) to over 2000 ft msl. The precipitation for the Project site is based on rainfall data from the Shasta Dam and Mountain Gate areas. Annual average rainfall is approximately 64 inches per year. The 25-year 24-hour storm event produces approximately 9.03 inches of rainfall. The 25-year six-hour storm event produces approximately 4.6 inches of rainfall. (Shasta County Development Standards, 1997, Chapter 2, Attachment Nos. 5 and 8).

While soils types vary greatly across the Project site, as shown in Figure 3.2-2, in the Agricultural and Forest Resources section. The most prominent soils at the site are defined primarily as Auburn Loam (AnB and AnD) and Auburn Very Stony Clay Loam (AtE2), as defined by the NRCS soil survey maps. These soil types are classified as being part of Hydrologic Soil Group D on Attachment No. 2 in Chapter 2 of the Shasta County Development Standards (1997).

Runoff from soils on the Project site would only change in areas within the limits of surface disturbance. Runoff within the limits of surface disturbance would be managed by the Project's stormwater system, as described in greater detail under Impact 3.9-1, and would come from exposed rock faces in the mining pits, overburden piles, and the plant areas that would be paved or covered with road base materials, none of which will consist of or contain background soils, due to the fact that these soils will be removed as part of initial ground clearing and mining activities within the limits of surface disturbance.

The following soil types have been identified and mapped within the limits of surface disturbance:

Auburn loam, 0 to 8 percent slopes (AnB): Well-drained clay loams underlain by basic metavolcanic rock. The surface layer is loam 5 to 10 inches thick, with moderate permeability. Runoff is slow to medium, with a slight to moderate hazard of erosion. This soil is used mainly as dryland pasture, and small areas are used as irrigated pasture and vineyards.

Auburn clay loam, 8 to 30 percent slopes, eroded (AsD2): Well-drained clay loams underlain by basic metavolcanic rock. This soil has moderate permeability, with medium to rapid runoff. The hazard of further erosion is moderate to high. This soil is used mainly as dryland pasture, and small areas are used as irrigated pasture.

Auburn very stony clay loam, 30 to 50 percent slopes, eroded (AtE2): Well-drained clay loams underlain by basic metavolcanic rock. This soil has moderate permeability and rapid runoff. The hazard of further erosion is high. This Auburn soil is used mainly as range and wildlife habitat and for watershed.

Auburn very rocky clay loam, 50 to 70 percent slopes, eroded (AuF2): Well-drained clay loams underlain by basic metavolcanic rock. This soil has moderate permeability and very rapid runoff. The hazard of further erosion is very high. This Auburn soil is used as range and wildlife habitat and for watershed.

Boomer gravelly loam, 30 to 50 percent slopes (BkE): A well-drained, light-brown, medium acid gravelly loam that is underlain by weathered metabasic rock. This soil has moderately slow permeability and rapid runoff. The hazard of erosion is high. This Boomer soil is used as woodland and wildlife habitat and for watershed.

Boomer very stony loam, 50 to 70 percent slopes (BIF): A well-drained, light-brown, medium acid gravelly loam that is underlain by weathered metabasic rock. However, its entire original surface layer has been lost through erosion. This soil has rapid runoff, with a high hazard of further erosion. This Boomer soil is used as woodland and wildlife habitat and for watershed.

Churn gravelly loam, 0 to 3 percent slopes (CeA): A light yellowish-brown, medium acid gravelly loam that forms in alluvium from mixed sources. This soil is well-drained and has moderately slow permeability with slow runoff. The hazard of erosion is none to slight. This Churn soil is used for irrigated hay and both irrigated and dryland pasture. Small areas are used for irrigated row crops and orchards.

Churn gravelly loam, deep, 0 to 3 percent slopes (CfA): A light yellowish-brown, medium acid gravelly loam in narrow channeled valley bottoms. This soil is moderately well drained, with slow permeability and runoff. The hazard of erosion is none to slight. This Churn soil is used as irrigated and dryland pasture, and is not suited to deep-rooted crops.

Goulding very stony loam, 10 to 30 percent slopes (GdD): A brown, slightly acid, and well-drained soil that is underlain by greenstone. Its permeability is moderate, with medium to rapid runoff. The hazard of erosion is moderate to high. This Goulding soil is used mainly as range.

Perkins gravelly loam, 8 to 15 percent slopes (PmC): A well-drained soil that formed in mixed alluvium, with a brown, slightly acid gravelly loam surface layer. It has slow permeability and medium runoff. The hazard of erosion is moderate. This Perkins soil is used for dryland pasture and for urban uses near Redding.

Rock Land (RxF): This is nearly level to very steep. Rock outcrops cover 25 to 90 percent of the surface. Rock land is used as watershed and for recreation.

Red Bluff loam, 0 to 3 percent slopes (RbA): A well-drained and moderately well drained soil that formed in gravelly old alluvium from mixed sources. It has moderately slow permeability, runoff is slow, and the hazard of erosion is none to slight.

Red Bluff loam, 3 to 8 percent slopes (RbA): This soil is well drained and has moderately slow permeability. Runoff is slow to medium and the hazard of erosion is slight to moderate. Available water capacity is 8 to 10 inches. Roots can penetrate to a depth of more than 60 inches.

The most significant surface-water feature in the area is Shasta Lake, located approximately one to two miles northwest of the Project area. Shasta Dam has a crest elevation of 1077.5 ft msl. Water levels fluctuate seasonally within the lake. The most recent peak water level occurred in June 2006 at 1064 ft msl. The most recent low water level in the lake occurred in October 2008 at 909 ft msl. For comparison, the lowest level this winter (2013/2014) was in February 2014 at 935.7 ft msl.

There are several surface water drainages located within the Project area, as shown on Figure 3.4-4. The property is within four drainage basins, Shasta Lake, Moody Creek, Rancheria Creek and Salt Creek. Salt Creek is a tributary of Churn Creek. Moody Creek and Rancheria Creek are tributaries of Stillwater Creek. Both Churn Creek and Stillwater Creek join the Sacramento River at Anderson approximately eight miles south of Redding. Most of the Project area is within the Moody Creek drainage basin. The western side of the Project area is within the Salt Creek drainage basin. Salt Creek and Moody Creek are part of the Sacramento River watershed downstream of Shasta Dam.

GROUNDWATER

Regional Groundwater Conditions

The Project site is located on metamorphic bedrock and is not part of an identified groundwater basin. The nearest significant groundwater basin is the Redding Basin, located south of the City of Redding near the city of Anderson approximately 15 to 20 miles south of the Project site. The Mountain Gate Community Services District (Mountain Gate CSD) produces groundwater from two wells located in the Spring Branch Creek watershed, one mile to the north of the Project site.

The information discussed in this paragraph was developed by Lawrence and Associates in the report titled *Hydrogeological Conditions and Ground-Water Potential within the Mt. Gate CWSD Boundary,* March 1992. The Mountain Gate CSD wells are approximately 200 feet to 300 feet deep and located within approximately 300 feet of each other. They are completed in a geologic bedrock unit called the Kennett Formation. The Kennett Formation is highly fractured, faulted, and sheared in the vicinity of the Mountain Gate CSD wells, providing the necessary porosity and permeability within the bedrock to allow both deep percolation of rainfall runoff and production of groundwater.

Lawrence and Associates (1992) indicate that during the five year period from the fall of 1986 through the summer of 1991, rainfall averaged 22 percent to 40 percent below normal, constituting an extended period of drought. During this five-year period, the Mountain Gate CSD wells produced an average of 350 acre-feet (AF) of water per year, which is equivalent to a combined pumping rate from the two wells of about 220 gallons per minute (gpm). Information on the production capacity of the wells during normal rainfall periods is not available, but Lawrence and Associates (1992) estimates that the rate of groundwater recharge during normal periods may be almost three times greater than the rate of groundwater recharge during the five-year drought period from 1986 to 1991.

Available Groundwater Supply

There are three main geologic units on the Project site, as shown on Figure 3.6-1, Regional Geology. The Unnamed Volcanic Unit and Copley Greenstone are both metamorphosed volcanic rocks that are classified as dense greenstone material. Both of these units would be mined for aggregate production as part of the Project. The Kennett Formation consists of metamorphosed sandstone, siltstone, and limestone units (Brown & Caldwell, 2010 and 2011).

Groundwater within the bedrock units in the region primarily occurs within the Kennett Formation in locations where significant fracturing, faulting, and shearing are observed and where there is a large

upslope watershed to provide adequate recharge. A field investigation was conducted to evaluate whether such conditions exist at the Project site (Brown & Caldwell, 2009, 2010, 2011). Based on analysis of aerial photographs and field mapping, a major shear zone was identified in the Kennett Formation along Moody Creek at the westernmost "Proposed Production Well" (Brown & Caldwell, 2010). In November 2009, water was observed flowing within the creek in the area of the shear zone, but there was no flow in other segments of the creek on the Project site, indicating that groundwater is discharging to this segment of Moody Creek from the shear zone in the Kennett Formation (Brown & Caldwell, 2010).

The mapping and field investigation indicate that the shear zone in the Kennett Formation along Moody Creek has the same characteristics as the Kennett Formation in the area of the Mountain Gate CSD wells in the Spring Branch Creek watershed to the north. Thus, the location of the Kennett Formation shear zone along Moody Creek is the target drilling location for future groundwater supply wells for the Project. The Kennett Formation along Moody Creek is geologically separated from that along Spring Branch Creek by a large outcrop of the Unnamed Volcanic Unit. Therefore, the two areas of Kennett Formation (Moody Creek and Spring Branch Creek) are geologically separated and pumping from the Kennett Formation along Moody Creek would not affect wells in the same formation in the Spring Branch Creek watershed. There are currently no wells completed within the Kennett Formation in the Project vicinity.

Water used on the Project site would come primarily from storm water runoff that would be retained onsite and secondarily from groundwater from wells located or to be located on the Project site. The storm water runoff water would be used as the Project's supply of non-potable water, while groundwater wells would be used to supply potable water. The anticipated potable water demand of the Project would be between 500 gallons per day and 1,000 gallons per day.

There is an existing well on the Project site (Well OW-1). Well OW-1 would provide potable water to the office area to supply the needs of both office and bathroom uses on-site. Well OW-1 has a production capacity of two gallons per minute, which is equivalent to 2,880 gallons per day. The Applicant proposes to install above-ground water storage tanks adjacent to Well OW-1 to augment and supplement the potable water supply demands of the Project. Two 10,000-gallon above-ground storage tanks may be used to store potable water.

The Applicant drilled a test well, designated OW-1, in June 2011 in an area of mapped fractures in the Unnamed Volcanic Unit on the eastern part of the Project site (east of the UPRR mainline). The borehole was drilled to a total depth of 405 feet below ground surface (ft bgs) and water production of seven gpm was measured. The borehole was cased with two-inch diameter PVC to a total depth of 400 ft bgs, with a screened interval from 100 ft bgs to 400 ft bgs and a sanitary seal from the ground surface to 50 ft bgs, in accordance with state and county requirements. Most of the initial water production in the borehole prior to installing the well casing occurred at the upper 50 feet. Thus, after the casing and sanitary seal were installed, the final production in the cased well decreased to two gallons per minute (gpm). Two gpm is equivalent to 2,880 gallons per day (Update to the SB 610 Water Supply Assessment for the Moody Flats Quarry Project, EMKO Environmental, Inc., August 2012). Test well OW-1 would serve as the onsite well for potable water for the proposed Project.

SURFACE-WATER AND GROUNDWATER QUALITY

Water samples were collected from several surface-water features and boreholes to evaluate the baseline water quality. The samples were analyzed for general mineral parameters and for metals. Surface-water samples were collected on March 30, 2009. Groundwater samples were collected from the four boreholes on May 27, 2009. The laboratory analytical reports for the surface-water and groundwater samples are included in Appendix C of the Field Investigation Report (Brown and Caldwell, 2009).

Surface-water samples were collected from three locations within the Project area. Sample locations include:

- SW-1, collected from the unnamed tributary to Salt Creek located on the west side of the South Pit;
- SW-2, collected from the unnamed tributary to Moody Creek that drains the north and northeast sides of the South Pit and the southeast side of the North Pit; and
- SW-3, collected from Moody Creek upstream of the confluence with the unnamed tributary from which sample SW-2 was collected.

A duplicate sample was also collected at the SW-1 location for quality assurance/quality control (QA/QC) purposes. The water samples were collected from actively flowing surface streams.

The surface-water chemistry data are presented in Table 3 of the *Update to the Hydrology and Water Quality Analysis of the Proposed 3M Moody Flats Quarry* (EMKO, 2012). The only metal reported above its analytical detection limit in the surface-water samples was barium. Barium was reported at a concentration of 22 micrograms per liter (ug/L) in sample SW-3, collected from Moody Creek.

The surface-water samples had relatively low dissolved solids levels, with total dissolved solids (TDS) levels ranging from 65 milligrams per liter (mg/L) in the sample from the tributary to Moody Creek (SW-2), to 75 mg/L in the sample from the tributary to Salt Creek (SW-3), to 130 mg/L in the sample from Moody Creek (SW-1 and its duplicate). The pH levels were neutral, ranging from 6.99 to 7.65. The Stiff Plots[1] indicate that the surface water is a calcium-bicarbonate water type at all three sample locations. The Piper Diagram indicates that all three surface water samples are very similar, with only minor differences in the ratios of bicarbonate, chloride, and sulfate. Stiff plots and Piper diagrams are graphical tools used to present the general mineral chemistry of water samples, based on the variations in the anions (negatively-charged atoms) and cations (positively-charged atoms) that make up the total dissolved solids in the water. Stiff plots and Piper diagrams are standard methods for interpretation of the chemical characteristics of water.

[1] A Stiff Plott is a graphical representation of chemical analyses, and is widely used by hydrogeologists and geochemists to display the major ion composition of a water sample.

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Within RWQCB Region 5 (Central Valley), Moody Creek, Rancheria Creek, Salt Creek, Churn Creek, and Stillwater Creek are not on the 303(d) list (these are the creeks on, or immediately adjacent to the Project site). The segment of the Sacramento River from Keswick Dam to Cottonwood Creek is listed only for "unknown toxicity." Segments farther downstream (Cottonwood Creek to Red Bluff and Red Bluff to Knights Landing) are listed for mercury and pesticides (specifically dieldrin & DDT), as well as unknown toxicity. Mercury and pesticides are not issues directly relevant to the Moody Flats Quarry Project, since the Project would not generate these toxins, nor would the project be affected by the existing water quality impairments downstream. Unknown toxicity is typically a bacterial or virus issue in acute and chronic toxicity tests conducted on fathead minnows, fruit flies, and other species.

Groundwater samples were collected from all four boreholes drilled at the South Pit area. A duplicate sample was also collected from B-1 for QA/QC purposes. Several metals were detected in the groundwater samples. Antimony, arsenic, molybdenum, and vanadium were detected at relatively low concentrations in the sample from B-3. Barium and iron were detected at relatively low concentrations in the sample from B-2. Manganese was detected in the samples collected from all four boreholes. The detected metals concentrations were below the water-quality limits for metals identified in the Water Quality Control Plan for the Sacramento River Basin (the "Basin Plan"), prepared by the Regional Water Quality Control Board, except for the manganese levels in the samples from B-2 and MW-1.

The groundwater samples had moderate dissolved solids levels, with total dissolved solids (TDS) levels ranging from 140 mg/L in the samples from B-1, to 210 mg/L in the sample from MW-1, to 440 mg/L in the sample from B-2, to 700 mg/L in the sample from B-3. The pH levels ranged from slightly acidic in MW-1 (pH of 6.19), to neutral in B-2 (pH of 7.74), to slightly alkaline in B-1 and B-3 (pH of 8.14 and 8.29, respectively).

The Stiff Plots and Piper Diagram indicate that the groundwater type varies somewhat in the Project area. The groundwater at B-1, B-2, and MW-1 is a calcium-bicarbonate water type. At B-3, the groundwater is a sodium-bicarbonate water type.

WATER SUPPLY ASSESSMENT

A Water Supply Assessment, consistent with the requirements of SB 610, was prepared for the proposed Project (Update to the SB 610 Water Supply Assessment for the Moody Flats Quarry Project (EMKO Environmental, Inc., August 2012) (**Appendix S**).

As described on pages 24-25 of the Water Supply Assessment, water for the proposed Project would be provided primarily by retention of storm water runoff. Potable supply would be provided by a groundwater supply well. Additional groundwater wells may be drilled in the future but retention of storm water runoff would provide an adequate supply for the Project. The potable water system would need to be permitted as a non-transient non-community public water system by the California Department of Public Health. Total Project demand would initially be approximately 65 acre feet per year (AFY) and is estimated to increase to 260 AFY over five to 15 years. In normal years, at least 800

AF of storm water runoff is available from the North and South pit areas, with additional runoff occurring from the overburden storage, processing, and load-out areas. Runoff from the North and South pit areas could be reduced to as low as 320 AF/yr in a single dry year, and to as low as 400 AFY to 600 AFY on average during multiple dry year periods. Even during these dry conditions, there would be more than adequate storm water runoff captured from the North and South pits alone to operate the Project.

There are currently no existing water users or Projects for which applications have been submitted that may potentially use storm water runoff or groundwater from the Moody Creek watershed.

Therefore, there is more than adequate water available to supply the proposed Project throughout its life, without interfering with existing or future surface water or groundwater uses. The Project water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the full life of the Project under average normal year, single dry year, and multiple dry year conditions.

Data and information provided in the Water Supply Assessment is presented throughout this EIR chapter.

3.9.2 REGULATORY SETTING

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972 as the Federal Water Pollution Control Act, regulates the discharge of pollutants into waters of the United States. Section 402(p) of the Act establishes a framework for regulating municipal, construction and industrial stormwater discharges under the NPDES Program. Section 402(p) requires that stormwater associated with industrial or construction activity that discharge either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards are responsible for implementing the Clean Water Act and dos so through issuing NPDES permits. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). This Project would require coverage under two general NPDES permits as discussed below.

303(d) Impaired Water Bodies: Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a water body and thereby the basis for the states to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved. As noted above, none of the creeks on the Project site are listed as 303(d) Impaired Water Bodies.

National Pollutant Discharge Elimination System (NPDES)

The CWA requires National Pollutant Discharge Elimination System (NPDES) permits for discharges of pollutants to navigable waters of the United States, which discharges can include any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. (Section 402; (33 USC 466 et seq.)

The SWRCB and RWQCB issue NPDES permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable waters. All NPDES permits issued by the RWQCB include Waste Discharge Requirements issued under the authority of the California Porter-Cologne Water Quality Control Act, discussed below.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are technically issued for five years or less, but in practice may not be updated regularly.

The SWRCB has adopted four statewide general permits in order to efficiently regulate different types of stormwater discharges under a single permit. Two of those general permits are relevant to this Project: general permits for stormwater runoff from industrial and construction sites. .

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Order 2009-0009-DWQ). Effective July 1, 2010 all dischargers are required to obtain coverage under the Construction General Permit as amended June 25, 2012.. Construction activity subject to the Construction General Permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs. Finally, unlike the previous construction permit, the new permit now requires that dischargers identify which risk level their site is and Risk Level 3 and LUP Type 3 Dischargers with direct discharges to surface waters must conduct receiving water monitoring whenever their effluent exceeds specified receiving water monitoring triggers. The receiving water monitoring triggers include pH outside the range of 6.0 and 9.0 pH units or turbidity in excess of 500 NTU.

The Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) is an NPDES permit that regulates discharges associated with 10 broad categories of industrial activities, including mining activities like the proposed Project. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). Like the General Construction Permit, the General Industrial Permit also requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described. The General Industrial Permit requires that an annual report be submitted each July 1.

Coverage under both the General Construction Permit and the General Industrial Permit may be obtained by filing a Notice of Intent with the SWRCB.

Federal Emergency Management Agency (FEMA)

Shasta County is a participant in the National Flood Insurance Program (NFIP), a federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

The regulations of the National Flood Insurance Program (NFIP), which is administered by FEMA, require that communities adopt land use restrictions for the 100-year floodplain in order to qualify for federally subsidized flood insurance. Included is a requirement that residential structures be elevated above the level of the 100-year flood and that other types of structures be flood-proofed. FEMA issues Flood Insurance Rate Maps for communities participating in NFIP. These maps delineate flood hazard zones in each participating community.

Shasta County participates in the National Flood Insurance Program and must therefore, require development permits to ensure that construction materials and methods will mitigate future flood damage.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution with the states. The Act establishes certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (California Water Code §§ 13000 et seq.) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is

the primary vehicle for implementation of California's responsibilities under the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unauthorized discharges of soils, hazardous substances, sewage, and oil or petroleum product, among others.

Each RWQCB must formulate and adopt one or more water quality control plans (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Antidegradation

The SWRCB adopted the Antidegradation Policy in 1968 (Resolution No. 68-16) to ensure the high quality of state waters is maintained. Specifically, the policy requires that changes in water quality not unreasonably affect beneficial uses. The policy sets forth the following requirements: (1) Whenever the existing quality of water is better than the quality established in policies as of the state on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies; and (2) Any activity which produced or may produce a waste or increased volume or concentration of waste and which discharges or proposed to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

REGIONAL AND LOCAL

The Project site is located in Region 5, the Central Valley RWQCB's jurisdiction.

Water Quality Control Plan and Waste Discharge Requirements for the Central Valley Region

The Central Valley RWQCB is the largest region, comprising upwards of 40 percent of the state's entire area. There are two Water Quality Control or Basin Plans that apply in the Central Valley: the Sacramento-San Joaquin River Basin Plan and the Tulare River Basin Plan. The Sacramento-San Joaquin River Basin Plan applies to the proposed Project. This Basin Plan includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing

the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards. Water quality concerns in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

The RWQCBs can also regulate waste discharges to minimize and control their effects on the quality of the region's ground and surface water through Waste Discharge Requirements (WDRs).

Water Code section 13260 requires that a Report of Waste Discharge (ROWD) be filed with the Central Valley RWQCB prior to any discharge of water to land that has the potential to affect groundwater quality. WDRs are issued in accordance with Section 13263. WDRs are issued to ensure discharges comply with the applicable Basin Plan, protect the beneficial uses listed in the Basin Plan, comply with applicable water quality objectives, consider the import of other waste discharges and the need to prevent nuisance.

Water System Permitting Requirements

"Public water systems" in California are regulated by the California Department of Public Health (CDPH), with delegated permitting functions carried out by the counties in most areas (Health & Safety Code §116325). Operation of a public water system is prohibited unless an operator first submits an application and obtains a permit (Health & Safety Code § 116525(a)). A "public water system" is a "system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily for at least 60 days out of the year" (Health & Safety Code § 116275(h)). "Human consumption" is defined as "the use of water for drinking, bathing or showering, hand washing, oral hygiene, or cooking, including but not limited to, preparing food and washing clothes" (Health & Safety Code § 116275(e)).

The water provided by the Project for "human consumption" (including hand washing) by employees and others at the site would service more than 25 individuals daily for more than 60 days out of the year. Therefore, it would require permitting as a public water system, through Shasta County Department of Resource Management, Environmental Health Division, with assistance from the CDPH Small Water Systems Technical Support Unit, as needed. The appropriate, specific category of system would be that of a "non-transient non-community water system," if it has more than 25 individuals using the system for more than six months out of the year, assuming it would not also serveic residential community connections.

Shasta County General Plan

To minimize the risk of exposing people, property and the environment to, erosion flood hazards, and water resources, the Shasta County General Plan includes several policies and implementations that pertain to this Project:

Erosion Objectives

- **SG-4** Protection of waterways from adverse water quality impacts caused by development on highly erodible soils.

Erosion Policies

- **SG-d** Shasta County shall develop and maintain standards for erosion and sediment control plans for new land use development. Special attention shall be given to erosion prone hillside areas, including those with extremely erodible soil types such as those evolved from decomposed granite.
- **SG-f** Shasta County shall pursue preparation of development standards based on topography and soil erosion potential in revising its land capability standards pursuant to Policy CO-h.

Flooding Objectives

- **FL-1** Protection of public health and safety, both on-site and downstream, from flooding through floodplain management which regulates the types of land uses which may locate in the floodplain, prescribes construction designs for floodplain development, and requires mitigation measures for development which would impact the floodplain by increasing runoff quantities.

Flooding Policies

- **FL-a** New development in floodplains shall be regulated through zoning regulations addressing land use type, density, and siting of structures.
- **FL-c** Whenever possible, flood control measures should consist of channel diversions or limited floodplain designs which avoid alteration of creeks and their immediate environs.
- **FL-h** The impacts of new development on the floodplain or other downstream areas due to increased runoff from that development shall be mitigated. In the case of the urban or suburban areas, and in the urban and town centers, the County may require urban or suburban development to pay fees which would be used to make improvements on downstream drainage facilities in order to mitigate the impacts of upstream development.

Water Resource Objectives

- **W-9** Institute effective measures to protect groundwater quality from potential adverse effects of increased pumping or potential sources of contamination.

Water Resource Policies

- **W-a** Sedimentation and erosion from proposed developments shall be minimized through grading and hillside development ordinances and other similar safeguards as adopted and implemented by the County.
- **W-b** Septic systems, waste disposal sites, and other sources of hazardous or polluting materials shall be designed to prevent contamination to streams, creeks, rivers, reservoirs, or groundwater basins in accordance with standards and water resource management plans adopted by the County.
- **W-c** All proposed land divisions and developments in Shasta County shall have an adequate water supply of a quantity and a quality for the planned uses. Project proponents shall submit sufficient data and reports, when requested, which demonstrate that potential adverse impacts on the existing water users will not be significant. The reports for land divisions shall be submitted to the County for review and acceptance prior to a completeness determination of a tentative map. This policy will not apply to developments in special districts which have committed and documented, in writing, the ability to provide the needed water supply.
- **W-d** The potential for cumulative water quality impacts resulting from widespread use of septic systems in poorly suited soil areas shall be periodically evaluated by the County for the need to provide greater monitoring and possible changes to applicable sewage disposal standards.

Shasta County Groundwater Management Ordinance

Adopted in 1998, Shasta County Ordinance 98-1 officially adopted a groundwater management plan prepared by the Shasta County Water Agency pursuant to AB 3030 the Groundwater Management Act (California Water Code § 10750 et seq.). The California Department of Water Resources defines

groundwater management plans as a "planned use of the groundwater basin yield, storage space, transmission capability, and water in storage."

Shasta County Grading Ordinance

The Shasta County Grading Ordinance, included in the Shasta County Zoning Plan (Shasta County, 2003) sets forth regulations concerning grading, excavating, and filling. The Shasta County Grading Ordinance, among other thresholds, prohibits any grading of more than 250 cubic yards or 10,000 square feet of disturbance area without a grading permit from the County. The grading permit must include an approved grading plan provided by a project applicant, and it must set forth terms and conditions of grading operations that conform to the County's grading standards. The permit also requires a project applicant to provide a permanent erosion control plan that must be implemented upon completion of the project. Ongoing maintenance of erosion control measures is required for the duration of any project and for three years after completion of the project, unless the project is released earlier by the enforcing officer designated by the County Board of Supervisors. The Shasta County Grading Ordinance (Shasta County Code Section 12.12.050 A. 3) exempts mining operations, which are subject to the requirements of a Use Permit and Reclamation Plan. Erosion and sediment control for mining operations is regulated by these and other permits and requirements.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact on the environment associated with hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation, on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;

- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

The IS/NOP prepared for this Project concluded that potential impacts associated with placing housing and structures within a 100-year flood hazard area posed no impact because no housing is proposed to be constructed and because the industrial structures proposed would not be constructed in a 100-year flood plain. Therefore, these topics will not be further addressed in this Draft EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Project implementation would alter the existing drainage pattern, which may result in substantial erosion or siltation, increased off-site runoff, or exceed the capacity of existing of planned stormwater drainage systems resulting in flooding or polluted runoff (Less than Significant with Mitigation)

As described in the Project Description, mining would eventually reach a production rate of two million tons of aggregate per year, with a maximum duration of 100 years. Initially, however, mining is anticipated to occur at a rate of 500,000 to 1,000,000 tons per year for five to 15 years, until the rail load-out facilities and additional processing capacity are constructed. Therefore, disturbance of the site would be gradual, and would not involve all areas simultaneously. Stormwater conveyance, erosion control, and drainage features would be constructed as needed, in advance of new disturbance in any given area of the Project site.

GENERAL APPROACH FOR STORMWATER MANAGEMENT

Figure 3.9-2 presents the anticipated layout of the stormwater conveyance, erosion control, and drainage features. Figure 3.9-3 presents a Site Stormwater Plan Concept Map, which is a general process flow diagram for the entire Stormwater, Erosion Control, and Drainage system.

In general, stormwater from the North Pit (4S) and the South Pit (5S) would be retained within sumps within each pit (i.e. the North Pit Sump-4B and the South Pit Sump-5B, respectively). Runoff from the Primary Processing Plant (5S) will also be directed into the South Pit Sump (5B). These sumps would change in size and location as each pit is developed. For example, initially the sumps would need to be constructed at the downslope edge of the pit. Once the pits are larger, the sumps would be relocated within the lowest part of the pits. Water from the sumps within the mine pits would be pumped out of the pits as needed to maintain adequate storage within the sumps. The sumps, however, would be over-sized so that they also provide storage to meet the Project water needs.

The excess water in the North Pit Sump (4B) would be pumped to one of the Overburden Channels (1R or 5R), which would then direct the water to the Overburden Surge Basin (3B). Excess water from the South Pit Sump (5B) would be pumped either to the Overburden Surge Basin (3B) or to Rate Control Basin 2 (2B). I Notably, the pit sumps would only be pumped out when there is minimal or no

flow within the other stormwater conveyances, for example, between storms or at the end of the wet season. The pit sumps would not contribute to peak storm flows within the rest of the system. In this way, the stormwater system would reduce the peak storm flows from the site.

Runoff from the Overburden Fill Area (3S and 4S) would be collected by Overburden Channel 1 (1R), along the north side of the Overburden Fill Area, and by Overburden Channel 2 (5R), along the south side of the Overburden Fill Area. The two overburden channels would be routed to the Overburden Surge Basin (3B). From the Overburden Surge Basin (3B), stormwater would be routed to Rate Control Basin 2 (2B) by the Overburden Channel (7R) and Overburden Culvert (6R). The culvert would be used to direct the stormwater under a local drainage and the Access Ramp. It is also anticipated that the system would include an option to route water from the Overburden Surge Basin to Rate Control Basin 1 (1B), depending on final site configuration and the sequencing of various Project components.

Runoff from the Primary Processing Area and the Access Ramp (18S) would move as sheet flow downslope to Rate Control Basin 2 (2B). Runoff from the Southwest Loading Area (17S) would be directed to Rate Control Basin 2 (2B) by Railroad Channel 2 (9R), once the railroad spur and load-out area is constructed. From Rate Control Basin 2 (2B), stormwater would be routed to Water Quality Pond 1 (1WQ) through the Rate Basin 2 Culvert (11R).

Runoff from the Secondary and Ancillary Processing Area (16S) would move as sheet flow to Rate Control Basin 1 (1B). Runoff from the Northeast Loading and Plant Area (1S) would be collected by Railroad Drainage Channel 1 (8R) and directed to Rate Control Basin 1 (1B), once the railroad spur and load-out area is constructed. From Rate Control Basin 1 (1B), stormwater would be routed to Water Quality Pond 1 (1WQ) through the Rate Basin 1 Culvert (10R).

Water Quality Pond 1 (1WQ) would be constructed to provide sufficient retention time to meet the size requirements specified in the SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Appendix D, for removal of suspended sediment for the entire stormwater system. However, to provide additional improvement in stormwater quality, a second stormwater settling pond (Water Quality Pond 2-2WQ) would be constructed. Both Water Quality Ponds would have the same dimensions and capacities. Therefore, the Water Quality Ponds would provide twice the retention time recommended by the SWRCB.

Despite the fact that the Water Quality Ponds provide twice the recommended retention time for removal of sediment from stormwater, an additional measure of protection would also be added. Stormwater leaving Water Quality Pond 2 (2WQ) would be directed by the Water Quality Pond Culvert (12R) to a 3.4-acre Vegetated Sheet Drain (13R). The Vegetated Sheet Drain (13R) would act to further entrain and remove any suspended particles in the storm water and to reduce, or attenuate, the rate of water flow prior to discharge to a natural drainage that is tributary to Moody Creek.

STORMWATER MODELING

As discussed in the Stormwater, Erosion Control, and Drainage Plan (EMKO, 2010), stormwater modeling has been conducted using the HydroCAD model utilizing SCS TR-20 Methodology. The

HydroCAD model was used for the detailed site-wide analysis because of the site complexity and the required routing of stormwater through the proposed basins. Attachment A of the Addendum to the Stormwater, Erosion Control, and Drainage Plan (EMKO, 2012) includes the design assumptions, parameters, and modeling results generated in HydroCAD.

To address the range of regulatory requirements and guidelines applicable to the Project, stormwater modeling was conducted for the following storm events:

- 20-year return period, 1-hour duration;
- 25-year return period, 24-hour duration; and
- 100-year return period, 24-hour duration.

Exhibit 3.9-1 summarizes the results of the HydroCAD modeling for each component of the stormwater system and each different storm event. As documented in Exhibit 3.9-1 the surface runoff (in acre-feet, or AF), flow rates (in cubic feet per second, or cfs), and maximum flow velocities (in feet per second, or ft/sec) for the 20-year, 1-hour storm event is always less than that for the larger storm events. Based on the regulatory criteria and guidelines applicable to the Project, the 25-year, 24-hour storm was selected as the design storm event. However, to provide a conservative assessment of the adequacy of the stormwater system, the ability to safely convey the runoff from a 100-year, 24-hour storm was also evaluated. Furthermore, the modeling results are based on an assumption that, at the time a storm event begins, each of the basins (e.g. Overburden Surge Basin, Rate Control Basins, and Water Quality Ponds) would be at capacity and would begin to discharge at soon as runoff begins. This is an overly conservative supposition because it assumes that the basins do not provide any storage capacity or attenuation of the stormwater flows. As designed, the various basins and ponds would provide sufficient volume to retain approximately 35 percent of the design storm runoff and 25 percent of the runoff from the 100-year, 24-hour storm event. Therefore, the basins and ponds would substantially attenuate the peak flood flows and delay the timing of the discharge at the end of the system below the Vegetated Sheet Drain. As a result of the assumptions used, the updated HydroCAD modeling results in a substantially over-sized stormwater management system, in terms of both storage and conveyance capacity.

As identified in Exhibit 3.9-2, the stormwater conveyance features, the Water Quality Ponds, and the Vegetated Sheet Drain would all be capable of handling not only the runoff from the design storm event but also the runoff from the 100-year, 24-hour storm event with adequate capacity and at flow rates and velocities that meet applicable criteria.

The storm water control system would also act to attenuate flood flows. As described in the *Stormwater, Erosion Control, and Drainage Plan* (EMKO, 2010), the current peak discharge for a 25-year, 24-hour storm from the site is estimated to be approximately 633 cubic feet per second (cfs). The surge basin and rate control basins would reduce the peak flow entering the Water Quality Ponds to approximately 213 cfs for the 25-year, 24-hour storm event. The peak flow rate at the end of the Vegetated Sheet Drain would be further reduced to approximately 200 cfs. For the 100-year, 24-hour storm, the peak flow entering the Water Quality Ponds would be approximately 281 cfs and

the peak flow rate leaving the Vegetated Sheet Drain would be approximately 266 cfs. Therefore, the proposed development of the property would reduce flood flows from the Project site compared to existing baseline conditions.

SUMMARY

The Project would substantially alter existing drainage patterns at the site. However, the Project is designed and would be constructed to reduce and minimize erosion and siltation by complying with County grading and drainage requirements. In addition, as discussed above, the stormwater system would reduce stormwater flow rates and volumes from the Project site, thus reducing the potential for erosion and siltation. Furthermore, the stormwater system would include redundant sediment removal capabilities with two Water Quality Ponds and the Vegetated Sheet Drain.

The stormwater modeling results demonstrate that both the rate and amount of surface runoff from the site would be reduced when compared to existing conditions. As discussed above, the current peak discharge for a 25-year, 24-hour storm from the site is estimated to be approximately 633 cfs. The stormwater system would reduce the peak discharge for the same storm event to about 200 cfs, which is a substantial reduction. Furthermore, by retaining sufficient water to meet the Project's needs, the annual stormwater runoff volumes would be reduced initially by 65 acre-feet per year and ultimately by 260 acre-feet per year. Current stormwater runoff from the Project site is estimated to be 800 acre-feet per year (SB 610 Water Supply Assessment, September 2011).

As described above, and shown on Exhibit 3.9-1, the proposed stormwater system would have more than adequate capacity to control and minimize runoff from the Project site. The system would reduce runoff rates and volumes, thus reducing potential sources of polluted runoff. In addition, the redundant Water Quality Ponds and the Vegetated Sheet Drain would provide reduction of suspended sediment in the final discharge beyond that recommended by the SWRCB. Water Quality Pond 1 (1WQ) is designed to provide sufficient retention time to meet the size requirements specified in the SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Appendix D, for removal of suspended sediment for the entire stormwater system. However, to provide redundancy and additional improvement in stormwater quality, a second stormwater settling pond (Water Quality Pond 2-2WQ) would be included in the system. Both Water Quality Ponds would have the same dimensions and capacities.

Therefore, the Water Quality Ponds would provide twice the retention time recommended by the SWRCB. Despite the fact that the Water Quality Ponds would provide twice the recommended retention time for removal of sediment from stormwater, an additional measure of protection is also proposed to be added. Stormwater leaving Water Quality Pond 2 (2WQ) would be directed by the Water Quality Pond Culvert (12R) to a 3.4-acre Vegetated Sheet Drain (13R). The Vegetated Sheet Drain (13R) would act to further entrain and remove any suspended particles in the storm water and to reduce, or attenuate, the rate of water flow prior to discharge to a natural drainage that is tributary to Moody Creek.

Although the Project would significantly reduce the rate and volume of stormwater runoff from the site, potentially harmful pollutants (e.g., TSS, iron, magnesium, aluminum, etc.) could be discharged

to surface waters via stormwater runoff. Therefore, this impact would be considered **potentially significant**. However, implementation of the following mitigation measures would ensure that the proposed Project would reduce this potentially significant impact related to flooding, stormwater, or surface water quality to a **less than significant** level.

MITIGATION MEASURES

Mitigation Measure 3.9-1(a)*: Prior to any ground disturbing activities, the Project Applicant shall submit engineered design plans to Shasta County for the final Stormwater, Erosion Control, and Drainage Plan that comply with the County's grading and drainage requirements. Issuance of a use permit from the County will verify compliance with this requirement.*

Mitigation Measure 3.9-1(b)*: Prior to commencing operations, the Applicant shall submit a Report of Waste Discharge (RoWD) to the Regional Water Quality Control Board to determine whether Waste Discharge Requirements (WDRs) will be required for the Project. The Project Applicant shall implement all required WDRs identified by the RWQCB throughout the life of the Project.*

Mitigation Measure 3.9-1(c)*: Prior to any ground disturbing activities, the Project Applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) that includes specific types and sources of stormwater pollutants, determines the location and nature of potential impacts, and specifies appropriate control measures to eliminate any potentially significant impacts on receiving water quality from stormwater runoff. The SWPPP shall require treatment Best Management Practices (BMPs) that incorporate, at a minimum, the required hydraulic sizing design criteria for volume and flow to treat projected stormwater runoff. The SWPPP shall comply with the most current standards established by the Central Valley RWQCB. BMPs shall be selected from a menu according to site requirements and shall be subject to approval by the Central Valley RWQCB. A copy of the SWPPP shall be provided to the Central Valley RWQCB (Redding Office) and the County for review and approval prior to any ground disturbing activities.*

The Project Applicant shall implement appropriate Best Management Practices (BMPs) as identified in the SWPPP throughout the life of the Project.

Mitigation Measure 3.9-1(d)*: The Project Applicant shall submit annual inspection reports as required under the SWPPP to both RWQCB and the County. These reports will verify the Applicant's compliance with the conditions in the SWPPP and the effectiveness of any BMPs that are installed.*

Impact 3.9-2: Project implementation may violate a water quality standard or waste discharge requirement (Less than Significant with Mitigation)

As required by Mitigation Measure 3.9-1(b), prior to commencing operations, the Applicant shall submit a Report of Waste Discharge (RoWD) to the Regional Water Quality Control Board to determine whether Waste Discharge Requirements (WDRs) would be required for the Project. Typical operations that may require a WDR include discharge of process water and the use of settling ponds. As discussed above, process water would be retained onsite. Settling ponds would be used to reclaim and recycle process wash water. Any tailings that accumulate in the settling ponds would have the same geologic composition as the bedrock that would be mined to produce aggregate.

Therefore, the process water would have water chemistry similar to that of the surface runoff and groundwater at the site. As discussed above, except for the concentrations of manganese in two groundwater samples, the water samples collected for this evaluation meet the Regional Water Quality Control Board Basin Plan limits, which are typically used for WDR water-quality standards. As a result, the WDRs would likely prohibit discharge of process water to surface drainages or the stormwater control system.

As described in greater detail under Impact 3.6-4, non-industrial wastewater would be discharged through an onsite septic system that would be permitted by the County Environmental Health Department. The non-industrial wastewater would come from the potable water system, which would provide water that meets applicable water-quality criteria. Thus, disposal through the septic system would meet applicable water quality standards and waste discharge requirements, as required by Mitigation Measure 3.6-4, in accordance with applicable regulations, and disposed of offsite at an appropriately permitted facility for such wastes.

The Applicant shall also submit a Notice of Intent (NOI) to discharge stormwater to the State Water Resources Control Board, and prepare construction and industrial Stormwater Pollution Prevention Plans (SWPPP), as required by Mitigation Measure 3.9-1(c). Best management practices would be used to control stormwater runoff from the process area, overburden storage site, plant site, and stockpile and loadout area, and prevent the discharge of pollutants, including sediment, from the Project facilities. The Stormwater, Erosion Control, and Drainage Plan (EMKO, 2010) and the Addendum to the Stormwater, Erosion Control, and Drainage Plan (EMKO, 2012) provide detailed information regarding the design of the stormwater control system best management practices to manage stormwater and minimize the discharge of pollutants, including sediment, from the site.

Compliance with the WDRs and SWPPP would prevent any violations of water quality standards.

The implementation of the mitigation measures listed above would ensure that the Project would not violate water quality standards. Thus, this would be a **less than significant** impact. No additional mitigation is required.

Impact 3.9-3: Project implementation may substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted) (Less than Significant)

Water for the proposed Project would be developed onsite and supplied by the Applicant. Water would come primarily from storm water runoff that would be retained onsite and secondarily from groundwater from wells located or to be located on the Project site.

The proposed Project would require water for various components of the operation. In the processing operations, water consumption would occur due water retained in the product after washing, water used to manufacture concrete, water used for processing recycled material, water used for truck washing (aggregate, concrete, and asphalt trucks), misters on conveyor belts to control dust, and evaporation from the retention basins. In addition to these water uses in the processing area, water would also be used for dust control in the quarry and on the haul roads. Water would also be required for the use by onsite employees.

Table 3.9-1 provides the estimated water usage for each of these items. At peak production, the total volume of water used in the processing of aggregate for the Project each year is estimated to be 206 AF. An additional 48 AF would be used annually for dust control in the quarry and on the haul roads. Thus, the total estimated water use at peak production would be approximately 254 AF/yr.

TABLE 3.9-1: ESTIMATED PROJECT OPERATIONS NET WATER USE

PROJECT COMPONENT	*NET ANNUAL CONSUMPTION (ACRE-FEET PER YEAR)**	
	INITIAL OPERATIONS (5-15 YEARS)	***PEAK PRODUCTION***
Dust control in quarry[1]	13	48
Dust control in processing area[2]	10	39
Wash water content in product	19	74
Portland Cement concrete	4	17
Evaporative loss	19	77
Net annual usage	**65**	**254**

Source: Update to the SB 610 Water Supply Assessment for the Moody Flats Quarry Project (EMKO Environmental, Inc., August 2012) (Appendix S);
Notes:
* These values are approximate.
1 Includes dust control for active mining area and haul roads.
2 Includes dust control for conveyor belts; the aggregate wash, asphalt concrete batch plant, Portland Cement concrete batch plant, and recycling plant; and truck washing.

As discussed previously in this section, the Project would initially operate at a rate of approximately 500,000 to 1,000,000 tons per year. Production would be increased to full capacity over five to 15 years. As discussed under Impact 3.9-1, storm water retention basins with the capacity to retain not only the runoff from a 25-year, 24-hour storm event but also sufficient quantity to supply the Project water demand would be constructed in the North and South pits. Additional storm water retention and settling basins would also be constructed on the Project site.

STORM WATER RETENTION FOR NON-POTABLE WATER SUPPLIES

In general, stormwater from the North Pit and the South Pit would be retained within sumps located in each pit. Runoff from the Primary Processing Plant would also be directed into the South Pit Sump. These sumps would increase in size and change location as each pit would be developed as mining operations expand and progress across the site. For example, initially the sumps would need to be constructed at the downslope edge of the pit. Once the pits are larger, the sumps would be relocated within the lowest part of the pits. Water from the sumps within the mine pits would be pumped out of the pits as needed to maintain adequate storage within the sumps to accommodate additional storm water flows. The sumps, however, would be oversized so that they also provide storage to meet the Project water needs.

Initially, small disturbance areas, relative to the full Project scope, would occur in the South Pit area, the Primary Processing Plant area, and the access routes. A stormwater retention basin would be constructed near the base of the South Pit to collect stormwater runoff from the South Pit area. Once the South Pit is enlarged, the South Pit Sump would be relocated within the pit. Disturbance in the North Pit area, most of the Overburden Stockpile, and the railroad load-out area would not occur for five to 15 years after the Project is initiated. During the initial five to 15 year operating period, the anticipated water demand for the Project is estimated to be 65 acre-feet per year. This water demand would be supplied from the initial stormwater system (Update to the Hydrology and Water Quality Analysis of the Proposed 3M Moody Flats Quarry, EMKO Environmental, Inc., August 2012) (**Appendix M**).

The storm water retention system for the proposed Project has been designed and sized to fully accommodate storm water runoff that would be generated on and around the Project site. For example, the nominal dimensions of the South Pit Sump are 250 feet by 250 feet by 50 feet (depth), which is approximately 1.5 acres with a capacity of 78.2 acre-feet. This would be an adequate size to retain all stormwater that would flow to this portion of the site. In order to meet the water supply demand of the Project, the dimensions of the South Pit Sump would be expanded to approximately 350 feet by 350 feet by 50 feet (depth) which would double the capacity of the sump. This expansion to the size and dimensions of the South Pit Sump would allow for a full year of initial Project water demand to be retained within the sump (assuming 7.5 inches of rain fell), while leaving adequate capacity to retain runoff from a severe storm event.

Rainfall of 7.5 inches falling over the 113-acre South Pit area would provide 65 acre-feet of runoff to the South Pit sump (based on the rainfall-runoff relationships presented in the August 2012 Addendum to the Stormwater, Erosion Control, and Drainage Plan) (**Appendix J**). This is the volume of water needed to supply the Project for one year at the initial production rates anticipated during

the first five to 15 years of operation. As noted in Table 6.0-1 of the SB 610 Water Supply Assessment (**Appendix S**), the driest complete water year on record was the 1976–1977 water year, with 26.57 inches of rain at Shasta Dam. The current water year (2013–2014) may end up being drier than 1976–1977 in many parts of California. However, in the month of February 2014 alone, 12.25 inches of rain were recorded at Shasta Dam. Thus, the need for 7.5 inches of rainfall over a rainy season to provide the annual water volume necessary for the initial five to 15 years of Project operation is easily achievable, even in the driest years ever recorded in the Project area.

As production capacity of the quarry increases beyond the initial five to 15 year period of operations, the Project's water demand would increase proportionately. The additional water demand would be met by constructing a stormwater retention basin near the base of the North Pit to collect stormwater runoff from the North Pit area. As with the South Pit, once the North Pit is enlarged, the North Pit Sump would be relocated within the pit. The nominal size of the North Pit Sump would be 400 feet by 400 feet by 50 feet (depth), or approximately 3.7 acres with a capacity of 182 acre-feet, which is sufficient to retain storm water generated in this portion of the Project site. In order to meet the additional water demand that would be generated as mining operations expand across the Project site, which would eventually be 195 acre-feet from the North Pit Sump, the perimeter of the sump would be expanded to approximately 600 feet by 600 feet by 50 feet depth, or approximately 8.25 acres.

As described in the Updated Water Supply Assessment (EMKO, 2012), under average conditions, it is estimated that over 800 AF/yr of runoff would occur from the North and South pit areas, combined, and additional runoff would be generated from the overburden storage area, and the processing and loadout areas. During dry periods, the runoff may be reduced to as low as 320 AF/yr from the North and South pit areas. The amount of water available from runoff during two-year, three-year, and multiple dry year conditions lasting more than three years, may range from 400 AF/yr to 600 AF/yr.

As discussed in Section 5.0 of the Updated Water Supply Assessment (EMKO, 2012), the net water demand for the proposed Project is 260 AF/yr at full production, but will initially be approximately 65 AF/yr and increase over five to 15 years as the rate of aggregate production is increased. There is more than adequate storm water runoff from the Project site, and capacity within the storm water retention basins, to provide the necessary water for the Project under normal and dry-year conditions. The updated storm water system design (EMKO, 2012) provides the retention capacity necessary for the Project.

Potable water for the office area would be provided by a groundwater well, either by converting existing well OW-1 to a production well, or installing one or more new wells. Well OW-1 has a production capacity of two gallons per minute, which is equivalent to 2,880 gallons per day. The Applicant proposes to install above-ground water storage tanks adjacent to Well OW-1 to augment and supplement the potable water supply demands of the Project. Two 10,000-gallon above-ground storage tanks may be used to store potable water. The two gallons per minute production of well OW-1 would be sufficient to supply the needs of both office and bathroom uses on the site, as determined in the Project's Water Supply Assessment (**Appendix S**). If the Applicant drills additional supply wells in the future, then these wells would provide additional capacity. Any new wells drilled

could provide either primary or reserve water-supply capacity. Although not needed to supply the Project with adequate water, based on production by Mountain Gate CSD in the Spring Branch Creek watershed to the north, the Kennett Formation at the Project site alone has the potential to provide sufficient groundwater to supply the entire Project demand. Thus, the Applicant has two available sources of supply, both with independent anticipated capacity sufficient to supply all the Project's water-supply needs.

There are no known groundwater supply wells completed within the Unnamed Volcanic Unit bedrock formation that would be mined within the vicinity of the proposed Project. Groundwater production for domestic and municipal supply use occurs in adjacent watersheds and from different geologic formations. The Project would not affect these watersheds and would not involve the mining of these other geologic formations because as discussed above, the groundwater surface tends to mimic the topography, but is located approximately 18 ft bgs to 49 ft bgs. The fractured bedrock contains very little groundwater, with maximum production rates of only one to two gallons per minute (1 to 2 gpm) observed in the area of the South Pit. Since the mine pit locations are on small peaks located along a topographic ridge, the pits form their own watersheds and would not intercept groundwater that has percolated into the subsurface from outside the pit boundaries. Therefore, the quarry pits would not affect groundwater supplies outside of the pit boundaries or at depths below the pit floors.

Additionally, the mine pits would not interfere with or reduce recharge. During mining, all rain that falls within the pit would be retained within the pit. Part of the water retained within the pit would recharge groundwater through fractures in the bedrock. After mining is completed, reclamation would re-establish the natural surface drainage patterns in the area. The flat quarry floors, however, would enhance recharge locally.

The final elevation of the South Pit would be below the high water levels in Shasta Lake. The lake, however, is nearly two miles from the proposed South Pit. In addition, another dense, massive geologic unit, the Copley Greenstone, is located between the proposed South Pit and Shasta Lake. The Copley Greenstone is not highly fractured and does not transmit large quantities of groundwater. Therefore, there is no indication that the proposed Project could cause water to flow from Shasta Lake to the South Pit.

Based on the available data and the above discussion, the Project would not deplete groundwater supplies, interfere with recharge, or affect the production rate of preexisting wells. This would be a **less than significant** impact, and no mitigation is required.

Impact 3.9-4: Project implementation may expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam (Less than Significant)

As discussed above under Impact 3.9-1, the Project would not cause an increase in runoff from the site, and as such, would not increase the risk of flooding either on or off the Project site.

In the unlikely event of the failure of the Shasta Dam, the project site would not be inundated by the failure of the Shasta Dam. The inundation area for a failure of the Shasta Dam is contained in, *Shasta Dam Breach Simulation, Maximum Inundation and Leading Edge Lines, Shasta Dam, California, Failure Inundation Study*, *Instantaneous Breach, Reservoir Elevation 950 ft.*, prepared by the U.S. Bureau of Reclamation, November 2001.

Implementation of the proposed Project would not increase the risk of exposure to dam failure, nor would it place new residences within a dam failure inundation zone. In the event of a catastrophic failure of Shasta Dam, onsite employees would receive evacuation notification through implementation of the Shasta County Emergency Operations Plan. Implementation of the Shasta County Emergency Operations Plan in the event of a dam failure would reduce this risk to a **less than significant** level, and no additional mitigation is required.

Impact 3.9-5: The Project may be subject to inundation by seiche, tsunami, or mudflow (Less than Significant)

The Project site is not immediately adjacent to any large surface water bodies. The nearest large surface water body is Shasta Lake, which is located approximately one mile north of the Project site. The land between the Project site and Shasta Lake includes ridgelines and slopes that preclude the potential for surface water to reach the Project site in the unlikely event of a seiche or tsunami. Therefore, the Project is not subject to inundation by seiche or tsunami. The Project area is underlain by bedrock with minimal soil cover. Therefore, the Project is not subject to inundation by a mudflow. This would be a **less than significant** impact, and no mitigation is required.

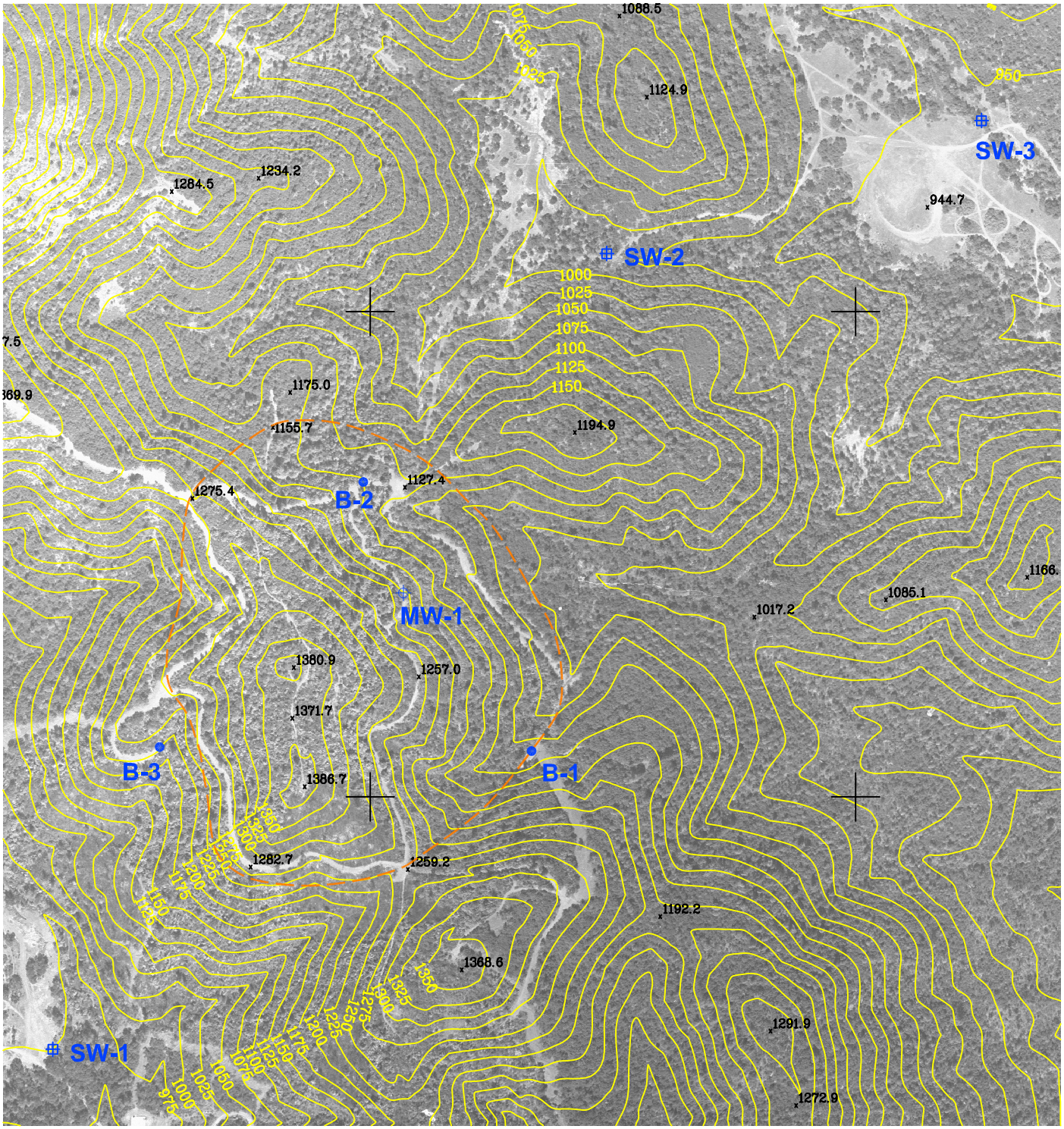
		Surface Runoff (AF)			Flow Rate (cfs)				Maximum Flow Velocity (ft/sec)			Average Depth in Culvert or Channel (ft)			Feature	Nominal Size	Description
		20-yr, 1-hr	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*Capacity*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*			
PIT RUNOFF & STORAGE																	
North Pit	6S		182.1	234.5		562.5	718.6									263 acres	Watershed area of North Pit
South Pit (including Primary Processing Area)	5S		78.2	100.7		241.7	308.8									113 acres	Watershed area of South Pit and the Primary Processing Plant Area
North Pit Basin	4B															182.1 ac-ft, 400'x400'x50' (depth)	Stormwater retention basin
Pumped to Overburden Channel 1 or 2 (1R or 5R, respectively).																	
South Pit Basin	5B															78.2 ac-ft, 260'x260'x50' (depth)	Stormwater retention basin
Pumped to Overburden Surge Basin (3B) or Rate Control Basin 2 (2B).																	
OVERBURDEN RUNOFF																	
Overburden Stockpile 2	3S		11.6	15.1		34.1	44.2									17.8 acres	South side of Overburden Pile
Overburden Channel 2	5R	1.661	11.6	15.1	28.04	34.1	44.18	156.57	6.27	6.6	7.06	0.92	1.01	1.14	Overburden pile South perimeter Channel	2' deep, 2' bottom width, 3:1 side slopes	Collects water at toe of overburden slope and directs runoff to overburden (OVB) pond.
					27.46	33.52	43.5										
Overburden Stockpile 1	4S		12.4	16.2		36.6	47.4									19.1 acres	North side of Overburden Pile
Overburden Channel 1	1R	1.782	12.4	16.2	30.09	36.59	47.41	160.08	6.5	6.85	7.32	0.94	1.04	1.17	Overburden pile North perimeter Channel	2' deep, 2' bottom width, 3:1 side slopes	Collects water at toe of overburden slope and directs runoff to overburden (OVB) pond.
					29.65	36.19	46.93										
Overburden Surge Basin	3B															8.092 ac-ft, 410'(L)x150'(w)x10'(d) (3:1 side slopes)	Surge basin
Overburden Culvert	6R	3.443	24.05	31.4	53.88	66.51	86.86	102.19	14.65	15.39	16.23	1.55	1.76	2.12	Culvert from OVB Pond	36" diameter	Directs water from overburden pond to rate control pond
					53.86	66.49	86.83										
Overburden Channel	7R	3.443	24.05	31.4	53.86	66.49	86.83	187.63	4.15	4.38	4.68	1.77	1.94	2.17	Channel from OVB pond	3' deep, 2' bottom width, 3:1 side slopes	Directs water from overburden pond to rate control pond
To Rate Control Basin 1 or 2 (1B or 2B, respectively)					53.7	66.37	86.7										

Exhibit 3.9-1: Stormwater Summary

		Surface Runoff (AF)			Flow Rate (cfs)				Maximum Flow Velocity (ft/sec)			Average Depth in Culvert or Channel (ft)			Feature	Nominal Size	Description
		20-yr, 1-hr	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*Capacity*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*			
NORTH AREA																	
Northeast Loading & Plant Area	1S		11.6	15		35.8	45.8									17 acres	Watershed area of NE Plant and Loading facilities
RR Channel 1	8R	1.901	11.6	15	31.36	35.76	45.85	85.3	2.75	2.83	3.02	1.6	1.68	1.87	Railroad/Loading Area North Channel	2.5' deep, 2' bottom width, 3:1 side slopes	Directs water from railroad/loading area to rate control pond
					29.83	33.38	43.11										
Plant Area	16S		26.1	34.3		79.4	104.1									42 acres	Watershed area of main Plant
Rate Control Basin 1	1B															17.6 ac-ft, 420'(L)x190'(w)x6'(d) (3:1 slopes)(this number assumes 7R is routed to 1B)	Rate control basin
Rate Basin 1 Culvert	10R	8.596	61.7	80.7	137.55	170.61	224.29	316	24.27	25.63	27.29	1.85	2.09	2.49	Culvert from Rate Control basin 1	48" diameter	Directs water from Rate Control basin 1 under the railroad tracks and to WQ basin 1
To 1WQ					137.49	170.57	224.25										
SOUTH AREA																	
Southwest Loading Area	17S		9.2	11.9		27.2	34.9									13.5 acres	Watershed of loading and railroad facilities south of Moody Creek.
RR Channel 2	9R	1.51	9.2	11.9	24	27.19	34.85	85.51	2.61	2.69	2.87	1.44	1.53	1.7	Railroad/Loading Area South Channel	2.5' deep, 2' bottom width, 3:1 side slopes	Directs water from railroad/loading area to rate control pond
					23.87	27.06	34.69										
Access Ramp	18S		7.3	9.9		20.2	27.6									13.5 acres	Watershed containing main ramp for "primary processing" plant located east of south pit. Also included is some un-touched vegetated areas.
Rate Control Basin 2	2B															6.156 ac-ft, 320'(L)x150'(w)x6'(d) (3:1 side slopes)(not assuming 7R Routing)	Rate control basin
Rate Basin 2 Culvert	11R	2.117	16.5	21.8	30.63	42.5	56.96	66.54	5.18	5.61	5.95	1.9	2.32	2.84	Culvert from Rate Control basin 2	48" diameter	Directs water from Rate Control basin 2 under the railroad tracks and to WQ basin 1
To 1WQ					30.49	42.39	56.8										
WATER QUALITY DISCHARGE																	
Water Quality Pond 1	1WQ															5.3 ac-ft, 250'x250'x4'(d)	Stormwater sediment removal basin
Water Quality Pond 2	2WQ															5.3 ac-ft, 250'x250'x4'(d)	Stormwater sediment removal basin

		Surface Runoff (AF)			Flow Rate (cfs)				Maximum Flow Velocity (ft/sec)			Average Depth in Culvert or Channel (ft)			Feature	Nominal Size	Description
		20-yr, 1-hr	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*Capacity*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*	*20-yr, 1-hr*	*25-yr, 24-hr*	*100-yr, 24-hr*			
Water Quality Pond Culvert	12R	10.713	78.2	102.4	152.21	201.2	266.74	399.01	18.95	20.36	21.77	2.14	2.51	2.99	Culvert from WQ basin 2	60" diameter	Directs water from WQ basin 2 under the existing railroad tracks and to the vegetated sheet drain
					152.17	201.18	266.71										
Sheet Drain	13R	10.713	78.2	102.4	152.17	201.18	266.71	1806.13	2.22	2.49	2.79	0.23	0.27	0.32	Vegetated Sheet Drain	300' wide, 12" deep, 490' long	Filters the runoff from the site before it reaches the outfall
To OUT					150.78	200.33	265.78										
Output	OUT				150.78	200.33	265.78										

This page left intentionally blank.



Surface Water Sampling Location

Boring Location

Monitoring well Location

Proposed Quarry Boundary

N

0 300 600

SCALE IN FEET

BROWN AND CALDWELL

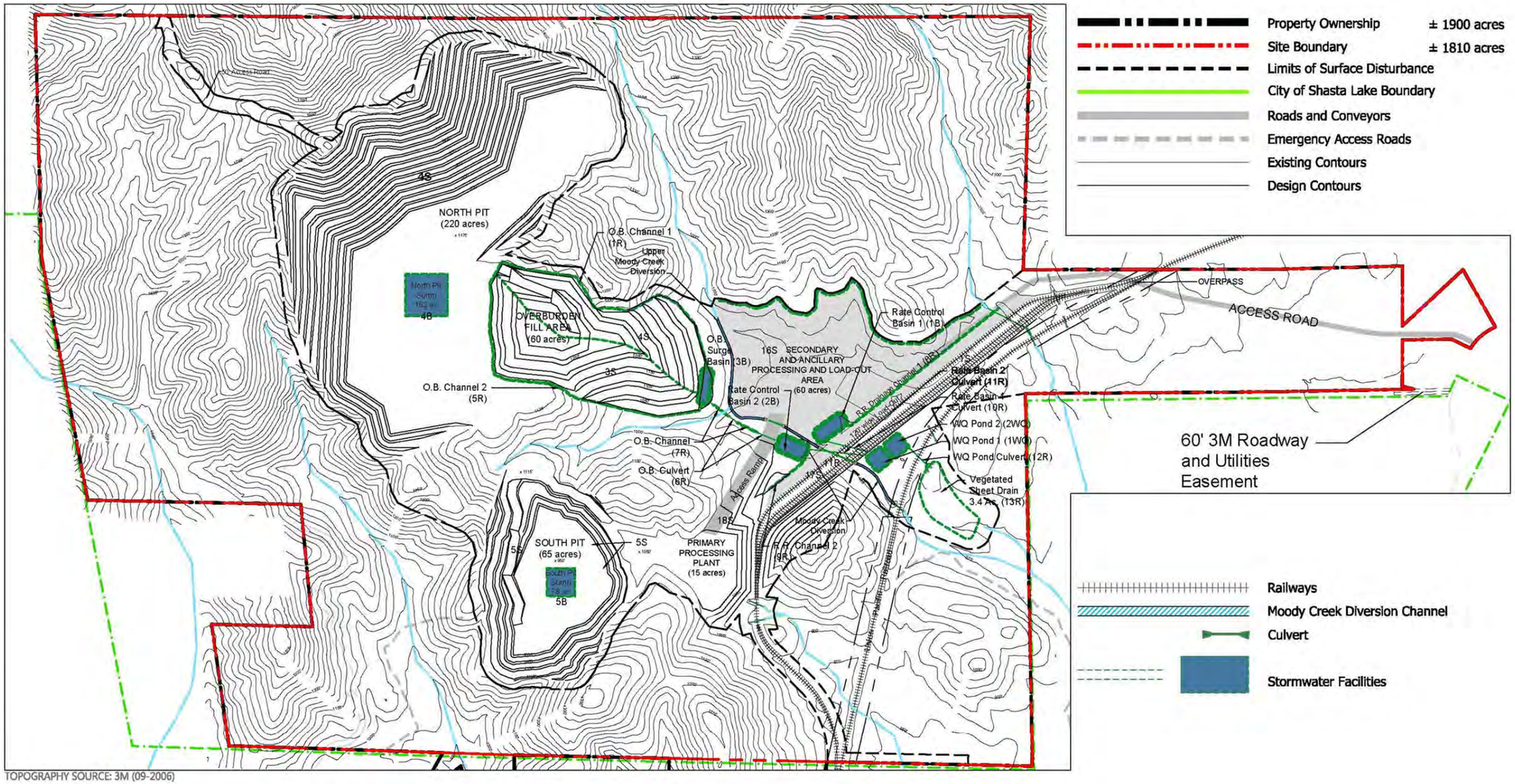
MOODY FLATS QUARRY EIR

Figure 3.9-1: Sampling Locations

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



TOPOGRAPHY SOURCE: 3M (09-2006)

NOTES:

1. Contour Interval: 25'-0"
2. All facilities and configurations approximate only. In particular, surface disturbance boundaries are not expected to be identical to those depicted, although total acreage to be disturbed and reclaimed should be similar to depicted. While this plan reflects best available data, development may vary due to actual geologic conditions encountered, engineering and other considerations.

500' 0 1,000'

Scale: 1" = 1,000 Feet

NORTH

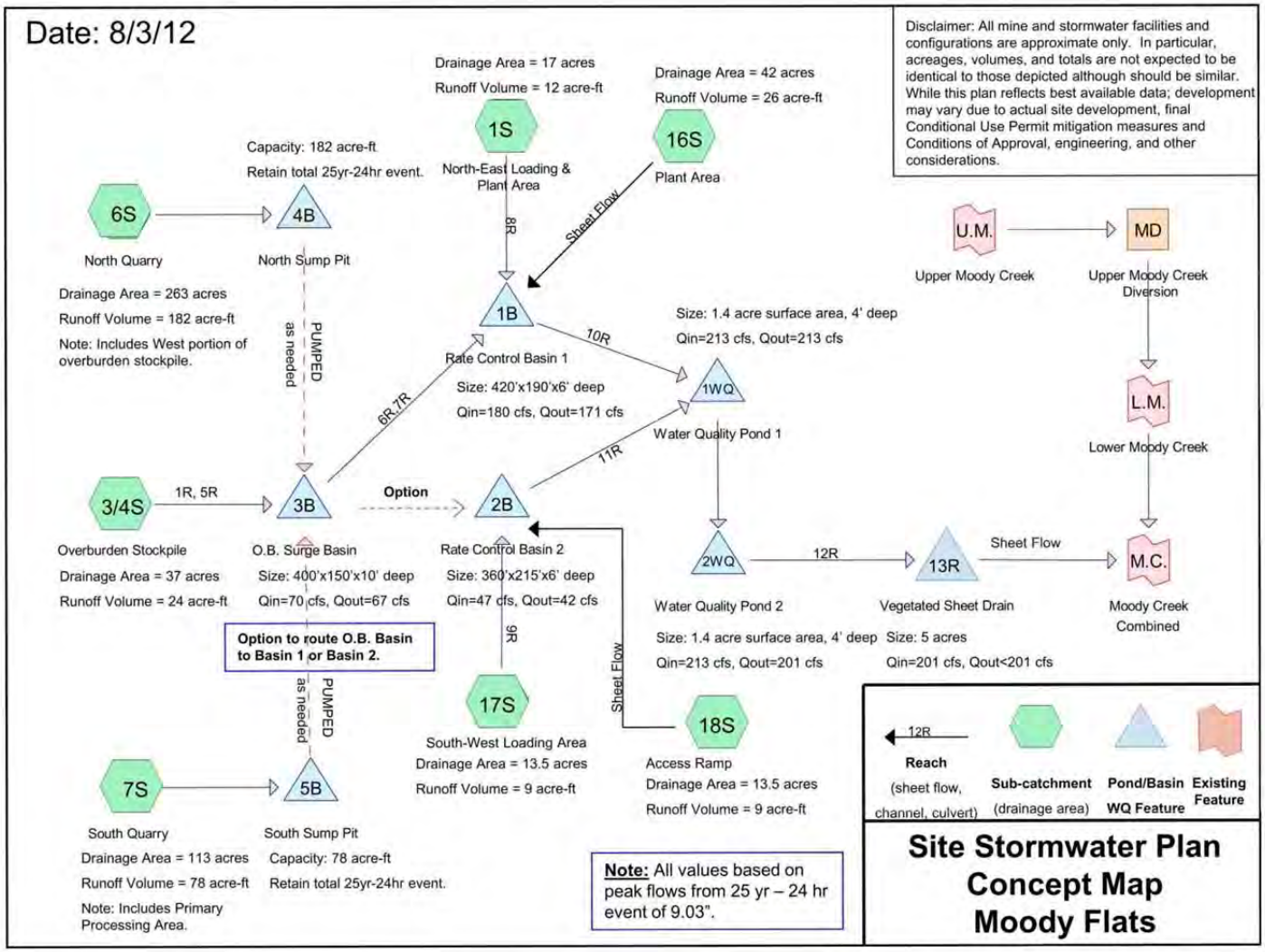
BENCHMARK RESOURCES

MOODY FLATS QUARRY EIR

Figure 3.9-2: Site Plan

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



SOURCE: HydroCAD Modeling Conducted by Trevor Crawford, 3M Facilities Engineering

Figure 3.9-3: Stormwater Contol and Facilities Flowchart

This page left intentionally blank.

This section provides an overview of the existing land uses on the Project site and the surrounding area, and addresses potential impacts associated with operation of the proposed Project. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Phyllis Beyer (January 18, 2012), Cinnamon Kern (February 4, 2012), Gordon Gienapp (January 27, 2012), Heidi Strand (February 8, 2012), and Rob and Sheryl Sampley (March 8, 2012).

Each of the comments received related to this topic are addressed within this section.

Information in this section is derived primarily from the following sources:

- Shasta County General Plan (September, 2004)
- Shasta County Zoning Ordinance
- Shasta County Code, Chapter 18.04, Surface Mining and Reclamation

3.10.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

Shasta County comprises approximately 3,850 square miles of diverse landscape, with a population of nearly 182,000 concentrated within the central valley flat lands of the County. The City of Redding, the County seat and largest incorporated City, is located at the northern end of the Central Valley. Two mountain peaks, Mount Shasta at 14,194 feet and Lassen Peak at 10,457 feet, dominate the horizon. Large lakes such as Shasta Lake, north of Redding, and Whiskeytown Lake to the west, provide varied visual character to the surrounding mountain ranges, and provide a range of recreational opportunities for residents and visitors. The Sacramento River, California's largest and longest river, runs through the center of the County as it flows south towards the San Francisco Bay. Vast areas of land, primarily unpopulated forest land, in the County remain under government ownership.

PROJECT LOCATION

The Project site is located in western Shasta County, California, about one (1) mile west of Interstate 5, immediately north of the City of Shasta Lake, and about nine (9) miles north of the City of Redding (see Figure 2-1 and Figure 2-2 for a map of the Project's regional location and site vicinity.)

The site lies in Sections 13, 24, and 25 of Township 33 North, Range 5 West, and Sections 18, 19, 20, and 30 of Township 33 North, Range 4 West, of the Mount Diablo Baseline and Meridian. The Project would be located entirely within the boundaries of the Applicant-owned Assessors Parcels Number 006-770-002 through -005, 065-500-002 and -004; 307-200-002, -006, -007, -010, -018, and -019; and 307-230- 004, -005, -006, -014, -016, and -017 (see Figure 2-3, "Assessor Parcel Map")

PROJECT SITE

The Project site is located on land that is currently undeveloped, as shown in Figure 2-4, "Existing Conditions Aerial Photograph." The elevation of the site ranges from approximately 800 feet to 2,000 feet above mean sea level (amsl). The Project site encompasses approximately 1,850 acres dominated by montane hardwood-conifer and montane hardwood vegetative habitats. Moody Creek, Rancheria Creek, and Salt Creek transverse the center and eastern portions of the Project site. A Union Pacific Railroad line runs through the eastern portion of the property and Digger Bay Road traverses the western portion of the property. The northwest corner of the property is within the mapped boundaries of the Shasta-Trinity National Forest but is private land and not subject to regulation by the Forest Service. The Project site is not within the boundaries of the Shasta Unit of the Shasta-Trinity National Recreation Area.

Existing and Proposed Land Use Designations and Zoning

The Project site is currently designated by the Shasta County General Plan as Mining Resource (MR), Industrial (I), Rural Residential A (RA), Suburban Residential (SR), and Commercial (C) (see Figure 2-6, "Existing General Plan Land Use Designations"). The Shasta County Zone Districts for the Project site are Mineral Resource (MR), Interim Rural Residential (IR), Community Commercial combined with the Design Review District (C-2-DR), and General Industrial (M) (see Figure 2-7, "Existing Zoning Designations").

As outlined in the Shasta County General Plan (Minerals Element, Policy MR-a) mining operations with 30 years or more of expected operation should be included in the Mineral Resource (MR) land use designation and Mineral Resource (MR) zone district. The policy explains that all parcels involving "extraction, processing, stockpiling, and shipping, and adjacent undeveloped area within the same ownership" shall be included within this zone district.

Approximately 80 percent of the land area within the Project site currently complies with this policy, however, 10 parcels require changes to their existing General Plan and/or zoning designation. Table 3.10-1, "Existing and Proposed General Plan Designations and Zone Districts," provides the existing land use designation and zoning of each parcel within the Project site and their respective proposed designation and zoning.

TABLE 3.10-1: EXISTING AND PROPOSED GENERAL PLAN AND ZONING DESIGNATIONS

APN	ACREAGE	EXISTING		PROPOSED	
		GENERAL PLAN	ZONING	GENERAL PLAN	ZONING
006-770-002	143	MR	MR	MR	MR
006-770-003	143.91	MR	MR	MR	MR
006-770-004	156.66	MR	MR	MR	MR
006-770-005	4.5	MR	MR	MR	MR
065-500-002	151.91	MR	MR	MR	MR
065-500-004	152.05	MR	MR	MR	MR
307-200-002	335.79	MR	MR	MR	MR
307-200-006	7.5	MR	MR	MR	MR
307-200-007	71.7	SR	IR	MR	MR
307-200-010	512.7	MR/I	MR/M	MR	MR
307-200-018	109.62	SR	IR	MR	MR
307-200-019	11.88	SR	IR	MR	MR
307-230-004	3.20	RA/C	C-2-DR	MR	MR
307-230-005	3.39	RA/C	C-2-DR	MR	MR
307-230-006	3.50	RA/C	C-2-DR	MR	MR
307-230-014	40.35	SR	IR	MR	MR
307-230-016	0.02	RA	C-2-DR	MR	MR
307-230-017	0.04	RA	C-2-DR	MR	MR

NOTES:

ZONING DISTRICTS: *MR = MINERAL RESOURCE DISTRICT; M = GENERAL INDUSTRIAL; IR = INTERIM RURAL RESIDENTIAL DISTRICT; C-2-DR = COMMUNITY COMMERCIAL COMBINED WITH THE DESIGN REVIEW DISTRICT.*

GENERAL PLAN DESIGNATIONS: *SR = SUBURBAN RESIDENTIAL; MR = MINING RESOURCE; I = INDUSTRIAL; RA = RURAL RESIDENTIAL.*

SOURCE: *SHASTA COUNTY. 2004 (SEPTEMBER). SHASTA COUNTY GENERAL PLAN. AMENDED THROUGH SEPTEMBER 2004. REDDING, CA.*

As shown in Table 3.10-1 above, approximately 1,600 acres (86 percent) of the land within the site boundary is designated and zoned as Mineral Resource. The Applicant is proposing a General Plan amendment and zoning amendment for the remaining approximately 250 acres not currently designated as Mineral Resource.

The existing Shasta County General Plan Land Use Designations for the Project site are shown in Figure 2-6. The existing Shasta County Zone Districts for the Project site are shown in Figure 2-7. Figures 2-8 and 2-9 show the proposed General Plan Land Use Designations and Zoning Designations, respectively.

Proposed General Plan and Zoning Text Amendments

At the present time both the Shasta County General Plan and the Shasta County Zoning Plan have requirements which limit the maximum length of time for Use Permits for mining operations to thirty years. The applicant has requested that these specific time limits be deleted from both the General Plan and the Zoning Plan.

Policy MR-n of the General Plan currently reads as follows:

> *MR-n An operating term shall be required for each mining use permit. This would set a defined length of time during which mining may occur. Any extensions beyond the permit expiration would require further environmental review and discretionary approval. The term of mining should be balanced so as to allow sufficient time for the operator to amortize investments, without sacrificing regulatory effectiveness. The maximum length of time for which any mining permit may be approved is 30 years.*

The applicant has requested deletion of the final sentence of this Policy.

Shasta County Code Section 17.88.020 (F) currently reads as follows:

> *17.88.020 F. An operating term shall be required for each mining use permit. This would set a defined length of time during which mining may occur. Any extensions beyond the permit expiration would require further environmental review and discretionary approval. The term of mining should be balanced so as to allow sufficient time for the operator to amortize investments, without sacrificing regulatory effectiveness. The maximum length of time for which any mining permit may be approved is 30 years.*

The applicant has requested deletion of the final sentence this Code Section.

SURROUNDING LAND USES

Interstate 5, a north/south freeway, is the closest major public roadway to the Project site, and is located less than one-quarter mile from the eastern boundary of the Project site, as shown in Figure 2-4.

The site is surrounded by undeveloped land with limited rural residential properties to the northeast, south, southeast, and southwest as shown on Figure 2-4 and described in greater detail below. Several other mines are located nearby, with the closest (Falkenbury Shale Quarry) approximately 1.5 miles to the northeast (see Figure 2-4).

Surrounding land uses (listed according their direction relative to the Project site) include:

North: Federal land managed by the U.S. Forest Service, including the Shasta-Trinity National Forest, and the Shasta-Trinity National Recreation Area.

Northeast: Lehigh Southwest Cement Company's Falkenbury Quarry.

East: Residences and commercial development on Wonderland Boulevard and

the Interstate 5/Old Oregon Trail interchange. The closest residence to the proposed processing plant site in this direction is about 2,700 feet (0.51 mile) away on Flintstone Avenue.

Southeast: Vacant land in the City of Shasta Lake, which is planned for a mix of highway-oriented commercial development as well as residential development.

South: Vacant land (owned by the applicant) and residences. The closest residences to the proposed south pit in this direction are about 2,000 feet (0.38 miles) away on Oak Avenue and on Oliver Street and about 3,400 feet (0.55 mile) away on Walker Lane. The closest residence to the proposed processing site in this direction is approximately 4,100 feet (0.78 mile) on Black Canyon Road.

Southwest: Vacant land (owned by the applicant) and residences. The closest residence to the proposed south pit site in this direction is approximately 1,600 feet (0.3 mile) away on Pickard Street.

West: Vacant land (owned by the applicant) and residences. The closest residence to the proposed north pit site in this direction is approximately 5,000 feet (0.95 mile) away on Lake Boulevard.

Northwest: Federal land managed by the U.S. Forest Service, including the Shasta-Trinity National Forest, and the Shasta-Trinity National Recreation Area. The Shasta Lake boat launching areas of Centimudi and Digger Bay Marina are approximately one mile from the proposed north pit site. Shasta Dam is approximately 8,400 feet (1.6 miles) northwest of the proposed north pit site.

3.10.2 REGULATORY SETTING

LOCAL

Shasta County General Plan

The County's General Plan includes objectives and policies that encourage and support the extraction of mineral resources in the County, while seeking to ensure that mining activities do not adversely impact the environment or surrounding land uses.

The following General Plan Minerals Element objectives and policies are relevant to the proposed Project.

OBJECTIVES

Objective MR-1: To identify, conserve, develop, and utilize Shasta County mineral resources while protecting mineral resource sites and access routes from potential conflicts with incompatible land uses.

Objective MR-2: To encourage the production and conservation of minerals while giving consideration to values relating to recreation, watersheds, wildlife, range, forage, timberlands, and aesthetics.

Objective MR-3: To ensure that mining operations are conducted in such a manner as to protect the public health, safety, and welfare; to minimize adverse impacts on adjacent land uses; and to mitigate other potential adverse environmental impacts.

Objective MR-4: To ensure that mined lands are reclaimed to minimize adverse impacts on the environment, to protect the public health and safety, and to restore mined lands sites to a usable condition which is readily adaptable to alternative land uses.

Objective MR-5: To maintain an adequate long-term supply of mineral resources within the County, in particular, Portland cement concrete grade alluvial sand and gravel.

Objective MR-6: To encourage the use of recycled mineral resources, especially aggregate materials.

Objective MR-7: To recognize the mineral information classified by the State Geologist and transmitted by the State Mining and Geology Board.

Objective MR-8: To ensure the joint participation of residents, industry, and affected agencies in a well-defined and consistent regulatory process.

POLICIES

Policy MR-a: Mineral operations that are long-term (i.e. 30 years or more of expected operation) should be included in the Mineral Resource (MR) land use designation and in the Mineral Resource (MR) zone district. Included in this designation and zoning shall be areas used for extraction, processing, stockpiling, and shipping, and adjacent undeveloped areas within the same ownership as the mining operation site. Development and uses within MR designations and zone districts shall be regulated so that proposed future land uses will avoid or mitigate incompatibilities with mineral extraction operations.

1. Uses permitted in these areas should include mineral exploration and extraction, processing, and accessory uses.
2. Residential uses may be permitted for security and labor housing.
3. The minimum parcel size for lands in the MR designation shall be 20 acres.

Policy MR-b: Land within up to one-half mile of MR designated and zoned mining operation sites, but outside the MR designation and zoning, should be included in the Mining Resource

Buffer (MRB) land use designation combined with the principal land use designation, and in the Mineral Resource Buffer (MRB) Zone District combined with the principal zone district. Mining operation sites shall include the extraction, processing, stockpiling, and shipping areas of the mining operation, as defined in the reclamation plan. The MRB combining zone district shall be designed to allow for compatible land uses while protecting the potential for mineral resource development.

1. The extent of the buffer designation and zone will depend on the surrounding topography, site distance, and existing development.

2. Notices shall be recorded on the deeds for lots created by new land divisions and/or subject to discretionary land use permits within the MRB combining zone district to advise the property owners of the proximity of existing or potential mining operations and the potential impacts.

3. Principal land use designations considered to be incompatible with the MRB combining designation include Urban Residential (UR), Suburban Residential (SR), and Rural Residential A (RA).

4. The minimum residential parcel size for lands in the MRB combining designation shall be 5 acres, except where a smaller parcel size is permitted by the principal land use designation adopted prior to January 1, 1998. To the extent it is feasible, building sites shall be located on that portion of the property furthest from the mining operation site.

5. The MRB combining designation shall not be applied within the Cottonwood Community Plan area.

Policy MR-d: The County will initiate the redesignation and rezoning for existing mining operations which had reclamation plans approved prior to January 1, 1998, and which are not already so designated and zoned. Applicants shall initiate redesignation and rezoning for new mining operations.

Policy MR-h: In the future, lands may be placed in the MR, MRB, and IMR designations and zone districts, and lands presently in these designations and zone districts may be removed from them at the initiative of the County, the property owners, or the mine operators, based on the results of mineral resource exploration, and/or completion of extraction and reclamation of the mine site. When the mineral resource is exhausted and reclamation is completed, the property owner shall initiate removal of the MR, MRB, and IMR designations and zone districts from the subject property.

Policy MR-i: All new or expanded mining operations shall have a use permit to ensure that they are conducted in a manner to protect the public health, safety, and welfare, and to minimize adverse impacts on adjacent land uses and the environment.

Policy MR-j: On-site processing, including crushing, washing, screening, sorting, and stockpiling, should be allowed as much as possible at all mineral resource sites, subject to consideration of potential conflicts with adjacent and nearby land uses, and to mitigation of potential adverse environmental effects. However, concrete plants and asphalt plants should only be permitted in the Mineral Resource (MR) and General Industrial (M) zone districts, subject to approval of a use permit.

Policy MR-n: An operating term shall be required for each mining use permit. This would set a defined length of time during which mining may occur. Any extensions beyond the permit expiration would require further environmental review and discretionary approval. The term of mining should be balanced so as to allow sufficient time for the operator to amortize investments, without sacrificing regulatory effectiveness. The maximum length of time for which any mining permit may be approved is 30 years.

Policy MR-o: Aggregate recycling facilities should be included as a use permitted subject to a use permit in General Industrial and Mineral Resource zone districts.

Policy MR-q: The County should maintain a Surface Mining and Reclamation Act regulatory program to provide current information on mineral resources and mining operations, to review applications for mining permit and reclamation plans, to review mine reclamation financial assurances, to perform annual mine inspections and file inspection reports, to monitor reclamation of mine sites, and to enforce compliance with State and County mining regulations.

As is discussed above on page 3.10-4, and in the impact section below, the Project Applicant proposes to operate the mine for a 100-year term. However, as outlined above, Policy MR-n limits the term of mining permits to a maximum of 30 years. Thus, the Project would conflict with Policy MR-n. Accordingly, the Project Applicant proposes that the County delete the last sentence of Policy MR-n, which limits the term of mining permits to 30 years.

Shasta County Zoning Ordinance

Section 17.12, Mineral Resource (MR) District, of the County Zoning Ordinance (as amended through July 2003) would apply to the proposed project.

The purpose of the mineral resource (MR) district is to protect long-term mining operations (i.e. mines with 30 years or more of expected operation). This district is consistent with the mineral resource (MR) general plan designation. This district may also be applied to other areas where there are mineral deposits that can be mined commercially, provided there are no conflicts with other general plan policies.

The following uses are permitted by right in the MR district:

A. Exploration work for minerals, except as provided in Section 17.12.030(B);

B. Agricultural uses, forest management;

C. Low-intensity recreational uses which require only minor improvements, such as a non-motorized hunting or fishing club that does not provide food service and/or lodging facilities.

The following uses are allowed by right in the MR district if a use permit is issued:

A. Living quarters for the use of the owner(s), security personnel, or laborers employed on site;

B. Notwithstanding any provision of Section 17.12.020(A) to the contrary, any mining activity, either underground or open pit, as defined by the Surface Mining and Reclamation Act (Article 5, Chapter 9, Division 2 (Section 2770, et seq.) of the California Public Resources Code);

C. Mills and other facilities, buildings, or structures, equipment and all other indoor and outdoor areas related to or used in connection with the extraction, storing, transportation, processing or refining of mined materials or products derived therefrom;

D. Aggregate recycling facilities.

The following set development standards apply in the MR district:

A. Minimum Lot Area. The minimum lot area requirement is 20 acres, or as specified by use permit, except as otherwise provided in Section 17.84.010.

B. Yards. The following yard requirements apply, except as otherwise provided in Section 17.84.020:

1. Front, 30 feet;

2. Side, 30 feet;

3. Rear, 30 feet.

C. Maximum Structural Height. Maximum permitted structural height is 45 feet, except as otherwise provided in Section 17.84.030.

D. Parking. Parking requirements are as specified in Chapter 17.86. (For industrial uses, the County Code (Section 17.86.140) requires one parking space per employee, plus one additional parking space per 300 square feet of office space.)

E. Reclamation Plans. All approved mining activities shall be accompanied by a reclamation plan for the rehabilitation, reuse and erosion control of the mined area. The reclamation plan shall be in accordance with Chapter 18.04.

Shasta County Code

CHAPTER 17.88, SPECIAL USES

Section 17.88.020(F) of the Shasta County Code states:

> An operating term shall be required for each mining use permit. This would set a defined length of time during which mining may occur. Any extensions beyond the permit expiration would require further environmental review and discretionary approval. The term of mining should be balanced so as to allow sufficient time for the operator to amortize investments, without sacrificing regulatory effectiveness. The maximum length of time for which any mining permit may be approved is 30 years.

As is discussed in the impact section below, the Project Applicant proposes to operate the mine for a 100-year term. However, as outlined above, Section 17.88 limits the term of mining permits to a maximum of 30 years. Thus, the Project would conflict with this code section. Accordingly, the Project Applicant proposes to delete the last sentence of Section 17.88, which limits the term of mining permits to 30 years.

CHAPTER 18.04, SURFACE MINING AND RECLAMATION

The purpose of this chapter is to implement the Surface Mining and Reclamation Act. This chapter acknowledges that the extraction of minerals is essential to the continued economic well-being of the County and to the needs of society. This chapter seeks to balance economic and environmental considerations with respect to surface mining, and to ensure that surface mining lands are reclaimed to a usable condition which readily adaptable for alternative land uses.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project would have significant impact on land use and planning if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

The Notice of Preparation and Initial Study prepared for this Project determined that project implementation would not physically divide an established community, nor would it conflict with any applicable habitat conservation plan or natural community conservation plan as no such plans govern the Project site. There were no public comments received during the NOP public review period that contested these conclusions or provided supporting information to dispute these conclusions. Therefore, these topics are not addressed further in this EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: Implementation of the proposed project may conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect (Less than Significant)

The Project site is currently designated by the Shasta County General Plan as Mining Resource (MR), Industrial (I), Rural Residential A (RA), Suburban Residential (SR), and Commercial (C) (see Figure 2-6, "Existing General Plan Land Use Designations"). The Shasta County Zone Districts for the Project site are Mineral Resource (MR), Interim Rural Residential (IR), Community Commercial combined with the Design Review District (C-2-DR), and General Industrial (M) (see Figure 2-7, "Existing Zoning Designations").

As outlined in the Shasta County General Plan (Minerals Element, Policy MR-a) mining operations with 30 years or more of expected operation should be included in the Mineral Resource (MR) land use designation and Mineral Resource (MR) zone district. The policy explains that all parcels involving "extraction, processing, stockpiling, and shipping, and adjacent undeveloped area within the same ownership" shall be included within this zone district.

Approximately 80 percent of the land area within the Project site currently complies with this policy; however, 10 parcels would require changes to their existing General Plan designation and/or zoning district. Table 3.10-1, "Existing and Proposed General Plan Designations and Zone Districts," provides the existing land use designation and zoning of each parcel within the Project site and their respective proposed designation and zoning.

As shown in Table 3.10-1, approximately 1,600 acres (86 percent) of the land within the site boundary is designated and zoned as Mineral Resource. The Applicant is proposing a General Plan amendment and zoning amendment for the remaining approximately 250 acres not currently designated as Mineral Resource. The proposed General Plan amendment and zoning amendment to designate and zone the entire Project area Mineral Resources would not result in a significant environmental impact. As shown on Figures 2-6 and 2-7, lands to the east and south of the existing Union Pacific rail line traversing the Project site are primarily designated Suburban Residential by the General Plan and zoned Interim Rural Residential by the Zoning Code. Residential land uses may not be compatible with mining operations in close proximity. Potential land use conflicts include exposure to excessive noise levels, exposure to dust and air emissions,

and general disturbances to residential areas as a result of adjacent mining and materials processing activities. By redesignating and rezoning the existing Suburban Residential and Interim Rural Residential parcels within the Project boundary, the Project would establish a larger buffer area around the proposed mining and materials processing areas, which would reduce the potential for land use conflicts between the proposed Project and future nearby residential land uses. The areas of the Project site currently designated and zoned for residential uses are outside of the active mining and materials processing areas, and these areas would serve as an on-site land use buffer between the active mining and materials processing areas, and existing and potential future land uses surrounding the Project site. Overall, the proposed General Plan amendment and rezone would have a beneficial environmental impact, given that land use conflicts are likely to be reduced following implementation of these actions.

The existing Shasta County General Plan Land Use Designations for the Project site are shown in Figure 2-6. The existing Shasta County Zone Districts for the Project site are shown in Figure 2-7. Figures 2-8 and 2-9 show the proposed General Plan Land Use Designations and Zoning Designations, respectively.

The full range of uses proposed by the Project Applicant, including the aggregate mining, processing and transport, would be consistent with the General Plan Land Use Designation of Mineral Resource (MR). The Applicant's request to have the entire 1,850-acre Project site redesignated as MR under the General Plan would ensure that the proposed land uses and activities would not conflict with the County General Plan Land Use Map. This proposed land use designation change would ensure that the Project meets the requirements of General Plan Policy MR-a.

General Plan Policy MR-b states that land within up to one-half mile of MR designated and zoned mining operation sites, but outside the MR designation and zoning, should be included in the Mining Resource Buffer (MRB) land use designation combined with the principal land use designation, and in the Mineral Resource Buffer (MRB) Zone District combined with the principal zone district. Principal land use designations considered to be incompatible with the MRB combining designation include Urban Residential (UR), Suburban Residential (SR), and Rural Residential A (RA). General Plan Policy MR-b applies only to lands within the jurisdiction of Shasta County. As shown on Figure 2-8, lands located to the south of the Project site, immediately adjacent to the Project site boundary are located within the City of Shasta Lake, and are not subject to the requirements of the Shasta County General Plan.

The proposed Project includes internal setbacks within the site between the mining areas and the edges of the property line. The smallest setback area within the Project site is between the southern edge of the South Pit and the Project site's southern boundary with the City of Shasta Lake, which is approximately 720 feet. The closest existing residence to the processing plant (which is the eastern-most mining-related activity in the eastern area of the Project site) is located approximately 0.51 miles from the processing plant area, which is beyond the minimum distance of one-half mile suggested in General Plan Policy MR-b. However, there are existing residences located to the south and southwest of the South Pit located approximately 1,600 feet and 2,000 feet, respectively, from the edge of the South Pit. The majority of the Project site has been

designated Mineral Resources by the Shasta County General Plan for approximately 30 years, and land uses within the Project vicinity have developed over time with this MR land use designation in place on the majority of the Project site. The primary purpose of General Plan Policy MR-b is to provide suggested buffer areas to reduce potential land use conflicts between mining activities and sensitive land uses, such as residences. This EIR includes a detailed analysis of potential impacts to surrounding land uses that may result from Project implementation and operations. Where potentially significant impacts have been identified, mitigation measures have been included to reduce the impact to the greatest degree feasible. As such, the proposed Project would not conflict with the guidance provided by General Plan Policy MR-b.

General Plan Policy MR-d requires applicants for mining operations to initiate redesignation and rezoning of sites to the MR designation for new mining operations. The Project applicant has initiated a redesigation and a rezone of the portions of the Project site that are not currently designated and zoned MR as part of this application, which is consistent with the requirements of this policy. Policy MR-h states that lands may be placed in the MR designation at the initiative of the County, the property owners or the mine operators.

Policy MR-i requires all new or expanded mining operations to have a use permit. A use permit has been requested by the Project Applicant as part of the permit application.

Policy MR-j states that on-site processing, including crushing, washing, screening, sorting, and stockpiling, should be allowed to the extent possible at all mineral resource sites, subject to consideration of potential conflicts with adjacent and nearby land uses, and to mitigation of potential adverse environmental effects. However, concrete plants and asphalt plants should only be permitted in the Mineral Resource (MR) and General Industrial (M) zone districts, subject to approval of a use permit. As noted above, as part of the Project, the Applicant seeks a use permit along with General Plan and Zoning Code amendments to ensure the Project site is designated and zoned MR.

Policy MR-o states that aggregate recycling facilities should be included as a permitted use subject to a use permit in the MR zoning district. A use permit for these proposed activities has been requested by the Project Applicant, and the Applicant has requested that the entire site be designated MR as required by the General Plan. Policy MR-n states that an operating term shall be required for each mining use permit, and that the maximum length of any mining permit shall be 30 years. Extensions beyond the permit expiration would require further environmental review and discretionary approval. As part of the Project, the Applicant proposes that the County amend the last sentence of Policy MR-n and Zoning Code section 17.88 to delete the 30-year limit on mining permits to allow request for a 100-year mining permit. The proposed amendments to the General Plan and Zoning Code to allow a 100-year mining permit would not, in and of themselves, result in a significant environmental impact. The potential environmental impacts associated with operation of any mining project for 100 years would be required to be analyzed in an environmental document to assure that all feasible mitigation measures are employed and all reasonably feasible alternatives have been considered. This Draft EIR analyzes the proposed Project and all potentially significant environmental impacts for a 100-year mining permit. The mitigation measures presented throughout the other sections of this EIR specify the timing and

duration applicable to each mitigation measure. In most cases, the mitigation measures related to operation of the proposed Project apply to the entire operational life of the Project, and would be implemented on an on-going basis throughout the 100-year permit timeframe of the Project. The ongoing implementation of these mitigation measures would ensure that operational impacts associated with the Project are continuously mitigated to the greatest extent feasible throughout the life of the Project. Other applications for a 100-year mining permit would similarly be required to mitigate potentially significant environmental impact. As such, the proposed changes to the mining permit time limits to the General Plan and Zoning Code, would not result in a significant environmental impact.

The Project also includes a detailed Reclamation Plan, as described in greater detail in Chapter 2.0 of this EIR. The Reclamation Plan has been developed to be consistent with SMARA and Chapter 18.04, Surface Mining and Reclamation, of the Shasta County Code. The Reclamation Plan, which includes the Project's Revegetation Plan, are contained in Appendix C.

Based on the foregoing discussion, the Project would have a **less than significant impact** on applicable plans, and regulations.

MITIGATION MEASURES

None required.

.