MOODY FLATS QUARRY PROJECT
AESTHETICS

DECEMBER | 2009

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Lead Agency
Shasta County, Department of Resource Management – Planning Division

Applicant/Operator
Moody Flats Quarry, LLC

BENCHMARK RESOURCES

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Lead Agency
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AESTHETICS

This section describes the visual character of the Moody Flats Quarry (Project) site and surrounding vicinity, and describes the impacts on visual resources resulting from the Project. Elements considered in this section include the degree of natural screening by vegetation and topography, relative size of features, and the length of time these features are in view.

1.0 METHODOLOGY AND TERMINOLOGY

The Project site was visited on several occasions to document the existing visual character of the site and the surrounding vicinity. Extensive photographic documentation of the Project site's existing visual character was taken from public viewsheds surrounding the site. These photographs were taken from locations with representative views of the Project site. Computer simulations were generated from the same locations from which the photographs were taken. Project-specific information, including specific facility details, was included in the computer simulations. In addition, existing aerial photographs, topography, and Shasta County (County) literature (e.g. General Plan) were reviewed to assess the visual quality of the area. Elements considered in determining the Project's change to the visual character of the site or surroundings included the degree of natural or Project purposed screening by vegetation, topography, relative size of Project features and components, and the length of time the features are in view.

The procedure for analysis in the visual assessment was based, in part, on the visual impact assessment methodology employed by the Federal Highway Administration,

the Bureau of Land Management (BLM), and the United States Forest Service. The assessment was conducted in a series of steps:

1. Defining the Project setting and viewsheds;
2. Identifying sensitive view receptors for assessment;
3. Analyzing the baseline visual quality and character of the identified views;
4. Depicting the visual appearance of the Project from the identified views;
5. Assessing the Project's impacts to those views in comparison to their baseline visual quality and character; and
6. Proposing methods to mitigate any potentially significant visual impacts identified.

To assess the potential for aesthetic impacts associated with implementation of the Project, the analysis focuses on the degree to which the Project directly and/or indirectly diminishes or enhances the existing visual quality and character of the natural environment. The analysis depends largely on the visual contrast created between the Project and the existing landscape. Visual contrast is measured by comparing the Project's features with the major features in the existing landscape. While an assessment of potential visual impacts is by nature somewhat subjective, qualitative criteria such as an evaluation of basic design elements of form, line, color, and texture are used to make this comparison and describe the visual contrast created by the Project.

2.0 EXISTING CONDITIONS

2.1 Regional Landscape

The County is situated where the Central Valley of California meets the convergence of the Klamath and Coastal Mountain Ranges to the northwest and west and the Cascade Mountain Range to the northeast and east. The County comprises approximately 3,850 square miles of diverse landscape and a population of nearly 182,000 concentrated within its central-valley flat lands. 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 recreation opportunities for the region. The Sacramento River, California's largest and longest river, runs through the center of the County as it flows south toward the San Francisco

Bay. Vast areas of land, primarily unpopulated forest land, in the county remain under government ownership regulated by both federal and state agencies.

2.2 Project Site Characteristics

The Project site is located in western Shasta County on undeveloped open space lands, as shown in AES-Figure 1, Site Location, and AES-Figure 2, Existing Conditions Aerial Photograph. The site is located at the extreme end of the Central Valley where it begins its transition from a flat plain at the southeastern and eastern portion of the site into the foothills of the Cascade and Coastal Mountain Ranges to the west and northwest. The elevation of the site ranges from approximately 800 feet to 2,000 feet above mean sea level (amsl).

The site encompasses approximately 1,900 acres dominated by Montane Hardwood-Conifer and Montane Hardwood vegetative habitats. The vegetation provides the greatest visual variation of the site. The Montane Hardwood-Conifer and Montane Hardwood habitats provide a dense green backdrop to the site year-round. The non-native grassland, some riparian woodland and mixed oak woodland, and wet meadows are typically deciduous. Their leaves begin to change color from green to yellow in the spring, brown from late summer to fall, and eventually fall from the tree or die in the late fall and winter. This late summer, fall, and winter colors provide a contrast of colors against the evergreen Montane Hardwood habitats that occupies much of the site. Three intermittent streams (Moody Creek, Rancheria Creek, and Salt Creek) transverse the center and eastern portions of the site.

The only major man-made structure on the site is the Union Pacific Railroad line traversing the eastern portion of the site. The railroad line is approximately 15 feet wide, including the iron rail lines, railroad ties, and ballast rock.

Photographs of existing conditions where Project components would be developed are shown in AES-Figures 3a through 3c, Existing Conditions Photographs.

2.3 Surrounding Visual Environment

The Project site is situated in a rural portion of the County. Views of the Project site are generally uninterrupted by buildings, residences, and other structures common of urbanized and residential areas but would be hindered by topography and intervening vegetation. The views in the surrounding area are similar to that within the Project site

Figure 1, Site Location

Figure 2, Existing Conditions Aerial Photograph

Figure 3a, Existing Conditions Photographs

Figure 3b, Existing Conditions Photographs

Figure 3c, Existing Conditions Photographs

and characterized by open grassland with clusters of oak trees to the east, and Montane Hardwood-Conifer and Montane Hardwood habitats to the west, north, and south (see AES-Figures 3a through 3c).

The site is surrounded by open space with a limited number of residential properties to the northeast, south, southeast, and southwest. The closest residential properties to Project development are approximately ½ mile to the southwest of the South Pit and 1 mile to the southeast. Several other aggregate mines are located in the vicinity, with the closest approximately 1.5 miles to the northeast.

The City of Shasta Lake (City), the closest urbanized area, is located south of the Project site. Much of the views in the area of the City are characterized by urban and residential development with distant views dominated by the Klamath and Cascade Mountain Ranges to the north, east, and west.

Roadways near the Project site include Interstate 5, Digger Bay Road, and Shasta Dam Boulevard. Interstate 5 is the closest major public roadway, and is located east of the site. Digger Bay Road is a windy two-lane road that cuts through the western edge of the property, connecting Digger Bay of Shasta Lake to Shasta Dam Boulevard. Shasta Dam Boulevard is a two-lane road starting at Interstate 5 and continuing west to Shasta Lake Dam.

2.4 Public Views and Sensitive Receptors

The Project site may be seen from multiple locations in varying degrees but can be characterized by three general locations which are representative of all areas from which the Project site may be viewed. AES-Figure 4, Viewpoint Locations, shows the general locations of these areas and their distances from the Project site.

2.4.1 Roadways

Digger Bay Road

Digger Bay Road is a private/public roadway traveling through the western edge of the property. The roadway is a windy two-lane road with varying topography and elevation changes. Digger Bay Road extends from Pickard Street/Shasta Park Drive to the north, ending at Digger Bay Marina and Shasta Lake, approximately 1.5 miles in total length. No large intersections or stop lights are located along Digger Bay Road. The posted speed limit along Digger Bay Road is 35 miles per hour.

Figure 4, Viewpoint Locations

The Project site is visible in varying degrees along stretches of Digger Bay Road where breaks in vegetation or elevations of the roadway allow views. These views are limited to an approximately ¼-mile stretch when first turning onto Digger Bay Road from Pickard Street/Shasta Park Drive and approximately ½-mile further north where the road rises in elevation for a very short segment before it descends into Digger Bay Marina and Shasta Lake.

For vehicles driving on Digger Bay Road, the views of the Project site would generally be brief because they would be seen while traveling in an automobile moving at posted motor vehicle speeds of 35 miles per hour. There are currently no residences, bike lanes or other recreation trails that are located along or follow this stretch of Digger Bay Road. There are no completely unobstructed direct line of sight views of any aspect of the Project site (see AES-Figures 5a through 5d, Visual Analysis Cross-Sections).

Shasta Dam Road

Shasta Dam Road is currently a two-lane major collector road primarily going east/west from Interstate 5 to the Shasta Dam. The road provides a route through the center of the City and major residential and commercial areas of the City. The speed limit along Shasta Dam Road ranges between 30 and 45 miles per hour.

The Project site is partially visible within two ¼- to ½-mile stretches on the west side of the City. The first area of partial visibility is between where Shasta Dam Road crosses the Union Pacific Rail line and Hardenbrook Avenue. The second area of partial visibility is between 1st Street and Shasta Park Drive. These views are not direct line of sight views because of intervening topography, vegetation, and commercial and residential buildings. In addition, the Project site is approximately 1 to 1.5 miles north of these areas on Shasta Dam Road (see AES-Figures 5a through 5d). Therefore, drivers traveling along these portions of Shasta Dam Road would only have brief, partial views of the site, due to their driving speed and the intervening topography, vegetation, and structures.

Interstate 5

Interstate 5, a north-south freeway, is the closest major roadway and has partial views of the Project site approximately 1 mile to the east. The intersection of Interstate 5 and Mountain Gate Road will provide access to and from the Project site. This stretch of Interstate 5 has limited commercial or residential development and provides unobstructed views of the surrounding natural environment. The speed limit through this stretch of Interstate 5 is 65 miles per an hour (see AES-Figures 5a through 5d).

Figure 5a, Visual Analysis Photographs and Cross-Sections

Figure 5b, Visual Analysis Photographs and Cross-Sections

Figure 5c, Visual Analysis Photographs and Cross-Sections

Figure 5d, Visual Analysis Photographs and Cross-Sections

2.4.2 City of Shasta Lake

The City is the closest incorporated city to the Project site with moderate residential and commercial infrastructure (see AES-Figure 2). From most viewpoints in the City, the Project site is completely out of sight because of intervening residential and commercial buildings, natural topography, and vegetation. The few areas of the City that would have views of the Project site are residences located within the City's northern limits (see AES-Figures 5a through 5d).

2.4.3 Surrounding Residences

Rural residencies are scattered in the surrounding vicinity of the Project site. These residences are located primarily to the southwest and southeast with the majority of these residences approximately 2-3 miles away from anticipated surface disturbance. These residences would not have views of the Project site because of intervening topography and vegetation. Only some residences located within the valleys near Digger Bay Road and Black Canyon Road would have partial views of the site; however, these residences would typically not have direct line of sight views of surface disturbing activities because of intervening vegetation and site distance.

3.0 REGULATORY SETTING

3.1 State

3.1.1 California Scenic Highway Program

The California Scenic Highway Program was enacted in 1962 to protect and enhance California's scenic beauty by identifying and conserving those portions of the state highway system that would diminish aesthetic values of surrounding lands if changed. A highway may be eligible for designation as "scenic" based on landscape seen by travelers on that highway, quality of the landscape seen, and the extent development would intrude on enjoyment of the landscape. Prior to official designation of a highway as scenic, a city or county must nominate the highway for designation and adopt ordinances that protect its scenic quality. The City or County then applies to the California Department of Transportation for scenic highway approval. A list of approved state scenic highways is provided in Section 263 of the Streets and Highway Code.

3.2 Local

3.2.1 Shasta County General Plan

The General Plan contains various goals and policies to protect and/or preserve aesthetic resources; within the Scenic Highways Element, the following policies are applicable to the proposed Project.

SH-1: Protection of the natural scenery along the official scenic highways of Shasta County from new development which would diminish the aesthetic value of the scenic corridor.

SH-2: New development along scenic corridors of the official scenic highway should be designed to relate to the dominant character of the corridor (natural or natural and man-made contrast) or of a particular segment of the corridor. Relationships shall be achieved in part through regulations concerning building form, site location, and density of new development.

SH-3: Recognition that the management practices of agriculture, timber, and other resource-based industries which may cause some degradation of the visual quality of the scenic corridor are inevitable but their impacts are temporary.

SH-4: To protect the value of the natural and scenic character of the official scenic highway corridors and the County gateways dominated by the natural environment, the following provisions, along with the County development standards, shall govern new development:

- Setback requirements;
- Regulations of building form, material, and color;
- Landscaping with native vegetation, where possible;
- Minimizing grading and cut and fill activities;
- Requiring use of adequate erosion and sediment control programs;
- Siting of new structures to minimize visual impacts from highway;
- Regulation of the type, size, and location of advertising signs;
- Utility lines shall be underground wherever possible; where undergrounding is not practical, lines should be sited in a manner which minimizes their visual intrusion.

4.0 THRESHOLDS OF SIGNIFICANCE

The significance of potential aesthetic impacts was determined based upon CEQA Guidelines (CCR §§15000-15387) as they apply, given the Project's specifics. Using these criteria, the Project would have a significant aesthetic or visual impact if it would cause:

- Substantial adverse effects on scenic vistas;
- Substantial damage to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantial degradation of the existing visual character or quality of a site and its surroundings; or
- Creation of a new source of substantial light and glare which would adversely affect day or nighttime views in the area.

5.0 ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND SIGNIFICANCE DETERMINATIONS

Impact AES-1: Effect on a Scenic Vista

A scenic vista is defined as an area that is designated, signed, and accessible to the public for the express purpose of viewing and sightseeing. There are no designated scenic vistas located within the viewshed of the Project site.

Level of Significance Before Mitigation: Less than Significant

Mitigation Measures: None Required

Impact AES-2: Effect to Scenic Resources for a State Scenic Highway

The Project site is located in western Shasta County, west of Interstate 5 and north of the City. The closest officially-designated scenic highway is Shasta Dam Boulevard, 2 miles west of the site (see AES-Figure 6, Scenic Highways). The distance between the Project site and the scenic highway, along with the influences of intervening topography and vegetation eliminate the potential for a substantial adverse impact on the scenic highway visual resources.

Level of Significance Before Mitigation: Less than Significant

Mitigation Measures: None Required

Figure 6, Scenic Highways

Impact AES-3: Effect to Visual Character of Site and Surroundings

The Project site is located in western Shasta County and characterized by open space primarily consisting of Montane Hardwood-Conifer and Montane Hardwood vegetative habitats. Other vegetation on-site consists predominately of non-native grassland, white leaf manzanita chaparral, mixed oak woodland, and riparian woodland. Limited wetland and riparian vegetation is found in the areas of watercourses and seasonal wet areas. The only man-made structure on-site is the Union Pacific rail line which transverses the eastern portion of the Project site.

The Project site will include a quarry, aggregate processing facility, plant site (including ready-mix, asphalt batch plant), rail spur/siding area, administration complex, on-site haul roads, and various other stockpile and processing areas. Mining of each Pit will result permanent alteration to the existing topography and visible surface disturbance to some surrounding public receptors. Mining is anticipated to begin with the development of the South Pit and will take approximately 20-30 years to develop. Once developed to proposed design standards, mining of the North Pit would begin for the remaining 70 years. Development of all features within the primary processing plant, secondary and ancillary processing plant, and rail spur/siding facility will take place during the first 15 years of Project life, depending on market conditions and demand factors.

South Pit

South Pit development would be most visible to motorists along Digger Bay Road and residences to the southwest, due to the lowering of a ridgeline (the west wall of the South Pit), by approximately 50-100 feet. The visible disturbance would be limited for several reasons. First, motorists on Digger Bay Road would be traveling at speeds of approximately 25 to 45 miles per an hour and would only have views of this area for less than 1 minute. Second, these motorists would be traveling on a roadway surrounded by tall and dense vegetation and/or intervening topography that would block much of the views of this ridgeline. The residences to the southwest are approximately ½ mile from proposed surface disturbance. Intervening topography and existing vegetation that would remain undisturbed would limit views of surface disturbance and mining related activity. Mining operations would also only disturb those areas visible to travelers on Digger Bay Road and residences to the southwest during the initial development of the South Pit. Upon completion of the first two benches, the ridgeline would be lowered, concurrently reclaimed, and any

additional surface disturbance would not be visible as it would be occurring on the east side of this ridge.

North Pit

The North Pit and the development associated with the secondary and ancillary processing and load-out area, and rail spur/siding area, may be visible, though at a far distance, to residences located northeast and southeast of the Project and motorists on Interstate 5. Sight distances of almost 2 miles, intervening topography, and vegetation that would remain undisturbed would partially hinder views. Motorists traveling on Interstate 5 would be approaching speeds of 65 to 70 miles per hour and would therefore have views of the Project site for less than a minute. The views available would be of the active quarry face of the North Pit and the various buildings, structures, and development associated with the secondary and ancillary processing and load-out area and rail spur/siding area. These views would not be atypical of the varied commercial, residential, and open space views that are common along Interstate 5. In addition, other active mines are visible to motorists on Interstate 5 approximately 1 mile farther north.

The Project will be screened from the views of the residences to the south east of the Project site due to intervening topography, vegetation, and sight distance. Some viewpoints in the City will have, at most, minimal views of the Project due to intervening residential and commercial buildings for a majority of the residences and visitors.

Due to sight distance, intervening topography and vegetation, the relative rural location of the site, and the similar surroundings, it is unlikely the changes to the existing topography will substantially degrade the visual quality or character of the site. However, since some changes to the visual character of the site will result from the proposed Project, and would be visible to some surrounding receptors, this impact is considered significant and unavoidable.

Level of Significance Before Mitigation: Significant and Unavoidable

Mitigation Measures: None Feasible

Impact AES-4: Introduction of Light or Glare

Table 1, Hours of Operation, provides the Applicant's proposed hours of operations for mining, blasting, processing, and hauling operations.

Mining operations will generally only occur during daytime hours, with processing and hauling operations occurring during both daylight and evening hours. Such operations would create sources of night lighting, which could be visible from outside the Project site, due to the nighttime operation of the processing facilities and vehicles traveling to and from the Project site. Daytime and nighttime glare would also occur as light reflects off equipment, building windows and vehicles. Currently, minimal night lighting and daytime or nighttime glare exists in the Project vicinity.

TABLE 1
HOURS OF OPERATION

Operations	Hours
Quarry	6:00 a.m. to 10:00 p.m., Monday – Friday. 6:00 a.m. to 3:00 p.m. Saturday
Blasting	Daylight hours (no earlier than 6:00 a.m. and no later than 10:00 p.m., Monday – Friday)
Crushing/ Processing	24 hours a day, 7 days a week
Loading/ Hauling/ Transport	24 hours a day, 7 days a week

Nighttime Lighting

Current night lighting is primarily limited to lights from the Interstate 5 freeway adjacent to the Project site and commercial buildings and residences in the City located approximately 2 to 3 miles south. Project-related nighttime lighting would be limited to some nighttime mining operations (between 5:00 p.m. and 10:00 p.m. depending on the time of year) but primarily from processing, loading, and hauling operations that could occur 24 hours a day. Much of this light would be restricted to the plant site and processing area and haul trucks traveling along the haul road to Interstate 5.

The nearest visual receptors would be travelers along Interstate 5 and residences to the southeast looking northwest up the valley towards Moody Flats. Motorists traveling on Interstate 5 would be going speeds in excess of 65 miles

per hour and would only have a brief glimpse of the plant site, processing and loadout area, and rail loadout facility. The residences to the southeast would have views of this area at a distance of approximately 1 mile with intervening vegetation and a slight rise in elevation. Because of the lack of any other light pollution in the area, lighting from these facilities may create a glow that would be visible by these receptors. This impact is potential significant.

Glare

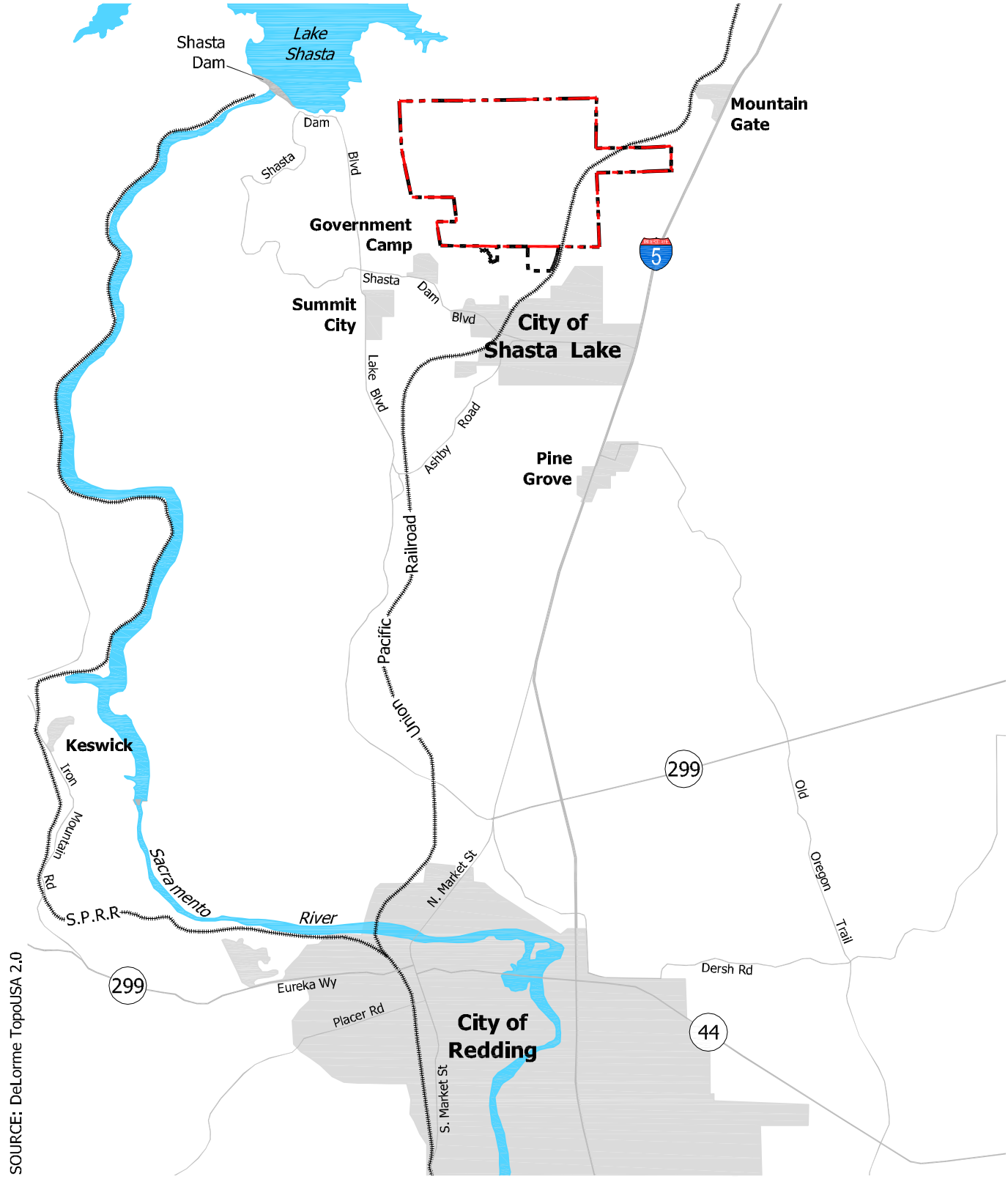
Existing glare in the Project vicinity is limited to vehicles traveling along adjacent roadways and the commercial and residential buildings in the City. Addition of activities associated with the Project would create a new source of glare due to the addition on-site construction vehicles and administrative building windows. As described above, much of this glare would not be visible to travelers along nearby Interstate 5 or residences to the southeast because of traveling speeds, distance, and intervening vegetation and topography. The additional glare would not substantially affect day or nighttime views in the area; therefore, this impact is less than significant.

Level of Significance Before Mitigation: Potentially Significant

Mitigation Measures: Mitigation Measure AES-1

To reduce direct and reflected light pollution, lighting at the Project site shall be equipped with shields that concentrate the illumination downward to limit the light that is cast off of the site. The direct source of the lighting (bulb, lens, filament, tube, etc.) shall be installed as low as possible on poles and/or structures as to minimize reflected light pollution. The candle power of the illumination at ground level shall not exceed what is required by any safety or security regulations of any government agency with regulatory oversight of the mining operation.

Level of Significance After Mitigation: Less than Significant

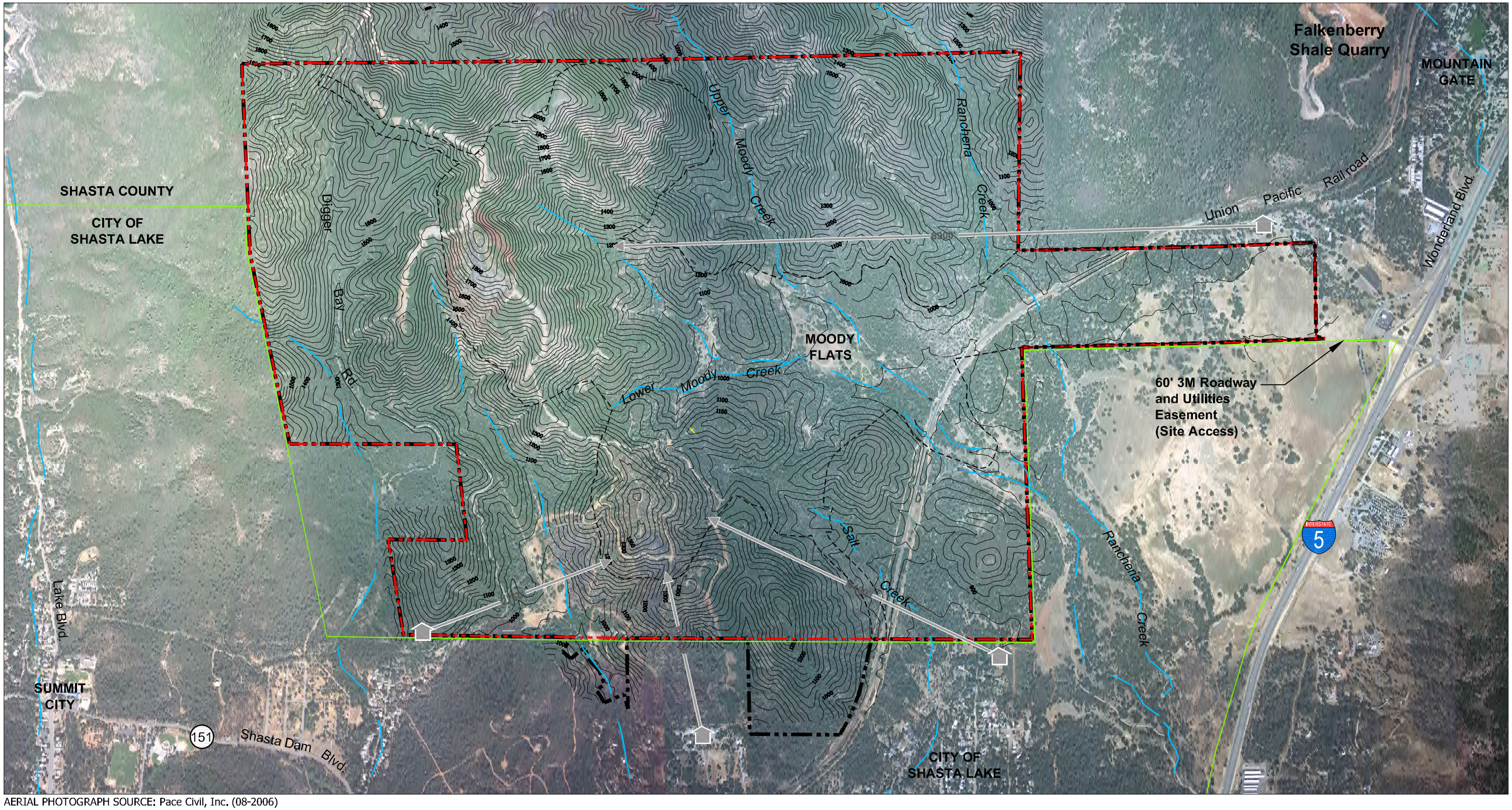


Site Location

MOODY FLATS QUARRY

BENCHMARK RESOURCES

AES - Figure 1



AERIAL PHOTOGRAPH SOURCE: Pace Civil, Inc. (08-2006)

N

0 1 1/2 miles

SCALE: 1" = 1 1/2 miles

Property Ownership	± 1900 acres
Site Boundary	± 1810 acres
Limits of Surface Disturbance	± 760 acres
City of Shasta Lake Boundary	
Residence	

BENCHMARK RESOURCES

Existing Conditions Aerial Photograph

MOODY FLATS QUARRY

AES - Figure 2

North Pit Mineral Resource (View from West)

South Pit Mineral Resource (View from West)

Existing Conditions Photographs

MOODY FLATS QUARRY

BENCHMARK RESOURCES

AES - Figure 3a

Processing Plant at Moody Flats (View Southwest)

Overburden Site

Existing Conditions Photographs

MOODY FLATS QUARRY

BENCHMARK RESOURCES

AES - Figure 3b

Overpass Location

UP Mainline and Rail Siding Location

Existing Conditions Photographs

MOODY FLATS QUARRY

BENCHMARK RESOURCES

AES - Figure 3c