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ENVIRONMENTAL CHECKLIST FORM

1.0 PROJECT INFORMATION

A. Project Title

Burney-Hat Creek Bioenergy Facility

B. Lead Agency Name and Address

Shasta County Department of Resource Management, Planning Division
1855 Placer Street, Suite 103
Redding, California 96001

C. Contact Person and Phone Number

Perry Thompson, Vice President
Hat Creek Construction and Materials, Inc.
24339 Highway 89 North
Burney, California 96013
(530) 335-5501

D. Project Location

The site of the proposed project is located at 24339 California Highway 89 (SR 89) and is approximately 4 miles north of the intersection of SR 89 and California Highway 299 East (SR 299E). The proposed bioenergy facility will be located on the Hat Creek Construction and Materials Eastside Aggregates site, which currently operates under Shasta County Use Permit 99-17 and Reclamation Plan 99-01 as a construction yard, rock quarry, rock crushing and screening plant, and asphalt batch plant. General site location is shown on Figure 1. Location of the bioenergy facility on the subject parcel is shown on Figure 2. Layout of the proposed biomass project is shown on Figure 3 and the overall site layout of the property is shown on Figure 4.

E. Project Sponsor's Name and Address

Hat Creek Construction and Materials, Inc.
24339 Highway 89 North
Burney, California 96013

F. General Plan Designation

I (Industrial)

G. Zoning

M (General Industrial)

H. Description of Project (Describe the whole action involved, including but not limited to later phases of the project, any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

1.1 Project Description

Hat Creek Construction and Materials, Inc., seeks to develop a 3-megawatt (MW), community-scale bioenergy facility on the site. The Burney-Hat Creek Bioenergy Facility (the project) will be located on the Hat Creek Construction and Materials site. The project site is located on a 343-acre former wood products site that currently houses Hat Creek Construction and Materials offices, construction equipment storage, an asphalt plant, a concrete plant, a rock quarry, and wild rice cultivation. The project is to be located on an unused 9-acre portion of the site as shown on Figure 2. The project will produce up to 3 MW of electricity and a “biochar” byproduct for sale.

The project will use a biomass gasification system, such as the one designed and integrated by West Biofuels. The project will use biomass derived as a byproduct of forest fuel load reduction activities and forest restoration work, and some residuals from sustainable commercial thinning and timber-harvest operations. All fuels used in this project must meet the requirements of the California Public Utilities Commission BioMat Program, which is described in Attachment XX. A majority of the biomass used for the project will be chipped in the field and delivered to the facility. Logs may be brought onsite as part of a cleanup effort following wildfire, storm events, or diseased tree removals. These logs will be chipped onsite. The major components of the project include:

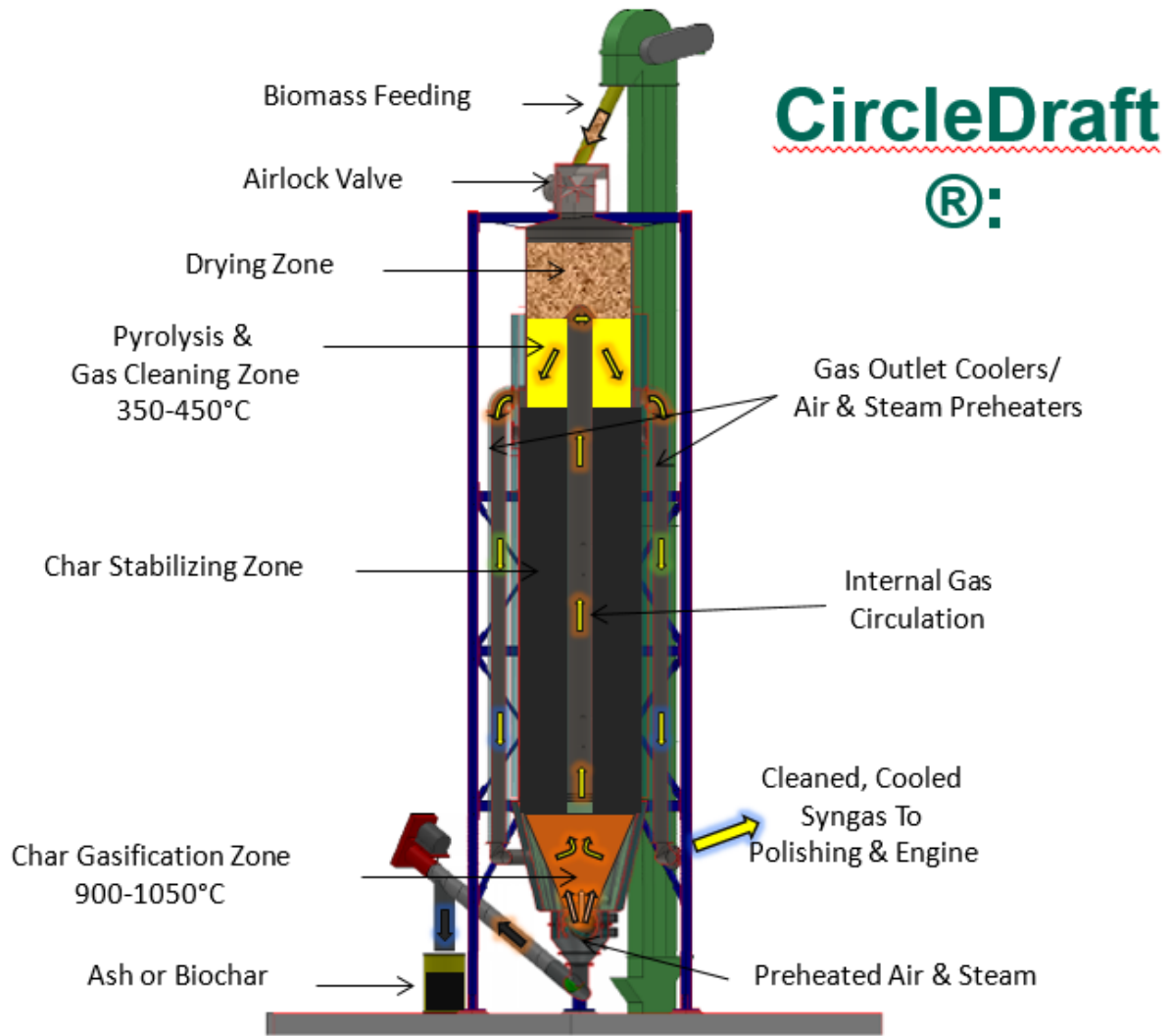
- Feedstock delivery
- Feedstock processing
- Feedstock conveyance
- Gasification
- Gas Conditioning
- Electrical generation
- Heat Recovery
- Biochar collection

Feedstock will be delivered to the site by chip truck and unloaded with a truck tipper or self-unload, in available. Feedstock will be moved into storage by a loader. Before use in the gasifier, feedstock will be processed with a deck screen to remove oversized feedstock, non-wood particles (rock, dirt, etc.), and fines. Feedstock received is estimated to contain 50 percent moisture and will be sent through an integrated heat recovery dryer to decrease moisture to between 10 and 20 percent prior to conveyance into the gasifier. The integrated heat recovery dryer will be a belt or drum dryer that uses process heat from the engine to pre-dry the feedstock. A portion of the wood feedstock will be covered.

In addition to chipped feedstock storage, a log storage area will be located adjacent to the site. In the event of wildfire, storm events, or diseased trees (beetle kill) in the vicinity, logs may be brought onsite as part of the cleanup effort. These logs will be chipped onsite and used as feedstock. Storage and chipping of logs is expected to be intermittent.

West Biofuels offers the CircleDraft gasifier, a direct gasification system designed by the Italian company, INSER. A diagram of the gasifier system can be seen on Figure 5. The CircleDraft

gasifier is configured most closely to a traditional downdraft gasifier; however, it recirculates the gases to the top of the gasifier for char scrubbing of the producer gas before collection. The gasifier is batch fed at the top of the reactor with dual-knife gate valves. Once in the reactor, the feedstock begins in the drying zone where moisture is evaporated. When dry, the feedstock moves to the pyrolysis zone. The pyrolysis zone maintains the temperature of 350°C to 450°C where the volatile gases are driven from the carbon structure of the wood, creating biochar and producing gas. The gas is then pulled through the char stabilizing zone. The char stabilizing zone acts as an initial filter for the gas and creates a temperature and pressure differential across the body of the reactor. The pressure and temperature differential allows for the circular gas flow through the gasifier body. As the char moves through the char stabilizing zone, the char reaches the char gasification zone. Limited air and recycled process water is injected into the char gasification zone to provide enough oxygen to maintain system heat. The char gasification zone is maintained at 900°C to 1,050°C. Detail of a single CircleDraft gasifier unit is shown on the diagram below.



Modulating the air flow, recycled water injection, and biochar removal are the principle mechanism for controlling temperature. The flue pipe in the middle of the gasifier allows the producer gases to recirculate to the pyrolysis zone of the reactor. Flow through the center of the reactor is driven by the temperature and pressure differential across the piping and creates the circular gaseous flow. The gas is removed from the pyrolysis zone after moving through the biochar bed. The char, after moving through the char gasification zone, is removed from the bottom of the reactor by a moving grate. The biochar is cooled below combustion temperatures as it is augured removed from the gasifier and exposed to oxygen.

From the gasifier, the gas is piped to the gas conditioning system, which consists of a gas scrubber and mist eliminator. The scrubber removes particulates, tars, and water from the gas stream. Process water from the scrubber system is reintroduced into the gasifier with the air injection to reintroduce and break down any tars. After the gas conditioning system, the gas is piped to a non-pressurized gas bladder. The bladder allows the producer gas to mix and provides approximately 15 minutes of gas storage, allowing the engine to draw on the gas supply to meet demand.

Electrical generation will be completed through the installation of syngas engine generators, a switchgear, and transformers. Engine-generators will be internal combustion engines designed for syngas and provided by well-known engine manufacturers, including Dresser-Rand (Guascor), Caterpillar, and/or General Electric (Jenbacher). The project is estimated have an effective capacity of up to 3.0 MW for export after station load and will be configured for wholesale grid export. Each engine is enclosed in an individual building to reduce noise emissions. Each engine will be equipped with the Best Available Control Technology-compliant Selective Catalytic Reduction System to reduce NOx emissions. The project is expected to utilize 22,000 bone dry ton (BDT) of waste feedstock per year.

As mentioned above, the gasification process produces biochar as a byproduct. The current market for biochar is as a soil amendment. Biochar produced at the site is expected to be 10 percent of feedstock quantities, or approximately 2,200 BDT per year, on average. A small portion of the produced biochar will be used onsite as a soil amendment for wild rice cultivation. The remainder of the biochar will be sold and shipped offsite by bulk truck. Estimated number of truck trips annually is 2,000, with an average of 6 trucks per day and a maximum of 15.

Necessary project construction will include the erection of a pole barn (approximately 2,500 square feet) to protect a portion of feedstock storage from moisture and wind. As the site is currently an active industrial site, no significant earth-moving activities will be required. Only minor grading will be required. Rock will be laid over existing soil once graded. The existing paved employee parking lot will be used for employee parking. Auxiliary unpaved parking will be made available adjacent to the project site. Approximately 0.5 acres of paving will be completed underneath and adjacent to the gasification equipment. Project construction, including set-up of gasification equipment, is estimated to take three months.

As the proposed project site is located on an active facility, existing fugitive dust controls implemented at the site in accordance with Shasta County Air Quality Management District (SCAQMD) guidelines will continue to be implemented. Use of watering or dust-palliative agents will be employed on all unpaved surfaces; paved surfaces will be swept. In accordance

with CARB commercial vehicle idling regulations and in-use off-road diesel vehicle regulations, idling onsite will be limited to under 5 consecutive minutes for all vehicles.

1.2 Background

The proposed project site has been operated as an industrial site since 1955. The site was originally developed in 1955 by the Lorenz Company as a large sawmill with a planer mill, log ponds, and log storage areas. The mill processed logs and later produced construction materials. In 1962, Farley and Loetscher constructed a plywood plant on the site. The sawmill was sold to and operated by the Fibreboard Corporation, Louisiana-Pacific Corporation, and again by Fibreboard Corporation. The plywood plant closed in 1985 and the sawmill closed in 1989.

Hat Creek Construction and Materials purchased the site and applied for a use permit in 1998 for operation of a construction yard, quarry, rock crusher, asphalt plant, and concrete batch plant. An Environmental Impact Report (EIR) was completed in August 2000 for site operations. Shasta County Use Permit 99-17 was issued for a period of 30 years. The site also serves as headquarters of Hat Creek Construction and Materials. In addition to these activities proposed during the August 2000 EIR, Hat Creek Construction proposed opening a commercial construction yard including a concrete trailer rental site, an outdoor sales area for landscaping materials and a repair shop for the repair of company-owned vehicles. To allow for these operations to occur, 24 acres of the Hat Creek Construction site were rezoned from M (General Industrial) to C-M (Commercial-Light Industrial).

The site currently operates as a rock quarry (Eastside Aggregates) with screening and crushing operations, a concrete batch plant, and an asphalt batch plant on the site. The mine and construction materials operation occur on 85.48 acres of a 343-acre parcel. The quarry operation (Reclamation Plan No. 99-01) extracts between approximately 30,000 and 45,000 cubic yards of material annually. Material extraction is completed by removal of loose rock by loader and excavator with a breaker. The rock is blasted at a maximum of six times per year. Excavated material is transported to stockpiles where it is screened and/or crushed prior to sale. The ready-mix concrete batch plant consists of silos, a gathering hopper, and a mixer and has an output of 8,000 cubic yards per year on average. The concrete batch plant operates Monday through Friday, and occasionally on Saturdays, from 4:00 a.m. to 8:00 p.m. The asphalt plant has cold aggregate bins, a dryer, a pug mill for mixing the aggregate with asphalt oil, a heated storage bin, and conveyors. The asphalt oil is stored in a heated tank. The asphalt batch plant has a permitted average annual production of 100,000 cubic yards. Operating hours of the asphalt batch plant are the same as for the concrete batch plant. Current site layout showing site industrial activities is shown on Figure 4.

The commercial construction yard operates under Shasta County Use Permit No. 99-05 which was adopted in November 2000 following CEQA review/EIR (State Clearinghouse No. 2000062079). In 2013, UP-05 was modified to allow for operation of a 50-barrel brewery (producing up to 62,400 barrel/year). The brewery operates under a 2,500 square-foot metal building with an adjacent storage area.

The current mine and construction materials operation operates under County Use Permit No. 99-17, also adopted following the 2000 EIR. The proposed project fits within the limitations of the current use permit. The conditions and limitations specified in the use permit include:

Operations

<i>Project Operation</i>	<i>Maximum Production Level (cubic yards annually)</i>	<i>Maximum Hours of Operation (daily)</i>
<i>Quarry</i>	<i>45,000</i>	<i>12</i>
<i>Crushing and Screening Operation</i>	<i>45,000</i>	<i>24</i>
<i>Concrete Batch Plant</i>	<i>25,000</i>	<i>14</i>
<i>Asphalt Plant</i>	<i>100,000</i>	<i>16</i>

The hours of the quarry operations shall be limited to 4:00 a.m. to 8:00 p.m., Monday through Friday, with the normal hours of operation from 7:00 a.m. to 5:00 p.m., Monday through Friday, and with occasional work limited to between 7:00 a.m. to 5:00 p.m. on Saturdays.

The hours of the crushing and screening operation shall be limited to 4:00 a.m. to 8:00 p.m., Monday through Saturday.

The hours of the concrete batch plant operation shall be limited to 4:00 a.m. to 8:00 p.m., Monday through Friday, with the normal hours of operations from 6:00 a.m. to 3:00 p.m., Monday through Friday, and with occasional work limited to between 6:00 a.m. to 3:00 p.m. on Saturdays.

The hours of the asphalt plant operation shall be limited to 4:00 a.m. to 8:00 p.m., Monday through Friday, with the normal hours of operation from 6:00 a.m. to 5:00 p.m., Monday through Friday, and with occasional work limited to between 6:00 a.m. to 5:00 p.m. on Saturdays.

The quarry operation, crushing and screening operation, concrete batch plant, and asphalt plant may be operated on Sundays and during hours other than those listed in Section A through D above, provided that the permittee has a written contract with a public agency that, for public health and safety reasons, requires that material be produced and/or transported on Sundays or during specific hours. The permittee shall notify the Director of the Department of Resource Management a minimum of 24 hours prior to the commencement of such operations, and shall notify the Director again within 24 hours of the cessation of operation in said time period.

Trucks/vehicles per day

<i>Project Activity and Traffic Type</i>	<i>Maximum Number of Round Trips per Day</i>
<i>Concrete Batch Plant truck</i>	<i>200</i>
<i>Asphalt Plant truck</i>	<i>300</i>
<i>Other Industrial Activities truck</i>	<i>60</i>
<i>Employee commute vehicle</i>	<i>74</i>
<i>Miscellaneous vehicle</i>	<i>45</i>

Lighting and illumination

Any onsite lighting shall be shielded from surrounding property.

Mitigation Measure (MM) 4.2.1a. The project applicant shall submit a plan to screen the project site at a level adequate to obscure the view of the site from passenger vehicles on SR 89. Screening measures may include construction of earthen berms and the planting of shrubbery and other vegetation. Vegetation shall consist of species native to the region, and it shall provide adequate screening of the site within a period of five years after planting. Screening measures shall be applied within the buffer area between SR 89 and the existing shop on the project site, from approximately 500 feet north to 500 feet south of the Hat Creek Construction main entrance. In implementing the screening measures, the existing mature trees within the buffer area shall be maintained. In the event that vegetative screening is utilized, annual monitoring reports shall be required to document the incremental effectiveness of the barrier in screening views. The report shall include photo documentation.

MM 4.2.3a. The County shall attach conditions to the use permit which require that lighting be shielded and/or directed so that it does not shine offsite. No use, including vehicles, will be allowed to create intense light or glare that causes a nuisance or hazard beyond the property line. Proposed new lighting shall be shown on building/site plans for review and approval by the Planning Division. The lighting on the site shall be monitored by the Building Division at the time of building permit issuance and inspection.

MM 4.2.3b. All new buildings shall either be painted or constructed of materials of neutral or earth tone colors. Roofing material shall be a non-glare, non-reflective material.

Noise

All off-road vehicles shall meet State regulations for noise abatement.

1.3 Environmental Setting

1.3.1 Visual Quality

Although the specific project site is industrial in nature, and has been since 1955, the site is located in a region considered to have high scenic value. The southern end of the Cascade mountain range traverses the area; thus, the region contains mountainous areas interspersed with mountain valleys and meadows. Several volcanic features, such as lava tubes and lava flows, are found throughout the region. Lassen Peak is visible to the south. Mt. Shasta may be seen to the north. The region is forested, consisting of ponderosa pine and mixed conifer forest. The project site is surrounded by pine forest. The timberlands are portions of the Shasta National Forest although is managed by private timber companies. Several major streams are located in the region, among them the Pit River, Fall River, and Hat Creek. Lassen Volcanic National Park is located approximately 30 miles south of the project site, and Ahjumawi Lava Springs State Park is located approximately 12 miles northeast.

The proposed project is located on a site that has been previously developed for industrial uses. Most of the original buildings were removed after closure of the sawmill in 1989. Structures that remain on the site include a barn, a shop, an office building, and truck scales. There are also concrete slabs, a railroad spur, and an unimproved airstrip. A former log pond with surrounding levee is a prominent feature on the project site. A pond and two rice field wetlands are the most notable semi-natural features on the site. Most of the project site has been graded and cleared of vegetation.

The bluff along the eastern boundary of the project site is the most prominent visual feature onsite. It is also visible from portions of SR 89 as it extends beyond the project site boundaries for approximately two miles, from north of the closed commercial building to the McCloud Railroad tracks. The bluff consists mostly of broken lava rock interspersed with disturbed areas. These are small trees and shrubs scattered on the face of the bluff, but in small numbers. As with the structures on the project site, visibility of the bluff from SR 89 varies, depending upon the presence and density of vegetation along the roadway.

In the vicinity of the site, the main scenic attraction is Burney Falls, located within McArthur Burney Falls Memorial State Park approximately $\frac{3}{4}$ mile northwest of the project site. Lake Britton, a reservoir operated by Pacific Gas & Electric Company, is located north of and adjacent to the state park.

A pine forest buffer is located between SR 89 and the proposed project site. The forest buffer varies in width along the northwestern corner of the larger parcel. Along other segments of SR 89, the buffer exceeds 500 feet in width. Generally, the forest limits the visibility of site activities. At the entrance to the site, existing buildings and equipment onsite can be seen from SR 89. The southern portion of the site, where the proposed project is to be located, is behind the thickest tree buffer and is obscured from highway views.

1.3.2 Geology

The project site is located in Burney Valley, which is in the southern portion of the Cascade Range and Modoc Plateau geomorphic provinces. The Cascade Range is a chain of Quaternary volcanoes that overlie slightly older Tertiary volcanic rocks. Erupted volcanic debris blankets the Cascade Range geomorphic province within Shasta County. The Modoc Plateau in northeastern Shasta County is characterized as a large, undulating highland, drained by the Pit River and composed of assorted Miocene to Holocene volcanic rocks principally basaltic in composition. The Burney Valley is bounded by two faults. A western member of the Hat Creek Fault, which runs along the eastern boundary of the project site, forms the eastern boundary of the valley. Approximately three miles west of the project site, another normal fault along an east-facing escarpment known as Rocky Ledge forms the western boundary.

The site itself is underlain by Pleistocene volcanic rock, composed mainly of basalt. The basalt is black to blue-black in color, and it is vesicular in character, meaning that it contains small cavities formed by entrapment of gas bubbles during solidification of the rock. A vertical fault scarp with a height from 60 to 80 feet runs along the eastern edge of the industrial area of the site. The bluff is composed of black to blue-black vesicular basalt that is Pleistocene in age. The faulted basalt form a west-facing hummocky and blocky cliff, built up of successive layered flows that exhibit well-developed columnar jointing. The bluff facing is covered with basalt talus varying in size from 6 inches to over 6 feet. The talus slope angle ranges from 1.25:1 to 1.5:1.

Northeastern Shasta County has several faults which have been active in Holocene times (within the last 11,000 years). The Hat Creek Fault is located approximately 8 miles southeast of the project site, and the McArthur Fault is located approximately 14 miles to the east. None of the faults in the vicinity of the project site have been recorded as active in recent times.

A fault exists along the base of the bluff on the project site. According to the 1994 Fault Activity Map of California, this fault has experienced activity within the last 11,000 years. Fault displacement at the project site is about 40 feet. No significant activity in historical times has been recorded. A site inspection by an engineering geologist in 1995 revealed no evidence of geologically recent movement along the bluff. Nevertheless, this fault has been designated by the State Geologist as an Alquist-Priolo Earthquake Fault Zone. The Alquist-Priolo Earthquake Fault Zoning Act is discussed later in this document. Faults in the vicinity and on the project site are shown on Figure 6.

The nearest volcano to the project site that has been active in recent history is Lassen Peak (located approximately 35 miles to the south). Lassen Peak experienced eruptions from 1914 to 1917. The characteristics of these eruptions included ash clouds, mudflows, and pyroclastic flows. The damage caused by these eruptions was limited to the area now encompassed by Lassen Volcanic National Park. Mt. Shasta, which last erupted in 1786, is located approximately 42 miles northwest of the project site. Another recently active volcanic site is the Medicine Lake area in Siskiyou County, approximately 42 miles to the north. A burnt lava flow in the area was estimated to have occurred in 1750.

1.3.3 Soils

The *Soil and Vegetation Survey-Intermountain Area, Parts of Lassen, Modoc, Shasta and Siskiyou Counties*, mapped the soils in the area. Soils under the project site have been identified as Burney-Arkright complex, 2 to 9 percent slopes. Soils within this complex are well drained with medium surface runoff and formed from slope alluvium derived from basalt. Other soils in the vicinity of the project area are Rubble land – Xerothents complex, 50 to 70 percent slopes, and Winnibulli loam, 0 to 2 percent slopes. The Rubble land – Xerothents complex is well drained with high surface runoff and formed from colluvium derived from igneous rock. Winnibulli loam is somewhat poorly drained with high surface runoff and formed from alluvium derived from igneous rock. Soils are included on Figure 7.

1.3.4 Hydrology

There are no streams located on the Hat Creek Construction and Materials site. Overall, surface drainage on the site, which includes the quarry, plants and proposed project site, flows from the south to the northwest. Flow is intercepted by the historical log pond (now used for wild rice production) and another adjacent detention basin, also used to produce wild rice. No stormwater discharges from the site. Hydrologic features on the site and in the general vicinity are shown on Figure 8.

The project site is within the Burney Creek watershed. The nearest stream to the site is Burney Creek, approximately one mile to the west. Overflows from Burney Creek entered the project site during flood events in 1995 and 1997. In the flood of 1997, water accumulated a few feet deep along the north side of the former log pond and between the pond dike and the slope to the east. The water eventually exited the site to the northeast going back to Burney Creek under SR 89. Based on flow records from stream gaging stations on Burney Creek and others in the region, overflow from Burney Creek reaches the project site in flood events of 10-year recurrence intervals. One study determined that the source of these floodwaters was an abandoned irrigation ditch located just north of the Hat Creek Construction and Materials site.

entrance from SR 89; however, a review of that study indicated that the ditch was likely ineffective in carrying flood flows, and that the topography in the vicinity may be more responsible.

The project site is part of the Burney Groundwater Basin watershed in a portion of the southernmost Cascade mountain range that includes Hat Creek and Burney Creek. Most of the surface water in the Hat Creek Basin originates from five large-volume springs that discharge from volcanic rocks. The total volume of discharge from these five springs is approximately 700 cubic feet per second (cfs). The springs represent approximately 10 percent of the total volume of water flowing into Shasta Lake. One of these springs is the primary source of water at Burney Falls. The Burney Falls spring has a discharge of approximately 1483 cfs. In 1993-1994, a study of the hydrology of the Hat Creek Basin determined the origin of water for this spring by testing samples of water from Burney Falls, Burney Creek, and other areas. It was presumed that Burney Creek, which disappears south of Burney Falls in the drier season, is a main source. However, the results of the study indicated that a main recharge area for Burney Falls spring is an area approximately 5890 to 6833 feet in elevation, which would correspond with Burney Mountain and/or the northern Crater Peak area, approximately 12 to 20 miles south of the project site. More recent studies indicate that up to possibly 39 percent of the flow from Burney Falls may come from inflows from the Hat Creek groundwater basin, east of the project site.

In 1996, the California Regional Water Quality Control Board (RWQCB) identified the existence of a shallow groundwater aquifer beneath the project site as part of an investigation associated with previous sawmill activities. The project site is underlain by a sequence of late Pleistocene weathered, jointed and vesicular basaltic lava flows. Above the basalt lies a thin surface layer of reddish-brown silty loam. Because of the many interconnected pore spaces occurring as shrinkage cracks or joints, fractures from mechanical forces and cavities between lava flows, the basalt has a very high ability to transmit water (hydraulic conductivity). Groundwater pumped from wells on the site is considered an excellent source of drinking water because of the high volume and low total dissolved solids. Based upon a hydrogeologic investigation report prepared for Louisiana-Pacific Corporation on the project site, the groundwater levels vary from approximately 7 to 24 feet bgs, with an average depth of approximately 14 feet. Groundwater beneath the project site flows in a northwesterly direction toward Burney Falls. The hydraulic gradient, or slope of the water table, is approximately 0.0012 feet per foot. Groundwater velocity at the site was calculated to be approximately 23 feet per day (Carlson, 1986).

1.3.5 Forest Resources

In September 2012, Governor Brown signed SB 1122 (Rubio, 2012) into law, requiring an incremental 250 megawatts (MW) of renewable Feed-in Tariff (FIT) procurement from small-scale bioenergy projects that commence operation on or after June 1, 2013.

The statute requires that each of California's three large investor-owned utilities (PG&E, SCE, and SDG&E) must procure a share of the statute's 250-MW requirement based on the ratio of each utility's peak demand to statewide peak demand. Additionally, the statute orders the California Public Utilities Commission (CPUC) to allocate the 250-MW procurement requirement among the following categories:

- i) For biogas from wastewater treatment, municipal organic waste diversion, food processing and codigestion (110 MW)
- ii) For dairy and other agricultural bioenergy (90 MW)
- iii) For bioenergy using byproducts of sustainable forest management (50 MW)

The objective of SB 1122 was to encourage forest thinning and fuels reduction projects on private and federal forest land through providing local small biomass conversion facilities. Shasta County was identified as an area with volumes and opportunity for success under the program (Black & Veatch, 2013).

The CPUC adopted a checklist developed by Calfire in December 2014 to define what types of forest management activities would be defined under SB 1122 as “sustainable.” Biomass from the following forest management activities was determined to meet the requirements of the program:

- i) *Fire Threat Reduction – biomass feedstock which originates from fuel reduction activities identified in a fire plan approved by CAL FIRE or other appropriate state, local or federal agency. On federal lands this includes fuel reduction activities approved under 36 CFR 220.6(e)(6)ii and (12) thru (14),*
- ii) *Fire Safe Clearance Activities – biomass feedstock originating from fuel reduction activities conducted to comply with PRC Sections 4290 and 4291. This would include biomass feedstocks from timber operations conducted in conformance with 14 CCR 1038(c) 150' Fuel Reduction Exemption, as well as projects that fall under 14 CCR 1052.4 (Emergency for Fuel Hazard Reduction Exemption, as well as projects that fall under 14 CCR 1052.4 (Emergency for Fuel Hazard Reduction), 14 CCR 1051.3-1051.7 (Modified THP for Fuel Hazard Reduction), and 14 CCR 1038(i) Forest Fire Prevention Exemption, Categorical exclusions on federal lands approved under 36 CFR 220.6(e).(6)ii.,*
- iii) *Infrastructure Clearance Projects – biomass feedstock derived from fuel reduction activities undertaken by or on behalf of a utility or local, state or federal agency for the purposes of protecting infrastructure including but not limited to: power lines, poles, towers, substations, switch yards, material storage areas, construction camps, roads, railways, etc. this includes timber operations conducted pursuant to 14 CC1104. 1(b),(c),(d),(e),(f), & (g),*
- iv) *Other Sustainable Forest Management – biomass feedstock derived from sustainable forest management activities that accomplish one or more of the following: 1) forest management applications that maintain biodiversity, productivity, and regeneration capacity of forests in support of ecological, economic and social needs, 2) contributes to forest restoration and ecosystem sustainability, 3) reduces fire threat through removal of surface and ladder fuels to reduce the likelihood of active crown fire and/or surface fire intensity that would result in excessive levels of mortality and loss of forest cover or, 4) contributes to restoration of unique habitats within forested landscapes.*

A form and checklist was developed to further define the Category IV activities. In addition, the following project types were defined to meet the sustainable forest management criteria and were exempted from submitting the additional form and checklist:

- 1) *Sustainable Forest Management projects implemented on state, federal and private ownership which involve meadow restoration, restoration of wetlands, restoration of aspen and other similar activities*

which are undertaken for restoration purposes and are subject to environmental review under CEQA or NEPA.

- 2) *Operations conducted pursuant to an approved Non-Industrial Timber Management Plan where the plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant adverse impacts, evaluates potential significant impacts, and mitigates potential significant impacts.*
- 3) *Operations conducted pursuant to an approved Timber Harvesting Plan or Modified Timber Harvesting Plans on non-industrial timberland ownerships where the landowner is not primarily engaged in the manufacture of wood products and where the approved plan or amendment to the plan evaluates and provides for a discussion of intended biomass operations and byproducts that may have potential significant impacts, evaluates potential significant impacts, and mitigates potential significant impact.*
- 4) *Operations with a total estimated volume of less than 250 bone dry tons.*

The checklist further defines activities considered eligible.

The majority of the site is surrounded by forest land managed by the U.S. Department of Agriculture, Forest Service (USFS), and private timber concerns as shown on Figure 9. Federally managed forests in the project vicinity are overstocked..

Numerous large fires have occurred in the region (see Figure 10). One hundred years of fire suppression has created overstocked forest conditions with more fire-susceptible trees and to larger, more intense wildfires. Forest fuel reduction is effective at reducing future fire intensity and improving tree health without negatively impacting understory vegetation, soil density or erosion, or wildlife. This project is estimated to use 22,000 BDT per year of woody biomass from surrounding forests and would lead to significant ecological improvement in surrounding forests. Fuels reduction limits the wildfire risk and, thus, helps prevent the loss of carbon sequestered, increasing greenhouse gas sequestration. Furthermore, forest floor woody materials that are not removed lead to aerobic conditions which release N₂O at higher rates than through biomass gasification, as is proposed in this project.

1.3.6 Biological Resources

Most of the project site has been altered by industrial operation of a sawmill and construction site and from the quarrying operations. Two habitat types have been identified within the project site boundaries: ruderal and grassland. Mixed woodland and open water habitats are located adjacent to the proposed project site on the Hat Creek Construction property

Ruderal: Because of the site history, the natural topography has been altered. These alterations have created large expanses of ruderal habitat, or habitat dominated by weeds. Dominant plant species growing among the remaining slash, graveled areas, former mill ponds, and cement pads include medusa-head (*Taeniatherum caput-medusae*), prickly lettuce (*Lactuca serriola*), turkey mullem (*Eremocarpus setigems*), yellow star-thistle (*Centaurea solstitialis*), horseweed (*Conyza canadensis*), gumplant (*Grindelia sp.*), rabbitbrush (*Chrysothamnus sp.*), California lilac (*Ceanothus prostratus*), and antelope brush (*Prusia tridentate*). Few wildlife species are found in the ruderal habitat. The western fence lizard (*Sceloporus occidentalis*) uses remnant slash for basking, and small mammals (*Peromyscm sp. and Microtus sp.*) are likely to occur in areas that have suitable plant cover. Birds forage in this often low-growing habitat, including Brewer's blackbird (*Euphagm cyanocephalus*),

horned lark (*Eremophila alpestris*), lesser goldfinch (*Spinus psaltria*), and sparrows (e.g. house sparrow, white-crowned, golden-crowned).

Grassland: Grassland habitat occurs in small patches among the ruderal areas on the valley floor. Dominant plants within the project site include squirrel tail (*Elymus elymoides*), Kentucky bluegrass (*Poa pratensis*), meadow grass (*Poa annua*), and cheatgrass (*Bromus tectorum*). Medusa-head is also present, often at the transition area between grassland and ruderal habitat. Wildlife found in the grassland habitat is similar to that found in the ruderal habitat. Additional species found in grasslands include Botta's pocket gopher (*Thomomys bottae*), killdeer (*Charadrius vociferans*), American robin (*Turdus migratorius*), western kingbird (*Tyrannus verticalis*), and European starling (*Sturnus vulgaris*).

Mixed Woodland: Mixed woodland habitat is found along the western and southern boundaries of the project site. It is also located at the top of the bluff along the eastern boundary of the site. The woodland is California black oak (*Quercus kelloggii*) interspersed, mostly at the southern end of the project site. Tree canopy cover varies in the mixed woodland, but most of the site is open, with 50 percent or less canopy cover. Understory shrub cover is more prevalent where tree cover is lower. Dominant understory species include antelope brush (*Purshia glandulosa*), rabbit brush (*Chrysothamnus nauseosus*), gooseberry (*Ribes* sp.), squaw carpet (*Ceanothus prostratus*), and manzanita (*Arctostaphylos* sp.). Sagebrush (*Artemisia tridentata*) is also present. The herbaceous layer is sparse and dominated by grasses.

Several wildlife species are found in the mixed woodland habitat. Acorns from the oak trees provide important food for the Steller's jay (*Cyanocitta stelleri*), acorn woodpecker (*Melanerpes formicivorus*), western gray squirrel (*Sciurus griseus*), and mule deer (*Odocoileus hemionus*). Ponderosa pines provide food and cover for the yellow pine chipmunk (*Eutamias amoenus*), hairy woodpecker (*Picoides vittosus*), northern flicker (*Colaptes auratus*), dark-eyed junco (*Junco hyemalis*), and common raven (*Corvus corax*). The mixture of shrubs and herbaceous cover is used by the valley quail (*Catipepla californica*) and mountain quail (*Oreortyx pictus*) as well as a variety of small mammals. Other common bird species in the mixed woodland include white-breasted nuthatch (*Sitta carolinensis*), western wood-pewee (*Contopus sordidulus*), and western bluebird (*Sialia mexicana*). Mountain lion (*Felis concolor*), coyote (*Canis latrans*) and gray fox (*Urocyon cinereoargenteus*) are occasionally observed on the project site.

Open Water: Two depressions located along the bluff, which were used as log ponds, are now used for wild rice cultivation.

Portions of the project site, especially the mixed woodland at the top of the bluff, probably receive moderate use by deer. Although key browse species (e.g., bitterbrush, wedge-leaved ceanothus) are not dominant vegetation in the area, young Oregon oaks provide good browse, and mature oaks provide acorns. The project site would be considered part of the winter range, with an influx of animals possibly occurring during the autumn months; however, the project site is not in a migratory corridor for deer.

Elk have occasionally been observed in the project vicinity. A small herd of native Roosevelt elk (*Cervus elaphus roosevelti*) or introduced Rocky Mountain elk (*Cervus elaphus nelsoni*) frequents a private ranch west of SR 89 a few miles from the project site. Elk typically require seclusion from human

interference and mature stands of deciduous and coniferous forest habitats, but individual elk may occasionally venture onto the project site.

For the purposes of this evaluation, special-status species are plant or animal species that are one of the following:

- Listed as rare, threatened, or endangered by the state or federal government.
- Proposed as state or federal candidates for threatened or endangered status
- Identified as Species of Concern by the U.S. Fish and Wildlife Service (USFWS) or by the California Department of Fish and Wildlife (CDFW).
- Included on the California Native Plant Society (CNPS) List as category 1A, 1B, and 2.

A search of the California National Diversity Database (CNDDDB) for the presence of sensitive species in the vicinity has been conducted and is shown on Figure 11. Based on this review, the osprey (*Pandion haliaetus*) is the only special-status wildlife species known to occur in the immediate project area. In 1996, the CDFW indicated the possibility that a special-status plant species may exist on the project site. The species, the slender Orcutt grass (*Orcuttia tenuis*), is listed as an endangered species by the state. Its habitat is associated with vernal pools, shallow areas of standing water which typically are dry by late spring. In that same year, North State Resources conducted a field inspection and examined aerial photographs of the project site, and concluded that vernal pools did not exist on the project site. In addition, North State Resources conducted a search of the CNDDDB for the presence of slender Orcutt grass in the vicinity. It was found that Orcutt grass existed in the project vicinity, but occupied landscape and soil types unlike those occurring on the project site.

1.3.7 Air Quality

The project site is located in the Northern Sacramento Valley Air Basin (NSVAB), comprised of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba Counties. The proposed site is under SCAQMD jurisdiction.

Shasta County encompasses the northernmost portion of the Sacramento Valley and the surrounding mountainous areas. The average annual temperature is approximately 62°F and annual precipitation averages about 30 inches.

The Sacramento Valley portion of the air basin forms a bowl, bounded on the northwest by the Klamath and Coastal Mountains and the Cascade Mountains to the northeast and east. Because of this, combined with the relatively calm winds and fairly stable atmospheric conditions in the area, the potential for air pollution in the basin is high. Moreover, the prevailing winds in the Sacramento Valley blow from south to north, and can transport pollutants from the broader Sacramento area and from the San Francisco Bay Area to the NSVAB. The mountain ranges that surround the NSVAB provide a physical barrier to continued movement of the air mass, significantly hindering the dispersal of pollutants.

1.3.7.1 Criteria Pollutants

Criteria pollutants from stationary sources regulated by the SCAQMD include:

- Ozone
- Carbon Monoxide
- Nitrogen Dioxide
- Sulfur Dioxide
- Particulate
- Lead
- Odor
- Toxic Air Contaminants

Ozone (O₃): Ozone (O₃) is a photochemical oxidant and the major component of smog. Ozone in the upper atmosphere is beneficial to life by shielding the earth from ultraviolet radiation; however, high concentrations of ozone at ground level are a major health and environmental concern. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak ozone levels occur typically during the warmer times of the year. Both ROGs and NO_x are emitted by transportation and industrial sources. ROGs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops, and other sources using solvents.

Carbon Monoxide: Carbon monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease, are at higher risk. Exposure to elevated levels of CO can cause impairment of visual perception, manual dexterity, learning ability, and performance of complex tasks. Automobile use is the primary source of carbon monoxide.

Nitrogen Dioxide (NO₂): "Nitrogen oxides" (NO_x) is a term used in reference to the mono-nitrogen oxides NO and NO₂. It is a highly reactive gas that is present in all urban atmospheres. NO₂ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O₃) and acid rain and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO). NO_x plays a major role in the atmospheric reactions that produce O₃. NO_x forms whenever combustion occurs in the presence of nitrogen. Transportation and stationary fuel combustion sources such as electric utility and industrial boilers are the primary anthropogenic sources of NO_x.

Sulfur Dioxide: Sulfur dioxide (SO₂) affects breathing and, in high doses, can aggravate existing respiratory and cardiovascular disease. Sulfur compounds in the air contribute to visibility impairment in large parts of the country. Ambient SO₂ results largely from stationary sources

such as coal and oil combustion, steel mills, refineries, pulp and paper mills, and nonferrous smelters.

Particulate Matter (PM₁₀ and PM_{2.5}): Particulate matter includes dust, dirt, soot, smoke, and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires, and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO₂ and VOCs are also considered particulate matter.

Lead (Pb): Lead (Pb) exposure can occur through multiple pathways, primarily inhalation and ingestion. Lead exposure can cause seizures, mental retardation, and behavioral disorders. Low doses of lead can lead to central nervous system damage. Lead may also be a factor in high blood pressure and heart disease.

Odors: Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to odors can range from psychological (e.g., irritation or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The human nose is the sole sensing device for odors. The ability to detect odors varies among the population and is subjective. Certain individuals may have the ability to smell minute quantities of specific substances while others may not have the same sensitivity. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one may be acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is, therefore, more likely to cause complaints than a familiar one. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity decreases and eventually drops below the level of detection, meaning it is not recognized by the average human.

Toxic Air Contaminants: Toxic Air Contaminants (TACs) are pollutants that can be expected to result in an increase in mortality or serious illness or that may pose a hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. Although ambient air quality standards exist for criteria pollutants, no such standards exist for TACs.

Many pollutants are identified as TACs because of their carcinogenic effects or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (CARB) has consistently found that there are no thresholds below which exposure is free of risk. For some TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a Hazard Index is used to evaluate risk. CARB established a statewide comprehensive air toxics program, the Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807), to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

According to the California Almanac of Emissions and Air Quality (ARB 2009), the majority of the health risks estimated from TACs can be attributed to few compounds, the most important being diesel PM. Diesel PM is different from other TACs in that it is not a single substance, but instead a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used.

1.3.7.2 Ambient Air Quality Standards

Both the federal and state governments have regulated air quality.

Federal: The Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for several air pollutants, referred to as “criteria pollutants” under the Federal Clean Air Act (FCAA) of 1970. The six criteria pollutants are ozone, particulate matter (PM₁₀), nitrogen oxides (NO_x), carbon monoxide (CO), lead, and sulfur dioxide (SO₂). The standards for these pollutants are based on evidence that exposure is harmful to public health. The Clean Air Act identifies two national ambient air quality standards – primary and secondary. Primary standards provide public health protection, including protection of “sensitive receptors” such as asthmatics, children and the elderly. Secondary Standards provide protection for public welfare and the environment. Table 1 lists the Federal ambient air quality standards.

State: California passed the California Clean Air Act (CCAA) in 1988. The CCAA established ambient air quality standards. The California standards are more stringent and include hydrogen sulfide (H₂S), vinyl chloride, and visibility reducing particles in addition to the six federal criteria pollutants. The CARB is responsible for establishing air quality standards, regulating mobile emission sources and overseeing the activities of the air pollution control districts (APCDs) and the air quality management districts (AQMDs).

Attainment Status: In accordance with the FCAA and the CCAA, CARB designates areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations do not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The CARB has classified Shasta County as a moderate nonattainment area for the 1-hour ozone standard, an unclassified area for the CO and PM_{2.5} standards, and a nonattainment area for the PM₁₀ standard. Shasta County’s attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 2.

Table 1 AMBIENT AIR QUALITY STANDARDS				
Pollutant	Averaging Time	California	Federal	
			Primary	Secondary
Ozone (O ₃)	1 Hour	0.09 ppm	-	-
	8 Hour	0.070 ppm	0.070 ppm	0.070 ppm
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual Arithmetic Mean	20 µg/m ³	-	-
Fine Particulate Matter (PM ₁₀)	24 Hour	-	35 µg/m ³	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm	-
	8 Hour	9.0 ppm	9 ppm	-
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm	100 ppb	-
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm	75 ppb	-
	3 Hour	-	-	0.5 ppm
	24 Hour	0.04 ppm	-	-
Lead	30 Day Average	1.5 µg/m ³	-	-
	Rolling Quarter	-	0.15 µg/m ³	0.15 µg/m ³
Visibility Reducing Particles	8 Hour (10 am – 6 pm PST)	(footnote)	-	-
Sulfates	24 Hour	25 µg/m ³	-	-
Hydrogen Sulfide (H ₂ S)	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.01 ppm	-	-
ppm – parts per million µg/m ³ – micrograms per cubic meter				

Table 2 SHASTA COUNTY ATTAINMENT STATUS		
Criteria Pollutants	State Designations	National Designations
1-Hour Ozone	Moderate Nonattainment	—
8-Hour Ozone	Nonattainment	Unclassified/Attainment
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	—
Lead	Attainment	—
Hydrogen Sulfide	Unclassified	—
Visibility Reducing Particles	Unclassified	—
Source: California Air Resources Board (2010)		

Shasta County: Shasta County Air Quality Management District (SCAQMD) is the regulating authority for air quality in Shasta County. The SCAQMD serves as the lead agency responsible for implementing and enforcing federal, state, and county air quality regulations. Stationary air pollution sources within Shasta County are required to receive an Authority to Construct and a Permit to Operate from the SCAQMD.

The SCAQMD Rulebook sets standards of operation and emission limits and defines permit requirement for the purpose of protecting public health. District Rule 2:1, New Source Review, requires new and modified stationary sources of air pollution to apply the best available control technology (BACT) for emissions. District Rule 3:2 sets limits on emissions of particulate matter, NO_x and SO_x.

The SCAQMD has adopted air quality significance threshold criteria under CEQA for determining the significance of potential air quality impacts. These are included in Table 3. Two types of thresholds have been established: Level “A” and Level “B.” Projects whose emissions do not exceed Level “A” thresholds are only required to implement a set of Standard Mitigation Measures (SMMs) developed by SCAQMD that are designed to reduce the total emissions generated by the project.

Table 3		
SHASTA COUNTY AIR QUALITY EMISSION THRESHOLDS		
Pollutant	Level A Threshold (lb/day)	Level B Threshold (lb/day)
Oxides of Nitrogen (NO _x)	25	137
Reactive Organic Gases (ROG)	25	137
Particulate Matter (PM ₁₀)	80	137

When a project exceeds Level “A” thresholds, Best Available Mitigation Measures (BAMM) are applied. The appropriate type and number of BAMM applied to a project is based on the unique characteristics of the project. BAMM is selected from a list of measures provided by the Shasta County Planning Department (SCPD) and the SCAQMD.

If a project exceeds Level “B” thresholds, the SCAQMD will advise the SCPD of the efficiency of proposed emission measures as part of the effort to reduce project emissions below Level “B” thresholds. If application of the above procedures results in reducing project emissions below Level “B” thresholds, the project can proceed with an environmental determination of a Mitigated Negative Declaration assuming other project impacts do not require more extensive environmental review. If project emissions cannot be reduced to below Level “B” thresholds, emission offsets are required. If, after applying all emissions offsets, the project emissions still exceed the Level “B” threshold, an EIR will be required before the project can be considered for action by the reviewing authority. Unmitigated emission increases above 137 pounds per day for either ozone precursors or PM₁₀ are considered to represent a significant adverse impact.

The exceedance of the state or federal standards for carbon monoxide, normally determined by a “hotspot” analysis, is also considered a significant impact. Carbon monoxide is not a problem pollutant in Shasta County, so such a “hotspot” analysis is not required as part of the environmental review process, unless requested by the Shasta County AQMD.

Odor-Specific Thresholds: Projects could be considered a significant air quality impact if it could potentially create objectionable odors near existing sensitive receptors or other land uses where people congregate. SCAQMD does not have a specific threshold for odors; however, other air

districts within the state suggest a threshold based on the distance of the source from people and complaint records for a similar facility. The threshold of one confirmed complaint, or three unconfirmed complaints, per year averaged over three years would be considered significant.

Construction-Specific Thresholds: Limited air emissions are anticipated during construction activities. These are generally assumed to be short-lived and transient and are associated with particulate and emissions from construction equipment. Thresholds of significance for construction emissions are contained in Table 3. If construction emissions exceed the thresholds listed in the table, they are considered significant. SCAQMD SMMs and BAMMs are required to be implemented during construction to reduce emissions from on-road and off-road equipment and fugitive dust that may result from construction-related activities.

1.3.8 Greenhouse Gas Emissions

1.3.8.1 Regulatory Setting - Federal

Mandatory Greenhouse Gas Reporting Rule: The EPA issued a final rule for mandatory reporting of greenhouse gas (GHG) emissions from large emission sources in the United States on September 22, 2009. This rule requires accurate annual reporting of GHG emissions data from facilities that emit 25,000 metric tons or more of CO₂ per year. This data is publicly available data and allows reporters to track emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. For a majority of facilities, the reporting is at the facility level. Approximately 85 percent of total U.S. GHG emissions, from approximately 10,000 facilities, are subject to this rule.

Energy Policy Act of 2005: The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the Act provides for renewed and expanded tax credits for electricity generated by qualified energy sources; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

The Clean Power Plan of 2015: The EPA has adopted the “Clean Power Plan” which sets the goal of 30 percent reduction in CO₂ by 2030 based on 2005 levels. It also spurs reductions in criteria pollutants and air toxics and instigates renewable energy projects. It is not expected that this plan or rules associated with it will effect California industry because our state requirements are more stringent than those described in this Plan.

1.3.8.2 Regulatory Setting – State

The Governor’s Emergency Proclamation of October 30, 2015: Governor Brown announced on October 30, 2015, that the significant number of dead and dying trees due to drought and bark beetle infestation have left the State’s forests in such a desperate state that immediate and decisive actions are needed at a regulatory level to deal with the crisis. The construction of new biomass facilities under the BioMat program, such as this one, are specifically encouraged and many state agencies are tasked to support such projects to the extent possible.

Bioenergy Action Plan – Executive Order #S-06-06: The Bioenergy Action Plan establishes targets for the use and production of biofuels and biopower and directs state agencies to advance

biomass programs in California. The Order establishes targets to increase the production and use of bioenergy. These targets include: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050.

California Executive Orders S-3-05 and Assembly Bill 32: Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005. The goal of this Order is to reduce California's GHG emissions to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. This goal was reinforced by the passage of Assembly Bill 32 (AB32), the Global Warming Solutions Act of 2006. AB 32 sets the same GHG emissions reduction goals but mandates that CARB create a plan using market mechanisms to implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

In 2008, CARB adopted the *Climate Change Scoping Plan* (Scoping Plan) which details CARB's plans to achieve the GHG reductions required by AB 32. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing improved emissions standards for light-duty vehicles, the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems, and a renewable portfolio standard for electricity production.

The First Update to the Scoping Plan was approved by the Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

Senate Bill 1368: SB 1368 requires the California Energy Commission (CEC) and the CPUC to set a global warming emissions standard for electricity used in California regardless of whether the electricity is generated in-state or purchased from plants in other states. The standard applies to any new long-term financial contracts for baseload electricity, and applies both to investor-owned utilities and municipal utilities. The standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, is an emissions performance standard (EPS) of 1,100 lbs CO₂ per megawatt-hour (MWh). However, the CPUC has determined that biomass generation of electricity is EPS compliant because alternative means of disposing biomass, such as open-air burning and landfill deposition, have the potential to generate greater concentrations of GHG in the atmosphere, including methane.

Senate Bills 1078 and 107 and Executive Order S-14-08: SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020.

Senate Bill 350: This bill would require that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030, as provided. The bill also makes other revisions to the Renewable Portfolio Standard (RPS) Program and to certain other requirements on public utilities and publicly owned electric utilities. This bill would require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. The bill would require the PUC to establish efficiency targets for electrical and gas corporations consistent with this goal. The bill would require local publicly owned electric utilities to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

SB 1122 The CA Public Utilities Commission BioMat Program: This bill was passed based on the recognition that California is missing out on the carbon reduction benefits of using organic waste for conversion to energy and, in this case, electricity. The bill directs electrical corporations subject to the RPS Program described above to collectively procure at least 250 megawatts of electricity from developers of bioenergy projects that commence operation on or after June 1, 2013. The bill requires the commission to allocate those 250 megawatts to electrical corporations from specified categories of bioenergy project types, with 50 megawatts specifically allocated to forest biomass projects such as the project described. The program developed for this procurement requirement will commence in February of 2015. It is the intent of this project to procure a Power Purchase Agreement under this program.

SB 605 Short-Lived Climate Pollutants: This Bill passed in 2014 requires the CARB to complete an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identify research needs to address any data gaps, identify existing and potential new control measures to reduce emissions, and prioritize the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities, as identified pursuant to Section 39711. The Board is also required to coordinate with other state agencies and districts to develop measures identified as part of the comprehensive strategy. Black carbon is one of the significant short-lived climate pollutants that is considered within this Plan. Black carbon is produced in large amounts when wildfire occur. This project's processing of wood that would have otherwise been burned relates to and supports the Plan concepts developed by CARB.

Greenhouse Gas Cap and Trade Program: California's GHG cap and trade program is the central element of AB 32 and covers major sources of GHG emissions in the state such as refineries, power plants, industrial facilities, and transportation fuels. The regulation includes a GHG cap that will decline over time. CARB distributes allowances, which are tradable permits, equal to the emission allowed under the cap. The final cap and trade regulations were adopted in 2011.

The regulation sets a statewide limit on sources and establishes a financial incentive to drive long-term investment in cleaner fuels and more efficient uses of energy. Companies are not given a specific limit on their GHG emissions but must supply a sufficient number of allowances (each equivalent to one ton of CO₂) to cover their annual emissions. As the cap declines each year, the total number of allowances in the state drops which requires companies to find the most cost-effective approach to reducing their emissions.

Those sources that need additional allowances to cover their emissions can purchase them at quarterly auctions by CARB, or buy them on the market from sources that have excess allowances.

The final regulations for the cap and trade program are codified in Subchapter 10 Climate Change, Article 5, Sections 95800 to 96023, Title 17, California Code of Regulations. Section 95802(a)(31) contains a definition of “biomass” as defined in the cap and trade regulations: *“Biomass means non-fossilized and biodegradable organic material originating from plants, animals, and microorganisms, including products, by-products, residues, and waste from agriculture, forestry, and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material. For the purpose of this article, biomass includes both California Renewable Portfolio Standard (RPS) eligible and non-eligible biomass as defined by the California Energy Commission.”*

Section 95852.2 identifies emissions without a compliance obligation under the cap and trade program. As stated in Section 95852.2:

Emissions from the following source categories and from the combustion of the following fuel types count toward applicable reporting thresholds, as applicable in MRR (Mandatory Reporting Regulation), but do not count toward a covered entity’s compliance obligation set forth in this article unless those emissions are reported as non-exempt biomass-derived CO₂ under MRR. Emissions without a compliance obligation include:

- (a) CO₂ emissions from combustion of the following biomass-derived fuels:*
 - (1) The biogenic fraction of solid waste materials as reported under MRR;*
 - (2) Waste pallets, crates, dunnage, manufacturing and construction wood wastes, tree trimmings, mill residues, and range land maintenance residues;*
 - (3) All agricultural crops or waste;*
 - (4) Wood and wood wastes identified to follow all of the following practices:*
 - (A) Harvested pursuant to an approved timber management plan prepared in accordance with the Z’berg-Nejedly Forest Practice Act of 1973 or other locally or nationally approved plan; and*
 - (B) Harvested for the purpose of forest fire fuel reduction or forest stand improvement*

The proposed project would utilize fuel that fully meets the definition of biomass and, as such, per the requirements of Section 95852.2, the proposed project would be required to report GHG emissions under the MRR; however, GHG emissions from the project would not count towards the compliance obligations under the cap and trade program. In other words, the GHG emissions from the combustion of biomass fuels for electricity generation are not required to be offset or reduced under the cap and trade program.

1.3.8.3 Thresholds of Significance under CEQA

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment. Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Few public agencies in California have adopted GHG thresholds of significance for CEQA, and no GHG thresholds have been developed specifically for facilities that generate electricity. Neither Shasta County Air Quality Management District nor Shasta County has developed GHG CEQA thresholds.

As reference, for the most recent similar (but significantly larger) project the Shasta County Air District and County relied on the Inclusion Thresholds for Covered Entities, as described in Section 95812 of the Cap and Trade regulations adopted by CARB in 2011 (Title 17, California Code of Regulations).¹ As described in Section 95812(c)(2), the applicability threshold for an electricity-generating facility is based on the annual emissions from which the electricity originated. The applicability threshold for an electricity-generating facility is 25,000 metric tons or more of CO₂e per data year.

CARB's 25,000 metric ton/year threshold is a reporting threshold for the cap and trade program, and was not specifically established as a CEQA threshold for GHGs. However, in the report titled: *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, the California Air Pollution Control Officers Association (CAPCOA) identifies the 25,000 metric ton threshold, as used by CARB for their reporting threshold, as a potential and appropriate non-zero GHG threshold for use in a CEQA document (see pages 44-45 of the above-referenced 2008 report).

Additionally, the U.S. EPA regulations for reporting of GHG emissions set a 25,000 metric ton threshold for large emission sources and the European Union has provided for "small installations" with emissions under 25,000 metric tons to be exempted from its Emissions Trading Scheme; notably, biomass emissions are excluded from this calculation.

In summary, a 25,000 metric ton threshold has been determined in several state, federal, and international rulemaking processes to represent a significant level of emissions with respect to cumulative contributions to global climate change. Given the research and resources that went into the development of the GHG Mandatory Reporting Rule and cap and trade programs adopted by CARB, the U.S. EPA GHG reporting rule, and the fact that the 25,000 metric ton threshold would capture approximately 94 percent of GHG emissions associated with stationary sources in California (CAPCOA, page 44), Shasta County has used the 25,000 metric tons/year of CO₂e threshold in past projects, and chooses to do so for this project.

Therefore, if the proposed project generates 25,000 metric tons of CO₂e or greater in a year, it would be considered to have a significant and cumulatively considerable impact on the environment. If the proposed project would generate less than 25,000 metric tons of CO₂e per year, it would be considered a less than significant and less than cumulatively considerable impact related to climate change and GHGs. In order to determine if the proposed project

¹ 2012 Draft Environmental Impact Report for the SPI Cogeneration Power Plant.

would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, the proposed project is compared to the most applicable and relevant state-level regulations adopted to reduce GHG levels.

1.3.8.4 Greenhouse Gases in Biomass

Facilities fueled or fired by biomass have been treated as “carbon neutral” by state, national and international carbon tracking and trading systems. Of greater relevance to this analysis is the treatment of biomass-fueled electricity facilities as carbon neutral by CARB and the California Energy Commission. As previously described, Section 95802(a)(31) of the California Code of Regulations contains a definition of “biomass” as defined in the cap and trade regulations. The entirety of the fuel mix proposed for this project meets this definition.

Section 95852.2 of the California Code of Regulations identifies emissions without a compliance obligation under the cap and trade program (see Section 1.3.8.2 Regulatory Setting – State, *Greenhouse Gas Cap and Trade Program*).

By exempting biomass fuels from the compliance obligations in the cap and trade program, CARB treats biomass as being carbon neutral and could be treated as such for the purpose of this GHG analysis. As documented in the Sierra Pacific Industries Draft EIR Cogeneration Power Plant (2010), CARB staff verified that biomass fuels are exempted from the cap and trade program because they are considered to be a carbon neutral fuel source. CARB also deemed that the treatment of biomass fuels as carbon neutral was appropriate in the context of the DEIR and consistent with CARB’s treatment of biomass combustion emissions. Specific project emissions are discussed in Section VII.

1.3.9 Transportation

Transportation to the site is limited to road access. The project site is located on SR 89, 3.7 miles north of Four Corners Junction (SR 299 and SR 89). Both SR 299 and SR 89 are major thoroughfares and the backbone of the interstate network on the region. The site is accessed with a dedicated right-turn lane when traveling north from Four Corners Junction; however, no dedicated turn lane access exists when traveling south to Four Corners Junction.

Average traffic volume data are maintained by Caltrans for Four Corners Junction and indicate annual average daily traffic (AADT) counts of 1,750 to 1,950 vehicles per day on SR 89 and 2,700 to 4,350 vehicles per day on SR 299. Hourly average of 280 vehicles and 380 vehicles on SR 89 and SR 299, respectively, indicate that these are relatively heavily trafficked roads.

I. Surrounding Land Uses and Setting (Briefly describe the project’s surroundings.)

The project area is surrounded by private timberland and portions of the Shasta-Trinity National Forest.

Across from the project, on the western side of SR 89, the land is mostly forested; some dirt roads traverse the area. Approximately 0.5 miles northwest of the project site, as measured from the Hat Creek Construction and Materials entrance to the Eastside Aggregates Mine to the intersection with Clark Creek Road, is a residential and vacation home area which includes

Burney Falls Trailer Park. McArthur-Burney Falls Memorial State Park is approximately 1.3 miles to the northwest. Surrounding land use is shown on Figure 12.

J. Other Public Agencies whose Approval Is Required (e.g., Permits, Financing Approval, or Participation Agreement)

- Authority to Construct – Shasta County Air Quality Management District
- Permit to Operate – Shasta County Air Quality Management District
- Building Permit – Shasta County Planning Department

2.0 DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Signature

Date

3.0 POTENTIALLY SIGNIFICANT EFFECTS CHECKLIST

A. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|---|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

B. Evaluation of Environmental Impacts:

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, “Earlier Analyses,” may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

- a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
 - 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion. See Section 5.
 - 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
 - 9) The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact too less than significance

4.0 ENVIRONMENTAL IMPACTS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

State Route 89 has been designated an “eligible” scenic highway under the California Scenic Highway Program. The status of a state scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies for scenic highway approval to Caltrans, and receives notification from Caltrans that the highway has been designated a Scenic Highway. To date, the County, which has jurisdiction over the segment of SR 89 that passes by the project site, has not adopted a scenic corridor protection program.

State Route 89 is designated as part of a Volcanic Legacy Scenic Byway. The designation does not impose any regulations on land uses located adjacent to the byway.

There is currently a forested buffer between SR 89 and the area on the project site proposed for the gasification plant. Hat Creek Construction and Materials is required to maintain the forested buffer under the current use permit. Existing buildings and vehicles on the site are visible from the highway for approximately 1,000 feet in the vicinity of the existing entrance to the site. Project features already include industrial activities such as a truck repair shop adjacent to and south of the existing office, a concrete plant, an asphalt plant, crusher, other equipment, and truck storage. The addition of the gasification plant should not add features inconsistent with the current use.

a) Have a substantial adverse effect on a scenic vista?

The Pacific Crest Trail is located approximately one mile east of the project site. The trail is located on the east side of a gently sloping ridge that runs between the project site and the trail, so the facility will not be visible from the trail. No impact is anticipated.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project is located adjacent to SR 89, which has been designated as part of the Volcanic Legacy Scenic Byway. The facility will be located behind a vegetated corridor that runs along the highway so that the facility cannot be seen from the highway.

Hat Creek Construction and Materials will continue to maintain the forested vegetative buffer of greater than 100 feet from the SR 89 right-of-way. Because of the angle of the view and the locations of the improvements, views are expected to be limited to the area approximately 1,000 feet north and south of the existing primary access road. This is the approximate location of the frontage for the commercial/light industrial rezone. No additional impacts will occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

The site is currently an industrial site and is zoned as Industrial. The development of the proposed facility will not alter the current visual quality and is consistent with current zoning. There is no impact.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Feedstock delivery will be limited to the operating hours of the Hat Creek Construction and Materials facility. Gasification equipment is expected to operate 24 hours per day, 7 days per week. The facility's current use permit requires that lighting be shielded and/or directed so that it does not shine offsite. The proposed project will not use additional light above that currently used onsite. The project will not create intense light or glare that causes a nuisance or hazard beyond the property line. There will be no impact over existing conditions.

II. AGRICULTURE AND FORESTRY RESOURCES -- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
--------------------------------------	---	------------------------------------	-----------

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment which, due to their location or nature that could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The site is zoned Industrial and is currently used for that purpose. Wild rice is grown in the historical log pond and historical log storage areas when water is available. The addition of the proposed plant will not affect this area of the site. General Plan and zoning designations for the site and surrounding areas are shown on Figures 13 and 14, respectively.

The proposed project will have a minimal effect on the local demand as most of the feedstock within the region is left in the woods to either remain on the ground to decompose or to be burned in piles. Local logging companies estimate that only 5 percent of feedstock is removed to sell to manufacturing facilities. The wood biomass feedstock market in the area surrounding the project site has a substantial oversupply and a long history of sustainably providing over 20 MW of additional power. The development of a 3 MW facility at the proposed site is not expected to impact the market.

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

The proposed project is not located in an area that is designated as prime farmland, unique farmland or farmland of statewide importance. No farmland is located in the vicinity of the project area with the exception of the historical log pond and log storage areas used to grow wild rice. The Department of Conservation defines prime farmland as land that has been used for irrigated agricultural production **and** the soil must meet the physical chemical criterion for Prime Farmland or Farmland of Statewide Importance as determined by the USDA NRCS. The proposed project will not impact the existing wild rice areas.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The site is zoned as I (Industrial) and is not part of a Williamson Act contract. No loss of forest land will occur as the site is currently used as a gravel mine and equipment yard with sparse timber in the area of the proposed facility. The site has acted as an industrial facility since it was operated as a lumber mill in 1955. The majority of the properties surrounding the site area are zoned TP (Timber Production District) but will not be impacted by the project.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The site is zoned as I (Industrial) and is not part of a Williamson Act contract. No direct loss of forest land will occur. The site is currently utilized as a gravel mine and equipment yard under the industrial zoning. In addition, the project will not result in economic incentives for the conversion of forest land or forest management practices that would result in conversion of timberland. The majority of the private properties surrounding the site area zoned as TP (Timber Production District) and or owned and managed by the USFS.

d) Result in loss of forest land or conversion of forest land to non-forest use?

No direct loss of forest land will occur relating to the siting of the project facility, as the site is currently utilized as a gravel mine and equipment yard and zoned industrial. The development of uses for forest thinning and fuels reduction project biomass will result in healthier and more resilient forests. Because the project supports sustainable forest management activities and related businesses, timberlands will be more likely to stay in a forest condition and not be converted to non-timber uses by catastrophic fire or economic driven conversion.

The majority of the properties surrounding the site area zoned as TP (Timber Production District). The proposed project will improve the surrounding forest through removal of the wood waste products and thinning residue, which will decrease risk of wildfire and improve forest growth and forest health. Reduced wildfire emissions will reduce emissions of black carbon and provide a positive benefit to greenhouse gas sequestration. Overall, this project will have a net benefit to the surrounding forest lands.

e) Involve other changes in the existing environment which, due to their location or nature that could result in conversion of Farmland, to non-agricultural use?

The proposed project is not located in an area that is designated as prime farmland, unique farmland, or farmland of statewide importance. No farmland is located in the vicinity of the project area. The development of the proposed project will have a minimal effect on the local demand as most of the feedstock within the region is left in the woods to either remain on the ground or be burned in piles. Currently, less than 5 percent of the feedstock is sold to manufacturing facilities. Therefore, it is expected that forest conditions will improve after installation of this project.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

Construction: Construction emissions are described as “short term” or temporary in duration and may represent a significant impact on air quality. Most of the construction-related emissions would occur at the site and would, therefore, be the jurisdiction of SCAQMD. Construction-related activities would result in emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from site preparation (excavation, grading, and clearing) and mobile activities (off-road equipment, deliveries, employee exhaust, and vehicle travel). Fugitive dust emissions are associated primarily with site preparation and vary upon site conditions. Ozone precursor emissions (ROG and NO_x) are associated primarily with equipment exhaust and the application of coatings.

Emissions factors for this section are estimated based on equations from the Environmental Impact Report (EIR) for the Placer County Cabin Creek Biomass gasification project, which is a similar biomass project. The Placer County EIR was designed for a 2-MW gasification facility with construction of a 10,800-square-foot building, a one-acre covered storage building, associated access roads, trenching for an underground transmission line connection, and an employee parking lot on a 3.7-acre, undeveloped site. Total construction time for this project is estimated at 6 months.

Planned construction at the site will include erection of a pole barn (approximately 2,500 square feet) for the purpose of protecting feedstock storage from moisture and wind. Some trenching may be required for electrical wiring. The proposed project site is on the currently active

industrial facility and is already cleared and leveled; therefore, minimal grading activities will be required. Paving activities are limited to 0.2 acres located underneath and immediately adjacent to the gasification equipment. Total construction time, including the set-up of the gasification equipment, is expected to take less than three months. As construction on the project site is considerably less than that at the Placer County site, emissions factors have been halved as shown in Table 4 to more accurately represent the construction-related emissions at the project site.

<p align="center">Table 4 ESTIMATED EMISSIONS ASSOCIATED WITH CONSTRUCTION ACTIVITIES</p>				
	ROG (lb/day)	NO_x (lb/day)	PM₁₀ (lb/day)	PM_{2.5} (lb/day)
Maximum Daily Emissions	34.5	20	4	2.5
Threshold of Significance A	25	25	80	N/A
Threshold of Significance B	137	137	137	N/A

As shown in Table 5, construction of the project would result in maximum unmitigated daily emissions of 34.5 lb/day ROG, 20 lb/day NO_x, 4 lb/day PM₁₀, and 2.5 lb/day PM_{2.5}. Dust control practices that will be implemented at the site will minimize fugitive dust emissions. Exhaust emissions will be limited due to site practices and CARB requirements to limit idling of off-road equipment to less than five minutes. Short-term construction emissions would not exceed SCAQMD's Level A or Level B significance thresholds for NO_x, PM₁₀, or PM_{2.5} and, thus, would not contribute to pollutant concentrations that exceed the NAAQS or CAAQS. Because PM₁₀ emissions are would be less than the threshold of 80 lb/day, and because PM_{2.5} is a subset of PM₁₀, it is not anticipated that construction activities would result in PM_{2.5} emissions in excess of the applicable ambient air quality standards. Project construction may result unmitigated emissions up to 34.5 lb/day ROG which exceeds the District threshold A of 25 lb/day, which requires the implementation of SMMs and appropriate BMM. The emission of ROG at construction sites comes primarily from paving activity and architectural coatings. As there are limited paving activities planned and the only building planned is the 2,500-square-foot pole barn, ROG emissions are expected to be considerably less than the unmitigated 34.5 lb/day estimated. This would be a less than significant impact.

Stationary: Emissions factors for this section are extrapolated from the North Fork Bioenergy Facility CEQA Initial Study submitted to the San Joaquin Valley Air Pollution Control District and information provided by the manufacturer. Manufacturer emissions estimates for NO_x, CO and ROG are included below. NO_x emissions are post-Selective Catalytic Reduction (SCR) system. PM₁₀ and SO_x emissions are estimated from the North Fork Facility. The North Fork Facility has a projected output of 1 MW. Emissions factors for PM₁₀ and SO_x will remain constant; however, the throughputs will be tripled to yield triple the total emissions as calculated in the North Fork Bioenergy Facility review to represent the 3-MW facility at Hat Creek Construction and Materials. Proposed emissions factors for the flare are all taken from the North Form Facility estimates and are shown in Table 5.

Table 5 INTERNAL COMBUSTION ENGINE AND FLARE EMISSIONS FACTORS AND POTENTIAL TO EMIT				
Pollutant	EF (lb/hr) ICE	EF (lb/hr) Flare	Daily Emissions (lb/day) ²	Annual Emissions (tons/year)³
NO _x	0.22	2.40	7.69	1.03
PM ₁₀	0.48	0.30	11.82	1.91
SO _x	0.30	0.24	7.44	1.20
CO	0.316	13.08	20.66	2.13
ROG ¹	0.064	2.22	5.98	0.40
¹ The manufacturer's estimate is VOC instead of ROG, but for this estimation, the emissions are viewed as comparable. ² Assumes 24 hr ICE operation and 1hr flare operation ³ Assumes operation at 90% capacity (7884 hrs ICE and 135 hrs flare)				

In addition to the internal combustion engine and the flare, the proposed facility at the site will have a dryer which introduces an additional emissions unit. The emissions factors for this estimate also come from the North Fork Bioenergy Facility. The facility's dryer is expected to run off of process heat from the engine and not burn a fossil fuel for the majority of its heat production. As the need for the dryer is variable depending on site conditions and moisture of feedstock, projected hours of operation cannot be determined. Therefore, the maximum conservative estimate (8,760 operating hours) is utilized. Dryer emissions are shown in Table 6.

Table 6 DRYER EMISSION FACTORS			
Pollutant	Emissions Factor	Consumption	Projected Emissions¹
NO _x	0.06 lb/MMBtu	3.0 MMBtu/hr	0.79 tons/year
PM ₁₀	0.31 lb/BDT ²	1 BDT/hr	1.36 tons/year
¹ Dryer estimates assume 8760 operating hours annually ² Assumes 10% moisture of outgoing fuel and 50% moisture for incoming fuel			

Mobile: Mobile emissions sources from facility operation include chipping biomass, delivery truck activity, loader activity onsite, employee commute trips, and biochar hauling. A front loader will operate onsite to move biomass feedstock to the dryer hopper as well as stacking and organizing feedstock delivery. The calculations for the Placer County Cabin Creek EIR were adjusted from the 2-MW plant at Cabin Creek to the 3-MW plant at Hat Creek Construction and Materials by multiplying biomass collection emissions activities by a factor of 1.5. Employment-related activities at the site remain the same. Mobile source emissions are included in Table 7.

<p style="text-align: center;">Table 7 POTENTIAL TO EMIT FROM MOBILE SOURCES (LB/DAY)</p>				
Source	NO_x	ROG	PM₁₀	PM_{2.5}
Chipping Biomass	63.3	6.0	2.1	2.1
Truck Activity at the Plant	1.05	0.15	0.15	0.15
Loader Activity at the Plant	13.2	1.35	0.45	0.45
Employee Commute Trips	0.3	0.15	<0.1	<0.1
Trucks Hauling Biomass	14.25	0.3	20.1	2.1
Trucks Hauling Biochar	1.35	0.15	0.15	0.15
TOTAL	93.45	8.1	23.05	5.05

Pre-Project Potential to Emit: The potential to emit (PTE) before the implementation of the proposed project is from the disposal method of sustainably sourced forest woody biomass feedstock. Pile and burn is a common disposal method in the project area – especially following a large storm/fire event. Material not burned is typically scattered and left to decompose. Pile and burn practices are designed to minimize GHG emissions by reducing the production of methane through decomposition.

Pre-project emissions include the open burning of forest-thinning slash and fuels in nearby forests and emissions associated with aerobic decomposition from forest slash cut and scattered on the forest floor. Shasta County AQMD provided smoke management plans for 3,748 acres in 2014 and 3,500 in 2015. In 2014, 2,866 of these acres were located within an accessible radius of the proposed facility. 2,686 acres were permitted in 2015 in this same area. Because SPI operates a biomass cogeneration plant in Shasta County, burn acres from SPI-owned property have been excluded as SPI is not expected to be a supplier to the proposed project. A study performed by the USFS estimates that approximately 41 acres of slash brush and other material are produced per acre thinned (Schimke and Dougherty, 1966). Using these estimations, approximately 59,163 BDT of slash and other materials were produced within the vicinity of the project area in 2014 and 55,063 BDT of slash and other materials were produced in 2015. While this estimation shows an excess of piled and burned material within the accessible radius of the project site, for the purposes of conservatively estimating avoided emissions it is assumed that this facility will use least 50 percent of forest-sourced biomass material that would have been piled and open-burned and 50 percent of forest-sourced biomass material that would have been scattered to decompose.

Emission factors for the pile and burn scenario are based on a study by the National Renewable Energy Laboratory (NREL).² The result of this study is shown in Table 8 and includes the emissions from processing and transportation of woody biomass feedstock. The proposed project expects to utilize 22,000 BDT of feedstock per year. Avoided emissions are calculated using the assumption that 50 percent of the feedstock is diverted from pile and burn fate, and assuming that 95 percent of a slash pile is burned, while the remaining 50 percent is diverted from a decomposition fate. No criteria emissions are assumed from the wood fated for decomposition. The pre-project potential to emit is shown in Table 8.

² Morris, Gregory Paul. “The value of the benefits of US biomass power.” National Renewable Energy Laboratory, 1999.

Table 8 PRE-PROJECT POTENTIAL TO EMIT			
Pollutant	EF (lb/th.bdt)	Consumption (th.bdt/year)	Projected Emissions (tons/year)
NO _x	7,000	10.45	36.56
PM ₁₀	15,000	10.45	78.38
SO _x	150	10.45	0.78
CO	150,000	10.45	783.75
ROG	24,000	10.45	125.40

Net Potential to Emit: The net emissions based on the project represent the difference between the pre-project potential to emit and the project's potential to emit, shown in Table 9.

Table 9 NET POTENTIAL TO EMIT			
Pollutant	Pre-Project Annual Emissions (tons/year)	Post-Project Annual Emissions (tons/year)	Net Project Annual Emissions (tons/year)
NO _x	36.56	17.17	-19.405
PM ₁₀	78.38	7.06	-71.32
SO _x	0.78	1.2	0.42
CO	783.75	2.13	-781.62
ROG	125.40	1.73	-123.67

As shown in Table 9, the proposed project will have a net-benefit impact to emissions when compared to the alternative of open burning.

a) Conflict with or obstruct implementation of the applicable air quality plan?

No impacts are identified as a result of this project.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Emissions vary depending on the biomass resource, the type of conversion technology, and the pollution controls installed. Most biomass resources and natural gas contain far less sulfur, mercury, and NO_x emissions than conventional coal plants. Overall, the project will have a net-benefit to the environment and will not violate any air quality standard or contribute to any air quality violation. There will be no impact.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

This project would not result in a cumulatively considerable net increase of any criteria pollutant, including ozone, ozone precursors or PM₁₀, for which Shasta County is in non-

attainment under the applicable ambient air quality standard. Construction activity would result in emissions of fugitive dust and diesel from vehicular traffic. All construction-related air emissions would be intermittent, of limited duration, and of low quantities with respect to emissions that normally occur in the area and are expected to be negligible.

The project will require feedstock to be delivered to the facility via covered haul truck; therefore, fugitive emissions will be generated in small quantities. These deliveries will be intermittent throughout the day and not expected to concentrate in any significant quantity.

As stated above, mitigation factors required are inherent to the project. Actual emissions are expected to have a less than significant impact to ambient air quality.

d) Expose sensitive receptors to substantial pollutant concentrations?

The proposed project is not anticipated to expose sensitive receptors to toxic air contaminants. While a project-specific Health Risk Assessment (HRA) has not been conducted for this site, the only sensitive receptors are located over a half-mile from the site to the northwest. The project site is located on an existing, active mine site and across SR 89. These few residences are the only sensitive receptors located within a one-mile radius of the facility. Sensitive receptors are shown on Figure 15. The surrounding area is empty land. Furthermore, the prevailing wind direction in the Burney basin is out of the southwest and would not be expected to transport TACs in the direction of the sensitive receptors. Therefore, the effect of this project is expected to be less than significant.

e) Create objectionable odors affecting a substantial number of people?

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals, and schools. There are existing residences located just over a half-mile from the project which are located across SR 89 to the northwest of the project site. There are no schools within close proximity to the project site.

The closest sensitive receptor is a residence located 0.56 miles northwest of the site across SR 89. Currently, SR 89 and the Hat Creek Construction and Materials aggregate mine, asphalt batch plant, and concrete batch plant lie between the proposed project and any sensitive receptors.

The construction of the project would result in temporary diesel exhaust emissions from onsite construction emissions. With the idling limits imposed on the site, diesel exhaust emissions would be limited and likely to dissipate quickly. Furthermore, the project site is located on an existing mine site and across the highway from the residence. Diesel emissions from the project site are not expected to cause a significant increase in odor.

Odors could potentially result should the feedstock piles be stored long enough such that decomposition begins. This would be unlikely as the feedstock usage at the facility will generally move in a first-in, first-out basis and will be stored under the pole barn. Due to these practices, odors from feedstock storage are not expected to cause significant odor.

Because project operations would include provisions that will guard against decomposition in feedstock storage piles, because the nearest sensitive receptor is located over a half-mile from

the project site, and because the site is located on an existing operating mine site and across SR 89, the project is not expected to create objectionable odors that will affect a substantial amount of people. This project is not expected to create any impact over current baseline conditions.

IV. BIOLOGICAL RESOURCES – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc) through direct removal, filling, hydrological interruption or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The site has been used as an active industrial site since 1955. The site is disturbed and industrial in nature. Nearby biological resources have adapted to that use.

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

A survey of the property determined that there are no vernal pools or slender Orcutt grass in the area. While one osprey nest structure was observed in 1999 during the EIR process, no nest structures have been observed during monitoring visits in the last several years. It is unlikely that project operations will have any impact. No other special-status species would be impacted by the proposed project. The site is highly disturbed and has been extensively altered by past logging and mill operations.

- b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

The proposed project area is not on or adjacent to any riparian habitat. A wetland study prepared by the U.S. Army Corps of Engineers in 1999 delineated 0.71 acres of the ponding area at the northern portion of the property as waters of the U.S. CDFW determined in 1996 that, other than wetland areas, the Hat Creek Construction and Materials site has little significant value as wildlife habitat. The proposed project is located on the southern end of the site and is not expected to have an impact on the wetland areas.

- c) **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?**

The project site will not have an impact on wetlands in the area. No filling, grading, or other activities proposed for the project will impact these areas.

- d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

While deer habitat the shrublands near the project site, the current project site currently operates as a quarry, asphalt batch plant and concrete batch plant and previously had acted as a sawmill. It is unlikely the project will contribute any substantial impact.

- e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

A review of Section 6.7 of the General Plan indicates that the proposed project would not conflict with the Shasta County objectives or policies for Fish and Wildlife Habitat.

- f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

There are no local, regional, or state habitat conservation plans for this site.

V. CULTURAL RESOURCES – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The project site, including the proposed gasification plant location, is an active industrial site. The site is zoned Industrial. Significant ground disturbance has already occurred.

a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?

The site has been substantially disturbed in the past during the construction and operation of the large lumber mill which occupied the site from the late 1950s until 1989 and through Hat Creek Construction and Material's operations in the more recent past. It is likely that any cultural resources which had been present on the site would have already been impacted. Cultural resource records and other information for the area and the site were reviewed by the Northeast Center of the California Historical Resources Information System at Chico State University. The Center determined that the project site is not located within an area of high sensitivity and a site-specific historical or archeological study was not recommended. The project is not anticipated to result in impacts to historical or archaeological resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?

As explained above, this project is expected to have no impact.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

There are no known paleontological resources on the site. A review of the Preliminary Paleontological Resource Assessment Map of Shasta County, California, prepared by Hugh M. Wagner, dated July 31, 1991, shows that the project site is in an area of no paleontological importance. The project will have no effect on any unique geologic features and is not anticipated to have any impacts.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Research of records and related data indicates that no formal cemeteries or other human remains are known to exist on the site; as such, the project is expected to have no impact. In the event that human remains are encountered during or subsequent to ground-disturbing activities, work will cease immediately near the area and not resume until applicable regulations have been followed, including, but not limited to, immediately contacting the County Coroner's office and requesting consultation with the responsible agencies.

VI. GEOLOGY AND SOILS – Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code Section 2621 et seq.) went into effect in 1973. The purpose of this Act is to prohibit the location of most structures built for human occupancy across the traces of active faults, thereby mitigating the hazard of fault rupture. Under this Act, cities and counties must withhold development permits for sites within and EFZ until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Under current state policy, the boundaries of an EFZ are positioned approximately 500 feet away from a major active fault and approximately 200 to 300 feet from well-defined minor faults. The Official Map of Earthquake Fault Zones for the project site depicts a 300-foot EFZ and is shown on Figure 6. The Uniform Building Code (UBC) regulates the construction of structures within the site. The UBC places the project site in Seismic Zone 3, defined as an area of potentially major damage from earthquakes corresponding to intensity 5.6 to 6.4 or higher. Shasta County sets forth regulations regarding grading, excavating, and filling. No significant grading activities are proposed as part of the project.

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

According to the California Division of Mines and Geology Earthquake Fault Zones (EFZ) Map of the project area, there is an “active earthquake fault line which runs along the base of the steep slope that separates the upper and lower portions of the project site. The Alquist-Priolo Earthquake Fault Zones Act requires that no commercial or industrial structures be located within the fault zones (300 feet on either side) delineated on the official map. No buildings or structures for the proposed project will be located within this zone.

ii) Strong seismic ground shaking?

Even if they are not located within the EFZ, structures on the project site could remain subject to a potential ground-shaking hazard, caused by potential activity on the fault. The current use permit requires that no permanent or fixed structures be located within the boundaries of the Earthquake Fault Zone as shown on the Earthquake Fault Zones map, Cassel Quadrangle, prepared by the State Geologist; and that construction of structures and the installation of equipment and buildings be in compliance with all State and local seismic safety regulations and building codes. Implementation of these mitigation measures reduces the potential severity of damage to structures on the project site, which would also increase the safety of people on the project site during a seismic event. With these requirements, there is no impact over baseline condition.

iii) Seismic-related ground failure, including liquefaction?

Seismic-related ground failure includes lateral spreading, lurch cracking, and liquefaction. Lateral spreading is a secondary result of severe shaking and includes the actual horizontal movement of unconfined alluvium toward lower areas. Severe ground shaking also can induce near-surface cracks in alluvium, or lurch cracking. Liquefaction occurs when loose, saturated

granular soil deposits lose their strength due to a sudden excess in water pressure. This buildup is induced by an earthquake. Liquefaction tends to occur in areas near water or within shallow groundwater.

The project site is located on a valley floor underlain by basalt, with no alluvium. Therefore, it is unlikely to experience lateral spreading or lurch cracking. The only likely places where liquefaction would occur is around the pond located south of the former log ponds. Liquefaction at the pond, if it occurs, would likely be confined to its edges. No structures are planned to be constructed near the pond. There are no impacts.

iv) Landslides?

The project is located on pre-existing cleared and leveled ground within the Hat Creek Construction and Materials site and is not expected to expose people to additional landslide risk. There is no impact.

b) Result in substantial soil erosion or the loss of topsoil?

The project site has already been significantly disturbed by prior operations. Minimal topsoil-moving activities are proposed as a part of this project and is expected to have a less than significant effect.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The project site is located on an active industrial mining site which includes asphalt and concrete batch plants. The proposed project will be constructed on already disturbed ground on the industrial areas of the site. The project will not contribute to any of the above hazards and impacts are expected to be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

The soil in the area of the project site is located in the Burney-Arkright complex which has a low shrink-swell potential. The project is expected to have no impact.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project will use the two existing septic systems on the Hat Creek Construction and Materials site. There is no change to baseline; therefore, there will be no impact.

VII. GREENHOUSE GAS EMISSIONS -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

☐
☐
☐
☒

Discussion

Construction and mobile emissions for the project are extrapolated from the Placer County Cabin Creek Forest Biomass project EIR, which used Cal EEMod, ARB's OFFROAD2007, ARB's EMFAC2011, ARB's Mandatory Reporting guidance, and EPA AP-42 for GHG modeling and calculations. Because proposed construction activities and added employees are less than that involved in the Placer County Cabin Creek EIR, construction- and employee-related emissions were not scaled up. The remainder of the emissions are scaled up by a factor of 1.5 to accommodate the larger output.

Project emissions related to the burning of biomass were estimated using the default CO₂ emissions factors found in CARB's Mandatory Reporting of Greenhouse Gases rule (MRR). Project emissions were calculated according to the procedures outlined in the MRR.

The production of syngas with a downdraft gasification vessel leaves approximately 10 percent of the original woody biomass feedstock input as biochar. Biochar is augered out of the gasification vessel and is a byproduct of downdraft gasification. The concentration of carbon in the remaining biochar varies by feedstock. For woody biomass, residual carbon concentrations range from 53.9 percent to 78 percent of the original feedstock.

Currently, the primary market for biochar is soil amendment. The fixed carbon within the biochar has a half-life of over 1,000 years. This fixed carbon is the source of carbon sequestration with biochar. Using the average residual carbon concentration, this yields approximately 0.053 tons of carbon sequestered per ton of woody biomass feedstock consumed. Converting carbon sequestration to carbon dioxide reduction yields 0.19 tons of carbon dioxide reduction per ton of feedstock consumed.

The project offers carbon sequestration potential through the production of biochar as shown in Table 10.

Table 10 CARBON SEQUESTRATION THROUGH BIOCHAR PRODUCTION			
Pollutant	EF (tons/bdt)	Consumption (bdt/year)	Projected Emissions (tons/year)
CO ₂ e	0.19	22,000	4,180

Scenario 1 – Carbon Neutral: As explained previously in this document, biomass combustion for the production of energy is considered to be carbon neutral, and is considered as such by state, federal and international agencies. CO₂e emissions related to the burning of woody biomass has been exempted from the cap and trade program for this reason and, as such, it is reasonable to consider the calculation of total emissions as potentially carbon neutral when determining the project's environmental impacts.

Total project emissions are summarized in Table 11 below when project is considered carbon neutral:

Table 11 GREENHOUSE GAS EMISSIONS ESTIMATES – SCENARIO 1	
Emissions Source	Projected GHG Emissions (MT CO₂e/yr)
Construction Emissions	4.5 ¹
Project Emissions ²	32,444
Mobile Operations	926
Subtotal:	33,374
Exclusion of Biomass Combustion ²	-32,444
Biochar Sequestration	-3,792
Total Emissions:	-2,862
Threshold of Significance:	25,000
¹ = Amortized over 30 years ² = Biomass combustion GHG emissions are carbon neutral and therefore shown to result in zero net emissions	

Scenario 2 – Avoided Emissions: Implementation of the project would result in the reduction of GHG emissions associated with activities that would occur if the proposed project were not implemented. These are referred to as “avoided emissions.” As explained in Section III, above, for the purposes of conservatively estimating avoided emissions, it is assumed that this facility will use least 50 percent of forest-sourced biomass material that would have been piled and open-burned and 50 percent of forest-sourced biomass material that would have been scattered to decompose. Without the proposed project, emissions from pile and burning and decomposition would occur. Using Intergovernmental Panel of Climate Change (IPCC) data for pile and burn emissions factors³ and decomposition emissions factors from a Stockholm Environment Institute report⁴, avoided emissions factors are shown in Table 12.

Table 12 EMISSION FACTORS			
Pile and Burn			
	CO ₂	CH ₄	N ₂ O
Emission Factor (g/kg)	1,550	6.1	0.06
Global Warming Potential (g CO _{2e} /g)	1	21	310
CO _{2e} Emission Factor (g CO _{2e} /kg)	1,550	128.1	18.6
Total (g CO _{2e} /g)	1,696.7		
Total (lb CO _{2e} /BDT)	3,400.5		
Decomposition			
Total (tons CO _{2e} /BDT)	1.58		

³ 2006 IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Generic Methodologies Applicable to Multiple Land-Use Categories, http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_02_Ch2_Generic.pdf

⁴ Greenhouse Gas and Air Pollutant Emissions of Alternatives for Woody Biomass Residues. Lee, C., Lazarus, M., Smith, G. November 2010, Stockholm Environment Institute.

The bioenergy facility is expected to consume 22,000 BDT annually, with at least 50 percent of that coming from piles that would have otherwise burned. With the assumption that 95 percent of a slash pile is burned, this results in CO₂e emissions reductions of 16,119 tonnes. The remaining 50 percent of the feedstock is assumed to decompose, which results in CO₂e emissions reductions of 14,979 tonnes. These are avoided emissions. When taking these avoided emissions into consideration, the proposed project will have a net-benefit to the environment, as shown in Table 13.

<p align="center">Table 13 GREENHOUSE GAS EMISSIONS ESTIMATES – SCENARIO 2</p>	
Emissions Source	Projected GHG Emissions (MT CO₂e/yr)
Construction Emissions	4.5 ¹
Project Emissions	32,444
Mobile Operations	926
Biochar	-3,792
Reduced Open Burning	-16,119
Reduced Decomposition	-14,979
Total:	-1,516
1 = Amortized over 30 years	

- a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Burning woody biomass can be considered “carbon neutral” in that CO₂ emitted during this process is not from a fossil source. Also, as described above, when taking into consideration the fact that the biomass that will be utilized would have otherwise been open-pile burned or left to decompose, the removal of this waste and its associated emissions has a net-positive effect on the environment. Based on the avoided emissions from the alternative fates of the wood waste and the accepted position by state and federal agencies that biomass to energy is “carbon neutral”, are below the threshold of 25,000 metric tons of CO₂e per year. The effect of this project on GHG emissions is less than significant.

- b) **Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

Shasta County has not yet developed a level of significance for CO emissions. However, using the significance threshold of 25,000 metric tons of CO₂e per year, the project will not have a significant impact. California AB 32 Scoping Plan was developed to produce an 80 percent reduction of 1990 GHG emissions levels by 2050. As part of this program, emissions entities are incentivized to use cleaner alternatives – such as biomass. This project is consistent with these initiatives.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport/use/disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project in the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working there?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) as follows:

“A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed” (CCR, Title 22, Section 66260.10).

Hazardous materials are defined as substances with certain chemical and physical properties that could pose a substantial present or future hazard to human health or the environment if improperly handled, stored, disposed or otherwise managed. Public health hazards from hazardous materials may occur through contamination of soils or groundwater or through airborne releases of vapors, fumes, or dust. Exposure to hazardous materials and wastes could cause various short-term or long-term health effects. The health effects would be specific to each substance or combination of substances.

The project is located in an area at risk for wildland fires. The Shasta County General Plan classifies the unincorporated areas as “moderate,” “high,” or “very high” fire hazard severity zones. The project site is within a “very high” zone. The factors used to classify fire hazards in Shasta County are fuel load, climate, and topography.

A private airstrip is located in the southwestern corner of the project site. The airstrip, which is unimproved, extends in a northwest-southeast orientation past the southern boundary of the project site into the adjacent parcel.

a) Create a significant hazard to the public or the environment through the routine transport/use/disposal of hazardous materials?

During construction and operational phases of the proposed project, common hazardous materials include gasoline and other motor vehicle fuels, propane, solvents, lubricating oils, welding gases, and acids and bases may be present onsite.

The proposed facility, once operating, must complete and submit Unified Program Consolidated Forms and must complete and submit Hazardous Materials Release Response Plan (Business Plan) to the County Environmental Health Department if handling or storing a hazardous material equal to or greater than the minimum reportable quantities. The minimum hazardous materials quantities are:

- 55 gallons of liquid
- 500 pounds of a solid
- 200 cubic feet of compressed gas

The proposed project is expected to be a Conditionally Exempt Small Quantity Generator generating between 0 and 99 kilograms of hazardous waste per month. However, use of oils, lubricants, and diesel fuels in small quantities will be a part of overall operations at the site. Fuel storage will be over secondary containment and is expected to have no impact.

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

While upset and accident conditions are always a possibility, the project site is not expected to pose any significant increase to this hazard than is already present at the existing facility. The site will be operated by Hat Creek Construction and Materials employees who are trained in proper spill cleanup and response procedures. Spill response equipment is already onsite. Fuel storage will be over secondary containment and is expected to have no impact.

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

There is no existing or proposed school within one-quarter mile of the project site. There will be no impact.

- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and create a significant hazard to the public or the environment?**

The project site is not listed on any of the lists of hazardous materials sites provided by the California Department of Toxic Substances Control. There will be no impact.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

The project site is not located within an airport land use plan, nor within two miles of a public airport or public use airport. There will be no impact.

- f) For a project in the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working there?**

There is an old private airstrip onsite. Even though it is no longer in use, no structures or mobile equipment will be located in such a way as to pose a hazard. The project will have no impact.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

A review of the County of Shasta Multi-Hazard Functional Plan indicates that the proposed project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, because of the remote location of the project which is located away from significant population centers, and because it would not block any public or private rights of way which could be necessary for emergency access. There will be no impact.

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

The site is located in an area that is designated a “very high” Fire Hazard Severity Zone. Hat Creek Construction and Materials, as part of their use permit, has already implemented mitigation measures to minimize this risk. In addition, the project will assist in reduction of forest fuel loading and result in increased forest regrowth through the removal of waste. An overall decrease in wildfire risk for communities within 50 miles of the site such as Burney, Cassel, McCloud, and Fall River will be a net benefit. The project will have no impact.

IX. HYDROLOGY AND WATER QUALITY -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g. production rate of pre-existing nearby wells would drop to a level which would not support existing or planned land uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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, which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) 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, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

The only surface water feature on the site is the historical log pond. The log pond is now used as a stormwater retention basin for stormwater discharge from the site and to grow wild rice during summers.

Existing wells onsite with a supply of up to 6,000 gallons per minute supply water to the site. These wells currently supply water to the cement and asphalt plants, maintenance shop, and office. The proposed gasification plant is not anticipated to need additional water as water that is needed is generated from the feedstock.

a) Violate any water quality standards or waste discharge requirements?

All stormwater runoff from this site is contained in the existing retention basin onsite for stormwater and industrial wastewater. The gasification system will not generate wastewater and input water for the system is generated by the water in the feedstock. Small water storage tanks are a component of the gasification system to ensure sufficient water is available for the scrubber and for injection into the gasifier and to maintain temperature control. The water storage tanks will serve as a buffer for fluctuations in moisture content. Water removed from the gas stream in the scrubbing system is returned to the gasifier. As no wastewater is produced in the gasifier and the site is already equipped with an adequate stormwater conveyance system, the project is anticipated to have no impact.

b) 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. production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Existing wells onsite, which once served to keep the large mill ponds filled, have a measured capacity of 6,000 gallons per minute and will only be required to supply water during startup of the process. Impacts on groundwater supplies will be less than significant.

c) 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, which would result in substantial erosion or siltation on- or off-site?

The project will not alter the course of a stream or river, nor would it result in substantial erosion or siltation on or offsite. All stormwater onsite will continue to flow to the onsite retention basins. There will be no impact.

- d) **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, which would result in flooding on- or off-site?**

Soils on this site are highly permeable and there is little to no standing water and no runoff from the site. The proposed project is not expected to change the soil conditions. The project will not contribute additional stormwater runoff to the site. As the existing stormwater drainage system onsite is adequate, the project will have no impact.

- e) **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?**

The project will be on the Hat Creek Construction and Materials site for which there is an existing stormwater drainage system. No additional sources of runoff would occur and no impact is expected.

- f) **Otherwise substantially degrade water quality?**

As stated above, the project is not expected to have a substantial impact on water quality.

- g) **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?**

No housing is proposed as a part of this project; therefore, there will be no impact.

- h) **Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?**

Proposed structures on this site are not expected to impede or redirect flood flows and are not located within a floodplain. There will be no impact.

- i) **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?**

The project is not located near a river or stream, nor in the floodplain, nor downstream from a dam of any consequence. No impact is anticipated.

- j) **Inundation by seiche, tsunami, or mudflow?**

The project site is not located near a large lake or the ocean. Therefore, there are no concerns regarding sieches or tsunamis and there are no formations near the site that are expected to cause a mudflow. There will be no impact.

X. LAND USE AND PLANNING -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan? ☐ ☐ ☐ ☒

Discussion

The site is zoned Industrial and the proposed use is compatible with that use.

a) Physically divide an established community?

There will be no impact as the project site is not located within an established community.

b) 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?

The project does not conflict with the County General Plan or Zoning Plan. There will be no impact.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

The proposed project does not conflict with the County General Plan or the Zoning plan and will have no impact.

XI. MINERAL RESOURCES -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

There are no impacts identified as a result of the proposed project. No mineral resources will be lost due to the project.

- b) **Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

There are no impacts identified as a result of the proposed project. No mineral resources will be lost due to the project.

XII. NOISE -- Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The proposed facility is located on the Hat Creek Construction and Materials site which houses an aggregate quarry, asphalt batch plant, and concrete batch plant. Prior to this, the site was operated as a sawmill from 1955 to 1989. The quarry operation mines rock from a volcanic basalt ledge located on the project site. The quarry is predicted to extract 900,000 cubic yards of material during the lifetime of the operation. Material is removed via equipment and blasting. A portable crushing and screening operation is used to process quarried material which is then stored in stockpiles onsite. The ready-mix concrete batch plant consists of silos, a gathering hopper, and a mixer with an estimated output of 8,000 cubic yards/year. The asphalt batch plant is composed of cold aggregate bins, a heated asphalt oil tank, a dryer, a pug mill a heated storage bin, and conveyors with an estimated output of 10,000 cubic yards per year.

The closest sensitive receptors to the site are residences located across SR 89, approximately 0.56 miles to the northwest. These residences are located within 750 feet from the highway. A noise assessment was conducted near these receptors in May 2000 as part of Hat Creek Construction and Materials EIR process. This investigation noted that the daytime average and maximum levels at the sensitive receptors were approximately 50 and 70 dB Leq and Lmax, respectively. Projected noise levels for the proposed project are summarized below.

Equipment Type	Approximate Noise Level at 100 feet, dBA	
	Maximum	Average
Combined Excavating Equipment (Water Truck, Grader, Loader, Dozer)	90	80
Portable Crushing/Screening Plant	85	80
Asphalt Plant	85	80
Concrete plant	85	80
Truck Repair Facility:		
Air Compressor	70	60
Impact Wrench	75	65
Die Grinder	70	60

As a project-specific noise assessment has not been done as the equipment is not in place, the estimated noise levels from the Placer County Cabin Creek EIR were used. This project estimated an average of 60 dB at 250 feet from the source.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The Shasta County General Plan Section 5.5 "Noise" indicates that the residences on Clark Creek Road already exist in a relatively noisy environment. The trailer park and the residences on Clark Creek Road between SR 89 and Black Ranch Road are within 720 feet of the state highway and experience a noise level in excess of 60 dB Leq. The Placer County Cabin Creek EIR predicted noise levels to drop to 60 dB 250 feet from the source. As these receptors are over 0.5 miles from the site, it is not expected that the project will contribute to any excessive noise.

The site was previously occupied by a lumber mill which generated noise when it was operating. The site currently operates as an aggregate quarry, asphalt batch plant and concrete batch plant which generate noise. Noise levels at the project site were estimated during the 2000 EIR process to be in excess of, on average, 70 dBA. Projected noise levels of 60 dBA for the project would not add to this noise level as it is not cumulative.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

During the construction phase of the project, some minor groundbourne vibrations can be expected. This will be temporary and short term. Truck traffic in and out of the project facility for the duration of the project can lead to minimal groundborne vibrations; however, these are not expected to be excessive or in any significant amount of duration. Overall impact is expected to be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The existing ambient noise environment in the immediate project vicinity is defined primarily by traffic on SR 89 and by existing industrial activities on the site. Noise-sensitive receptors in the immediate project vicinity consist of residences located about 0.56 miles northwest of the project site. Residential areas are shown on Figure 12.

The Placer County EIR indicated that the highest decibel (dB) reading anticipated was 74dB at 50 feet from the center of the project. At 250 feet from the project, the reading dropped to 60 dB. These highest readings are lower than the average noise levels predicted for the Hat Creek Construction and Materials operation existing at the site. Therefore, the proposed project is not expected to contribute to any noise levels above what is already at the site and is expected to have a less than significant effect.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

The site was previously occupied by a lumber mill which generated noise when it was operating. The site currently operates as an aggregate quarry, asphalt batch plant, and concrete batch plant which generate noise. The Shasta County General Plan Section 5.5 "Noise" indicates that the residences on Clark Creek Road already exist in a relatively noisy environment. The trailer park and the residences on Clark Creek Road between SR 89 and Black Ranch Road are within 720 feet of the state highway and thus experience a high noise level. The addition of the project is not expected to add any significant amount of noise to the current baseline.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

There is no impact as the project site is not located within two miles of a public airport or public use airport.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is adjacent to a private airstrip which is no longer in use. It had been used seasonally in the past for agricultural uses including crop dusting. As this use was intermittent, it is not expected to have a significant impact.

XIII. POPULATION AND HOUSING -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

The proposed project would add an estimated two employees onsite. The population of the community of Burney is approximately 3,400 people. There are an additional approximately 4,700 people in the surrounding area. Comparing the number of additional employees with the local population, the project is not expected to result in a substantial population growth. No new roads or infrastructure are proposed and no impact is expected.

- b) **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

There will be no impact as no housing will be displaced as a result of the project.

- c) **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

There will be no impact as no people will be displaced as a result of the proposed project.

XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The proposed project is not expected to cause the need for additional fire protection, police protection, schools, parks, or other public facilities. Fire protection will be provided onsite. At least one night-watchman resides on the site. The project does not include any additional population which would affect local parks or schools. The project should provide an overall net benefit in the reduction of forest fuels and wildfire risk.

XV. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The project will be located on private property zoned for industrial use.

- a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

The project does not include any residential population which would affect recreational facilities; therefore, no impact is expected.

- b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

The project does not include recreation facilities or require the construction or expansion of recreational facilities. No impact is expected.

XVI. TRANSPORTATION/TRAFFIC -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The project site is located on SR 89, approximately 3.7 miles north of Four Corners Junction with SR 299. SR 89 and SR 299 are highly trafficked roads with average vehicle traffic of 1,850 (20 percent of which is truck traffic) and 3,525 (9 percent of which is truck traffic) per day, respectively. Hat Creek Construction and Material's current use permit limits traffic on the site to a total of 709 round trips per day. Daily traffic at the site during periods of production averages 500 trips per day including employee trips. The proposed project is expected to add a maximum of 10 and an average of 6 truckloads of feedstock per day and a maximum of 4 employee trips per day.

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

As part of the Hat Creek Construction and Materials use permit process in 2000, a right-turn lane was added to ensure significant congestion was not encountered at the site. The proposed project is only expected to add a maximum of ten and an average of six truck-loads of feedstock per day. These are within the current traffic limits at the site (709 truck-loads/day). The project will add less than 10 truck and 4 employee trips per day. This additional traffic will not be a significant increase from current traffic at the site. There will be no significant impact.

- b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

According to Caltrans monitoring data, SR 89 sees an average of 1,750 to 1,950 vehicles per day. Increased traffic due to the proposed project is small and not expected to have any significant impact.

- c) **Result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks?**

The project does not include any air traffic and is not expected to have any effect on air traffic patterns. There is no impact.

- d) **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

The project does not propose any new design features or incompatible uses. The existing entrance to the project site will be adequate to handle the additional traffic for the project. No impact is expected.

- e) **Result in inadequate emergency access?**

There are two access points to the subject property which could be used for emergency access. The proposed project would not be located near either access point and would not affect either access point. There will be no impact.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The proposed project does not affect, in any way, adopted policies, plans or programs supporting alternative transportation.

XVII. UTILITIES AND SERVICE SYSTEMS -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The proposed project is located on the existing Hat Creek Construction and Material's facility and will not result in any additional demands over what was evaluated under Use Permit 99-17. The facility relies on private wells for water supply and a private septic system for wastewater treatment. Additional water, such as connection to public water supply systems, will not be

required for the proposed project. Any wastewater produced as a byproduct of the proposed project will be contained and recycled through the system. No wastewater will be discharged.

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The proposed project is not expected to release any waste water; therefore, no impact is expected.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The project would not require the construction of new water or wastewater treatment facilities as no wastewater is expected to be generated. No impact is expected.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

All stormwater from the project site is already contained onsite through an existing stormwater drainage system. Therefore, any changes due to the project will have no impact.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The majority of water required for the project will be supplied by the moisture in the feedstock. Onsite wells have the capacity to pump 6,000 gpm. The wells will provide the additional water necessary during periods of startup. This amount of water is expected to be small and intermittent and have a less than significant effect on onsite water supply.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

There will be no impact as no wastewater treatment provider currently serves or is planned to serve the project.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

The proposed project is not expected to generate any significant amount of solid waste. The only waste stream generated by the proposed project is the biochar which will be stockpiled and sold as a soil amendment; therefore, there will be no impact.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

The proposed project is not expected to generate any significant amount of solid waste. The only significant amount of waste generated by the proposed project is the biochar which will be stockpiled and sold as a soil amendment. There will be no impact.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

