NOTICE OF INTENT TO
ADOPT A MITIGATED NEGATIVE DECLARATION

To: San Bernardino County
Clerk of the Board
385 North Arrowhead Avenue
San Bernardino, CA 92415

and

Office of Planning and Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

From: Big Bear City Community
Services District (BBCCSD)
139 East Big Bear Blvd. (PO Box 558)
Big Bear City, CA 92314

Subject: Filing of Notice of Intent to Adopt a Mitigated Negative Declaration in compliance with Section 21092.3 of the Public Resources Code.

Project Title

Well 8A Development Project

Not Assigned Yet	Scott Heule, General Manager	(909) 585-2565
State Clearinghouse Number	Lead Agency Contact Person	Telephone Number

Project Location

The property is located on the southwestern side of Baldwin Lake, on Palomino drive north of the intersection of Palomino Drive and Shay Road in Big Bear City, California. The proposed Well 8A is shown on the USGS – Baldwin Lake 7.5' Series Topographic Map. Cadastrally, the site is located in Section 7, Township 2 North, Range 2 East, San Bernardino Meridian.

Project Description

The Big Bear City Community Services District (BBCCSD or District) currently operates Well 8, which is located at the Big Bear Area Regional Wastewater Agency's (BBARWA or Agency) Administration site. Well 8 is experiencing diminished water production. BBCCSD is proposing to drill, construct, develop and test a new well, Well 8A, to replace existing Well 8. The proposed new well will be drilled approximately 150 feet west of Well 8. This well is designed to replace Well 8, which historically has been one of the District's largest water producers (about 550 gallons per minute, gpm).

Proposed Review Process

A capital improvement project such as the proposed project is a discretionary decision or "project" that requires evaluation under the California Environmental Quality Act (CEQA). This Mitigated Negative Declaration is the proposed CEQA determination for this project. BBCCSD acting as the CEQA lead agency for this project will consider adoption of this Mitigated Negative Declaration at a future scheduled public meeting.

After public review of the Initial Study is completed, BBCCSD proposes to adopt a Mitigated Negative Declaration in accordance with CEQA and the State CEQA Guidelines. Any parties that comment on this proposed Mitigated Negative Declaration will be notified of the meeting date where adoption of the Mitigated Negative Declaration will be considered. Copies of the Mitigated Negative Declaration/Initial Study are available for review at the BBCCSD's office located at 139 East Big Bear Blvd., Big Bear City, CA 92314. The proposed Mitigated Negative Declaration will be available for public review and comment from October 5, 2016 through November 3, 2016. Any comments you have must be submitted in writing no later than November 3, 2016.

Signature	Title	Date
	Gen. Mgr.	10/4/16

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814 — 916/445-0613

SCH #_____

Project Title: WELL 8A DEVELOPMENT PROJECT

Lead Agency: Big Bear City Community Services District
Contact Person: Scott Heule
Mailing Address: 139 East Big Bear Blvd., (PO Box 558)
Phone: (909) 585-2565
City: Big Bear City Zip: 92314
County: San Bernardino County

Project Location: County: San Bernardino County
City/Nearest Community: Big Bear City
Cross Streets: Palomino Drive and Shay Road
Zip Code: 92314
Lat. / Long.: 34° 16' 04.06" N / 116° 48' 56.84" W
Total Acres: < 1 acre
Assessor's Parcel No: N/A
Sections: 7, T2N, R2E, SBM
Within 2 miles: State Hwy #: 38
Waterways: Baldwin Lake
Airports: N/A Railways: N/A Schools: N/A

Document Type:

CEQA: ☐ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☐ Neg Dec (Prior SCH No.) _____
■ Mit Neg Dec ☐ Other _____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other _____

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ■ Other Well Development

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
☐ Education _____
☐ Recreational _____

■ Water Facilities: Type Well MGD N/A
☐ Transportation: Type _____
☐ Mining: Mineral _____
☐ Power: Type _____ Watts _____
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☐ Other: _____

Project Issues Discussed in Document:

■ Aesthetics / Visual
■ Agricultural Land
■ Air Quality
■ Archaeological / Historical
■ Biological Resources
■ Coastal Zone
☐ Drainage / Absorption
☐ Economic / Jobs
☐ Fiscal
■ Floodplain / Flooding
■ Forest Land / Fire Hazard
■ Geologic / Seismic
☐ Minerals
■ Noise
☐ Population / Housing Balance
■ Public Services / Facilities
■ Recreation / Parks
☐ Schools / Universities
☐ Septic Systems
☐ Sewer Capacity
■ Soil Erosion / Compaction / Grading
☐ Solid Waste
■ Toxic / Hazards
■ Traffic / Circulation
■ Vegetation
☐ Water Quality
■ Water Supply / Groundwater
■ Wetland/Riparian
■ Wildlife
☐ Growth Inducing
■ Land Use
☐ Cumulative Effects
☐ Other _____

Present Land Use / Zoning / General Plan Designation:

Project Description: The Big Bear City Community Services District (BBCCSD or District) currently operates Well 8, which is located at the Big Bear Area Wastewater Reclamation Agency's (BBARWA or Agency) Administration site. Well 8 is experiencing diminished water production. BBCCSD is proposing to drill, construct, develop and test a new well, Well 8A, to replace existing Well 8. The proposed new well will be drilled approximately 150 feet west of Well 8. This well is designed to replace Well 8, which historically has been one of the District's largest water producers (about 550 gpm).

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an **"X"**.
If you have already sent your document to the agency please denote that with an **"S"**.

____	Air Resources Board	____	Office of Historic Preservation
____	Boating / Waterways, Department of	____	Office of Public School Construction
____	California Highway Patrol	____	Parks & Recreation
X	Caltrans District # 8	____	Pesticide Reguletion, Department of
____	Caltrans Division of Aeronautics	____	Public Utilities Commission
____	Caltrans Planning (Headquarters)	____	Reclamation Board
____	Coachella Valley Mountain Conservancy	X	Regional WQCB, # 8, Santa Ana
____	Coastal Commission	____	Resources Agency
____	Colorado River Board	____	S.F. Bay Conservation & Development Commission
____	Conservation, Department of	____	San Gabriel & Lower L.A. Rivers & Mtns Conservancy
____	Corrections, Department of	____	San Joaquin River Conservancy
____	Delta Protection Commission	____	Santa Monica Mountains Conservancy
____	Education, Department of	____	State Lands Commission
____	Energy Commission	X	SWRCB: Clean Water Grants
X	Fish & Wildlife, Region # 6	____	SWRCB: Water Quality
____	Food & Agriculture, Department of	____	SWRCB: Water Rights
____	Forestry & Fire Protection	____	Tahoe Regional Planning Agency
____	General Services, Department of	____	Toxic Substances Control, Department of
____	Health Services, Department of	X	Water Resources, Department of
____	Housing & Community Development		
____	Integrated Waste Management Board		
____	Native American Heritage Commission		
____	Office of Emergency Services	____	Other _____
		____	Other _____

Local Public Review Period (to be filled in by lead agency)

Starting Date October 5, 2016 Ending Date November 3, 2016

Lead Agency (complete if applicable)

Consulting Firm:	Tom Dodson & Associates	Applicant:	Big Bear City CSD
Address:	2150 N. Arrowhead Avenue	Address:	139 East Big Bear Blvd (POB 558)
City/State/Zip:	San Bernardino, CA 92405	City/State/Zip:	Big Bear City, CA 92314
Contact:	Tom Dodson	Contact:	Scott Heule
Phone:	(909) 882-3612	Phone:	(909) 585-2565

Signature of Lead Agency Representative:

Signature Title Date

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

DRAFT MITIGATED NEGATIVE DECLARATION

Lead Agency: Big Bear City Community Services Dist.
P.O. Box 558
Big Bear City, CA 92314

Contact: Scott Heule
Phone: (909) 585-2565
Email: sheule@bbccsd.org

Project Title: WELL 8A DEVELOPMENT PROJECT

State Clearinghouse Number: Not yet assigned

Project Location: The property is located on the southwestern side of Baldwin Lake, on Palomino drive north of the intersection of Palomino Drive and Shay Road in Big Bear City, California. The proposed Well 8A is shown on the USGS – Baldwin Lake 7.5' Series Topographic Map. Cadastrally, the site is located in Section 7, Township 2 North, Range 2 East, San Bernardino Meridian.

Project Description: The Big Bear City Community Services District (BBCCSD or District) currently operates Well 8, which is located at the Big Bear Area Wastewater Reclamation Agency's (BBARWA or Agency) Administration site. Well 8 is experiencing diminished water production. BBCCSD is proposing to drill, construct, develop and test a new well, Well 8A, to replace existing Well 8. The proposed new well will be drilled approximately 150 feet west of Well 8. This well is designed to replace Well 8, which historically has been one of the District's largest water producers (about 550 gallons per minute, gpm).

Finding: Big Bear City Community Services District's (BBCCSD) decision to facilitate implementation of this proposed project is a discretionary decision or "project" that requires evaluation under the California Environmental Quality Act (CEQA). Based on the information in the project Initial Study, BBCCSD has made a *preliminary* determination that a Mitigated Negative Declaration will be the appropriate environmental determination for this project to comply with CEQA.

Initial Study: Copies of the Mitigated Negative Declaration/Initial Study are available for public review at the BBCCSD's office located at 139 East Big Bear Blvd., Big Bear City, CA 92314. The proposed Mitigated Negative Declaration will be available for public review and comment from October 5, 2016 through November 3, 2016. Any comments you have must be submitted in writing no later than November 3, 2016.

Mitigation Measures: All mitigation measures identified in the Initial Study are summarized on pages 52-54 and are proposed for adoption as conditions of the project. These measures will be implemented through a mitigation monitoring and reporting program if the Mitigated Negative Declaration is adopted.

Signature *Title* *Date*

INITIAL STUDY
FOR
BIG BEAR CITY COMMUNITY SERVICES DISTRICT'S
WELL 8A DEVELOPMENT PROJECT

Prepared for:

Big Bear City Community Services District
139 East Big Bear Boulevard
Big Bear City, California 92314

Prepared by:

Tom Dodson & Associates
2150 North Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

October 2016

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PROJECT DECRIPTION

Introduction

The Big Bear City Community Services District (BBCCSD or District) currently operates Well 8, which is located at the Big Bear Area Wastewater Reclamation Agency's (BBARWA or Agency) Administration site. Well 8 is experiencing diminished water production. BBCCSD is proposing to drill, construct, develop and test a new well, Well 8A, to replace existing Well 8. The proposed new well will be drilled approximately 150 feet west of Well 8. This well is designed to replace Well 8, which historically has been one of the District's largest water producers (about 550 gallons per minute, gpm).

Location

As indicated in the Introduction, the proposed new Well 8A is located at the Administration Building site operated by BBARWA. The property is located on the southwestern side of Baldwin Lake, on Palomino drive north of the intersection of Palomino Drive and Shay Road in Big Bear City, California. Figure 1 shows the project location on a regional map. Figure 2 shows the proposed Well 8A location on the USGS – Baldwin Lake 7.5' Series Topographic Map. Cadastrally, the site is located in Section 7, Township 2 North, Range 2 East, San Bernardino Meridian. The Longitude/Latitude of the proposed Well 8A site is approximately 34°16'04.06" N and 116°48'56.84" W respectively. Figure 3 is an aerial photograph that shows the specific location of the Well 8 and proposed Well 8A on the WWTP property. The building to the right of proposed Well 8A (east) is the Administrative Office for BBARWA.

Project Characteristics

BBCCSD will serve as a lead agency under the California Environmental Quality Act (CEQA) and BBARWA will serve as a CEQA responsible agency for the proposal to drill, construct, develop and test a new well, Well 8A, to replace existing Well 8. The District will fund and oversee installation of the new well, while BBARWA must authorize the installation of the well on its property. There are no entitlements from local government required to install and operate proposed Well 8A by the District. Funding from alternative sources (State or Federal) may be sought in the future.

The following summary of information is provided regarding the drilling, construction, development and testing the new well, Well 8A, to replace existing Well 8. The total area of disturbance shown on Figure 3 is approximately one to 1.5 acre. Once the well is completed the area of above ground disturbance will be less than 10,000 square feet (about 1/4 acre). The proposed well will be drilled to about 400 feet below the ground surface, or as directed by the hydrogeologist. The well bore will be a minimum of 17.5-inches in diameter, and then enlarged to 22-inch diameter from 50 feet below-ground surface to the total depth specified by the hydrogeologist. Drilling will be accomplished through use of a reverse rotary drill unit. Once the well is completed to the desired depth, it will be pumped to test the production rate and quality of the water. The groundwater extracted from the well will be passed through Baker tanks to settle out any sediment and then delivered to the wastewater ponds for disposal. Assuming the well produces a sufficient quantity of groundwater of adequate quality, the well will be equipped for production with a vertical turbine pump and converted to a production well.

It is anticipated that about five persons will be on the site at any one time to support drilling the well: three drillers, the hydrogeologist inspector and a foreman. Daily trips to complete the well will average about 10 round trips per day, including: two round trips for drill rigs; between 6 and 12 roundtrips for cement trucks; a few trips to deliver pipe; and about 20 trips per day for employees. The District estimates that it will require about 8 weeks to drill the well, with 24-hour drilling activities limited to about 2 weeks; to avoid excessive noise, temporary noise control barrier walls and equipment will be installed. The production objective for the well is to generate about 550 gpm. Assuming the ground water quality is potable (see the discussion under Hydrology and Water Quality), the new well will be connected to the District's distribution system located about 150 feet to the east at Well 8. The well pump will be located aboveground and placed in an enclosed structure similar to what presently exists at Well 8. The groundwater will be treated with a sodium hypochlorite disinfectant at the wellhead.

The project hydrogeologist has provided the following more detailed sequence of events that will be implemented in support of the proposed project.

- The bucket auger drill rig will come onsite and drill and install conductor casing and cement sanitary seal
- The reverse rotary drill rig will mobilize to the site and set up, including sound walls.
- Drill the pilot borehole and collect associated data, such as lithology, geophysical logs, isolated aquifer zone testing
- Deliver the well construction materials
- Drill enlarged borehole to target depth
- Construct the well
- Conduct initial well development by airlift/swab
- Demobilize the drill rig and mobilize the test pump
- Conduct final development by pumping
- Conduct pumping tests
- Temporarily cap the well and demobilize remaining equipment
- Return the site to original condition
- Connect Well 8A to the District Distribution System

Other Agencies That May Have Jurisdiction Over the Project

Other than BBARWA there are several other agencies with possible jurisdiction over the proposed project. First among these is the State Water Resources Control Board (SWRCB). SWRCB ultimately approves connection of the new well to the District's water distribution system after determining that the water quality is adequate to supply potable water to the District's customers. The existing District water supply permit will be modified to include the new well assuming it produces water of adequate quality. Although the proposed well site and all areas shown on Figure 3 with support facilities is highly disturbed, listed plant species do occur within the project area and it may be necessary to coordinate the drilling activities with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). Finally, based on the amount of area disturbed to support well drilling (about one acre), it may be necessary to file a General Construction Permit Notice of Intent with the State Water Resources Control Board. Regardless, the District will prepare a Storm Water Pollution Prevention Plan (SWPPP) to ensure water quality degradation does not occur during site ground disturbing activities during construction. This SWPPP will be coordinated with the Santa

Ana Regional Water Quality Control Board as part of the project's compliance with the General Construction Permit.

No other permits have been identified as being required to support the proposed project.

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.

■ Aesthetics	❑ Agriculture and Forestry Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	■ Geology / Soils
❑ Greenhouse Gas Emissions	■ Hazards & Hazardous Materials	■ Hydrology & Water Quality
❑ Land Use / Planning	❑ Mineral Resources	■ Noise
❑ Population / Housing	❑ Public Services	❑ Recreation
❑ Transportation / Traffic	■ Utilities / Service Systems	■ Mandatory Findings of Significance

Note that all potentially significant impacts can be reduced to a less than significant impact level with implementation of identified mitigation measures.

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation, the following finding is made:

	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	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.
	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	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.
	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.

Tom Dodson & Associates
Prepared by

Date

10/4/16
Date

Signature
Big Bear City Community Services District

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

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project would not have a substantial adverse effect on a scenic vista. The project will not change land uses, or substantially alter existing scenic vistas in the project area or visual aspects of the area. The installation of a water production well involves ground disturbing activities for the construction of the well, however once drilled, most of the well facilities will be below-ground with the exception of an enclosure for the well turbine pump. Construction activities will be temporary and localized. The well head will be placed in a wood building structure. Well 8A will be located approximately 150 feet east of Well 8's current location, which is within BBARWA's existing Administration Building site, and is therefore consistent with the existing surroundings and would not impact the scenic vista. Operational activities and the new enclosure will cause minor changes in views from surrounding development, but will not obstruct scenic vistas and therefore the impact as such is considered less than significant.

b. *No Impact* – The proposed project would not substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a state scenic highway. The project site is not located on a state scenic highway. Highway 18, north of the proposed well site, is an eligible state scenic highway, but has not been designated as such. No historic buildings are located within the area proposed for development as part of the proposed project. No rock outcroppings, trees, or other visual features would be impacted by the proposed project. The proposed project site is within an existing Administration Building setting on developed land, so with no important scenic resources or visual qualities within the project area, the proposed project does not have a potential to substantially degrade the visual character or quality of the site or its surroundings. No impact can occur under this issue and no mitigation is required.

c. *Less Than Significant Impact* – The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. The construction of the well will alter the visual setting of the site temporarily, but as Well 8A is expected to replace the existing Well 8, the new well would be a feature comparable to what one would expect to exist at this site especially considering the Administration Building features in the immediate vicinity of the proposed well site. Therefore, implementation of the proposed project will not degrade or change the visual character of the sites or their surroundings.

d. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Lighting at the well site will be installed as needed for safety. Lighting is already present at the wastewater treatment plant site in which Well 8 presently exists and Well 8A will be adjacent to, so the lighting associated with the proposed project would not be considered a significant change to the night-light environment. Lighting will also be required during the 24-hour drilling phase of the well construction. In order to ensure that impacts to this issue area remain less than significant, the following mitigation measure will be implemented.

I-1 Night lighting will be located and shielded so as to avoid creating a nuisance to nearby residents. Light from night lighting shall not spill off the pump station site or wastewater treatment plant site onto adjacent occupied structures.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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:				
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?				**X**
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?				**X**
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))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				**X**

SUBSTANTIATION:

a. *No Impact* – The proposed project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown in the map of the site from the State of California Department of Conservation: California Important Farmland Finder (Figure II-1). No agricultural land exists within the proposed project area and no agricultural land is proposed over the long-term according to the County's General Plan Land Use Map for the Big Bear and Baldwin Lake areas. The proposed project area is located in a non-agricultural rural and suburban area that is already disturbed. The proposed project area is not within an area identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impacts are identified, and no mitigation is required.

   http://maps.conservation.ca.gov/ciff/ciff.html

b. *No Impact* – According to the County of San Bernardino General Plan, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. The project areas are not zoned agricultural and none are located in a Williamson Act designated area. No impacts are identified, and no mitigation is required.

   http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf

c. *No Impact* – The proposed project would not 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)). Trees are found in abundance in the project area and the area surrounding Big Bear and Baldwin Lake. The wastewater treatment plant (WWTP) site is adjacent to the San Bernardino National Forest, which is under jurisdiction of the U.S. Forest Service. However, no timberland resources would be disturbed as a result of project implementation. The project site is not considered forest land or immediately adjacent to such resources. The site is already disturbed and the use of the sites would remain the same with or without the proposed project.

d. *No Impact* – The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. The proposed project would drill, construct, develop and test a new well, Well 8A, to replace existing Well 8, on BBARWA's WWTP property where Well 8 currently exists. No forest resources occur within the area of potential effects (APE). Thus, no impacts are anticipated to be associated with the implementation of the proposed project.

e. *No Impact* – The proposed project would not involve changes in the existing environment, which due to their nature or location, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. The project will not result in other changes in the existing environment that might convert farmland to non-farmland uses. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		**X**		
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		**X**		
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)?		**X**		
d) Expose sensitive receptors to substantial pollutant concentrations?		**X**		
e) Create objectionable odors affecting a substantial number of people?		**X**		

SUBSTANTIATION: The information provided in the following text is abstracted from an air quality and greenhouse gas technical study titled *"Air Quality and GHG Impact Analyses Big Bear City Community Services District Well 8A Project"* prepared by Giroux & Associates dated May 18, 2016. This study is provided as Appendix 1 to this document. Only data from that portion of the technical study applicable to the well development is summarized below.

a-e. *Less Than Significant Impact With Mitigation Incorporated* – The following information utilized in this section of the Initial Study was obtained from the Air Quality and GHG Impact Analyses Big Bear City Community Services District Well 8A Project prepared by Giroux & Associates dated May 18, 2016 (AQ Analysis). Please refer to the AQ Analysis in Appendix 1 for a detailed discussion of the background and physical setting, as well as the regulatory setting for federal and California ambient air quality standards. The discussion below will center on the short- and long-term emissions as they relate to regional significance thresholds and localized significance thresholds. Background air quality is summarized in Appendix 1 and on Table III-3 provided in this section. In summary, peak daily construction activity emissions are estimated to be below the South Coast Air Quality Management District (SCAQMD) CEQA thresholds without the need for added mitigation.

Background

The project area is located in the San Bernardino Mountains. The area is characterized by an alpine climate, with substantial winter precipitation in the form of winter snow because of its high elevation. Snowfall, as measured at lake level, averages 61.8 inches each year (although upwards of 100 inches can accumulate on the forested ridges bordering the lake, above 8,000 feet). Snow has fallen in every

month except July and August. There are normally 16.5 days each year with measurable snow (0.1 inch or more).

On average, the Bear Valley area receives approximately 24 inches of precipitation per year, with a sharp transition between the western edge of the Valley at the dam and the eastern edge at Baldwin Lake. Historical precipitation consists of both rainfall and snowfall, Within the Big Bear watershed, the precipitation varies with location. The west end of the lake, at the Big Bear dam, receives about 37 inches per year with about 14 inches at Baldwin Lake.

Daily temperatures in the summer are from 60°F to 70°F. Temperatures in the winter average approximately 35°F to 40°F. According to the National Weather Service, the warmest month at Big Bear is July, when the average high is 80.7°F and the average low is 47.1°F. The coolest month is January, with an average high of 47.1°F and an average low of 20.7°F. There are an average of 1.2 days each year with highs of 90°F or higher. The highest temperature recorded at Big Bear was 94°F last recorded on July 15, 1998. The record lowest temperature was -25°F on January 29, 1979.

Ambient Air Quality Standards

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table III-1. Sources and health effects of various pollutants are shown in Table III-2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard

Table III-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O3)	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.075 ppm (147 µg/m3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		–		
Fine Particulate Matter (PM2.5)	24 Hour	–	–	35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	15 µg/m3		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m3)	–	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9 ppm (10 mg/m3)		9 ppm (10 mg/m3)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 g/m3)		–	–	
Nitrogen Dioxide (NO2) [8]	1 Hour	0.18 ppm (339 µg/m3)	Gas Phase Chemiluminescence	100 ppb (118 pg/m3)	–	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)		0.053 ppm (100 µg/m3)	Same as Primary Standard	
Sulfur Dioxide (SO2) [9]	1 Hour	0.25 ppm (655 µg/m3)	Ultraviolet Fluorescence	75 ppb (196 pg/m3)	–	Ultraviolet Flourescense; Spectrophotometry (Paraosaniline Method)
	3 Hour	–		–	0.5 ppm (1300 µg/m3)	
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm (for certain areas) [9]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas) [9]	–	
Lead 8 [10,11]	30-Day Average	1.5 µg/m3	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m3 (for certain areas) [11]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Avg	–		0.15 µg/m3)		
Visibility Reducing Particles [12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	**No Federal Standards**		
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride [10]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1 California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations

2 National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8 hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24 hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9 On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (10/1/15)**

Table III-2
HEALTH EFFECTS OF MAJOR CRITERIA POLLUTANTS

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm, which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2025.

Of the standards shown in Table III-1, those for ozone (O_3), and particulate matter (PM-10) are exceeded at times in the MDAB. They are called "non-attainment pollutants." Because of the variations in both the regional meteorology and in area-wide differences in levels of air pollution emissions, patterns of non-attainment have strong spatial and temporal differences.

The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

Baseline Air Quality

Existing and probable future levels of air quality in the project area can be best inferred from ambient air quality measurements conducted by the SCAQMD. The data resource in closest proximity to the project site is the Big Bear City Monitoring Station. However, this station only monitors small particulates (PM-2.5). The closest available data for ozone and large particulates (PM-10) is the Crestline Monitoring Station. Data for carbon monoxide and nitrogen oxide were obtained from the San Bernardino 4th Street Monitoring Station. Summary data compiled from these resources is provided in Table III-3. Findings are summarized below:

Table III-3
PROJECT AREA AIR QUALITY MONITORING SUMMARY 2010-2014
(Days Standards Were Exceeded and Maximum Observed Levels)

Pollutant/Standard	2011	2012	2013	2014
Ozone				
1-Hour > 0.09 ppm (S)	58	56	45	50
8-Hour > 0.07 ppm (S)	103	103	101	97
8- Hour > 0.075 ppm (F)	84	86	72	68
Max. 1-Hour Conc. (ppm)	0.160	0.140	0.120	0.130
Max. 8-Hour Conc. (ppm)	0.137	0.112	0.105	0.106
Carbon Monoxide				
8- Hour > 9. ppm (S,F)	0	0	0	0
Max 8-hour Conc. (ppm)	1.7	1.6	1.7	2.4
Nitrogen Dioxide				
1-Hour > 0.18 ppm (S)	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.062	0.067	0.072	0.073
Respirable Particulates (PM-10)				
24-hour > 50 $\mu g/m^3$ (S)	0/59	0/57	0/60	0/61
24-hour > 150 $\mu g/m^3$ (F)	0/59	0/57	0/60	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	37.	36.	32.	47.
Fine Particulates (PM-2.5)				
24-Hour > 35 $\mu g/m^3$ (F)	0/55	1/52	1/59	0/xx
Max. 24-Hr. Conc. ($\mu g/m^3$)	30.7	36.4	35.5	24.2

xx = not reported on CARB website

Source: South Coast Air Quality Management District; Crestline Monitoring Station for Ozone and PM-10; San Bernardino 4th Street Monitoring Station for CO and NO_2; Big Bear City Monitoring Station for PM-2.5.

data: www.arb.ca.gov/adam/

a. Photochemical smog (ozone) levels frequently exceed standards at Crestline. The 8-hour state ozone standard has been exceeded an average of 28 percent of all days in the past four years near the project site while the 1-hour state standard has been violated an average of 14 percent of all days. While ozone levels are still high, they are much lower than 10 to 20 years ago.

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels very rarely exceed the state or federal standard PM-10 standard. There have been no violations in the last four years of either standards.

d. A substantial fraction of PM-10 is comprised of small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). However, PM-2.5 readings rarely exceed the federal 24-hour PM-2.5 ambient standard (two times in the last four years).

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Significance Thresholds Used in This Document

The project proposed to construct, develop, and test a new well, Well 8A, to replace existing Well 8. This well is designed to replace Well 8, which historically has been one of the District largest (about 550 gpm) water producers. Potential air quality impacts to the immediate project vicinity would occur almost exclusively during the construction phase of the proposed improvements.

The U.S. Environmental Protection Agency published "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule," in the November 30, 1995, Federal Register (40 CFR Parts 6, 51, and 93). The 40 CFR Part 1 51.850(a) states that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity which does not conform to an applicable state implementation plan (SIP). It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan, before the action is taken. If the proposed project includes any federal funding, federal participation is not allowed unless a conformity determination has been made.

Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* emission levels. The 40 CFR Part 51.853(b) establishes these *de minimis* levels for criteria pollutants. The Mojave Desert area is a designated severe non-attainment area for the federal 8-hour standard for ozone and serious non-attainment for PM-10. These designations establish the *de minimis* annual air pollution emissions levels for any proposed action.

If the project-related annual emissions are less than specified "*de minimis*" levels, no further SIP consistency demonstration is required. As discussed, ozone (O_3), and particulate matter (PM-10) are considered "non-attainment pollutants" for the MDAB. Based upon these designations, the following emissions levels are presumed evidence of SIP conformity:

VOC/ROG	5 tons/year
NOx	25 tons/year
PM-2.5	100 tons/year
PM-10	70 tons/year

Additional Indicators
In its CEQA Handbook (2007), the MDAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators relevant to this project are as follows:

- Generates total emissions (direct and indirect) in excess of the MDAQMD thresholds.
- Generate a violation of any ambient air quality standard when added to the local background
- Creates odors that could be considered a nuisance by any substantial number of people.
- Does not conform to applicable attainment or maintenance plans.
- Emits hazardous or toxic emissions that create an excess cancer risk of more than 10 in a million or a non-cancerous health index (HI) or more than 1.0.

Except in special circumstances, the CEQA Handbook notes that meeting the daily or annual emissions thresholds is normally sufficient to demonstrate a less-than-significant impact.

Construction Activity Impacts

CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

Although exhaust emissions will result from on and off-site equipment, the exact types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Estimated construction emissions were modeled using CalEEMod2013.2.2 to identify maximum daily emissions for each pollutant during project construction.

The proposed well project is expected to require 8 weeks for construction. Because 24-hour drilling will be required for a period of time, for a worst case day, drilling equipment was assumed to operate the entire time. The modeled default prototype construction equipment fleet and schedule is shown in Table III-4.

Table III-4
CONSTRUCTION ACTIVITY EQUIPMENT FLEET

Phase Name and Duration	Equipment
Drill (6 weeks)	1 Drill Rig
	1 Gen Set
	1 Loader/Backhoe
Pipeline Install (1 week)	1 Crane
	1 Air Compressor
	1 Welder
Paving (1 week)	1 Mixer
	1 Paver
	1 Roller
	1 Loader/Backhoe

Utilizing this indicated equipment fleet and durations shown in Table III-4 the following worst case daily construction emissions are calculated by CalEEMod and are listed in Table III-5.

Table III-5
CONSTRUCTION ACTIVITY EMISSIONS
MAXIMUM DAILY EMISSIONS (pounds/day)

Year 2016	ROG	NOx	CO	SO_2	PM-10	PM-2.5
Maximal Construction Emissions	1.9	22.0	12.4	<0.1	5.7	3.4
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA thresholds without the need for additional mitigation.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel

emissions relative to health risk due to the short 8-week period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

III-1 Fugitive Dust Control

The following measures shall be incorporated into Project plans and specifications for implementation:

- ***All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.***
- ***The contractor shall ensure that all disturbed areas within the Project are watered with complete coverage of disturbed areas at least two times a day, preferably in the mid-morning, afternoon, and after work is done for the day. Additional watering can be applied if fugitive dust is observed leaving the project site.***
- ***The contractor shall ensure that traffic speeds on the Project site are reduced to 10 miles per hour or less.***
- ***Plans, specifications and contract documents shall direct that a sign must be posted on-site stating that construction workers shall not idle diesel engines in excess of five minutes.***
- ***During grading activity, all construction equipment greater than 150 horsepower shall be California Air Resources Board (CARB) Tier 3 Certified.***
- ***Only "Zero-Volatile Organic Compounds" paints (no more than 150 gram/liter of VOC) and/or High Pressure Low Volume (HPLV) applications consistent with South Coast Air Quality Management District Rule 1113 shall be used when reservoirs are painted, if painted onsite.***
- ***Install and maintain track out control devices in effective condition at all access points where paved and unpaved access or travel routes intersect (e.g., Install wheel shakers, wheel washers, and limit site access.)***
- ***All roadways, driveways, sidewalks, etc., shall be completed as soon as possible. In addition, reservoir pads shall be installed as soon as possible after grading, unless seeding or soil binders are used in travel areas.***
- ***When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.***
- ***All streets shall be swept at least once a day using SCAQMD Rule 1186 certified street sweepers if visible soil materials are carried to adjacent streets.***
- ***The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite.***
- ***Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours.***
- ***Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered three times daily.***
- ***Use electric construction equipment where technically feasible, i.e., a competent electronic version of the equipment is commercially available.***

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds during construction. However, because of the non-attainment for photochemical smog, the

use of reasonably available control measures for diesel exhaust is recommended. The following mitigation measures shall be implemented:

III-2 Exhaust Emissions Control

- ***Utilize well-tuned off-road construction equipment.***
- ***Establish a preference for contractors using Tier 3-rated or better heavy equipment.***
- ***Enforce 5-minute idling limits for both on-road trucks and off-road equipment.***

With the implementation of these mitigation measures, any Project-related construction impacts will remain less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IV. BIOLOGICAL RESOURCES: Would the project:				
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 Wildlife or U.S. Fish and Wildlife Service?			**X**	
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 Wildlife or U.S. Fish and Wildlife Service?			**X**	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				**X**
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?		**X**		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
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?				**X**

SUBSTANTIATION: The "*Biological Resources Assessment and Focused Botany Survey, Big Bear City Community Services District Well 8A Project, Big Bear City, County of San Bernardino, California*" prepared by Jericho Systems Inc. dated June 30, 2016 was utilized for the following analysis. A copy of this document is provided as Appendix 2 to this Initial Study. The following information is abstracted from this document.

The purpose of the Biological Resources Assessment (BRA) was to address potential effects of the proposed project to designated critical habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California

Department of Fish and Wildlife (CDFW, formerly California Department and Fish and Game) and/or the California Native Plant Society (CNPS).

Furthermore, two known sensitive plant species are well documented (CNDDB, CDFW, Mitigation Monitoring Reports prepared by Tom Dodson and Associates) to occur in the area. As such, a focused botany survey was conducted on site to locate any Slender-petaled Thelypodium (*Thelypodium stenopetalum*) and Bird-foot checkerbloom (*Sidalcea pedata*).

The site was assessed for sensitive species known to occur locally, and focused our attention on those listed species that have been documented in the project vicinity, namely; unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), Cushenbury oxytheca (*Acanthoscyphus parishii var. goodmaniana*), Cushenbury milk-vetch (*Astragalus albens*), Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*), San Bernardino Mountains bladderpod (*Physaria kingii ssp. Bernardina*), San Bernardino blue grass (*Poa atropurpurea*), California dandelion (*Taraxacum californicum*) and southern mountain yellow-legged frog (*Rana muscosa).*

During the construction of the Big Bear Area Regional Wastewater Agency (BBARWA) administration building, a mitigation site for Slender-petaled Thelypodium (*Thelypodium stenopetalum*) and Bird-foot checkerbloom (*Sidalcea pedata*) was purchased and established. These plant species are currently listed both State and Federally, as Endangered. The mitigation site, of 3.17 acres, is located to the north and east of the project site. During the initial planning phase of the administration building, an incidental take permit was issued by CDFW (Permit No. 2081-2002-018-06). The requirements for the issuance of the permit were that the mitigation site be monitored for a minimum of ten (10) years and that the project site would be fenced and signs placed in perpetuity. The mitigation site has been monitored by Tom Dodson and Associates since 2006.

None of the sensitive habitats identified in the literature review and database search are present within the project area. The site was visited on June 1, 2016 and revisited on June 9, 16 and 30, 2016 to determine if the two sensitive species of plants (Slender-petaled Thelypodium (*Thelypodium steno-petalum*) and Bird-foot checkerbloom (*Sidalcea pedata*)) were in bloom. The mitigation site and additional documented locations were visited and no flowers were seen in bloom.

a. *Less Than Significant Impact* – Implementation of the Project does not have a potential for a significant adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) (*formerly Department of Fish and Game)* or U.S. Fish and Wildlife Service (USFWS). The project area is not within the designated critical habitat of any species. The project area, as discussed in the abstract above, does lie within range of several sensitive species, and there is suitable habitat within the proposed project footprint, as well as the immediate surrounding area, that is suitable for several sensitive species, including eight (8) plant species and one (1) animal species. However, no suitable habitat occurs within the project area for any of the State and/or federally listed threatened or endangered species identified in the literature review and database search. Upon survey of the project footprint, the field biologist determined that, of the species listed as sensitive species that could occur in the area, none would be impacted by implementation of the proposed project. Therefore, no significant impacts under this issue are anticipated, and no mitigation is required.

b. *Less Than Significant Impact* – Implementation of the proposed project will not have an adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. Habitat on site consists of a wet meadow habitat dominated by non-native grasses. The site has been subject to historic human disturbances and borders an actively used office building and a habitat conservation site. Based on the field survey conducted by Jericho Systems and the information contained in Appendix 2, no significant impacts are anticipated under this issue, and no mitigation is required.

c. *No Impact* – According to the data gathered by Jericho Systems in Appendix 2, no federally protected wetlands occur within the project footprint. Therefore, implementation of the proposed project will have no potential to impact any federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. No mitigation is required.

d. *Less Than Significant Impact With Mitigation Incorporated* – Based on the field survey of the project site, the Project will not substantially interfere with the movement of any native resident or migratory species or with established native or migratory wildlife corridors, or impede the use of native nursery sites. However, the State does protect all migratory and nesting native birds. Though no impacts to nesting or migratory birds have been identified in Appendix 2, the project area may include locations that function as nesting locations for native birds. To prevent interfering with native bird nesting, the following mitigation measure shall be implemented.

IV-1 The State of California prohibits the "take" of active bird nests. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal should be conducted outside of the the State identified nesting season (Raptor nesting season is February 15 through July 31; and migratory bird nesting season is March 15 through September 1). Alternatively, the site shall be evaluated by a qualified biologist prior to the initiation of ground disturbace to determine the presence or absence of nesting birds. Acitve bird nests MUST be avoided during the nesting season. If an active nest is located in the project construction area it will be flagged and a 300-foot avoidance buffer placed around it. No activity shall occur within the 300-foot buffer until the young have fledged the nest.

Thus, with implementation of the above measure, any effects on wildlife movement or the use of wildlife nursery sites can be reduced to a less than significant impact.

e. *No Impact* – Based on the field survey, the project area of potential impact does not contain any biological resources, such as trees, that might be protected by local policies or ordinances.

f. *No impact* – The proposed project would not 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 adopted plans for the project area, the proposed project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?		**X**		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		**X**		
c) Directly or indirectly destroy a unique paleon-tological resource or site or unique geologic feature?		**X**		
d) Disturb any human remains, including those interred outside of formal cemeteries?			**X**	

SUBSTANTIATION: A cultural resources report has been prepared to evaluate the potential for cultural resources to occur within the project area of potential effect. This report is titled *"Phase I Historical/ Archaeological Resources Survey Big Bear City Community Services District Well 8A Replacement Project"* prepared by CRM TECH dated September 7, 2016 (Appendix 3). The following information is abstracted from Appendix 3.

Background

On February 13, 2015, CRM TECH archaeologist Nina Gallardo, B.A., completed the records search at the Archaeological Information Center (AIC), San Bernardino County Museum, Redlands, which was then the official cultural resource records repository for the County of San Bernardino. During the records search, Gallardo examined maps and records on file at the AIC for previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project area. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

As a result of the previous studies in the vicinity, a total of 47 historical/ archaeological sites and 16 isolates—i.e., localities with fewer than three artifacts—have been recorded within the scope of the records search. Among these, 21 of the sites and 13 of the isolates were of prehistoric—i.e., Native American—origin, consisting mainly of bedrock milling features, scattered lithic artifacts, and other habitation debris. The nearest among them was a lithic scatter located approximately 0.12 mile to the south, on the north side of Shay Road. The other 26 sites and 3 isolates dated to the historic period and included primarily refuse scatters, various roads, remnants of mining operations, and Baldwin Lake itself. Since none of these sites and isolates was found in the immediate vicinity of the project area, none of them requires further consideration during this study.

On April 21, 2016, a letter to the San Manuel Band of Mission Indians was sent to initiate Native American Consultation under AB-52. Historical background research for this study was conducted by CRM TECH principle investigator/ historian Bai "Tom" Tang, M.A., on the basis of published literature in local history as well as historic maps and aerial photographs of the Big Bear City area. According to these sources, no notable man-made features were present within or adjacent to the project area throughout the historic period with the sole exception of present-day Palomino Drive, which was first depicted in 1969

(GLO 1858; USGS 1902-1971; NETR Online 1938-1969). As late as 2002, the entire project area remained completely undeveloped (Google 2002). The Big Bear Area Regional Wastewater Agency office compound in existence today, constructed in 2003 (Google 2003), represents the first development activity observed within the project boundaries.

On February 17, 2015, CRM TECH archaeologist Daniel Ballester, M.S., conducted the intensive-level field survey of the project area. In this way, the exposed ground surface in the project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older), but none was found. All buildings and other built-environment features in the project area are clearly modern in origin, and no archaeological features or artifact deposits, either prehistoric or historic in age, were encountered during the survey.

a-b. *Less Than Significant Impact With Mitigation Incorporated* – CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

Per the above discussion and definition, no historical or archaeological sites or isolates were recorded within the Project boundaries; thus, none of them requires further consideration during this study.

In light of this information and pursuant to PRC §21084.1, the following conclusions have been reached for the Project:

- No historical resources within or adjacent to the Project area have any potential to be disturbed as they are not within the proposed area in which the facilities will be constructed and developed, and thus, the Project as it is currently proposed will not cause a substantial adverse change to any known historical resources.
- No further cultural resources investigation is necessary for the proposed project unless construction plans undergo such changes as to include areas not covered by this study.

However, if buried cultural materials are discovered during any earth-moving operations associated with the Project, the following mitigation measure shall be implemented:

V-1 Should any cultural resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection shall be performed immediately by a qualified archaeologist. Responsibility for making this determination shall be with the District onsite inspector. The archaeological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

With the above contingency mitigation incorporation, potential for impact to cultural resources will be reduced to a less than significant level. No additional mitigation is required.

c. *Less Than Significant Impact With Mitigation Incorporated* – The potential for discovering paleontological resources during development of the Project is considered highly unlikely. No unique geologic features are known or suspected to occur on or beneath the sites. These resources are located beneath the surface and can only be discovered as a result of ground disturbance activities; therefore, the following measure shall be implemented:

V-2 Should any paleontologic resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection should be performed immediately by a qualified paleontologist. Responsibility for making this determination shall be with the District onsite inspector. The paleontological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

With incorporation of this contingency mitigation, the potential for impact to paleontological resources will be reduces to a less than significant level. No additional mitigation is required.

d. *Less Than Significant Impact* – As noted in the discussion above, No available information suggests that human remains may occur within the APE and the potential for such an occurrence is considered very low. State and local laws (Section 7050.5 of the Health and Safety Code) require that local law enforcement agencies be notified local Police Department, County Sheriff and Coroner's Office if human remains are encountered. Compliance with these laws is considered adequate mitigation for potential impacts and no further mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
• 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.			**X**	
• Strong seismic ground shaking?			**X**	
• Seismic-related ground failure, including liquefaction?			**X**	
• Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?		**X**		
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
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?			**X**	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				**X**

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 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 (Figures VI-1 and VI-2); strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides. The nearest active fault zone is the Helendale Fault that passes north of Big Bear Valley (Figure VI-3). The Mill Creek Branch of the San Andreas Fault Zone is located approximately 15 miles to the south and North Frontal Fault Zone is located approximately 15 miles to the north of the project area. There is a potential for the proposed

improvements to be subject to relatively strong ground motion. Therefore, any structures associated with Well 8A will be designed to meet seismic specifications of the current Uniform Building Code. No significant impacts are forecast to occur.

The proposed project is located within an area of low to moderate liquefaction susceptibility, with no potential for landslide susceptibility, which is shown on the San Bernardino County Land Use Plan General Plan Geologic Hazards Overlay (Figure VI-4). However, due to the type and nature of a well development project, no adverse impact is forecast to occur if liquefaction occurs in the vicinity of the project. No human occupied structures will be adversely impacted due to project implementation. Therefore, it is concluded this project has no potential to expose people or property to significant liquefaction or landslide hazards or to create significantly unstable earth conditions or cause changes to geological substructures.

http://www.bsc.ca.gov/Home/Current2013Codes.aspx

b. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not result in substantial soil erosion or the loss of topsoil. The project may result in exposing some soil to erosion during site grading activities before the well is drilled. Due to the disturbed nature of the existing site and the flat topography, it is concluded that the potential for this project to cause substantial soil erosion is low. The proposed project will be required to meet NPDES requirements. These will be met by requiring the construction contractor to use BMPs to control potential erosion and drainage off-site.

Implementation of BMPs in conjunction with Mitigation Measure VIII-1 in the Hydrology and Water Quality section to control erosion is considered adequate to mitigate potential impacts associated with the water-related erosion of soil. Please refer to the detailed discussion and mitigation measures addressing wind-related soils erosion (fugitive dust) in the Air Quality section. No further mitigation is required under this item.

VI-1 The BBCCSD shall identify best management practices (BMPs, such as hay bales, wattles, detention basins, silt fences, coir rolls, etc.) to ensure that the discharge of the storm runoff from construction sites does not cause erosion downstream of the discharge point. If any substantial erosion or sedimentation occurs as a result of discharging storm water from a project construction site, any erosion or sedimentation damage shall be restored to pre-discharge conditions.

c. *Less Than Significant Impact* – The proposed project would not 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. Refer to response (a).

d. *Less Than Significant Impact* – The proposed project would not 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. According to the County's General Plan, there is no expansive soils hazard in the area because of the relatively minor amount of clay present in the alluvial soils derived from the regional granitic bedrock. Additionally, according to the United States Department of Agriculture (USDA) Natural Resources Conservation Service Web Soil Service, the soils in the site vicinity are mostly water areas or Avawatz-Oak Glen, dry families associate, 2 to 15 percent slopes, which are generally gravelly loamy coarse or gravelly coarse sand soils and not considered an expansive soil (Figure VI-5). Therefore, no impact can be identified, and no mitigation is required.

e. *No impact* – The proposed project does not involve septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. The proposed project will develop a new test well, Well 8A, and does not require or impact septic systems.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			**X**	

SUBSTANTIATION: The information provided in the following text is abstracted from an air quality and greenhouse gas technical study titled: "Air Quality and GHG Impact Analyses Big Bear City Community Services District Well 8A Project" prepared by Giroux & Associates dated May 18, 2016. This study is provided as Appendix 1 to this document. Please refer to the AQ Analysis in Appendix 1 for a detailed discussion of the background and physical setting as well as the regulatory setting for federal and California Greenhouse Gases (GHG).

a&b. *Less Than Significant Impact* – "Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding GHG. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.

- Requires immediate "early action" control programs on the most readily controlled GHG sources.

- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.

- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Greenhouse Gas Emissions Significance Thresholds

In response to the requirements of SB97, the state Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate". The most common practice for infrastructure/combustion GHG emissions quantification is to use a computer model such as CalEEMod.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

The California Air Resources Board (ARB) has developed an interim significance guideline for industrial projects or 7,000 metric tons of CO_2-equivalent annual emissions. Water management and treatment is not strictly an "industrial" process. However, in the absence of any adopted significance thresholds, this screening level will be used in the following analysis.

GHG Impact Analysis

Construction Activity GHG Emissions

The project is assumed to require 8 weeks of construction. During project construction, the CalEEMod2013.2.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table VII-1.

Table VII-1
CONSTRUCTION EMISSIONS (Metric Tons CO_2e)

	CO_2e
Year 2016	56.5
Amortized	**1.9**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less-than-significant.

Total project GHG emissions are substantially below the proposed significance threshold of 3,000 MT suggested by the SCAQMD. Hence, the project will not result in generation of a significant level of greenhouse gases.

Consistency With GHG Plans, Programs and Policies

Big Bear City has not yet developed a Greenhouse Gas Reduction Plan. The applicable GHG planning document is AB-32. As discussed above, the project is not expected to result in a significant increase in GHG emissions. As a result, the project results in GHG emissions well below the recommended SCAQMD 3,000 ton threshold of significance. Therefore, the project would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
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?		**X**		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			**X**	
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, as a result, would it create a significant hazard to the public or the environment?			**X**	
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?			**X**	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			**X**	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
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?			**X**	

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. However, operation and testing of the proposed Well 8A would store chemicals required for the testing of water extracted from the well. Mishandling hazardous materials, such as improper storage or disposal, could potentially expose the public or the environment to hazardous materials.

However, compliance with applicable federal, state, and local laws would minimize the potential risks associated with the handling of hazardous materials and foreseeable accidents. Therefore, potential impacts to the public or the environment through accidental release due to the routine transport, use, or disposal of hazardous materials would be less than significant. The District has standard operational procedures for safe transport and use of its operational and maintenance materials. No additional measures are necessary to ensure the impact of managing this chemical result in a less than significant impact on the environment.

b. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not 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.

During construction or maintenance activities in support of the proposed project, fuels, oils, solvents, and other petroleum materials classified as "hazardous" will be used to support these operations. Mitigation measures designed to reduce, control or remediate potential accidental releases must be implemented to prevent the creation of new contaminated areas that may require remediation in the future and to minimize exposure of humans to public health risks from accidental releases. The following mitigation measure will be incorporated into the Storm Water Pollution Prevention Plan (SWPPP) prepared for the project, which would reduce such accidental spill hazards to a less than significant level.

VIII-1 All spills or leakage of petroleum products during construction activities will be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. The contaminated waste will be collected and disposed of at an appropriately licensed disposal or treatment facility.

By implementing this measure, potentially substantial adverse environmental impacts from accidental releases associated with installation of the proposed well can be reduced to a less than significant level.

c. *Less Than Significant Impact* – The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The Bear Valley Unified School District serves students in the proposed project area. The District has four elementary schools, one middle school and two high schools. The schools closest to the project—Chautauqua High School, Big Bear High School, and Baldwin Lane Elementary School—are approximately one mile away from the proposed project site. As such, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste during construction or operation in a quantity that would pose any danger to people adjacent to, or in the general vicinity of, the project site. Therefore, the impacts of the proposed project to this issue area would be considered less than significant.

d. *Less Than Significant Impact* – The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment. None of the proposed facility improvements would be near to or impact a site known to have hazardous materials or a site under remediation for hazardous materials or associated issues.

A review of the California State Water Resources Control Board GeoTracker database (http://geotracker.waterboards.ca.gov) indicates that no indicates that no open hazardous materials clean-up sites are located within a mile of the proposed Well 8A site. Therefore, the proposed project is not forecast to result in a significant hazard to the public or the environment associated with this issue area. No mitigation is required.

e&f. *Less Than Significant Impact* – The proposed project is located within two miles of a public use airport, Big Bear Airport. However, the project would not result in a safety hazard for people residing or working in the project area. The proposed test well will be drilled below-ground with minimal supporting above ground structures, and therefore would not interfere with airspace or airport operations. Lighting would be minimized and no facility features that would create glare are included in the proposed project. The proposed test well, Well 8A, would have no impact on airport operations or associated and surrounding uses.

g. *Less Than Significant Impact* – The proposed project will be confined to the project site, and is not anticipated to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Ingress and egress of trucks onto the site will come from Shay Road, which is the main east-west road leading to Palomino Drive. The volume of traffic on these local roadways (estimated to be about 12-15 round trips per day) is not forecast to cause any interference with emergency response or evacuation plans.

h. *Less Than Significant Impact* – The proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildland are adjacent to urbanized areas or where residences are intermixed with wildland. The proposed project site is located in an area susceptible to wildland fires. However, the proposed installation of a new well at the WWTP site does not expose people or structures to wildland fire risks that would not occur without implementation of the proposed project. The proposed test well and associated facilities will involve the extraction of ground water, and should therefore not contribute to a wildland fire risk.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?		**X**		
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., the 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)?		**X**		
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 onsite or offsite?		**X**		
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 onsite or offsite?		**X**		
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?		**X**		
f) Otherwise substantially degrade water quality?				**X**
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?				**X**
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				**X**
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?				**X**
j) Inundation by seiche, tsunami, or mudflow?				**X**

SUBSTANTIATION:

a&f. *Less Than Significant Impact With Mitigation Incorporated* – Installation of the proposed well includes activities that have a potential to violate water quality standards or waste discharge requirements due to direct discharge of water brought to the surface during well testing. Prior to pumping large quantities of water from the proposed municipal-supply water well, BBCCSD proposes to test the quality of the water to verify that it does not contain contaminants that would exceed standard water quality objectives for this portion of the Santa Ana Watershed. The Santa Ana Regional Water Quality Control Board has jurisdiction over the groundwater quality and surface water discharges for Well 8A. The discharge of groundwater generated from well drilling and development activities is covered by a General Permit within the Regional Board's jurisdiction. This General Permit establishes specific performance requirements for discharges from well activities and the proposed project must comply with these requirements. Before discharge from the well test program can proceed, sampling must be completed to ensure that maximum contaminant levels (MCLs) are not exceeded in the groundwater brought to the surface and discharged. If water quality is degraded it must be blended to a level below MCLs or any specific pollutant exceeding MCLs must be treated prior to discharge to meet the MCL requirements for that pollutant. The following mitigation measure ensures that no significantly degraded groundwater (above MCLs) will be discharged during well testing:

IX-1 BBCCSD shall test the groundwater produced from the well prior to discharge. Prior to or during discharge any contaminants shall be blended below the pertinent MCL or treated prior to discharge, including sediment or other material.

The proposed project may result in some soil erosion during excavating and construction activities. Due to the disturbed nature of the WWTP site and flat topography, it is concluded that the potential for this project to cause substantial soil erosion, and subsequent water quality impacts, is low. The proposed project will be required to meet NPDES requirements. Implementation of Mitigation Measures VIII-1 and XI-3 (below) establish performance criteria for reducing sediments and pollutants in runoff water. No contaminants that could significantly degrade surface water quality will be discharged in quantities that could adversely impact water quality from implementation of the project. No additional mitigation is required based on this analysis. With implementation of the appropriate mitigation measures, impacts from implementing the proposed project would be considered less than significant.

b. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a substantial lowering of the local groundwater table level (e.g., the 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). The proposed drilling, testing, and development of Well 8A, if approved for use following the testing phase, would replace the existing Well 8, so it is not anticipated to alter groundwater levels in the basin as water drawn from the basin will remain similar to that which is currently being withdrawn. The proposed well will extract groundwater from the Lower Aquifer of the Bear Valley Groundwater Basin. The proposed depth of water production for this well is approximately 400 feet below the ground surface, or as directed by the hydrogeologist. This well is not designed to interfere with any private wells located within the same aquifer. However, since pumping tests will not be conducted until the proposed well in completed, the following mitigation measure shall be implemented by the District to ensure that other wells within this local aquifer do not incur a significant adverse impact from pumping the proposed well.

IX-2 BBCCSD shall conduct a pump test of the new well and determine whether any other wells are located within the cone of depression once the well reaches

equilibrium. If any private wells are adversely impacted by future groundwater extractions from the proposed well, BBCCSD shall offset this impact through provision of water service; or adjusting the flow rates or hours of operation to mitigate adverse impacts.

With implementation of the above mitigation measure, the impacts to this issue would be reduced to less than significant. No additional mitigation is required.

c-e. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite or exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The project site is not located adjacent to any existing drainage channels, and any discharge offsite would be required to meet NPDES water quality requirements. The proposed well site is already disturbed and would have no potential to interfere with the discharge of stormwater over the long-term.

Counties require implementation of a set of BMPs to control discharges that surface runoff with pollutants could cause that may cause a significant adverse impact to surface water quality. Stormwater pollution prevention BMPs will be incorporated to control pollution from construction activities in the vicinity of the project site. These measures, such as berms, coil rolls, silt fencing, detention basins, etc., are mandatory, as are the measures for ongoing non-point source pollution controls implemented by the local jurisdictions once the project is completed. The mandatory BMPs applied in conjunction with Mitigation Measures VIII-1, in conjunction with measure IX-1 below, are deemed sufficient to reduce potential surface water quality impacts to a less than significant level. This is because the stormwater discharge will be treated to the point that the discharge will meet requirements for stormwater runoff from construction sites. No additional mitigation is required.

IX-3 The District and construction contractor shall select best management practices applicable to the project site and activities on the site to achieve a reduction in pollutants to the maximum extent practicable (including but not limited the development and implementation of a SWPPP), both during and following development of the proposed municipal-supply water well and associated facilities, and to control urban runoff after the project is constructed and the well (if approved for operation post well testing) is in operation.

g. *No Impact* – The proposed project would not 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 part of the proposed project.

h. *No Impact* – The proposed project would not place a structure within a 100-year flood hazard area that would impede or redirect flood flows. The proposed structures are not located in a 100-year flood hazard area according to the Federal Emergency Management Agency flood map. Therefore, no impacts from this issue would occur upon implementation of the proposed project. Reference FEMA 06071C7315H.

i. *No impact* – No human occupancy structures are proposed as part of the project. The project has no potential to 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. No impact can be identified and no mitigation is required.

j. *No Impact* – The proposed project is not located in an area that could be exposed to any inundation by external seiche, tsunami, or mudflow. No impacts are anticipated and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?				**X**
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?				**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

SUBSTANTIATION:

a&b. *No Impact* – The project does not involve construction of new structures that would cause any physical divisions of communities. The proposed project will develop and test a new well to replace an existing well, and provide municipal water to the District's service area if it is approved for use after the well is tested. The proposed project is in conformance with the County of San Bernardino General Plan; therefore, the proposed project can have no impact to the applicable land use plans.

c. *No Impact* – Although the area is not within a habitat conservation plan or natural community or conservation planning area, it is adjacent to the planning boundaries of the mitigation area set aside under agreement with the California Department of Fish and Wildlife to protect two endangered plant species, Thelypodium and Sidalcea – see section III: Biological Resources.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XI. MINERAL RESOURCES: Would the project:				
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?				**X**
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?				**X**

SUBSTANTIATION:

a&b. *No Impact* – The proposed project is not in an area with identified aggregate resources. According to the Geologic Map of the San Bernardino Quadrangle from the California Department of Conservation (http://www.quake.ca.gov/gmaps/RGM/sanbernardino/sanbernardino.html), the Project site is located on alluvial soils. Alluvial soils are not a unique soil classification in the Project vicinity, as well as in southern California. No minerals are known to occur in this area. While the San Bernardino County General Plan does contain Goals and Policies related to mineral resources (Goal CO7, Policies CO7.1 through CO7.8, pp. V-32-V-33 of the San Bernardino County General Plan): http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGPtext20130718.pdf, the Project site has not been historically mined for important mineral resources. Therefore, it is not anticipated that the Project will 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; or 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. No Impact is anticipated to occur, and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XII. NOISE: Would the project result in:				
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?		**X**		
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		**X**		
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		**X**		
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		**X**		
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?			**X**	
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?			**X**	

SUBSTANTIATION:

Background

Noise is generally described as unwanted sound. If accepted as a production well, the proposed well will be outfitted with a vertical turbine pump that will be housed in a noise minimizing structure. The location for this proposed well is 150 ft west of the District's existing Well 8, so the development of a Well 8A to replace Well 8 is consistent with existing uses on the site. The well will be developed at the WWTP site operated by BBARWA, which is surrounded by WWTP facilities to the north, and west and rural living/single-family residential 1-acre minimum land uses to the east, and south. The area immediately surrounding the project site is sparsely populated.

The unit of sound pressure ratio to the faintest sound detectable to a person with normal hearing is called a decibel (dB). Sound or noise can vary in intensity by over one million times within the range of human hearing. A logarithmic loudness scale, similar to the Richter scale for earthquake magnitude, is therefore used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all sound frequencies within the entire spectrum. Noise levels at maximum human sensitivity from around 500 to 2,000 cycles per second are factored more heavily into sound descriptions in a process called "A-weighting," written as "dBA."

Leq is a time-averaged sound level; a single-number value that expresses the time-varying sound level for the specified period as though it were a constant sound level with the same total sound energy as the time-varying level. Its unit is the decibel (dB). The most common averaging period for Leq is hourly.

Because community receptors are more sensitive to unwanted noise intrusion during more sensitive evening and nighttime hours, state law requires that an artificial dBA increment be added to quiet time noise levels. The State of California has established guidelines for acceptable community noise levels that are based on the Community Noise Equivalent Level (CNEL) rating scale (a 24-hour integrated noise measurement scale). The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and "clearly unacceptable" noise levels for various land use types. The State Guidelines, Land Use Compatibility for Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses with some structural noise attenuation.

a. *Less Than Significant Impact With Mitigation Incorporated* – Implementation of the proposed project will generate noise. Generally, well drilling equipment can generate noise levels of about 70 to 90 dBA at a distance of 50 feet from the equipment. Drilling of the 36-inch minimum diameter surface casing/sanitary seal borehole to 50 feet and drilling, by reverse circulation methods, a 17.5-inch minimum diameter pilot borehole from 50 feet to 400 feet bgs will occur over a 24-hour period until the well is completed to the design depth of about 400 feet bgs. Stationary source noise diminishes at a rate of about 6 dB for each doubling of the distance from the source. This means that periodic construction noise levels at the nearest receptor can be about 70-80 dBA on the exterior of the nearest receptor. The well drilling will likely exceed the County's noise standard of 65 dBA at the exterior of the nearest receptors, which consists of some existing development near that will be temporarily impacted by construction noise, some of which consists of low density residential uses. This increase in noise levels will be short term (about 12 days). The increased noise levels will not be severe enough to pose a health or hearing hazard, but could be considered a short-term nuisance. Once Well 8A becomes operational, the vertical turbine pump will generate noise, however this noise can be mitigated, as outlined in the mitigation measure below—by constructing a wooden or concrete housing unit to reduce operational noise levels to a less than significant impact. Additionally, to reduce potential short-term effects of noise and long-term noise effects from the well pump to the greatest extent feasible, the mitigation measures presented below will be implemented—which include constructing temporary noise barrier walls and equipment to meet specified noise level limits during construction activities.

XII-1 BBCCSD will require the implementation of adequate measures to reduce noise levels to the greatest extent feasible or below 65 dBA, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

XII-2 BBCCSD will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be accomplished by random field inspections by applicant personnel during construction activities.

XII-3 BBCCSD will establish a noise complaint/response program and will respond to any noise complaints received for this project by measuring noise levels at the affected receptor. If the noise level exceeds an Ldn of 65 dBA exterior or an Ldn of 45 dBA interior at the receptor, the applicant will implement adequate measures to reduce noise levels to the greatest extent feasible, including

portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

XII-4 All construction activities other than well drilling and casing landing shall be restricted to daylight hours, unless an emergency exists.

XII-5 BBCCSD will require that well pump noise levels to be at or below 50 dB(A) at the nearest sensitive noise receptor. This can be accomplished be installing surface well housing, which can be housed in a wooden or concrete block structure that attenuates noise to meet this performance standard.

XII-6 Upon request from adjacent residents, BBCCSD shall provide the option of relocating adjacent residents for the duration of active 24-hour drilling activity.

b. *Less Than Significant Impact With Mitigation Incorporated* – Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by vibration of room surfaces is called structure borne noises. Sources of groundborne vibrations include natural phenomena (e.g. earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g. explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous or transient. Vibration is often described in units of velocity (inches per second), and discussed in decibel (dB) units in order to compress the range of numbers required to describe vibration. Vibration impacts related to human development are generally associated with activities such as train operations, construction, and heavy truck movements.

The background vibration-velocity level in residential areas is generally 50 VdB; Groundborne vibration is normally perceptible to humans at approximately 65 VdB, while 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible. Construction activity can result in varying degrees of groundborne vibration, and can occur as a result of well drilling activities. While no enforceable regulations for vibration exist within the County of San Bernardino, the Federal Transit Association (FTA) guidelines identify a level of 80 VdB for sensitive land uses. This threshold provides a basis for determining the relative significance of potential Project related vibration impacts.

In the short term, pipeline alignment and blending facility construction activities have the some potential to create some vibration to the nearest sensitive receptors at some sites within the project footprint. However, any short-term impacts to the nearest sensitive receptors would be considered less than significant through implementing the following mitigation measure:

XII-7 During future construction activities with heavy equipment within 300 feet of occupied residences, vibration field tests should be conducted at the nearest occupied residences. To the extent feasible, if vibrations exceed 72 VdB, the construction activities shall be revised to reduce vibration below this threshold.

c. *Less Than Significant With Mitigation Incorporated* – This project includes the installation of a vertical turbine pump at the proposed new Well 8A. As previously stated, once Well 8A becomes operational, the vertical turbine pump will generate noise, however this noise can be mitigated, as outlined in the mitigation measure XII-5—by constructing a wooden or concrete housing unit to reduce operational noise levels to a less than significant impact. The noise generated by operation Well 8A would not result in noise levels that exceed the standards deemed acceptable by the County of San Bernardino. Implementation of mitigation measure XII-5 is considered adequate to reduce the level of impact to less than significant.

d. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project will involve construction operations that have the potential to cause short-term significant noise impacts. In the short term, well drilling, construction, development and testing activities will result in noise generated by excavators, drilling rig/drilling equipment (mast and draw-works, air compressors, drilling fluid pumps, drill pipe, etc), and other noise making equipment required to complete well construction. Noise generated from a drill rig will reach approximately 80 dBA at a receptor located at a distance of 50 feet. As outlined in item (a) this project will have a temporary impact on ambient noise levels during construction and operation. The mitigation measures set forth in that section are considered adequate to reduce the level of impact to less than significant.

e&f. *Less Than Significant Impact* – The project site is within two miles of the Big Bear Airport. However, the proposed project would not expose people residing or working in the project area to excessive aircraft overflight noise levels. The well development activities would not be located near the airport. Therefore noise from construction and operation would not impact the airport operations or peoples near the airport. The construction noise would be temporary and operational noise would not add significantly to existing ambient noise levels.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIII. POPULATION AND HOUSING: Would the project:				
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)?				**X**
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**

SUBSTANTIATION:

a-c. *No Impact* – This project does not propose the development of any new housing. Existing housing will not be affected by this project. The proposed project is intended to develop, test, and complete a new well, Well 8A, which will replace an existing well on the same BBARWA WWTP site if it is approved for use after extensive testing. The proposed well will deliver water within BBCCSD's service area. This project is considered a replacement project, and therefore is not growth-inducing, in that it will help provide a more consistent well water supply and service to the existing BBCCSD service area and development that is approved or allowed in the future by agencies that have jurisdiction over land use issues. The proposed well will operated within the same general parameters as that which were envisioned for the District's Well 8; Well 8A will replace Well 8 and does not envision greater water/service output, and therefore no impacts to that could induce growth in population or housing are envisioned as part of the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIV. PUBLIC SERVICES: 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:				
a) Fire protection?			**X**	
b) Police protection?			**X**	
c) Schools?				**X**
d) Recreation/Parks?				**X**
e) Other public facilities?				**X**

SUBSTANTIATION:

a&b. Police and Fire

Less Than Significant Impact – The proposed project would not have direct impacts on fire protection. The only police or fire protection likely to be required for operation of the proposed Well 8A would be trespass, vandalism or theft of equipment or material. Standard protection measures are implemented by the District to protect its Well facilities at its existing Well 8, which is on the same property at the proposed Well 8A. Police resources to respond to any situations are available primarily through the County Sheriff's Department. Fire protection of the project area is provided by the Big Bear Fire Department, which works with BBCCSD and Big Bear Lake Fire Protection to serve the communities of Big Bear Lake, Big Bear City, and surrounding communities. The nearest fire station is Station 282, located at 301 W. Big Bear Blvd in Big Bear City, which is approximately 2 miles from the Project site. Additionally, Big Bear Fire Department has plans for another fire station—Station 284—at 45260 Lucky Baldwin Ranch Road in Big Bear City, which would be approximately 1.4 miles from the project site on the opposite site of Baldwin Lake. Thus, the project site will not create the need for new of physically altered fire or police facilities. No mitigation is required.

c-e. Schools, Parks, and Public Facilities

No Impact – The Project will not generate significant numbers of new long-term jobs, nor attract new residents to the area. As a result, the implementation of the Project will not 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 public services to include: schools, parks, or other recreational activities. No impacts to schools, parks, or other public facilities are anticipated. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XV. RECREATION:				
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?				**X**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

SUBSTANTIATION:

a. *No Impact* – The Project will not generate significant numbers of new long-term jobs, nor attract new residents to the area. As a result, the implementation of the Project will not 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 public services to include: schools, parks, or other recreational activities. No impacts to schools, parks, or other public facilities are anticipated. No mitigation is required.

b. *No Impact* – The proposed Project will construct, develop and test a new well, Well 8A, to replace existing Well 8. The well and its associated facilities will be installed and operated by the District. There will be no adverse recreational effects on the environment from implementing this project. Therefore, no unavoidable impacts will result from project implementation. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVI. TRANSPORTATION / TRAFFIC: Would the project:				
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?			**X**	
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?			**X**	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				**X**
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e) Result in inadequate emergency access?			**X**	
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?				**X**

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project would not 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.

This project does not propose any new roads. In the short term, construction of the proposed facilities will result in the generation of up to about 10-15 additional roundtrips per day on the adjacent roadways by construction personnel and the removal of any graded material and delivery of well construction materials. This increase in traffic will be temporary and is not considered sufficient to affect the level of service of roadways or congestion at any intersection. No measurable increases in traffic are anticipated during operations as the proposed Well 8A will

replace an existing well, Well 8, and will not require an increase in maintenance or operational activities than that which exists presently at the Well 8 site, which is 150 feet east of the proposed Well 8A site on the same property. No mitigation is required.

b. *Less Than Significant Impact* – The proposed project would not 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. The minor construction traffic impacts associated with the project would be temporary and, even during this temporary period, insignificant.

c. *No Impact* – The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. The proposed project would not impact air traffic. The proposed project is made up of surface level or low profile well infrastructure improvements and would not result in any interference with airspace.

d. *No Impact* – The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The construction of the well would occur at the WWTP site in which Well 8 presently exists, and with the exception of the aforementioned trip generation during the construction phase, the proposed project will not alter any adjacent roadways. No impact is anticipated and no mitigation is required.

e. *Less Than Significant Impact* – The Project site includes direct access to public roadways, which is considered adequate for emergency purposes. According to the San Bernardino County General Plan, no known emergency access plans or routes or emergency response or evacuation plans will be affected by this Project in the long term. The proposed project will occur entirely within the project site boundaries. Construction activities will not occur within the roadways adjacent to the project site. Large trucks delivering equipment or removing small quantities of excavated dirt can enter the site without major conflicts with the flow of traffic on the identified access roadways. Therefore, it will not be necessary for the contractor to implement a traffic management plan, including flagpersons or other features to control the interaction of the truck traffic and the flow of vehicles on these roadways. No mitigation is required.

f. *No Impact* – This Well 8A development project will not generate a substantial amount of new traffic and will not conflict with any adopted plans, policies or programs supporting alternative transportation. No impact to such plans will result and no mitigation required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?		**X**		
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?		**X**		
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		**X**		
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			**X**	
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?				**X**
f) Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			**X**	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			**X**	

SUBSTANTIATION:

a-c. *Less Than Significant Impact With Mitigation Incorporated* – The proposed project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB), or require or result in the construction of new water or wastewater facilities or expansion of existing facilities. The proposed development of Well 8A does not require expansion of existing facilities, and in itself, the proposed project will construct water facilities to replace the existing District Well 8. Development of such water facilities will not cause a significant environmental effect if the recommended mitigation measures, as identified in previous sections, are implemented.

The project-related disturbed areas will not generate substantial additional runoff as the areas are already disturbed and topographically flat. Due to the small area of overall disturbance and the flat grade of the project area, no substantial increase in runoff is forecast to result from implementing the proposed project. No discharge that would exceed treatment requirements of the Colorado River Basin or Santa Ana Regional Water Quality Control Boards are associated with the proposed

project. However, in order to alleviate any potential impacts, the District will implement mitigation measure IX-3, which identifies specific requirements to ensure that any discharged water will meet water quality standards of the aforementioned RWQCBs and that no significant degradation of surface water quality will result from the proposed project.

d. *Less Than Significant Impact* – Implementation of the proposed project will be conducted within the existing District entitlements to water. The proposed project will construct, develop, and test a new well to replace the District's existing Well 8. The new well, Well 8A, will be constructed 150 feet west of Well 8 and would draw from the same aquifer as Well 8 currently exists, so the existing District water supply permit will be modified to include the new well assuming it produces water of adequate quality. Therefore, as the proposed project will develop a well intended to replace the existing well on the same WWTP site, there are adequate existing water supplies available to serve the project's purpose and no new entitlements, only modified permits will be required to support the development of Well 8A. No mitigation is required.

e. *No Impact* – The proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. The proposed project will develop Well 8A to replace the existing Well 8 to supply water to the District's service area; no potential exists to adversely impact a wastewater treatment provider. No mitigation is required.

f-g. *Less Than Significant Impact* – The proposed project is not forecast to generate substantial solid waste during construction or operation and no adverse impacts to the solid waste system are forecast to result from project implementation. The District is served by a number of landfills in the area, but the location nearest the project site is the Big Bear Transfer Station at 38550 Holcomb Valley Road in Big Bear City, which can receive 400 tons per day. The District shall require the construction contractor to recycle the materials associated with the demolished facilities. Some solid waste may not be recyclable and will be disposed of at one of the San Bernardino County landfills in accordance with all local and state regulations. However, the amount of material that cannot be recycled would be considered less than significant (estimated to be less than 250 cubic yards) and easily handled by nearby transfer facilities or landfills, and would have little to no impact on the solid waste system.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:				
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?		**X**		
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)?		**X**		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		**X**		

SUBSTANTIATION:

a. *Less Than Significant Impact With Mitigation Incorporated* – Based on the analysis presented above, the Well 8A Development Project can be implemented without causing any significant adverse environmental effects. This includes biological resources and cultural resources. Adequate mitigation has been provided to reduce potential impacts to these resources to a level of non-significance or to reduce less than significant impacts to the greatest extent feasible. Since the Project site has no known significant cultural or biological resources, the mitigation measures identified are contingency measures that will be implemented if certain conditions occur during construction activities at the site.

b. *Less Than Significant Impact With Mitigation Incorporated* – The evaluation contained in this document determined that potential impacts to the environment can be reduced to a less than significant level with implementation of the identified mitigation measures. The issues for which mitigation has been provided are Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. Based on data provided in this document, including the type of project proposed, it is concluded that implementation of this project will not result in impacts that are either individually or cumulatively considerable or significant when viewed in relation to past, present or probable future projects.

c. *Less Than Significant Impact With Mitigation Incorporated* – This project will not result in any identifiable substantial adverse effects on humans either directly or indirectly. This project will result in replacing an existing domestic water production well. The issues for which mitigation has been provided are Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology and

Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. With implementation of the required mitigation no substantial adverse effect to humans will result from carrying out the Project.

Therefore, based on the findings in this Initial Study, the Big Bear City Community Services District (District) will process a Mitigated Negative Declaration as the appropriate CEQA environmental determination for the project. The District will issue a Notice of Intent to Adopt a Mitigated Negative Declaration and circulate the Mitigated Negative Declaration package for the required 30-day public review period. Following receipt of comments, the District will compile responses to any comments and prepare a final Mitigated Negative Declaration package for consideration by the District. Based on the final Mitigated Negative Declaration package, the District will consider whether implementation of the Well 8A Development Project as defined in this document can proceed at the completion of the review process to implementation. If you or your agency comments on this proposed Mitigated Negative Declaration, you or your agency will be provided responses to comments and notified of the date of the District's final review and decision. A decision by the District to approve the Well 8A Development Project6 Mitigated Negative Declaration would be based on all of the information available in the whole of the record before the District at the conclusion of the CEQA environmental review process for this proposed project. Completion of the CEQA review process would allow the District to implement the Well 8A Development Project.

SUMMARY OF MITIGATIONS

Aesthetics

I-1 Night lighting will be located and shielded so as to avoid creating a nuisance to nearby residents. Light from night lighting shall not spill off the pump station site or wastewater treatment plant site onto adjacent occupied structures.

Air Quality

III-1 Fugitive Dust Control

The following measures shall be incorporated into Project plans and specifications for implementation:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.
- The contractor shall ensure that all disturbed areas within the Project are watered with complete coverage of disturbed areas at least two times a day, preferably in the mid-morning, afternoon, and after work is done for the day. Additional watering can be applied if fugitive dust is observed leaving the project site.
- The contractor shall ensure that traffic speeds on the Project site are reduced to 10 miles per hour or less.
- Plans, specifications and contract documents shall direct that a sign must be posted on-site stating that construction workers shall not idle diesel engines in excess of five minutes.
- During grading activity, all construction equipment greater than 150 horsepower shall be California Air Resources Board (CARB) Tier 3 Certified.
- Only “Zero-Volatile Organic Compounds” paints (no more than 150 gram/liter of VOC) and/or High Pressure Low Volume (HPLV) applications consistent with South Coast Air Quality Management District Rule 1113 shall be used when reservoirs are painted, if painted onsite.
- Install and maintain track out control devices in effective condition at all access points where paved and unpaved access or travel routes intersect (e.g., Install wheel shakers, wheel washers, and limit site access.)
- All roadways, driveways, sidewalks, etc., shall be completed as soon as possible. In addition, reservoir pads shall be installed as soon as possible after grading, unless seeding or soil binders are used in travel areas.
- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All streets shall be swept at least once a day using SCAQMD Rule 1186 certified street sweepers if visible soil materials are carried to adjacent streets.
- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours.
- Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered three times daily.
- Use electric construction equipment where technically feasible, i.e., a competent electronic version of the equipment is commercially available.

III-2 Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3-rated or better heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

Biological Resources

IV-1 The State of California prohibits the "take" of active bird nests. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal should be conducted outside of the the State identified nesting season (Raptor nesting season is February 15 through July 31; and migratory bird nesting season is March 15 through September 1). Alternatively, the site shall be evaluated by a qualified biologist prior to the initiation of ground disturbace to determine the presence or absence of nesting birds. Acitve bird nests MUST be avoided during the nesting season. If an active nest is located in the project construction area it will be flagged and a 300-foot avoidance buffer placed around it. No activity shall occur within the 300-foot buffer until the young have fledged the nest.

Cultural Resources

V-1 Should any cultural resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection shall be performed immediately by a qualified archaeologist. Responsibility for making this determination shall be with the District onsite inspector. The archaeological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

V-2 Should any paleontologic resources be encountered during construction of these facilities, earthmoving or grading activities in the immediate area of the finds shall be halted and an onsite inspection should be performed immediately by a qualified paleontologist. Responsibility for making this determination shall be with the District onsite inspector. The paleontological professional shall assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act.

Geology and Soils

VI-1 The BBCCSD shall identify best management practices (BMPs, such as hay bales, wattles, detention basins, silt fences, coir rolls, etc.) to ensure that the discharge of the storm runoff from construction sites does not cause erosion downstream of the discharge point. If any substantial erosion or sedimentation occurs as a result of discharging storm water from a project construction site, any erosion or sedimentation damage shall be restored to pre-discharge conditions.

Hazards and Hazardous Waste

VIII-1 All spills or leakage of petroleum products during construction activities will be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. The contaminated waste will be collected and disposed of at an appropriately licensed disposal or treatment facility.

Hydrology and Water Quality

IX-1 BBCCSD shall test the groundwater produced from the well prior to discharge. Prior to or during discharge any contaminants shall be blended below the pertinent MCL or treated prior to discharge, including sediment or other material.

IX-2 BBCCSD shall conduct a pump test of the new well and determine whether any other wells are located within the cone of depression once the well reaches equilibrium. If any private wells are adversely impacted by future groundwater extractions from the proposed well, BBCCSD shall offset this impact through provision of water service; or adjusting the flow rates or hours of operation to mitigate adverse impacts.

IX-3 The District and construction contractor shall select best management practices applicable to the project site and activities on the site to achieve a reduction in pollutants to the maximum extent practicable (including but not limited the development and implementation of a SWPPP), both during and following development of the proposed municipal-supply water well and associated facilities, and to control urban runoff after the project is constructed and the well (if approved for operation post well testing) is in operation.

Noise

XII-1 BBCCSD will require the implementation of adequate measures to reduce noise levels to the greatest extent feasible or below 65 dBA, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

XII-2 BBCCSD will require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement will be accomplished by random field inspections by applicant personnel during construction activities.

XII-3 BBCCSD will establish a noise complaint/response program and will respond to any noise complaints received for this project by measuring noise levels at the affected receptor. If the noise level exceeds an Ldn of 65 dBA exterior or an Ldn of 45 dBA interior at the receptor, the applicant will implement adequate measures to reduce noise levels to the greatest extent feasible, including portable noise barriers or scheduling specific construction activities to avoid conflict with adjacent sensitive receptors.

XII-4 All construction activities other than well drilling shall be restricted to daylight hours, unless an emergency exists.

XII-5 BBCCSD will require that well pump noise levels to be at or below 50 dB(A) at the nearest sensitive noise receptor. This can be accomplished be installing surface well housing, which can be housed in a wooden or concrete block structure that attenuates noise to meet this performance standard.

XII-6 Upon request from adjacent residents, BBCCSD shall provide the option of relocating adjacent residents for the duration of active 24-hour drilling activity.

XII-7 During future construction activities with heavy equipment within 300 feet of occupied residences, vibration field tests should be conducted at the nearest occupied residences. To the extent feasible, if vibrations exceed 72 VdB, the construction activities shall be revised to reduce vibration below this threshold.

REFRENCES

CRM TECH, *"Phase I Historical/ Archaeological Resources Survey Big Bear City Community Services District Well 8A Replacement Project"* dated September 7, 2016

Giroux & Associates, *"Air Quality and GHG Impact Analyses Big Bear City Community Services District Well 8A Project"* dated May 18, 2016

Jericho Systems, Inc., "*Biological Resources Assessment and Focused Botany Survey, Big Bear City Community Services District Well 8A Project, Big Bear City, County of San Bernardino, California*" dated June 30, 2016

http://maps.conservation.ca.gov/ciff/ciff.html

http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf

www.arb.ca.gov/adam/

http://www.bsc.ca.gov/Home/Current2013Codes.aspx

http://geotracker.waterboards.ca.gov)

http://www.quake.ca.gov/gmaps/RGM/sanbernardino/sanbernardino.html)

http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGPtext20130718.pdf

FIGURES

FIGURE 1
Regional Location

FIGURE 2
Site Location

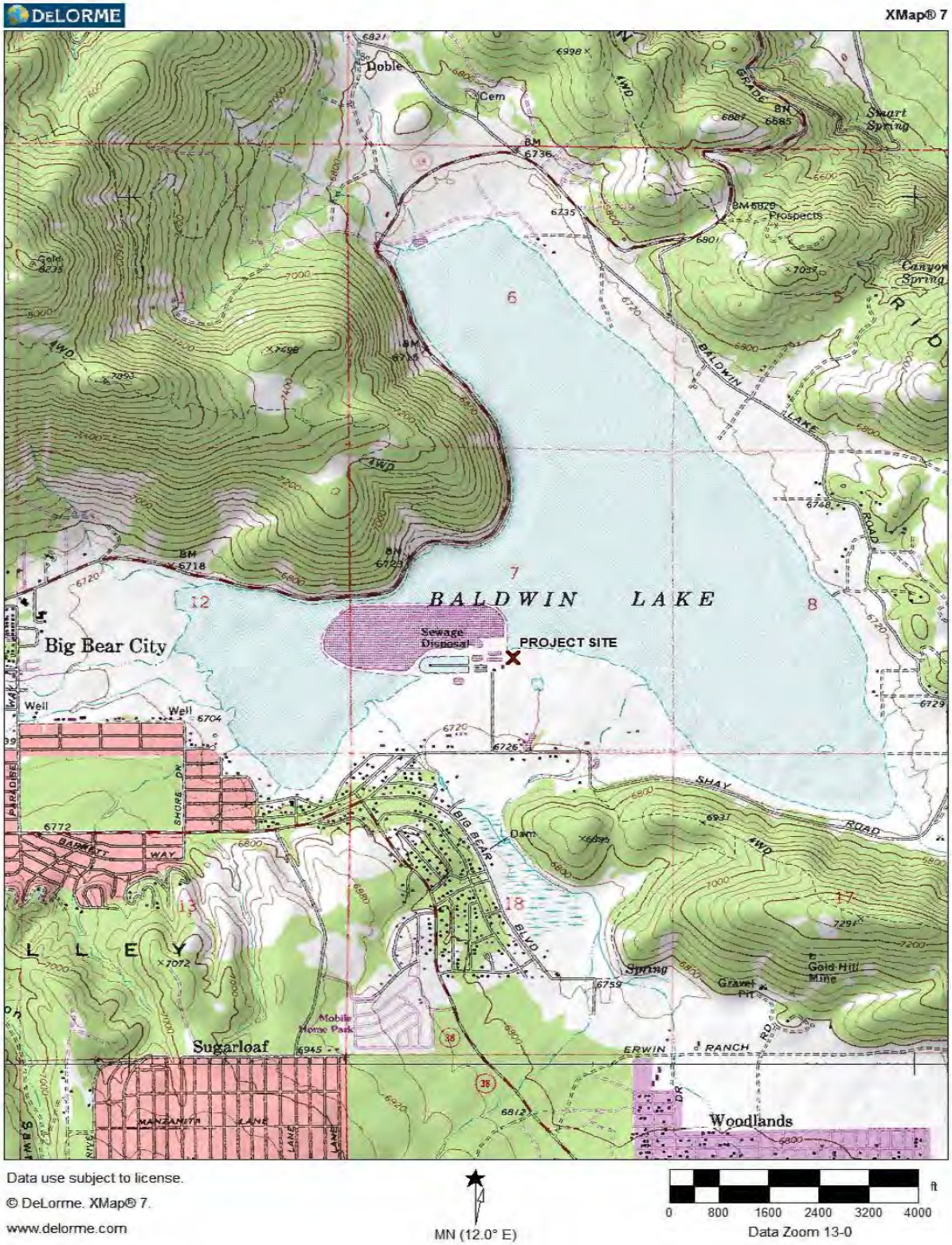
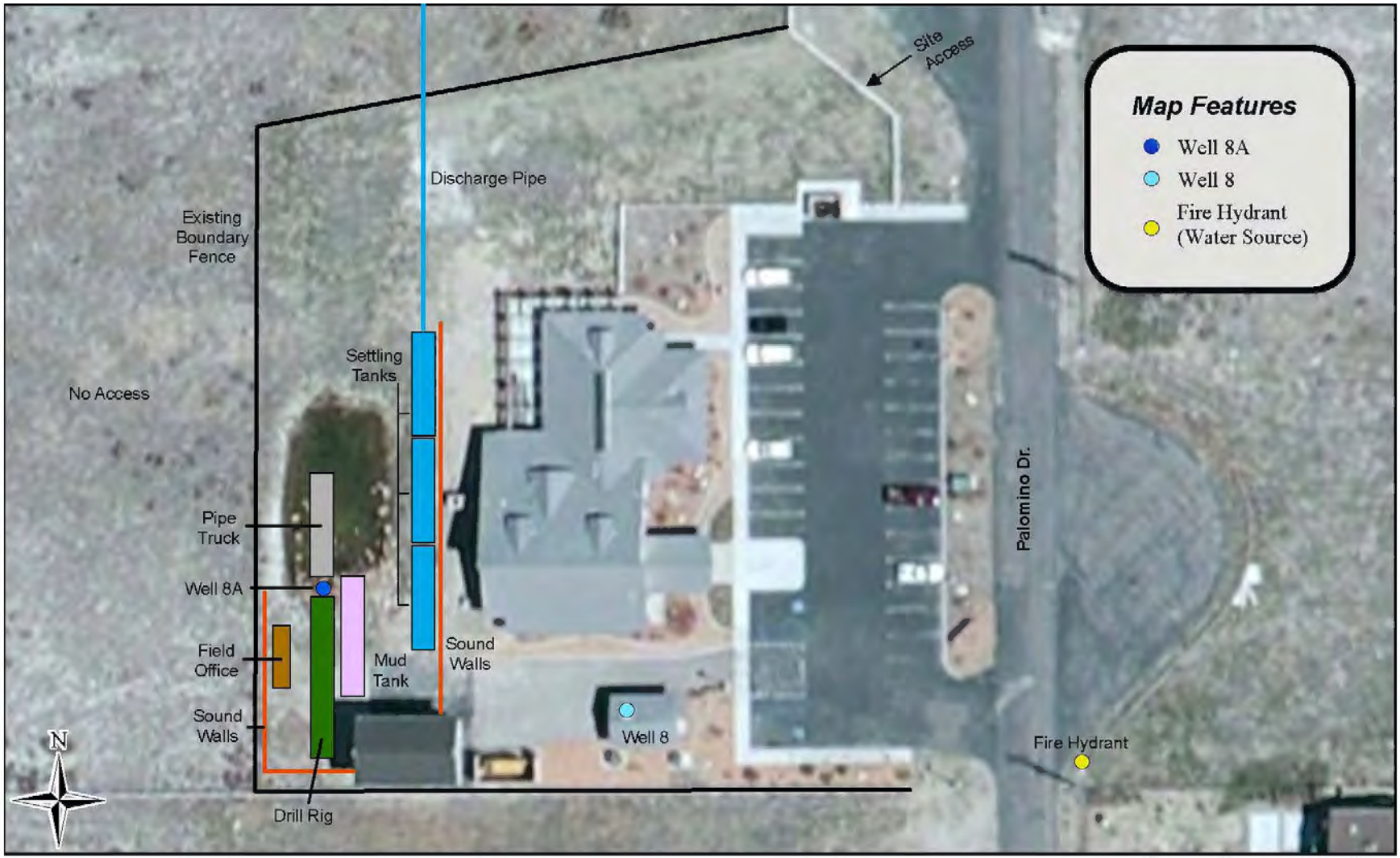


FIGURE 3
Aerial Photo of Specific Location of Well 8 and Proposed Well 8A



Source: Thomas Harder & Co. Groundwater Consulting

FIGURE II-1
Important Farmland Finder

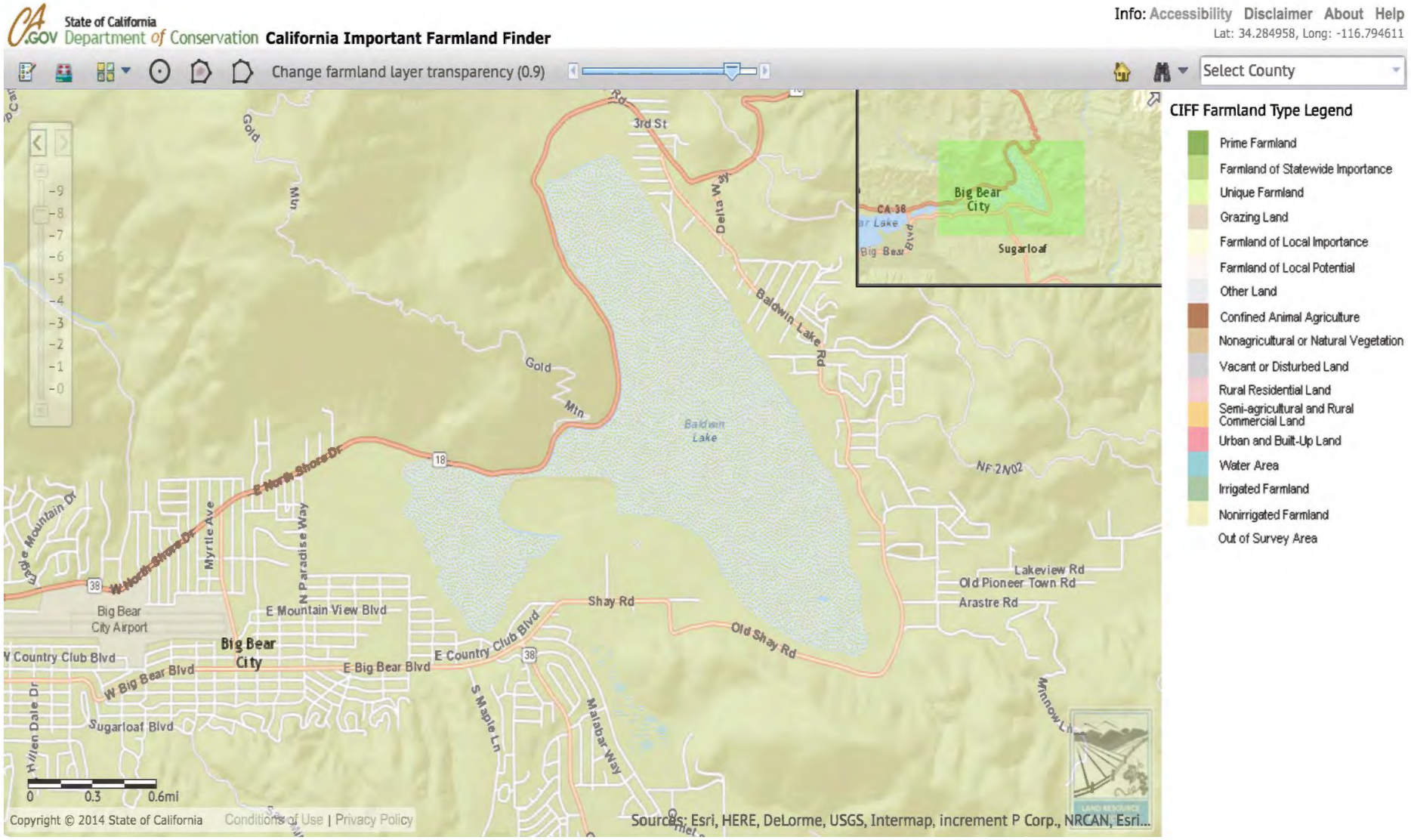
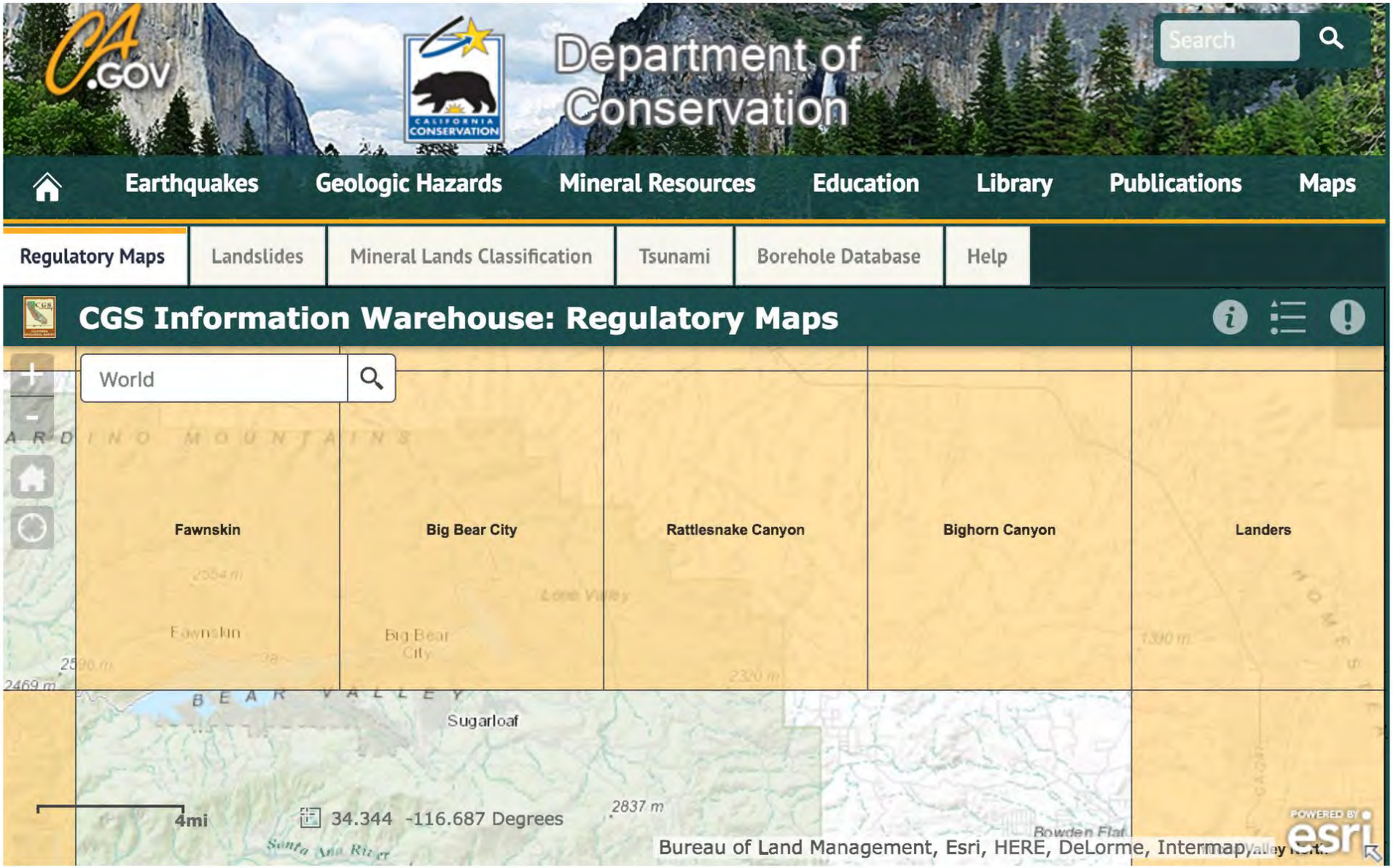


FIGURE VI-1
Alquist-Priolo Map



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

BIG BEAR CITY QUADRANGLE
CALIFORNIA—SAN BERNARDINO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 LUCERNE VALLEY 15' QUADRANGLE

2652 IV NW (LUCERNE VALLEY)
2652 I NW (OLD WOMAN SPRINGS)
2652 IV SW (FAWNSKIN)
2652 I SW (RATTLESNAKE CANYON)
(BIG BEAR LAKE) 2652 III NW
(ONYX PEAK) 2652 II NW

116°52'30" 34°22'30" 116°45' 34°15'

LUCERNE VALLEY 7 MI. R.1E. R.2E. 2652 IV NE (COUGAR BUTTES) R.1E. R.2E. (MOONRIDGE) CAMP ANGELUS 39 MI. 2652 III NE

3803 000 m.N. 3790 000 m.N. 512 000 m.E. 522 000 m.E. 2 370 000 FEET 320 000 FEET 280 000 FEET

T. 3 N. T. 2 N.

(AREA D)

NORTH FRONTAL FAULT

HELENDALE FAULT

SAN BERNARDINO NATIONAL FOREST

(AREA OF Greenlee)

ITALY

NORTH BRANCH HELENDALE FAULT

FIGURE VI-2

linear trenches in alluvium

faults not verified

fault in alluvium not verified

area of massive landslides

no geomorphic evidence of recent faulting

vague t

not verified

FAULTS NOT SHOWN TO NORTHWEST

Substation, Cushenbury Springs, Cushenbury, Cushenbury Pit, Marble Canyon Pit, Monarch Flat, Prospect, Spring, Tailings, Ruins, Santa Fe Mine, Silver Reef Mine, Blackhawk Mine, Blackhawk Canyon, Blackhawk Mtn, Silver Peak, Round Mtn, Prospects, Ternate Springs, Mohawk Mine, Whiskey Springs, Burnt Flat, Cactus Spring, Cactus Flat, Jacoby Spring, Union Flat, Arrastre Flat, Doble Mine, Doble, Cem, Smart Spring, Canyon Spring, Squirrel Spring, Horsethief Flat, Arrastre Dam, Gold Mountain, Van Dusen Canyon, Sewage Disposal, Well, Trailer Park, Sugarloaf, Gravel Pit, Gold Hill Mine, Erwin Lake, Granite Spring, Creek, Dam, Substation, Prospect, Spring, Well, Gravel Pit, Trailer Park, Sewage Disposal

BM 3834, BM 3914, BM 4432, BM 4760, BM 5812, BM 5908, BM 5894, BM 6032, BM 6295, BM 6380, BM 6685, BM 6736, BM 6829, BM 5992, BM 6718, BM 6725, BM 6774, BM 7464

Monarch, Marble, Cushenbury, Atchison, Topeka & Santa Fe, Miller, Sadler, Dibblee, Jeep, Trail, Boundary, Valley, Holcomb, Road, Smarts Ranch, Johnson Grade, Baldwin, Lake, Shore Dr, Way, Big Bear, Blvd, Shay Road, Erwin Ranch Rd

MAP EXPLANATION

Faults mapped by Dibblee (1964, 1967), dashed where indefinite, dotted where concealed or inferred, queried where doubtful.

Faults mapped by Meisling (1984), dashed where poorly located, queried where inferred, dotted where concealed; sawteeth on upper plate of thrust fault.

Faults mapped by Miller (1975-77), dashed where approximately located, dotted where concealed; sawteeth on upper plate of thrust fault; ball & bar indicate direction scarp faces.

Scarp — Faults mapped by Morton and others (1980), dashed where approximately located, queried where scarp is poorly defined or origin may be other than faulting. Annotations point out particularly well-developed features.

Faults mapped by Sadler (1981), dashed where inexact, queried where speculative; sawteeth on upper plate of thrust fault; ball & bar indicate direction scarp faces. Note: only selected faults are plotted.

(3) Locality referred to in text.

Key to faulted and unfaulted deposits

□ - deposit offset — H- Holocene; L- late Pleistocene

○ - deposit not offset — Q- Quaternary — b- bedrock

Figure 2c (to FER-182). Faults in northeastern San Bernardino Mountains study area, based on available mapping by others. Annotatins are selected data from the work of others and air photo interpretation by Bryant (this report).

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1969. Field checked 1971

Projection and 10,000-foot grid ticks: California coordinate system, zone 5 (Lambert conformal conic)
1000-metre Universal Transverse Mercator grid ticks, zone 11, shown in blue. 1927 North American datum

Red tint indicates areas in which only landmark buildings are shown

Where omitted, land lines have not been established

There may be private inholdings within the boundaries of the National or State reservations shown on this map

Revisions shown in purple and woodland compiled from aerial photographs taken 1978 and other source data
This information not field checked. Map edited 1979

GN MN 0°06' 2 MILS 14½ 258 MILS
UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000
1 MILE 1 KILOMETRE
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CALIF QUADRANGLE LOCATION

ROAD CLASSIFICATION
Primary highway, hard surface — Light-duty road, hard or improved surface
Secondary highway, hard surface — Unimproved road
Interstate Route — U. S. Route — State Route

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1980

BIG BEAR CITY, CALIF.
SE/4 LUCERNE VALLEY 15' QUADRANGLE
N3415—W11645/7.5

1971
PHOTOREVISED 1979
AMS 2652 IV SE—SERIES V895

(Work Copy)

182-7

FIGURE IV-3
USGS Fault Map

FIGURE VI-4

San Bernardino County Land Use Plan
GENERAL PLAN
Geologic Hazard Overlays

SCALE 1:4,400

1.5 0 1.5 3 4.5 6 Miles
0.5 0 0.5 1 1.5 2 Kilometers

Generalized Landslide Susceptibility
- Low to moderate
- Moderate to High
- Mapped, Existing Landslide
- Rockfall/Debris-Flow Hazard Area (Forest Falls Only)

Map data originally compiled on 1:48,000 scale measured maps photo-reduced from 7-1/2 minute USGS quads by D.M. Morton, U.S. Geological Survey, 1974 and by S.S. Tan, State Division of Mines and Geology, 1986

Positional accuracy of map data is at best plus or minus 250 feet.

Zone of Suspected Liquefaction Susceptibility
- Zone of Susceptibility

The Zone of Suspected Liquefaction is mostly layer compiled by the San Bernardino County Geologist, 2009

Positional accuracy of map data is at best plus or minus 200 feet.

Generalized Liquefaction Susceptibility
- Low
- Medium
- High

Map data originally compiled on 1:48,000 scale measured maps (photo-reduced from 7-1/2 minute USGS quads by J.E. Matti and S.E. Cahoon, 1986.

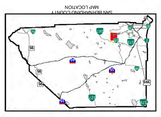
Positional accuracy of map data is at best plus or minus 250 feet.

Earthquake Fault Zones
- Cities
- Earthquake Fault Zone Boundary
- County Designated Fault Zones

Map data compiled on 7-1/2 and 15-minute USGS quadrangle maps by the State of California, Division of Mines and Geology, 1987.

Positional accuracy of map data is at best plus or minus 150 feet.

NOTICE:
Effective January 1, 1994, the name "Special Studies Zones" has been changed to "Earthquake Fault Zones", and Chap. 7.5, Div. 2 of the Public Resources Code has been renamed the "Alquist-Priolo Earthquake Fault Zoning Act."



F110 C
Big Bear City

See F111 C

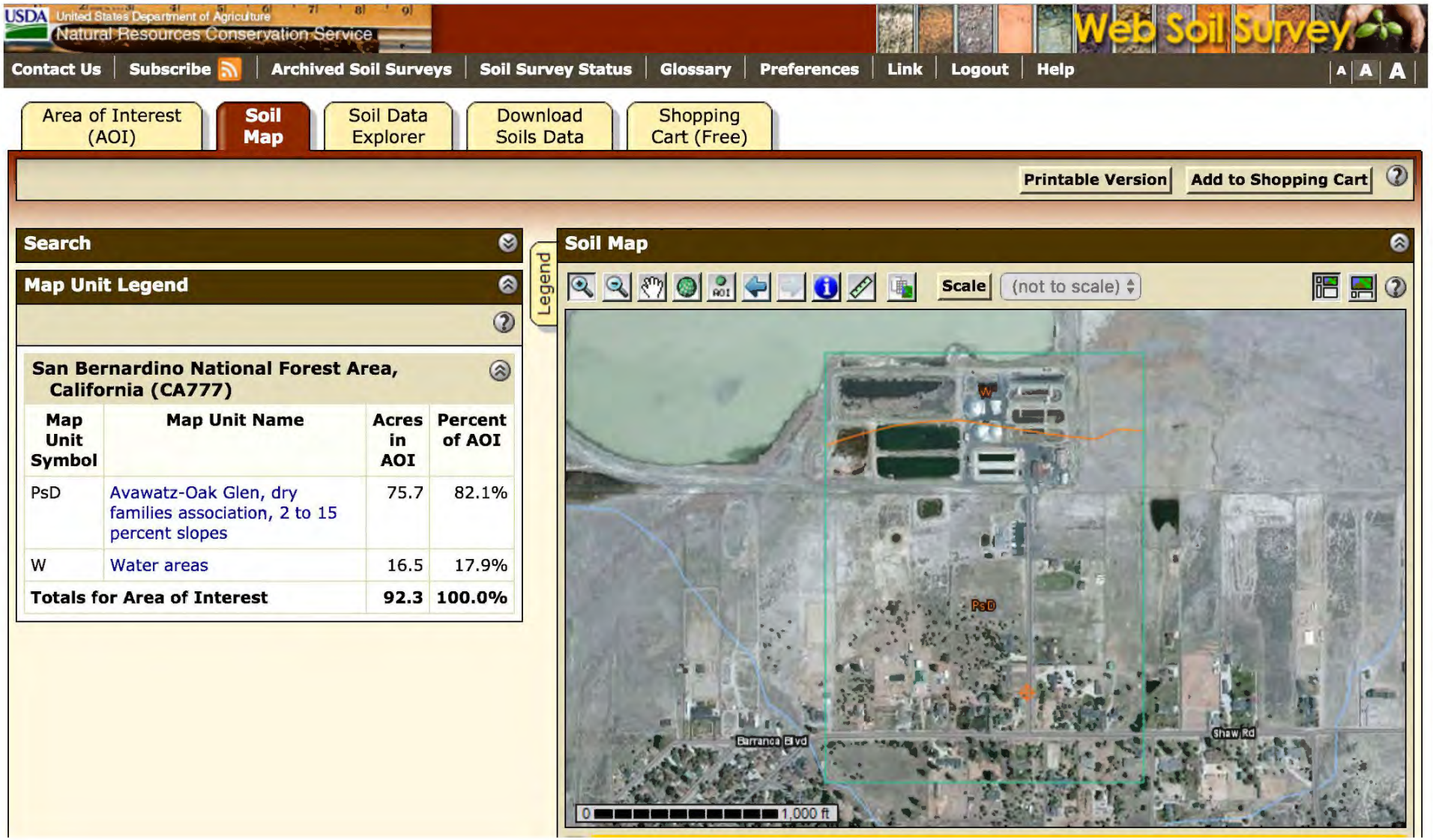
See F109 C

See F102 C

See F118 C

Z:\Projects\Maps\EIR\GeoHazMaps\GeoHaz_Overall2.mxd
Plot Date: 03/09/2010

FIGURE IV-5
Soils Map



APPENDIX 1

AIR QUALITY and GHG IMPACT ANALYSES

BIG BEAR CITY COMMUNITY SERVICES DISTRICT WELL 8A PROJECT

BIG BEAR, CALIFORNIA

Prepared by:

Giroux & Associates
1800 E. Garry Avenue #205
Santa Ana, Calif. 92705

Prepared for:

Tom Dodson & Associates
Attn: Kaitlyn Dodson
2150 N. Arrowhead Avenue
San Bernardino, California 92405

Date:

May 18, 2016

Project No.: P16-029 A

METEOROLOGICAL SETTING

The project area is located in the San Bernardino Mountains. The area is characterized by an alpine climate, with substantial winter precipitation in the form of winter snow because of its high elevation. Snowfall, as measured at lake level, averages 61.8 inches each year (although upwards of 100 inches can accumulate on the forested ridges bordering the lake, above 8,000 feet). Snow has fallen in every month except July and August. There are normally 16.5 days each year with measurable snow (0.1 inch or more).

On average, the Bear Valley area receives approximately 24 inches of precipitation per year, with a sharp transition between the western edge of the Valley at the dam and the eastern edge at Baldwin Lake. Historical precipitation consists of both rainfall and snowfall, Within the Big Bear watershed, the precipitation varies with location. The west end of the lake, at the Big Bear dam, receives 14 inches per year.

Daily temperatures in the summer are from 60°F to 70°F. Temperatures in the winter average approximately 35 °F to 40 °F. According to the National Weather Service, the warmest month at Big Bear is July, when the average high is 80.7 °F and the average low is 47.1 °F. The coolest month is January, with an average high of 47.1 °F and an average low of 20.7 °F. There are an average of 1.2 days each year with highs of 90 °F or higher. The highest temperature recorded at Big Bear was 94 °F last recorded on July 15, 1998. The record lowest temperature was -25 °F on January 29, 1979.

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AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [5,6]	Secondary [5,7]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour		Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³		12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)		Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)		Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[12]	—	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[13]	Same as Primary Standard	
	Rolling 3 Month Average			0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (10/1/15)

Table 1 (continued)

1 California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9 On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1 hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11 On June 2, 2010, a new 1 hour SO_2 standard was established and the existing 24 hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Respirable Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2025.

In 2010 a new federal one-hour primary standard for nitrogen dioxide (NO_2) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

BASELINE AIR QUALITY

Existing and probable future levels of air quality in the project area can be best inferred from ambient air quality measurements conducted by the SCAQMD. The data resource in closest proximity to the project site is the Big Bear City Monitoring Station. However, this station only monitors small particulates (PM-2.5). The closest available data for ozone and large particulates (PM-10) is the Crestline Monitoring Station. Data for carbon monoxide and nitrogen oxide were obtained from the San Bernardino 4th Street Monitoring Station. Summary data compiled from these resources is provided in Table 3. Findings are summarized below:

a. Photochemical smog (ozone) levels frequently exceed standards at Crestline. The 8-hour state ozone standard has been exceeded an average of 28 percent of all days in the past four years near the project site while the 1-hour state standard has been violated an average of 14 percent of all days. While ozone levels are still high, they are much lower than 10 to 20 years ago.

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels very rarely exceed the state or federal standard PM-10 standard. There have been no violations in the last four years of either standards.

d. A substantial fraction of PM-10 is comprised of small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). However, PM-2.5 readings rarely exceed the federal 24-hour PM-2.5 ambient standard (two times in the last four years).

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3

Air Quality Monitoring Summary (2011-2014)
(Number of Days Standards Were Exceeded, and Maximum Levels During Such Violations)
(Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	2011	2012	2013	2014
Ozone				
1-Hour > 0.09 ppm (S)	58	56	45	50
8-Hour > 0.07 ppm (S)	103	103	101	97
8- Hour > 0.075 ppm (F)	84	86	72	68
Max. 1-Hour Conc. (ppm)	0.160	0.140	0.120	0.130
Max. 8-Hour Conc. (ppm)	0.137	0.112	0.105	0.106
Carbon Monoxide				
8- Hour > 9. ppm (S,F)	0	0	0	0
Max 8-hour Conc. (ppm)	1.7	1.6	1.7	2.4
Nitrogen Dioxide				
1-Hour > 0.18 ppm (S)	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.062	0.067	0.072	0.073
Respirable Particulates (PM-10)				
24-hour > 50 $\mu g/m^3$ (S)	0/59	0/57	0/60	0/61
24-hour > 150 $\mu g/m^3$ (F)	0/59	0/57	0/60	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	37.	36.	32.	47.
Fine Particulates (PM-2.5)				
24-Hour > 35 $\mu g/m^3$ (F)	0/55	1/52	1/59	0/xx
Max. 24-Hr. Conc. ($\mu g/m^3$)	30.7	36.4	35.5	24.2

xx = not reported on CARB website

Source: South Coast Air Quality Management District;
Crestline Monitoring Station for Ozone and PM-10.
San Bernardino 4th Street Monitoring Station for CO and NO_2.
Big Bear City Monitoring Station for PM-2.5.

data: www.arb.ca.gov/adam/

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation will allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification sets a later attainment deadline (2024), but also requires the air basin to adopt even more stringent emissions controls.

Table 4

South Coast Air Basin Emissions Forecasts (Emissions in tons/day)

Pollutant	2010[a]	2015[b]	2020[b]	2025[b]
NOx	603	451	357	289
VOC	544	429	400	393
PM-10	160	155	161	165
PM-2.5	71	67	67	68

[a]2010 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, 2013 Almanac of Air Quality

In other air quality attainment plan reviews, EPA has disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA has stated that the current attainment plan relies on PM-2.5 control regulations that have not yet been approved or implemented. It is expected that a number of rules that are pending approval will remove the identified deficiencies. If these issues are not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the ARB submittal to EPA as part of the California State Implementation Plan (SIP) is expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked around eight years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the 2012 AQMP contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP is believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every three years. The 2012 AQMP was adopted in early 2013. An updated AQMP must therefore be adopted in 2016. Planning for the 2016 AQMP is currently on-going. The current attainment deadlines for all federal non-attainment pollutants are now as follows:

8-hour ozone (70 ppb)	2032
Annual PM-2.5 (12 $\mu g/m^3$)	2025
8-hour ozone (75 ppb)	2024 (old standard)
1-hour ozone (120 ppb)	2023 (rescinded standard)
24-hour PM-2.5 (35 $\mu g/m^3$)	2019

The key challenge is that NOx emission levels, as a critical ozone precursor pollutant, are forecast to continue to exceed the levels that would allow the above deadlines to be met. Unless additional NOx control measures are adopted and implemented, attainment goals may not be met.

The proposed project does not directly relate to the AQMP in that there are no specific air quality programs or regulations governing water projects. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants 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).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based

upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table 5
Daily Emissions Thresholds

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.

- Project could generate vehicle trips that cause a CO hot spot.

CONSTRUCTION ACTIVITY IMPACTS

CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

Although exhaust emissions will result from on and off-site equipment, the exact types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Estimated construction emissions were modeled using CalEEMod2013.2.2 to identify maximum daily emissions for each pollutant during project construction.

The proposed well project is expected to require 8 weeks for construction. Because 24-hour drilling will be required for a period of time, for a worst case day, drilling equipment was assumed to operate the entire time. The modeled default prototype construction equipment fleet and schedule is shown in Table 6.

Table 6

Construction Activity Equipment Fleet

Phase Name and Duration	Equipment
Drill (6 weeks)	1 Drill Rig
	1 Gen Set
	1 Loader/Backhoe
Pipeline Install (1 week)	1 Crane
	1 Air Compressor
	1 Welder
Paving (1 week)	1 Mixer
	1 Paver
	1 Roller
	1 Loader/Backhoe

Utilizing this indicated equipment fleet and durations shown in Table 6 the following worst case daily construction emissions are calculated by CalEEMod and are listed in Table 7.

Table 7
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Year 2016	ROG	NOx	CO	SO_2	PM-10	PM-2.5
Maximal Construction Emissions	1.9	22.0	12.4	<0.1	5.7	3.4
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA thresholds without the need for additional mitigation.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short 8-week period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

NEPA CONFORMITY

Annualized construction activity emissions were calculated by assuming peak daily activities would occur for the indicated eight week time frame. The calculated emissions were then compared to the EPA *de minimis* emission thresholds that would allow for a federal conformity finding with Section 176c of the Clean Air Act.

If the project-related emissions from construction and operations are less than specified "*de minimis*" levels, no further SIP consistency demonstration is required. The SCAB is designated as a "extreme" non-attainment area for the federal 8-hour ozone standard. The basin is a non-attainment area for PM-2.5, and a maintenance area for PM-10. Based upon these designations, the following emissions levels are presumed evidence of SIP conformity:

VOC/ROG	-	10 tons/year
NOx	-	10 tons/year
PM-2.5	-	100 tons/year
PM-10	-	100 tons/year

Annual construction emissions were calculated with the CalEEMod computer model. Maximum annual project-related air pollution emissions relative to federal standard attainment designations and appropriate *de minimis* thresholds are as follows:

Total Annual Construction Emissions (tons/year)

Activity	ROG	NOx	CO	SO_2	PM-10	PM-2.5	CO_2
Maximal Construction Emissions	0.03	0.38	0.22	0.00	0.09	0.05	56.5
NEPA Threshold	10	10	100	100	70	100	-

Maximum annual emissions are much less than their associated *de minimis* thresholds. A formal SIP consistency analysis is not required.

CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, emissions minimization through enhanced dust control measures is required because of the non-attainment status of the air basin. Recommended measures include:

Fugitive Dust Control

- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been

developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

THRESHOLDS OF SIGNIFICANCE

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,000 MT CO_2e for all land use projects. This 3,000 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

PROJECT RELATED GHG EMISSIONS GENERATION

Construction Activity GHG Emissions

The project is assumed to require 8 weeks of construction. During project construction, the CalEEMod2013.2.2 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 8.

Table 8
Construction Emissions (Metric Tons CO_2e)

	CO_2e
Year 2016	56.5
Amortized	**1.9**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less-than-significant.

Total project GHG emissions are substantially below the proposed significance threshold of 3,000 MT suggested by the SCAQMD. Hence, the project will not result in generation of a significant level of greenhouse gases.

CONSISTENCY WITH GHG PLANS, PROGRAMS AND POLICIES

Big Bear City has not yet developed a Greenhouse Gas Reduction Plan. The applicable GHG planning document is AB-32. As discussed above, the project is not expected to result in a significant increase in GHG emissions. As a result, the project results in GHG emissions well below the recommended SCAQMD 3,000 ton threshold of significance. Therefore, the project would not conflict with any applicable plan, policy, or regulation to reduce GHG emissions.

CALEEMOD2013.2.2 COMPUTER MODEL OUTPUT

- **DAILY EMISISONS**
- **ANNUAL EMISSIONS**

Big Bear Lake

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total disturbance area

Construction Phase - Drilling 6 weeks, Pipe Install 1 week, Concrete Pad 1 week

Off-road Equipment - Drilling: 1 drill rig (24 hours), 1 loader/backhoe, 1 gen set

Off-road Equipment - Pipeline: 1 crane, 1 forklift, 1 air compressor, 1 welder

Off-road Equipment - Concrete Pad: 1 mixer, 1 paver, 1 roller, 1 loader/backhoe

Trips and VMT - 20 work trips, 10 daily trips for drill rig, cement pipe, etc.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	5.00

tblConstructionPhase	PhaseEndDate	3/28/2016	3/30/2016
tblConstructionPhase	PhaseEndDate	3/18/2016	3/21/2016
tblConstructionPhase	PhaseStartDate	3/22/2016	3/24/2016
tblConstructionPhase	PhaseStartDate	3/12/2016	3/15/2016
tblGrading	AcresOfGrading	11.25	1.50
tblLandUse	LotAcreage	0.00	1.50
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Drilling
tblOffRoadEquipment	PhaseName		Drilling
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	PhaseName		Pipeline
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.8905	22.0486	12.3749	0.0373	4.8181	0.8913	5.7094	2.5548	0.8437	3.3985	0.0000	3,755.4161	3,755.4161	0.9329	0.0000	3,775.0079
Total	**1.8905**	**22.0486**	**12.3749**	**0.0373**	**4.8181**	**0.8913**	**5.7094**	**2.5548**	**0.8437**	**3.3985**	**0.0000**	**3,755.4161**	**3,755.4161**	**0.9329**	**0.0000**	**3,775.0079**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.8905	10.0919	12.3749	0.0373	4.8181	0.8913	5.7094	2.5548	0.8437	3.3985	0.0000	3,755.4161	3,755.4161	0.9329	0.0000	3,775.0079
Total	**1.8905**	**10.0919**	**12.3749**	**0.0373**	**4.8181**	**0.8913**	**5.7094**	**2.5548**	**0.8437**	**3.3985**	**0.0000**	**3,755.4161**	**3,755.4161**	**0.9329**	**0.0000**	**3,775.0079**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	54.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Drilling	Grading	2/1/2016	3/11/2016	5	30	
2	Pipeline	Trenching	3/15/2016	3/21/2016	5	5	
3	Concrete Pad	Paving	3/24/2016	3/30/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Drilling	Bore/Drill Rigs	1	24.00	205	0.50
Concrete Pad	Cement and Mortar Mixers	1	6.00	9	0.56
Drilling	Generator Sets	1	7.00	84	0.74
Pipeline	Cranes	1	4.00	226	0.29
Pipeline	Forklifts	1	4.00	89	0.20
Pipeline	Air Compressors	1	6.00	78	0.48
Pipeline	Welders	1	6.00	46	0.45
Concrete Pad	Pavers	1	6.00	125	0.42
Concrete Pad	Rollers	1	7.00	80	0.38
Drilling	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Concrete Pad	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pipeline	0	20.00	2.00		14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drilling	3	20.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Pad	5	20.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Drilling - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5696	0.0000	4.5696	2.4884	0.0000	2.4884			0.0000			0.0000
Off-Road	1.7738	21.5971	10.6786	0.0336		0.8837	0.8837		0.8368	0.8368		3,430.2204	3,430.2204	0.9201		3,449.5429
Total	**1.7738**	**21.5971**	**10.6786**	**0.0336**	**4.5696**	**0.8837**	**5.4533**	**2.4884**	**0.8368**	**3.3252**		**3,430.2204**	**3,430.2204**	**0.9201**		**3,449.5429**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0334	0.3474	0.3990	8.7000e-004	0.0250	5.6400e-003	0.0306	7.1200e-003	5.1900e-003	0.0123		87.2792	87.2792	6.3000e-004		87.2923
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1167**	**0.4515**	**1.6963**	**3.7000e-003**	**0.2486**	**7.5100e-003**	**0.2561**	**0.0664**	**6.9100e-003**	**0.0733**		**325.1957**	**325.1957**	**0.0128**		**325.4650**

3.2 Drilling - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5696	0.0000	4.5696	2.4884	0.0000	2.4884			0.0000			0.0000
Off-Road	1.7738	1.6275	10.6786	0.0336		0.8837	0.8837		0.8368	0.8368	0.0000	3,430.2204	3,430.2204	0.9201		3,449.5429
Total	**1.7738**	**1.6275**	**10.6786**	**0.0336**	**4.5696**	**0.8837**	**5.4533**	**2.4884**	**0.8368**	**3.3252**	**0.0000**	**3,430.2204**	**3,430.2204**	**0.9201**		**3,449.5429**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0334	0.3474	0.3990	8.7000e-004	0.0250	5.6400e-003	0.0306	7.1200e-003	5.1900e-003	0.0123		87.2792	87.2792	6.3000e-004		87.2923
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1167**	**0.4515**	**1.6963**	**3.7000e-003**	**0.2486**	**7.5100e-003**	**0.2561**	**0.0664**	**6.9100e-003**	**0.0733**		**325.1957**	**325.1957**	**0.0128**		**325.4650**

3.3 Pipeline - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2618	8.9431	5.4785	8.4500e-003		0.5775	0.5775		0.5556	0.5556		808.0111	808.0111	0.1829		811.8512
Total	**1.2618**	**8.9431**	**5.4785**	**8.4500e-003**		**0.5775**	**0.5775**		**0.5556**	**0.5556**		**808.0111**	**808.0111**	**0.1829**		**811.8512**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0167	0.1737	0.1995	4.4000e-004	0.0125	2.8200e-003	0.0153	3.5600e-003	2.5900e-003	6.1500e-003		43.6396	43.6396	3.1000e-004		43.6462
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1000**	**0.2778**	**1.4968**	**3.2700e-003**	**0.2361**	**4.6900e-003**	**0.2407**	**0.0629**	**4.3100e-003**	**0.0672**		**281.5561**	**281.5561**	**0.0125**		**281.8188**

3.3 Pipeline - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2618		5.4785	8.4500e-003		0.5775	0.5775		0.5556	0.5556	0.0000	808.0111	808.0111	0.1829		811.8512
Total	**1.2618**		**5.4785**	**8.4500e-003**		**0.5775**	**0.5775**		**0.5556**	**0.5556**	**0.0000**	**808.0111**	**808.0111**	**0.1829**		**811.8512**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0167	0.1737	0.1995	4.4000e-004	0.0125	2.8200e-003	0.0153	3.5600e-003	2.5900e-003	6.1500e-003		43.6396	43.6396	3.1000e-004		43.6462
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1000**	**0.2778**	**1.4968**	**3.2700e-003**	**0.2361**	**4.6900e-003**	**0.2407**	**0.0629**	**4.3100e-003**	**0.0672**		**281.5561**	**281.5561**	**0.0125**		**281.8188**

3.4 Concrete Pad - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9803	9.6404	6.5448	9.3200e-003		0.6305	0.6305		0.5810	0.5810		951.7527	951.7527	0.2796		957.6240
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9803**	**9.6404**	**6.5448**	**9.3200e-003**		**0.6305**	**0.6305**		**0.5810**	**0.5810**		**951.7527**	**951.7527**	**0.2796**		**957.6240**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0334	0.3474	0.3990	8.7000e-004	0.0250	5.6400e-003	0.0306	7.1200e-003	5.1900e-003	0.0123		87.2792	87.2792	6.3000e-004		87.2923
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1167**	**0.4515**	**1.6963**	**3.7000e-003**	**0.2486**	**7.5100e-003**	**0.2561**	**0.0664**	**6.9100e-003**	**0.0733**		**325.1957**	**325.1957**	**0.0128**		**325.4650**

3.4 Concrete Pad - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9803	9.6404	6.5448	9.3200e-003		0.6305	0.6305		0.5810	0.5810	0.0000	951.7527	951.7527	0.2796		957.6240
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9803**	**9.6404**	**6.5448**	**9.3200e-003**		**0.6305**	**0.6305**		**0.5810**	**0.5810**	**0.0000**	**951.7527**	**951.7527**	**0.2796**		**957.6240**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0334	0.3474	0.3990	8.7000e-004	0.0250	5.6400e-003	0.0306	7.1200e-003	5.1900e-003	0.0123		87.2792	87.2792	6.3000e-004		87.2923
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
Total	**0.1167**	**0.4515**	**1.6963**	**3.7000e-003**	**0.2486**	**7.5100e-003**	**0.2561**	**0.0664**	**6.9100e-003**	**0.0733**		**325.1957**	**325.1957**	**0.0128**		**325.4650**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.514315	0.060290	0.180146	0.139458	0.042007	0.006636	0.015782	0.029894	0.001929	0.002512	0.004343	0.000595	0.002093

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Big Bear Lake

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total disturbance area

Construction Phase - Drilling 6 weeks, Pipe Install 1 week, Concrete Pad 1 week

Off-road Equipment - Drilling: 1 drill rig (24 hours), 1 loader/backhoe, 1 gen set

Off-road Equipment - Pipeline: 1 crane, 1 forklift, 1 air compressor, 1 welder

Off-road Equipment - Concrete Pad: 1 mixer, 1 paver, 1 roller, 1 loader/backhoe

Trips and VMT - 20 work trips, 10 daily trips for drill rig, cement pipe, etc.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	5.00

tblConstructionPhase	PhaseEndDate	3/28/2016	3/30/2016
tblConstructionPhase	PhaseEndDate	3/18/2016	3/21/2016
tblConstructionPhase	PhaseStartDate	3/22/2016	3/24/2016
tblConstructionPhase	PhaseStartDate	3/12/2016	3/15/2016
tblGrading	AcresOfGrading	11.25	1.50
tblLandUse	LotAcreage	0.00	1.50
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Drilling
tblOffRoadEquipment	PhaseName		Drilling
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	PhaseName		Pipeline
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	PhaseName		Pipeline
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0345	0.3796	0.2235	6.2000e-004	0.0734	0.0164	0.0898	0.0386	0.0155	0.0542	0.0000	56.2597	56.2597	0.0138	0.0000	56.5495
Total	**0.0345**	**0.3796**	**0.2235**	**6.2000e-004**	**0.0734**	**0.0164**	**0.0898**	**0.0386**	**0.0155**	**0.0542**	**0.0000**	**56.2597**	**56.2597**	**0.0138**	**0.0000**	**56.5495**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0345	0.0577	0.2235	6.2000e-004	0.0734	0.0164	0.0898	0.0386	0.0155	0.0542	0.0000	56.2596	56.2596	0.0138	0.0000	56.5495
Total	**0.0345**	**0.0577**	**0.2235**	**6.2000e-004**	**0.0734**	**0.0164**	**0.0898**	**0.0386**	**0.0155**	**0.0542**	**0.0000**	**56.2596**	**56.2596**	**0.0138**	**0.0000**	**56.5495**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**84.80**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Drilling	Grading	2/1/2016	3/11/2016	5	30	
2	Pipeline	Trenching	3/15/2016	3/21/2016	5	5	
3	Concrete Pad	Paving	3/24/2016	3/30/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Drilling	Bore/Drill Rigs	1	24.00	205	0.50
Concrete Pad	Cement and Mortar Mixers	1	6.00	9	0.56
Drilling	Generator Sets	1	7.00	84	0.74
Pipeline	Cranes	1	4.00	226	0.29
Pipeline	Forklifts	1	4.00	89	0.20
Pipeline	Air Compressors	1	6.00	78	0.48
Pipeline	Welders	1	6.00	46	0.45
Concrete Pad	Pavers	1	6.00	125	0.42
Concrete Pad	Rollers	1	7.00	80	0.38
Drilling	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Concrete Pad	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pipeline	0	20.00	2.00		14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drilling	3	20.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Pad	5	20.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Drilling - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0685	0.0000	0.0685	0.0373	0.0000	0.0373	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.3240	0.1602	5.0000e-004		0.0133	0.0133		0.0126	0.0126	0.0000	46.6777	46.6777	0.0125	0.0000	46.9406
Total	**0.0266**	**0.3240**	**0.1602**	**5.0000e-004**	**0.0685**	**0.0133**	**0.0818**	**0.0373**	**0.0126**	**0.0499**	**0.0000**	**46.6777**	**46.6777**	**0.0125**	**0.0000**	**46.9406**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	5.4500e-003	6.9900e-003	1.0000e-005	3.7000e-004	8.0000e-005	4.5000e-004	1.1000e-004	8.0000e-005	1.8000e-004	0.0000	1.1835	1.1835	1.0000e-005	0.0000	1.1837
Worker	1.2000e-003	1.7700e-003	0.0184	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0837	3.0837	1.7000e-004	0.0000	3.0872
Total	**1.7300e-003**	**7.2200e-003**	**0.0254**	**5.0000e-005**	**3.6600e-003**	**1.1000e-004**	**3.7700e-003**	**9.8000e-004**	**1.1000e-004**	**1.0800e-003**	**0.0000**	**4.2672**	**4.2672**	**1.8000e-004**	**0.0000**	**4.2709**

3.2 Drilling - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0685	0.0000	0.0685	0.0373	0.0000	0.0373	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.0244	0.1602	5.0000e-004		0.0133	0.0133		0.0126	0.0126	0.0000	46.6776	46.6776	0.0125	0.0000	46.9405
Total	**0.0266**	**0.0244**	**0.1602**	**5.0000e-004**	**0.0685**	**0.0133**	**0.0818**	**0.0373**	**0.0126**	**0.0499**	**0.0000**	**46.6776**	**46.6776**	**0.0125**	**0.0000**	**46.9405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	5.4500e-003	6.9900e-003	1.0000e-005	3.7000e-004	8.0000e-005	4.5000e-004	1.1000e-004	8.0000e-005	1.8000e-004	0.0000	1.1835	1.1835	1.0000e-005	0.0000	1.1837
Worker	1.2000e-003	1.7700e-003	0.0184	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0837	3.0837	1.7000e-004	0.0000	3.0872
Total	**1.7300e-003**	**7.2200e-003**	**0.0254**	**5.0000e-005**	**3.6600e-003**	**1.1000e-004**	**3.7700e-003**	**9.8000e-004**	**1.1000e-004**	**1.0800e-003**	**0.0000**	**4.2672**	**4.2672**	**1.8000e-004**	**0.0000**	**4.2709**

3.3 Pipeline - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1500e-003	0.0224	0.0137	2.0000e-005		1.4400e-003	1.4400e-003		1.3900e-003	1.3900e-003	0.0000	1.8325	1.8325	4.1000e-004	0.0000	1.8413
Total	**3.1500e-003**	**0.0224**	**0.0137**	**2.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**1.8325**	**1.8325**	**4.1000e-004**	**0.0000**	**1.8413**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	4.5000e-004	5.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0986	0.0986	0.0000	0.0000	0.0986
Worker	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
Total	**2.4000e-004**	**7.4000e-004**	**3.6400e-003**	**1.0000e-005**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.6126**	**0.6126**	**3.0000e-005**	**0.0000**	**0.6132**

3.3 Pipeline - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1500e-003		0.0137	2.0000e-005		1.4400e-003	1.4400e-003		1.3900e-003	1.3900e-003	0.0000	1.8325	1.8325	4.1000e-004	0.0000	1.8413
Total	**3.1500e-003**		**0.0137**	**2.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**1.8325**	**1.8325**	**4.1000e-004**	**0.0000**	**1.8413**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	4.5000e-004	5.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0986	0.0986	0.0000	0.0000	0.0986
Worker	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
Total	**2.4000e-004**	**7.4000e-004**	**3.6400e-003**	**1.0000e-005**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.6126**	**0.6126**	**3.0000e-005**	**0.0000**	**0.6132**

3.4 Concrete Pad - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.4500e-003	0.0241	0.0164	2.0000e-005		1.5800e-003	1.5800e-003		1.4500e-003	1.4500e-003	0.0000	2.1585	2.1585	6.3000e-004	0.0000	2.1719
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4500e-003**	**0.0241**	**0.0164**	**2.0000e-005**		**1.5800e-003**	**1.5800e-003**		**1.4500e-003**	**1.4500e-003**	**0.0000**	**2.1585**	**2.1585**	**6.3000e-004**	**0.0000**	**2.1719**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	9.1000e-004	1.1700e-003	0.0000	6.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.1973	0.1973	0.0000	0.0000	0.1973
Worker	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
Total	**2.9000e-004**	**1.2000e-003**	**4.2300e-003**	**1.0000e-005**	**6.1000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.7112**	**0.7112**	**3.0000e-005**	**0.0000**	**0.7118**

3.4 Concrete Pad - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.4500e-003	0.0241	0.0164	2.0000e-005		1.5800e-003	1.5800e-003		1.4500e-003	1.4500e-003	0.0000	2.1585	2.1585	6.3000e-004	0.0000	2.1719
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4500e-003**	**0.0241**	**0.0164**	**2.0000e-005**		**1.5800e-003**	**1.5800e-003**		**1.4500e-003**	**1.4500e-003**	**0.0000**	**2.1585**	**2.1585**	**6.3000e-004**	**0.0000**	**2.1719**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	9.1000e-004	1.1700e-003	0.0000	6.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.1973	0.1973	0.0000	0.0000	0.1973
Worker	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
Total	**2.9000e-004**	**1.2000e-003**	**4.2300e-003**	**1.0000e-005**	**6.1000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.7112**	**0.7112**	**3.0000e-005**	**0.0000**	**0.7118**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.514315	0.060290	0.180146	0.139458	0.042007	0.006636	0.015782	0.029894	0.001929	0.002512	0.004343	0.000595	0.002093

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX 2

June 30, 2016

Tom Dodson and Associates
Attn: Tom Dodson
2150 N. Arrowhead Avenue
San Bernardino, California 92504

RE: Biological Resources Assessment and Focused Botany Survey
Big Bear City Community Services District Well 8a Project
Big Bear City, County of San Bernardino, California

Dear Tom Dodson,

Jericho Systems Inc. is pleased to present this letter report of findings for the biological resources assessment (BRA) conducted for Big Bear City Community Services District's (District) well 8A project (project) proposed to replace well number 8 which has been experiencing reduced water production.

The purpose of the BRA was to address potential effects of the proposed project to designated critical habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW, formerly California Department and Fish and Game) and/or the California Native Plant Society (CNPS).

Furthermore, two known sensitive plant species are well documented (CNDDB, CDFW, Mitigation Monitoring Reports prepared by Tom Dodson and Associates) to occur in the area. As such, a focused botany survey was conducted on site to locate any Slender-petaled Thelypodium (*Thelypodium stenopetalum*) and Bird-foot checkerbloom (*Sidalcea pedata*).

The site was assessed for sensitive species known to occur locally, and focused our attention on those listed species that have been documented in the project vicinity, namely; unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), Cushenbury oxytheca (*Acanthoscyphus parishii var. goodmaniana*), Cushenbury milk-vetch (*Astragalus albens*), Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*), San Bernardino Mountains bladderpod (*Physaria kingii ssp. Bernardina*), San Bernardino blue grass (*Poa atropurpurea*), California dandelion (*Taraxacum californicum*) and southern mountain yellow-legged frog (*Rana muscosa).*

Project Purpose

Well 8 is experiencing diminished water production and high background concentrations of iron and manganese. The district is proposing to drill, construct, develop and test a new well, well 8A, to replace existing well 8. The proposed new well will be drilled approximately 150 feet west of well 8. This well is designed to replace Well 8, which historically has been one of the District's largest (about 550 gallons per minute, gpm) water producers.

Project Description

The proposed well will be drilled to about 400 feet below the ground surface, or as directed by the hydrogeologist. The well will be a minimum of 17.5-inches in diameter, and then enlarged to 22-inch

diameter from 50 ft. below ground surface to the total depth specified by the hydrogeologist. Drilling will be accomplished through use of a reverse rotary drill unit. Once the well is completed to the desired depth, it will be pumped to test the production rate and quality of the water. The groundwater extracted from the well will be passed through Baker tanks to settle out any sediment and then delivered to the wastewater ponds for disposal. Assuming the well produces a sufficient quantity of groundwater of adequate quality, the well will be equipped for production with a vertical turbine pump and converted to a production well.

Location

The project site is generally located in the southern portion of Section 7, Township 2 North, Range 2 East and is depicted on the *Big Bear City* U. S. Geological Survey's (USGS) 7.5-minute topographic map. The project site is specifically located on the southwestern side of Baldwin Lake, on Palomino drive, north of the intersection of Palomino Drive and Shay Road, directly behind the Big Bear Area Wastewater Reclamation Agency office in Big Bear City, San Bernardino County, California. The total area of disturbance shown on Figure 3 is approximately one to 1.5 acre. Once the well is completed the area of above ground disturbance will be less than 10,000 square feet (about 1/4 acre). Land use adjacent to the project consists of a mixture of residential development to the south, rural development parcels to the west, industrial use parcels to the north and a mitigation site to the north and east.

Setting

The Big Bear City area is subject to both seasonal and annual variations in temperature and precipitation. Average annual maximum temperatures typically peak at 81 degrees Fahrenheit (°F) in July, and fall to an annual minimum temperatures of 21°F in January. Average annual precipitation is greatest from December through March and reaches a peak in January (4.13 inches). Precipitation is lowest in the month of June (0.16 inches). Annual precipitation averages 20.11 inches.

Soils in this area are dominated by Avawatz-Oak Glen. This series is characteristically dry with low runoff potential and 2 to 15 percent slopes. This soil is excessively drained as water is transmitted freely throughout the soil. Hydrologically, the Big Bear City area is located within the Baldwin Hydrologic Sub-Area (HSA 801.73) which comprises a 22,789-acre drainage area within the larger Santa Ana River Watershed (HUC 18070203). The Santa Ana River is the major hydrogeomorphic feature within the Santa Ana Watershed. The closest tributary to the Santa Ana River is Big Bear Lake, which is located west of the project site.

Mitigation Site

During the construction of the Big Bear Area Regional Wastewater Agency (BBARWA) administration building, a mitigation site for Slender-petaled Thelypodium (*Thelypodium stenopetalum*) and Bird-foot checkerbloom (*Sidalcea pedata*) was purchased and established. These plant species are currently listed both State and Federally, as Endangered. The mitigation site, of 3.17 acres, is located to the north and east of the project site. During the initial planning phase of the administration building, an incidental take permit was issued by CDFW (Permit No. 2081-2002-018-06). The requirements for the issuance of the permit were that the mitigation site be monitored for a minimum of ten (10) years and that the project site would be fenced and signs placed in perpetuity. The mitigation site has been monitored by Tom Dodson and Associates since 2006.

Methods

Data regarding biological resources on the project site were obtained through literature review and field investigations. Prior to performing the surveys, available databases and documentation relevant to the project site was reviewed for documented occurrences of sensitive species in the area. The U.S. Fish and

Wildlife Service (USFWS) threatened and endangered species occurrence data overlay, as well as the most recent versions of the California Natural Diversity Database (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) databases were searched for sensitive species data on the *Big Bear City* USGS 7.5-minute series quadrangle. These databases contain records of reported occurrences of State and federally listed species or otherwise sensitive species and habitats that may occur within the vicinity of the subject property. Other available technical information on the biological resources of the area was also reviewed including previous surveys and recent findings.

Jericho biologists Shannon Dye and Eugene Jennings conducted a biological resources assessment and focused botanical survey of the project area on June 1, 2016. The survey area encompassed both the proposed access point and project location (approximately 3,194 sq. yds.). Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species actually observed, expected wildlife usage of the site was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. The main focus of the faunal species surveys was to identify potential habitat for special status wildlife within the project area..

Results

According to the CNDDB, CNPSEI, and other relevant literature and databases, 61 sensitive species and one (2) sensitive habitats have been documented to occur in the *Big Bear City* USGS 7.5-minute series quadrangle. This list of sensitive species and habitats includes any State and/or federally listed threatened or endangered species, CDFW designated Species of Special Concern (SSC), and otherwise Special Animals. “Special Animals” is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of “species at risk” or “special status species.” The CDFW considers the taxa on this list to be those of greatest conservation need. An analysis of the likelihood for occurrence of federally listed species is provided in Table 1 and for occurrence of all sensitive species is provided in Table 2. This analysis takes into account species range as well as documentation within the vicinity of the project area and includes the habitat requirements for each species and the potential for their occurrence on the site, based on required habitat elements and range relative to the current site conditions.

Based on the literature review and personal observations made in the immediate vicinity, no State and/or federally listed threatened or endangered species are documented/or expected to occur within the survey area (project site). Two (2) sensitive species identified in the CNDDB search have a moderate potential to occur within the project area, including San Bernardino ragwort (*Packera bernardina*) and Baldwin Lake linanthus (*Linanthus killipii*). In addition, one species has a high potential to occur, Big Bear Valley milk-vetch (*Astragalus lentiginosus var. sierrae*). This species, while listed in the CNDDB search, it is not listed in as endangered by either federal or state agencies.

None of the sensitive habitats identified in the literature review and database search are present within the project area.

The site was visited on June 1, 2016 and revisited on June 9, 16 and 30, 2016 to determine if the two sensitive species of plants (Slender-petaled Thelypodium (*Thelypodium stenopetalum*) and Bird-foot checkerbloom (*Sidalcea pedata*)) were in bloom. The mitigation site and additional documented locations were visited and no flowers were seen in bloom.

Habitat

Habitat on site consists of a wet meadow habitat dominated by non-native grasses. The site has been subject to historic human disturbances. The site borders an actively used office building and a habitat conservation site.

Wildlife

Birds and one mammal were seen during the survey. Species observed or otherwise detected on or in the vicinity of the project site during the survey included; house finch (*Haemorhous mexicanus*), rock pigeon (*Columba livia*), western bluebird (*Sialia Mexicana*), northern rough-winged swallow (*Stelgidopteryx serripennis*), Brewer's black bird (*Euphagus cyanocephalus*), bush rabbit (*Sylvilagus bachmani*).

Special Status Species and Sensitive Habitats

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both Federal and State levels, depending on the magnitude of threat to the continued existence and existing knowledge of population levels. Of the 61 sensitive species identified in the literature review and database search, sixteen (13 plant species and 3 animal species) are State and/or Federally listed as threatened or endangered species and they are:

- unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)
- Slender-petaled *Thelypodium* (*Thelypodium stenopetalum*)
- Bird-foot checkerbloom (*Sidalcea pedata*)
- Cushenbury oxytheca (*Acanthoscyphus parishii var. goodmaniana*)
- Cushenbury milk-vetch (*Astragalus albens*)
- Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*)
- San Bernardino Mountains bladderpod (*Physaria kingii ssp. Bernardina*)
- San Bernardino blue grass (*Poa atropurpurea*)
- California dandelion (*Taraxacum californicum*)
- Ash-gray paintbrush (*Castilleja cinerea*)
- Big Bear Valley sandwort (*Eremogone ursina*)
- Parish's daisy (*Erigeron parishii*)
- Southern mountain buckwheat (*Eriogonum kennedyi var. austromontanum*)
- Southern mountain yellow-legged frog (*Rana muscosa)*
- Bald eagle (*Haliaeetus leucocephalus*)
- Southern rubber boa (Charina umbratica)

The project site is not located within any USFWS designated Critical Habitat for threatened or endangered species.

Regulatory Background

Federal and State Regulations applicable to this project include the following:

Federal Endangered Species Act

The USFWS administers the federal Endangered Species Act (ESA) of 1973. The ESA provides a legal mechanism for listing species as either threatened or endangered, and a process of protection for those species listed. Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. "Take" can include adverse modification of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act. Take authorization can be obtained under Section 7 or Section 10 of the act.

State Endangered Species Act

The CDFW, formerly Fish and Game, administers the state Endangered Species Act. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. And a rare species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. Rare species applies to California native plants. Further, all raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Species that are California fully protected include those protected by special legislation for various reasons, such as the California condor. Species of Special Concern is an informal designation used by CDFW for some declining wildlife species that are not proposed for listing as threatened or endangered. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFW.

The Migratory Bird Treaty Act

Nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C 703-711). The MBTA provides protection for nesting birds that are both residents and migrants whether or not they are considered sensitive by resource agencies. The MBTA prohibits take of nearly all native birds. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

A nest as defined above, during the portion of the breeding season as defined below, once birds begin constructing or repairing the nest in readiness for egg-laying. A nest is no longer an "active nest" if abandoned by the adult birds or once nestlings or fledglings are no longer dependent on the nest. Nests which are critical to the life history of the individual (e.g., individuals of species that exhibit site fidelity, colonial nesters and raptors) are considered an Active Nest year-round. The breeding season is identified by the period of the year during which courting, breeding, or nesting occurs, or when breeding adult birds or their nestlings or fledglings are at or near a nest. The breeding season varies among bird species and geographic locations.

Special Status Species Background

Slender-petaled *Thelypodium* (*Thelypodium stenopetalum*)

Slender-petaled thelypodium (hereafter *Thelypodium*) was listed as endangered by U.S. Fish and Wildlife Service (USFWS) on August 31, 1984 (49 FR 34500) and by the state of California in 1989.*Thelypodium* is endemic to seasonally moist alkaline soils associated with seeps and lake shores between 1900 and 2200 meters in elevation in the Big Bear and Holcomb Valleys of the San Bernardino Mountains and is threatened by habitat degradation and conversion of suitable habitat to urban, agricultural and other uses. *Thelypodium* is a biennial with oblanceolate, thick, purpletinged leaves 1.6 to 5.9 inches long, arranged in a basal rosette that withers soon after blooming. Leaf margin varies from entire to few-toothed or shallowly lobed. Stems are 12 to 31 inches tall with stem leaves arrowhead shaped with lobes clasping the stem at the base. Flowers are lavender to white with small linear petals (10 to 14 millimeters) and a purple

tinged calyx. The fruit is a straight to slightly curved thin pod that is cylindrical and slightly narrowed between seeds.

Bird-foot checkerbloom (*Sidalcea pedata*)

Bird-foot checkerbloom (hereafter *Sidalcea)* was listed as endangered by USFWS on August 31, 1984 (49 FR 34500) and by the state of California in 1989. *Sidalcea* is endemic to moist meadows in open areas between 1,600 and 2,500 meters in elevation in the Big Bear and Holcomb Valleys of the San Bernardino Mountains and is threatened by habitat degradation and conversion of suitable habitat to urban, agricultural and other uses. *Sidalcea* is a several stemmed perennial herb 8 to 16 inches tall with predominately basal leaves that are dissected palmately and often tinged with red. The bright pink to magenta petals are on loose, spike-like terminal racemes.

There is no designated Critical Habitat within the project area.

Conclusions and Recommendations

The project area lies within the range of several sensitive species. The project site consists of mostly non-native grasses and is within a developed area of Big Bear City. The project site is surrounded by a mixture of public utility development and open space. There is some habitat within the proposed project footprint, as well as the immediate surrounding area, that is suitable for several sensitive species, including eight (8) plant species and one (1) animal species. However, no suitable habitat occurs within the project area for any of the State and/or federally listed threatened or endangered species identified in the literature review and database search.

- Slender-petaled Thelypodium *(Thelypodium stenopetalum)* – There are 5 recorded occurrences of ash-gray paintbrush within the Big Bear City Quad. The closest occurrence of this species is directly to the north of the project site, within the mitigation site for this species. A focused survey was conducted and species was determined not present within the project site. Impacts to this species will not result.

- Bird-foot checkerbloom (*Sidalcea pedata*) – There are 8 recorded occurrences of Bird-foot checkerbloom within the Big Bear City Quad. The closest occurrence of this species is directly to the north of the project site, within the mitigation site for this species. A focused survey was conducted and species was determined not present within the project site. Impacts to this species will not result.

- Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) - There is 1 recorded occurrence of unarmored threespine stickleback within the Big Bear City Quad. The closest occurrence of this species is approximately .2 miles SE of the project site. This species is found near flowing streams with cool water. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Cushenbury oxytheca (*Acanthoscyphus parishii var. goodmaniana*) – There are 14 recorded occurrences of Cushenbury oxytheca within the Big Bear City Quad. The closest occurrence of this species is approximately 4.5-mile N of the project site. This species is associated with rocky slopes and limestone talus habitat. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Cushenbury milk-vetch (*Astragalus albens*) – There are 14 recorded occurrences of cushenbury milk-vetch within the Big Bear City Quad. The closest occurrence of this species is approximately 3-mile NE of the project site. This species is associated with rocky slopes. The

project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*) – There are 14 recorded occurrences of cushenbury buckwheat within the Big Bear City Quad. The closest occurrence of this species is approximately 2.3-mile NE of the project site. This species is associated with limestone mountain slopes. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- San Bernardino Mountains bladderpod (*Physaria kingii ssp. Bernardina*) – There are 2 recorded occurrences of San Bernardino Mountains bladderpod within the Big Bear City Quad. The closest occurrence of this species is approximately 1-mile SW of the project site. This species is associated with rocky carbonate soil. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- San Bernardino blue grass (*Poa atropurpurea*) – There are 7 recorded occurrences of San Bernardino blue grass within the Big Bear City Quad. The closest occurrence of this species is approximately .2 miles SE of the project site. This species is associated with wetland and grassy slopes habitats. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- California dandelion (*Taraxacum californicum*) – There are 8 recorded occurrences of California dandelion within the Big Bear City Quad. The closest occurrence of this species is 417 feet NE of the project site. This species is associated with moist meadow habitat. The project site does contain suitable habitat for this species. However, none were observed on site. Impacts to this species will not result.

- *Ash-gray paintbrush (Castilleja cinerea)* – There are 13 recorded occurrences of ash-gray paintbrush within the Big Bear City Quad. The closest occurrence of this species is 200 feet NE of the project site. This species is associated with pebble plains habitat. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- *Big Bear Valley sandwort* (*Eremogone ursina*) – There are 8 recorded occurrences of Big Bear Valley sandwort within the Big Bear City Quad. The closest occurrence of this species is .5 miles SE of the project site. This species is associated with pebble plains habitat. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Parish's daisy (*Erigeron parishii*) – There are 16 recorded occurrences of Parish's daisy within the Big Bear City Quad. The closest occurrence of this species is 2 miles NE of the project site. This species is associated with pebble plains habitat. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Southern mountain buckwheat (*Eriogonum kennedyi var. austromontanum*) – There are 10 recorded occurrences of Southern mountain buckwheat within the Big Bear City Quad. The closest occurrence of this species is .5 miles SE of the project site. This species is associated with limestone habitat. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Southern mountain yellow-legged frog (*Rana muscosa*) – There is 1 recorded occurrence of Southern mountain yellow-legged frog within the Big Bear City Quad. The closest occurrence of

this species is 2 miles W of the project site. This species is associated with aquatic habitat. The project site does contain suitable habitat for this species but it is considered extirpated from the area. Impacts to this species will not result.

- Bald eagle (*Haliaeetus leucocephalus*) – There are 2 recorded occurrences of Bald eagle within the Big Bear City Quad. The closest occurrence of this species is 244 feet SE of the project site. This species is associated with tall old growth vegetation. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

- Southern rubber boa (*Charina umbratica*) – There is 1 recorded occurrence of southern rubber boa within the Big Bear City Quad. Due to the sensitive nature of this species the location information is not available. This species is associated with wet meadows rock outcrops with loose soil for burrowing. The project site does not contain suitable habitat for this species. Impacts to this species will not result.

Designated Critical Habitat

The project site and vicinity is not located within or adjacent to any USFWS designated Critical Habitat. No further action is required.

Nesting Birds

The project site and immediate surrounding areas do contain habitat suitable for nesting birds. Nesting bird surveys should be conducted prior to any construction activities taking place during the nesting season to avoid potentially taking any birds or active nests. In general, impacts to all bird species (common and special status) can be avoided by conducting work outside of the nesting season (generally February 1st to August 31st), and conducting a worker awareness training. However, if all work cannot be conducted outside of nesting season, a project-specific Nesting Bird Management Plan can be prepared to determine suitable buffers.

Please do not hesitate to contact me at 909-915-5900 should you have any questions or require further information.

Sincerely,

Shay Lawrey, President
Ecologist/Regulatory Specialist

Attachments:
Attachment A – Tables
Attachment B – Figures
Attachment C – Site Photos

Table 1. Federally Listed Species
Documented within the CNDDB *Big Bear City* – USGS 7.5 Quadrangle

Common Name	Scientific Name	Status	Found Locally	Found in Project Area	Determination of Project Affects
Plants					
unarmored threespine stickleback	*Gasterosteus aculeatus williamsoni*	FE	Yes	No	No Affect
bird-foot checkerbloom	*Sidalcea pedata*	FE	Yes	No	No Affect
slender-petaled thelypodium	*Thelypodium stenopetalum*	FE	Yes	No	No Affect
Cushenbury oxytheca	*Acanthoscyphus parishii var. goodmaniana*	FE	Yes	No	No Affect
Cushenbury milk-vetch	*Astragalus albens*	FE	No	No	No Affect
Cushenbury buckwheat	*Eriogonum ovalifolium var. vineum*	FE	Yes	No	No Affect
San Bernardino Mountains bladderpod	*Physaria kingii ssp. bernardina*	FE	Yes	No	No Affect
San Bernardino blue grass	*Poa atropurpurea*	FE	Yes	No	No Affect
California dandelion	*Taraxacum californicum*	FE	Yes	No	No Affect
ash-gray paintbrush	*Castilleja cinerea*	FT	Yes	No	No Affect
Big Bear Valley sandwort	*Eremogone ursina*	FT	Yes	No	No Affect
Parish's daisy	*Erigeron parishii*	FT	No	No	No Affect
southern mountain buckwheat	*Eriogonum kennedyi var. austromontanum*	FT	Yes	No	No Affect
Amphibians					
southern mountain yellow-legged frog	*Rana muscosa*	FE	Yes	No	No Affect

Table 2. CNDDB Sensitive Species Documented within the *Big Bear City* – USGS 7.5 quadrangle.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Acanthoscyphus parishii var. goodmaniana	Cushenbury oxytheca	Endangered/ None	G4?T1; S1; CNPS: 1B.1	Limestone, Pinon & juniper woodlands, Pinyon and juniper woodland. On limestone talus and rocky slopes. 1400-2380 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Aquila chrysaetos	golden eagle	None/ None	G5; S3; CNPS:	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland, rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Astragalus albens	Cushenbury milk-vetch	Endangered/ None	G1; S1; CNPS: 1B.1	Desert wash, Joshua tree woodland, Limestone, Mojavean desert scrub, Pinon & juniper woodlands, Sandy or stony flats, rocky hillsides, canyon washes, & fans, on carbonate or mixed granitic-calcareous debris. 1185-1950 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Astragalus bernardinus	San Bernardino milk-vetch	None/ None	G3; S3; CNPS: 1B.2	Joshua tree woodland, Limestone, Pinon & juniper woodlands, Granitic or carbonate substrates. 275-2286 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Astragalus lentiginosus var. sierrae	Big Bear Valley milk-vetch	None/ None	G5T2; S2; CNPS: 1B.2	Meadow & seep, Mojavean desert scrub, Pinon & juniper woodlands, Upper montane coniferous forest, Stony meadows and open pinewoods; sandy and gravelly soils in a variety of habitats. 1710-3230 m.	Suitable habitat for this species exists within the project area and this species has been documented approx. 37 feet north of the project site. Occurrence potential for this species is **high.**
Astragalus leucolobus	Big Bear Valley woollypod	None/ None	G2; S2; CNPS: 1B.2	Lower montane coniferous forest, Pavement plain, Pinon & juniper woodlands, Upper montane coniferous forest, Dry pine woods, gravelly knolls among sagebrush, or stony lake shores in the pine belt. 1750-2885 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Astragalus tidestromii	Tidestrom's milk-vetch	None/ None	G3; S2; CNPS: 2B.2	Limestone, Mojavean desert scrub, Washes, in sandy or gravelly soil. On limestone. 765-1575 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Atriplex parishii	Parish's brittlescale	None/ None	G1G2; S1; CNPS: 1B.1	Alkali playa, Chenopod scrub, Meadow & seep, Vernal pool, Wetland, Usually on drying alkali flats with fine soils. 5-1420 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Berberis fremontii	Fremont barberry	None/ None	G5; S3; CNPS: 2B.3	Joshua tree woodland, Pinon & juniper woodlands, Rocky, sometimes granitic. 1140-1770 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Boechera dispar	pinyon rockcress	None/ None	G3; S3; CNPS: 2B.3	Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Granitic, gravelly slopes & mesas. Often under desert shrubs which support it as it grows. 1200-2450 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Boechera lincolnensis	Lincoln rockcress	None/ None	G4G5; S3; CNPS: 2B.3	Chenopod scrub, Limestone, Mojavean desert scrub, On limestone. 880-2410 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Boechera parishii	Parish's rockcress	None/ None	G2; S2; CNPS: 1B.2	Pavement plain, Pinon & juniper woodlands, Upper montane coniferous forest, generally found on pebble plains on clay soil with quartzite cobbles; sometimes on limestone. 1770-2990 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Boechera shockleyi	Shockley's rockcress	None/ None	G3; S2; CNPS: 2B.2	Limestone, Pinon & juniper woodlands, On ridges, rocky outcrops and openings on limestone or quartzite; usually in pinyon or p-j series. 875-2310 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Bombus crotchii	Crotch bumble bee	None/ None	G3G4; S1S2; CNPS:	Coastal California east to the Sierra-Cascade crest and south into Mexico, Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	None/ None	G3T3?; S3?; CNPS: 1B.2	Chaparral, Lower montane coniferous forest, Meadow & seeps, Vernally moist places in yellow-pine forest, chaparral. 1000-2390 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Calochortus striatus	alkali mariposa-lily	None/ None	G3; S3; CNPS: 1B.2	Chaparral, Chenopod scrub, Meadow & seep, Mojavean desert scrub, WetlandChaparral, chenopod scrub, Alkaline meadows and ephemeral washes. 70-1595 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Calyptridium pygmaeum	pygmy pussypaws	None/ None	G2; S2; CNPS: 1B.2	Subalpine coniferous forest, Upper montane coniferous forest, Sandy or gravelly sites. 1980-3110 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Castilleja cinerea	ash-gray paintbrush	Threatened/ None	G1G2; S1S2; CNPS: 1B.2	Meadow & seep, Mojavean desert scrub, Pinon & juniper woodlands, Upper montane coniferous forest, Pebble plains, Endemic to the San Bernardino Mountains, in clay openings; often in meadow edges. 725-2745 m.	Suitable habitat for this species does exists within the project area and this species has been documented approx. 200 feet NE of the project site. Occurrence potential for this species is **low.**
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	None/ None	G2; S2; CNPS: 1B.2	Chaparral, Meadow & seep, Pavement plain, Riparian woodland, Upper montane coniferous forest, Wetland, Mesic to drying soils in open areas of stream and meadow margins or of vernally wet areas. 1300-2390 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None/ None	G5T34; S3S4; CDFW: SSC	Desert wash, Pinon & juniper woodlands, Sonoran desert scrub, desert succulent scrub, pinyon-juniper, etc., Sandy herbaceous areas, usually in association with rocks or coarse gravel.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Charina umbratica	southern rubber boa	None/ Threatened	G2G3; S2S3; USFW: S	Meadow & seep, Riparian forest, Riparian woodland, Upper montane coniferous forest, WetlandKnown from the San Bernardino and San Jacinto mtns; found in a variety of montane forest habitats. Snakes resembling C. umbratica reported from Mt. Pinos and Tehachapi mtns group with C. bottae based on mtDNA. Further research needed, Found in vicinity of streams or wet meadows; requires loose, moist soil for burrowing; seeks cover in rotting logs, rock outcrops, and under surface litter.	Suitable habitat for this species does exist within the project area. There has only been one documented occurance within the Big Bear City Quad in 1993. Occurrence potential for this species is **low**.
Claytonia lanceolata var. peirsonii	Peirson's spring beauty	None/ None	G5T2Q; S2; CNPS: 3.1	Subalpine coniferous forest, Upper montane coniferous forest, Granitic scree slopes, often with a sandy or fine soil component and granitic cobbles; N aspect. 2135-2745 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Corynorhinus townsendii	Townsend's big-eared bat	None/ Candidate Threatened	G3G4; S2; CDFW: SSC	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub | Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland, Throughout California in a wide variety of habitats. Most common in mesic sites.Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. extremely sensitive to human disturbance.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Cymopterus multinervatus	purple-nerve cymopterus	None/ None	G4G5; S2; CNPS: 2B.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland.Sandy or gravelly places. 765-2195 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Dudleya abramsii ssp. affinis	San Bernardino Mountains dudleya	None/ None	G4T2; S2; CNPS: 1B.2	Limestone, Pinon & juniper woodlands, Upper montane coniferous forest, Pebble (pavement) plain, Outcrops, granite or quartzite, rarely limestone. 1250-2600 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Ensatina klauberi	large-blotched salamander	None/ None	G2G3; S3; CNPS:	Found in conifer and woodland associations, Found in leaf litter, decaying logs and shrubs in heavily forested areas.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Eremogone ursina	Big Bear Valley sandwort	Threatened/ None	G1; S1; CNPS: 1B.2	Meadow & seep, Pinon & juniper woodlands, Pebble plain, Mesic, rocky sites. 1800-2900 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Erigeron parishii	Parish's daisy	Threatened/ None	G2; S2; CNPS: 1B.1	Limestone, Mojavean desert scrub, Pinon & juniper woodlands, Often on carbonate; limestone mountain slopes; often associated with drainages. Sometimes on grainite. 1050-1950 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Eriogonum evanidum	vanishing wild buckwheat	None/ None	G1; S1; CNPS: 1B.1	Chaparral, Cismontane woodland, Lower montane coniferous forest, Pinon & juniper woodlandsSandy sites. 1100-2225 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Eriogonum kennedyi var. austromontanum	southern mountain buckwheat	Threatened/ None	G4T2; S2; CNPS: 1B.2	Lower montane coniferous forest, Pebble (pavement) plain, 1770-2890 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Eriogonum microthecum var. johnstonii	Johnston's buckwheat	None/ None	G5T2; S2; CNPS: 1B.3	Limestone, Subalpine coniferous forest, Upper montane coniferous forest, Slopes and ridges on granite or limestone. 1829-2926 sq km	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Eriogonum ovalifolium var. vineum	Cushenbury buckwheat	Endangered/ None	G5T1; S1; CNPS: 1B.1	Joshua tree woodland, Limestone, Mojavean desert scrub, Pinon & juniper woodlands, Limestone mountain slopes. Dry, usually rocky places. 1430-2440 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	Endangered/ Endangered	G5T1; S1; CFDW: FP	Aquatic, South coast flowing waters, Weedy pools, backwaters, and among emergent vegetation at the stream edge in small Southern California streams. Cool (<24 C), clear water with abundant vegetation.	Suitable habitat for this species does exist within the project area. There has only been one documented occurrence .2 miles SE from the project site in 1995. Occurrence potential for this species is **low**.
Haliaeetus leucocephalus	bald eagle	Delisted/ Endangered	G5; S3; CDFW: FP	Lower montane coniferous forest, Old growth, Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water, Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Hydroporus simplex	simple hydroporus diving beetle	None/ None	G1?; S1?;	Aquatic, Sacramento/San Joaquin flowing waters, Known from aquatic habitats in Tuolumne and San Bernardino counties.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Icteria virens	yellow-breasted chat	None/ None	G5; S3; CDFW: SSC	Riparian forest, Riparian scrub, Riparian woodland, Summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses, Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	None/ None	G2T2; S2; CNPS: 1B.2	Meadow & seep, Upper montane coniferous forest, pebble plains, upper montane coniferous forest, In pebble plains and meadows with other rare plants. 1460-2960 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Lewisia brachycalyx	short-sepaled lewisia	None/ None	G4; S2; CNPS: 2B.2	Lower montane coniferous forest, Meadow & seep, Dry to moist meadows in rich loam. 1370-2450 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Linanthus killipii	Baldwin Lake linanthus	None/ None	G1; S1; CNPS: 1B.2	Joshua tree woodland | Meadow & seep | Pavement plain | Pinon & juniper woodlands Alkaline meadows, pebble plain, pinyon-juniper woodland, Joshua tree woodland. Usually on pebble plains with other rare species. 1700-2400 m.	Suitable habitat for this species does exist within the project area. This species has been documented approx. .6 miles from the project site. Occurrence potential for this species is **moderate.**
Mimulus exiguus	San Bernardino Mountains monkeyflower	None/ None	G2; S2; CNPS: 1B.2	Meadow & seep, Pavement plain, Upper montane coniferous forest, Wetland, Seeps and sandy sometimes disturbed soil in moist drainages of annual streams; clay soils. 2060-2630 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Mimulus purpureus	little purple monkeyflower	None/ None	G2; S2; CNPS: 1B.2	Meadow & seep, Pavement plain, Upper montane coniferous forest, Wetland meadows and seeps, Dry clay or gravelly soils under Jeffrey pines, along annual streams or vernal springs & seeps. 1900-2300 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Navarretia peninsularis	Baja navarretia	None/ None	G3; S2; CNPS: 1B.2	Chaparral, lower montane coniferous forest, Meadow & seep, Pinon & juniper woodlands, Wet areas in open forest. 1150-2365 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Neotamias speciosus speciosus	lodgepole chipmunk	None/ None	G4T2T3; S2S3;	Chaparral, Upper montane coniferous forest, Summits of isolated Piute, San Bernardino, & San Jacinto mountains. Usually found in open-canopy forests.Habitat is usually lodgepole pine forests in the San Bernardino Mts & chinquapin slopes in the San Jacinto Mts.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Packera bernardina	San Bernardino ragwort	None/ None	G2; S2; CNPS: 1B.2	Meadow & seep, Upper montane coniferous forest, Wetland meadows and seeps, pebble plains, Mesic, sometimes alkaline meadows, and dry rocky slopes. 1615-2470 m.	Suitable habitat for this species does exist within the project area. This species has been documented approx. 270 feet from the project site. Occurrence potential for this species is **moderate.**
Pebble Plains	Pebble Plains	None/ None	G1; S1.1;	Pavement plain	Habitat not present within project site.
Perideridia parishii ssp. parishii	Parish's yampah	None/ None	G4T3T4; S2; CNPS: 2B.2	Lower montane coniferous forest, Meadow & seep, Upper montane coniferous forest, Damp meadows or along streambeds-prefers an open pine canopy. 1465-3000 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Phlox dolichantha	Big Bear Valley phlox	None/ None	G2; S2; CNPS: 1B.2	Upper montane coniferous forest, Pebble plains, Sloping hillsides, in shade under pines and Quercus kelloggii, with heavy pine litter; also in openings. 2000-2970 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Phrynosoma blainvillii	coast horned lizard	None/ None	G3G4; S3S4; CNPS:	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands Riparian scrub, Riparian woodland, Valley & foothill grassland, Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Physaria kingii ssp. bernardina	San Bernardino Mountains bladderpod	Endangered/ None	G5T1; S1; CNPS: 1B.1	Limestone, Lower montane coniferous forest, Pinon & juniper woodlands, Subalpine coniferous forest, lower montane coniferous forest, subalpine coniferous forest, Dry sandy to rocky carbonate soils. 1850-2700 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Piranga rubra	summer tanager	None/ None	G5; S1; CDFW: SSC	Riparian forest, Summer resident of desert riparian along lower Colorado River, & locally elsewhere in California deserts, Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Poa atropurpurea	San Bernardino blue grass	Endangered/ None	G2; S2; CNPS: 1B.2	Meadow & seep, Wetland, Meadows and seeps, Mesic meadows of open pine forests and grassy slopes, loamy alluvial to sandy loam soil. 1360-2455 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Poliomintha incana	frosted mint	None/ None	G5; SH; CNPS: 2A	Lower montane coniferous forest. In boggy soil. 1600-1700 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Psychomastax deserticola	desert monkey grasshopper	None/ None	G1G2; S1S2; CNPS:	Chaparral, Occurs in very arid environments in the vicinity of the San Bernardino Mtns. Known to occur on chamise (Adenostoma fasciculatum).	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Pyrrocoma uniflora var. gossypina	Bear Valley pyrrocoma	None/ None	G5T1; S1; CNPS: 1B.2	Meadow & seep, Pebble plain, meadow edges, and along streams in or near pebble plain habitat. 1600-2300 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Rana muscosa	southern mountain yellow-legged frog	Endangered/ Endangered	G1; S1; CDFW: SSC	Aquatic, Federal listing refers to populations in the San Gabriel, San Jacinto & San Bernardino Mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, Apr 2014, effective Jun 30, 2014, Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.	Suitable habitat for this species does exist within the project site. However, this species is believed extirpated within the region. Occurrence potential for this species is **low**.
Saltugilia latimeri	Latimer's woodland-gilia	None/ None	G2; S2; CNPS: 1B.2	Chaparral, Mojavean desert scrub, Pinon & juniper woodlands, Rocky or sandy substrate; sometimes in washes. 400-1900 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	None/ None	G5T2T3; S2S3; CNPS: 1B.2	Lower montane coniferous forest, Meadow & seep, Riparian woodland, Upper montane coniferous forest, Wetland, Known from wet areas within forested habitats. Affected by hydrological changes. 1495-2685 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.
Sidalcea pedata	bird-foot checkerbloom	Endangered/ Endangered	G1; S1; CNPS: 1B.1	Meadow & seep, Wetland, Meadows and seeps, pebble plains. Vernally mesic sites in meadows or pebble plains. 1840-2305 m.	Suitable habitat for this species does exist within the project site. This species is present within the mitigation site located directly to the north of the project site. A focused botanical survey was completed on 6/1/2016 and none were found. Occurrence potential for this species is **low**.
Southern California Threespine Stickleback Stream	Southern California Threespine Stickleback Stream	None/ None	GNR; SNR;		This habitat does not occur within the project area.
Symphyotrichum defoliatum	San Bernardino aster	None/ None	G2; S2; CNPS: 1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Valley & foothill grassland, Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040 m.	Suitable habitat for this species does not exist within the project area. Occurrence potential for this species is **low**.

Scientific Name	Common Name	Status Fed/ State	Other Listings	Habitat	Occurrence Potential
Taraxacum californicum	California dandelion	Endangered/ None	G1G2; S1S2; CNPS: 1B.1	Meadow & seep, Wetland, Mesic meadows, usually free of taller vegetation. 1620-2590 m.	Suitable habitat for this species does exist within the project area. However, none were observed on site. Occurrence potential for this species is **low**.
Thelypodium stenopetalum	slender-petaled thelypodium	Endangered/ Endangered	G1; S1; CNPS: 1B.1	Meadow & seep, Wetland Meadows and seeps, seasonally moist alkaline clay soils; associated with seeps and springs in the pebble plains. 2045-2240 m.	Suitable habitat for this species does exist within the project site. This species is present within the mitigation site located directly to the north of the project site. A focused botanical survey was completed on 6/1/2016 and none were found. Occurrence potential for this species is **low**.

Coding and Terms

E = Endangered T = Threatened SSC = Species of Special Concern
R = Rare C = Candidate FP = Fully Protected

Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.

State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, possess or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess or destroy the nest or eggs of any such bird."

State Fully Protected: The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles. Please note that most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

State Plant Rankings:

S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres
S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres
S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres
S4 - No Threat Rank
S5 - No Threat Rank
SH - all sites in California are historical
.1 - very threatened
.2 - threatened
.3 - no current threats known

FIGURE 1
Regional Location

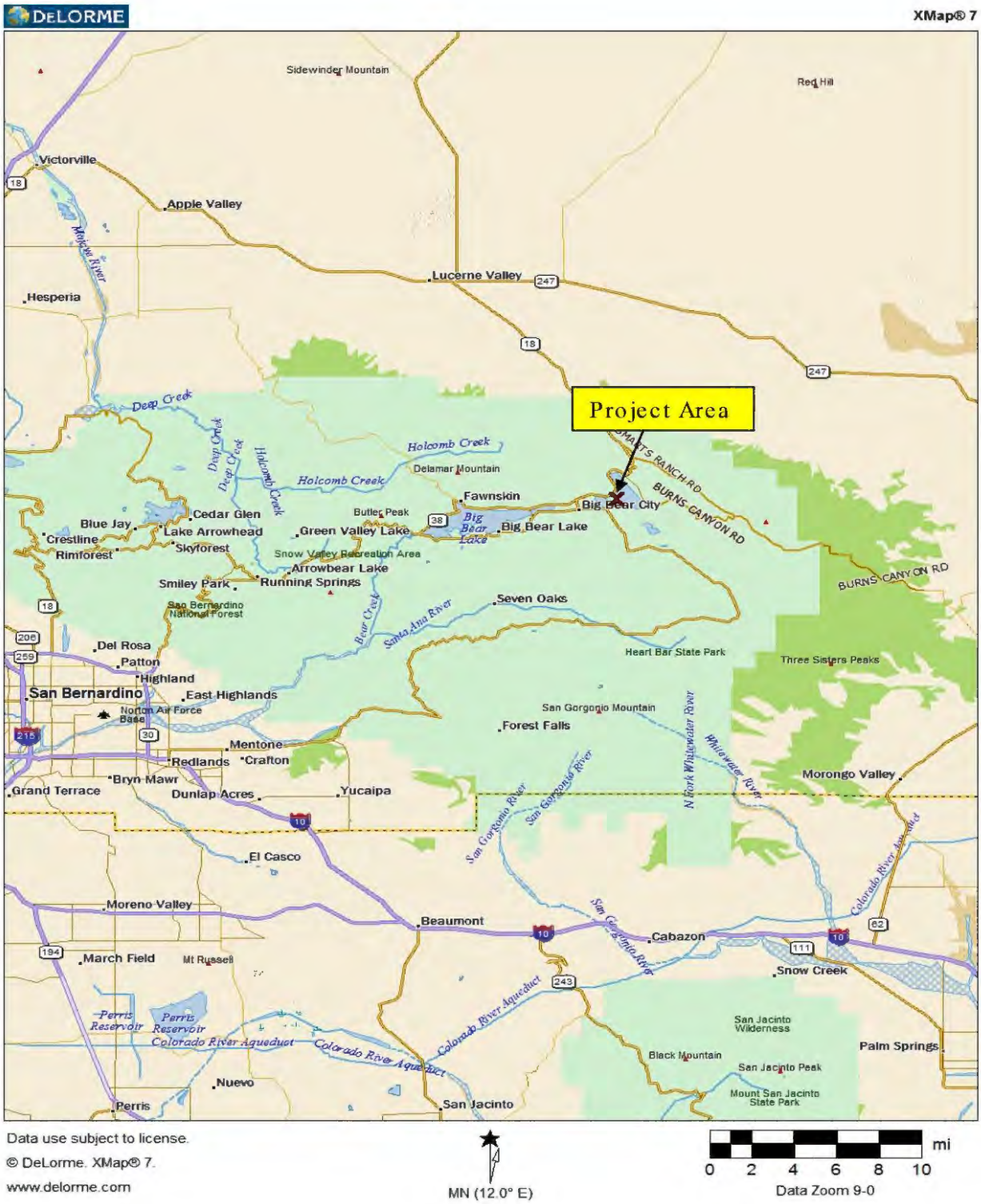


FIGURE 2
Site Location

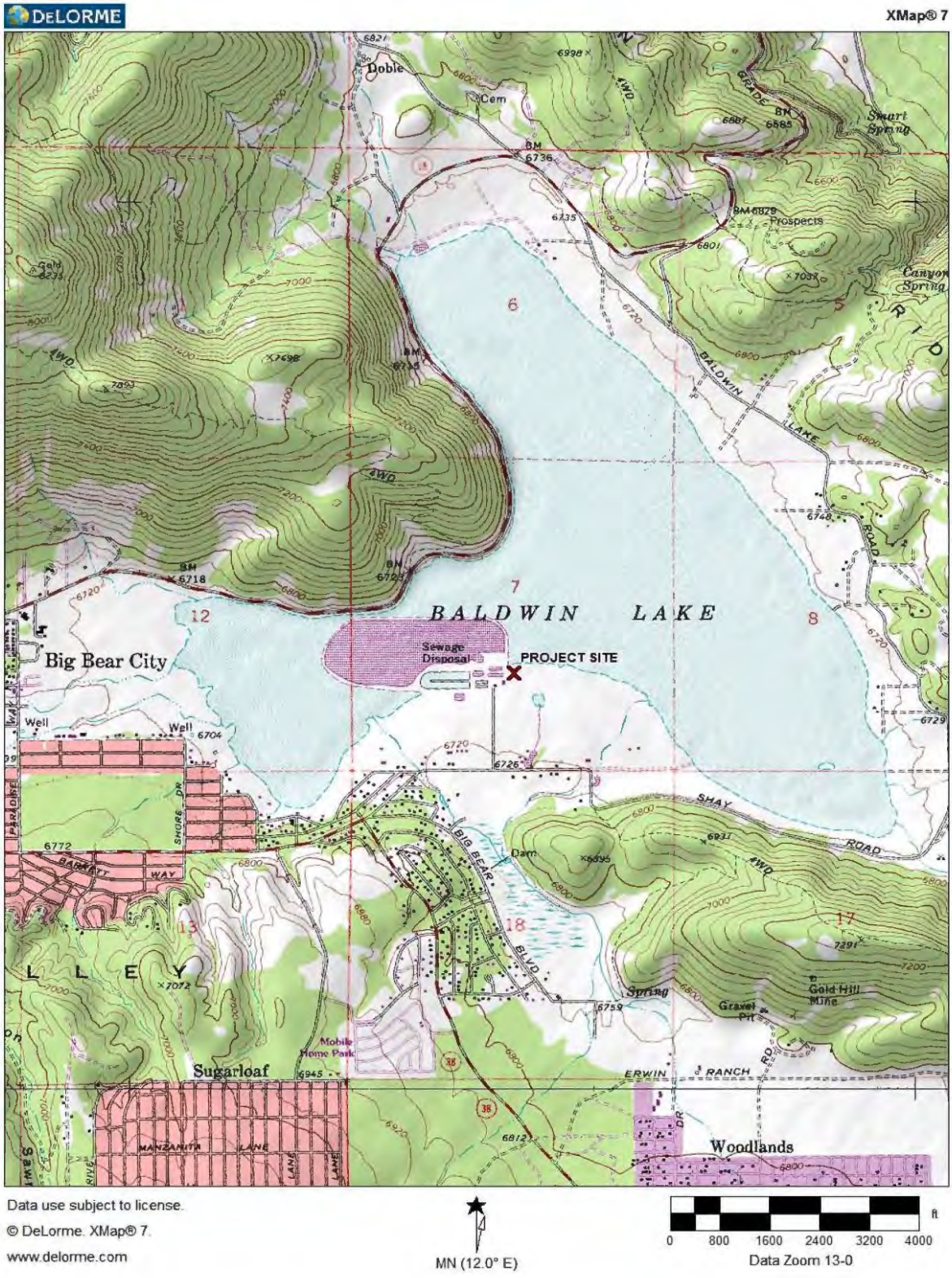
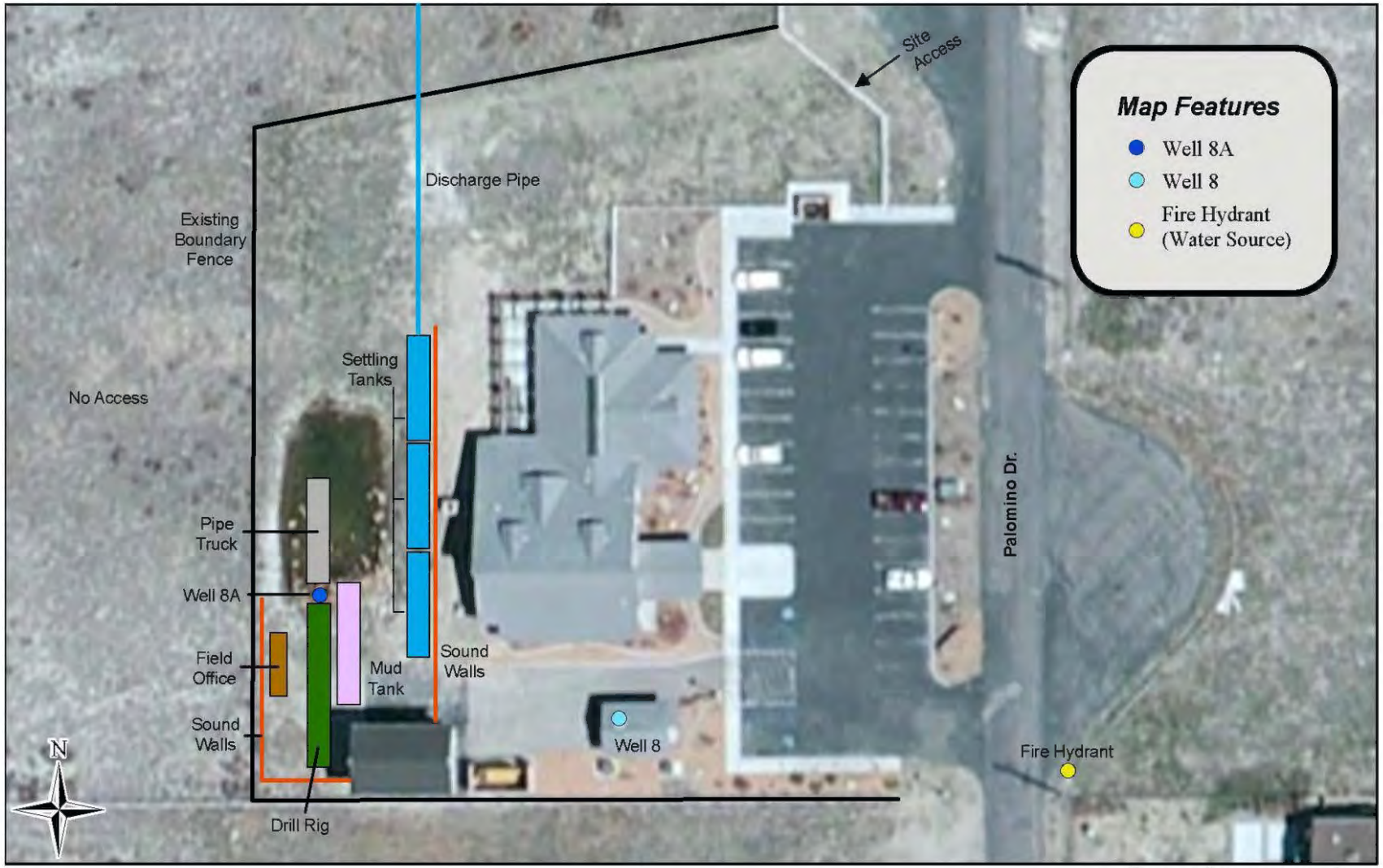


FIGURE 3
Aerial Photo of Specific Location of Well 8 and Proposed Well 8A



Source: Thomas Harder & Co. Groundwater Consulting

	Photo 1 – east end of site, facing west.
	Photo 2 – center of site, facing south west corner

	Photo 3 – center of site, facing south.
	Photo 4 – south portion of site, facing north.

APPENDIX 3

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

September 7, 2016

Tom Dodson, President
Tom Dodson and Associates, Inc.
2150 North Arrowhead Avenue
San Bernardino, CA 92405

Re: Phase I Historical/Archaeological Resources Survey
Big Bear City Community Services District Well 8A Replacement Project
Big Bear City Area, San Bernardino County, California
CRM TECH Contract No. 2895

Dear Mr. Dodson:

At your request, CRM TECH has completed a Phase I cultural resources survey for the proposed Big Bear City Community Services District Well 8A Replacement Project near the unincorporated community of Big Bear City, San Bernardino County, California (Figure 1). The project entails primarily the establishment of a new well, Well 8A, to replace existing Well 8, and the construction of associated facilities (Figure 2). The project area consists of an approximately 1.5-acre portion of Assessor's Parcel Number 0314-571-69, located near the northern terminus of Palomino Drive, in the southwest quarter of Section 7, T2N R2E, San Bernardino Baseline and Meridian (Figure 1).

The study is a part of the environmental review process for the project, as required by the Big Bear City Community Services District (District), as the project proponent and the lead agency, pursuant to the California Environmental Quality Act (CEQA). The purpose of the study is to provide the District with the necessary information and analysis to determine whether the project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, and carried out an intensive-level field survey. This letter presents a brief summary of the methods and results of these research procedures.

Project Setting

The project area lies within the San Bernardino Mountains and near the southern shoreline of Baldwin Lake, a natural but intermittent lake at the eastern end of the Big Bear Valley. The overall boundaries of the project encompass the existing office compound of the Big Bear Area Regional Wastewater Agency at 121 Palomino Drive, with the majority of the proposed new facilities located to the rear of the buildings (Figure 2). The project area adjoins Palomino Drive on the east, a residential neighborhood on the south, and undeveloped land on the west and the north.

The terrain at the project location is relatively level, and the elevation is approximately 6,730 feet above sea level. Soils in the area are made up of fine to medium-grained sand with small to large

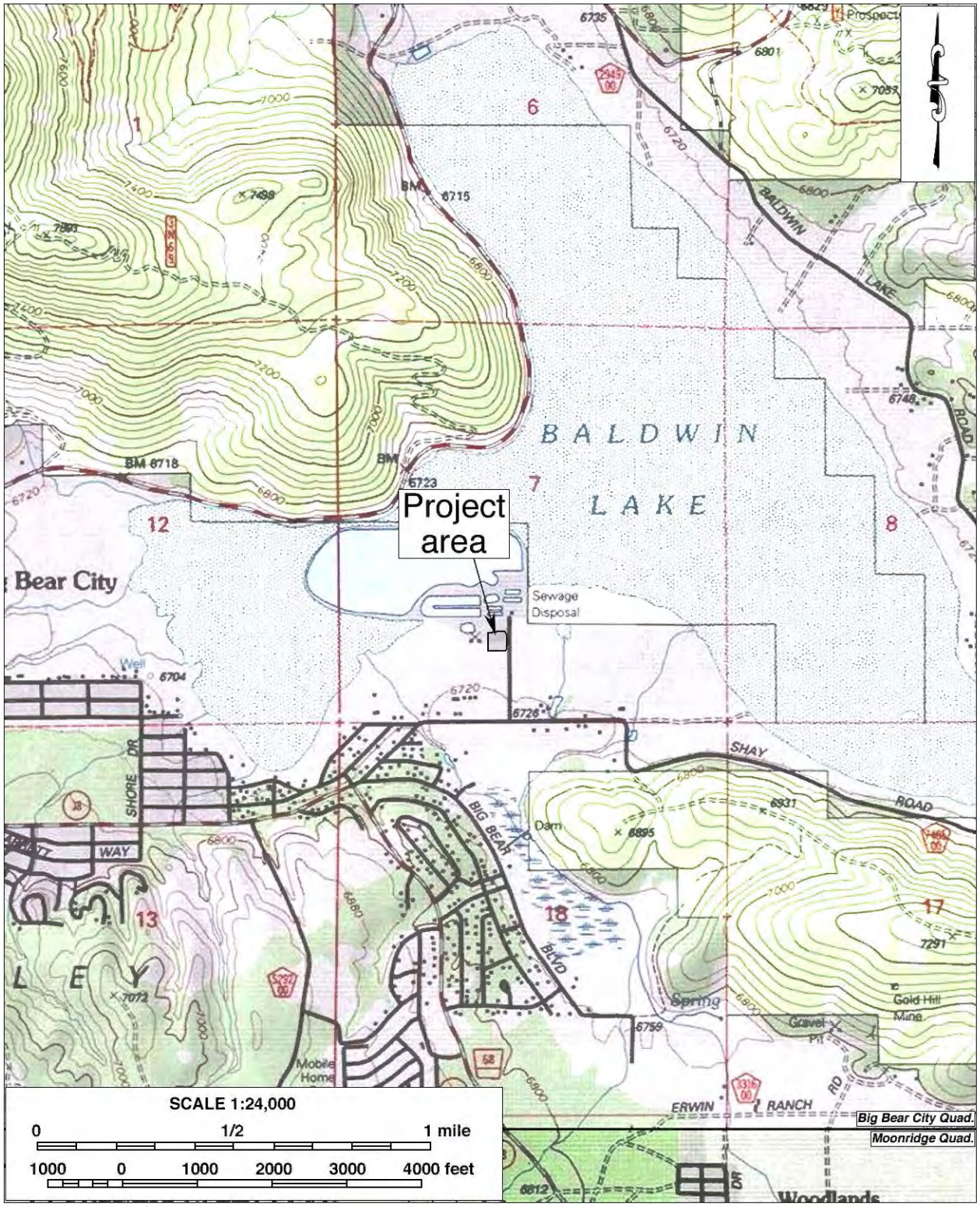


Figure 1. Project Area. (Based on the USGS Big Bear City and Moonridge, Calif. 7.5' quadrangles, 1994 edition)

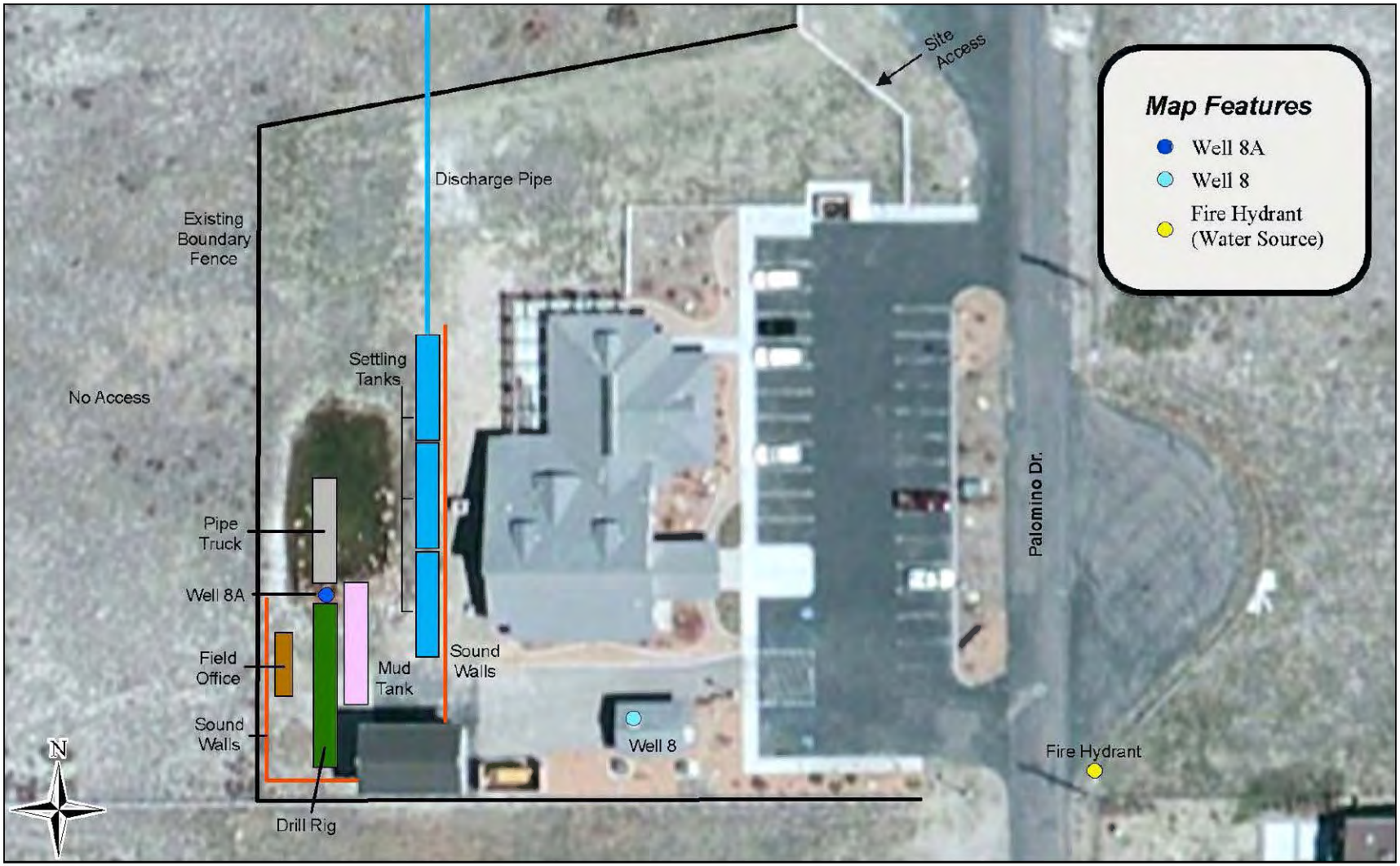


Figure 2. Aerial photograph of the project site, showing existing and proposed facilities.

Figure 3. Overview of the project location. (Photograph taken on February 17, 2015; view to the northeast)

rocks, and the surface sediments have been extensively disturbed by construction activities associated with the existing buildings and an associated parking lot (Figure 3). The vegetation consists primarily of small brush and grasses along with various landscaping trees and bushes around the buildings.

Records Search

On February 13, 2015, CRM TECH archaeologist Nina Gallardo, B.A., completed the records search at the Archaeological Information Center (AIC), San Bernardino County Museum, Redlands, which was then the official cultural resource records repository for the County of San Bernardino. During the records search, Gallardo examined maps and records on file at the AIC for previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project area. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

According to AIC records, the northern portion of the project area was included in a cultural resources survey completed in 1999 (Love and Tang 1999), but the project area as a whole had not been surveyed systematically prior to this study, and no known historical/archaeological resources had been identified within or adjacent to the project boundaries. Outside the project area but within the one-mile radius, AIC records show more than 50 other previous studies on various tracts of land and linear features. As a result of the previous studies in the vicinity, a total of 47 historical/ archaeological sites and 16 isolates—i.e., localities with fewer than three artifacts—have been recorded within the scope of the records search.

Among these, 21 of the sites and 13 of the isolates were of prehistoric—i.e., Native American—origin, consisting mainly of bedrock milling features, scattered lithic artifacts, and other habitation debris. The nearest among them was a lithic scatter located approximately 0.12 mile to the south, on the north side of Shay Road. The other 26 sites and 3 isolates dated to the historic period and included primarily refuse scatters, various roads, remnants of mining operations, and Baldwin Lake itself. Since none of these sites and isolates was found in the immediate vicinity of the project area, none of them requires further consideration during this study.

Historical Background Research

Historical background research for this study was conducted by CRM TECH principle investigator/ historian Bai "Tom" Tang, M.A., on the basis of published literature in local history as well as historic maps and aerial photographs of the Big Bear City area. The historic maps include primarily the U.S. General Land Office's (GLO) land survey plat map dated 1858 and the U.S. Geological Survey's (USGS) topographic maps dated 1902-1971. The aerial photographs, taken between 1938 and 2015, are available from the NETR Online website and through the Google Earth software.

According to these sources, no notable man-made features were present within or adjacent to the project area throughout the historic period with the sole exception of present-day Palomino Drive, which was first depicted in 1969 (GLO 1858; USGS 1902-1971; NETR Online 1938-1969). As late as 2002, the entire project area remained completely undeveloped (Google 2002). The Big Bear Area Regional Wastewater Agency office compound in existence today, constructed in 2003 (Google 2003), represents the first development activity observed within the project boundaries.

Field Survey

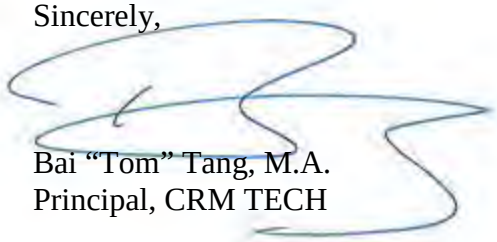
On February 17, 2015, CRM TECH archaeologist Daniel Ballester, M.S., conducted the intensive-level field survey of the project area. The survey was completed on foot by walking a series of parallel 10-meter (approximately 33-foot) transects across the vacant portions of the property. In this way, the exposed ground surface in the project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older), but none was found. All buildings and other built-environment features in the project area are clearly modern in origin, and no archaeological features or artifact deposits, either prehistoric or historic in age, were encountered during the survey.

Conclusion and Recommendation

In summary of the research results outlined above, no "historical resources," as defined by CEQA, were identified within or adjacent to the project area throughout the course of this study. Based on these findings, CRM TECH recommends to the District a conclusion that *no "historical resources" will be affected by the proposed project*. No further cultural resources investigation is recommended for the project unless construction plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Thank you for this opportunity to be of service.

Sincerely,



Bai "Tom" Tang, M.A.
Principal, CRM TECH

References

GLO (General Land Office, U.S. Department of the Interior)
1858 Plat Map: Township No. 2 North Range No. 2 East, San Bernardino Meridian; surveyed in 1858.

Google Inc.
2002-2003 Aerial photograph of the project vicinity. Available through the Google Earth software.

Love, Bruce, and Bai "Tom" Tang
1999 Cultural Resources Report: New Facilities Site near Baldwin Lake, Big Bear Area Regional Wastewater Agency, San Bernardino County, California. On file, Archaeological Information Center, San Bernardino County Museum, Redlands (now South Central Coastal Information Center, California State University, Fullerton).

NETR Online
1938-1969 Aerial photographs of the project vicinity, taken in 1938, 1953, and 1969. http://www.historicaerials.com.

USGS (United States Geological Survey, U.S. Department of the Interior)
1902 Map: San Gorgonio, Calif. (30', 1:125,000); surveyed in 1899.
1947 Map: Lucerne Valley, Calif. (15', 1:62,500); aerial photographs taken in 1945.
1971 Map: Big Bear City, Calif. (7.5', 1:24,000); aerial photos taken in 1969, field-checked in 1971.