



Limited Phase II Environmental Site Assessment

Bear Valley Solar Energy Project

PREPARED FOR
EDF Renewables Distribution-Scale
Power

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Bear Valley Solar Energy Project

0739207



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ACRONYMS AND ABBREVIATIONS

Acronym	Description
bgs	Below Ground Surface
DTSC	Department of Toxic Substances Control
ERM	Environmental Resources Management, Inc.
ESA	Environmental Site Assessment (for either Phase I or Phase II)

Acronym	Description
HASP	Health and Safety Plan
mg/kg	Milligrams per kilogram
mg/L	Milligrams per Liter
QA/QC	quality assurance/quality control
STLC	Soluble Threshold Limit Concentration
TTLC	Total Threshold Limit Concentration
USEPA	U.S. Environmental Protection Agency
WET	Waste Extraction Test

1. INTRODUCTION

Environmental Resources Management, Inc. (ERM) conducted a Limited Phase II Environmental Site Assessment (ESA) Report (Report) for the Bear Valley Solar Energy Project site located in Big Bear, unincorporated San Bernardino County, California ("Subject Property" or "Property"). In ERM's Phase I ESA, dated 23 July 2024, ERM identified one recognized environmental condition (REC) related to historical mining operations (ERM 2024). To evaluate the REC and the potential for mining-related hazardous metals that could have infiltrated into the surrounding soil at the Subject Property, ERM collected limited soil samples near the mining features, conducted laboratory analysis, and assessed the results to determine if mining-related hazardous metals are present within the Subject Property above California regulatory limits. This Report summarizes the results of this Limited Phase II ESA.

2. BACKGROUND

2.1 LOCATION

The Subject Property is located on the eastern side of Lakewood Drive and southern side of Erwin Ranch Road, in Big Bear, unincorporated San Bernardino County, California. The general location of the Subject Property and the physiographic features of the surrounding area are depicted on Figure 1, developed from the United States Geological Survey 7.5-minute quadrangle for Big Bear City, California, dated 2021.

2.2 GEOLOGY AND HYDROGEOLOGY

According to the EDR report included with the Phase I ESA (ERM 2024), surface soils in the Subject Property vicinity are described as generally composed of Avawats and Olete soils. Avawats soils are generally described as Class A soils that are well drained with high infiltration rates. Olete soils are generally described as Class B soils that are moderately well drained with moderate infiltration rates. The Olete soil type is not hydric.

According to the EDR report, 26 state groundwater wells are present within a 1-mile radius of the Subject Property. No public water supply wells or federal groundwater wells are present within a 1-mile radius of the Subject Property.

The generalized results of gold mining and processing are mineral dusts, mill site residues, and mineral processing wastes containing arsenic, lead, manganese, and petroleum. Contaminants affect site soils and structures and may also affect drainage sediments and proximate locales due to windblown migration and/or surface water transport. The Property-specific, depth to groundwater data necessary to determine shallow groundwater flow direction for the Subject Property are not available, and as such, ERM cannot accurately determine groundwater flow direction at the Subject Property. However, based on surface topography, it is expected that groundwater generally flows to the west toward Baldwin Lake.

It is important to note that groundwater flow direction can be influenced locally and regionally by the presence of local wetland features, surface topography, recharge, and discharge areas, horizontal and vertical inconsistencies in the types and location of subsurface soils, and proximity to water pumping levels.

2.3 CURRENT SITE USE

According to information from the Property representative and EDR report, no operations are currently being conducted at the Subject Property.

3. SOIL SAMPLING AND WASTE MANAGEMENT

3.1 PRE-FIELD ACTIVITIES

Before initiating field activities, ERM conducted the following tasks:

- Prepared a Site-specific Health and Safety Plan (HASP) in accordance with Title 29 of the Code of Federal Regulations, Part 1910.120, and California Code of Regulations, Section 5192.
- Procured necessary sampling materials and equipment to perform soil sampling.
- Sub-surface clearance prior to the ground disturbance activities performed. Marked soil boring locations and notified Underground Service Alert (Dig Alert).
- Performed an onsite private utility survey to locate and mark underground utilities near all proposed boring locations.

3.2 SOIL SAMPLING METHODS

ERM conducted soil sampling on 11 November 2024. ERM advanced seven soil borings within the Subject Property boundary, as shown on Figure 2. Six of the soil borings (SS-2 through SS-7) were field borings located within the approximate area for mining operations (production shaft, ventilation shaft, and mine shaft). To assess "background" conditions unaffected by previous mining operations, ERM identified soil sample SS-1 as a potential representative location and sampled soil at this location for comparison to the other soil borings located closer to the mining operations. ERM planned to bore via hand augering into the soil to total depth of 5.0 feet below ground surface (bgs) at each location and sample at pre-determined depth intervals of 2.5 feet bgs and 5.0 feet bgs.

Soil borings were visually logged by onsite field geologist to record lithology in accordance with the Unified Soil Classification System. Samples were also observed for indications of potential soil impact (e.g., odor, staining) and any other relevant characteristics.

In total, 11 soil samples (10 primary sample, one profile sample, and one quality assurance/quality control [QA/QC] sample) from the seven soil borings were analyzed for metals by United States Environmental Protection Agency (USEPA) Method 6010B and for total mercury by USEPA Method 7471A. Samples were sent to Enthalpy Analytical, an accredited third-party laboratory, for analysis. Upon completion of soil sampling, ERM backfilled soil borings with bentonite and restored the surface to match the undisturbed conditions.

3.3 DECONTAMINATION PROCEDURES

In between augering each borehole, sampling materials and hand augers were decontaminated using an Alconox solution. Loose material was removed from the hand auger bucket using a brush, and the bucket was then rinsed with purified water and cleaned prior to advancing to the next borehole.

3.4 INVESTIGATION DERIVED WASTE

Soil cuttings were sampled, profiled, and backfilled into respective borings once a waste profile had been generated at each location.

4. RESULTS

4.1 FIELD DESCRIPTION OF BOREHOLE CUTTINGS

Borings SS-1, SS-4, SS-5, and SS-7 were completed to a total depth of 5.0 feet bgs with sample depth intervals at 2.5 feet bgs and 5.0 feet bgs, as planned; however, borings SS-2, SS-3, and SS-6 were completed to total depth of 0.5 feet bgs, with a lone sample taken at the same depth, due to the gravelly soil precluding sampling at the pre-determined sampling intervals.

Onsite soil generally consisted of silts (ML), clay (CL), gravel (GM), and silty sands (SM). Soils were observed to be generally soft, slightly moist, fine- to dense and dry gravel, to a depth of 5.0 feet bgs. No noticeable odor or discoloration of soil samples was observed. Field notes detailing soil sampling activities and lithology are included as Appendix A, and sample locations are included on Figure 2.

4.2 LABORATORY QUALITY ASSURANCE

Enthalpy Analytical reviewed the analytical data for adherence to applicable QA/QC procedures, and deemed the analysis and results as valid. All data can be used for decision making purposes and are included as Appendix B.

4.3 SOIL SAMPLING RESULTS SUMMARY

ERM analyzed 11 soil samples for heavy metals via USEPA Method 6010B, and for total mercury by USEPA Method 7471A.

The soil samples collected were compared to the Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC), both California requirements for hazardous waste.

Table 1 contains the soil analytical results. The following is a summary of these results:

- Ten metals were detected in all soil samples (Arsenic, Barium, Beryllium, Chromium, Cobalt, Copper, Lead, Nickel, Vanadium, Zinc). All detections were below the STLC/TTLC regulatory limits.
- Analyte sample SS-2-0.5-20241111 had a total Chromium reading of 54 mg/kg. This exceeds the STLC trigger value (50 milligrams per kilograms [mg/kg]), considered 10 times the STLC regulatory value. Therefore, an STLC test, or also referred to as the waste extraction test (WET), was performed. The lab control sample yielded an STLC test (WET leachate) reading of 3.878 mg/L for Chromium, which does not exceed the STLC regulatory limit of 5 mg/L. Therefore, the soil is not considered hazardous waste.
- One sample detected Silver below the STLC/TTCL regulatory limit.
- Two samples detected Molybdenum below the STLC/TTCL regulatory limit.
- Antimony, Cadmium, Selenium, and Thallium were non-detect across all samples.
- Mercury was non-detect across all samples.

5. CONCLUSIONS AND RECOMMENDATIONS

ERM assessed 11 soil samples obtained from seven borings during the Limited Phase II ESA. All analyzed compounds detected above their respective laboratory method detection limit were below their respective STLC/TTLC regulatory limits. Based on the results of the laboratory analyses presented in this Report, it is ERM's professional opinion that the specific metals of concern analyzed within the soil samples are not measured above the regulatory limits promulgated by the Department of Toxic Substances Control (DTSC) to be defined as hazardous waste. Furthermore, the soils analyzed do not appear to be impacted by any historical releases associated with the Subject Property's former use of mining.

6. REFERENCES

Environmental Resources Management, Inc. (ERM). 2024. *Phase I Environmental Site Assessment*. July 2024.

Department of Toxic Substances Control (DTSC). 2024. *Persistent and Bioaccumulative Toxic Substances, STLC and TTLC Regulatory Limits*. Available online: <https://dtsc.ca.gov/persistent-and-bioaccumulative-toxic-substances/>.



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TABLE



FIGURES



APPENDIX A

BORING LOGS



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APPENDIX B

LABORATORY DATA AND VALIDATION
REPORT



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ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING
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