



Phase I Environmental Site Assessment

Bear Valley Solar Energy Project

PREPARED FOR
EDF Renewables Distribution-Scale
Power

DATE
27 July 2024

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Bear Valley Solar Energy Project

0739207



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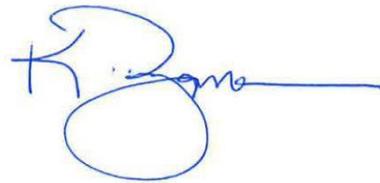
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CLIENT: EDF Renewables Distribution-Scale Power
PROJECT NO: 0739207 DATE: 27 July 2024

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EXECUTIVE SUMMARY

Environmental Resources Management, Inc. (ERM) conducted a Phase I Environmental Site Assessment (ESA) of the Bear Valley Solar Energy Project site located in Big Bear, unincorporated San Bernardino County, California ("Subject Property" or "Property"). The Phase I ESA was conducted in accordance with the scope and limitations of ASTM International (ASTM) Standard E1527-21, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (E1527-21). Exceptions to, or deletions from, E1527-21 are described in Section 1.3.4 of this report.

The Subject Property encompasses approximately 30 acres of undeveloped land generally accessed from Lakewood Drive to the west and Erwin Ranch Road to the south of the Property. The groundcover at the Subject Property consists of mostly tall grasses with a portion of the north-northeast corner consisting of sparse wooded land. ERM was unaccompanied during the Property visit. However, according to the landowners there are no structures or storage tanks onsite, and they were unaware of any prior occupants of the Subject Property.

According to the Environmental Data Resources, Inc. (EDR)® Radius Map™ Report (EDR report), Gold Hill Mine located approximately 200-feet west of the Subject Property is listed in the MINES Mineral Resources Data System (MRDS) database. The listing indicates that the adjacent property was historically utilized as a gold mine. No additional information was provided in the EDR report. However, after additional review of historical aerials and onsite observations, it appears that the Subject Property is at least partially associated with the former Gold Hill Mine operations.

At the time of ERM's Property visit, a partially backfilled excavation approximately 5 feet by 5 feet wide and 10 feet deep was observed on the northeastern portion of the Property. The excavation appears to be an abandoned mineshaft. The opening of the shaft is partially blocked with heavily weathered and degraded wooden planks. What appears to be a small tailing pile was observed adjacent to the mineshaft. A former ventilation shaft within a 10-foot by 10-foot concrete slab and production shaft with subgrade machinery were also observed approximately 250-300 feet northeast of the mineshaft. The ventilation shaft was capped, and the production shaft was backfilled with soil and covered with a metal grate.

According to "The Diggings" website, Gold Hill Mine is closed and there are no plans for reopening. During its active period, the mine was considered to have a relatively small production size. The operations at the Gold Hill Mine included both surface and underground workings. In addition, the mine reportedly extends to a maximum depth of approximately 54 feet below ground surface, and the ore body extends approximately 10 feet in thickness. The gold bearing host rock most prevalent in this area is quartzite.

A variety of environmental impacts are commonly associated with former mining activities. Each of the different types of mineral processing operations generates its own specific waste streams. Environmental concerns specifically associated with gold mining and processing are mineral dusts, tailings, acid mine drainage, and other mineral processing wastes. Contaminants of concern include, but are not limited to, heavy metals (e.g., mercury, lead, nickel, copper, cadmium, zinc, and arsenic).



Given the excavation and subgrade machinery may be related to mineral extraction on the Property, it is ERM's opinion that a Limited Phase II is conducted on the Subject Property to determine potential impacts; this may include surficial soil sampling in the surrounding area of the former Gold Hill Mine.

Historical maps indicate that the Subject Property was undeveloped land as early as 1902. By the late 1930s a small stream is indicated as traversing the Property from the northwest corner to the east. A review of aerial photographs from between the late 1940s to the late 1960s, show what appears to be ground disturbance onsite due to mining operations to the northeast. Circa 1969 to 1970, a wooden structure in connection to onsite mining activities is visible on the northeastern side of the Subject Property. By the early to mid-1970s, a majority of the wooden structure was removed, and a mineshaft is visible, bringing the Property to its present-day configuration.

ERM has concluded the following associated with the Subject Property:

Summary of Identified Issues

ASTM E1527-21 Findings

Recognized Environmental Conditions (RECs)¹

- *Former Mining Operations On and Off Property:* The land adjacent to the east of the Subject Property is listed under Gold Hill Mine in the MINES Mineral Resources Data System (MRDS) database in the EDR report. The listing indicates that the adjacent property was historically utilized as a gold mine. No additional information was provided in the EDR report. However, after additional review of historical aeriels and onsite observations, it appears as though the Subject Property was also associated with the former Gold Hill Mine operations.

As a result, given the mining history associated with the region as a whole and the potential for the excavation and subgrade machinery to be related to mineral extraction, it is ERM's opinion that further assessment of the Subject Property is warranted.

Controlled Recognized Environmental Conditions (CRECs)²

- No CRECs were identified in connection with the Subject Property.

Historical Recognized Environmental Conditions (HRECs)²

- No HRECs were identified in connection with the Subject Property.

De Minimis Conditions

- Big Bear has historically had wild donkeys since the 1860s. During the Property visit, the Subject Property had approximately 20 wild donkeys onsite. Given the long duration of animal waste (manure), the potential exists that methane, nitrates, and ammonia are found in soil. However, based on the proposed land use (solar) particulates from animal waste are not considered a REC, but a de minimis condition.

Significant Data Gaps

- Historical operations at the Subject Property include mining activities (Gold Hill Mine) between the late 1940s to the late 1960s. The primary commodity being gold. According to the Environmental Protection Agency (EPA), per- and polyfluoroalkyl substances (PFAS) can be used as surfactants to enhance recovery of metals from copper and gold mines. They can also be used in the ore flotation

¹ Key ASTM definitions, including REC, CREC, and HREC, are provided in Section 9.

Summary of Identified Issues

process of aluminum, vanadium, and uranium. However, safety data sheets for cleaning detergents used on the Subject Property were not available. As such, ERM could not determine whether these chemicals associated with the mining operations contained PFAS and ERM cannot exclude the potential for PFAS to have impacted the Subject Property; therefore, the absence of information regarding the possible presence or use of such chemicals such as PFAS represents a significant data gap.

Other Noteworthy Conditions

- No noteworthy conditions were identified in connection with the Subject Property.

Non-ASTM E1527-21 Issues

Other Potential Issues

- According to historical aerials, between the late 1940s to the late 1960s, it appears there is ground disturbance due to mining operations to the northeast. Circa 1969 to 1970, a wooden structure in connection to onsite mining activities is visible on the northeastern side of the Subject Property. By the early to mid-1970s, most of the structure was removed. However, pipes in mine tunnels are often wrapped with asbestos containing insulation; therefore, asbestos-containing materials (ACMs) may be present at the Subject Property.
-

1. INTRODUCTION AND BACKGROUND

1.1 PURPOSE AND AUDITORS

On behalf of EDF Renewables Distribution-Scale Power (EDFR-DSP; "Client"), Environmental Resources Management, Inc. (ERM) completed a Phase I Environmental Site Assessment (ESA) of the Bear Valley Solar Energy Project located in Big Bear, unincorporated San Bernardino County, California ("Subject Property" or the "Property"). The environmental assessment was performed in anticipation of a financial transaction involving the Subject Property.

A visit to the Subject Property (the "Property visit") was performed on 1 July 2024 by ERM assessor, Marlene Mattola.

The "User" of this Phase I ESA report, as prescribed under ASTM International (ASTM) Standard E1527-21, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (E1527-21), is defined as EDFR-DSP.

1.2 SCOPE OF WORK

This environmental assessment was conducted in conformance with ERM's proposal dated 9 May 2024 and with the requirements of ASTM E1527-21. Exceptions to, or deletions from, E1527-21 are described in Section 1.3.4 of this report.

ERM's Phase I ESA sought to gather information regarding: (1) current and past property uses and occupancies; (2) current and past use of hazardous substances and petroleum products; (3) waste management and disposal activities that could have caused a release or threatened release of hazardous substances; (4) current and past corrective actions and response activities to address past and ongoing releases of hazardous substances at the Subject Property; and (5) properties adjoining or near the Subject Property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the Subject Property.

The scope of this Phase I ESA included:

- A Property visit to evaluate current conditions and identify areas of potential concern at the Subject Property
- A review of the history of the Subject Property and its vicinity through interviews and a review of various historical sources
- Observation of adjoining properties and properties in the local area to evaluate the potential for adverse environmental impact to the Subject Property
- Interviews/Research of local city/county, tribal, state, and federal records, including contracting of Environmental Data Resources, Inc. (EDR) to identify regulatory listings for the Subject Property and regulatory-listed facilities in the vicinity of the Subject Property, as required in the regulatory records review section of ASTM E1527-21
- Interviews and/or requests for information from the User and Subject Property owner, as deemed appropriate by the Environmental Professional

1.3 LIMITING AND SPECIAL CONDITIONS

1.3.1 LIMITING CONDITIONS DURING THE SUBJECT PROPERTY VISIT

ERM was unable to visually inspect the entirety of the Subject Property due to half of the Property being covered in tall grasses or sparse wooded land. No other limiting conditions were encountered during the Property visit.

1.3.2 DATA GAPS

The following table summarizes the data gaps identified during the assessment.

TABLE 1-1 DATA GAP SUMMARY

Data Gap / Failure	Sources Consulted to Address Data Gap	Significance*
ERM cannot determine whether chemicals associated with onsite mining operations contained PFAS.	N/A	Significant

* "Significance" provides a qualitative indication of the implication of the identified data gap relative to the Environmental Professional's ability to identify conditions indicative of releases or threatened releases to the Subject Property; the "significance" of the data gaps is rated from low to high. "Non-significant" indicates that additional information to fill the data gaps is not likely to negatively impact ERM's conclusions presented in this report. "Significant" indicates that it is ERM's opinion that additional diligence or investigation (such as additional data review or physical sampling of environmental media) is required to address the data gap.

1.3.3 SIGNIFICANT ASSUMPTIONS

No significant assumptions have been made.

1.3.4 EXCEPTIONS TO OR DELETIONS FROM THE ASTM E1527-21 STANDARD

ERM has not identified any exceptions to, or deletions from, the ASTM E1527-21 Standard.

2. PHYSICAL SETTING

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 (USGS) 7.5-minute quadrangle for Big Bear City, California, dated 2021.

2.2 TOPOGRAPHY AND HYDROLOGY

The Subject Property is located at an elevation of approximately 6,800 feet above mean sea level, is relatively hilly, and slopes slightly to the southwest. Surface water at the Subject Property drains via infiltration into onsite soils.

The overall topography of the surrounding area slopes to the southwest. Surface water drains into nearby streams and channels, and discharges to Big Bear Lake located 3.5 miles northwest of the Subject Property.

According to flood zone and National Wetland Inventory (NWI) data presented in the EDR® Radius Map™ (EDR report) reviewed by ERM, the Subject Property does not lie within wetland delineated areas or the 100- or 500-year flood plains. Flood zone and NWI data were obtained by EDR from the Federal Emergency Management Agency (FEMA) and United States Fish and Wildlife Service, respectively.

2.3 GEOLOGY AND HYDROGEOLOGY

According to the EDR report, 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 wells.

3. SUBJECT PROPERTY DESCRIPTION, OPERATIONS, AND HISTORY

3.1 GENERAL SUBJECT PROPERTY DESCRIPTION

3.1.1 SUBJECT PROPERTY OWNERSHIP INFORMATION

According to the property record card obtained from the San Bernardino County Assessor, the Subject Property consists of a single parcel identified by PIN No. 031-44-0129, owned by Donald Kim Mc Rae and Sandra Beth Mc Rae. Donald Kim Mc Rae and Sandra Beth Mc Rae acquired the Subject Property from James O Erwin in 2000.

3.1.2 SUBJECT PROPERTY LAYOUT

The Subject Property encompasses approximately 30 acres of undeveloped land generally accessed from Lakewood Drive to the west and Erwin Ranch Road to the south of the Property. The groundcover at the Subject Property consists of mostly tall grasses with a portion of the north-northeast corner consisting of sparse wooded land. ERM was unaccompanied during the Property visit. However, according to the landowners there are no structures or storage tanks onsite and were unaware of any prior occupants.

However, during ERM's Property visit, a partially backfilled excavation approximately 5 feet by 5 feet wide and 10 feet deep was observed on the northeastern portion of the Property. The excavation appears to be an abandoned mineshaft. The opening of the shaft is covered with highly weathered and degraded wooden planks. What appeared to be a small tailing pile was observed adjacent to the mineshaft. A former ventilation shaft within a 10-foot by 10-foot concrete slab and production shaft with subgrade machinery were also observed approximately 250-300 feet northeast of the mineshaft. The ventilation shaft was capped, and the production shaft was backfilled with soil and covered with a metal grate.

The production shaft had a small portion of the remaining wooden structure that was still intact. Southwest of the production shaft was a pile of approximately 50, 10-foot-long logs, that were cut and shaped. The logs were similar in size and shape to the remaining structure.

EDFR-DSP plans for future development of the Big Bear Solar Energy Project, an approximate 5.7-megawatt solar photovoltaic project.

A Subject Property Layout Map is provided as Figure 2 and a Surrounding Area Map is provided as Figure 3. Photographs of the Subject Property are included as Appendix A.

3.2 OPERATIONS AT THE SUBJECT PROPERTY

3.2.1 CURRENT OPERATIONS

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

3.2.2 HISTORICAL OPERATIONS

According to information from the Property representative and EDR report, no operations have occurred at the Subject Property.

3.3 HISTORICAL PROPERTY SUMMARY

3.3.1 HISTORICAL SUMMARY

Historical maps indicate that the Subject Property was undeveloped land as early as 1902. By the late 1930s a stream is indicated as traversing the Property from the northwest corner to the east. A review of aerial photographs from between the late 1940s to the late 1960s, show what appears to be ground disturbance onsite due to mining operations to the northeast. Circa 1969 to 1970, a wooden structure in connection to onsite mining activities is visible on the northeastern side of the Subject Property. By the early to mid-1970s, a majority of the structure was removed, and a mineshaft is visible, bringing the Subject Property to its present-day configuration.

3.3.2 EVALUATION OF HISTORICAL INFORMATION SOURCES

ERM reviewed historical sources of information as outlined in Section 7 and presented in the tables below; information from these sources is summarized in Section 3.3.1 above. Copies of pertinent historical sources are also appended.

3.3.2.1 TOPOGRAPHIC MAPS

TABLE 3-1 TOPOGRAPHIC MAPS SUMMARY

Year(s)	Discussion
1902, 1947, 1949	The Subject Property appears as undeveloped land.
1954	Observations cannot be made; map is undepicted.
1970, 1971,	The Subject Property appears as undeveloped land.
1978	Observations cannot be made; map is undepicted.
1979	The Subject Property appears as undeveloped land.
1988	Observations cannot be made; map is undepicted.
1994, 1996, 2012, 2015, 2018, 2021	The Subject Property appears as undeveloped land.

3.3.2.2 HISTORICAL FIRE INSURANCE MAPS

Historical fire insurance maps were not available for the Subject Property.

3.3.2.3 AERIAL PHOTOGRAPHS

TABLE 3-2 HISTORICAL AERIAL PHOTOGRAPHS

Year(s)	Discussion
1938	The Subject Property is undeveloped land with sparse wooded land to the north-northeast. A stream is visible traversing the Property from the northwest corner to the east.
1949, 1969	It appears there is ground disturbance onsite due to mining operations to the northeast. Circa 1969, a wooden structure is visible on the northeastern side of the Subject Property.
1970, 1975	By the early to mid-1970s, the wooden structure was removed, and a mineshaft is visible, bringing the site to its present-day configuration.
1995, 2002, 2002, 2009, 2012, 2016, 2020	No changes are depicted on the Subject Property.
Present	Observations made at the time of ERM’s Property visit are discussed throughout this report.

3.3.2.4 CITY DIRECTORY INFORMATION

The Subject Property was not listed in the available historical city directory information.

3.3.2.5 HISTORICAL AGENCY INFORMATION

TABLE 3-3 HISTORICAL AGENCY INFORMATION

Date	Source	Discussion
Historical Tax and Deed Records		
19 October 2000	Deed (San Bernardino County Assessor’s Office)	Donald Kim Mc Rae and Sandra Beth Mc Rae purchased the Subject Property from James O Erwin.

Zoning Records

Zoning records were not available for the Subject Property.

No other relevant historical agency records were reviewed.

3.3.2.6 OTHER HISTORICAL SOURCES

According to “The Diggings” website, Gold Hill Mine is closed and there are no plans for its reopening. During its active period, the mine was considered to have a small production size. The operations at the Gold Hill Mine included both surface and underground workings. The maximum subsurface depth of the mine is around 54 feet, and the ore body extends approximately 10 feet in thickness. The gold bearing host rock prevalent in this area is quartzite.

No other relevant historical information was identified. Information provided by the Property representative is included in applicable sections of this report.

3.3.3 DISCUSSION OF PRIOR ASSESSMENTS, INVESTIGATIONS, AND EVENTS

ERM was not provided with any historical environmental assessments or investigation reports for the Subject Property.

3.4 ENVIRONMENTAL DATABASE RECORDS REVIEW

According to the EDR report, Gold Hill Mine located approximately 200-feet west of the Subject Property is listed in the MINES Mineral Resources Data System (MRDS) database. The listing indicates that the adjacent property was historically utilized as a gold mine. No additional information was provided within the EDR report. However, after additional review of historical aerials and onsite observations, it appears that the Subject Property is likely associated with the former Gold Hill Mine operations.

4. ENVIRONMENTAL OPERATIONS

4.1 HAZARDOUS MATERIAL USE AND STORAGE

No hazardous materials were observed being utilized or stored onsite. No drums, totes, or intermediate bulk containers were identified on the Subject Property.

4.1.1 DRUMS, TOTES, AND INTERMEDIATE BULK CONTAINERS (IBCS)

No drums, totes or IBCs were identified on the Subject Property.

4.1.2 UNDERGROUND STORAGE TANKS (USTS)

No historically registered USTs were identified by the EDR report, and ERM noted no visual indication of the potential presence of historical USTs during the Property visit. According to the landowners no USTs are currently located on the Subject Property.

4.1.3 ABOVEGROUND STORAGE TANKS (ASTS)

No historically registered ASTs were identified by the EDR report, and ERM noted no visual indication of the potential presence of historical ASTs during the Property visit. According to the landowners no ASTs are currently located on the Subject Property. No other ASTs were observed on the Subject Property at the time of the Property visit.

4.1.4 HAZARDOUS SUBSTANCE AND PETROLEUM PRODUCT CONTAINERS NOT IN CONNECTION WITH IDENTIFIED USES

ERM did not observe containers of hazardous substances or petroleum products, other than those described above and used in connection with identified former uses at the Subject Property.

4.1.5 UNIDENTIFIED SUBSTANCE CONTAINERS

ERM did not observe opened or damaged containers with unidentified contents suspected of being hazardous substances or petroleum products at the Subject Property.

4.1.6 STAINED SOIL

There was no evidence of stained soil at the Subject Property. However, ERM was unable to visually inspect the entirety of the Subject Property due to half of the Property being covered in tall grasses or sparse wooded land.

4.1.7 STRONG, PUNGENT, OR NOXIOUS ODORS

There was no evidence of strong, pungent, or noxious odors observed at the Subject Property.

4.2 WASTE MANAGEMENT

4.2.1 HAZARDOUS WASTE

No records of outstanding violations were identified during ERM's review of agency information and online databases.

4.2.2 NON-HAZARDOUS WASTE

ERM did not observe evidence of waste generated on the Subject Property.

4.2.3 SOLID WASTE DISPOSAL

ERM did not observe evidence of solid waste disposal on the Subject Property.

4.3 AIR EMISSIONS

4.3.1 AIR EMISSIONS SOURCES AND PERMITTING

There were no air emissions sources identified in connection with the Subject Property.

4.4 WASTEWATER

4.4.1 SEWAGE DISPOSAL SYSTEM

There are no current or historical sewage disposal systems identified in connection with the Subject Property.

4.4.2 SEPTIC SYSTEMS OR CESSPOOLS

There are no current or historical septic systems or cesspools identified in connection with the Subject Property.

4.4.3 DRAINS AND SUMPS

There are no current or historical drains or sumps identified in connection with the Subject Property.

4.4.4 PITS, PONDS, OR LAGOONS

There are no current or historical pits, ponds, or lagoons identified in connection with the Subject Property.

4.5 STORMWATER

Precipitation that falls on the Subject Property drains into soils and vegetation located onsite. ERM observed no staining, sheens, or other evidence of impact to stormwater pathways at the time of the Property visit.

4.6 SUBJECT PROPERTY FEATURES AND CONDITIONS

ERM did not identify any standing surface water, pools, or sumps containing liquids likely to be hazardous substances or petroleum products. However, a couple inches of ponded water was observed in the abandoned mineshaft located on the eastern portion of the Subject Property.

4.6.1 WATER SUPPLY AND WELLS

4.6.1.1 WATER SUPPLY

There are no current or historical water supply systems in connection with the Subject Property.

4.6.1.2 WELLS

ERM observed no dry wells, irrigation wells, injection wells, monitoring wells, abandoned wells, or other wells on the Subject Property.

4.6.2 HEATING AND COOLING

There are no heating or cooling systems in use at the Subject Property.

4.6.3 STRESSED VEGETATION

ERM observed no evidence of stressed vegetation at the Subject Property.

4.7 ASBESTOS-CONTAINING MATERIALS (ACMS)

Asbestos was banned in most friable building materials (spray-applied surfacing materials and thermal system insulation) in 1978, but the Occupational Safety and Health Administration (OSHA) deems thermal system insulation and surfacing materials as “presumed asbestos-containing materials” (PACMs) if they are present in buildings constructed no later than 1980 (Title 29 of the Code of Federal Regulations [CFR], Parts 1910.1001 and 1926.1101).

According to historical aerials, between the late 1940s to the late 1960s, it appears there is ground disturbance onsite due to mining operations to the northeast. Circa 1969 to 1970, a wooden structure in connection to onsite mining activities is visible on the northeastern side of the Subject Property. By the early to mid-1970s, the majority of the structure was removed. However, pipes in mine tunnels are commonly wrapped with asbestos-containing insulation; therefore, ACMS may be present at the Subject Property.

4.8 POLYCHLORINATED BIPHENYL (PCB) CONTAINING EQUIPMENT

ERM did not identify PCB-containing equipment at the Subject Property.

4.9 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

PFAS are a group of emerging contaminants of which perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are the two most widely regulated compounds. PFAS are known to be associated with use in a variety of commercial and industrial applications, with firefighting operations and medical and consumer products recognized as common sources. Other documented potential sources of PFAS include landfills, pulp and paper mill wastes, and wastewater treatment plant biosolid wastes/sludges. PFAS have been manufactured and used around the world since the 1940s. Although the United States has discontinued the manufacture of PFOA and PFOS, these compounds can be imported into the United States from international manufacturers.

Regulatory scrutiny associated with PFAS is a changing landscape, and this scrutiny is increasing. The United States Environmental Protection Agency (EPA) has not yet established regulatory cleanup standards for PFAS, although several states have begun promulgating their own standards.

Approximately 20 states have begun to compile information regarding known or potential sources of PFAS. Regulatory database providers have been aggressively pursuing this information for inclusion in their own PFAS databases, which have already begun to appear in database reports. The available database information varies widely by state. As such, it may be prudent to contact the respective environmental regulators to determine the nature of the database if there is uncertainty regarding the information provided or their significance relative to the conclusions of our report.

According to historical aerials and observations made during ERM's Property visit, historical operations at the Subject Property include mining activities (Gold Hill Mine) between the late 1940s to the late 1960s. The primary commodity being gold. According to the EPA, PFAS can be used as surfactants to enhance recovery of metals from copper and gold mines. They can also be used in the ore flotation process of aluminum, vanadium, and uranium. However, safety data sheets for cleaning detergents used on the Subject Property were not available. As such, ERM could not determine whether these chemicals associated with the mining operations contained PFAS and ERM cannot exclude the potential for PFAS to have impacted the Subject Property; therefore, PFAS represents a significant data gap.

5. ADJOINING AND SURROUNDING PROPERTIES

5.1 CURRENT USES OF ADJOINING AND SURROUNDING PROPERTIES

TABLE 5-1 ADJOINING AND SURROUNDING PROPERTIES DESCRIPTION

Direction	Current
North	The property that adjoins the Subject Property to the north is occupied by undeveloped wooded land, followed by Shay Road.
Southwest	The southwest adjoining property is occupied by single family homes, followed by Erwin Ranch Road.
Southeast	Immediately southeast of the Subject Property is Erwin Ranch Road, followed by undeveloped land.
East	Immediately east of the Subject Property is undeveloped land, followed by a single-family home.
West	Immediately west of the Subject Property is Lakewood Drive, followed by undeveloped land.

5.2 HISTORICAL USES OF ADJOINING AND SURROUNDING PROPERTIES

According to historical aerial photographs, the surrounding area was undeveloped/wooded land as early as 1902. By the late 1930s, a single residential property was constructed to the east of the Subject Property. Between the late 1940s to the late 1960s, it appears there is ground disturbance adjacent to the northeast of the Property; eight small structures and/or tailers were also visible adjacent to the east at this time. According to the EDR report, the adjacent property was historically utilized as a gold mine (Gold Hill Mine). No additional information was provided in the EDR report. By the early 1970s, the small structures adjacent to the east of the Property were removed and a single-family home was constructed. Between the mid-1970s and mid-1980s, residential property was constructed to the southwest of the Subject Property and continued to expand to the south by the early 2000s, bringing the surrounding area to its present-day configuration.

5.3 ADJOINING AND SURROUNDING PROPERTIES DATABASE LISTINGS

5.3.1 ADJOINING PROPERTIES DATABASE LISTINGS

The adjacent properties, as observed by ERM at the time of the Property visit, are summarized in the table below. No obvious environmental concerns associated with surrounding properties were observed during ERM’s Property visit or review of historical sources.

Additional information regarding regulatory database entries associated with adjoining properties is presented in Table 5-2 below.

Based on ERM’s review, the east adjoining property does represent an environmental concern for the Subject Property.

TABLE 5-2 ADJOINING PROPERTIES DISCUSSION

Direction	Regulatory Database Listing(s)	Discussion
North	No listings identified.	There were no environmental records identified for the north adjoining property, which does not represent a significant impact concern to the Subject Property.
South	No listings identified.	There were no environmental records identified for the south adjoining property, which does not represent a significant impact concern to the Subject Property.
East	MINES MRDS	<p>The listing indicates that the adjacent property was historically utilized as a gold mine. No additional information was provided within the EDR report.</p> <p>Based on former mining operations, the east adjoining property does represent a significant impact concern to the Subject Property. Please refer to other sections throughout this report for additional information.</p>
West	No listings identified.	There were no environmental records identified for the west adjoining property, which does not represent a significant impact concern to the Subject Property.

5.3.2 SURROUNDING PROPERTIES DATABASE LISTINGS

Based on their closed regulatory status, distance from the Subject Property, or topographic position relative to the Subject Property, none of the surrounding properties listed in the EDR report are expected to present a significant impact concern for the Subject Property.

5.4 ADJOINING AND SURROUNDING PROPERTIES AGENCY AND RECORDS REVIEW

The EDR report contains regulatory agency files and records, and sufficient information was available in the EDR report to determine if adjoining properties pose or have the potential to pose an impact concern to the Subject Property. As a result, an additional request for records, such as an in-person file review, was not deemed warranted at this time.

6. CONCLUSIONS

6.1 FINDINGS AND OPINIONS

ERM performed a Phase I ESA of the Big Bear Solar Energy Project site located in Big Bear, unincorporated San Bernardino County, California, the Subject Property in conformance with the scope and limitations of ASTM Standard E1527-21 (as defined in Section 1 of this report). Exceptions to, or deletions from, this practice are described in Section 1.3.4 of this report. This Phase I ESA revealed the following recognized environmental conditions, controlled recognized environmental conditions, and/or significant data gaps in connection with the Subject Property:

Summary of Identified Issues

Recognized Environmental Conditions (RECs)²

- ***Former Mining Operations On and Off Property:*** The land adjacent to the east of the Subject Property is listed under Gold Hill Mine in the MINES Mineral Resources Data System (MRDS) database in the EDR report. The listing indicates that the adjacent property was historically utilized as a gold mine. No additional information was provided in the EDR report. However, after additional review of historical aerials and onsite observations, it appears as though the Subject Property was also associated with the former Gold Hill Mine operations.

As a result, given the mining history associated with the region as a whole and the potential for the excavation and subgrade machinery to be related to mineral extraction, it is ERM's opinion that further assessment of the Subject Property is warranted.

Controlled Recognized Environmental Conditions (CRECs)²

- No CRECs were identified in connection with the Subject Property.

Historical Recognized Environmental Conditions (HRECs)²

- No HRECs were identified in connection with the Subject Property.

De Minimis Conditions

- Big Bear has historically had wild donkeys since the 1860s. During the Property visit, the Subject Property had approximately 20 wild donkeys on site. Given the long duration of animal waste (manure), the potential exists that methane, nitrates, and ammonia are found in soil. However, based on the proposed land use (solar) particulates from animal waste are not considered a REC, but a de minimis condition.

² Key ASTM definitions, including REC, CREC, and HREC, are provided in Section 9.

Summary of Identified Issues

Significant Data Gaps

- Historical operations at the Subject Property include mining activities (Gold Hill Mine) between the late 1940s to the late 1960s. The primary commodity being gold. According to the Environmental Protection Agency (EPA), per- and polyfluoroalkyl substances (PFAS) can be used as surfactants to enhance recovery of metals from copper and gold mines. They can also be used in the ore flotation process of aluminum, vanadium, and uranium. However, safety data sheets for cleaning detergents used on the Subject Property were not available. As such, ERM could not determine whether these chemicals associated with the mining operations contained PFAS and ERM cannot exclude the potential for PFAS to have impacted the Subject Property; therefore, the absence of information regarding the possible presence or use of such chemicals such as PFAS represents a significant data gap.

Other Noteworthy Conditions

- No noteworthy conditions were identified in connection with the Subject Property.

Non-ASTM Issues

Other Potential Issues

- According to historical aerials, between the late 1940s to the late 1960s, it appears there is ground disturbance due to mining operations to the northeast. Circa 1969 to 1970, a wooden structure in connection to onsite mining activities is visible on the northeastern side of the Subject Property. By the early to mid-1970s, most of the structure was removed. However, pipes in mine tunnels are often wrapped with asbestos containing insulation; therefore, asbestos-containing materials (ACMs) may be present at the Subject Property.

6.2 OPINION ON ADDITIONAL ASSESSMENT

The Environmental Professional for this project is of the opinion that additional assessment is recommended in connection with the Subject Property.

Given the excavation and subgrade machinery may be related to mineral extraction on the Property, it is ERM's opinion that a Limited Phase II is conducted on the Subject Property to determine potential impacts; this may include surficial soil sampling in the surrounding area of the former Gold Hill Mine.

7. REFERENCES

TABLE 7-1 RESOURCE LIST

Agency/Company	Person Contacted	Phone	Regarding
San Bernardino County Assessor 222 West Hospitality Lane San Bernardino, California	Office representative	909-387-8307	Property information
San Bernardino County Recorder 222 West Hospitality Lane San Bernardino, California	Office representative	909-387-8306	Deed information
Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, California	Freedom of Information Act (FOIA) request	760-245-1661	Air quality information
City of Hesperia Fire Department 17288 Olive Street Hesperia, California	FOIA request	760-243-8595	Tanks, spills, fires, incidents, inspections, hazardous materials
San Bernardino County Public Works 825 East Third Street San Bernardino, California	FOIA request	909-387-7910	Wastewater collection, treatment, and disposal information
San Bernardino Environmental Health 385 North Arrowhead Avenue San Bernardino, California	Online database records	800-442-2283	Wells, septic systems, tanks, incidents, inspections, violations
Regional Water Quality Control Board 320 West 4th Street, Los Angeles, California	FOIA request and GeoTracker database	213-576-6600 https://geotracker.waterboards.ca.gov/	Water supply and quality information
Department of Toxic Substances Control 5796 Corporate Avenue, Cypress, California	FOIA request and EnviroStor database	714-484-5300	Spills, cleanups, tanks, inspections
EDR 6 Armstrong Road, 4th Floor Shelton, CT 06484	Not applicable	800-241-6476	EDR report, topographic maps, aerial photographs, city directories, fire insurance maps

Agency/Company	Person Contacted	Phone	Regarding
Internet resources	Not applicable	Not applicable	Subject Property database searches (www.rtk.net/ , http://www.epa.gov/echo/ , www.osha.gov/).

TABLE 7-2 SUMMARY OF HISTORICAL SOURCES REVIEWED

Agency/Source of Information	Data Provided	Years Reviewed (if applicable)	
		Subject Property	Surrounding Property
Current Subject Property owner	Not applicable	Not applicable	Not applicable
Interview(s) with past owners/occupants	Not applicable	Not applicable	Not applicable
Interview(s) with owner/occupants of neighboring and nearby properties	Not applicable	Not applicable	Not applicable
USGS Topographic Maps	Topographic maps	1902, 1947, 1949, 1954, 1970, 1971, 1978, 1988, 1994, 1996, 2012, 2015, 2018, 2021	1902, 1947, 1949, 1954, 1970, 1971, 1978, 1988, 1994, 1996, 2012, 2015, 2018, 2021
EDR	Sanborn fire insurance maps	Not applicable	Not applicable
EDR	City directories	Not applicable	Not applicable
EDR and internet resources (Google Earth Pro and NetR www.historicaerials.com)	Aerial photographs	1938, 1949, 1969, 1995, 2002, 2002, 2009, 2012, 2016, 2020	1938, 1949, 1969, 1995, 2002, 2002, 2009, 2012, 2016, 2020
EDR	Environmental lien search	Not applicable	Not applicable

8. ENVIRONMENTAL PROFESSIONAL CERTIFICATION

This Phase I ESA was conducted by Marlene Mattola of ERM. Kristal Nadimyan, Ian Todd and Kevin Bryan reviewed the contents of this report. The professional qualifications for Ian Todd, Marlene Mattola, Kristal Nadimyan and Kevin Byran are appended to this report. Kevin Bryan meets the definition of an Environmental Professional as defined in 40 CFR 312.10 and has prepared the following declaration. Signatures of the Environmental Professionals are included at the beginning of this report.

- I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312.10.
- I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

The designated Environmental Professional for this project is: Consulting Director, Kevin Bryan

ERM

1920 Main Street
Suite 300
Irvine, CA 92614

9. LIMITATIONS AND OTHER CONSIDERATIONS

9.1 GENERAL LIMITATIONS

A number of exclusions and limitations are associated with this assessment. These are briefly outlined below:

- This report has been prepared by ERM exclusively for Client and any of its affiliates associated with the contemplated transaction and may not be relied upon by any other recipient, person, or entity (together, henceforth, "Other Recipient") without ERM's express, written permission. ERM makes no warranties or representations to any Other Recipient, has no obligation to advise any Other Recipient regarding changes to this report or changes in applicable laws and regulations subsequent to the date of this report, and NOTWITHSTANDING DELIVERY OF THIS REPORT BY ERM OR CLIENT to such Other Recipient party(ies) is provided for informational purposes only, without the right to rely. In receiving this report, any Other Recipient agrees that (a) it will make no claim against ERM that relates in any way to this report, or the Other Recipient's access to this report, and (b) to the fullest extent permitted by applicable law, Other Recipient hereby releases ERM from, and will defend and hold harmless ERM from and against, any claim, action, suit, damage, loss, award, liability, expense, cost, or fees including attorneys' fees arising from or relating to any use or disclosure of the report or any portion thereof by Other Recipient or any third party to whom Other Recipient discloses the Report. Notwithstanding the foregoing, if requested, ERM will issue reliance letters allowing lenders or other interested parties to rely on the contents of this report, in accordance with ERM's terms and conditions, for financing or other purposes.
- ERM is a sustainability consulting firm, and as such we make no representations regarding questions of legal or accounting interpretation. Consultation with an attorney and/or certified accountant should be made with respect to any legal or accounting matters, or items that require such interpretation, under any law, regulation, or contract.
- The conclusions presented in this report represent ERM's professional judgment based on the information made available to us during the course of this assessment and are true and correct to the best of ERM's knowledge as of the date of this report.
- ERM did not independently verify all the information provided by Client, information on publicly available databases, or information obtained from applicable regulatory agencies. Therefore, our findings are accurate and complete only to the extent that information provided to ERM was itself accurate and complete.
- No sampling or testing of soils, waters, or other materials was included in the assessment. However, reference has been made to previous testing and sampling, as appropriate.
- Unless otherwise stated, the compliance review did not consider annual costs associated with maintaining compliance in the normal course of business, such as costs associated with ongoing operation of existing pollution control equipment, permit renewals, and required record keeping and agency submittals.

- Unless specifically stated, our evaluation of potentially significant issues excluded costs associated with third-party actions in the event that contamination causes harm to property, the environment, or human health.
- Unless specifically stated, our evaluation of potentially significant issues did not take into account mitigating factors such as legal indemnities, insurance coverage, or third-party responsibility. In addition, ERM's evaluation of potentially significant issues did not include fines, penalties, or expenses associated with legal claims.
- Our assessment did not consider potential business interruption costs caused by sustainability issues at the Subject Property or in association with any Client operations.
- Unless otherwise stated, our assessment did not consider closure scenarios for the Subject Property. We have assumed that the Subject Property will continue to be used for its current purposes and that no major construction, renovation, or addition projects will be conducted.
- Unless otherwise stated, review of state-specific requirements related to property transfer (or ownership changes) was not included in ERM's assessment.
- Our evaluation of environmental impact issues is based on ERM's professional experience of the likely scale of investigation and remediation efforts. ERM has taken into account the environmental settings of the Subject Property, known/potential soil and groundwater issues, the vulnerability/sensitivity of known receptors, and the presence or otherwise of current regulatory triggers for investigation and/or remediation of soil and/or groundwater.

9.2 ASTM LIMITATIONS

The innocent landowner, contiguous owner, and prospective purchaser defenses to liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) require that a person acquiring property conduct an all appropriate inquiry with respect to the Subject Property. ERM has conducted this environmental assessment in accordance with the standards for conducting an appropriate inquiry set forth at 40 CFR 312. Those standards require the application of scientific principles and professional judgment to certain facts with resultant subjective interpretations and exercise of discretion. Professional judgments expressed herein are based on the facts currently available within the limits of the existing data, and data gaps identified herein, scope of work, budget, and schedule. Those standards also require that the User undertake certain additional inquiries. In addition, the liability defenses under CERCLA require, among several other things, that the User after the acquisition stop any continuing releases, prevent any future threatened releases and prevent or limit human, environmental or natural resource exposure to any hazardous substance released at the Subject Property. Therefore, ERM makes no warranties, express or implied, including, without limitation, warranties as to merchantability or fitness for a particular purpose, including any warranty that this Phase I assessment will in fact qualify User for the innocent landowner, contiguous property owner, or prospective purchaser defense to liability under CERCLA. ERM's assessment is limited strictly to identifying recognized environmental conditions associated with the Subject Property. Results of this assessment are based upon the visual inspection of readily accessible areas of the Subject Property conducted by ERM personnel, information from interviews with knowledgeable persons regarding the Subject Property, information reviewed regarding historical uses, information provided by contacted

regulatory agencies, and review of publicly available and practically reviewable information identifying current and historical uses of the property and surrounding properties. All conclusions and recommendations regarding the Subject Property represent the professional opinions of the ERM personnel involved with the project, and the results of this report should not be considered a legal interpretation of existing environmental regulations. ERM assumes no responsibility or liability for errors in the public data utilized, statements from sources outside of ERM, or developments resulting from situations outside the scope of this project. We make no warranties, express or implied, including, without limitation, warranties as to merchantability or fitness for a particular purpose.

9.3 REPORT VIABILITY

The components of this report are valid for 180 days following their date of occurrence. The 180-day date is calculated from the earliest of the dates below.

TABLE 9-1 REPORT VIABILITY

Component	Date	End of 180-Day Window
Interviews with owner(s), operator(s), and occupant(s)	N/A	N/A
Review of federal, tribal, state, and local government records	02 July 2024	29 December 2024
Visual inspection of Subject Property and adjoining properties	01 July 2024	28 December 2024
Declaration by the Environmental Professional responsible for the assessment	10 July 2024	06 January 2025

9.4 OTHER CONSIDERATIONS

9.4.1 ENVIRONMENTAL DATABASE SEARCH

ERM contracted EDR to conduct a database search for agency records. The appended database report defines and summarizes the ASTM databases reviewed in the EDR report and notes if any listed facilities (including the Subject Property) were identified in the specified radius. The locations of the listed facilities identified in the EDR report were evaluated to determine which listed facilities were located within the ASTM specified search distance from the Subject Property boundary. Only those listed facilities worthy of further discussion are discussed within the applicable sections of this report and data on additional listed facilities are included in the appended EDR database report.

It should be noted that the computerized geocoding technology used in the database search is based on available census data and is only accurate to ±300 feet. The EDR report provides a list of unmapped facilities for which inadequate location information was provided. ERM has reviewed the list of “unmapped” listed facilities to determine if these listed facilities are within the study

radius. If the “unmapped” listed facilities appeared likely to be within the search radius for a specific database, they are discussed in the applicable sections of this report.

Listed facilities identified within the study radii were evaluated to determine if they are likely to have adversely impacted the Subject Property. The criteria used to evaluate the potential for adverse impact to the Subject Property include:

- Distance from the Subject Property;
- Expected depth and direction of groundwater and surface water flow;
- Geology and physical ground conditions;
- Expected stormwater flow direction;
- The presence/absence of documented contaminant releases at the identified sites that have not been remedied to the satisfaction of regulators; and
- The current regulatory status of the listing.

The identification of a listed facility as potentially upgradient or downgradient is based on the expected direction of groundwater flow referenced in Section 2.3.

9.4.2 USER-PROVIDED INFORMATION

ERM contacted the User with respect to the following information:

- An evaluation of the presence of Environmental Cleanup Liens for the Subject Property.
- Activity and Use Limitations (AULs) such as engineering controls (e.g., slurry walls, caps) and land use restrictions or institutional controls (e.g., deed restrictions, covenants) that may be in place for the Subject Property.
- Specialized Knowledge that includes personal knowledge or experience related to the Subject Property or nearby properties based on professional experience or knowledge of the Subject Property.
- Fair Market Value to evaluate whether a purchase price is significantly below Fair Market Value.
- Obvious Indicators that involve past or present spills, stains, releases, cleanups on or near the Subject Property.
- Common Knowledge about specific chemicals, possible contamination, or past use of the Subject Property and surrounding area.

Relevant information provided by the User is summarized under the appropriate headings of this report and in the following table.

TABLE 9-2 USER-PROVIDED INFORMATION

User Request	Response
Environmental Cleanup Liens	The User is not aware of environmental liens currently recorded against the Subject Property. The User did not request that ERM perform an independent evaluation of environmental liens for the Subject Property.

User Request	Response
AULs and Land Use Restrictions or Institutional Controls	The User is not aware of AULs and/or land use restrictions currently recorded against the Subject Property.
Specialized Knowledge	The User has no specialized knowledge of the Subject Property other than what was provided to ERM as discussed under the relevant sections. ERM is not aware of additional specialized knowledge for the Subject Property.
Fair Market Value	The User is not aware of a devaluation of the purchase price or fair market value of the Subject Property in association with environmental conditions at, on, or under the Subject Property.
Obvious Indicators that involve past or present spills, stains, releases, or cleanups	The User was not aware of any obvious indicators that involve past or present spills, stains, releases, or cleanups.
Common Knowledge about specific chemicals, possible contamination, or past use	Not provided to ERM by the User.

9.5 KEY ASTM DEFINITIONS

ASTM E1527-21 prescribes the following definitions:

Recognized environmental condition (REC): “the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment....”

Controlled REC (CREC): “...recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations)....”

Historical REC: “...a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). A historical recognized environmental condition is not a recognized environmental condition....”

De minimis condition: “...a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition



determined to be a de minimis condition is not a recognized environmental condition nor a controlled recognized environmental condition....”

Data gap: “...a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to, site reconnaissance (for example, an inability to conduct the Property visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.)....”

Significant Data Gap: “...a data gap that affects the ability of the environmental professional to identify a recognized environmental condition....”

Data failure: “...a failure to achieve the historical research objectives...even after reviewing the standard historical sources...that are reasonably ascertainable and likely to be useful....”

User: “...the party seeking to use Practice E1527 to complete an Environmental Site Assessment of the subject property. User may include, without limitation, a potential purchaser of subject property, a potential tenant of subject property, an owner of the subject property, a lender, or a property manager. A User seeking to qualify for an LLP to CERCLA liability, or a User that is an EPA Brownfield Assessment and Characterization grantee, has specific responsibilities for completing a successful application of this practice....”



FIGURES



APPENDIX A SUBJECT PROPERTY PHOTOGRAPHS



APPENDIX B HISTORICAL SOURCES



APPENDIX C ENVIRONMENTAL REGULATORY DATABASE
REPORT



APPENDIX D PROFESSIONAL PROFILES



ERM

ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING
COUNTRIES AND TERRITORIES WORLDWIDE

Argentina	The Netherlands
Australia	New Zealand
Belgium	Peru
Brazil	Poland
Canada	Portugal
China	Puerto Rico
Colombia	Romania
France	Senegal
Germany	Singapore
Ghana	South Africa
Guyana	South Korea
Hong Kong	Spain
India	Switzerland
Indonesia	Taiwan
Ireland	Tanzania
Italy	Thailand
Japan	UAE
Kazakhstan	UK
Kenya	US
Malaysia	Vietnam
Mexico	
Mozambique	

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