

**U.S. Department of the Interior  
Bureau of Land Management**

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**Categorical Exclusion DOI-BLM-NV-S010-2015-0011-CX  
October 2014**

**Geotechnical Investigation for the NV Dry Lake Solar Project**

**Categorical Exclusion**

**File Number: N-93306-01**

**PREPARING OFFICE  
U.S. Bureau of Land Management  
Southern Nevada District Office  
Las Vegas Field Office  
4701 North Torrey Pines Drive  
Las Vegas, Nevada 89130**



**BLM Mission Statement**

*It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.*



## 1.0 BACKGROUND

NV Dry Lake, LLC (Applicant) submitted a Land Use Application and Permit (BLM Form 2920-1) on September 14, 2014, to conduct a limited geotechnical investigation to provide background site information necessary to support the engineering and design of a utility-scale photovoltaic solar energy project, located in Clark County, Nevada. The impacts of the proposed solar facility will be analyzed separately under the National Environmental Policy Act (NEPA) and are not covered by this categorical exclusion analysis.

The limited geotechnical evaluation (Proposed Action) is located within the boundaries of the Dry Lake Solar Energy Zone (SEZ), identified through an amendment to the Las Vegas Resource Management Plan (LVRMP) (BLM 1998) by the Record of Decision (ROD) for the BLM's Solar Energy Programmatic Environmental Impact Statement (Solar PEIS) (BLM 2012). In accordance with the Solar PEIS ROD, a SEZ is defined as an area within which the BLM will prioritize and facilitate utility-scale production of solar energy and associated transmission infrastructure development.

On June 30, 2014, the BLM conducted a competitive auction for 3,083 acres of land within the Dry Lake SEZ (divided into 6 individual parcels) in order to select preferred applicants to submit right-of-way applications and plans of development for solar energy projects. The Applicant submitted a preliminary ROW application to participate in the competitive auction and was the successful bidder on three of the parcels (Parcel Nos. 3, 4, and 5) auctioned within the Dry Lake SEZ for a total application area of approximately 1,700 acres. The winning bidders were required to submit a supplemental ROW application and POD for a solar energy project on their parcels. The supplemental ROW application was submitted to the BLM on July 21, 2014 and the POD was submitted to the BLM on August 27, 2014.

**BLM Office:** Las Vegas Field Office, 4701 N. Torrey Pines Drive, Las Vegas, NV 89130

**Lease/Serial/Case File Number:** N-93306-01

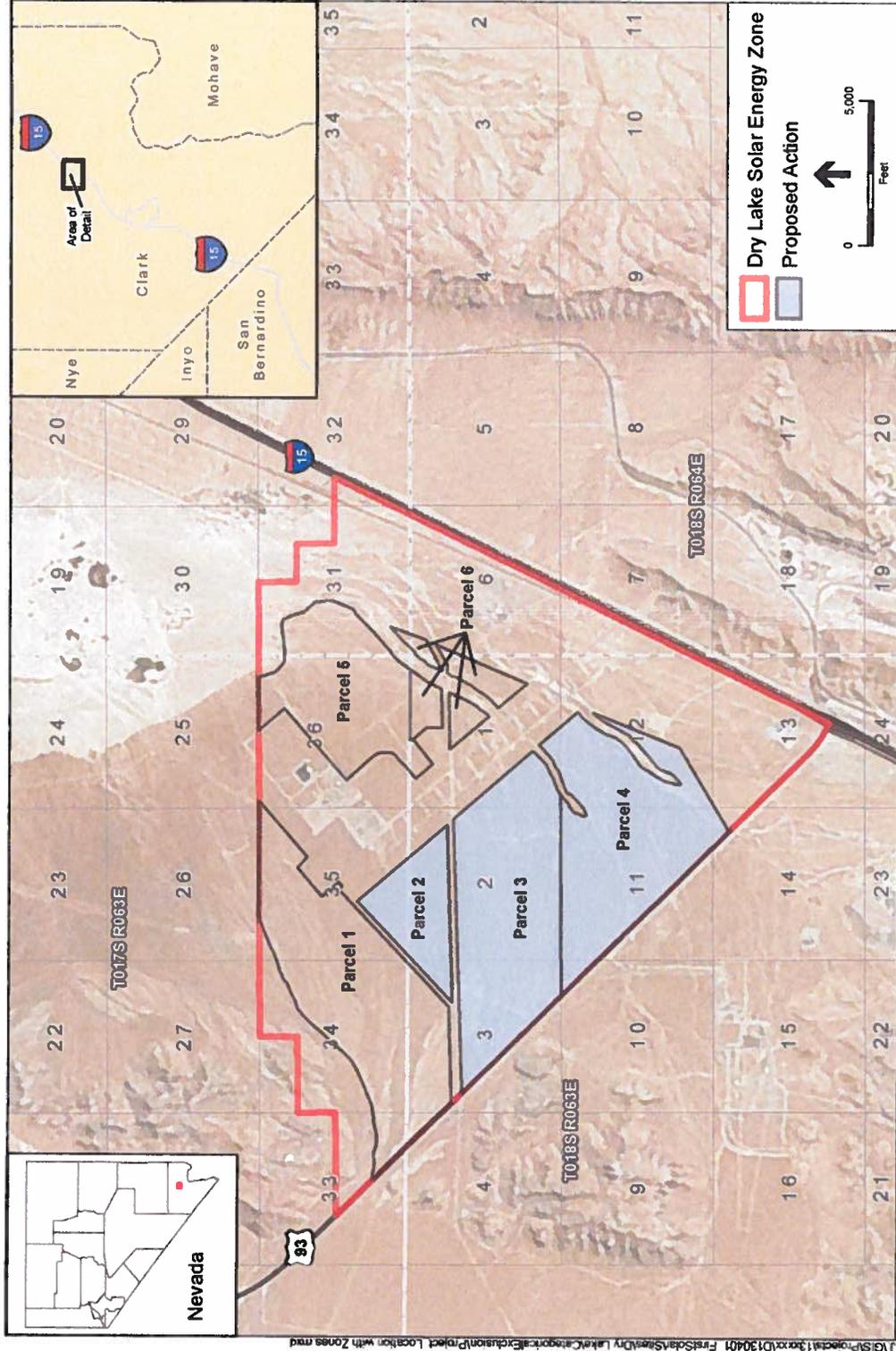
**Proposed Action Title/Type:** Land Use Application and Permit (BLM Form 2920-1) to conduct limited geotechnical investigation.

**Location of the Proposed Action:** The Proposed Action is located in the Dry Lake Solar Energy Zone, Clark County, Nevada, approximately 14 miles northeast of the City of Las Vegas and south and east of the Moapa River Indian Reservation (see **Figure 1**). U.S. Route 93 is located on the western boundary of the Proposed Action site and Interstate 15 (I-15) is located approximately 2 miles east of the Proposed Action.

The Proposed Action is located in T17S, R63E, in a portion of Section 35; and in T18S, R63E, sections or portions of sections 1, 2, 3, 10, 11, 12 and 13, Mount Diablo Base and Meridian. Location information for bore holes and test pits is presented in **Table 1 and Figure 2.**

**Table 1. Geotechnical Investigation Location Information**

Test ID	Latitude	Longitude	Township, Section, Range	Boring Depth (feet)	DC Resistivity (Max Spacing feet)	Test Disturbance (square feet)	Access Disturbance (square feet)	Total Temporary Disturbance (square feet)
CS01	W114° 54'36.00"	N036° 25'07.83"	T018S R063E S02	50	600	4,500	5,100	
CS02	W114° 54'30.49"	N036° 25'07.79"	T018S R063E S02	50	600	1,750	2,350	
CS03	W114° 54'30.51"	N036° 25'06.06"	T018S R063E S02	50	600	3,960	4,560	
CS04	W114° 54'30.56"	N036° 24' 59.68"	T018S R063E S02	50	600	1,180	1,780	
CS05	W114° 54'42.52"	N036° 24'54.86"	T018S R063E S02	50	600	0	600	
CS06	W114° 54'42.80"	N036° 24'28.87"	T018S R063E S02	50	600	0	600	
CS07	W114° 54'42.98"	N036° 24'03.09"	T018S R063E S11	50	600	0	600	
ER01	W114° 54'26.02"	N036° 25'07.09"	T018S R063E S02	200	600	1,500	2,100	
GT01	W114° 54'24.55"	N036° 25'12.72"	T018S R063E S02	50	600	4,750	5,350	
GT02	W114° 54'36.34"	N036° 25'23.94"	T017S R063E S35	50	600	5,440	6,040	
GT03	W114° 54'26.75"	N036° 25'31.30"	T017S R063E S35	50	600	3,360	3,960	
GT04	W114° 54'26.12"	N036° 25'30.76"	T017S R063E S35	50	600	750	1,350	
SS01	W114° 54'24.59"	N036° 25'08.02"	T018S R063E S02	50	600	2,020	2,620	
SS02	W114° 54'24.65"	N036° 25'06.02"	T018S R063E S02	50	600	2,300	2,900	
SS03	W114° 54'27.47"	N036° 25'06.03"	T018S R063E S02	50	600	2,470	3,070	
TL01	W114° 54'50.20"	N036° 25'27.26"	T017S R063E S35	10	200	0	600	
TL02	W114° 55'13.41"	N036° 25'11.60"	T018S R063E S03	10	8	0	600	
TL03	W114° 54'51.06"	N036° 24'55.05"	T018S R063E S02	10	8	0	600	
TL04	W114° 55'46.02"	N036° 24'51.98"	T018S R063E S03	10	200	0	600	
TL05	W114° 55'24.42"	N036° 24'47.55"	T018S R063E S03	10	8	0	600	
TL06	W114° 54'57.06"	N036° 24'44.25"	T018S R063E S02	10	200	0	600	
TL07	W114° 54'14.72"	N036° 24'56.67"	T018S R063E S02	10	200	0	600	
TL08	W114° 54'29.54"	N036° 24'41.00"	T018S R063E S02	10	8	0	600	
TL09	W114° 55'16.51"	N036° 24'32.76"	T018S R063E S03	10	200	0	600	
TL10	W114° 53'58.94"	N036° 24'43.68"	T018S R063E S01	10	200	0	600	
T11	W114° 54'44.99"	N036° 24'16.50"	T018S R063E S11	10	200	12,630	13,230	
T12	W114° 54'17.31"	N036° 24'27.15"	T018S R063E S02	10	200	0	600	
T13	W144° 54'10.33"	N036° 24'07.38"	T018S R063E S11	10	8	0	600	
T14	W144° 53'30.65"	N036° 24'15.95"	T018S R063E S12	10	200	0	600	
T15	W144° 54'29.13"	N036° 24'04.41"	T018S R063E S11	10	200	0	600	
T16	W144° 53'41.63"	N036° 24'03.37"	T018S R063E S12	10	200	0	600	
T17	W144° 53'58.31"	N036° 23'44.38"	T018S R063E S12	10	8	0	600	
T18	W114° 54'22.06"	N036° 23'51.04"	T018S R063E S11	10	8	14,690	15,290	
T19	W144° 54'12.44"	N036° 23'32.32"	T018S R063E S11	10	200	0	600	
<b>Total (square feet)</b>							<b>81,700</b>	
<b>Total (Acres)</b>							<b>1.9</b>	



SOURCE: ESRI Imagery

BLM Nevada Dry Lake SEZ-First Solar, D.140515  
**Figure 1**  
**Project Location Map**





## **2.0 DESCRIPTION OF THE PROPOSED ACTION**

### **2.1 Introduction**

NV Dry Lake Solar, LLC (Applicant) has applied for BLM approval to perform a limited geotechnical investigation of the site (Proposed Action) to determine soil composition which will support the engineering and design of a utility-scale solar energy project. Geotechnical data collected would be analyzed to select the type and size of foundations that may be required for project structures and equipment associated with the solar project. Additionally, data regarding the soil's resistance to electric current flow would be collected and used for the electrical grounding design to ensure the project meets electrical safety codes.

### **2.2 Limited Geotechnical Investigation**

The limited geotechnical investigation would involve drilling approximately 14 soil borings to a depth of 50 feet and excavating approximately 19 test pits to a depth of approximately 10 feet. The borings would be completed by a truck-mounted, soil-boring machine, and the test pits would be completed by a rubber-tired backhoe. A soil resistivity survey would be conducted using hand-carried equipment at 12 of the sampling location. A pickup truck support vehicle would be used with both the truck-mounted soil boring machine and backhoe. An overview of soil borings and test pits is shown on Figure 2 which also identifies test location coordinates (latitude and longitude) and Section, Township, and Range.

In addition, at each test pit location, a steel test post (6-8" in width) would be driven into the ground to a depth of 6 to 12 feet. A light-duty truck-mounted impact post pounder would be used. Static tests would be performed to measure the strength of the embedded post. Once the testing is complete, the post would be removed and the hole backfilled with native soil and returned to its native state. The steel test post would be located within the previously disturbed area associated with the abovementioned test pits and borings.

All soil boring, soil resistivity, and test pit locations would be accessed by driving on existing roads, trails, or washes to the extent possible. Each test location can be relocated in the field up to 100 feet to avoid any identified environmentally sensitive areas.

Soil boring activities would require a work area approximately 20 feet by 30 feet at each location. A truck-mounted drilling rig would use hollow-stem auger drilling to bore an approximately 6-inch diameter hole to a depth of 50 feet due to the foundations of the towers and substation equipment. Soil samples would be collected every 2.5 feet for the first 15 feet of depth and every 5 feet thereafter. At each sample location, a hollow metal tube would be driven 18 inches below the bottom of the auger to determine the strength of the native soil material. One sample, consisting of approximately 0.5 pounds of material, would be collected at each sampling depth (approximately 7-14 samples would be collected at each boring based on the

overall boring depth). The remaining soil would be deposited on the ground adjacent to the sampling location. Upon completion of each soil boring, the bore hole would be restored by backfilling with the material removed during boring, replacing topsoil and raking the disturbed area to re-establish the pre-existing grade and minimize contrast with the surrounding undisturbed area.

Global positioning system (GPS) equipment would be used to record the exact location of each boring and test pit, including the route to each test location and the corners of each work area. Access would be via existing roads, trails, or washes to the extent possible. Where new access is needed, the access path would be no more than 10 feet wide. A drive-and crush method of access would minimize impacts to existing vegetation as it leaves the root system and some of the aboveground portion of plants intact so that they can regenerate in place.

Each test pit excavation would require a work area up to 20 feet by 30 feet (600 square feet). A rubber-tired backhoe would be used to excavate each pit to a depth of approximately 6 feet. Each pit would be approximately 3 feet wide and 6 feet long at the bottom.

Before excavation, the top 4 inches of soil would be removed from the test pit excavation and spoil pile area. Topsoil would be stockpiled for replacement at the site once test pit sampling has been completed and the test pit backfilled. Spoils material from the excavation would be placed adjacent to each side of the test pit. After inspection, recording of data, and collection of soil samples (approximately 100 pounds total at each test pit) by an engineer or geologist, the pit would be backfilled by the backhoe using the front end loader bucket.

Soil electrical resistivity measurements would be obtained at the locations indicated in Figure 2 using equipment brought to the test location in a pick-up truck. As noted above, access to resistivity testing would be restricted to existing roads, trails, or washes to the extent feasible. The equipment is portable and would be hand-carried during testing. Soil resistance measurements would be taken with four 3/8-inch metal rods, which are connected by 20-gauge wire to an electrical source a 12 volt DC battery. The rods would be inserted 3 to 6 inches into the ground such that the four rods form a straight line with the electrical source in the middle. Each rod would be inserted into the ground at varying spacing up to maximum rod spacing of 200 feet. Each test would then be repeated at a right angle to the original configuration. Upon completing the sampling, boring holes and test pits would be backfilled using a backhoe, all materials and equipment would be removed, and surfaces would be restored to their original condition.

The total area of disturbance for all components of the geotechnical investigation, including disturbance associated with access, would be approximately 1.9 acres. There would be no permanent disturbance associated with geotechnical investigation.

## **2.3 Environmental Resources Protection Measures**

### **Desert Tortoise**

- A qualified biologist would be on-site throughout the geotechnical investigation to monitor for desert tortoise. If desert tortoises are observed in the immediate vicinity of the work area, work would be stopped to allow the tortoise to move out of the area. In case of imminent danger to desert tortoise, the U.S. Fish and Wildlife Service (USFWS) would be contacted immediately.
- Desert tortoise awareness training would be provided to all workers/contractors, by the biologist, in a tailgate setting on the first day the worker/contractor is on-site.
- On a daily basis, wildlife escape ramps (slope egress from excavated pits) would be erected in each pit, by the contractor, to allow tortoises to move out of the pit if access is gained (or the pit would be completely backfilled).
- The biologist would inspect under vehicles and equipment for the presence of desert tortoise at the beginning of each work day. Additional inspections would be performed, by the biologist, on all vehicles/equipment that have not moved within 30 minutes, throughout the work day.

### **Cultural Resources**

- Based on the Class III survey completed for the site, a cultural resource monitor would not be necessary on-site during the investigation activities. If any cultural resources are encountered during the geotechnical investigation, work would be halted in the vicinity of the find and the BLM would be notified.

## **2.4 Additional BLM Required Environmental Resources Protection Measures**

- Ensure dust control permit is obtained from the Clark County Department of Air Quality for soil disturbing activities greater than 0.25 acres or greater, in the aggregate and that all permit stipulations are in compliance for the duration of the project.
- In the event of an inadvertent paleontological resource discovery, the BLM archaeologist will be notified within 48 hours; work will not resume until the BLM has determined the significance of the find.
- Comply with fire restrictions current at time of project implementation.
- Conform to Best Management Practices and standard BLM Weed Stipulations throughout the duration of the project (Attachment A).
- All holes should be reclaimed according to NRS and NAC regulations and reclaimed immediately after drilling. If groundwater is intercepted, holes will need to be reclaimed appropriately.

- To prevent undue harm, habitat altering project or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between February 15<sup>th</sup> and August 31<sup>st</sup>. If a project has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately sized buffer area must be avoided until the young birds fledge. As the above dates are a general guideline, if active nests are observed outside this range they are to be avoided as described above.
- The spatial limits for drilling activities would be predetermined and flagged to ensure all activity is restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks, vegetation, structures, fences, etc., to indicate drilling activity limits.
- To eliminate the spread of noxious/invasive weeds, equipment and vehicles (including the undercarriages) would be cleaned at a local car wash prior to entering another area with different vegetation.
- The project proponent shall limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The project proponent would avoid creating soil conditions that promote weed germination and establishment.
- All vehicle movement would be restricted to identified cross-country access routes or public roads crossing the project area. Constructing new access roads is not authorized for this project. Travel should consist of drive and crush only.
- Boreholes would be backfilled with drill cuttings and on-site soils.
- The section 7 consultation for this project will be covered under the current Programmatic Biological Opinion (84320-2010-F-0365.R003) contingent on compliance with the attached terms and conditions (Attachment B).
- The contractor shall immediately notify the BLM Authorized Officer of any release of hazardous substances, toxic substances, or hazardous waste on, or near or emanating from the project area as a result of the contractor's activities.
- Hazardous material shall not be drained onto the ground or into drainage areas. Totally enclosed containment shall be provided for all trash. All construction waste including trash and litter, garbage, solid waste, petroleum products, and other potentially hazardous materials shall be removed to a disposal facility authorized to accept such materials.
- Each temporary work area would be kept in an orderly condition and free of trash throughout the drilling activities. All refuse and trash would be collected in closed containers until removed from the site and disposed of in an approved manner. Waste

oils, chemicals, and spill clean-ups would be hauled to a site authorized for disposal of such materials.

- Vehicle refueling and servicing activities would be performed in Pahrump or in Las Vegas. Spill preventative and containment measures or practices would be incorporated as needed.
- Cactus and yucca will be avoided.

### 3.0 LAND USE PLAN CONFORMANCE

**Land Use Plan Name:**

Las Vegas Resource Management Plan (LVRMP), as amended by the Record of Decision (ROD) for the BLM's Solar PEIS (BLM 2012).

**Date Approved/Amended:**

October 5, 1998/October 12, 2012

The Proposed Action is in conformance with the LVRMP as amended, even though it is not specifically provided for, because it is clearly consistent with the decision(s) (objectives, terms, and conditions) described below.

*Land Use Authorizations*

*LD-2. All public lands within the planning area, unless otherwise classified, segregated or withdrawn, and with the exception of Areas of Critical Environmental Concern and Wilderness Study Areas, are available at the discretion of the agency, for land use leases and permits under Section 302 of the Federal Land Policy and Management Act and for airport leases under the authority of the Act of May 24, 1928, as amended.*

*Management Direction*

*LD-2-a. Land use lease or permit applications and airport lease applications will be addressed on a case by- case basis, where consistent with other resource management objectives and local land uses. Special terms and conditions regarding use of the public lands involved would be developed as applicable.*

In addition, the site is located within the Dry Lake SEZ, identified through an amendment to the LVRMP by the ROD for the BLM's Solar PEIS (BLM 2012). In accordance with the Solar PEIS ROD, a SEZ is defined as an area within which the BLM will prioritize and facilitate utility-scale production of solar energy and associated transmission infrastructure development. The proposed geotechnical investigation is being conducted in support of the engineering and design of a proposed utility-scale solar energy project within the Dry Lake SEZ.

## 4.0 COMPLIANCE WITH NEPA

The Proposed Action is categorically excluded from further documentation under the NEPA in accordance with 516 DM2, Appendix 1, or 516 DM 11.9, under the following categorical exemptions:

### *E. Realty*

*(19) Issuance of short-term (three years or less) rights-of-way or land use authorizations for such uses as storage sites, apiary sites, and construction sites where the proposal includes rehabilitation to restore the land to its natural or original condition.*

### *J. Other*

*(3) Conducting preliminary hazardous materials assessments and site investigations, site characterization studies, and environmental monitoring. Included are siting, construction, installation, and/or operation of small monitoring devices such as wells, particulate dust counters, and automatic air or water samplers.*

This categorical exclusion is appropriate for the Proposed Action because there are no extraordinary circumstances potentially having effects that may significantly affect the environment. The Proposed Action has been reviewed and none of the extraordinary circumstances in 516 DM2 apply.

Comments and mitigation measures providing substantive information relevant to the analysis have been incorporated in this document.

I have reviewed the plan conformance statement and have determined that the proposed actions is in conformance with the approved LVRMP and that no further environmental analysis is required.

## 5.0 APPROVAL AND CONTACT INFORMATION

Authorizing Official:

  
\_\_\_\_\_  
(Signature)

10/28/14  
\_\_\_\_\_  
(Date)

**Vanessa L. Hice**

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## 6.0 References

Bureau of Land Management (BLM). 1998. Las Vegas Resource Management Plan and Environmental Impact Statement. Volumes I and II. U.S. Department of the Interior, BLM, Las Vegas Field Office.

Bureau of Land Management (BLM). 2012. *Approved Resource Management Plan Amendments/Record of Decision (ROD) for Solar Energy Development in Six Southwestern States.*