



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Mother Lode Field Office
5152 Hillside Circle
El Dorado Hills, CA 95762-5713
www.blm.gov/ca/motherlode

Permit for Soil Moisture Sensor Installation Project (CA-180-13-24) Finding of No Significant Impact May 2013

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed by the Sierra Resource Management Plan (RMP). Thus, the proposed action does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement (EIS) is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA and based on my understanding of the project:

- 1) *Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.* Potential impacts include soil disturbance and temporary noise and dust.
- 2) *The degree of the impact on public health or safety.* No aspects of the proposed action have been identified as having the potential to significantly and adversely impact public health or safety.
- 3) *Unique characteristics of the geographic area.* The project area does not contain any unique characteristics.
- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial effects.* No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).
- 5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* The analysis does not show that the proposed action would involve any unique or unknown risks.
- 6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* The proposed action is not precedent setting.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* No significant site specific or cumulative impacts have been identified. The proposed action is consistent with the Sierra RMP.

8) *The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources.* The proposed action would not adversely affect cultural properties listed on or eligible for the National Register of Historic Places.

9) *The degree to which the action may adversely affect ESA listed species or critical habitat.* No ESA listed species (or their habitat) are known to occur in the area potentially affected by the proposed action.

10) *Whether the action threatens a violation of environmental protection law or requirements.* There is no indication that the proposed action will result in actions that will threaten such a violation.

William S. Haigh
Field Manager,
Mother Lode Field Office

Date



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EA Number: CA-180-13-24

Proposed Action: Permit for Soil Moisture Sensor Installation Project

Location: T. 6 N., R. 10 E., section 8, lot 1, MDBM (see project map attached)

1.0 Introduction and Background

1.1 Project Background

On February 11, 2013, Mahta Moghaddam, a professor in the engineering department at the University of Southern California (USC) filed an application for a permit for a soil moisture sensor project on public lands administered by the Mother Lode Field Office (BLM). The application requests authorization for her and her colleagues to install and maintain a series of soil moisture sensors and coordinators (each with a small solar panel) on two sites on a BLM-administered parcel near Ione within Amador County, California. The applicant's proposal included provisions to install barbed wire fencing if grazing is apparent. Legal access is through the use of state and Amador County maintained roads (Highway 124 and Mt Echo Road) and requires no easements for the applicant to reach the BLM-administered land.

1.2 Brief Description of Proposed Action

The proposed authorization is to install and maintain a series of moisture sensors and coordinators (each with a small solar panel) on two sites situated on a BLM-administered parcel, within a 23 x 23 mile sampling grid, in Amador County, California.

The installation project involves digging several holes (less than 10 inches in diameter), up to 2 feet deep, and installing in each hole three soil moisture probes at different depths and replacing the soil. The digging would be done through the use of a gas-powered auger, manual auger and shovel. If the soil is wet a manual auger is sufficient. Using a post driver a t-post is put in place to hold the wireless communication equipment. For sites used for cattle grazing barbed wire fences would be installed around the equipment to prevent damage to wires and electronics. The sensor deployment is carried out by a small team comprising PhD and post-doctoral researchers from USC and MIT and is being coordinated by Prof. Moghaddam.

Legal access is through the use of state and Amador County maintained roads (Highway 124 and Mt Echo Road) and requires no easements for the applicant to reach the BLM-administered parcel. The two sites will be returned to their original condition at the completion of the study which is expected to have duration of two years based on current project funding. If it becomes necessary to remove individual sensors or an entire site due to the project ending or requirements by the BLM, equipment can be quickly removed leaving minimal, temporary disturbance to the soil and surrounding vegetation.

2.0 Purpose of and Need for Proposed Action

2.1 Purpose and Need

The purpose and need for the proposed action is to respond to a FLPMA 2920 permit application submitted by Professor Moghaddam to install and maintain a series of soil moisture sensors and coordinators with a small solar panel on four separate sites situated on federally managed lands within Amador County, California on public land located within T. 6 N., R. 10 E., section 8, lot 1, MDBM administered by the BLM allowing sensor installation and maintenance in compliance with FLPMA, BLM permit regulations, and other applicable Federal laws and policies.

2.2 Decision and Rational

This EA discloses the environmental consequences of implementing the proposed action or alternatives to that action. The Finding of No Significant Impact (FONSI) describes the findings of the analysis in this EA. The BLM Mother Lode Field Office Manager is the Deciding Official. His decision and the rationale for that decision will be stated in a separate Decision Record. Based on the information provided in this EA, the BLM Manager will decide whether to grant the land use permit application with appropriate mitigation measures, or whether to reject it.

2.3 Conformance with Applicable Land Use Plans

The Sierra Resource Management Plan (RMP), February 2008, covers land use planning decisions for the subject area. This ROW proposal has been reviewed to determine that the proposed action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5.

Proposed permit sites #1 and #2 are in conformance with the RMP as outlined on page 32 which states that the goal of the Land and Realty program is to respond to demand for land use authorizations as mandated by FLPMA.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

Proposed permit site #3 is located within the Ione Tertiary Oxisol Soils Area of Critical Environmental Concern (ACEC). The Sierra RMP Record of Decision (ROD) states on page 39 that land use authorizations will be confined to areas that lack ACEC values. A grant of a permit within an ACEC would not be in conformance with the land use plan for the Mother Lode Field Office area. In addition, this ACEC was designated to protect the unique soils of the Ione formation and areas with intact soil horizons must be preserved.

The area of proposed permit site #4 provides habitat for a previously undescribed onion species (*Allium sp.*). When additional information is collected about this species in the future it could very well be designated a special status species. The Sierra RMP states on page 4-43 that management goals for special status species would ensure all management activities and BLM authorizations on public lands are consistent with the conservation needs for special status species; and to manage special status plant species habitat to assist in the recovery of listed species. Since we do not yet know if this species will be determined a special status species in the future, we need to err on the side of caution and protect its habitat at this time.

2.5 Relationship to Statutes, Regulations or Other Plans

Sections 302, 303 and 310 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1732, 1733, 1740) authorize the Secretary of the Interior to issue regulations providing for the use, occupancy, and development of the public lands through leases, permits, and easements.

Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized Under Section 2920.1 of BLM permit regulations. Uses which may be authorized include residential, agricultural, industrial, and commercial, and uses that cannot be authorized under title V of the Federal Land Policy and Management Act or section 28 of the Mineral Leasing Act.

Land use authorizations shall be issued only at fair market value and only for those uses that conform with Bureau of Land Management plans, policy, objectives and resource management programs

Permits shall be used to authorize uses of public lands for not to exceed 3 years that involve either little or no land improvement, construction, or investment, or investment which can be amortized within the term of the permit. A permit conveys no possessory interest. The permit is renewable at the discretion of the authorized officer and may be revoked in accordance with its terms and the provisions of 43 CFR §2920.9-3.

3.0 Proposed Action and Alternatives

3.1 Proposed Action

The proposed authorization is to install and maintain a series of soil moisture sensors and coordinators with a small solar panel on two sites situated on a BLM-managed parcel in Amador County, California.

The installation project involves digging a hole, less than 10 inches in diameter and up to 2 feet deep, installing three soil moisture probes at different depths and replacing the soil. This is done through the use of a gas-powered auger, manual auger and shovel. If the soil is wet a manual auger is sufficient. Using a post driver a t-post is put in place to hold the wireless communication equipment. For sites used for cattle grazing barbed wire fences would be installed around the equipment to prevent damage to wires and electronics. The sensor deployment is carried out by a small team comprising PhD and post-doctoral researchers from USC and MIT and is being coordinated by Professor Moghaddam.

Legal access is through the use of state and Amador County maintained roads and requires no easements for the applicant to reach the BLM land. The sites will be returned to their original condition at the completion of the study which is expected to have duration of two years based on current project funding. If it becomes necessary to remove individual sensors or an entire site due to the project ending or requirements by the BLM, equipment can be quickly removed leaving minimal, temporary disturbance to the soil and surrounding vegetation.

3.2 Project Design Features

The project area will include an exclusion area, in which no ground disturbance of any kind will be allowed. There will be no installation of the sensors, coordinators, or other project-related work within this exclusion area.

3.3 No Action

Under the no-action alternative, the BLM would deny Professor Moghaddam's Soil Moisture study application, and the proposed action of performing soil moisture sensor installation and maintenance on public land would not be initiated. The no-action alternative is considered as a part of BLM's NEPA process and provides a comparative impact base for other alternatives. It could be selected by BLM if warranted by the findings of the environmental analysis. The no action alternative would meet the purpose and need of the BLM but would not address the multiple use mandates set forth for the BLM by FLPMA.

4.0 Affected Environment

There two sites are located on a BLM-administered parcel in Amador County, California. The parcel (project area) is located off of HWY 124 near the intersection of Willow Creek and Mt. Echo roads in the center-west portion of Section 8, Township 6 N., Range 10 E., within section 8, lot 1, MDBM. A biological inventory performed by BLM biologists in 2013 for the project area determined they did not contain any special status species. The project area's topography consists of low rolling foothills with an elevation of approximately 600 feet amsl. The vegetation is blue oak savannah. Mule Creek (intermittent) runs east-west through site # 2, within the parcel.

5.0 Environmental Effects

The following critical elements have been considered for this environmental assessment, and unless specifically mentioned later in this chapter, have been determined to be unaffected by the proposal: air quality, areas of critical environmental concern, prime/unique farmlands, floodplains, water quality, hazardous waste, wetlands and riparian zones, wild and scenic rivers, wilderness, and environmental justice.

5.1 Impacts of the Proposed Action

Air, water, and soil – Rare soils do not occur within the project area. There would be negligible levels of dust and soil erosion caused by proposed action in both the short term (installation of the sensors) and the long term (maintenance of the sensors).

Vegetation/forestry – The BLM botanist analyzed the potential impacts of the proposed action on botanical resources, especially special status plants. The analysis was designed to help BLM meet its obligations under the Endangered Species Act and other special status species policy. The two sites do not contain any special status species.

Wildlife – The BLM wildlife biologist analyzed the potential impacts of the proposed action on wildlife, especially on special status wildlife. Her analysis was designed to help BLM meet its obligations under the Endangered Species Act and other special status species policy. No special status wildlife or habitat to support special habitat wildlife occurs on the sites. The wildlife biologist recommends that the project would have negligible short-term or long-term impacts on wildlife.

Range – No allotments occur on the sites proposed for this study; therefore grazing is not an issue with regard to expensive scientific equipment within the project area.

Cultural/Native American interests – The BLM archaeologist analyzed the potential impacts of the proposed action on significant or potentially significant cultural resources. The primary purpose of the analysis was to identify the presence of significant cultural resources or “historic properties” that could be affected by the proposed action, in accordance with Section 106 of the National Historic Preservation Act. The analysis involved a background records search for cultural resources data pertaining to the project area. The records search indicated that the project area had been intensively inventoried by BLM archaeologists in 1980-81 and 1999. A potentially significant cultural resource exists within the project area and could be negatively affected by the proposed action. The project will be redesigned to avoid any effects to the potentially significant cultural resource. This cultural resource, therefore, will not be affected. No Native American resources or issues were identified.

Recreation and visual resources – Recreation is extremely uncommon in within the project area. It might see some hunting use and the local neighbors might go on walks through the parcel. The proposed action would not affect this use. The proposed project would have negligible impacts on visual resources. The removal of vegetation on the permit site area would have negligible impact as the site is temporary and will be rehabilitated back to its original condition upon completion of the soil moisture study. The new disturbance that would occur with the insertion of the sensors would be to a small degree due to the small size of the individual sensors. The applicant would restore the road to its original condition upon completion of the universities study period. In terms of policy, the BLM manages the area in accordance with VRM class III standards, and the permit corridor is in line with the management objective for this class, which is to retain the existing character of the landscape.

5.2 Impacts of the No Action Alternative

Under the No Action Alternative there would be no change to the current status or quality of the site or landscape. Impacts to resources described above would not be expected from the No action alternative.

5.3 Cumulative Impacts

No significant or potentially significant environmental resources or other elements of the human environment would be negatively affected. Therefore, cumulative impacts at a larger scale are not expected.

6.0 Agencies and Persons Consulted

6.1 Agencies, Organization, Persons Consulted

No Federally listed animal or plant species (or their habitat) were found; therefore, no consultation with outside agencies, organizations or other persons outside of the BLM interdisciplinary team was conducted in regard to the proposed ROW.

6.2 BLM Interdisciplinary Team

/s/ James Barnes 4/29/13

James Barnes
NEPA coordinator and Cultural Resources Specialist

/s/ Peggy Cranston 4/23/13

Peggy Cranston
Wildlife Specialist

/s/ Beth Brenneman 4/22/13

Beth Brenneman
Botanist

/s/ Jeff Horn 4/25/13

Jeff Horn
Visual Resources

/s/ Heather Fullerton 4/19/13

Heather Fullerton
Realty Specialist

6.3 Availability of Document and Comment Procedures

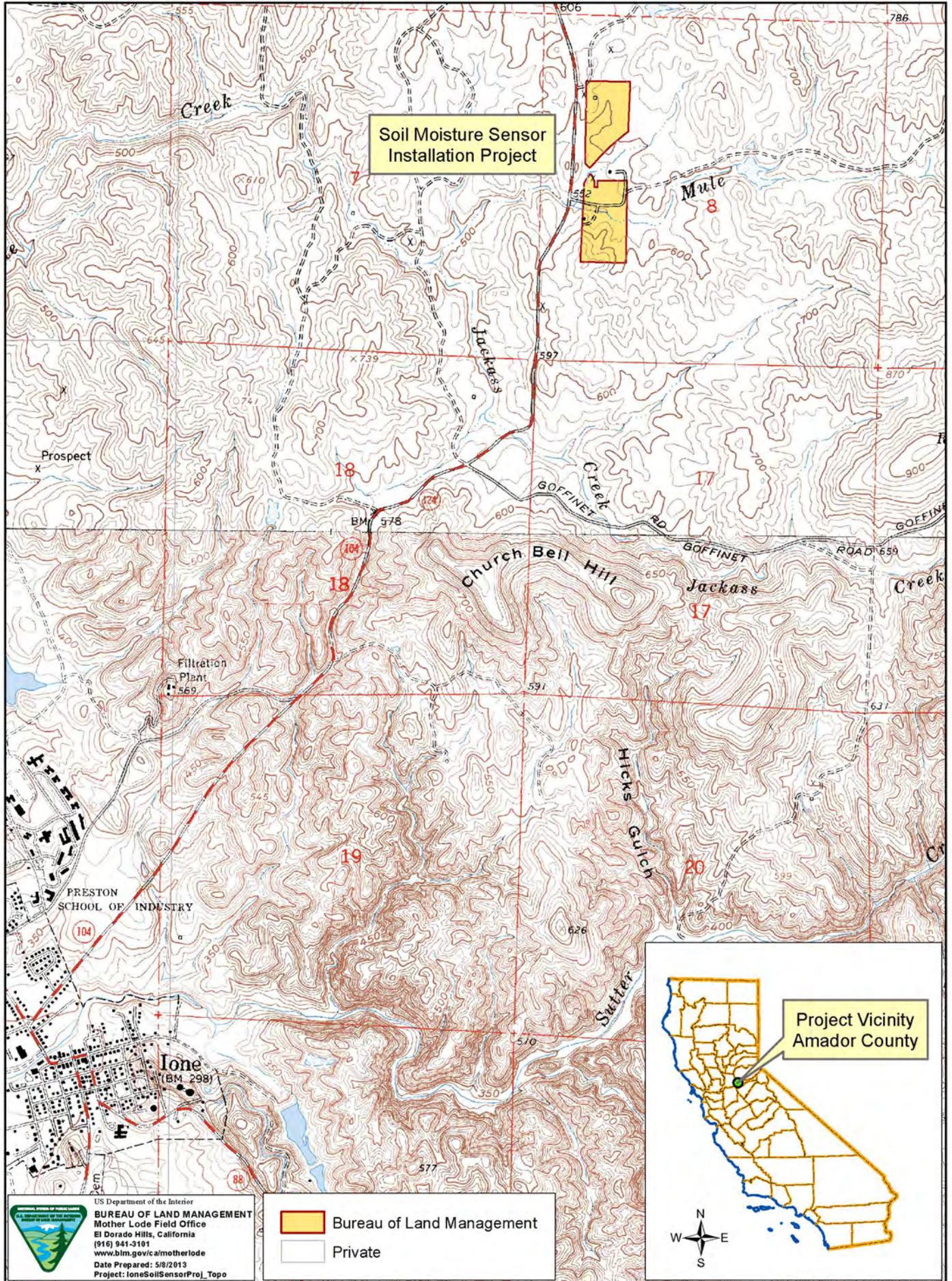
This EA, posted on Mother Lode Field Office's website (www.blm.gov/ca/motherlode) under Information, NEPA (or available upon request), will be available for a 15-day public review period. Comments should be sent to the Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, CA 95762 or emailed to us at hfullerton@blm.gov.

6.4 References

- U.S. Department of the Interior, Bureau of Land Management. 2008. BLM NEPA Handbook H-1790-J, pp.70-74
- U.S. Department of the Interior, Bureau of Land Management. 2008. Sierra Resource Management Plan

R9E

R10E



Soil Moisture Sensor
Installation Project

Project Vicinity
Amador County



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BUREAU OF LAND MANAGEMENT
 Mother Lode Field Office
 El Dorado Hills, California
 (916) 941-3101
 www.blm.gov/c/motherlode
 Date Prepared: 5/8/2013
 Project: IoneSoilSensorProj_Topo

	Bureau of Land Management
	Private



R9E

R10E

120°54'30"W

R10E

120°54'0"W

38°23'30"N

38°23'30"N

T6N

T6N

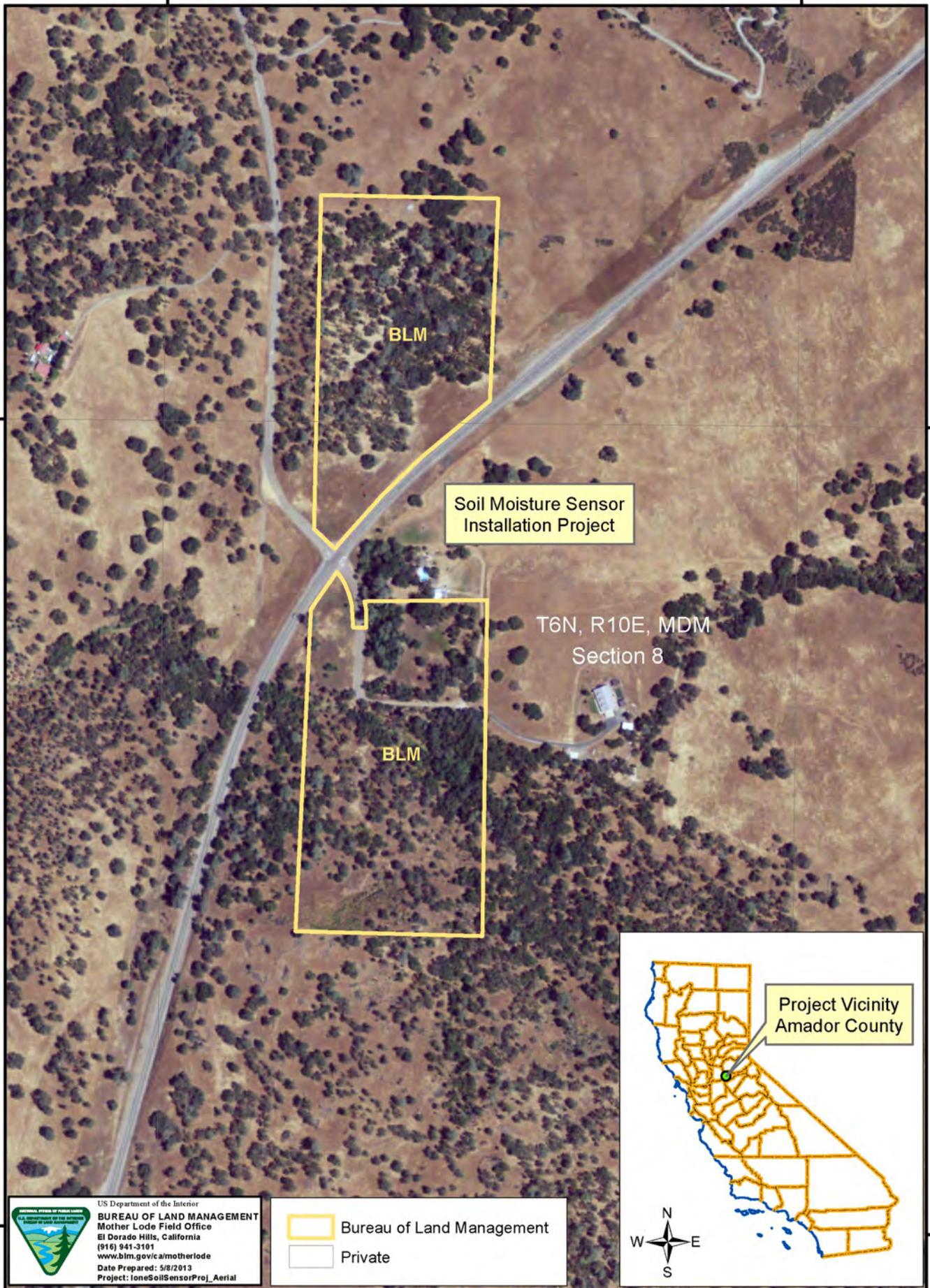
38°23'0"N

38°23'0"N

120°54'30"W

R10E

120°54'0"W



Soil Moisture Sensor
Installation Project

T6N, R10E, MDM
Section 8

BLM

BLM

Project Vicinity
Amador County



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 Mother Lode Field Office
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www.blm.gov/c/motherlode
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 Project: IoneSoilSensorProj_Aerial

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