



**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIDGECREST FIELD OFFICE**



Environmental Assessment

**Proposed Range Improvements in Deep Springs Valley and South Oasis Grazing Allotments
Deep Springs Valley, Piper Mountains, and Fish Lake Valley, Inyo County, California
DOI-BLM-CA-D050-2021-0011-EA**



Estimated Agency Total Cost Associated with Developing and Producing this Environmental Assessment: \$ 15,000

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Chapter 1. Introduction

(Note- This EA falls under the new National Environmental Policy Act (NEPA) Regulations. (<https://beta.regulations.gov/document/CEQ-2019-0003-720630> or <https://ceq.doe.gov/laws-regulations/regulations.html>))

1.1 Purpose and Need

Deep Springs Trustees (Proponent) has proposed the construction, use, and maintenance of eleven range improvement features within the Deep Springs Valley (05062) and South Oasis (05063) Bureau of Land Management (BLM) grazing allotments located in eastern Inyo County, California (See Appendix A- Maps). The proponent currently holds the grazing leases for these allotments (0406562; 0406565). These improvements would consist of seven water trough sites, two water pipelines, one permanent corral, and one water tank (further described in Chapter 2). The water will be supplied by the proponent, hauling the water to the sites. The construction of these range improvements will result in less than one acre of surface disturbance in habitat primarily characterized by desert alkali scrub. Where possible, new range improvement features would be located in previously disturbed and/or natural clearings and weed-free areas. None of the new features would be located in wilderness. However, some features would be in close proximity to wilderness. The 10-year grazing permit renewals will not be analyzed in this document because this action does not reauthorize grazing. It seeks to authorize or not authorize the installation of range improvements and the associated impacts of that action.

The need for the proposed action is a lack of available water source options for authorized grazing use on the Deep Springs Valley and South Oasis allotments. The purpose for the proposed action is to provide the BLM more adaptive management capability, to reduce impacts at existing watering sites and protect resources, and to allow for the more even distribution of cattle throughout the Deep Springs Valley and South Oasis allotments.

In addition, BLM is preparing to treat Russian thistle at the Fish Lake Valley/South Oasis Windmill site (see full Environmental Analysis at <https://eplanning.blm.gov/eplanning-ui/admin/project/1504483/570>). While cattle use of the water site will not be discontinued, it will become more restricted. Currently, the windmill site is the only source of water for pastures at the southern end of Fish Lake Valley. It is anticipated that additional watering sites may be needed to offset new limitations. The additional sites could be used in conjunction with the windmill site to implement a rotational (as opposed to a tethered) grazing strategy. Spigots could be turned on and turned off. Cattle could be moved easily from one pasture to the next before impacts become too concentrated at any one location. Rangeland health within the allotment would improve.

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) and other federal and applicable state laws and regulations. The purpose of this document is to disclose and analyze the environmental consequences that are anticipated from the construction and maintenance of range improvements in the Deep Springs Valley and South Oasis grazing allotments.

1.2 Conformance with BLM Land Use Plans

The proposed action is in conformance with the following land use plans; California Desert Conservation Area (CDCA, 1980), as amended- specifically these two amendments: the Northern and Eastern Mojave Desert Management Plan (NEMO, 2002); and the Desert Renewable Energy Conservation Plan (DRECP, 2016).

The action is also in compliance with the Deep Springs and South Oasis Allotment Management Plans (AMPs) as approved in 1990. These plans have been reviewed, and it has been determined that the proposed action conforms with land use plans, terms, and conditions as required by 43 CFR §1610.5. The proposed action and modifications were specifically provided for the following land use plan decisions:

NEMO, 2002-

Cattle Grazing Use Guidelines in NEMO Desert Habitat, Section VI. A-E, summary-

Rangeland health assessments are conducted on a short term (1 year, utilization) basis and long term (10- year, trend) basis to provide assessments of overall allotment health. Particular emphasis may be placed on issues associated with areas where livestock congregate on the allotment. With respect to native species, alien and noxious plants should not exceed acceptable levels. Guidelines mandate monitoring and control of invasive plants.

DRECP, 2016-

DRECP designated the area outside of wilderness where this project takes place as general public (BLM) lands (GPL) that do not have a specific land allocation or designation associated with energy development, conservation, or recreation. Other designations in or adjacent to the proposed project include California Desert National Conservation Lands (CDNCL). Specific Conservation Management Actions (CMAs) were required as part of in DRECP. The project will adhere to applicable CMAs (see Appendix B- Applicable CMA Table).

This and other plans are publicly available at the California BLM website for land use planning at https://eplanning.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do.

1.3 Relationship to Statutes, Regulations, or Other Plans and Requirements

The BLM manages lands that produce significant amounts of forage utilized by wildlife, wild horses & burros, and livestock. The grazing of this forage for livestock use is managed in accordance with *Title 43, Subtitle B, Chapter II, Subchapter D, Part 4100 – Grazing Administration – Exclusive of Alaska* in the Code of Federal Regulations, and other directly relevant laws, regulations and policies. Table 1.3-1 lists these and explains their connection to the Proposed Action. This list is not exhaustive but includes what were found to be the most directly relevant.

Table 1.3-1 Directly Relevant Laws, Regulations, and Policies

Statute/Regulation/Policy	Connection to Proposed Action
Taylor Grazing Act of 1934 (Public Law 73-482) as amended	Establishes grazing districts in California subject to the authority of the Federal Grazing Service. This was later combined with the General Land office to become BLM. Regulates grazing on public land.
Wilderness Act of 1964 (Public Law 88-577)	Section 4(d)(4)(2) describes the circumstances in which livestock grazing may occur in wilderness areas.
National Historic Preservation Act of 1966 (Public Law 89-665) as amended	Section 106 of the National Historic Preservation Act (NHPA) requires agencies to make a reasonable and good faith effort to identify historic properties that may be affected by an agency’s undertakings and take those effects into account in making decisions. The BLM process for implementing this NHPA requirement is set forth in the <i>State Protocol Agreement Among the California State Director of the Bureau of Land Management and the California State Preservation Officer and the Nevada State Historic Preservation Officer (2019)</i> .
National Environmental Policy Act of 1970 (Public Law 91-190) as amended	Requires all federal agencies to analyze the environmental impacts of any proposed action affecting public lands or resources, to involve the public in decision-making, and to disclose environmental impacts to the public.

Statute/Regulation/Policy	Connection to Proposed Action
Clean Air Act of 1970 (Public Law 88-206) as amended	The Great Basin Valleys Unified Air Pollution Control District has state air quality jurisdiction over the project area. <i>See</i> section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.).
Wild Free-Roaming Horses and Burros Act of 1971 (Public Law 92-195) as amended	Authorized the BLM and the U.S. Forest Service to manage, protect and control of wild horses and burros on public lands.
Federal Land Policy and Management Act of 1976 (Public Law 94-579)	Authorizes BLM to permit grazing use on public land subject to environmental review.
Public Rangeland Improvement Act of 1978 (Public Law 94-514)	Sets policy to inventory, manage, maintain, and improve the condition of the public rangelands.
Colorado Wilderness Act of 1980 (Public Law 96-560) referring to “Grazing in National Forest Wilderness” (House Committee Report 96-617)	Clarifies the intent of Congress in allowing grazing in wilderness areas per the Wilderness Act of 1964. Originally interpreted and administered in reference to National Forest wilderness areas, the California Desert Protection Act of 1994 directly references these guidelines as the intent expressed for the administration of grazing within the Sylvania Mountain Wilderness and Piper Mountain Wilderness.
California Desert Protection Act of 1994 (Public Law 103-433)	Establishes the Sylvania Mountain Wilderness and Piper Mountain Wilderness; CDPA allows grazing and maintenance of range improvements to continue if established prior to passage of CDPA in 1994.
43 CFR Parts 6300 and 8560 Wilderness Management; Final Rule (December 2000)	Subpart 6304 – Regulations addressing Uses in the Special Provisions Section of the Wilderness Act, encompassing among other things, the administration of livestock grazing in wilderness, including the construction of new livestock management facilities (Section 6304.26).

1.4 Scoping of Issues

This project was formally proposed to BLM by the proponent at the March 2013 Deep Springs Resource Management Team (DSRMT) meeting. This is a team organized by the proponent including Forest Service, BLM, NRCS and CA Fish and Wildlife to serve as advisors on environmental issues. The DSRMT meets twice per year to discuss issues pertinent to grazing across the members' jurisdictions. Meetings include field visits to discuss resource issues related to Deep Springs Trustees' grazing allotments.

The proponents' needs and proposed range improvements were identified in consultation with the DSRMT during this meeting. Internal scoping was conducted with Ridgecrest Field Office (RIFO) Resource Specialists in Fall 2013 to identify potential resource issues and develop draft alternatives. This project was revisited during the April 2017 DSRMT meeting, and BLM presented on project alternatives during the April 2019 DSRMT meeting. An additional field visit between Deep Spring Trustees and the BLM occurred in June 2018. BLM conducted additional field visits in December 2018 and May-July 2020 to finalize the ID team Checklist and identify issues (see Sec. 1.5 Issues Identified Below).

A Notice of Proposed Action (NOPA) was mailed out to interested members of the Wilderness and Range communities in January 2014. A NOPA is sent to interested parties when an action affecting a Wilderness Area is proposed. BLM received two comment letters in response, identifying concerns with impacts to the Piper and Sylvania Mountain wilderness areas, including visual impacts and weed exacerbation, which were used to further develop the alternatives.

1.5 Issues Identified for Analysis

An environmental resources analysis was conducted through coordination with the BLM RIFO Interdisciplinary Team. Substantive issues discussed and potential impacts resulting from the Proposed Action and alternatives are summarized in the Interdisciplinary Team checklist, included as Appendix C. Resources present with the potential for significant impact from any of the alternatives are analyzed in detail in this EA. Resources either not present or present but not affected to a degree requiring detailed analysis, were not carried forward in this EA. Further rationale for determination for each resource is included in Appendix C.

Resources determined to be present with the potential for significant impact, which have been carried forward in this EA, are:

- Issue 1 – Biological Resources (including Sensitive Species and Vegetation)
- Issue 2 – Invasive Plants/Noxious Weeds
- Issue 3- National Conservation Lands
- Issue 4 – Rangeland Health Standards and Grazing
- Issue 5 – Soils
- Issue 6 -- Visual Resources
- Issue 7 -- Wilderness

Table 1.5-1 Resources that were eliminated from further consideration, and why, are:

<p><u>Air Quality</u></p>	<p>The project area is within the Great Basin Valleys Air Basin. It is regulated by the Great Basin Unified Air Pollution Control District (GBUAPCD), in which the primary air pollutant present is particulate matter (PM), and the vast majority of efforts go toward controlling this pollutant. This area is Unclassified/Attainment for the Federal PM-2.5 standard and Unclassified for the Federal PM-10 standard (CARB).³ Increased vehicle use for installing the new range improvements will be temporary and is not expected to place the basin in non-attainment. The amount of hauling will likely remain similar to the No Action Alternative because though the location of water sites will change, the number of livestock will not be different. The lessee will be required to comply with all GBUAPCD rules and regulations as a part of the operating procedures and environmental protection measures, therefore Air Quality will not be affected to a degree that detailed analysis is required.</p>
<p><u>Areas of Critical Environmental Concern (ACEC)</u></p>	<p>The White Mountain City ACEC is within the Northwest Pasture of the Deep Springs Valley allotment. The Powerline Troughs are proposed to be installed within that same pasture. There are no expected potential impacts to the ACEC because there is an existing trough site and it is</p>

	closer in proximity. It will not be affected to a degree that detailed analysis is required.
Cultural Resources	A total of eleven new proposed range improvements and four existing range facilities, for a total of 15 locations, were surveyed by BLM archeologists. Only three of these locations contain identified cultural resources, all prehistoric lithic debitage. These are: the proposed Deep Springs Trough #1 and #2, and the existing Two Tub Spring Development. Minor modification to the proposed location of the Deep Springs Trough # 1 and #2 would avoid causing effects to potentially eligible National Register Historic Properties. The installation of the Two Tub Spring Development during the 1980's caused an Adverse Effect upon a National Register eligible Historic Property, but the removal of the spring development as proposed would eliminate this Adverse Effect. Thus, this undertaking would not cause any Effects to Historic Properties.
Environmental Justice	The proposed action will not produce significant amounts of waste or hazards commonly associated with environmental justice concerns as described by the Environmental Protection Agency (EPA).
Farmlands (prime and unique)	There are no prime or unique farmlands (as designated by the Natural Resources Conservation Service) within the project area.
Floodplains	The project area is designated as area of minimal hazard (Zone X) by the Federal Emergency Management Agency (FEMA). Further analysis is not necessary.
Fuels and Fire Management	Improving the distribution of cattle on the South Oasis allotment may reduce the fuel load in certain locations, but the impacts of grazing are analyzed during the permit renewal process. The installation of these range improvements will not impact fuels/fire management to a degree that necessitates further analysis.
Geology/Mineral Resources/Energy Production	The Proposed Action does not impact any known geological feature, mineral resource, or potential for energy production in the project area. Most of the project area is withdrawn from mineral entry and have no claims.

Greenhouse Gas Emissions	The Proposed Action would not impact or contribute substantially to increase GHG emissions and does not meet the requirements for greenhouse gas reporting (https://www.epa.gov/ghgreporting). (https://www.epa.gov)
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	<u>/ghgreporting</u>). The limited amount of pollutants resulting from the installation of range improvements and seasonally hauling water would not impede the BLM and the State of California from meeting the air quality objectives or reductions in GHG emissions. The installation of pipelines will reduce the distance needed to haul water and result in less emissions related to Gilbert Canyon and the Deep Springs Troughs #1 and #2. Number of livestock will not change in response to the Proposed Action. These resources will not be affected to a degree that necessitates further analysis.
Human Health and Safety	No part of the proposed action has been identified as having an impact to human health and safety in the project. Further analysis will not be carried forward.
Lands/Access	Access to project areas would be along existing roads. No conflicts with other land uses have been identified. These resources will not be carried forward for further analysis.
Native American Religious Concerns	Based upon the previous 15 years of government to government consultation by the BLM with Tribes and Tribal communities within the region, there are no Tribally important or significant sites, resources, features, or locations that have been made known to the BLM that occur within the boundaries of these proposed range improvement projects.
Paleontology	The various components of this proposed range improvement project have no potential to impact vertebrate fossils or deposits
Recreation	The Proposed Action will not impact the routes used for recreational purposes in the project area to the degree that needs in depth analysis. These resources will not be carried forward for analysis. The troughs in the Piper Corridor may impede some jeep trail usage when the cattle are watering at the site but it will be minimum and the duration will be short.
SocioEconomics	While the Proposed Action may provide short-term economic benefit to the ranch equipment suppliers used to purchase materials for this project, impacts will not be significant enough to warrant a detailed analysis.
Threatened and Endangered Species	No federally threatened, endangered, or proposed for listing plant or animal species have been identified within or near the project area.

Wastes- Hazardous or Solid	No wastes are present or expected to be produced from this project.
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<u>Water Resources/Quality (drinking/surface/ground)</u>	All proposed alternatives are designed to exclude cattle from riparian areas and prevent potential water quality impacts due to the presence of fecal coliform. Not affected to a degree that detailed analysis is required.
<u>Waters of the U.S.</u>	The proposed action is located within the Fish Lake Valley, Deep Springs Valley, and Eureka Valley hydrographic basins. There are no Traditionally Navigable Waters or Relatively Permanent Waters within the project footprints of the proposed range improvements. No impacts to Waters of the U.S. are anticipated.
<u>Wetland/Riparian Zones</u>	These resources will not be affected to a degree that detailed analysis is required at this time.
<u>Wild and Scenic Rivers</u>	The proposed range improvement sites are located outside of any designated or proposed Wild & Scenic River corridor, i.e., Cottonwood Creek.
<u>Wild Horse and Burros</u>	The Piper Mountain Wild Horse and Burro Herd Area / Herd Management Area with an AML of 17 horses and 82 burros is within the Deep Springs and South Oasis Allotments. The current population of burros is 0 and horses are very seldom seen. The horses are typically found more to the north of the California / Nevada border within the Fish Lake Valley Horse Herd Area, where there is an estimated 120 horses. These resources will not be affected to a degree that detailed analysis is required.
<u>Areas with Wilderness Characteristics</u>	The Powerline Troughs site is approximately ¼ mile away from lands with wilderness characteristics in the Northwest Pasture. Livestock have been actively moved throughout this pasture without the installation of this site, but the Proposed Action may increase the frequency and distribution of use. However, these impacts would be distributed across a broad area and would not make enough of a difference where grazing has occurred with moderate intensity over the course of many years, to merit additional analysis.

1.5 Decision to be Made

The BLM will decide whether or not to authorize the construction of any combination of the new range improvement features; and the maintenance of those features. The BLM will not be deciding whether or not to graze on the Deep Springs Valley and South Oasis allotments in this document.

Chapter 2. Proposed Action and Alternatives

2.1 Alternative 1: Lessee's Proposed Action

The Lessee's Proposed Action alternative (Alternative 1) represents Deep Springs Trustee's range improvement proposal, originally reviewed, and submitted to BLM in March 2013, and revised in May 2019. Alternative 1 aims to balance range management capabilities. It addresses concerns about the spread of invasive species, particularly Russian thistle (*Salsola tragus*). It also acknowledges the lessee's reliance on the South Oasis allotment during warm season months (see Appendix A- Maps).

The following range improvement features have been proposed by the lessee and are incorporated into Alternative 1:

2.1.1 New Range Improvement Features

1. Deep Springs Troughs #1

This location is approximately 0.9 miles to the southwest of Deep Springs College private property along the Lake Road running northeast to southwest along the western boundary of the Piper Mountains Wilderness in the Mid-East Pasture. Two 500-gallon troughs would be offset approximately 300 feet to the west of the centerline of the road in a previously disturbed, natural clearing. Cattle currently trail and graze across the site. Prior to the installation of the Deep Springs Pipeline, a new two-track disturbance may be created along the shortest possible distance from the road to allow for a water haul truck to deliver water to the troughs. The troughs would be outfitted with wildlife escape ramps and float valves.

2. Deep Springs Troughs #2

This location is approximately 3.6 miles to the southwest of Deep Springs College private property along the Lake Road running northeast to southwest along the western boundary of the Piper Mountains Wilderness in the Mid-East Pasture. Two 500-gallon troughs would be offset approximately 450 feet to the west of the centerline of the road in an area of sparse scrub vegetation. Prior to the installation of the Deep Springs Pipeline, a two-track disturbance may be created along the shortest possible distance from the road to allow for a water haul truck to deliver water to the troughs. The site currently has active cattle trailing through the it, but has not been previously disturbed. The troughs would be outfitted with wildlife escape ramps and float valves.

3. Deep Springs Pipeline

The pipeline would consist of approximately 3.6 miles of 1¼" black high-density polyethylene pipe beginning on private property and traveling south to Deep Springs Troughs #1 and then to Deep Springs Troughs #2. No significant amount of new surface disturbance is expected to occur as the pipeline would be buried within the Lake Road roadbed. Short, temporary trenches would be dug to bury feeder lines from the pipeline to the troughs. These trenches would be subsequently filled-in and allowed to revegetate on their own.

4. Powerline Troughs

This location is within the Northwest Pasture at northern end of Deep Springs Valley, approximately 450 feet to the northwest of CA-168 as the highway begins to head uphill toward Gilbert Summit, and adjacent to an existing power line road. This water haul site would serve the northern portion of the Northwest Pasture, as the next closest watering site is approximately one mile to the southwest along the Wyman Creek Pipeline. Two 1000-gallon troughs would be offset approximately 50 feet to the northwest of this road. The site is currently undisturbed, and if necessary, a two-track disturbance may be created, along the shortest possible distance from the road, to allow for the water haul truck to deliver water to the troughs. The troughs would be outfitted with wildlife escape ramps and float valves.

5. Gilbert Summit Corral

The proposed corral would be located at Gilbert Summit, approximately 305 feet south of CA-168 and 271 feet west of the start of the Piper Corridor Jeep Trail. The corral would be built entirely outside of wilderness. It would be located north of the wilderness boundary and west of the start of the jeep trail, in a low-lying area that is sparsely vegetated and a little less visible from the highway. The structure would be built of wood posts and poles or planks and would resemble other corrals commonly found in the area.

The corral would be used solely for paddocking wrangler's horses, while cattle are grazing in the area. This corral is near the wranglers' campsite and would serve as an administrative support structure for moving and managing livestock between the Deep Springs and South Oasis allotments.

6. Gilbert Summit Tank

This location is adjacent to the Piper Corridor Jeep Trail and is approximately 0.5 miles from CA-168. The jeep trail provides vehicle access across the Piper Mountains Wilderness through a narrow non-wilderness (cherry-stemmed) corridor. The tank would be located off to the side of the route immediately north of the wilderness boundary. (The tank would also be located outside of wilderness.) This tank would be low-profile and/or partially buried with an approximate 3,000-gallon capacity and would be colored to reduce visual impacts. Water would be hauled to this tank via truck. From the tank, the water would flow through the proposed Gilbert Canyon Pipeline to the established Gilbert Canyon Tank and Trough, and then from there, it would flow via an extension of the pipeline to a terminus at two new troughs (Gilbert Canyon Troughs #2) further down the canyon.

7. Gilbert Canyon Pipeline

The pipeline would run from the Gilbert Summit Tank approximately 1.5 miles down to the existing Gilbert Canyon Tank and Trough, and then approximately an additional 1.4 miles further down to Gilbert Canyon Troughs #2. The pipeline would consist of 1¼" black high-density polyethylene pipe, placed directly adjacent to the road surface within the non-wilderness cherry stem. No ground disturbance would occur as the pipeline would sit on the surface and be placed so as to avoid damage to vegetation. Rocks and braces would be placed to prevent drift of the pipeline. The new proposed tank (Gilbert Canyon Troughs #2) and pipeline would eliminate the need to haul water down to the existing tank and trough and to the new proposed troughs further down the canyon.

8. Gilbert Canyon Troughs #2

This location is within South Oasis Pasture #4, close to Pasture #5, and approximately 2.5 miles southeast of CA-168 within the non-wilderness cherry stem along the Piper Corridor Jeep Trail. Two 500-gallon troughs would be offset approximately 15 feet to the east of the jeep trail, just outside of the wilderness boundary. The troughs would be at the terminus of the Gilbert Canyon Pipeline. The site is in an active wash bottom where vegetation tends to be patchy and flooding often occurs. The site is mostly intact but has been minimally disturbed by vehicle use on a short two-track extending off of the jeep trail. The troughs would be colored to blend in with the surroundings. The troughs would be equipped with wildlife escape ramps and float valves.

9. South Oasis Troughs #1

This location is within South Oasis Pasture #1, and adjacent to North Eureka Valley Rd, approximately 1.7 miles to the southeast of the junction with CA-168. Two 1000 gallon troughs would be offset approximately 406 feet -east of the North Eureka Valley Rd, and approximately 250 feet south of the range fence separating the south end of the Oasis Ranch allotment and the west portion of South Oasis Pasture #1. The site has some signs of active cattle trailing, but these signs are not prevalent. An infrequently used two-track runs along the fence line. This two-track would be used to access the site from the Eureka Valley Road. From the fence line, a new, short vehicle route would be created to allow the water haul truck to deliver water to the troughs. The troughs would be outfitted with wildlife escape ramps and float valves.

10. South Oasis Troughs #2

This location is within South Oasis Pasture #3, at the southwest end of Fish Lake Valley, and adjacent to North Eureka Valley Rd, approximately 6 miles to the southeast of the junction with CA-168. Two 1000- gallon troughs would be offset approximately 50 feet to the southwest of North Eureka Valley Road. This would place the troughs on Inyo

County's proposed road Right Of Way and within the non-wilderness cherry stem that extends for 100 feet on either side of the road centerline. This location is approximately 0.3 miles northwest of the cattle guard and range fence that separates the South Oasis and Last Chance allotments. The site is currently undisturbed and a two-track disturbance would be created within the footprint of the larger disturbance created by cattle use of the troughs to allow the water haul truck to deliver water to the troughs. The troughs would be outfitted with wildlife escape ramps and float valves.

11. South Oasis Eastside Troughs

Troughs would be installed to improve cattle distribution in Pasture #1 of the South Oasis allotment. The troughs would be placed directly on the west side of the range fence separating the South Oasis and Last Chance allotments. Water would be supplied by truck and hauled to the Last Chance side of the fence line and then siphoned over to the troughs from there. The troughs would be outfitted with wildlife escape ramps and float valves.

Table 2.1-1 Proposed Range Improvement Locations* (see Appendix A- Maps)

Range Improvement Feature	Northing*	Easting*	Township, Range, and Section**
1.Deep Springs Troughs #1	412071	4134164	T7S, R36E, Section 11
2.Deep Springs Troughs #2	411012	4130042	T7S, R36E, Section 27
3.Deep Springs Pipeline	N/A	N/A	T7S, R36E, Section 11, 14, 23, 26 & 27
4.Powerline Troughs	414063	4141322	T6S, R36E, Section 24
5.Gilbert Summit Corral	416990	4142936	T6S, R37E, Section 17
6.Gilbert Summit Tank	417401	4142504	T6S, R37E, Section 17
7.Gilbert Canyon Pipeline	N/A	N/A	T6S, R37E, Sections 15, 16, 17, 22 & 27
8.Gilbert Canyon Troughs #2	419692	4140039	T6S, R37E, Section 27
9.South Oasis Troughs #1	421835	4143524	T6S, R37E, Section 11
10.South Oasis Troughs #2	425235	4138717	T6S, R38E, Section 30
11.South Oasis Eastside Troughs	425748	4143652	T6S, R38E, Section 8

*Site coordinates in NAD1983 – UTM Zone 11S

**All sites referenced to the PLSS Mt. Diablo Meridian

*All locations are approximate

2.1.2 Existing Range Improvement Features

1. Fish Lake Valley/South Oasis Allotment Windmill

The windmill is working and is presently the only watering location in the lower part of the South Oasis allotment. This windmill has also been called the South Oasis Allotment Windmill and is where the weed treatments are slated to occur, primarily within two large flanking areas that will be fenced off from cattle entry and use. It is over-utilized and suffers from a large target zone of trampled and over-grazed vegetation. The proposed action would reduce the amount

of use at this location in exchange for one, two or all of the new troughs proposed for the South Oasis Allotment. The new troughs that could be used to offset changes at the South Oasis Windmill Site include: South Oasis Troughs #1, South Oasis Troughs #2, and the South Oasis Eastside Troughs.

With respect to weed treatments, BLM is planning a demonstration project addressing the Russian thistle presence at the windmill site involving integrated pest management techniques. While Deep Springs College will be offered the opportunity for consultation, cooperation, and communication, BLM will plan, initiate, and bear the costs of this project. Some aspects of the demonstration project have already been approved, others are awaiting analysis and approval. A Decision Record approving construction of two Russian thistle exclusion fences at the windmill site was signed on April 6, 2020 (See DOI-BLM-CA-D050-2020-0016-EA). Methods proposed for weed control (mechanical, chemical, and cultural) are covered under the field office’s current Integrated Weed Management Plan and EA (DOI-BLM-CA-2011-0034). These methods will be used at this site as well as at other weed sites in the area on BLM lands managed by the Ridgecrest Field Office. Additional methods and additional herbicides may be used at this and other sites in the future. New methods and herbicides are currently being evaluated and will be incorporated into an updated Programmatic Integrated Weed Management Plan (EA) for the field office.

2. Gilbert Canyon Tank and Trough

Midway down the Gilbert Canyon Pipeline is an existing water tank and trough which serves the upper (north) pasture in Gilbert Canyon. It has been in place since a few years after wilderness designation. (These developments were installed along the corridor as a trade-off for swapping out a water haul site located east of the corridor deep in wilderness.) The proposed new tank and pipeline would service this tank and trough from Gilbert Summit, eliminating the need to haul water further down the corridor. The pipeline would then be extended south from the existing tank and trough to its final terminus at the proposed new Gilbert Canyon Troughs #2 site.

Table 2.2-1 Relevant Existing Range Improvement Locations⁺

Range Improvement Feature	Northing*	Easting*	Township, Range, and Section**
1.Fish Lake Valley Windmill	422981	4141689	T6S, R37E, Section 24
2.Gilbert Canyon Tank & Trough	419450	4141996	T6S, R37E, Section 15

*Site coordinates in NAD1983 – UTM Zone 11S

**All sites referenced to the PLSS Mt. Diablo Meridian

+All locations are approximate

2.1.3 Summary of Alternative 1 Project Description

This alternative would authorize the installation of all proposed new range improvements in the Deep Springs and South Oasis allotments (Table 2.4-3). Livestock use would continue at the Fish Lake Valley/South Oasis Windmill site, albeit temporarily in a more restricted way. The invasive species management plan would be established at all new range improvements. Implementation of the invasive species management plan at new sites would be the responsibility of the permittee. This alternative would provide for more flexibility than the other two alternatives with respect to adaptive management, particularly on the South Oasis allotment, where three new watering sites in addition to the windmill site would be developed for use. Pickup trucks and a small excavator would be used to install the range improvements as needed. A water tender would be used to haul water to new water haul sites. Use of sites to be serviced by pipeline would not all have to await use until the requisite pipelines are installed. Deep

Springs Troughs #1 and #2, the Powerline Troughs, and all proposed South Oasis Troughs would be available for use immediately as simple water haul sites, without benefits of a pipeline. Only the Gilbert Canyon #2 Troughs would be placed on hold until the supply pipeline and associated tanks are completed. These improvements would be installed in phases as funding allows.

2.1.4 Design Features, Operating Procedures, and Environmental Protection Measures

The range improvement project would be implemented using the following measures. BLM or a representative will monitor construction to ensure the measures are followed.

1. Water troughs and two-track disturbances will be placed within site polygons previously surveyed by a BLM archaeologist to identify and avoid cultural resources and agreed upon by the lessee.
2. In the event that cultural or paleontological resources, not previously identified, are discovered during development activities, operations in the vicinity of the discovered resources shall cease immediately and the BLM archaeologist will be notified.
3. No blading of access routes and the trough locations is permitted.
4. Garbage shall be kept in closed containers and properly disposed of.
5. Vehicular vegetation disturbance will be limited to singular two-tracks and a 50-foot diameter around the trough locations, except where vehicles are restricted from utilizing a full 50-foot diameter based on the location of wilderness boundaries.
6. BLM and the lessee will monitor use of the range improvement sites by cattle to identify any problems or excessive disturbance and report to the parties involved on possible corrective actions.
7. The lessee is required to follow all Great Basin Unified Air Pollution Control District rules and regulations, including 401- Fugitive Dust.
(https://www.gbuapcd.org/Docs/PermittingAndRules/RulesAndRegulations/GBUAPCD_Rules%20and%20Regulations.pdf).
8. Invasive species monitoring and management will occur at all new range improvement sites, as described below:

- ***Invasive Species Management Plan***

Watering sites are susceptible to invasive species spread due to repeated disturbance in locations where livestock will congregate. The ***Invasive Species Management Plan***, a programmatic Field Office-wide plan, completed in 2011 (see DOI-BLM-CA-2011-0034), has been developed to allow watering site facilities installation while monitoring and preventing spread of invasive species, particularly Russian thistle (*Salsola tragus*). The plan's application as a standard operating procedure to prevent the spread of weeds is incorporated into this Proposed Action. The relevant actions are as follows:

- Since weed problems, especially Russian thistle, are quite substantial and beyond the capacity of the College to address at many of the existing watering sites on BLM lands, BLM will assume primary responsibility for monitoring, treating, and controlling weeds at **existing** facilities (including the Fish Lake Valley/South Oasis Windmill site). BLM will of course, continue to consult and welcome the assistance of the Permittee at all and/or any of these existing facility sites.
- The permittee will assume primary responsibility for monitoring, treating, and controlling weeds at any proposed and subsequently approved **new** watering site facilities.
- Monitoring for existing and new watering site facilities will take two forms:

- At a minimum, each new water site will be monitored using photo points associated with a short description of site conditions. Frequency of monitoring will be established between BLM and the permittee and may be increased or decreased depending on monitoring needs. The recommended frequency at time of signing this document will be immediately prior to livestock use, during livestock use, and immediately following livestock use.
- In addition, monitoring would be scheduled to correspond to the most treatable stages of pest development, i.e., as seedlings are emerging and later, during the 2-3 month period when plants are starting to flower but before they go to seed. Responsible parties would be expected to act on what they find, i.e., to start hand-pulling seedlings from March-June, and then later, to mow or weed-whack (outside of wilderness) and to lop off and bag mature plants (in wilderness) found on-site as they flower but before they go to seed (from mid-July through September). BLM and the permittee will coordinate removal efforts to the extent necessary to get the job done.
- The primary method of removal in any unfenced areas open to cattle use would be to use mechanical (not chemical) means, i.e., hand-pulling seedlings, mowing or weed-whacking (outside wilderness) and lopping and bagging (inside wilderness) to detach/remove mature (flowering) plants before they go to seed. These methods would conform to the permittee's organic certification.
- Within agreed to treatment areas fenced off from cattle use (the Fish Lake Valley/South Oasis Windmill site), and in areas outside of the permittee's allotments, other methods to combat Russian thistle may be employed, including herbicide use.

In addition, the DRECP Conservation Management Actions that are applicable to this project can be found in Appendix B.

The BLM began treating Russian thistle in the project area in 2019, under the programmatic Invasive Species Plan. A pilot project to address the Russian thistle infestation at the Fish Lake Valley/South Oasis Windmill site is ongoing. This pilot project intends to address large infestations, which remain from prior grazing use. The current permittee will address new weed populations. The pilot project includes two cattle enclosure fences, which have been approved to be built around the greater mass of the infestations at the Fish Lake Valley windmill site per BLM environmental decision DOI-BLM-CA-D050-2020-0016-EA. These fences will be temporary and will be removed upon weed removal and successful restoration of these sites. The fences will temporarily stop disturbances caused by cattle use and will enable BLM to use herbicides as well as mechanical means to get the Russian thistle and other weeds found on-site there under control. Due to the organic certification that Deep Springs Trustees currently holds, there will be a buffer area inside the fence line that will not be treated due to the cattle possibly reaching underneath the fence to graze.

BLM is committed to working cooperatively with Deep Springs Trustees on weed problems within their allotments. However, BLM reserves the right to change weed management strategies as needed, switching from a reliance on mechanical removal and cultural practices alone to control weeds in unfenced areas, to herbicide use or some combination of mechanical, cultural, and herbicidal methods, if weed problems persist and BLM's, and the Permittee's best efforts demonstrate that the weeds cannot be controlled by use of mechanical and cultural means alone.

2.2 Alternative 2: Limited Range Improvements

The Limited Grazing Alternative (Alternative 2) further incorporates resource concerns expressed by members of the public in response to the NOPA (February 7, 2014, NOPA CA-D05000-14-01), and members of the interdisciplinary team. This alternative is similar to the Lessee's Proposed Alternative (Alternative 1), but it takes additional steps to mitigate potential invasive species and wilderness impacts. Under this alternative, South Oasis Trough #2, located along the North Eureka Valley Road within the 100 foot of the centerline wilderness setback, would **not** be approved

for use as a new water haul site. No troughs proposed for use with new pipelines would be used as water haul sites before the pipelines are installed. Use of these sites would commence only upon completion of the pipelines. Some trough sites would be relocated, farther away from known weed vectors and populations, while at others, vehicle trips would be kept to the minimum necessary to install the troughs rather than relying on them to continuously resupply the troughs with water. Instead, water would be piped into these sites from the adjacent allotment by extending existing pipelines servicing other troughs in the same general vicinity. This would remove the need to establish a new two track or to drive into a more distant site on a regular basis to deliver water.

Under this alternative, the Deep Springs Allotment would acquire three new water sources and a total of five new improvements. The South Oasis Allotment would also acquire three new water sources and a total of five new improvements. Pastures 3 and 5 of the South Oasis Allotment would remain waterless. However, Pastures 1, 2, and 4 would gain additional water sources, at least one of which would be located far enough south to help service Pasture 5. The Fish Lake Valley/South Oasis Windmill site would remain open and available for use as a centrally located watering site for Pastures 2 and 3. In sum, this alternative would approve all but one of the new proposed range developments, some under slightly different conditions, while minimizing visual impacts, preventing new weed introduction and spread, and otherwise, limiting impacts to wilderness.

Design Features, Operating Procedures, and Environmental Protection Measures (2.1.4) would be the same under both alternatives. Plans for Existing Range Improvement Features (2.1.2) and Implementation of an Invasive Species Management Plan (2.1.4) would also remain the same under both alternatives.

2.2.1 Summary of Alternative 2 Project Descriptions

1. Deep Springs Troughs #1: There would be no changes in this alternative from changes proposed in Alternative 1, except that the troughs would not be put into use until the pipeline servicing them is completed. Using the site as a water haul site before a pipeline is in place to service the troughs, would defeat the primary purpose of the pipeline. A buried pipeline in place of a new two-track would soften visual impacts by retaining the natural vegetation buffer around the site and limiting new disturbances to the area surrounding the troughs. Not driving into the site on a regular basis after traveling down a road (the Lake Road) known to be a weed vector would support rather than undercut efforts to prevent Russian thistle introduction and spread at this site.

2. Deep Springs Troughs #2: There would be no changes in this alternative from changes proposed in Alternative 1, except that the troughs would not be put into use until the pipeline servicing them is completed.

3. Deep Springs Pipeline: There would be no changes in this alternative from changes proposed in Alternative 1.

4. Powerline Troughs: There would be no changes in this alternative from changes proposed in Alternative 1.

5. Gilbert Summit Corral: There would be no changes in this alternative from changes proposed in Alternative 1. The corral would be located outside of wilderness and would be constructed out of wood and wire in keeping with other corrals in the area.

6. Gilbert Summit Tank: There would be no changes in this alternative from changes proposed in Alternative 1. The tank would be placed in the small turnaround near the summit of Gilbert Pass that is outside of wilderness. Its proximity to the highway would make it easy for the lessee to pull in and empty water into the tank so it can be piped down to the other tanks and troughs.

7. Gilbert Canyon Pipeline: There would be no changes in this alternative from Alternative 1 with respect to location and purpose of the pipeline. However, there would be changes to how the pipeline would be installed. Instead of being laid down on the ground alongside the jeep trail where it would be visible and subject to warming by

the sun, it would be buried in and/or alongside the jeep trail with a trenching tool. This work would be performed outside of wilderness, within the 30-foot setback of the centerline of the jeep trail. Vegetation removal would be kept to the bare minimum necessary. Once buried, the pipeline would be allowed to revegetate on its own, subject to periodic, small disturbances required for repair.

8. Gilbert Canyon Trough #2: There would be no changes in this alternative from changes proposed in Alternative 1.

9. South Oasis Troughs #1: There would be no changes in this alternative from Alternative 1.

10. South Oasis Troughs #2: In this alternative, South Oasis Troughs #2 would **not** be approved for use as a new water haul site. The proposed new cattle watering site is only 2 miles south of the Fish Lake Valley/South Oasis Windmill site, a new weed project site encompassing nearly 300 acres of Russian thistle. The troughs would be located within 50 feet of the North Eureka Valley Road, a known vector for Russian thistle infestation and spread. The current Russian thistle infestation extends south along the road from the windmill site to within 1 mile of the proposed new water haul site. In this location, the North Eureka Valley Road passes between two wilderness areas, the Piper Mountains Wilderness and the Sylvania Mountains Wilderness. Both wildernesses have been impacted by Russian thistle carried along this route. The troughs would be located on the Piper Mountain Wilderness (west) side of the road, directly across from the Sylvania Mountains Wilderness. They would be placed 50 feet from the centerline of the road within the 100' of the road centerline wilderness setbacks. In this location, new impacts from concentrated cattle use at the watering site would be expected to extend into both wilderness areas.

The South Oasis Trough #2 site would not be approved due to concerns that it would diminish visual resources and wilderness character in the surrounding area, and would very likely result in a new infestation of Russian thistle that could spread deeper into wilderness.

11. South Oasis Eastside Troughs: In this alternative, South Oasis Eastside Troughs would be relocated (moved further away from the fence line) due to the Russian thistle infestation at the adjacent watering site on the opposite (Last Chance Allotment) side of the fence. The problem is exacerbated by a nearby drainage extending from the Last Chance side of the fence where Russian thistle is a problem into the South Oasis allotment. The new proposed trough site would be moved further away from the fence line and deeper into the South Oasis Allotment. This new site would be moved 400 feet back from the fence line and allotment boundary to provide a healthy vegetation buffer between the new disturbance it would cause and the weed site on the opposite side of the fence. The troughs would also be set up on better, more durable, soil. The troughs would be painted to blend into the natural surroundings.

Vehicle access to the troughs would be via a barely discernible two track running alongside the allotment boundary fence on the South Oasis Allotment side of the fence line. This route would be accessed from the fence's intersection with the Sylvania Canyon jeep trail coming from the windmill site, not from the Sylvania Canyon Road and Nevada Highway. As the trough site is set back from the fence line at some distance, some additional cross-country travel would also need to be permitted. The route would be used for initial placement of the troughs and occasional maintenance. Water would be supplied to the site via a new pipeline extending from the existing pipeline along the fence that supplies water to the troughs within the Last Chance Allotment.

Project	Alt 1-Proposed Location	Alt 2- Proposed Location
South Oasis Eastside Troughs	37.43657, -117.83982	37.43635, -117.84150

2.3 Alternative 3: No Action

Consideration of the No Action alternative forms the basis from which all impacts are considered. This would mean a continuation of present management policies. Under the No Action alternative, none of the proposed range improvements would be constructed and current levels of use and impacts at existing water sites would continue, no

actions would be taken at any existing range improvements beyond regular maintenance, and no new mitigation measures would be implemented.

2.4 Alternatives Rejected from Further Analysis

Four Alternatives, listed below, were considered but rejected because they do not meet the purpose and need for BLM to have more flexible management capability to reduce impacts at existing watering sites and protect resources, and to allow for the more even distribution of cattle throughout the Deep Springs Valley and South Oasis allotments.

1. **Grazing in the Winter Months-**The permittee holds a year-round grazing permit, and currently can graze any portion of the allotments that improvements are being made on at any time desired. Despite having a year-round season of use on the lease, South Oasis allotment has primarily been utilized during the summer months since the early 2000s. This restriction has been due to limitations from the lessee's grazing operations. However, in order to change this permanently, it requires a permit renewal process, which was last completed in 2018. Mitigation can be made currently to create a grazing rotation schedule to ensure that not one area is being grazed too much or too little, and to give proper rest to those pastures or areas that need it most. As part of the scoping process, BLM has proposed Deep Spring Trustees reexamine their options regarding use on their BLM allotments. The interdisciplinary team developed a briefing explaining the rationale for modifying the lessee's grazing rotation (Appendix E). BLM has requested Deep Springs Trustees take advantage of their year-long season of use capabilities for adaptive management and transition away from solely grazing South Oasis allotment during the summer. Year-long season of use is analyzed during grazing permit renewal and is already approved. This flexibility exists in the current lease and the lessee may make these changes at any time. BLM and Deep Springs will coordinate to develop these changes in conformance with the Deep Springs and South Oasis Allotment Management Plans (Appendix F). Any permanent modification to season of use required by BLM would have to be analyzed during the permit renewal process.
2. **Eliminating Pipelines from proposal-** This alternative was rejected from further analysis due to the location in which the troughs have been located. This would require more driving on undisturbed ground or through rough terrain to reach and would create more disturbance. Pipelines give the option to transport water without having to drive into areas where there either are no roads, or roads are not viable for driving.
3. **Eliminating trough locations-** This alternative was rejected due to the current placement of troughs. The lessee thought about the locations where the cattle are not grazing due to a lack of water, therefore, not using all of the available ground to use. If the troughs were not placed in the areas they are, those grazing areas are not being used, which the lessee has a right to use. Cattle only stray a few miles from water sources, and areas of the grazing allotments produce viable forage for grazing and need a water source closer by. So these trough locations are vital to the rancher and benefit the BLM range health.
4. **Fire as a weed treatment:** Weed treatments are listed in another Environmental Assessment. This Environmental assessment is for installation and maintenance of range improvements and therefore this is not within the scope of this EA. A prescribed burning EA would need to be completed to be accomplished.

2.3 Alternative Summary

Table 2.5-1 Alternative Summary

Range Improvement Feature	Alternative 1 - Proposed Action	Alternative 2 – Limited Range Improvements	Alternative 3 - No Action
Deep Springs Troughs #1	Install	Install	Do Not Install
Deep Springs Troughs #2	Install	Install	Do Not Install
Deep Springs Pipeline	Install	Install	Do Not Install
Powerline Troughs	Install	Install	Do Not Install
Gilbert Summit Corral	Install	Install	Do Not Install
Gilbert Summit Tank	Install	Install	Do Not Install
Gilbert Canyon Pipeline	Install	Install	Do Not Install
Gilbert Canyon Troughs #2	Install	Install	Do Not Install
South Oasis Troughs #1	Install	Install	Do Not Install
South Oasis Troughs #2	Install	Do Not Install	Do Not Install
South Oasis Eastside Troughs	Install	Install (at new location)	Do Not Install
Fish Lake Valley/South Oasis Windmill	Continue Cattle Use with Temporary Limited Access	Continue Cattle Use with Temporary Limited Access	Continue Cattle Use with Temporary Limited Access
Gilbert Canyon Tank & Trough	Continue Use	Continue Use	Continue Use
One Tub Spring Development	Repurpose	Repurpose	No Action
Two Tub Spring Development	Repurpose	Repurpose	No Action

3.0 Affected Environment and Environmental Consequences

Introduction to Affected Environment

This section presents a concise assessment of changes to the human environment that are reasonably foreseeable and have a close causal relationship to the proposed action and alternatives and may include effects that are later in time or farther removed in distance from the proposed action and alternatives. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. This section also presents the environmental consequences relative to the issues warranting further analysis identified in Sec. 1.5. The following information regarding past, present, and future relevant actions for effects applies to all alternatives, and for all resource impacts discussed below:

Past and Present Relevant Actions

Livestock grazing has been authorized in South Oasis and Deep Springs allotments for over 40 years and will likely continue to be authorized in the future. •

Reasonably Foreseeable Relevant Actions Not Part of the Proposed Action •

Deep Springs College plans to initiate, with BLM approval, a grazing rotation schedule (see Appendix F for the current permitted plan and Appendix E for the BLM suggested rotation schedule).

General Information

The project area is primarily located in the Deep Springs Valley, Gilbert Canyon (Piper Corridor), and Fish Lake Valley in eastern Inyo County, CA. Elevation ranges from 4500-6900 feet, and average annual precipitation is 6.01 inches at Deep Springs College and 4.99 inches at Dyer, NV (Western Regional Climate Data 2014). The closest cities are Big Pine, CA, 29 miles to the southwest, and Dyer, NV, 27 miles to the north. Maps are attached of the area; the range improvement projects and important boundaries. (Appendix A- Maps).

A Summary Table of Impacts per action alternative and each range improvement can be found in Appendix H.

3.1 Biological Resources (Special Status Wildlife and Plant Species, Vegetation Community)

3.1.1 Affected Environment

Special Status Wildlife Species:

Desert bighorn sheep (*Ovis canadensis nelsoni*): The North Mojave metapopulation of desert bighorn sheep move into the valley to drink at Deep Springs Lake. In 1995 and 2000, the population within the Deep Springs area was estimated to be at less than 25 individuals (Epps et al., 2003). Periodically, they have been observed on the Deep Springs Allotment east of Deep Springs Lake in the Piper Mountains.

Bat species: The following special status bat species have been documented near Deep Springs College in the vicinity of the allotment: Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), western small-footed myotis (*Myotis ciliolabrum*) and long-eared myotis (*Myotis evotis*). These bat populations depend on a diversity of insect and invertebrate prey. Vegetation needs to be sufficient to provide the diversity of insects, spiders, and other invertebrates that comprise the bats' diets.

Migratory and breeding birds: All native bird species on the allotments are protected under the Migratory Bird Treaty Act, but some have additional status. Raptors use the upland primarily for hunting prey. Thus, they require a healthy vegetative community that produces an abundance of rodents, rabbits, and other prey species. Swainson's hawk (*Buteo swainsoni*), a BLM sensitive species, nests on the periphery of riparian areas and agriculture fields and forages over a wide area. In addition to resident bird species, an abundance of migratory bird species use the area as they pass through the area in spring and fall.

Burrowing owl (*Athene cucularia*): The burrowing owl is a BLM Sensitive Species and a California Species of Special Concern that is a year-around resident in the general area. Burrowing owls require a productive vegetative community around their nest because they do not forage great distances. They do, however, prefer shorter vegetation around their nest sites so they can easily see their prey.

Black toad (*Bufo exsul*): The black toad is listed as threatened by the California Department of Fish and Wildlife (CDFW) and is a BLM Sensitive Species. Although various population studies indicate a stable population, the black toad has among the smallest range of any North American anuran, which puts the species in a potentially perilous position, especially considering that its required aquatic habitat is surrounded by arid lands (Emery, 2019). A collaborative census performed in a portion of the range of the toad in 1978 estimated a population size of 7,897 to 9,744 toads. California Department of Fish and Wildlife, along with partners, surveyed this population in the same area in 1999 and estimated 8,419 toads (Emery, 2019). They are only found within the Deep Springs Valley and the Saline Valley in California and their habitat occurs along water courses associated with wet meadow habitat. They can be found on dry sandy soil around springs. Habitat of this type occurs within the same grazing allotment (Deep Springs Valley) but is not proximal (>1-mile) or adjacent to the proposed project sites. Furthermore, the majority of black toad observations and habitat presence occurs on state- or privately-owned parcels.

Vegetation Community and Special Status Plant Species:

The project area is located within the East of the Sierra Nevada (SNE) region of the Great Basin Floristic Province. This region has a wide elevational range and supports primarily a mosaic of sagebrush steppe, pinyon/juniper woodland, and cottonwood-dominated riparian vegetation. At the southern edge of the region, there is a gradual transition zone to the Mojave Desert region of the Desert Floristic Province, with creosote bush and white bur-sage dominated scrub vegetation.⁴

The proposed project area is composed primarily of the Low Sage (LSG), Sagebrush (SGB), and Alkali Desert Scrub (ASC) vegetative communities, with representative species being four-wing saltbush (*Atriplex canescens*), rubber rabbitbrush (*Ericameria nauseosa*), Nevada ephedra (*Ephedra nevadensis*), winterfat (*Krascheninnikovia lanata*), spiny menodora (*Menodora spinescens*), little galleta grass (*Pleuraphis jamesii*), and Joshua tree (*Yucca brevifolia*). Additionally, several non-native species including *Bromus tectorum* and *Salsola tragus* are present in the project area.

Most of the range improvement project sites have existing forms of vegetation and soil disturbance, including the following: existing two-track access; presence of non-native plant species; partially-denuded to fully-denuded; cattle trails; or some combination of these disturbances. However, the proposed South Oasis Trough #2 development site is not considered disturbed and is relatively intact. The South Oasis Trough #2 would also require the development of a two-track road that would be created along the shortest possible distance from the road to allow for the water to be delivered to the troughs.

For special status plant species, the California Natural Diversity Database (CNDDB) shows 12 sensitive species that occur within the grazing allotments (Table 3.1-1). Of the 12 species, *Boechera lincolnensis* is the only BLM Special Status Plant. As *B. lincolnensis* is not known to occur within 5 miles of any of the proposed range improvements, it will not be considered further in this analysis. No other BLM special status species are known to occur within either grazing allotment.

Of the other species listed by CNDDDB, only *Boecheera dispar* is known to occur less than approximately ¼ miles from any of the 11 proposed range improvements. The location of *B. dispar* shown by CNDDDB is 325 feet from the site of the proposed Gilbert Summit water tank.

Table 3.1-1 Sensitive Plant Species present in Deep Springs and South Oasis Allotments

Common Name	Scientific Name	Status	Allotment	Nearest New Improvement	Distance
Geyer’s milk-vetch	<i>Astragalus geyeri</i> var. <i>geyeri</i>	G4T4, S2, 2.2	Deep Springs Valley	Deep Springs water haul #1	3678 feet
King’s eyelash grass	<i>Blepharidachne kingii</i>	G4, S2, 2.3	Deep Springs Valley	Deep Springs water haul #2	3.1 miles
Pinyon rockcress	<i>Boecheera dispar</i>	G3, S2.3, 2.3	Deep Springs Valley	Gilbert Summit water tank	325 feet
Lincoln rockcress	<i>Boecheera lincolnensis</i>	BLM- Special Status, G4G5, S2, 2.3	Deep Springs Valley	Deep Springs water haul #2	5.3 miles
Greene’s rabbitbrush	<i>Chrysothamnus greenei</i>	G5, S3, 2.3	Deep Springs Valley	College Water Haul	1.4 miles
Hall’s meadow hawksbeard	<i>Crepis runcinata</i> ssp. <i>hallii</i>	G5T3, S1S, 2.1	Deep Springs Valley	Deep Springs water haul #2	2.7 miles
Booth’s hairy evening-primrose	<i>Eremothera boothii</i> ssp. <i>intermedia</i>	G5T3, S1S, 2.1	South Oasis	South Oasis water haul #1	1294 feet
Beautiful cholla	<i>Grusonia pulchella</i>	G4, S2S, 2.2	Deep Springs Valley	Deep Springs water haul #1	2995 feet
Parry’s monkeyflower	<i>Mimulus parryi</i>	G3G4, S2.3, 2.2	Deep Springs Valley	Deep Springs water haul #2	4.6 miles
Shiny-nutlet popcornflower	<i>Plagiobothrys nitens</i>	GNR, S1, 2.1	Deep Springs Valley	Deep Springs water haul #2	2.2 miles
Desert popcornflower	<i>Plagiobothrys salsus</i>	G2G3, S1, 2.2	Deep Springs Valley	Deep Springs water haul #2	2.7 miles
Prairie wedge grass	<i>Sphenopholis obtusata</i>	G5, S2.2, 2.2	Deep Springs Valley	Powerline water haul	1.6 miles
<p>KEY for Plant Status: G2 – Imperiled; G3 – Vulnerable; G4 – Apparently Secure; G5 – Secure; GNR – Unranked; S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Contains a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.</p>					

3.1.2 Environmental Impacts—No Action Alternative

The No Action Alternative would result in a continuation of the current range management plan and a continued presence of the existing infrastructure. As a result, there should be no change to the status and trend of the vegetation community or sensitive wildlife and plant species within the decision area.

3.1.3 Environmental Impacts—Alternative 1 and Alternative 2

The installation and maintenance of the proposed water haul sites, water troughs, and pipelines—along with associated disturbances—could affect the behavior, occurrence, and habitat of some vegetation or sensitive wildlife and plant species. The two prominent effects that the proposed range improvement features (i.e., Alternative 1 and 2) could have on wildlife and associated habitat are (1) Habitat disruption or fragmentation and (2) Behavior modification due to an increase in water availability on the landscape. Intact vegetation communities and individual

sensitive plant species could be temporarily or permanently affected by the range improvement construction and maintenance activities, as well as the subsequent congregation of cattle around new water sites.

Special Status Wildlife Species:

1) Both Alternative 1 and Alternative 2 could result in temporary or permanent habitat fragmentation. Alternative 2 should have less of an affect due to less infrastructure development, and thus, less habitat and behavior disturbance. The introduction of new infrastructure on the landscape can temporarily (e.g., construction noise) or permanently affect wildlife habitat-use through fragmentation and subsequent avoidance of the area by the species. Furthermore, two-track development for access, cattle congregation/site compaction, and maintenance activities can increase the probability of fragmentation and increase the frequency of access by cattle to sensitive resources. Depending on the life history of the species involved, these disturbance factors are amplified when a negative habitat interference occurs at a medium-to-large ecological scale (e.g., hindering historic ungulate migration corridor). Of the special-status species known to be in the vicinity of the project sites, burrowing owls and sensitive migratory bird species could be the most susceptible to negative impacts from the range developments within seasonal habitat-use areas. These negative impacts could range from an abbreviated disruption in breeding activities to habitat area avoidance due to an increase in edge effect. However, research has also noted that a few positive effects can occur after the introduction of vertical structures in burrowing owl and some scrubland breeding bird habitat. For instance, Scobie et al. (2014) noted that, among the various disturbances (e.g., roads, noise, fences, posts) frequently encountered in burrowing owl habitat, owls spent more time near fences and posts, likely because these elevated perches are good vantage points for predator detection. Berardelli et al. (2010) and Martinez et al. (2017) also suggested that the presence of perches (i.e., vertical structures) near the nest site can be a critical resource for owls and other perching migratory birds.

Overall, as proposed, the range development features will constitute less than one acre of ground surface disturbance and will be aligned with, or adjacent to, known linear disturbances (existing routes and two-tracks) and other denuded areas; thus, limiting the impact of the range developments to a minimal level of habitat fragmentation.

2) Both Alternative 1 and Alternative 2 will result in an alteration of water availability on the landscape. Alternative 2 should have less of an affect because fewer new water features will be introduced. Wildlife populations have the potential to be affected by any alteration to water availability. One drawback of establishing a new water source is the potential for an increase in the density of wildlife individuals and populations within a concentrated area, which could lead to an increase in predator-prey interaction, as well as an increase in disease conveyance. Conversely, the introduction of a reliable water source in an arid landscape most often has a net positive effect on species occurrence and wildlife population numbers within the vicinity of the water site. Current agency management plans for many sensitive desert-dwelling species (e.g., desert bighorn sheep, pronghorn antelope, California quail) often recommend installing or maintaining supplemental water sources (e.g., guzzlers) to sustain populations susceptible to climatic shifts and land management practices. An increase in water sites on the landscape can also increase prey availability (e.g., insects), which can subsequently increase the population of some sensitive wildlife species (e.g., bats, migratory birds).

Overall, the location of some water sites within the allotments might be altered; however, the installation of the proposed new water features will not markedly change the number of available water sites in the area, and therefore, the new range improvement features are not expected to substantially negatively affect wildlife populations.

Vegetation Community and Special Status Plant Species:

Both Alternative 1 and Alternative 2 could result in temporary or permanent habitat alteration or elimination for the occupying native vegetation (i.e., Low Sage (LSG), Sagebrush (SGB), and Alkali Desert Scrub communities) and special-status plant species. Alternative 2 should have less of an affect due to less infrastructure development, and therefore, less habitat disturbance and species removal. The construction activities (i.e., vegetation removal,

vegetation crushing and soil compaction) of the range improvement projects could remove individual sensitive plant species from the population, alter preferred habitat micro-sites, and subsequently allow further infestation of non-native invasive plant species while eliminating future site recruitment for sensitive plants species and native vegetation as a whole. Furthermore, two-track development for access (e.g., South Oasis Trough #2), cattle congregation/site compaction, and maintenance activities can increase the impact of these effects. Of the special-status species known to be in the vicinity of the project sites, Booth's evening-primrose and pinyon rockcress could be the most susceptible to negative impacts from the range developments. Individuals of these species have been documented relatively near (< 1 mile) the potential project sites and could reside within the expected disturbance footprint. Other sensitive species (see Table 3.1-1) are known to be farther in proximity (> 1 mile) from the potential project sites but could still occur on-site.

Overall, as proposed, the range development features will constitute less than one acre of ground surface disturbance and will mostly be aligned with, or immediately adjacent to, existing invasive plant species infestations or monocultures (e.g., Russian thistle), linear disturbances (existing routes and two-tracks), and areas of sparse or denuded vegetation. These circumstance will thus substantially limit the impact of the proposed range developments on intact vegetation communities and sensitive plant species.

3.1.4 Mitigation

Mitigation measures will be implemented to help avoid, minimize, rectify, reduce/eliminate or compensate for effects caused by a proposed action to native vegetation communities and sensitive wildlife/plant species would include the project-appropriate Conservation Management Actions (Appendix B), as well as the permittee-driven measures outlined in the Invasive Plants/Noxious Weeds analysis section.

3.2 Invasive Plants/Noxious Weeds

3.2.1 Affected Environment

Invasive Plants/Noxious Weeds Affected Environment

Several non-native, invasive plant species are known to occur in the Deep Springs Valley and South Oasis Grazing allotments. These species include Russian thistle (*Salsola tragus*), cheat grass (*Bromus tectorum*), red brome (*Bromus madritensis* spp. *rubens*), various mustard species, including crossflower (*Chorispora tenella*), Halogeton (*Halogeton glomeratus*), and salt cedar (*Tamarix ramosissima*). These species are listed in order of known distribution and prevalence within the allotments, with Russian thistle being the most prevalent and salt cedar being the least. Of the species listed above, Russian thistle, Halogeton, Crossflower and Tamarisk have been classified as noxious weeds by the California Department of Food and Agriculture (CDFA). In addition, Halogeton has a CDFA A Rating and a California Exotic Pest Plant Council (CalEPPC) Red Alert Rating. Halogeton is known to be toxic to livestock.

The California Exotic Pest Plant Council (CalEPPC) evaluates invasive plants with respect to distribution, propensity for spread, and deleterious effects on the environment. List A species have been identified as the most invasive wildland pest plants that displace natives and disrupt natural habitats. Cheat grass, red brome, and tamarisk currently appear on this list. Cheat grass and red brome have also been placed on the Red Alert list, because of their propensity to carry fire. Several other invasive mustards in addition to crossflower have been identified at the South Oasis/Fish Lake Valley windmill site and along road corridors in the region. These mustards include tansy mustard (*Descurainia sophia*), short pod mustard (*Hirschfeldia incana*), and black mustard (*Brassica nigra*). To date, Saharan mustard (*Brassica tourenfortii*) has not been found within these areas. Among mustards, only Sahara mustard appears as a List A species on the CalEPPC list. The other mustards appear on the B List as either less invasive and/or less destructive and/or less widespread. (See <https://www.cal-ipc.org>)

Russian thistle (*Salsola tragus*), Barbwire thistle (*Salsola paulsenii*), Halogeton (*Halogeton glomeratus*), and various invasive mustard species

Russian thistle (*Salsola tragus*) is a dry land non-native plant in the Goosefoot or Chenopodiaceae (Amaranthaceae) Family. It is a Eurasian plant that was introduced into the United States in 1873 in contaminated flaxseed. It quickly spread throughout the western United States where it is now quite common. It is a summer annual, germinating in late winter/early spring and flowering and producing seed from summer to early Fall. One plant typically produces 200,000 seeds. Seeds spread as mature plants break off and tumble free dispersing seeds (hence the common name of tumbleweed). Seed dispersal is generally a localized event, dependent upon proximity to a seed source and the range of wind or extent of water. Seeds can be viable in the soil for up to 3 years but most seeds (up to 90%) either germinate or die within the first year.

What we call Russian thistle today may be one of three or more morphologically similar species, some of which can hybridize. Russian thistle spp. favor loose, sandy or silty soils and disturbed sites. They are well adapted to arid conditions and can tolerate alkaline soils. They do particularly well when native plants are suppressed and/or absent due to overgrazing. Russian thistle spp. are present in Deep Springs and Fish Lake valleys along bladed road margins of State Highways and county-maintained dirt roads. Maintained roads appear to be the primary vectors. In addition, these species proliferate in high disturbance sites located near these vectors and sometimes in more isolated areas where seed is transported by wind and water. These areas typically include: road ditches, quarries, cattle watering sites, salt licks, sand dunes, and drainages.

In Deep Springs Valley, Russian thistle is a problem along the margins of CA Highway 168 and the margins of nearly half of the Lake Road traveling south from Deep Springs College. It is also a problem along certain two-track jeep trails in the area. Large infestations exist at several existing watering sites in the area on both private and public lands, most notably at the East Valley Well and along the Payson Pipeline.

The Fish Lake Valley/South Oasis Windmill site is the loci of one of the largest known Russian thistle infestations in

the region. The windmill is located immediately east of the North Eureka Valley Road in a sink area that is heavily impacted by cattle gathering and watering at the site. The problem is exacerbated by the easily disturbed, fine and unconsolidated lake sediments found on the valley floor within the South Oasis Allotment. Populations expand and contract with precipitation, with Russian thistle expanding in drought years and contracting in wet years. In 2015, the Russian thistle population around the windmill site was found to encompass 133 acres. It crossed the adjacent jeep trail and continued south down several drainages into wilderness. Since that time, Russian thistle populations have expanded. The fence lines drawn on the new weed project map for the area (see DOI-BLM-CA-D050-2020-0016-EA) reflect new data about the current extent of the infestations. The near continuous stand of Russian thistle on the north side of the jeep trail now radiates out for more than a half-mile. The Russian thistle population on the south side of the jeep trail extends for more than a mile down several drainages into wilderness. The infestation continues south from the windmill site along the margins of the North Eureka Valley road for another half-mile, with additional patches cropping up sporadically as one travels south through the allotment and beyond, down to Eureka Valley.

Other large infestations occur in the Last Chance Allotment to the east and in Cucumongo Wash to the south. The problems in the Last Chance Allotment are closely tied to the Sylvania Canyon Road coming from Nevada State Highway 266. They terminate at a cattle watering site at a well on the other side of the allotment boundary fence from the proposed new South Oasis Eastside troughs. The Cucumongo Wash infestation is located along the southern boundary of the Sylvania Mountains Wilderness, well outside of any authorized grazing use area. It intersects with bordering NPS lands.

Other weed species known to be present in the general area in association with Russian thistle, include Barbwire Russian thistle (*Salsola paulsenii*), Halogeton (*Halogeton glomeratus*), and various invasive mustard species such as Crossflower (*Chorispora tenella*). Barbwire Russian thistle is found along the North Eureka Valley Road, at Willow Springs, and along the Cucumongo Canyon Road and Wash. Halogeton is present along the Lake Road (as a sporadic, light infestation) and along the Sylvania Canyon Road and Cucumongo Canyon Jeep Trail and Wash (as a moderate to heavy infestation).

Currently, there are no known infestations of Russian thistle or associated invasive species in the Gilbert Pass/Piper Corridor area.

See Russian thistle Populations & Vectors maps (Appendix A.)

Cheat grass (*Bromus tectorum*) and Red brome (*Bromus madritensis* spp. *rubens*)

Cheat grass and Red brome are found in patchy, isolated stands along highways and roadways and in upland areas within grazing allotments. Cheatgrass is an early emerging annual and biennial grass native to southern Europe, north Africa, and southwestern Asia. Like most invasive plant species, these bromes are disturbance followers and cattle have been implicated in their distribution and spread. The seeds are awned and readily attach to clothing, the undercarriage of vehicles, and hide/fur. These seeds can potentially spread further from a seed source by hitching a ride with vehicles, people, and livestock. These seeds can be moved over longer distances from weed-infested areas into non-infested areas. Both species are found along Highway 168 leading in and out of Deep Springs Valley and both have been identified in the Gilbert Pass/Piper Corridor area, where they occur in patchy stands of moderate to heavy intensity.

Cheat grass is now estimated to cover about 30% of all lands managed by the BLM. The agency has been slow to try to manage it, in part because there are no well-established means to control it. Cheat grass and Red brome are generally too widespread to be effectively hand-pulled or sprayed. Disking or other mechanical control methods will increase dominance as disturbance coupled with a well-aerated seedbed favors cheatgrass establishment. Repeated mowing every 2-3 weeks during spring and summer may stop seed production. Targeted grazing early in the year (late fall to early spring) before native annuals emerge and perennial grasses bolt has been used successfully in some places to control cheatgrass. Targeted grazing will reduce seed production and may reduce risk of wildfire. Heavy grazing, however, may simply increase disturbance and promote infestation. (USDA Field Guide for Managing Cheatgrass, June 2017)

Red brome is often tolerated because it is considered good (desirable) forage for cattle.

Salt cedar (*Tamarix ramosissima*)

Salt cedar mostly occurs in this area as a small number of isolated plants in a few, well-watered spots. It has a ranking of “B” on the CDFA noxious weed list, as “a pest of known economic or environmental detriment, and if present in California it is of limited distribution.” Salt cedar establishes itself in riparian ecosystems and areas with shallow groundwater, using unusually high amounts of water, and forming very dense stands. The high levels of salt that accumulate in areas of salt cedar leaf-drop inhibit the germination and growth of many native plant species. Salt cedar seeds are easily carried by wind, and populations can become quickly entrenched in riparian areas that have experienced disturbances such as heavy cattle grazing (Di Tomaso 1998).

The Deep Springs Allotment has five sites identified with populations of salt cedar, several of which have received herbicide treatment and may now have been completely eliminated. Two remaining active sites are located within the Deep Springs Allotment. They are along Payson Pipeline and are believed to be receiving water from leaks in the pipeline and spillage from water troughs. In the South Oasis Allotment, two sites have been identified, one at Two Tub Springs, and one behind a sandy spit at an old mine site across from the Fish Lake Valley/South Oasis Windmill Site. These sites were subsequently treated. Two Tub Springs was inspected in 2014, 2018 and 2019 and no tamarisk was found on site. The old mine site was inspected more recently (in July 2020) and resprouts from two-three previously treated stumps were found. BLM plans to retreat these stumps. Salt cedar seeds are dispersed by wind and water and require moisture and sunlight (open ground) to germinate successfully. Once established, plants need permanent access to water to flourish. This explains why salt cedar is often found in great numbers around springs and lake margins, along streams, and in riparian areas. Salt cedar is not believed to be spread as a direct result of livestock grazing but is known to be associated with livestock watering facilities and sites, including tanks, pipelines, and troughs.

3.2.2 Environmental Impacts—No Action Alternative

Livestock grazing and activities in support of livestock grazing can affect the state of invasive, non-native species within cattle allotments. These effects are mostly limited to: (1) moving seeds from infested sites to non-infested sites; and (2) modifying sites so they are susceptible to new weed introduction and spread. Of the two, the modification of sites in proximity to known weed vectors and populations is more likely to result in new weed infestations than the transport of weed seed by vehicles or cattle over long distances.

Weed sites within the Deep Springs and South Oasis allotments are principally found along highway and road margins and at cattle watering sites. Roadwork, particularly the intensive blading and grading of road margins, strips competing native perennial vegetation from roadsides, de-compacts soils, and pushes aerated soils and seed banks off to the side, moving them from infested areas to non-infested areas. Cattle watering sites where cattle concentrate for long periods of time, whether because of too few alternative watering sites and/or inappropriate seasons of use is another. Cattle left for too long in one place will trample soils and strip sites of competing native vegetation by overgrazing it.

Under the No Action Alternative, weed vectors and populations would remain the same subject to active intervention (implementation of weed treatment programs) by BLM. However, no new watering sites would be established and no new disturbance (weed susceptible) areas would be created. BLM would continue its planned weed treatments on Russian thistle at the Fish Lake Valley/South Oasis Windmill site. This work may be extended to other sites in the future, as time and resources permit.

3.2.3 *Environmental Impacts—Alt. 1-Lessee’s Proposed Action*

Impacts:

Alternative 1 would approve eleven proposed new improvements; at least six of which would result in new (weed susceptible) disturbance sites. This alternative would approve use of two sites (Deep Springs Troughs #1 and Deep Springs Troughs #2) as simple water haul sites prior to pipeline installation. It would keep the South Oasis Eastside Troughs closer to the fence line where a large Russian thistle population exists on the opposite side of the fence. Water would be hauled to the site and siphoned across the fence line to the troughs from a weed-infested staging area.

The following risk assessments for the proposed improvements are based on: (1) knowledge about the invasive species of concern and presence in the region (see Affected Environment), (2) weed inventories at each of the proposed improvement sites, proximity of the sites to known weed vectors and populations, and finally, (3) distinctions between the types of improvements proposed for each site and specific conditions pertaining to each site.

Definition of risk indicators:

High – the spread of weeds is very likely to occur, especially if not found and treated quickly.

Moderate – the spread of weeds may occur, if not found and treated quickly.

Low – the spread of weeds is not likely to occur

Table 3.2-1 Invasive Species Inventories & Risk Assessments at Proposed New Improvement Sites

Proposed New Range Improvement	Invasive Species Found On-Site	Proximity to Known Weed Vector/ Weed Populations¹	Risk of New Weed Introduction	Risk of Weed Intensification and Spread
Deep Springs Troughs #1	Russian thistle. Large population evenly distributed across the site.	Troughs would be placed 640 feet from the Lake Road and its Russian thistle population.	Low	High
Deep Springs Troughs #2	Russian thistle. Few individual, scattered plants.	Troughs would be placed 530 feet from Lake Road, but they would be nearly a mile (0.9 miles) away from the nearest known population of Russian thistle found along the road.	High	High
Deep Springs Pipeline	Russian thistle, Halogeton.	On-site in and along Lake Road. Invasive species extend south from the College along the road for nearly half of its length.	High while under construction. Low once pipeline is installed.	High/Low.
Powerline Troughs	None.	Troughs would be 450 feet From CA Highway 168 and 50 feet from the Powerline Rd.	Low	Low

Gilbert Summit Corral	None.	Corral would be located approximately 300 feet from CA Highway 168. Cheatgrass is present along highway.	Low	Low
Gilbert Summit Tank	None.	Tank would be placed approximately 400 feet from CA Highway 168. Cheatgrass is present along highway.	Low	Low
Gilbert Canyon Pipeline	Cheatgrass.	On-site. Cheat grass is found along most of the Piper Corridor Jeep Trail and up on flanking hillsides.	Low	Low
Gilbert Canyon Troughs #2	Cheatgrass.	On-site, along jeep trail and up on flanking hillsides.	Low	Moderate
South Oasis Trough #1	None.	Troughs would be more than 1,000 feet from the North Eureka Valley Road. They would be 0.5 miles north of (upwind from) the nearest known Russian thistle pop. found along the road.	Moderate	Moderate
South Oasis Trough #2	None.	Troughs would be placed 50 feet from North Eureka Valley Road. They would be 0.7 miles south of (downwind from) from nearest known Russian thistle pop. found along the road.	High	High
South Oasis Eastside Troughs Alt. 1	Russian thistle. Thistle is expanding under the fence from the opposite (Last Chance Allotment) side of the fence line.	Troughs would be placed within 225 feet of the allotment boundary fence, next to a large Russian thistle infestation on the opposite side of the fence line. The troughs would be 1600 feet (0.3 miles) from nearest known Russian thistle pop. located along the Sylvania Canyon Road (a known weed vector).	High	High
South Oasis Eastside Troughs Alt. 2	None. However, Russian thistle is in the vicinity	Troughs would be placed 450 feet back from the fence line and the Russian thistle infestation on the	High	High

	extending towards site from opposite (Last Chance) side of fence line.	opposite side of the fence. Troughs would be approximately the same distance from the nearest known Russian thistle pop. located along the Sylvania Canyon Road.		

1 More than 50 plants in proximity to one another.

Low Risk Improvements and/or Sites

Four improvements and/or sites are considered to be low risk with respect to new weed introduction and spread and weed intensification and spread. They include:

Powerline Troughs, Water Haul Site

Approval of this water haul site would result in a large new disturbance (intensive cattle use area) within 100-150 feet of the troughs. However, there are no invasive species on-site and no known weed populations nearby. The site is isolated behind a fence line and is set back more than 450 feet away from a stretch of Highway 168 that is not infested with Russian thistle.

Gilbert Summit Corral and Gilbert Summit Tank

Cheat grass is present along the margins of Highway 168, but there is no Russian thistle along this portion of the highway. The corral and tank would be set back (300-400 feet) from the highway. Currently there are no invasive species on-site and these developments are not anticipated to generate large new disturbances. The corral would be used to hold horses, not cattle, and its footprint would be quite minimal, limited to the approximately 10 feet x 20 feet confines of the corral itself. While cheat grass awns will attach themselves to horse hides, it is not anticipated that cheat grass would erupt here in such large numbers that it could not be controlled by hand-pulling. Burying the water tank would result in a more significant one-time disturbance, but would occur within an already disturbed footprint (an existing turnaround) that is weed-free. The tank would be used to send water down a pipeline rather than to supply cattle troughs with water on-site.

Gilbert Canyon (Piper Corridor) Pipeline

Cheat grass is prevalent along the flanks of the jeep trail as it continues down the Piper corridor. Cheat grass awns will attach themselves to cattle and to tires and undercarriages. Vehicles and equipment used to install the pipeline within the roadbed or immediately alongside it should be power-washed at Gilbert summit before proceeding down the corridor. Vehicles and equipment should be washed again before they exit infested areas and enter non-infested areas.

Once installed, the tank and pipeline would make it unnecessary for the water tender to go beyond Gilbert Summit to resupply cattle troughs with water. This would reduce the possibility of new weed introduction and spread from frequent vehicle trips up and down the corridor.

Leaks along the pipeline and water spillage at the troughs could support germination and growth of non-native invasive plants (including several species of mustards and possibly, tamarisk). Leaks along the pipeline will need to be fixed immediately. Invasive species will need to be pulled as soon as they are detected.

Medium Risk Improvements and/or Sites

South Oasis Troughs, Water Haul Site #1

The site is considered to be of medium risk with respect to new weed introduction and spread and weed intensification and spread. The site is currently weed-free. It is located 1,000 feet east of the North Eureka Valley Road. As such, it is relatively isolated and self-contained. Water would be hauled to the site from Deep Springs College via Highway 168 and the North Eureka Valley Road. The North Eureka Valley Road is the primary Russian thistle vector within the South Oasis Allotment. Immediate vehicle access to the troughs would be via an infrequently used two-track that leaves the North Eureka Valley Road to follow the fence line separating the South Oasis Allotment from the Oasis Ranch Allotment. Russian thistle is not currently present at the intersection of the North Eureka Valley Road and the two-track to the proposed water troughs. The intersection is upwind and more than a half-mile away from the nearest known Russian thistle population along the road.

The troughs would be set back from the fence line in a low-lying area comprised of fine, unconsolidated soils (i.e., old lakebed sediments). The physical characteristics of the site are similar to the Fish Lake Valley/South Oasis Windmill site where Russian thistle is such a problem. Cattle bunched up and trailing along the fence line in such close proximity to a watering site could intensify impacts and more easily spread disturbances. Weed seed could be carried and/or blown in from one susceptible site along the fence line to the next.

BLM has plans to treat the margins of the North Eureka Valley Road where it passes through the South Oasis Allotment as part of its Russian thistle control efforts at the windmill site. The Lessee should be able to keep this site weed-free with care. In addition, efforts should be extended to the nearby fence line, the two-track, and the intersection of the two-track with the North Eureka Valley Road.

Mixed Risk Improvements and/or Sites

Two developments are considered to be of mixed risk. Weeds are already present at these sites. They pose a low risk for new weed introduction and spread. However, present weed populations pose a moderate to high risk of weed intensification and spread with new improvements and more intensive use.

Deep Springs Troughs #1, Water Haul Site

The site is within a very large, disturbed area that is already infested with Russian thistle. Troughs would be placed 640 feet west of the continuous Russian thistle infestation found along the margins of the Lake Road. The probability of an intensifying and expanding weed infestation at this site that could impact surrounding plant communities would be high with additional cattle disturbance and radiating use. The possibility of cross-contamination would be exacerbated under Alternative 1 where the lessee would be permitted to drive in to supply water to the site from the Lake Road in advance of a pipeline being installed.

The Invasive Species Management Plan outlined in Section 2.6.2 would not be effective in controlling weed intensification and spread from this site unless it was expanded to include the entire weed infested area. The Russian thistle infestation here is at least 2-3 times larger than the 300-foot radius from the troughs specified in the plan. BLM has no plans at this time to tackle the Lake Road itself, so the Lake Road would remain a weed vector. Travel along the Lake Road to and from the site would undermine weed control efforts made at the site.

Gilbert Canyon Troughs #2

The troughs would be placed within 15 feet of the edge of the Piper Corridor Jeep trail to avoid placing them inside wilderness. (Wilderness setbacks are 30 feet from the centerline of the jeep trail.) Although the troughs would be located within an active wash bottom, cattle use of the troughs would result in a new heavily disturbed area that would be more susceptible to weed introduction, intensification and spread. The risk of new weed introduction here is estimated to be low. The site is in a tight, isolated canyon bottom, two to three miles away and on the other side of some mountains from the nearest known Russian thistle vectors and populations. The Piper Corridor jeep trail is not a known vector for Russian thistle at this time. The Invasive Species Management Plan is expected to be effective in stopping introduction and spread of Russian thistle at this site and within the corridor more generally. Use of a pipeline to supply water to the troughs instead of a water tender would reduce the risk of Russian thistle and other associated weedy species introduction and spread even further.

Cheat grass, however, is plentiful on-site and up on the flanks of the hills along most of the Piper Corridor jeep trail. The risk of intensification and spread of cheat grass on-site and in the general vicinity is anticipated to be moderate if not high as cattle spend more time at the troughs and fan out to forage in new areas. Cheat grass will populate disturbed areas. Awns will attach themselves to hoofs and hides and travel with cattle.

It is unlikely that the Invasive Species Management Plan would be adequate to control the spread of cheat grass at this site or within the area more generally.

High Risk Improvements and/or Sites

Three improvements and/or sites are considered high risk with respect to new weed introduction and spread and weed intensification and spread.

Deep Springs Troughs #2, Water Haul Site

The site is problematic with respect to new weed introduction, spread and intensification. Currently the site hosts a few, widely-scattered individual Russian thistle plants, blown in from somewhere within the allotment, either from the southern terminus of the known infestation along the Lake Road or possibly, across the valley floor from the Payson pipeline. Since this is an incipient population, efforts should start immediately to pull and bag Russian thistle and any associated weeds (particularly Halogeton) at the site. This should be done in advance of installing water troughs.

The troughs would be located more than 500 feet from the Lake Road and nearly a mile south of the nearest known population (of more than 50 individual plants) of Russian thistle found along the road. This is a relatively undisturbed site with a robust native plant community. Installing troughs here would create a new disturbance within an area where disturbed sites nearly always result in new weed infestations. It is also within a portion of Deep Springs Valley (southwest corner) where there are relatively few watering sites and no known large weed populations. See Russian thistle Populations & Vectors map for the Deep Springs Allotment (Appendix A).

Use of this site as a water haul site in advance of a pipeline being built would defeat the purpose of the pipeline. Water tenders would use the Lake Road to haul water to the site and a newly created two track to carry water to the troughs. A pipeline would eliminate the need to drive into the site on an ongoing basis and along a known weed vector.

South Oasis Troughs, Water Haul Site #2

The proposed new water haul site is estimated to be at high risk for new weed introduction and at high risk for new weed intensification and spread primarily due to its location within the allotment. The site would be located near the southern boundary of the allotment in an upland, hilly area that is grazed much less intensively than the valley floor. The site is wide-open, unconstrained by topography and would be directly linked to other weed sites in the area by the North Eureka Valley Road (a known weed vector). The proposed new troughs would be located within 50 feet of the centerline of the road and downwind (south) of the Fish Lake Valley/South Oasis Windmill Russian thistle site. The site would be approximately 2.5 miles south of the windmill and 0.7 miles south of the terminus of another large population of Russian thistle found along the margins of the North Eureka Valley Road. This weed population is the tail end of a near continuous line of Russian thistle extending south along the margins of the road from the windmill site. As this section of the North Eureka Valley Road has not been worked by the County for many years, it appears that the weeds found along the road margins are most likely the result of cattle trailing (causing disturbances) up and down the sides of the road to and from the troughs at the windmill site.

The proposed new water haul site is undisturbed and there are no invasive species on-site. The heavier soils and more robust upland vegetation community is probably more resistant to disturbance and weed infiltration and spread than the unconsolidated lake sediments and Winterfat communities on the valley floor. However, they are not impervious to disturbances and weed infiltration. A large Russian thistle population has been documented at

a similar site immediately off of the North Eureka Valley Road to the south. The area within 100-150 feet of the troughs would be heavily trampled. Most of the vegetation would be removed. The disturbance is projected to extend across the road and to continue on the opposite side.

BLM is beginning work to control Russian thistle within the South Oasis Allotment. BLM is limited to using mechanical means only (no herbicides) in areas open to cattle use. This is out of deference for the Lessee's organic certification. BLM has experimented with various weed whackers and mowers but has not yet found an effective, cost-efficient way for controlling thistle in large stands using mechanical means alone. At this time, it is not yet known how the new Russian thistle cattle enclosure fences around the windmill site will affect patterns of cattle use in the area. Will they funnel or disperse cattle in new ways? Will they help or hinder Russian control efforts? Will they lead to new disturbances and new infestations?

The proposed new trough site is a water haul site requiring regular access by vehicle via the North Eureka Valley Road. BLM is working on the Russian thistle problems along the road but is at least two-three years out from solving them. The trough site cannot be isolated from the road or from vehicles casually using the road, and/or from cattle trailing up and down the road and/or along sections of the new Russian thistle fences being built. It is very probable that Russian thistle and other associated weed species would be introduced into this new site and that these weeds would intensify and spread. It is also probable that weed problems along the North Eureka Valley Road would be amplified and would be extended south from their current terminus beyond the windmill site to the new water haul site at the southern end of the allotment.

South Oasis Eastside Troughs (Original Location), Water Haul Site #3

The South Oasis Eastside Troughs site has the highest risk of new weed introduction and of weed intensification and spread of any of the proposed new improvement sites. The troughs would be placed within 225 feet of an allotment boundary fence separating them from a highly disturbed area with a large Russian thistle population (another cattle watering site) on the opposite side of the fence line. (This site is used by the lessee of the Last Chance Allotment.) The new water haul site within the South Oasis Allotment would be located in a relatively undisturbed area (unused portion of the allotment), which may explain why Russian thistle has not yet spread there much. However, there is some Russian thistle on-site. The area is minimally infested with it. It is spreading under the fence line and is present in a nearby drainage spanning both sides of the fence. New cattle disturbances would be concentrated within 100-150 feet of the troughs and within only 75 feet of the fence and the Russian thistle infestation on the opposite side. To prevent the incipient Russian thistle population from becoming a full-fledged problem, the Lessee would need to commit to monitoring and treating all Russian thistle seedlings and plants on the South Oasis side of the fence line.

The Sylvania Canyon Road is a known weed vector. The Lessee would need to commit to driving into and exiting the staging area for siphoning water to the troughs on the Last Chance side of the fence line from the Sylvania Canyon Road and Nevada Highway 266. BLM would not want the lessee to travel across non-infested portions of the South Oasis Allotment along the Sylvania Canyon jeep trail to and from the windmill site to do this. Vehicles would need to be power washed before exiting the highway and entering BLM lands.

In addition, it would be advisable for BLM not to approve use of this site until it has effectively treated and controlled the Russian thistle population on the Last Chance Allotment side of the fence as well as the Russian thistle and Halogeton-infested roadbed and margins of the Sylvania Canyon Road leading into the site. The Last Chance Allotment is held by a different lessee. BLM may be able to achieve effective control here by use of chemical as well as mechanical means.

See Russian thistle Populations & Vectors map for the South Oasis Allotment (Appendix A).

3.2.4 Environmental Impacts—Alt. 2 Limited Range Improvements

Alternative 2 would approve ten of eleven new proposed improvements.

South Oasis Troughs, Water Haul Site #2

This site would not be approved but would be dropped from consideration at this time. The site would remain relatively undisturbed and free of non-native invasive species. Non-infested sections of the North Eureka Valley Road flanking this site would remain non-infested. BLM would have a chance to develop effective, mechanical methods to suppress and control Russian thistle along this vector without the complication of adding a new weed site further down the road from the windmill site.

Deep Springs Troughs #1 and #2

These sites would not be approved for use as water haul sites. Instead, approval for use would wait until a new pipeline (the Deep Springs Pipeline) and feeder lines for supplying the troughs with water were installed. This would not make much of a difference at the Deep Springs Troughs #1 site where Russian thistle is already prevalent. It would, however, go a long way towards preventing Russian thistle introduction, intensification and spread at the Deep Springs Troughs #2 site. This site would remain isolated from other weed sites in the area. Water tenders would not be driving in and out of the site from the Lake Road. It would also keep the infestations along the margins of the Lake Road in check north of their current terminus by reducing the number of vehicle trips taken back and forth between infested and non-infested portions of the road.

Installation of the new Deep Springs Pipeline would be a high-risk endeavor as work moves from infested sections of the road to non-infested sections. However, once installed, the pipeline would eliminate the need for use of vehicles (water tenders) to resupply the troughs with water. This would reduce risk of new weed introduction, intensification and spread.

South Oasis Eastside Troughs (New Location)

The South Oasis Eastside Troughs would be relocated. The troughs would be placed about twice as far back from the fence line and the Russian thistle infestation on the opposite side of the fence. In addition, water would be piped into the new troughs from an existing pipeline on the opposite (Last Chance) side of the fence (and a new feeder line would need to be installed) instead of being hauled in by truck and siphoned across the fence line into the troughs.

Moving the troughs twice as far back from the fence line would not make enough of a difference to lower the risk of new weed introduction, intensification and spread, from high to moderate at this site. Under this alternative, the troughs would be placed approximately 450 feet back from the fence line as opposed to 225 feet, and a short distance south. The new heavily disturbed area around the troughs would come to within 300 feet of the fence line instead of 75 feet. This would still be within easy reach of the wind, of wind-driven seeds and tumbleweeds.

Installing a feeder pipeline instead of relying on a water tender to supply water to the troughs may help reduce weed intensification and spread in already infested areas by reducing the number of vehicle trips taken along the Sylvania Canyon Road. However, this would not make much of a difference at the new trough site itself. Treating the infestation on the opposite side of the fence line and along the Sylvania Canyon Road would make a difference. However, these treatments would need to start immediately, two to three years in advance of development, and should include use of chemical as well as mechanical means. In addition, the lessee would need to be committed to hand-pulling and/or weed-whacking weeds on a near continual basis along the entire South Oasis side of the fence line.

To recap, this alternative would eliminate one problem site (the South Oasis Troughs, Water Haul Site #2). It would resolve most of the issues at the Deep Springs Trough Site #2. It would not in itself, however, solve the problems at the South Oasis Eastside Troughs site.

Alternative 1 would be more likely to exacerbate the Russian thistle problems in the Deep Springs and South Oasis Allotments than solve them. Three new high-risk sites would be added to the current list of up to a dozen known large weed populations awaiting effective treatment. These three sites are linked to known weed vectors and at least two of them are likely to result in an expansion of weed problems along associated vectors. This would undermine efforts currently underway to control Russian thistle, particularly within the South Oasis Allotment.

Alternative 2 would be less likely to exacerbate weed problems within the two allotments. One high risk site within the South Oasis Allotment would be dropped and another within Deep Springs Valley would be mitigated. Only one new high-risk site (the South Oasis Eastside Troughs) would need to be added to the current list of sites awaiting treatment. Responsible approval of this site would require substantial on-site effort but could spur additional treatments efforts by BLM within the Last Chance Allotment and along the Sylvania Canyon Road. If the resources to do so are made available, this could improve the weed situation in southern Fish Lake Valley rather than amplifying it. It would complement efforts currently underway in the neighboring South Oasis Allotment, at the windmill site and along the Sylvania Canyon jeep trail and North Eureka Valley Road.

3.2.5 Mitigation

The following mitigation measures could be applied under both alternatives to reduce impacts:

- (1) Best Management Practices should be adopted, including power-washing vehicles and equipment before exiting infested areas and entering non-infested areas to avoid spreading weeds from infested areas.
- (2) Weed vectors (infested roads) should be avoided to the extent possible when traveling to and from sites to avoid carrying weeds into new areas.
- (3) The Invasive Species Management Plan should be fully and effectively implemented. At some sites, this may mean expanding treatment areas beyond 300 feet of the water troughs and incorporating susceptible portions of roads and routes used for access.
- (4) Incipient infestations should be addressed in advance of developments being installed as a proactive measure to prevent new infestations.
- (5) Pipelines should be installed in advance of using those troughs' designed for connection to a pipeline use which would eliminate the need to drive a water truck to the tank, potentially spreading weeds.
- (6) Leaks at troughs, tanks and pipelines should be repaired immediately upon discovery.
- (7) Some sites should not be approved until BLM can effectively treat adjacent areas and associated vectors. Delaying approval could allow time to determine the effectiveness of the BLM and permittee's ability to treat new weed infestations.

3.3 National Conservation Lands

3.3.1 Affected Environment

The National Conservation Lands (NCL) are made up of National Monuments, National Conservation Areas, Wilderness Areas, Wilderness Study Areas (WSA), Wild and Scenic Rivers, National Scenic and Historic Trails, and Conservation Lands of the California Desert (California Desert National Conservation Lands (CDNCL)). CDNCL are made up of BLM-administered lands with nationally significant ecological, cultural, and scientific values. These lands are managed to conserve, protect, and restore these values.

The proposed project area includes units of NCL and CDNCL called the Basin and Range Ecoregion. Part of the S. Oasis Allotment south of the Highway 168, are in, or are close to wilderness areas and wilderness study area (WSA), in particular, the Sylvania Mountains Wilderness Area and the Piper Mountain Wilderness Area and Piper Mountain WSA (see Appendix A- Maps). Some of the proposed range developments, including South Oasis Troughs Sites #1,

#2 and the Gilbert Canyon Tank and Troughs fall close to this lower unit. In total, this NCL/CDNCL unit encompasses around 100,000 acres, as it includes both Wilderness Areas and the WSA and has a one percent ground disturbance cap. These two Wilderness areas are described in more detail in Section 3.7- Wilderness. The total current ground disturbance is less than the one percent per the SDARTT calculations (<https://blm.sciencebase.gov/sdartt/login/auth?format=>).

3.3.2 Environmental Impacts—No Action Alternative

Under the No-Action Alternative, the proposed project activities would not occur. No new surface disturbance would occur in the NLCS, but the focused impacts around the current designated water sites would continue such as trampling around the current sites and continued spread of Russian thistle.

3.3.3 Environmental Impacts—Alternative 1. Lessee's Proposed Action

The proposed action would impact less than 1 acre of land within this unit of the Basin and Range Ecoregion Subarea, which falls under the one percent ground disturbance cap of DRECP. The new impacts would be from the sites along the boundary of the Wildernesses and include at least a 300 foot radius around of cattle disturbance around the new water sites. This could impact landscape intactness and visual resources and would continue until each area is rested and recovered to original conditions, which can take decades. These disturbed areas are prime for invasive and noxious species, which would be monitored closely to stop the spread.

The effects of the proposed action would result in a slight increase to the overall disturbance area within this unit, but will not result in ground disturbance exceeding the threshold. of the Basin and Range Ecoregion Subarea but would have negligible impacts to National Conservation Lands as a whole, in particular this CDNCL unit, as it is approximately 100,000 acres of land in total. The impacts that would occur could result in a loss of scenery due to new trampling and trailing impacts and a loss of naturalness due to losses in native plant cover and changes in plant composition, similar to impacts in Sec. 3.7 Wilderness.

3.3.4 Environmental Impacts—Alternative 2. Limited Range Improvements

Alternative 2 impacts to the CDNCL unit but would be similar to Alternative 1 except that the South Oasis Troughs Site #2 would not be approved for installation and use. No troughs proposed for use with new pipelines would be used as water haul sites before the pipelines are installed. Some trough sites would be relocated, farther away from known weed vectors and populations, while at others, vehicle trips would be kept to the minimum necessary to install the troughs rather than relying on them to continuously resupply the troughs with water. Instead, water would be piped into these sites from the adjacent allotment by extending existing pipelines servicing other troughs in the same general vicinity. This would remove the need to establish a new two track or to drive into a more distant site on a regular basis to deliver water. In conclusion, this alternative would lessen the effects to the CDNCL unit, reducing the impacts due to less infrastructure and in turn less disturbance as a whole.

3.3.5 Mitigation

The Environmental Protection Measures in 2.1.4 will minimize impacts to the CDNCL unit. Some important measures include monitoring and removal of non-native invasives, which would assist with re-vegetation of natives in the future. Also, no blading of access routes or the trough locations is permitted which lessens disturbance greatly. A change in season of use, which is going to be discussed with the leasee when the permit comes up for renewal, could potentially mitigate any residual impacts to the CDNCL unit that may still be left unresolved after all pro-active measures are adhered to.

3.4 Soils

3.4.1 Affected Environment

There are no soil surveys covering the proposed range development sites. Soils are generally poorly developed. They can be well drained or poorly drained depending on whether the substrate is rocky or silt-like. When the surface has been disturbed, the silty areas are subject to wind and water erosion. Much of the soil has been subject to periodic disturbance due to livestock grazing for 140 years from erosion. Additional disturbance occurring in the area includes vehicle use on unpaved roads, farming operations, and utility right-of-way maintenance.

During the time, the Rangeland Health Assessment (2015) was conducted all the soil sites evaluated scored in the stable range. However, soil impacts were noted at sites where cattle congregated for water. Soil has been evaluated since then by field staff and noted the same impacts as in the 2015 findings.

The open space between vegetation is not generally bare of all life. Highly specialized organisms make up a surface community consisting of cyanobacteria, green algae, lichens, mosses, micro fungi, and other bacteria, which form a crust. Soils with these crusts are often referred to as cryptogamic or cryptobiotic soils. Soil crusts appear to be relatively wide-spread and in good condition in the Deep Springs and South Oasis allotments. Rangeland health assessments conducted on these allotments included sampling on the occurrences of biological crusts.

Soil crusts are particularly common at S. Oasis Eastside Troughs and there are a few found at Gilbert Summit Corral, Tank, Trough, Pipeline and around the Deep Springs Trough #1 & #2. The data documents the widespread occurrence of complex soil crust communities consisting of mosses, lichens, green algae, and small cyanobacteria. These species are easily damaged by livestock grazing (Belnap and Lange 2003, and USDI BLM 2001b). Many of the biological crust species are not mobile and cannot survive burial. Despite livestock grazing on these allotments, occurrence of biological crust species are found in the project area with the largest mapped site in Deep Springs Allotment (See Appendix A Map 12). These cryptogamic soils would be less impacted by the dispersion of water troughs, as the cattle would not congregate in an area for an extended period of time.

3.4.2 Environmental Consequences

Impacts of Proposed Action:

The proposed action would disturb the soil in the selected areas for the installation of the water tanks, troughs, and pipelines. Some impacts in areas will be greater than others due to the digging and submerging the tanks and pipelines into the ground. Most of the troughs would be placed on the surface of the soil though, not severely affecting the soil which would occur if the sites were excavated. This alternative would disrupt mostly topsoil, not the subsurface strata. These disturbed areas are prime for invasive and noxious species, which would be monitored closely to stop the spread. Cryptogamic soils would be impacted in the shortterm, however, due to the abundance of them in the allotments, there would still be a plentiful amount and the ability to regrow over the time.

Impacts of Alternative Action:

Under alternative two, the soil in the selected areas for the installation would be disturbed, however the sites in this alternative would have more intact soil surfaces to reduce the spread of invasive and noxious weeds. It would still need to be monitored closely and treated when need. Troughs would still be placed on top of the soil, with the submerging of tanks and pipelines. Cryptogamic soils are also found in these areas but would not wipe out all of them due to the abundance found in the area.

Impacts of No Action:

Under this alternative, there would be no additional changes to the impact of the soil versus what the impact is

currently, which would be cattle grazing and using the watering sites that are currently installed. Soil would still be disturbed at the current rate including continued focused impacts around water sites by cattle use and administrative use to haul water.

Table 3.4-1- Soil Impacts by Action

Site Name	Proposed Action (Alt 1)	Alternative Action (Alt 2)	No Action
Deep Springs Trough #1	Impact would include disturbance of topsoil to place trough and area around where cattle come in to water	Impact would include disturbance of topsoil to place trough and area around where cattle come in to water, might have to slightly settle due to use not being authorized until completion of project	Impact would be trailing of cattle to the lake and back, but no trough installed
Deep Springs Trough #2	Impact would include disturbance of topsoil to place trough and area around where cattle come in to water	Impact would include disturbance of topsoil to place trough and area around where cattle come in to water, might have to slightly settle due to use not being authorized until completion of project	Impact would be trailing of cattle to the lake and back, but no trough installed
Deep Springs Pipeline	Impact would be topsoil disturbance down the middle of the road to reach the locations where the valves will be turned on and off for water use	Same impacts as Proposed Action	Impact would be the trailing of cattle to the Lake and back to the home property
Powerline Trough	Impact would include disturbance of topsoil to place trough and cattle coming to the water source	Same impacts as Proposed Action	No soil impact except for cattle grazing
Gilbert Pass Corral	Impact would include disturbance of topsoil and some subsurface soil at construction. Topsoil will be affected when in use	Same impacts as Proposed Action	No soil impact except for cattle grazing
Gilbert Pass Tank	Impact would include disturbance of topsoil and subsurface soil to place the tank because of burial	Same impacts as Proposed Action	No soil impact except for cattle grazing
Gilbert Canyon Pipeline	Impact would include topsoil loss due to the laying of the pipeline on the surface of the ground	Impact would include topsoil disturbance due to burial of the pipeline in the middle of the jeep trail	No soil impact except for cattle grazing
Gilbert Canyon Trough #2	Impact would be topsoil due to the placement of the trough and the soil	Same impacts as Proposed Action	No soil impact except for cattle grazing

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	around the trough for cattle watering		
South Oasis Trough #1	Impact would be topsoil disturbed for placement of trough and around for cattle watering	Same impacts as Proposed Action	No soil impact except for cattle grazing
South Oasis Trough #2	Impact would be topsoil disturbance for placement and for cattle watering around	No soil impact except for cattle grazing	No soil impact except for cattle grazing
South Oasis Eastside Trough	Impact would be topsoil disturbance for placement and for cattle watering around	Impact would be soil disturbance for placement and cattle watering around	No soil impact except for cattle grazing

3.4.5 Mitigation

For mitigation, areas that new improvements that are being installed would not be used until they were ready for use, meaning the improvement is properly installed and working correctly and soil could be fixated to not erode so easily (ex. Slight compaction, replanting, etc.). If the range improvement is not needing immediate use, this time could be used to help soil placement maintain a level where it would not erode as easily. This would benefit the soil as well as the plants in the area. Digging could be done on non-windy days and monitored during windy days, potentially putting up a wind barrier to protect that disturbed soils.

3.5 Rangeland Management and Grazing

3.5.1 Affected Environment

The affected environment for rangeland will be the areas directly around the improvements. BLM CA Desert District follows the fallback Standards and Guidelines for Grazing Administration outlined in the 43 Code of Federal Regulations (CFR) Subpart 4180 pending approval of the new guidelines. Range improvements may be implemented in accordance with regulation to attain progress towards achieving Rangeland Health Standards (subpart 4180.1 and 4180.2 Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration).

The vegetation surrounding the new improvements will be affected for the first few years, but over time the vegetation around the outer portions of the troughs will come back and re-populate the area. The vegetation can be found in the vegetation section listed above.

In 2016, Rangeland Health Evaluations were conducted on Deep Springs and South Oasis Allotments to evaluate the overall health of the allotments. The evaluations found that the rangeland health standards were met and noted the invasive species.

Blaine Horn, an employee of the University of Wyoming Big Horn Extension Area, wrote an article on the water locations on rangeland. Horn describes: "Often the most effective way to improve the uniformity of grazing is to increase the number and/or change the location of watering points. The development of water, especially in new locations on rangeland, can result in better utilization of lightly and non-grazed areas, resulting in an increase in the length of the grazing season through greater forage supply. It is recommended that watering points be no farther apart than 1.3 miles. It can also lead to less uniform utilization of available forage because areas close to water are overused while areas far away are used lightly or not at all. Rotating access to watering points can improve the uniformity of pasture use. This practice will also allow vegetation around watering points to recover from grazing. It is often more economically feasible to develop a water source and control access to it than to implement a specialized

grazing system due to the cost of building and maintaining fences". This is exactly what the proponent is trying to accomplish; better rangeland health for the health of his herd.

3.5.2 Environmental Consequences

For the proposed action, rangeland management would trend upward over time with the improvements being more spread out on the allotments. This gives the range an opportunity to be grazed more evenly instead of in heavy patches and also give the range, soil and vegetation a chance to rest the range ranging the more heavily grazed areas and gives a better chance for higher scoring rangeland standards in the future.

This alternative would not give the rangeland as much flexibility as the proposed action. In this geographic area, water is the driving factor for grazing which leads to rangeland health standards. Without water in some areas, those areas remain un-grazed and score well on the rangeland health standards, however, other over-grazed areas will decrease and offset those un-grazed areas to an un-healthy rangeland standard. This alternative still gives the option to graze areas that may not have been grazed before but would not improve the rangeland health like the proposed action would.

For the no action alternative, rangeland health standards would continue the way they are with a possible decline in the areas that are being heavily used due to the water in the areas. Making the overall range health unbalanced.

Table 3.5-1- Impacts of Improvements on Rangeland Health Standards

Site Name	Proposed Action	Alternative Action	No Action
Deep Springs Trough #1	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as Proposed Action	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Deep Springs Trough #2	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as Proposed Action	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Deep Springs Pipeline	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Powerline Trough	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.

Gilbert Pass Corral	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Gilbert Pass Tank	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Gilbert Canyon Pipeline	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Rangeland Health Standards here would be impacted more because of the burying of the pipeline. But after a rest period, the health standards will increase as a whole.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
Gilbert Canyon Trough #2	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as Proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
South Oasis Trough #1	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Same as proposed action.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
South Oasis Trough #2	Overall Rangeland Health Standards would be impacted right away, but would improve over time and improve the allotment as a whole Rangeland Health.	Rangeland Health Standards would have good areas and bad areas in patches, making the overall seem healthy, when really it is decreasing.	Rangeland Health Standards would have patches of good areas and bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
	Overall Rangeland Health Standards would be impacted right away, but	This would impact the rangeland health right away, but over time it will	Rangeland Health Standards would have patches of good areas and

South Oasis Eastside Trough	would improve over time and improve the allotment as a whole Rangeland Health.	even out the whole allotment and keep the categories more normal than extremes.	bad areas, making the allotment overall seem healthy, but it deteriorates the rangeland more.
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3.5.3 Mitigation

For mitigation, areas that new improvements that are being installed would not be used until they were ready for use, meaning the improvement is properly installed and working correctly and soil could be fixated to not erode so easily (ex. Slight compaction, replanting, etc.). Rangeland Health Standards for these allotments could be mitigated by giving time after the improvement is installed to rest and make sure that it will work properly. This gives the soil some time to rest, gives the opportunity for new seeds to be re-planted into the seed bank for a better chance of growth. Trying to save as many mature plants and replant them with completion of installation is another way to help with the rangeland health and meeting those standards to make sure that it is a proper functioning rangeland system.

3.6 Visual Resources

3.6.1 Affected Environment

The BLM is charged with protecting the scenic quality of the lands it administers (Title I, Section 102 (8); FLPMA, 1976). The BLM has developed and uses an analytic process (the VRM system) to identify, establish, and maintain scenic values. The VRM system has two key aspects: (1) inventorying visual resources and (2) classifying and managing those resources in accordance with their assigned management class.

On BLM-administered lands, visual values reflected in the VRM Class are considered in locating and evaluating proposed projects and establishing goals and objectives for resource management. A visual resource inventory of public lands managed by the Ridgecrest Field Office was completed in 2012 in anticipation of two large plan amendments to the CDCA Plan of 1980: the West Mojave Plan and the DRECP. Final class determinations were subsequently made in the DRECP (BLM, 2016) based on a geographic locale's visual appeal and sensitivity level.

The eleven new proposed range improvements would be built on VRM Class II lands in Deep Springs Valley, at Gilbert Summit and within the Piper Corridor, and at the Southern end of Fish Lake Valley. Seven of these eleven sites would be watering sites for cattle. Visual disturbances would not be confined to the appearance of new structures (troughs) at these sites but would also include new areas of significant ground disturbance. The watering sites would become new concentrated cattle use areas. These areas would be trampled and soiled and stripped of vegetation. The large, denuded areas that would result would encircle the troughs and are anticipated to extend anywhere from 100-150 feet out from the troughs in multiple directions.

Five of the eleven improvements would be built outside but very close to (within 30-50 feet of) the Piper Mountains Wilderness boundary. Two of the five improvements would be watering sites for cattle. These watering sites would become new concentrated cattle use areas. Ground disturbances at these trough sites are anticipated to extend 75-150 feet into wilderness. This would have an impact on VRM Class I lands in wilderness.

The visual resource management objectives for Class II and Class I lands are as follows (BLM, 1986a): *Class II Objective.* The objective of this class is to *retain the existing character of the landscape.* The level of change to the characteristic landscape should be low. Management activities *may be seen but should not attract the attention of the casual observer.* Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class I Objective. The objective of this class is to *preserve the existing character of the landscape*. This class provides for natural ecological changes; however, it does not preclude very limited management activity. *The level of change to the characteristic landscape should be very low and must not attract attention.*

Existing Environment/Conditions/Resources

Factors that influence the existing visual condition of areas near the proposed project sites are terrain, vegetation patterns, and land ownership and use. The proposed new improvements would be widely dispersed across two cattle allotments in highly variable terrain. Lands on the valley floors are flat and relatively featureless with large panoramic views extending out to mountains on the far horizon. Near the base of the mountains, views are stopped by steep escarpments or become encapsulated (enclosed) by flanking hills and ridgelines. Views become focal where opposing ridgelines converge and/or dip into the mouths of canyons. In the canyons, views tend to be radically foreshortened, hemmed in by canyon walls and mountain sides and the twists and turns of the canyon bottoms.

Vegetation is comprised mostly of shrubs. These are generally low to the ground and can range from patchy to thick depending upon vegetation type and distance. Rural developments on private lands exist, but most of these developments are relatively small and discrete. They tend to cluster in just a few locations and/or are concentrated at one end of a valley but not the other. Private developments do not impact much of the surrounding area. Most exist as small outposts or islands within a sea of publicly owned, predominantly natural lands. The public lands in this region are vast and largely roadless (even outside of designated wilderness). Most locations are quite isolated and distant from development.

3.6.2 Environmental Impacts – No Action Alternative

No new range improvements would be approved. There would be no changes to visual quality or to scenery caused by new developments at the proposed sites.

3.6.3 Environmental Impacts- Alternative 1- Lessee's Proposed Action

Eight Key Observation Points (KOPs) were selected to analyze impacts to visual resources on public lands from the proposed new developments. These KOPs focus on the most visually prominent of the proposed new improvements. Additionally, they focus on sites that are in direct line of sight from travel routes commonly used by the public. These KOP locations are identified on KOP maps in Appendix D.

Under this alternative, all proposed new range improvements would be installed and approved for use at the proposed sites. The Gilbert Canyon pipeline would not be buried within the roadbed but would be laid down on the ground immediately alongside the jeep trail. This would keep the pipeline visible for a nearly three and a half miles and would amplify visual impacts of other more discrete developments found along the way by providing a direct connection or visual link between them. The perception traveling down the jeep trail would be one of continuous development.

In addition, the lessee would be permitted to use and drive into two of the proposed sites (Deep Springs Troughs #1 and Deep Springs Troughs #2) to supply the troughs with water before pipelines and feeder lines are installed and buried. New access roads (new visual linear disturbances) would be added to these sites. These disturbances would compound disturbances caused by cattle use at the troughs.

Proposed developments at five or six of the eight KOP sites would meet VRM Class II objectives. One additional site, although very similar to the others, may not meet VRM Class II objectives under this alternative, but would meet VRM Class II objectives under Alternative 2. Two sites spanning the wilderness boundary would not meet VRM Class I or VRM Class II objectives under any of the proposed development alternatives.

Cattle Watering Sites meeting VRM Class II objectives under this alternative: Deep Springs Troughs #1 (KOP #1), Powerline Troughs (KOP #3), and South Oasis Troughs #1 (KOP #7)

Moderate to strong visual contrasts are apparent at all sites. These result from the appearance of new watering facilities (principally troughs) and from vegetation losses and ground disturbance caused by concentrated cattle use within a 100 to 150 foot radius of the troughs. Some of these contrasts would be mitigatable. Pipelines could be buried. Troughs could be partially sunk to reduce their profile. Permeon-like patina or paint could be applied to their outside surfaces to help them match and blend in better with new (bare ground) surroundings. In this way, contrasts could be diminished to acceptable levels to meet VRM Class II objectives.

However, other moderate to strong contrasts would persist. Contrasts associated with vegetation losses and other disturbances within the new clearings encircling the troughs would not and could not be mitigated without discontinuing use of the site. Perennial vegetation would not recover from 2-3 months of intensive cattle use with less than three-to-five years of recovery time (an exceptionally long interval of rest) between periods of use. This would defeat the purpose of the troughs and over the long run, with repeated exposure, would not be sustainable. The new clearings would become permanent features of the landscape. Bringing these features into compliance with VRM Class II standards depends upon siting. In some locations they may be less visually intrusive than in others. They may be sufficiently mediated by other factors (such as relative scale and distance) to put them in conformance with VRM Class II objectives.

The following factors were considered in determining that the trough sites and clearings at KOPs #1, #3, and #7 while still very visible, would meet VRM Class II standards:

1. Landscape types and views are large, panoramic or focal.
2. Changes are confined to a relatively small part of the frame (viewing space) in the mid-to-far distance. New troughs and disturbance areas appear relatively small and discrete within this larger framework.
3. Where the landscape type is focal, changes are offset from the focal area of interest.
4. Previous ground disturbance exists.
5. Similar ground disturbances exist and are visible within the same general area.
6. Troughs are set back (more than 450-1000 feet away) from the principal routes of travel they are being viewed from.
7. There is intervening vegetation and/or other forms of natural screening (undulating land) available from the roadside.
8. Viewing distances are long but viewing times are short, along well-maintained dirt roads and particularly at highway speeds.
9. Developments are located close to other developments, so they don't appear to be out of context.
10. Secondary access routes to the site are pre-established and/or vehicles can enter sites from a less visible, oblique angles.

See completed Visual Simulations and completed Visual Contrast Rating Sheets for each of these KOPs in in Appendix D.

Additional Cattle Watering Site not meeting VRM Class II objectives under this alternative but meeting objectives under Alternative 2: Deep Springs Troughs #2 (KOP #2)

This site shares many of the mediating factors of the previous sites. The landscape type is panoramic. The trough site sits in the mid-distance and takes up less than a quarter of the viewing frame. The site is set back (530 feet) from the Lake Road and would retain, under this alternative, at least a portion of the buffer of intervening native vegetation

available at the site. Within the part of the frame affected, changes to elements would range from none to moderate (with respect to the land) and from moderate to strong (with respect to vegetation).

The site, however, is unlike the site at KOP #1, and unlike the other two previously mentioned sites. Development would occur within a predominantly natural, thickly vegetated area rather than in a previously used, lightly vegetated and heavily disturbed one. The robustness (size and density) of the surrounding vegetation would provide more of a marked contrast between newly disturbed (cleared areas) and relatively undisturbed ones. At the same time, the robustness of the surrounding vegetation would provide a better screen and may be more likely to constrain expansion of the newly disturbed area in the future.

Development at this site would occur within a relatively remote and undeveloped part of the valley floor. This site is 3.5 miles from the College, 2 miles from the private developments at the terminus of the Lake Road, and 2 miles across the valley floor from the Payson pipeline and associated troughs.

Under the Lessee's Alternative 1 where vehicles would be allowed to drive in to supply troughs with water in advance of a pipeline being installed (and buried). An additional linear feature (a well-used two-track) would be created in the center of the frame along the shortest route possible from the Lake Road to the troughs. This would remove part of the natural vegetation buffer. It would attract attention and amplify visual changes at the site. The two-track may tip the balance from conforming to not conforming to VRM Class II objectives at this site.

Other types of sites that would meet VRM Class II Objectives under both development alternatives although they are very close the wilderness boundary: Gilbert Corral (KOP #4) and Gilbert Summit Tank (KOP #5)

The two sites are within a couple hundred feet of each other. Views are enclosed and changes are confined to a relatively small part of each frame in the upper mid-distance. The corral is set 300 feet back from the highway within a dense belt of vegetation comprised of small to medium-size shrubs. The tank is set 400 feet back from the highway in a previously disturbed area (a small turnout loop) along the Gilbert Canyon/Piper Corridor Jeep Trail. This site is located outside of but very close to (within 50 feet of) the wilderness boundary. Changes to land and vegetation elements from these two developments would be virtually non-existent relative to the site as a whole.

The corral would be used to overnight a couple of horses. It would not be used to keep cattle. Some weak changes with respect to vegetation loss and exposure of bare ground would occur. However, these changes would be mostly confined to the inside of the corral. They would be barely perceptible as they would be hidden behind the corral's structural supports. Moderate to strong contrasts would occur with respect to the appearance of a new structure (the corral) in a place where structures have not existed before. However, these impacts would be expected to subside over time as the wooden structure weathers and assumes a color indistinguishable from its surroundings. This site is right alongside a paved highway. The corral is small (10x20 feet) and would be similar if not identical to many other primitive corrals found in the area. The corral should be built of untreated wood and left to weather and darken over time.

The new tank would be used to pipe water to troughs located further down the corridor, not to supply water to cattle on-site. There would be no large ground disturbances and no permanent ground disturbances associated with this tank. Some ground disturbance and clearing of vegetation would occur within the footprint and in the immediate vicinity of the tank. These would occur in placing (partially burying) the tank on-site. However, these changes would be expected to moderate over time as the ground settles and new vegetation grows back in around the tank.

Strong contrasts would occur as a result of placing a new, metallic structure (a tank) in a relatively exposed place where structures have not existed before. However, the structure would be a relatively small and discrete. This tank would not be visible from the highway, but it would be located very close to the highway and other developments (notably powerlines) in the same general vicinity. The water tank would be virtually identical to another, half-buried tank located a bit further down the corridor, immediately alongside the jeep

trail. The tank could be partially buried (seated) in the ground to reduce its profile and could be painted a dark, matte color (perhaps Shadow Gray) to blend in better with its surroundings. In accordance with BLM Manual 8431, the viewing length of time as well as the relative size of the change in comparison to the landscape must also be taken into consideration. The viewing times are estimated to be quite short, lasting less than 5 minutes at highway and jeep trail speeds.

Cattle Watering Sites that would not meet VRM Class I or Class II objectives under this or any other development alternative: Gilbert Canyon Troughs #2 (KOP #6) and South Oasis Troughs #2 (KOP #8)

The landscape type at both sites is Enclosed. The Gilbert Canyon Troughs #2 site (KOP #6) is very tightly enclosed. It is in the bottom of the canyon in one of the canyon's narrowest passages. Changes would fill the center of the frame and would extend across the entire width of the frame. The troughs would need to be set within 30 feet of the centerline of the jeep trail to keep them out of wilderness. This would place them immediately alongside the jeep trail within 10-15 feet of the edge of the trail, where they would be most clearly visible. In addition, it would place the troughs within 5-10 feet of the wilderness boundary. The large, heavily disturbed (mostly denuded) area that would result from intensive cattle use at the troughs would extend as much as a 100 to 150 feet out from the troughs in all directions. This would place most of the disturbance (and the most severe and non-mitigatable visual impacts) inside wilderness. Visitors traveling down the corridor on the jeep trail would drop into the wash bottom, drive through the site, and become fully immersed in these new disturbances.

The South Oasis Troughs #2 site (KOP #8) is immediately flanked by a series of upward trending hillslopes backed by a final, tall, steep ridgeline in the distance. Changes here would fill three-quarters of the frame. The troughs would be set 50 feet back from the centerline of the North Eureka Valley Road to avoid being placed within Inyo County's Right-of-Way. This would put the troughs within 50 feet of the wilderness boundary. The large, denuded area that would result from cattle use of the troughs is anticipated to extend as much as a 100 to 150 feet out in all directions. Some of this area, anywhere from 50 to 100 feet of it, would be inside the Piper Mountains Wilderness. The remainder would be almost entirely within the county's ROW. It is expected that large ground disturbances and vegetation losses associated with more intensive cattle use at the troughs would extend across all of the site, including the road visible in the foreground and on over to the other side. This would bring the eastern edge of the concentrated use area very close to, if not right up to, the Sylvania Mountains Wilderness boundary. These impacts would be very visible, spanning the entire width of the road and taking up substantial ground on both of its sides. Visitors traveling down the North Eureka Valley Road would drive through the site and become fully, if temporarily, immersed.

Basic landforms would not change at the two sites. The most disruptive disturbances would be more concentrated and localized than that. In Gilbert Canyon at KOP #6, a horizontal plane would still meet a near vertical wall, and the near slope and more distant ridgeline would still slant to the right in a diagonal direction. However, moderate contrasts would occur as a result of changes to land line and texture. A large break (a new elliptical clearing) would assume prominence within the horizontal plane in the mid-distance. Dislodged rocks, soiled and heavily trampled bare ground would extend throughout most of the frame. Lighter (beige) disturbed soils would displace darker soils within the new clearing and where cattle frequently trail.

Along the North Eureka Valley Road at KOP #8, some slight leveling of the slope within a 100-150 feet of the troughs may occur. The slope would however resume trending upwards towards the top of the first rise and on over the top of the next hill and on to the ridgeline on the distant horizon. However, moderate contrasts would occur as a result of changes to land line, color, and texture. A large break (a new elliptical clearing) would become prominent in the foreground to mid-distance. Lighter, disturbed (overturned) soils would displace darker soils within the new clearing (concentrated use area) and where cattle collectively amass to cross the road. Dislodged rocks, soiled and heavily trampled bare ground would extend throughout most of the frame.

At both sites, the strongest contrasts would result from losses in vegetation form, line, color and texture within the newly denuded areas. In Gilbert Canyon (KOP #6), the newly denuded area would extend from one side of the

canyon bottom (of the wash) to the other. A strong, ragged line of demarcation would appear between cleared (non-vegetated) areas and the surrounding vegetation. There would be loss of color and texture with the loss of vegetation and exposure of bare ground in the foreground and mid-distance. Some losses would also be expected to extend up and down the canyon bottom (or the wash) and up the sides of the canyon (over the banks of the wash) where cattle would be trailing and grazing more intensively.

Along North Eureka Valley Road (KOP #8), strong contrasts would result from losses in vegetation within the cleared (denuded) concentrated use area around the troughs extending 100-150 feet out from the troughs in all directions. A strong, ragged line of demarcation would appear between cleared (non-vegetated) areas and the surrounding vegetation. There would be a loss of color and texture with the loss of vegetation and exposure of bare ground in the foreground and mid-distance. Some additional losses would also be expected to occur outside of the most concentrated use area, on the slopes immediately above the troughs (in the Piper Mountains Wilderness) and more likely, across the road from the troughs on the flats and the alluvial fans (extending into the Sylvania Mountains Wilderness) where cattle would be trailing back and forth to water and grazing more intensively.

In both places, strong to moderate contrasts would be generated by installing such large double troughs (each side holding 500 to 1,000 gallons each) in such close proximity to commonly used travel routes (the Piper Corridor jeep trail and the North Eureka Valley Road) in exposed places where developments have not been seen before. The Piper Corridor jeep trail is a favored portal into the interior of the Piper Mountains Wilderness. The North Eureka Valley Road is an often traveled, exceptionally scenic, through route (the only one) between Fish Lake Valley and Eureka Valley and Death Valley National Park.

Context is important. The Gilbert Canyon/Piper Corridor site is in a predominantly natural area, most of which is in designated wilderness. The nearest development is more than 2 ½ miles away, much further up the corridor and closer to the highway. The single trough at this location is significantly smaller than the double troughs proposed for the new site. It does not appear to be designed to support as many cows for as long a period of time. The North Eureka Valley Road site is also within a predominantly natural area. The troughs would be placed within a 200 foot-wide corridor sandwiched between two designated Wilderness areas. The nearest comparable development (the Fish Lake Valley/South Oasis Windmill site) is located outside of the wilderness corridor, to the north and more than 2 miles away.

In accordance with BLM Manual 8431, the viewing length of time as well as the relative size of the change in comparison to the landscape (type) must also be taken into consideration. The Piper Corridor jeep trail follows the canyon bottom. The canyon bottom moves up and down and twists and turns. The viewing time is estimated to be quite short, lasting less than 5 minutes at jeep trail speeds. The viewing time (and distance) along the North Eureka Valley road is estimated to be anywhere from 5 to 10 minutes, depending upon the direction of travel.

The strong visual contrasts at both sites are tied to large vegetation losses and ground disturbances associated with cattle use of the troughs within enclosed (confined or relatively confined) viewing spaces at close range. These vegetation and ground disturbances are more important (more visually impactful) than the physical appearance of the troughs themselves. They cannot be mitigated without foregoing and/or changing the intended purpose of the troughs. Perennial vegetation cannot recover from 2-3 months of intensive cattle use with less than three-to-five years of recovery time (interval of rest) between periods of use.

3.6.4 Environmental Impacts- Alternative 2- Limited Range Improvements

Under this alternative, all but one of the most visible improvements and problematic disturbance sites (South Oasis Troughs #2 at KOP #8) would be installed. The Gilbert Canyon pipeline would be buried in the roadbed or alongside the jeep trail instead of laid alongside it. This would make it invisible. In addition, the lessee would not be permitted to drive into Deep Springs Troughs #1 or Deep Springs Troughs #2 to provide troughs with water before pipelines

and feeder lines are installed. This would remove the need for access roads to the troughs, preserving all vegetation buffers and eliminating additional vehicle disturbances at the trough sites.

Under this alternative, only one site (KOP #6, Gilbert Canyon Troughs #2) of the 8 sites analyzed would be out of compliance with its VRM Class II and Class I objectives.

See completed Visual Simulations and completed Visual Contrast Rating Sheets for all KOPs in Appendix .

3.6.5 Mitigation

Large vegetation and ground disturbances around the troughs cannot be mitigated. The following mitigations have been developed for structures only:

1. Troughs should be partially sunk to reduce their profile. Permeon or paint should be applied to their outside surfaces to help them match and blend in better with new (bare ground) surroundings.
2. Pipelines should be buried within the roadbeds where possible. Feeder lines should be hand buried from the main line (roadbed) to the troughs to minimize disturbance.
3. Tank should be buried within the already disturbed area (middle of the turnaround). It should be partially buried to reduce its profile and painted a dark, matte color to match and blend in with its surroundings. Vegetation should be allowed to repopulate the site where it was removed for tank placement.
4. The corral should be built of untreated wood and left to weather and darken over time.

3.7 Wilderness

3.7.1 Affected Environment

Grazing is an authorized but non-conforming use in wilderness where it existed at the time of wilderness designation (Section 4(D)(4), Wilderness Act of 1964). Regulations regarding grazing in wilderness are contained in 43 CFR Parts 6300 and 8560 Wilderness Management; Final Rule (December 2000). Subpart 6304 addresses special provisions of the Wilderness Act; livestock grazing is specifically covered under §6304.25.

§6304.25 (c) allows lessees to maintain or reconstruct grazing support facilities that existed before wilderness designation as management plans for the area permit. The rule specifies that new support facilities for increasing numbers of livestock will not be authorized. It also specifies that construction of new livestock management facilities can only be authorized for the purposes of protection and improved management of wilderness resources. These regs are typically used to justify cattle enclosure fences around natural springs and riparian areas or in the case of the South Oasis/Fish Lake Valley Windmill site, to control Russian thistle and restore native plant communities.

The eleven new proposed range developments would **not** be located in wilderness. They would **not** violate wilderness regulations. However, they may not conform to good wilderness management practice. Nine of the eleven would be located within 1,000 feet of the wilderness boundary. Seven

of the eleven would be located within 100 feet of the wilderness boundary. Five of the eleven would be located within 15 to 50 feet of the wilderness boundary.

Impacts from the proposed new developments would be both direct and indirect. The Piper Mountains Wilderness would be the most heavily impacted (all of the sites are in proximity to its boundaries); the Sylvania Mountains Wilderness less so, with just one site located near (within 175 feet of) its boundaries.

The Piper Mountains Wilderness

The Piper Mountains Wilderness was designated as part of the California Desert Protection Act of 1994, P.L. 103-433-50. The wilderness is comprised of 72,192 acres. It is located within a transitional block of mountains (known as the Piper/Chocolate Mountains) between the White and Inyo ranges and Fish Lake and Eureka valleys. The wilderness is approximately 20 miles east of Bishop, California, as the crow flies, in Inyo County. The wilderness is bordered on the west by Inyo National Forest lands and the Lake Road in Deep Springs Valley, on the north by BLM lands in Deep Springs and Fish Lake valleys, on the east by the North Eureka Valley Road (across from the Sylvania Mountains Wilderness), and on the south by Death Valley National Park.

Approximately 44,900 acres or 62% of the 72,192 acre-wilderness is located within a grazing allotment. The grazing allotments spanning wilderness include: *Deep Springs* (extending over ~7,700 acres or 10% of the wilderness), *Oasis Ranch* (~700 acres or 0.9%), *South Oasis* (~9,000 acres or 12%), *Eureka Valley* (~16,000 acres or 22%) and *Last Chance* (~11,500 acres or nearly 16%). Of these allotments, only the Deep Springs, Oasis Ranch, and South Oasis allotments are in regular use. The Last Chance allotment has been used only once over the past twenty years. The Eureka Valley allotment is an ephemeral grazing allotment that has not been used since shortly after wilderness designation.

The Deep Springs and Oasis Ranch allotments are significantly larger than the acres encompassed by wilderness. However, about 62% of the South Oasis Allotment (9,000 acres out of a total 14,527 acres) is located within the Piper Mountains Wilderness. Another 1,200 acres of the same allotment is located within the Sylvania Mountains Wilderness.

The Deep Springs and South Oasis allotments are perennial cattle grazing allotments. Historically (in the period spanning wilderness designation), cattle activity within the Piper Mountains Wilderness portions of these allotments was light (estimated at <40% use). In the Deep Springs Allotment, cattle did not use the steeper, mountainous areas to the east and north of Deep Springs Valley. Similarly, cattle activity in the mountainous western half of the South Oasis Allotment both within the Gilbert/Piper corridor and between Piper (Chocolate) Mountain and the North Eureka Valley Road was also light (<40% use). In contrast, use of the flats on the Fish Lake Valley floor east of the North Eureka Valley Road and extending south into the Sylvania Mountains Wilderness

was moderate (up to 60% use), especially around water developments like the Fish Lake Valley/South Oasis Windmill site.¹

The Deep Springs Allotment was grazed in the winter (December-February) and spring (March-May). The lessee used multiple pastures within the allotment on a deferred rotational system in conjunction with a high elevation USFS allotment that was available only during the summer.¹ This worked reasonably well until it stopped working and the USFS permit was suspended (it has since been reissued on a more limited basis). In 2004, BLM issued a new grazing authorization, changing the season of use from winter and spring to year around to allow for greater flexibility in response to this problem. In practice, this has meant more intensive use of previously lightly used areas in warm to hot season months.

The South Oasis Allotment was typically used in warm to hot season months from spring to early fall (April to October), before it fell into disuse after 1999. In 2002, the permit was transferred to Deep Springs College with no prescribed season of use. In 2004, BLM authorized year-round grazing here as well to allow for greater flexibility. In practice, this has meant continuation of moderate use during warm to hot season months.

Use of the Gilbert/Piper Corridor area and the mountainous west side of the South Oasis Allotment in conjunction with the flats around the windmill site have intensified since 2004. The College is relying more heavily on these areas rather than on Deep Springs Valley proper or the USFS allotment to carry their cattle through the summer. As cattle tend to stay closer to water in hot weather months rather than disperse, impacts to these areas, particularly around watering sites, have increased in severity and extent.

Water is scarce within the Piper Mountains Wilderness. There are a small number of isolated seeps and springs in the area supporting small riparian communities of interest. The most productive springs are distributed along the wilderness boundary at the eastern edge of the lake in Deep Springs Valley (i.e., Buckhorn Springs). Other springs, One-Tub, Two-Tub (Tule) and Wheelbarrow (Wyler), are few and far between, distributed among the mountains between Deep Springs, Fish Lake, and Eureka valleys. These springs have all been developed to some extent in the past.

The Piper Mountains Wilderness currently contains ten physical developments. All but one of these developments predated wilderness designation in 1994, and all but one wildlife drinker (5843, Wheelbarrow Spring) were constructed in support of livestock grazing. The livestock grazing developments include six fences, two unmaintained, non-functional to minimally-functional spring developments (5086, One Tub Spring and 5087, Two Tub/Tule Spring), and one water haul site (5423) comprised of a tank and trough located immediately off of the Gilbert Canyon/Piper non-wilderness corridor. The Gilbert/Piper tank and trough were added in 1996 in exchange for decommissioning a water haul site that was located deeper within wilderness and more than a mile away from the corridor.

Invasive plant species are a big concern within this wilderness area, as well as within the Deep Springs and South Oasis allotments as a whole (See the Invasive Species Section). Russian thistle,

¹ Livestock Grazing Authorization, Deep Springs, South Oasis, and Eureka Valley Allotments, EA Number CA-65-2004-40 (November 15, 2006)

Halogeton, Cheat grass, Red brome, Diffuse knapweed and Tamarisk have all been identified within this wilderness area. Of the six, Russian thistle and Cheat grass are of greatest concern. Russian thistle is estimated to cover less than 1% of the wilderness area. However, where it occurs it occurs as a near monoculture, representing anywhere from 35-65% or more of all plant species found on-site. Cheat grass is estimated to cover somewhat more (1-5%) of the wilderness area. It is found principally in upland and mountainous areas along Highway 168 and within the Gilbert/Piper corridor. Where Cheat grass occurs, it is estimated to represent anywhere from 5-25% of all plant species found on-site.²

The Sylvania Mountains Wilderness

The Sylvania Mountains Wilderness was designated as part of the California Desert Protection Act of 1994, P.L. 103-433-66. This wilderness is comprised of 16,682 acres. It encompasses most of the flanks and upper elevations of the Sylvania Mountains between Fish Lake and Eureka valleys. The wilderness is located approximately 35 miles east of Bishop, California, as the crow flies, in Inyo County. The wilderness is bordered on the west by a county-maintained dirt road (the North Eureka Valley road), on the north by an unmaintained jeep trail (the Sylvania Canyon jeep trail) originating near the South Oasis Windmill site, on the east by the CA-Nevada state line, and on the south by the Cucomungo Canyon jeep trail and Death Valley National Park.

The entire wilderness is located within a grazing allotment, however, only about 40% of the wilderness is located within a currently permitted and/or authorized grazing area. Most of the 40% is located within the Last Chance Allotment. This allotment has only one water source. This water source is located about one mile north of the wilderness boundary (on the other side of the fence from the proposed South Oasis Eastside troughs). The Last Chance Allotment has been grazed only once over the past twenty years.

Approximately 1,200 acres or 7% of the Sylvania Mountains Wilderness is located within the 14,527-acre South Oasis Allotment. The Sylvania Mountains Wilderness comprises about 8% of the South Oasis Allotment. The South Oasis Windmill site is the only watering site located at the south end of the allotment. It is very close (within 500 feet) of the Sylvania Mountains Wilderness boundary and lies directly across the North Eureka Valley Road from the Piper Mountains Wilderness.

Historically, use of the flats on the Fish Lake Valley floor east of the North Eureka Valley Road and extending south into the Sylvania Mountains Wilderness was moderate (up to 60% use), especially around water developments like the windmill site. The South Oasis Allotment was typically used in warm to hot season months from spring to early fall (April to October), before it fell into disuse after 1999.¹ In 2002, the permit was transferred to Deep Springs College with no prescribed season of use. In 2004, BLM authorized year-round grazing to allow for greater flexibility. In practice, this has meant continuation of moderate use during warm to hot season months with expansion and intensification of impacts around existing watering sites.

Most of the Sylvania Mountains Wilderness is waterless. Existing springs with surface water and riparian vegetation are known to occur in only two remote locations. These springs (Hidden Springs and Willow Springs) are located near or along the southern boundary of the wilderness.

² Wilderness Character Measure 2-2 *Abundance and distribution of non-indigenous species*, Piper Mountains Wilderness Character Monitoring Report As Amended (September 2019).

They are outside of any currently approved grazing use area. The springs were once minimally developed as cattle watering sites. However, these developments are no longer functional and could be removed.

The Sylvania Mountains Wilderness currently contains five developments. All of them predate wilderness designation in 1994 and all were constructed in support of livestock grazing. Of the five developments, two are fences, one of which is in disrepair, and three are spring developments. One of the spring sites (Kincaid Spring) is difficult to find and has not been evaluated for quite some time. Two are the sites mentioned previously. A new fence is being built around a Russian thistle infestation in the Sylvania Mountains Wilderness as part of the Fish Lake Valley/South Oasis Windmill Russian thistle treatment project. This fence will raise the wilderness development score (where a higher score reflects a loss of wilderness character).³

Invasive plant species are a big concern within this wilderness area as well as within the South Oasis Allotment as a whole. In 2019, staff estimated that Russian thistle covered 1-5% of the Sylvania Mountains Wilderness area (assigning it an areal extent score of 2) but that it generally represented more than 25%, sometimes approaching as much as 100%, of the species found on the sites it occupied (meriting a density score of 5).⁴ These estimates were based on informal staff surveys along roads and known and likely susceptible problem (salt licks and watering) sites. The polygon shown on the map for the Fish Lake Valley/South Oasis Windmill Russian thistle project resulted from a 2014 inventory of the site. The enclosure fences have been expanded to accommodate the growing Russian thistle population found on-site.

Other invasive species identified within wilderness include Barbwire thistle and Halogeton. Barbwire thistle appears to be hybridizing with Russian thistle. It is smaller in extent (covering <1% of the wilderness area) than Russian thistle, but where it occurs, is estimated to represent at least 5-25% (for a density score of 3) of the plant species found on-site. Halogeton is much less prevalent (except in the Cucomongo Wash area). It too is estimated to cover less than 1% of the wilderness area. But, where it occurs, it represents more than 25% of the species found on-site (meriting a density score of 5).

3.7.2 *Environmental Impacts—No Action Alternative*

Under the No Action Alternative, there would be no new developments near wilderness boundaries. Patterns of cattle use within the Piper Mountains and Sylvania Mountains wildernesses would remain the same as they are currently. Use would be intensified during warm to hot season months from what they were at the time of wilderness designation, but it would not be intensified in new locations by the addition of new watering sites near the wilderness boundaries. Wilderness character measures with respect to invasive species would remain the same, subject to active intervention (implementation of weed treatment programs) by BLM. However, no *new* watering sites would be established and no *new* disturbance (weed susceptible) areas would be created.

3.7.3 *Environmental Impacts- Proposed Action*

³ Wilderness Character Measure 3-1 *Index of physical development for authorized or pre-designation structures and developments*, Sylvania Mountains Wilderness Character Monitoring Report As Amended (September 2019).

⁴ Wilderness Character Measure 2-2 *Abundance and distribution of non-indigenous species*, Sylvania Mountains Wilderness Character Monitoring Report As Amended (September 2019).

Under this alternative, all of the proposed new range developments within 1,000 feet of the wilderness boundary would be approved.

Deep Springs Troughs #1 & #2

These troughs would be placed across the Lake Road from the Piper Mountains Wilderness boundary. However, they would be set much farther back from the wilderness boundary than most of the other proposed new sites. Both of these watering sites would be more than 500 feet from the centerline of the road. (The wilderness boundary is a 100 feet from the centerline on the opposite side of the road.) At such distances (more than 600 feet), there would be no direct impacts to wilderness from concentrated cattle use within 100-150 feet of the troughs at these sites (Anticipated concentrated use area around troughs per range specialists). Indirect impacts of the new watering sites would be to shift grazing east, away from the Payson pipeline towards the east side of the valley floor and the base of the mountains. The area spanning the wilderness boundary here has always been used for grazing purposes to at least a moderate degree. As the Piper Mountains are very steep in most places here, the move is not anticipated to extend grazing impacts up on the flanks of the mountains and into parts of the wilderness that have been only lightly or rarely grazed before.

These two sites are problematic with respect to weed introduction and/or weed intensification and spread (See the Invasive Species section). The Lake Road is a common vector for Russian thistle on both the wilderness and non-wilderness sides of the road.

The Gilbert Summit/Piper Corridor Complex

The complex includes the following new proposed developments: the corral and tank at Gilbert summit, the pipeline down the corridor to an existing tank and trough, and the continuation of that pipeline to a new set of troughs located a mile and a half away and further down the corridor.

Impacts at three of these developments (the Gilbert Summit corral and tank, and the Piper Corridor pipeline) would be relatively small and discrete. The corral would be located off of Highway 168, north of but within 50 feet of the wilderness boundary. It would be used for overnighting horses, not for off-loading or holding cattle. The tank would be installed in an already disturbed area (a small vehicle turnaround) a short distance away, on the northside of the corridor before the corridor passes through wilderness. It too would be just outside of wilderness. The tank would not be used for supplying water to cattle troughs on-site. It would only be used to send water down a pipeline to an existing tank and trough, and then on down to a proposed new set of troughs. A water tender would deliver water to the site and then turn around and leave. The new tank and pipeline would make any additional trips by vehicle down the corridor to deliver water to any new and existing troughs unnecessary. The new pipeline would be buried within the roadbed or laid down alongside the jeep trail within 30 feet of its centerline. This would keep the pipeline and any impacts associated with its installation outside of wilderness. These developments would not become cattle use areas. They would not generate impacts that could extend into wilderness. Direct impacts would be confined to the basic dimensions or footprints of the developments themselves, all of which would be outside of wilderness. These types of developments could be easily accommodated very close to the wilderness boundaries without adverse impacts to wilderness.

Gilbert Canyon Troughs #2

This new proposed trough site could not be accommodated without adverse impacts to wilderness. The trough site would be so close to the wilderness boundary that it would result in direct impacts to wilderness beyond the footprint of the troughs themselves. The troughs would need to be located within 10-15 feet of the wilderness boundary (and at least 15 feet from centerline of the jeep trail) to be kept out of the jeep trail, within the corridor, and outside of wilderness. (Wilderness setbacks are 30 feet from the centerline of the jeep trail along both sides of the jeep trail.) Impacts from cattle use of the site would be expected to extend for 100-150 feet in all directions. That would take them to the canyon walls and possibly beyond, extending across and along both sides of the jeep trail. On the east side, impacts would extend across the wash bottom and more than 100 feet into wilderness. On the west side, they would extend across the jeep trail and on up the adjacent slope, extending for as much as 50 feet into wilderness. Impacts would be noticeable, resulting in a large, denuded area, where the ground would be trampled and soiled, and stripped of vegetation. Impacts may be permanent. There may or may not be long enough intervals between periods of use for soil and vegetation to recover. Weeds (Cheat grass) already found on-site may intensify with disturbance and may spread off-site into adjacent wilderness areas with foraging cattle.

This portion of the allotment and this part of the wilderness has never had a cattle watering site before. Use within this area and within the corridor generally has been described as light (<40%) during the period spanning wilderness designation. The new proposed watering site is a mile and a half away from and farther down the corridor from the existing watering site. This proposal would support ever more intensive use of what was once a lightly used area, particularly over warm to hot season months. (See analysis of South Oasis Troughs #2 for details on how watering sites affect cattle distribution and use.)

South Oasis Trough #1

This site is similar to the new proposed trough sites located off of the Lake Road. The South Oasis Trough #1 site is located across the North Eureka Valley Road from the Piper Mountains Wilderness. It is set twice as far back (1,000 feet east) from the centerline of the road and from the wilderness boundary on the opposite side of the road. (The wilderness boundary is 100 feet west of the centerline of the road.) It is located off of a known weed vector (the North Eureka Valley Road), but along a section of the road which is not currently weed-infested. It is located at the extreme northern end of the allotment, on the valley side of the road, a side that has been described as moderately grazed in the past. This area was most likely grazed in conjunction with the adjacent hills on the wilderness side of the road. The placement of water here is not likely to extend grazing impacts into wilderness beyond what was previously occurring.

This site is unlikely to have impacts on wilderness.

South Oasis Trough #2

Two troughs would be installed within 50 feet of the Piper Mountains Wilderness boundary (within the 100' of the centerline of the road wilderness setbacks) at the extreme southern end of the South Oasis Allotment. The troughs would be located immediately off of the North Eureka Valley Road

which would be used to truck water into the site. The troughs would be placed directly across the road from the Sylvania Mountains Wilderness. This portion of the South Oasis Allotment and these parts of two wilderness areas have never had a cattle watering site in place before. These areas show very little if any evidence of prior cattle use. There are no signs of trampling, soiling or trailing. Forage has not been munched and weeds are not present.

The installation of these troughs would result in impacts to two wilderness areas. The placement of troughs so close to the wilderness boundary would result in a new, large, heavily disturbed area (an intensive cattle use area) that would extend past the wilderness boundary for at least 100 feet into the Piper Mountains Wilderness. On the Sylvania Mountains Wilderness side, impacts from concentrated cattle use of the site would be expected to cross the road and continue right up to the wilderness boundary.

Grazing at the south end of the South Oasis Allotment and within the two wildernesses would be expected to intensify. Areas formerly not impacted or only lightly impacted by cattle grazing would become more heavily impacted. Slope and distance from water are the most important factors in determining cattle distribution and use. The standard rule of thumb is that cattle will travel up to 2 miles from water in flat areas and up to 1 mile in mountainous terrain. Utilization studies show that the most intensive foraging occurs within a ½ mile of a watering site (70-45% utilization), dropping to 30% utilization at 1 mile and 15% utilization at 2 miles, as distance is extended.⁵ Water consumption doubles in hot (summer) weather as does frequency of trips to the watering site and time spent resting at the watering site. As this allotment is grazed most frequently in the warm to hot summer months, additional warm weather impacts would be particularly intense within 900 meters or approximately a ½ mile of the new watering site.⁶

The South Oasis Troughs #2 site is 2.5 miles from the Fish Lake Valley/South Oasis Windmill site. Distance from water is less important in wintertime when water consumption drops, forage is wet (or in early spring, very green), and snow is available for use. Cattle may water every other day as opposed to twice a day. Cattle can range up to 3 and even 4 miles from a watering site in cool weather.⁷ Without changing the season of use from warm to cool season months, it is unlikely that this site could be used in conjunction with the windmill site to successfully disperse cattle use or to more evenly distribute cattle use between the two sites. It is more likely that this site would become a satellite site to the windmill site and another heavy concentrated use area.

The range program is *not* proposing to use the proposed new facilities to increase the number of AUMs or numbers of livestock grazing within these allotments, but to more evenly distribute livestock use across the entire span of these allotments. This is being proposed as a solution to overgrazing (and to some extent, to weed introduction and spread) in areas (mostly outside of wilderness) where water support facilities currently exist. Cattle would not spend too much time in any one area if they had water available in other areas to move to. Water would be turned on and

⁵ Valentine, K.A. (1947). Journal of Forestry, Vol. 45: 749-754

Mann, Roy S. (1979). Technical Notes, USDA-SCS, Portland, Oregon, Range No. 11: 1-10

⁶ Harris, N.R., Johnson, D.E., George, M.R., McDougald, N.K. (2001). The Effect of Topography, Vegetation, and Weather on Cattle Distribution at San Joaquin Experimental Range, CA. USDA Forest Service Gen. Tech. Rep. PSW-GTR-184: 53-63

⁷ Bailey, Derek W. (2005). Identification and Creation of Optimum Habitat Conditions for Livestock, Rangeland Ecology & Management 58(2) March 2005: 109-118

off at a larger number of watering sites and cattle would be rotated in this way throughout the allotment. This would reduce the grazing pressure in some areas and raise it in others. The range program is proposing this as a way to improve rangeland health within these allotments *as a whole*.

The strategy puts range management in conflict with wilderness management. As wilderness managers, BLM has a mandate to preserve wilderness character and to improve upon it if possible. Distributing cattle use more evenly across these allotments would intensify use (and potentially new weed introduction and spread) in previously waterless portions of the allotments (mostly within wilderness) that are weed-free and that historically, have supported relatively light or little to no cattle use.

In addition, while adding watering sites and rotating cattle use would alleviate grazing pressure at some sites, it would not solve the weed and forage problems at these sites or within these allotments as a whole. Well established weeds will not simply go away on their own because there is less disturbance. Some kind of intervention and treatment would still be needed at these sites and within these allotments to control them. In long-standing, heavily weed-infested areas, native plant communities would not be expected to stage a comeback on their own, simply because grazing pressure has subsided. Native seed banks may be seriously depleted or even non-existent in some areas. The composition of native plant communities may be off as some native species manage to survive better with weeds on-site than others. Active intervention will be required to restore these plant communities, to suppress weeds, replant native species and/or replace native seed banks. Untreated weeds will not stop spreading to other susceptible, newly disturbed sites located within the same general area.

3.7.4 Environmental Impacts-Alternative 2

Impacts to wilderness would be the same as in Alternative 1, except that one of the most problematic sites out of the eleven (the South Oasis Troughs Site #2) would *not* be approved for installation and use. This would help retain the natural and scenic qualities of two wildernesses in a part of the South Oasis Allotment that has seen little to no grazing use in the past.

The effects on wilderness of approving new water developments within 30 to 50 feet of the wilderness boundary in parts of the allotment that were only lightly grazed in the past and that were never supported by water, would be substantial. These effects would result in a detectable loss of wilderness character both within 100-150 feet of the watering sites and within a ½ mile radius of the sites where grazing impacts would be most concentrated. Specific losses would include a loss of scenery due to trampling, soiling and trailing impacts, a loss of naturalness due to losses in plant cover and changes in plant composition, and very probably, the introduction and spread of new invasive plant species.

3.7.5 Mitigation

The new range developments could be approved incrementally over time so effects can be studied and evaluated before new ones are added. Approval of these nine (actually eleven) new developments could wait until the grazing strategies for the affected allotments (Deep Springs and South Oasis) have been reviewed and possibly revised.

4.0 Consultation and Coordination

4.1 Summary of Consultation and Coordination

Name	Agency/Organization	Title
Lisa Sims	U.S. Forest Service-Inyo National Forest	Rangeland Management Specialist
Robert Pearce	NRCS-Bishop	District Conservationist
Nick Buckmaster	California Department of Fish and Wildlife	Environmental Scientist-Fisheries Biologist
Tim Gipson	Deep Springs College	Ranch Manager

4.2 Summary of Public Participation

Public scoping efforts, included the NOPA (See Sec. 1.4). This EA will be published for public comment on the BLM Environmental Documents and Land Use Plans website located at: www.eplanning.blm.gov for 30 days.

4.3 List of Preparers

Name	Title	Resource Area
Ryan Klausch	Natural Resource Specialist (Former)	Rangeland Management Standards and Guidelines, Livestock Grazing
Blair Street	Rangeland Management Specialist-Project Lead	Rangeland Management Standards and Guidelines, Livestock Grazing, Soils
Caroline Woods	Planning and Environmental Coordinator	Overall review, NCL,
Donald Storm	Archeologist	Archeology, Paleontology, Cultural Resources, Native American Religious Concerns
Clint Helms	Wildlife Biologist	Wildlife Biology, Farmlands, Threatened/Endangered Species, Vegetation
Priscilla Watson-Wynn	Contractor-Wildlife Biology	Wildlife Biology, Special Status Species

Martha Dickies	Outdoor Recreation Specialist- Wilderness Coordinator	Wilderness, Invasive Species and Noxious Weeds, Visual Resources, Areas with Wilderness Characteristics
Jack Hamby	BLM California State DRECP Project Manager	Rangeland Health Standards and Guidelines, Livestock Grazing
Alexander Neibergs	Rangeland Management Specialist- Wild Horse and Burro	Air Quality, WH&B, Greenhouse Gas Emissions, Invasive Species and Noxious Weeds
Craig Beck	Supervisory Outdoor Recreation Specialist	Recreation, National Conservation Lands

5.0 List of Appendices

Appendix A—Maps

Appendix B—Applicable DRECP CMAs

*Appendix C—Interdisciplinary Team
Checklist*

Appendix D— Visual Resources

Appendix E—Season of Use Flexibility

Appendix F- Range Allotment Plans

Appendix G- List of References

Appendix H- Table of Overall Impacts

Appendix A: Maps

Attached Separately

Appendix B—Applicable Conservation Management Actions Table

Attached Separately

Appendix C- Interdisciplinary Team Checklist

Attached Separately

Appendix D— Visual Resources

Attached Separately

Appendix E— BLM Rationale for Deep Springs Season of Use Flexibility

Attached Separately

| *Appendix F— Oasis and Deep Springs Range Allotment Plans*

Attached Separately

Appendix G- List of References

Attached Separately

Appendix H- Table of Overall Impacts

Attached Separately