

United States Department of the Interior
Bureau of Land Management

ENVIRONMENTAL ASSESSMENT
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Dairy Syncline Drilling Project

Prepared By:

United States Department of the Interior
Bureau of Land Management
Pocatello Resource Area Office
4350 Cliffs Drive
Pocatello, Idaho 83204

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

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1.0 Introduction/Purpose and Need

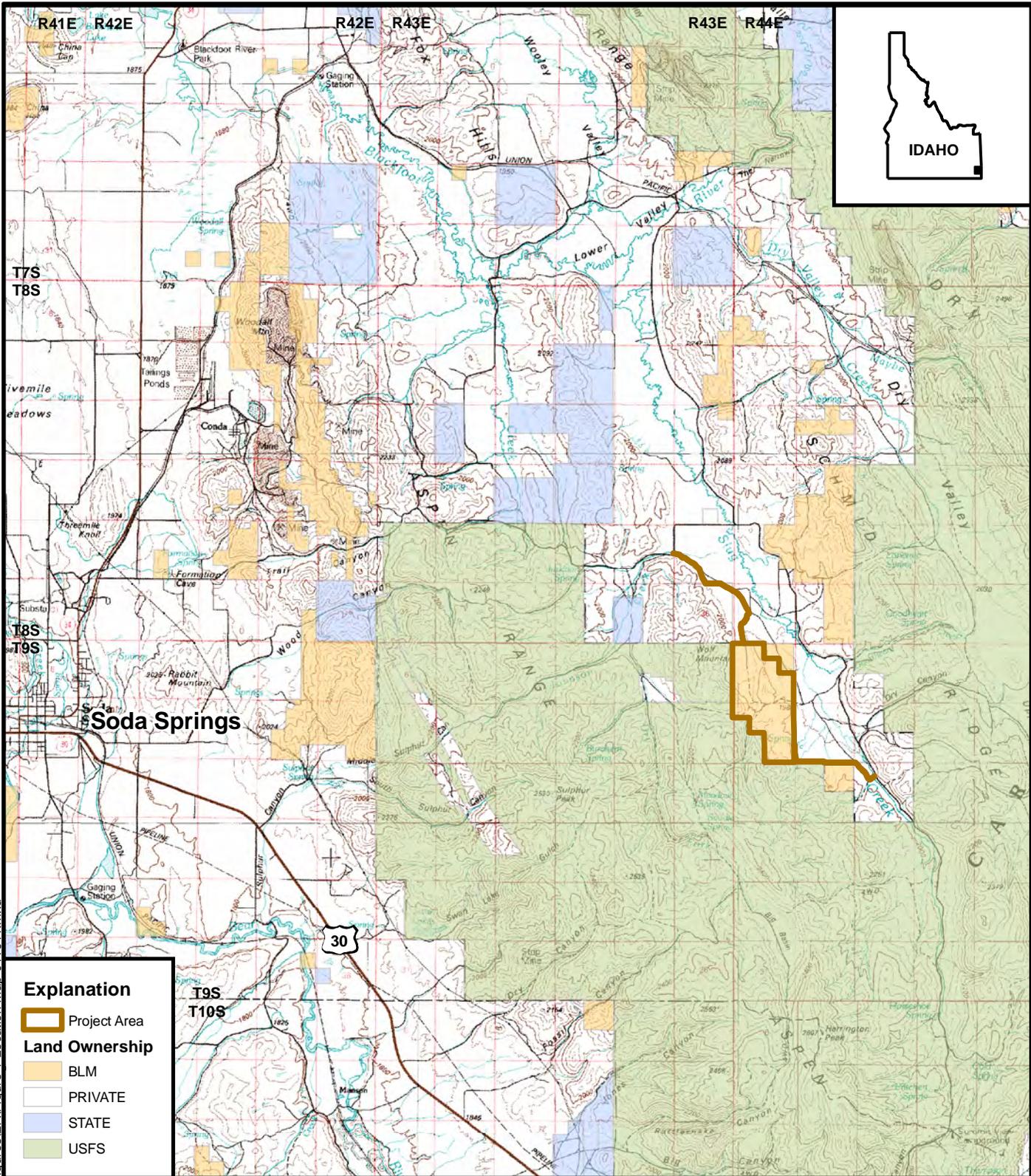
1.1 Introduction

The Bureau of Land Management (BLM) and JR Simplot Company (Simplot) have proposed a drilling project (the Project) on the National System of Public Lands in Township 9 South (T9S), Range 44 East (R44E), Boise Meridian, Sections 6 and 7. In addition to these sections the Project Area includes proposed temporary access roads on both public and private lands in Sections 8 and 17, T9S, R44E, Section 31, T8S R44E, and Sections 25 and 36, T8S, R43E (see **Figure 1**, Site Location Map).

Simplot submitted the proposed Dairy Syncline Mine and Reclamation Plan application to BLM in 2008, which proposes a tailings impoundment on BLM managed public lands as part of the application. A mitigated land sale of BLM managed public lands to Simplot is being considered to accommodate the proposed tailings impoundment. This proposed Drilling Project is directly related to and associated with the proposed mitigated land sale. Information obtained from this Drilling Project is designed to obtain subsurface geologic and environmental information that the BLM will utilize in preparing the Environmental Impact Statement (EIS) for the proposed Dairy Syncline Mine and Reclamation Plan application and associated mitigated land sale. The EIS will fully describe and analyze the mitigated land sale, including effects from this project, and will include the opportunity for public involvement and review as part of the EIS process prior to any decision regarding the land sale.

The Drilling Project consists of drilling activities for two distinct purposes: 1.) investigation of mineral potential on the proposed mitigated land sale parcel, and 2.) geotechnical drilling within the proposed tailings impoundment area.

1.) Mineral Potential Investigation Drilling (Geologic Boreholes): The 2010 BLM Mineral Potential report, prepared for the parcels of BLM land proposed for sale, recommended that a three to four hole drilling program be conducted to determine if the phosphatic shale member of the Phosphoria Formation underlies the southeast quarter of Section 6 and the northeast quarter of Section 7 (BLM 2010a). Follow-up communication from the BLM field office staff recommended eleven potential geologic drill holes to make this determination. These holes are prioritized on **Figures 2** and **3** as primary or secondary. The data collected from the primary boreholes would determine the need or lack thereof to drill the secondary holes. The secondary boreholes would only be drilled if phosphate is encountered in the primary boreholes, and would assist in determining the extent of the phosphate resource, if present. Advancement of these 11 boreholes would satisfy the recommendation from the 2010 Mineral Potential report. Additionally, the data obtained from these 11 boreholes would enable the BLM to determine if the lands proposed for sale to Simplot have either no mineral potential or that the sale of land includes the value of the mineral potential as required by 43 CFR 2720.1-3 Part C.

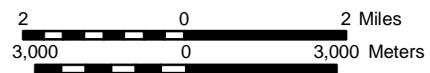


drawings\Simplot Dairy Syncline.EOS\Figures\EA\Figure 1 Location Map 011911.mxd

BASE FROM USGS 1:100,000-SCALE METRIC TOPOGRAPHIC MAP: SODA SPRINGS, IDAHO

Explanation

- Project Area
- BLM
- PRIVATE
- STATE
- USFS

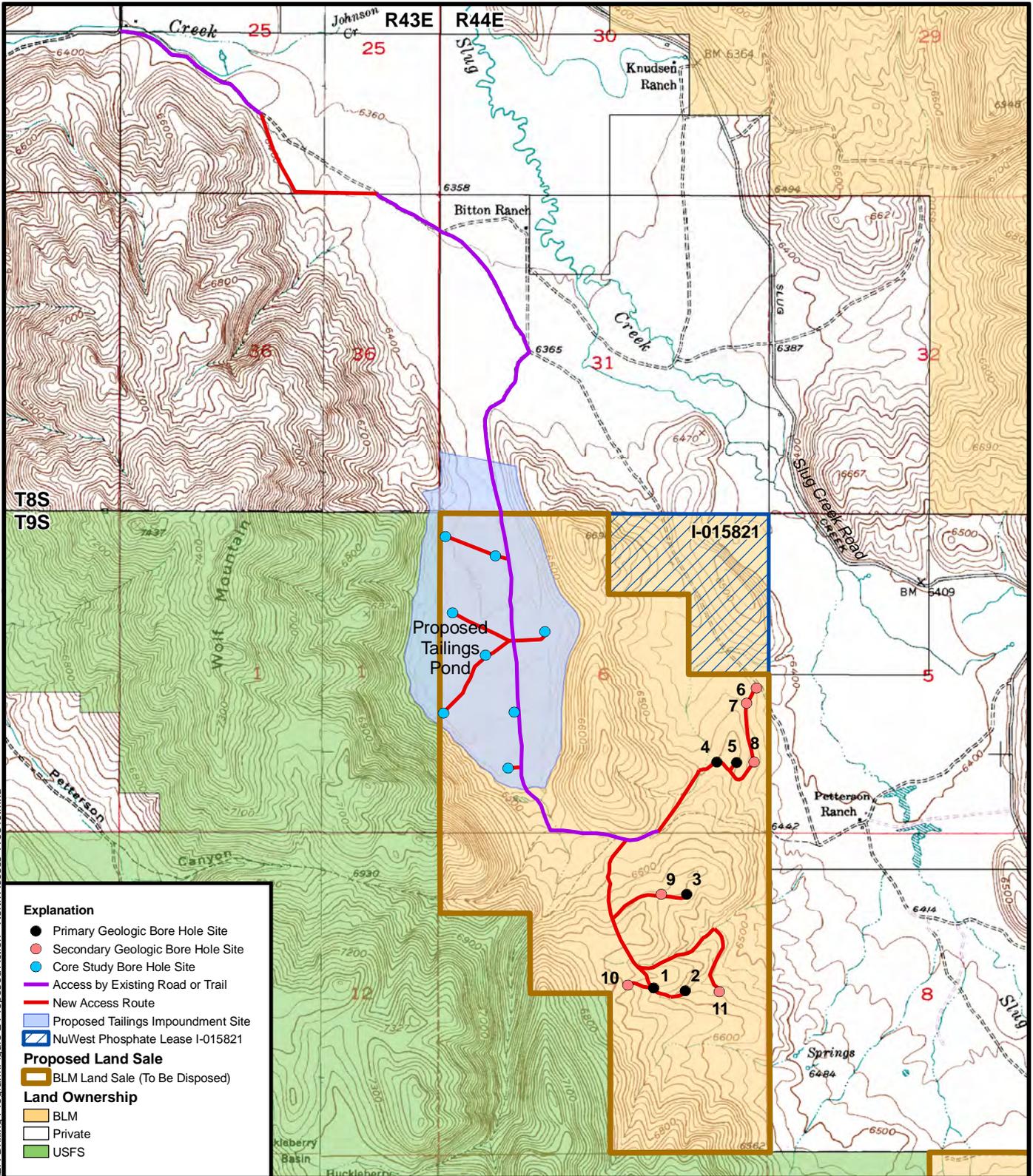


DAIRY SYNCLINE DRILLING PROJECT

FIGURE 1
SITE LOCATION MAP



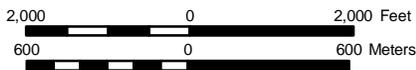
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drawings\Simplot Dairy Syncline EOS\Figures\EA-Drilling Program\Figure 2 Proposed Action - North Access 110810.mxd

- Explanation**
- Primary Geologic Bore Hole Site
 - Secondary Geologic Bore Hole Site
 - Core Study Bore Hole Site
 - Access by Existing Road or Trail
 - New Access Route
 - Proposed Tailings Impoundment Site
 - ▨ NuWest Phosphate Lease I-015821
- Proposed Land Sale**
- BLM Land Sale (To Be Disposed)
- Land Ownership**
- BLM
 - Private
 - USFS

Base from USGS 1:24,000 Topographic Quadrangles.

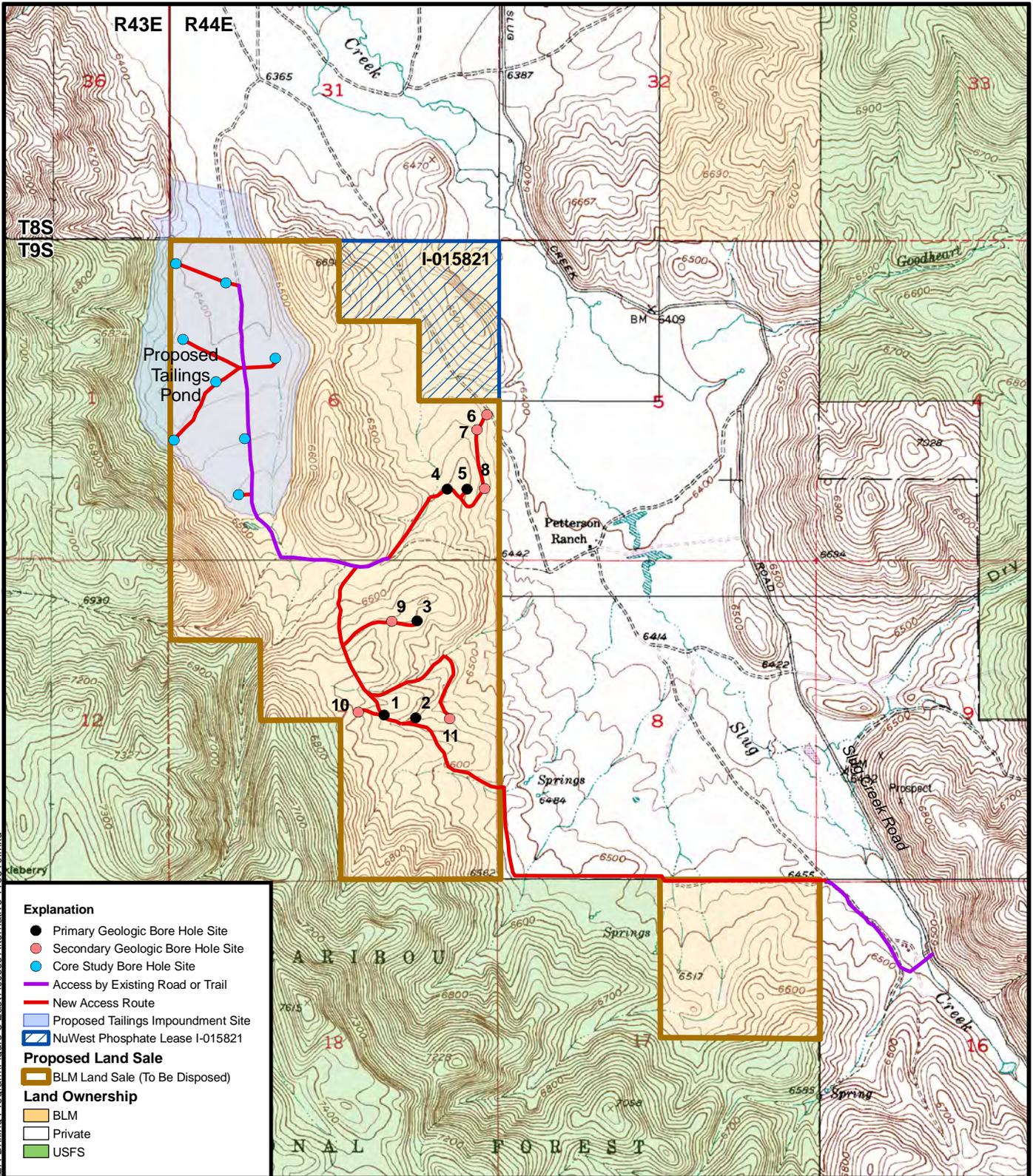


DAIRY SYNCLINE DRILLING PROJECT

FIGURE 2
PROJECT AREA MAP
PROPOSED ACTION NORTH ACCESS



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SCALE	1:28,000		



drawings\Simplot Dairy Syncline EOS\Figures\EA-Drilling Program\Figure 3 East Access Alternative 110810.mxd

- Explanation**
- Primary Geologic Bore Hole Site
 - Secondary Geologic Bore Hole Site
 - Core Study Bore Hole Site
 - Access by Existing Road or Trail
 - New Access Route
 - Proposed Tailings Impoundment Site
 - NuWest Phosphate Lease I-015821
- Proposed Land Sale**
- BLM Land Sale (To Be Disposed)
- Land Ownership**
- BLM
 - Private
 - USFS

Base from USGS 1:24,000 Topographic Quadrangles.



DAIRY SYNCLINE DRILLING PROJECT

FIGURE 3
PROJECT AREA MAP
EAST ACCESS ALTERNATIVE



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SCALE 1:28,000	

2.) Tailings Impoundment Boreholes: In addition to the 11 boreholes described above, Simplot is proposing to drill eight boreholes within the Project Area in the vicinity of the proposed tailings impoundment area. These holes would be drilled to gather geotechnical and environmental data. This information would be utilized in the impact analysis of the Dairy Syncline Mine and Reclamation Plan EIS project, as well as in the engineering evaluation of the proposed tailings impoundment area. Data obtained from these eight boreholes would enable the BLM to determine if this area is a suitable location for the proposed tailings impoundment.

Geological, hydrological, and analytical information resulting from this exploration program would be submitted to the BLM. In addition, some drill holes may be cased and used to obtain groundwater and additional environmental information.

Alternative routes for drilling and support vehicles to access the Project Area are considered as separate alternatives in this Environmental Assessment (EA), as described in **Section 1.2** and shown on **Figure 2** and **Figure 3**. This EA assesses potential impacts to the human environment that may occur from Alternative 1 (Proposed Action, North Access), Alternative 2 (East Access Alternative), or Alternative 3 (No Action) in compliance with the National Environmental Policy Act (NEPA).

1.2 Location and Access

The Proposed Action and the East Access Alternative would be on public lands in Sections 6 and 7, T9S, R44E, Boise Meridian. In addition to these sections the Project Area includes proposed temporary access roads on both public and private lands in Sections 8 and 17, T9S, R44E; Section 31, T8S R44E; and Sections 25 and 36, T8S, R43E (see **Figures 1, 2, and 3**).

Under the Proposed Action, access to the Project Area would be from the existing Slug Creek Road, northwest of the proposed drilling area (see **Figure 2**). A second action alternative, the East Access Alternative, would access the Project Area from the southeast using existing and new temporary roads (see **Figure 3**). Either action alternative would require overland travel on existing two-track roads through private property in order to access the Project Area. Once on public land, overland access on existing two-track roads or across flat topography, along with the construction of temporary new access roads to certain drill holes, would be utilized to access each proposed drill hole. Simplot would obtain the necessary access agreements with the private land owners.

1.3 Purpose and Need

As described in **Section 1.1**, the purpose and need for the federal action is to gather subsurface geologic data to determine the mineral potential of the proposed sale parcel, and to gather geotechnical and other environmental data in the vicinity of the proposed tailings impoundment. Various exploration and geotechnical borings would be completed as shown in (**Figure 2**). These borings are needed to gather geologic, geotechnical, and environmental information that would be utilized for analysis in the EIS being prepared for the Dairy Syncline Mine and Reclamation application, primarily the portion of the application that proposes to place a tailings impoundment on this parcel of public lands.

1.4 Land Use Plan Conformance Statement & Other Regulations

The Project is subject to the “Pocatello Resource Management Plan and Environmental Impact Statement” (BLM 1988). This land use plan and applicable regulations have been reviewed and a determination made that the proposed drilling project is consistent with the land use plan, as well as with federal, state, and local laws and regulations.

The proposed Project is in compliance with the Minerals Management, Management Objective of allowing for mineral exploration and development while minimizing adverse impacts to other resource values. The RMP also states, “that it is the objective of BLM to make public lands available for the orderly and efficient development of energy and mineral resources under principles of balanced multiple use management (BLM 1988).”

This document was prepared in compliance with the Council on Environmental Quality (CEQ), National Environmental Policy Act (NEPA), (40 CFR Sec. 1500-1508); and the BLM’s NEPA Handbook, H-1790-1 (BLM 2008).

1.5 Decisions To Be Made

Based on the information in this analysis, the BLM will determine whether to approve data collection activities: the entire drill plan, a portion of the drill plan, access to the drilling area, what conditions may apply, or not to approve any portion of the drill plan.

1.6 Scoping/Public Involvement

On April 14, 2010, the BLM sent 23 Notice of Scoping letters to potentially interested and affected individuals, groups, and agencies, requesting comments and input for the project. The Notice of Scoping was also posted on the Pocatello Field Office BLM NEPA Database.

Two responses were received during the public comment period. A summary of the public comments are listed below, along with BLM’s responses to those comments.

1. The public expressed some confusion about the action proposed, stating that the cover letter and scoping notice contradicted each other concerning the intent to mine the land; noting the presence of a public road on private land where none exists; and determining whether an access road, or pipeline, or both would be included as part of the proposal.
 - BLM Response: The Proposed Action addressed in this EA is for the drilling project to collect geologic and other environmental data on BLM administered public land. These same lands are proposed for sale in the Dairy Syncline Mine and Reclamation Plan EIS project. The Drilling Project is needed to gather the data needed for the Dairy Syncline Mine and Reclamation Plan EIS project (see **Sections 2.1.1** and **2.1.2**). Potential subsequent actions (i.e., Dairy Syncline Mine and associated facilities) are considered in the cumulative impacts section as reasonably foreseeable activities.
2. An alternative to use other access routes that do not cross private property for 10-15 years should be considered.

- BLM Response: All environmentally acceptable access routes would require travel over private land. A second action alternative, which uses an access route from the east, has been retained for analysis in this EA (see **Section 2.2**, East Access Alternative).
3. An alternative that would include having a temporary (2-3 months) trail across private land to allow drilling should be considered.
 - BLM Response: The current action alternatives include temporary improvements to existing two-track trails and new temporary access roads where none exist. Due to the requirements of the drilling and reclamation equipment, it is estimated that the length of time it will take to complete the drilling program is 2-3 months. The two alternative access proposals are believed to be the most environmentally acceptable options that would allow the program to be completed in an efficient and environmentally acceptable manner.
 4. Other locations to withdraw water from Slug Creek should be considered.
 - BLM Response: Corollary to the alternative access route analyzed as the East Access Alternative, a second location for water withdrawal is considered in this EA. Because water for drilling needs would be trucked from Slug Creek to the site, the withdrawal location is limited by its proximity to site access. See **Section 2.1.1**.
 5. An alternative that disallows the sale of public lands and directs Simplot to buy adjacent private lands for the proposed tailings impoundment should be considered.
 - BLM Response: The purpose of this drilling project is to gather geologic, geotechnical, and other environmental data, to be used in preparation of an EIS that will assess the Dairy Syncline Mine and Reclamation Plan application. The information in this EA analysis will be used by BLM to determine whether to approve data collection activities: the entire drill plan, a portion of the drill plan, access to the drilling area, what conditions may apply, or not to approve any portion of the drill plan. A decision related to the sale of public lands is not within the scope of this EA analysis. Alternatives to the sale of public lands and decisions related to disallowing the sale of public lands would be considered in the EIS which is being prepared for the Dairy Syncline Mine and Reclamation application. Consequently, an alternative that disallows the sale of public lands is not appropriate in this analysis.
 6. The drilling program should be deferred until the public has the opportunity to comment on the sale of public lands.
 - BLM Response: The public has had the opportunity to comment on the proposed land sale on two previous occasions: 1) During the scoping period for the EIS which is currently being prepared for the Dairy Syncline Mine and Reclamation Plan application; and 2) During the public comment period for the notice of realty action for the proposed sale of public lands.

Additionally, the public will have an opportunity to comment on the sale of public lands when the BLM publishes the draft EIS for the Dairy Syncline Mine and Reclamation Plan application.

7. The proposed access road across private land would increase access for hunting, poaching, and cattle rustling.
 - BLM Response: Potential effects due to increased access to private land are considered in this EA, see **Table 5, Chapter 3 - Access**.
8. Adjacent major mining project could negatively impact adjacent private land values.
 - BLM Response: This proposed drilling project is not a major mining project. Potential impacts to the property values of private lands from major mining activities would be considered in the EIS which is being prepared for the Dairy Syncline Mine and Reclamation Plan application.
9. The project may impact grazing by having fencing that would impede the movement of cattle and make it difficult to get to water sources.
 - BLM Response: Access roads on public lands would not be fenced, so no impacts to cattle movement are anticipated. Potential effects on grazing are considered in **Section 3.8** of this EA.
10. The effects of water withdrawals from Slug Creek should be fully analyzed, including water flow and quality. The withdrawal of water from Slug Creek could affect aquatic species.
 - BLM Response: The effects of water withdrawals from Slug Creek are analyzed in **Sections 2.1.1 and 3.10.2** of this EA.
11. The 20-foot access road would interfere with natural drainage and the availability of water for dry farm grass on private ranches.
 - BLM Response: Access roads would be built as close as possible to the edges of the existing pasture fences on private land, so as to minimize the amount of water potentially being impeded. Also, any existing drainages would be culverted to allow water to flow. Potential effects on water resources are considered in **Section 3.10** of this EA.
12. The proposed project area contains important sage grouse habitat and the EA should analyze impacts to sage grouse and habitat.
 - BLM Response: Potential effects on sage grouse and its habitat are considered in **Section 3.11** of this EA.
13. A legally sufficient cumulative effects analysis must be conducted and include all associated activities as well as those reasonably foreseeable (i.e., BLM's proposed land sale and the proposed Dairy Syncline Mine and Reclamation Plan application).

- BLM Response: The cumulative effects analysis in **Chapter 4** includes the actions associated with the proposed Dairy Syncline Mine and Reclamation Plan application, including the proposed BLM land sale.
14. Cumulative effects analysis should include, but not be limited to: a) water quality in the Upper Blackfoot River Basin, b) Yellowstone cutthroat trout and its habitat, and c) sage grouse and its habitat in southeast Idaho.
- BLM Response: The direct and indirect effects on water quality and sage grouse and its habitat are disclosed in the appropriate resource sections in **Chapter 3**. These effects are considered in the cumulative effects analyses disclosed in **Chapter 4**. Fisheries, including threatened, endangered, and sensitive fish were determined to be present, but not impacted. Rationale for this determination is provided in **Table 5, Section 3.2**.

1.7 Staff to Staff Coordination with Shoshone-Bannock Tribes

BLM has coordinated with the Shoshone-Bannock Tribal staff regarding the Proposed Action. The goal of this coordination was to assure the Tribal government, Native American community, and those individuals whose interests might be affected have a sufficient opportunity for productive participation in BLM resource management decision making as set forth in BLM Manual Section 8160.

The Notice of Scoping letter sent out on April 14, 2010 was sent to the Business Council of the Shoshone-Bannock Tribes. The Project was also discussed during the August 26, 2010 coordination meeting with the Tribal, Environmental Program Manager, and other Tribal staff at Fort Hall, Idaho. After discussing the Proposed Action, Tribal staff did not identify specific concerns or a need for consultation with the Tribal Business Council, but expressed interest in knowing BLM's decision and being informed of proposed activities that might occur in the future.

2.0 Description of Alternatives

2.1 Proposed Action – North Access

2.1.1 Geologic Boreholes

The 2010 BLM Mineral Potential report, prepared for the parcel of land that has been proposed for possible sale to Simplot as part of the Dairy Syncline Mine and Reclamation Plan EIS project, recommended that Simplot conduct a three to four hole drilling program to determine if the phosphatic shale member of the Phosphoria Formation underlies the southeast quarter of Section 6 and the northeast quarter of Section 7 (BLM 2010a). Follow-up communication from the BLM field office staff recommended eleven potential geologic drill holes. These holes are prioritized on **Figure 2**, as either primary or secondary. The data collected from the primary boreholes would determine the need or lack thereof to drill the secondary holes. This Proposed Action would satisfy the recommendation from the 2010 Mineral Potential report.

These holes would be completed by reverse circulation drilling to a total depth of approximately 350 feet. Once exploration activities are completed the boreholes would be plugged and abandoned per any approved Conditions of Approval issued for this Project and Idaho Department of Water Resources requirements (see Environmental Protection Measure 5 in **Section 2.4** below).

Water required for the drilling activities would be obtained from Slug Creek with appropriate approval(s) from the Idaho Department of Water Resources, which administers water rights in the State of Idaho. The proposed withdrawal of 1,000 gallons per day would occur in the Slug Creek channel at the Slug Creek Road crossing between sections 19 and 30 in T8S, R44E (stream sampling site DSW-35 on **Figure 4**). Access to this area is available from Slug Creek Road using a standard water tanker truck. No surface disturbance of riparian areas or wetlands from heavy equipment would occur and use of a screened intake hose to the tanker truck would minimize the potential for fish getting injured or killed. The 1,000 gallons per day represents less than one percent of Slug Creek's daily low-flow rate at the lowest measured flow location upstream of this location.

The proposed total disturbance for drilling the geologic holes includes improvements to existing access roads/trails off of the existing Slug Creek Road and the temporary construction of new access roads (**Figure 2, Table 1**), which would have a disturbed width of 20 feet. Since portions of the existing access roads/trails would require improvement and other portions would not, for this disturbance calculation, it was assumed that improvement of up to 10 feet in width for existing roads/trails would occur. This assumption was documented by a field inspection of the existing roads/trails. Drill holes and any necessary environmental controls, such as sumps, would be sited in the disturbance footprint of the existing or newly constructed road. Proposed disturbance would be limited as much as possible but would be enough to assure safe travel. Assuming the geologic drilling is a complete and independent project from the geotechnical drilling, proposed disturbance would total approximately 10.6 acres. This proposed disturbance total includes improvements to existing access roads/trails and the temporary construction of new access roads. Approximately 7.14 acres of this

proposed disturbance would occur on National System of Public Lands (BLM Lands). **Table 1** depicts the estimated disturbance for the proposed geologic drill holes and access roads.

Table 1. Disturbance for Geologic Boreholes, Proposed Action

Access	Existing Roads/Trails**				New Access Routes			
	BLM		Private		BLM		Private	
	Length (ft)	Area (acres)	Length (ft)	Area (acres)	Length (ft)	Area* (acres)	Length (ft)	Area (acres)
Primary Holes	7,202	1.65	9,537	2.19	6,898	3.17	2,758	1.27
Secondary Holes					5,064	2.32		0
Disturbance	7,202	1.65		2.19	11,961	5.49	2,758	1.27
Total Acres	3.84				6.76			

* All Routes determined to have a 20-foot width

** Existing roads/trails determined to result in up to an average 10-foot width of new disturbance

2.1.2 Tailings Impoundment Boreholes

In addition to the geologic boreholes, Simplot is proposing to drill eight boreholes within the Project Area in the vicinity of the proposed tailings impoundment area. Access to the proposed tailings impoundment area would be the same as for accessing the geologic hole locations (**Figure 2**). These holes would be drilled by hollow stem auger to gather geotechnical and environmental data. This information would be utilized in the EIS as well as the engineering evaluation of the proposed tailings impoundment area. All data collected from this drilling would be provided to the BLM.

Assumptions related to access improvements are the same for this drilling proposal. It was assumed that improvement of up to 10 feet in width for existing roads/trails and new disturbance of 20 feet in width for the new access roads would occur. Drill holes and any necessary environmental controls, such as sumps, would be sited in the disturbance footprint of the road. Assuming the geotechnical drilling as a complete and independent project from the geologic drilling, proposed disturbance would total approximately 6.61 acres. Approximately 3.15 acres of this proposed disturbance would occur on BLM Lands. **Table 2** quantifies the estimated disturbance for the proposed tailings impoundment geotechnical drill holes and access roads.

Table 2. Disturbance for Proposed Tailings Impoundment Boreholes

Access	Existing Roads/Trails**				New Access Routes			
	BLM		Private		BLM		Private	
	Length (ft)	Area (acres)	Length (ft)	Area (acres)	Length (ft)	Area* (acres)	Length (ft)	Area (acres)
Geotech Holes-Disturbance	4,212	0.97	9,537	2.19	4,749	2.18	2,758	1.27
Total Acres	3.16				3.45			

* All Routes determined to have a 20-foot width

** Existing roads/trails determined to result in up to an average 10-foot width of new disturbance

Portions of existing roads/trails would be used for both drilling proposals and, therefore, overall disturbance would be reduced when compared to treating each program independently as described above. If both geologic and tailings impoundment boreholes were approved the total combined disturbance would be 12.8 acres.

All disturbances would be reclaimed within the same field season according to BLM recommendations and all drill holes would be abandoned consistent with any approved Conditions of Approval issued for this Project and Idaho Division of Water Resources requirements (see Environmental Protection Measures in **Section 2.4.1**).

2.1.3 North Access Route

The North Access route comes off the graveled and graded Slug Creek Road in the NW1/4 SW1/4 SW1/4 Section 25, T8S, R43E, on private land (see **Figure 2**). The access follows an existing, graded dirt road south and east through the private parcel; where the road enters the SE1/4 of Section 25, it will leave the existing road (at the owners request), travel in a SSE direction to the section boundary, then follow the southern boundary of the section until it rejoins the existing road where it enters the NE corner of Section 36. The access would follow the existing road across the corner of this section into the NW1/4 NW1/4 of Section 31, T8S, R44E. The road forks as it reaches the SW1/4 of Section 31; the access would be the right fork the rest of the way into Section 6, T9S, R44E, where the proposed drilling would occur.

As noted above, temporary and improved access roads would result in an average 10-foot width of disturbance and new access roads would result in an average of 20-foot wide disturbance. This may be a conservative assumption because Simplot would make efforts to avoid disturbance with the intent being to only disturb land that would be needed for safe travel of the equipment servicing the drill sites. All new access roads would be obliterated and reclaimed when the drilling program is completed, and existing roads/trails would be reclaimed according to BLM requirements or as requested by the private landowner.

2.1.4 Proposed Action Summary

Under the Proposed Action, if both the drilling of the BLM-required geologic boreholes and the proposed tailings impoundment geotechnical boreholes are approved, total disturbance for the combined project would be 12.8 acres, of which 9.3 acres would be on BLM lands.

2.2 Alternative – East Access

Under the East Access Alternative, access to the site would be from the south and east, rather than from the north (see **Figure 3**). The change in access precipitates several other changes as described in the subsections that follow.

2.2.1 Geologic Boreholes

This would be the same as described for the Proposed Action (**Section 2.1.1**) with the following exception. Water required for the drilling activities would be obtained from Slug Creek, with the appropriate approvals, but from a different location (stream sampling site DSW-28 on **Figure 4**). Because the required water would be trucked to the Project site, it is proposed to be withdrawn from the NE1/4 NW1/4 of Section 16, T9S, R44E, near the location where the east access leaves the Slug Creek Road. The East Access Alternative is shown on **Figure 3**.

Table 3 shows the disturbance estimated for the geologic boreholes under the East Access Alternative. All assumptions are the same as for the Proposed Action. Assuming the geologic drilling as a complete and independent project from the geotechnical drilling, proposed disturbance would total approximately 10.3 acres. This proposed disturbance total includes improvements to existing access roads/trails and the temporary construction of new access roads. Approximately 7.8 acres of this proposed disturbance would occur on BLM lands.

Table 3. Disturbance for Geologic Holes, East Access Alternative

Access	Existing Roads/Trails**				New Access Routes			
	BLM		Private		BLM		Private	
	Length (ft)	Area (acres)	Length (ft)	Area (acres)	Length (ft)	Area* (acres)	Length (ft)	Area (acres)
Primary Holes	544	0.12	2,579	0.59	11,580	5.32	4,157	1.91
Secondary Holes		0.0		0.0	5,064	2.32		0.0
Disturbance		0.12		0.59		7.64		1.91
Total Acres	0.71				9.55			

* All Routes determined to have a 20-foot width

** Existing roads/trails determined to result in up to an average 10-foot width of new disturbance

2.2.2 Tailings Impoundment Boreholes

This would be the same as described for the Proposed Action, with the same exception for the point of water withdrawal noted in the previous section (**Section 2.2.1**). **Table 4** quantifies the estimated disturbance for the proposed tailings impoundment geotechnical drill holes. Assuming the geotechnical drilling as a complete and independent project from the geologic drilling, proposed disturbance would total approximately 9.6 acres. Approximately 7.1 acres of this proposed disturbance would occur on BLM Lands.

Table 4. Disturbance for Proposed Tailings Impoundment Boreholes, East Access Alternative

Access	Existing Roads/Trails**				New Access Routes			
	BLM		Private		BLM		Private	
	Length (ft)	Area* (acres)	Length (ft)	Area (acres)	Length (ft)	Area* (acres)	Length (ft)	Area (acres)
Geotech Holes	5,917	1.36	2,579	0.59	12,545	5.76	4,157	1.91
Total Acres	1.95				7.67			

* All Routes determined to have a 20 foot width

** Existing roads/trails determined to result in up to an average 10-foot width of new disturbance

2.2.3 East Access Route

The East Access route comes off the Slug Creek Road in the NE1/4 NW1/4 Section 16, T9S, R44E, on private land (see **Figure 3**). The access follows an existing road south and west a short distance to meet an existing road in which it follows northwest to the location where the road splits near the section line with Section 9. The access takes the left fork off the existing road to a new road that would follow the northern boundary of the NE quarter of Section 17, T9S, R44E, through BLM land. Before entering the NW quarter of the section it crosses north into Section 8 prior to intersecting the U.S Forest Service boundary. In Section 8 the access follows the southern border west to the section boundary, then north for approximately ¼ mile before turning northwest up a dry wash into Section 7, T9S, R44E, where it will meet the road system that would access the individual boreholes, as described in the Proposed Action.

2.2.4 East Access Alternative Summary

Under the East Access Alternative, if both the BLM-requested geologic boreholes and the proposed tailings impoundment geotechnical boreholes are approved, total disturbance for the combined project would be 13.8 acres, of which 11.3 acres would be on BLM lands.

2.3 No Action Alternative

Under the No Action Alternative, the BLM would not approve either the geologic or the tailings impoundment boreholes at this time. There would be a continuation of current agency management practices in the area and the purpose and need for the project would not be met.

2.4 Environmental Protection Measures/Mitigation

Under the Proposed Action (North Access) and East Access Alternative, Simplot would initiate Best Management Practices (BMPs) (see Idaho Department of Lands (IDDL) 1992) to prevent unnecessary and undue degradation to the environment to the greatest extent possible. In addition, Simplot would be required to implement the following Environmental Protection Measures (EPMs). These measures would be outlined in the Conditions of Approval/Agency Developed Mitigation Measures prepared by the BLM as part of the Decision Record. They would apply to all lands potentially affected by the Project. All activities would be in compliance with all RMP standards and agency guidelines. Additional measures may be developed upon final approval and field examinations by the BLM. Simplot would be responsible to insure that all personnel contracted or otherwise doing work on the Project are aware of these approval requirements and abide by all regulations and conditions of approval governing this Project.

Erosion/Sedimentation/Water Quality

1. Roadway erosion controls, including waterbars, rolling dips, ditches, and sumps, would be installed as directed and/or required by the BLM (BMP Items III.5 and 10). Additional measures may also be required by the BLM at selected locations to prevent unauthorized access.
2. Only clean, new buckets labeled “water only” would be used with the fill pump in Slug Creek. A screen would be required at the inlet of the suction hose when water is withdrawn from Slug Creek
3. Project activities would not occur during or immediately following heavy precipitation events.
4. Drilling activities would be conducted in such a manner (e.g., the use of natural vegetation, buffers, silt fences, and berms) that sediments or drilling fluids would not enter any dry or flowing drainage channels.
5. Drill Hole Plugging and Abandonment: As exploration drilling is a method of sub-surface discovery several scenarios of conditions may be encountered and require alternative abandonment methods. According to the Idaho Department of Water Resources IDAPA 37 Title 03 Chapter 9, Well Construction Standards, Rule 10.66.c.i, exploration drill holes are not considered “Wells”. However, Rule 45.03 states exploration drill holes must be decommissioned or abandoned according to well abandonment Rule 25.16.02. Therefore a list of alternative drill hole plugging and abandonment methods are listed below.

All grout and bentonite materials would meet the standards of such as per Rule 10.07.a, 10.07.c, and Rule 10.39. Plugging or sealing material not mentioned

here may be used as additional alternatives in the future given authorization as per Rule 25.10.

Dry Hole Conditions

- If the drill hole is dry and stable, bentonite chips may be used to seal the drill hole. Bentonite chip levels in the drill hole will be tagged every 100 feet with a weighted tape measure.
- If the drill hole is dry and unstable, a cement grout may be used to seal the hole concurrent with the removal of the drilling pipe. At such point that unstable portions of a drill hole have been sealed with cement grout, bentonite chips may be used to seal the remaining portions of the drill hole. Tagging the bentonite chips every 100 feet with a weighted tape measure would take place in this scenario.

Wet Hole Conditions

- If the drill hole encounters groundwater and is stable, dry bentonite chips may be used to seal the drill hole. Bentonite chip levels in the drill hole would be tagged every 100 feet with a weighted tape measure. Alternatively, a bentonite grout may be used below the water surface and dry bentonite chips may be used above the water surface to seal the drill hole. Bentonite chip levels in the drill hole would be tagged every 100 feet with a weighted tape measure.
 - If the drill hole encounters groundwater and is unstable, a bentonite grout may be used below the water surface and cement grout may be used above the water surface to seal the drill hole. At such point the unstable portions of a drill hole have been sealed with either bentonite grout or cement grout, dry bentonite chips may be used to seal the remaining portions of the drill hole. Tagging the bentonite chips every 100 feet with a weighted tape measure would take place in this scenario.
 - If the drill hole encounters groundwater in stable or unstable conditions, a cement grout may be used to seal the drill hole above and below the water surface.
6. Prior to drilling, Simplot and BLM would evaluate intermittent stream and/or wetland crossings in order to determine if culverts or hardened low water crossings are needed.

Wildlife

7. Efforts would be made to avoid clearing and/or removal of mature upland shrubs, trees, and snags that provide important habitat to wildlife (such as high-value forage species, shelter, and nesting areas for migratory birds, small mammals, and big game).
8. To minimize impacts to sage grouse and suitable habitat, the following measures would be implemented as part of the Project: 1.) road alignments would be optimized to decrease disturbance, 2.) if feasible, road

construction/clearing activities would be initiated post August 15th (based upon requests from private landowners in the Project Area allowing access, this would not be feasible), 3.) overland travel and use of existing access roads/trails would be used where feasible, 4.) a seed mix with forbs would be developed and used for disturbed areas, and 5.) applicable conservation measures taken from the Idaho Sage-grouse Advisory Committee (2006) would be implemented and adhered to. These include:

- Infrastructure conservation measures described in Section 4.3.2.3 of the Idaho Sage-grouse Conservation Plan, which calls for avoidance of inspections, maintenance work, and related human activities between 6 pm and 9 am within 1 kilometer of leks between March 25 and May 15 at higher elevations,
 - Human disturbance conservation measures described in Section 4.3.5.3 of the Idaho Sage-grouse Conservation Plan, which calls for avoidance of project related work between 6 pm and 9 am within 1 kilometer of leks between March 25 and May 15 at higher elevations; and,
 - Mines, landfills, and gravel pits conservation measures described in Section 4.3.18 of the Idaho Sage-grouse Conservation Plan, which calls for ensuring that an appropriate seed mix (see EPM 25 below, developed specifically for sage-grouse habitat) is used for reclamation of sage-grouse habitat and that adequate measures are employed to control invasive and noxious weeds (see EPM 22 and 23).
9. To avoid impacts to migratory birds and their nesting, ground clearing of vegetation for road and drill pad construction would generally be completed before or after the nesting period for the site (approximately May 15th to August 15th - seasonal restrictions for other resources may also apply). BLM may grant exceptions to this if erosion, sedimentation, weed infestation, important timing conflicts, or other unacceptable impacts would occur. If an exception is granted, the following bird survey would be required and additional mitigation measures would apply.

A survey of the drill pad locations and access roads would be conducted by a BLM-approved biologist to identify if there are any migratory bird nests within the proposed impacted areas (as defined in the approved drill plan). If no migratory bird nest(s) are found within the proposed impacted areas, then construction activities can proceed.

If migratory bird nest(s) are found within the proposed impacted areas, the location of the drill pad or access road would be adjusted in order to minimize the impacts to the nest(s). Adjustments to the road alignment or pad locations would be made to the extent practicable as determined by the authorized officer. BLM would require application of additional measures for given time frames that may include:

- Minimizing the number of equipment trips through a nesting area.
- Working during daylight hours only.

- Maintaining a nesting buffer distance for disturbance activities of at least 1,000 feet from raptor or owl nest(s) and 200 feet for all other migratory birds. These distances may be lessened if safety or other site specific conditions warrant and a BLM biologist feels that the reduced buffer distance would not affect nesting activities, however the buffer distance should be no less than 100 feet.
 - Other measures determined appropriate for the situation by BLM to avoid a “taking” of migratory birds or their nests. (Personal Communication, Barry Myers, U.S. Bureau of Land Management, May 5, 2010)
10. The July 2010 version of “Seasonal Wildlife Restrictions and Procedures for Processing Requests for Exceptions on Public Lands in Idaho,” and Appendix D, Seasonal Restrictions for Wildlife/Raptor Activities/Habitat, (Pocatello Field Office Proposed RMP/Final EIS April 2010, BLM 2010b) would be followed. Where there are conflicts among restrictions, BLM biologists would be consulted prior to initiation of activities.

Cultural Resources

11. Pursuant to 43 CFR 10.4(b), if any unidentified cultural resources are discovered during Project activities, operations in the immediate area of the discovery would be halted. The discovery would be reported to the BLM, and the BLM or its authorized representatives would be allowed to document and evaluate the discovery, and if appropriate, would be allowed time for the determination and implementation of actions necessary to prevent or mitigate the loss of important cultural values in consultation with the Idaho SHPO.

Domestic Livestock Grazing

12. Grazing activities would be coordinated with the appropriate agency and/or permittee to avoid conflicts with drilling activities. Initial coordination on this Project with the appropriate grazing permittees and private landowners has already occurred and would continue throughout the duration of the Project.

Wastes/Hazardous Materials

13. All solid wastes generated by the Project, including all trash and drill materials, would be removed and disposed of by Simplot staff/contractors in accordance with applicable state and federal regulations.
14. The Project would not generate or dispose of any hazardous waste as defined by CERCLA of 1980, as amended, 42 U.S.C. 9601 et seq.
15. All drilling would be done using water, air, and/or non-polluting foam mixtures.
16. All potentially hazardous or deleterious chemicals and agents would be secured to prevent accidental spillage or sabotage during periods when Simplot contractors or company employees are absent from the site (i.e., daily shut downs, weekends, vacations, etc.). Materials that cannot be secured would be removed from the site daily during the life of the Project.

17. Diesel, oil, and lubricants would be transported to the site in portable containers (e.g., tanks in pickup trucks for diesel fuel), but would not be stored on site. Maximum quantities of fuel hauled for refueling of equipment would not exceed 250 gallons.
18. A spill prevention plan would be on-site with Simplot personnel and/or the construction contractor and readily available for review by the BLM, if requested.
19. Any spills would be reported by Simplot staff/contractors to the BLM, Environmental Protection Agency (EPA), and the Idaho Department of Environmental Quality (IDEQ). If necessary, soil remediation would be conducted and would include removal of contaminated soils to an approved bioremediation facility and a soil sample(s) would be taken to verify the success of the site remediation. In addition, the construction contractor would be required to follow any other local, state, or federal regulations related to the use, handling, storing, transporting, and disposing of hazardous materials.

Air Quality

20. If at any time during the Project excessive dust, as determined by BLM, is created by vehicular traffic on dirt roads, Simplot would initiate dust abatement methods (e.g., watering roads) to minimize dust creation.

Reclamation/Vegetation

21. Topsoil would be salvaged via side casting from areas to be disturbed and used as a top dressing in the reclamation of disturbed areas.
22. Noxious weeds would be controlled on access roads and drill sites in order to avoid transporting weed seeds. Simplot, their contractors, and Agency inspectors would visually monitor for the presence of noxious weeds. Simplot would treat noxious weeds upon discovery. Use of chemicals to control noxious weeds would be in accordance with the Integrated Pest Management Strategy approved in 1996. Through monitoring and subsequent treatment, if necessary, noxious weeds would be controlled both during the life of the Project and until it is determined that establishment of vegetation on the disturbed areas is successful.
23. All heavy equipment would be steam cleaned and/or high pressure washed prior to traveling on BLM lands to prevent weed seed transportation by vehicles. Washing activities would occur off BLM lands. No water for washing activities would be obtained from Slug Creek.
24. Following exploration activities, all areas on public lands that have detrimental soil compaction, excluding permanent/existing travel ways would be ripped to facilitate adequate seedbed preparation. This would also be required on private lands unless otherwise requested by the private landowner.
25. Reclamation of drill sites would consist of earthwork and revegetation of all surface disturbances to stabilize the reclaimed areas and to achieve post-drilling land use pursuant to 36 CFR §294.12 (b)(7).

- Earthwork would consist of recontouring, back-filling road cuts, and re-grading of staging and drilling areas to approximate the form of the land before disturbance (i.e., original surface topography). These activities would not be conducted if the BLM Soil Scientist determines that current soil moisture in the area is excessive. Natural drainage patterns would be re-established. Backfilled and reshaped areas would be left rough-graded to ensure adequate seedbed preparation.
- Upon completion, all disturbed areas on public land would be broadcast seeded using the following BLM approved, prescribed, and weed-free seed mix. The seed mix utilized on private property would be approved by the property owner.

Percent per Pound	Name	Scientific Name	Variety	Seeds per Pound	Seeds in Mix per Pound	Percent of Total Seeds per Pound
53.33	Mycorrhizal Inoculum					
4.67	Great Basin Wildrye	<i>Elymus cinereus</i>	Magnar	130,000	6,067	10.88
3.50	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp <i>spicata</i>	Goldar	140,000	4,900	8.79
4.20	Western Wheatgrass	<i>Pascopyrum smithii</i>	Rosanna	110,000	4,620	8.28
4.67	Mountain Bromegrass	<i>Bromus marginatus</i>	Bromar	90,000	4,200	7.53
0.70	Rocky Mtn Penstemon	<i>Penstemon strictus</i>	Bandera	592,000	4,144	7.43
1.63	Alfalfa	<i>Medicago sativa</i>	Ladak	210,000	3,430	6.15
1.17	Lewis Blue Flax	<i>Linum lewisii</i>	Appar	293,000	3,419	6.13
0.47	Orchardgrass	<i>Dactylis glomerata</i>	Paiute	654,000	3,052	5.47
0.23	Timothy	<i>Phleum pretense</i>	Climax	1,300,000	3,034	5.44
2.80	Pubescent Wheatgrass	<i>Elytrigia intermedia</i> ssp <i>trichophorum</i>	Greenleaf	100,000	2,800	5.02
4.67	Small Burnet	<i>Sanguisorba minor</i>	Delar	55,000	2,567	4.60
0.12	Kentucky Bluegrass	<i>Poa pratensis</i>	Ginger	2,177,000	2,540	4.55
0.23	Mountain Phlox	<i>Leptosiphon grandiflorus</i>		907,000	2,116	3.79
0.23	Big Bluegrass	<i>Poa ampla</i>	Sherman	882,000	2,058	3.69
4.90	Sainfoin	<i>Onobrychis viciaefolia</i>	Eski	30,000	1,470	2.64
0.12	Showy Goldeneye	<i>Viguiera multiflora</i>		1,055,000	1,231	2.21
0.32	Wax Currant	<i>Ribes cereum</i>		350,000	1,111	1.99
5.13	Antelope Bitterbrush	<i>Purshia tridentate</i>		15,000	770	1.38
1.52	Woods Rose	<i>Rosa woodsii</i>		45,300	687	1.23
0.23	Strawberry Clover	<i>Trifolium fragirerum</i>	Palestine	300,000	700	1.26
4.70	Quickguard	<i>Sterile Triticale Cover Crop</i>	CMS 154E	13,000	611	1.10
0.47	Sticky Purple Geranium	<i>Geranium viscosissimum</i>		52,000	243	0.44
46.67					55,770	100.00

Note: Seed to be distributed at 35 pounds per acre and Inoculum to be distributed at 40 pounds per acre.

- Logs and slash would be placed across reclaimed roads to render them impassable to off-road and passenger vehicles. This practice would aid revegetation efforts by providing protection for seeds and seedlings, and provide erosion control.
26. All drilling and support personnel would have fire tools and extinguishers available at all times if needed. Operators would be trained in basic fire control procedures.

The long-term reclamation goal for the Project is to create a safe, stable, and productive post-drilling land use. The post-drilling land use of the Project Area would be similar to the pre-drilling land use: mineral exploration, timber and vegetation management, wildlife habitat, recreation, and livestock grazing. Concurrent reclamation would commence upon the deactivation of specific drilling activities. Establishment of self-sustaining vegetation communities on reclaimed sites would reduce the potential for soil erosion and provide forage for livestock and wildlife utilization. This post-drilling land use is consistent with the Pocatello Resource Management Plan (BLM 1988). The Proposed Action, in conjunction with the EPMs and Conditions of Approval, adequately addresses all of the issues and meets the Purpose and Need of this Project.

2.5 Compliance Monitoring

The BLM would inspect the Project both during and after drilling activities to ensure compliance with BMPs, EPMs, and other requirements. The results of these inspections would become part of the Project Record. Appropriate BLM resource specialists would be responsible for monitoring activities.

2.6 Alternatives Considered But Eliminated

One alternative was considered, but eliminated because it would not accomplish the purpose and need for the project. The alternative considered aligning the geotechnical drill holes on the existing two-track road in the proposed tailings impoundment area to reduce impacts to sage grouse habitat. However, aligning all of the drill holes on the existing road in the proposed tailings impoundment area, which occurs essentially in the center of the proposed impoundment area (see **Figures 2** or **3**), would not allow sufficient aerial coverage of the site to gather the necessary geotechnical and environmental information.

As a result of scoping, BLM received a comment to consider an alternative that disallows the sale of public lands and directs Simplot to buy adjacent private lands for the proposed tailings impoundment (**see Section 1.6**). The purpose of this drilling project is to gather geologic, geotechnical, and other environmental data to be used in preparation of an environmental impact statement that will assess the Dairy Syncline Mine and Reclamation Plan application. The information in this EA analysis will be used by BLM to determine whether to approve data collection activities: the entire drill plan, a portion of the drill plan, access to the drilling area, what conditions may apply, or not to approve any portion of the drill plan. A decision related to the sale of public lands is not within the scope of this EA analysis. Alternatives to the sale of public lands, and decisions related to disallowing the sale of public lands would be considered in the EIS which is being prepared for the Dairy Syncline Mine and Reclamation Plan application. Consequently, an alternative that disallows the sale of public lands is not appropriate in this analysis.

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

The Project Area lies in the northern portion of the Preuss Range, one of the minor mountain ranges in the western part of the Middle Rocky Mountain Physiographic Province. Three prominent ridges form the northern portion of the Pruess Range, Dry Ridge on the east, Schmid Ridge in the middle, and the Aspen Range on the west. The Project Area lies on the east slope of the Aspen Range just west of the Slug Creek drainage (see **Figure 1**). Schmid Ridge lies to the east of the Slug Creek drainage.

Elevations within the Project Area range from 6,400 feet to 7,000 feet. The north and east slopes of the Aspen Range are forested with both mixed and pure stands of aspens and conifers. South and west slopes are covered with native grasses and sagebrush. The lands drain into Slug Creek, one of the tributaries to the Blackfoot River. Springs and seeps are common along the east slope of the Aspen Range and several are located near or within the Project Area.

A well graveled road (NFD 1266 – Slug Creek Road) that provides access from Georgetown and Soda Springs through the Slug Creek drainage lies just to the east of the Project Area. The private lands that lie north and northwest of the Project Area are covered by sagebrush and native grasses that provide range for livestock grazing. National Forest Lands within the Caribou National Forest lie immediately west and south of the Project Area; they are grazed by livestock and used extensively in the late summer and throughout the fall for big game hunting and in the winter for recreation activities.

3.2 Resources Considered in the Analysis

To comply with NEPA, the BLM is required to consider a wide range of resources that may be impacted. **Table 5** outlines the elements that must be addressed in all environmental analyses, as well as other resources deemed appropriate for evaluation by the BLM. For the resources listed in **Table 5**, which are either “not present” or “present and not impacted”, a rationale is provided as to why the resource is not impacted. The resources which are “present and impacted” by the Proposed Action or alternative, an analysis in narrative form is provided below. Resource information was taken from various baseline resource surveys by JBR Environmental Consultants, Inc. (JBR) or from available existing information as otherwise cited.

Table 5. Resources Considered in the Analysis

Resource	Not Present	Present - Not Impacted	Present – Impacted	Rationale or Location of Additional Information
Air Quality		X		Temporary increase in fugitive dust. Project Area is Class II. BMPs and EPMS would be implemented to keep impacts at negligible level.
Access		X		Existing public roads would be used to access the proposed private access roads to the public land in the Project Area. Existing public access to the public land within the Project Area would not be changed. New access roads created for the Project would be temporary in nature and exclusively used by Simplot or their contractors.
Areas of Critical Environmental Concern (ACECs)	X			No ACECs are located within or immediately adjacent to the Project Area.
Cultural Resources			X	Construction activities could impact cultural resources, although no Adverse impacts are anticipated. See Section 3.3 .
Economic and Social Values		X		The Project would not generate significant socioeconomic changes. Drilling activities would require an estimated total of 7-8 workers for a period of 2 to 4 months. This temporary influx of workers could provide a temporary income to the local establishments for services provided (trailer space rental, restaurant, groceries, etc.), but it would be very short term and minimal. Private land owners would grant access across their land and all disturbances would be restored.
Paleontological Resources		X		Paleontological resources could occur within the geologic formations in the Project Area, although they are not unique to the Project Area.
Environmental Justice	X			No concerns or disproportionate effects to a minority or low income population identified by local communities or tribal governments are anticipated.
Existing and Potential Land Uses		X		Implementation of the Project would not affect the existing or potential land uses of the Project Area.
Farmlands (Prime or Unique)	X			No prime or unique farmlands occur within the Project Area.
Soil Resources			X	Up to 14 acres of temporary soil disturbance could be necessary. The Project may impact soil productivity through compaction and loss of topsoil. The Project may increase erosion potential through the removal of ground cover and/or constructing roads on steep slopes. See Section 3.4 .

Resource	Not Present	Present - Not Impacted	Present – Impacted	Rationale or Location of Additional Information
Fisheries, Including Threatened, Endangered, and Sensitive Fish		X		<p>Public scoping identified sedimentation, water withdrawal, the accidental introduction of hazardous materials to the aquatic system, as impacts of concern to fisheries resources. Fish have been documented in the lower and middle reaches of Slug Creek, an adjacent perennial stream. Impacts to fisheries through sedimentation are considered to be negligible because: (1) the areas proposed for exploration drilling do not contain any fish bearing or perennial streams, (2) streambank disturbance in the areas of water withdrawal from Slug Creek would not occur, and (3) the only potential crossing of Slug Creek is at an existing culvert.</p> <p>The Project would include the removal of water from Slug Creek under an Idaho Department of Water Resources temporary water right (~1,000 gallons/day). Combined with other drilling projects in the area which draw water from Slug Creek, the combined withdrawal would be less than 1 percent of the daily flow of Slug Creek. Additionally, the water withdrawal hose would be screened to eliminate killing fish through entrainment into the hose. Negligible impacts to fisheries from water withdrawal are anticipated.</p> <p>Implementation of the wastes/hazardous materials EPMs described in Section 2.4 would eliminate any potential impacts to fisheries through introduction of hazardous materials into the aquatic system.</p>
Floodplains	X			No floodplains are present in the Project Area.
Migratory Birds			X	The Migratory Bird Treaty Act prevents take of migratory birds. Migratory birds may be nesting on the ground or in shrubs within the Project Area at the time of construction. See Section 3.5 . EPMs would be implemented.
Forest Resources			X	Impacts are disclosed in Section 3.9 .
Native American Religious Concerns	X			See Section 1.7 concerning coordination with Shoshone-Bannock Tribes. No ceremonial sites or resources associated with ceremonial practices were identified within the Project Area by Tribal staff.
Tribal Treaty Rights and Interests			X	Impacts are disclosed in Section 3.6 .
Riparian/Wetlands			X	The Project Area contains no perennial streams with riparian vegetation. One isolated, non-jurisdictional seep occurs more than 500 feet northeast of secondary geologic borehole 11, and a wetland would be crossed by the East Access

Resource	Not Present	Present - Not Impacted	Present – Impacted	Rationale or Location of Additional Information
				Alternative. See Section 3.7 .
Range Resources			X	Small temporary loss of forage on the North Petterson Ranch, South Petterson Ranch, and Unit 4 Slug Creek allotments. See Section 3.8 .
Recreational Use		X		There are no developed recreational facilities or campgrounds in the Project Area. Dispersed recreational activities within the Project area are limited, but could be temporarily impacted during Project activities. The addition of Project personnel in the area, and a minor and temporary increase in noise levels, is not expected to detract from the overall recreational experience in the area.
Vegetation Resources, Including Threatened, Endangered, and Sensitive Species; and Noxious Weeds/Non-Native Invasive Species			X	Some vegetation removal would be necessary. The Project may impact vegetation through compaction and loss of topsoil and may increase erosion potential through the removal of ground cover and/or drilling on steep slopes. No threatened, endangered, or sensitive plant species occur within the Project Area. Noxious weeds listed by the State of Idaho are present within the Project Area. Project related activities, especially traveling from one drill site to another, have the potential to introduce and spread noxious weeds within the Project Area. Ground disturbance has the potential to create conditions favorable for the invasion of noxious weeds and other undesirable plants. See Section 3.9 .
Visual Resources		X		The Project would be in compliance with the current VRM objectives for the Project Area.
Wastes – Hazardous/Solid		X		No chemicals subject to the Superfund Amendments and Reauthorization Act Title III would be used. Trash receptacles would be placed on-site for the full duration of the project. All wastes would be disposed off-site at a licensed facility. A fuel/lube truck would travel to some of the onsite machinery on an as-needed basis. Any spill or release of fuel or oil would be immediately cleaned up and contaminated material would be disposed of properly.
Water Quality (Surface and Ground)			X	As a result of implementing the Environmental Protection Measures described in Section 2.4 (e.g., each drill hole would be plugged and secured after completion of exploration activities), no impacts to ground water are expected. If certain holes are left open to obtain additional environmental data, then these drill holes would be developed and cased according to all applicable regulations. Impacts to surface water resources are described in Section 3.10 .

Resource	Not Present	Present - Not Impacted	Present – Impacted	Rationale or Location of Additional Information
Wild & Scenic Rivers	X			No Wild & Scenic Rivers occur in the Project Area.
Wild Horses and Burros	X			None within Project Area.
Wilderness	X			There are no wilderness areas or wilderness study areas within or near the Project Area.
Wildlife Resources, Including Threatened, Endangered, and Sensitive Species			X	Some wildlife habitat would be temporarily disturbed and wildlife would be temporarily displaced. No threatened or endangered species occur within the Project Area. Several BLM-Sensitive species have the potential to occur in the Project Area. See Section 3.11 .
Mineral Resources		X		Up to 11 drill holes are proposed to determine if the phosphatic shale member of the Phosphoria Formation is present within in the Project Area. If the phosphatic shale member is found in the Project Area, impacts to the phosphate reserves within the Project Area from the advancement of 11 boreholes into the shale member is considered to be negligible.

3.3 Cultural Resources

3.3.1 Affected Environment

Cultural resources are defined as any definite location of past human activity identifiable through field survey, historical documentation, and/or oral evidence. Cultural resources include archaeological or architectural sites, structures, or places, and places of traditional cultural or religious importance to specified groups whether or not represented by physical remains.

The National Historic Preservation Act (NHPA) of 1969, as amended, and its implementing regulations (36 CFR 60 and 800) require that federal agencies take into account the effects of their undertakings on cultural resources that are listed or eligible for listing to the National Register of Historic Places (NRHP); eligible or listed resources are labeled “historic properties.”

Section 106 of the NHPA requires consultations among federal agencies, like BLM, the State Historic Preservation Office (SHPO), culturally affiliated American Indian Tribes, and other affected parties, including private land owners, to develop and evaluate alternatives or modifications to proposed undertakings, in order to avoid, minimize, or mitigate adverse effects on historic properties. Federal regulations at 36 CFR 800.5 and 800.6 detail the process by which the consulting parties determine whether undertakings will adversely affect historic properties and how the agencies consult to avoid, minimize, or mitigate the adverse effects in order to meet Section 106 requirements.

Archaeological investigations, including a Class I records search and Class III intensive pedestrian surveys, have been completed throughout the Project Area (Polk and Jones 2009; Johnson and Jones 2010). Portions of three existing access roads that would be utilized under either Action Alternative are themselves historic roads that have been recorded as cultural resource sites. No prehistoric cultural resource sites were identified in the Project Area.

The spur off of the Valley Road (CB479) appears on the 1902 GLO map of the area. It is currently a two-track road still utilized for ranching access. This road has been impacted by erosion, as well as grazing and agricultural use. No artifacts or features were found to be associated with the road segment. While the site maintains integrity of location, setting, and feeling, it is a minor secondary road that is not associated with any events or persons important to the broad patterns of history. The road has been determined as Not Eligible for the NRHP (Johnson and Jones 2010).

The Road to Georgetown (CB480), also called the Valley Road, appears on 1902 and 1903 GLO maps. Research indicates this road was a secondary road supporting the local dairy, ranching, and lumber milling industries in the area (Barnard et al. 1958). The two segments of this road recorded during the current inventory have been impacted by erosion and continued use. No artifacts or features were found to be associated with the road segments. However, the segments of the Road to Georgetown maintain integrity of location, setting, and feeling, and are associated with the broad theme of transportation during the expansion era. These segments contribute to the overall eligibility of the site. The Road to Georgetown has been recommended eligible for the NRHP under criterion A (Johnson and Jones 2010).

The Old Canon Road (10CU223) is plotted on a 1902 GLO map of the area. The segment of the Old Canon Road in the Project Area is a two-track road which is being used for ranching access. No artifacts or features were observed in association with this segment of the Old Canon Road. This road has been previously recommended Eligible to the NRHP under criterion A as it retains integrity of location, setting, and feeling, and is associated with the broad theme of transportation during the expansion era. However, this segment of the road has been severely impacted by erosion, agricultural use, the construction of an existing slurry line, and the continued use and maintenance of Mill Canyon Road. These impacts to the road have severely compromised the integrity of this segment. This segment of the Old Canon Road is therefore recommended as a Non-contributing element to the overall eligibility of the site (Johnson and Jones 2010).

The Idaho State Historic Preservation Office has concurred with these determinations of eligibility and the concurrence letter is included in the Project Record.

No other cultural or historic resource sites have been recorded at or near the proposed tailings impoundment area, the borehole locations, or proposed access routes, although the Old Canon Road does occur very near the Slug Creek Road and the North Access intersection.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action – North Access

The North Access would utilize the historic roads known as the Old Canon Road (10CU223), Road to Georgetown (Valley Road, CB480), and the spur of Valley Road (CB479). The spur of Valley Road has been recommended Not Eligible for the NRHP and the segment of Old Canon Road in the Project Area is Non-contributing to the overall eligibility of the site; therefore there would be No Effect and No Adverse Effect on these resources, respectively.

The Road to Georgetown (CB480) is considered Eligible for the NRHP under criterion A for its association with the broad theme of transportation during the expansion era. This segment of the road may be impacted by the Proposed Action. However, the road is generally proposed to be utilized as-is, with no modifications, unless necessary. Impacts may consist of blading certain areas between 2 to 4 inches deep and approximately 10 feet wide in order to improve vehicle access in areas deemed unsafe. Although blading would impact the physical integrity of this segment, it would not impact the characteristics and aspects of integrity that make it eligible for the NRHP, which include its association with the broad theme of transportation and integrity of location, setting, and feeling. Modifications would be minimal and would be limited to improving the portions of the road that pose safety concerns. This Project would have No Adverse Effect on this site. The Idaho State Historic Preservation Office has concurred with this Determination of Effect and the concurrence letter is included in the Project Record.

No indirect impacts are anticipated from the Proposed Action as there are no NRHP-eligible cultural resource sites in the vicinity of the Project Area, other than the roads themselves which would simply be used to access the area. If cultural resources are discovered during Project implementation, the BLM would be notified and work in the area would halt until inspected by a BLM-approved archaeologist and a mitigation plan developed, if necessary (EPM 11, **Section 2.4**).

3.3.2.2 Alternative – East Access

The East Access Alternative would utilize a portion of the Road to Georgetown (CB480). Impacts to the Road to Georgetown would be similar to those described under the Proposed Action North Access.

No indirect impacts are anticipated from the East Access Alternative as there are no NRHP-eligible cultural resource sites in the vicinity of the Project Area, other than the access road itself. If cultural resources are discovered during Project implementation, the BLM would be notified and work in the area would halt until inspected by a professionally trained archaeologist and a mitigation plan developed, if necessary (EPM 11, **Section 2.4**).

3.3.2.3 No Action

Under the No Action Alternative there would be no project disturbance and therefore no impacts to known cultural resources.

3.4 Soil Resources

3.4.1 Affected Environment

As part of the baseline data collection effort for the Dairy Syncline Mine and Reclamation Plan EIS project, detailed soil mapping was conducted in the proposed tailings impoundment area as described in the *draft Dairy Syncline Soil Survey Report, J.R. Simplot Company, Caribou County, Idaho* (Simplot 2009). A total of six soil mapping units were identified and mapped. **Table 6** shows the soil units mapped in the proposed tailings impoundment area. The rest of the Project Area has not been mapped for soils by the Natural Resources Conservation Service.

Table 6. Soil Mapping Units in the Proposed Tailings Impoundment Area

Soil Mapping Unit	Area (acres)
Zecanyon family sandy clay loam, 0 to 2% slopes	48.5
Hades sandy clay loam, 2 to 8% slopes	125.8
Hades clay loam, 8 to 25% slopes	49.1
Agassiz extremely cobbly sandy clay loam, 20 to 45% slopes	32.2
Strickland family – MM family complex, 8 to 25% slopes	11.1
Strickland family – Bischoff – Spliten family complex, 25-40% slopes	34.6
Total	301.2

General descriptions from the Natural Resources Conservation Service (NRCS) of the four main soil families mapped within the proposed tailings impoundment area are provided below.

Agassiz soils are at elevations of 5,200 to 8,700 feet. They are on strongly sloping and very steep, dominantly south and west-facing mountain slopes with gradients of 4 to 70 percent. The soils formed in colluvium over fractured, weathering limestone. The climate is moist subhumid or humid, with the average annual precipitation about 16 to 22 inches. The mean annual temperature is 31 to 47 degrees F., and the average summer temperature is 59 to 64 degrees F. Freeze-free period is 30 to 100 days. These soils are used for watershed, rangeland, and wildlife. Present vegetation is big sagebrush, curleaf mountain mahogany, bluebunch wheatgrass, snowberry, buckwheat, serviceberry, chokecherry, and some juniper. In places some open stunted stands of Douglas-fir, white fir, and aspen occur. (NRCS 2010)

Hades soils are on mountain slopes, hills, fan remnants, and structural benches. These soils formed in colluvium, till, alluvium, and residuum from sandstone, shale, and quartzite. Slopes range from 0 to 60 percent. They are on all exposures, but are dominantly on north aspects. Hades soils are at elevations of 4,800 to 8,300 feet. The

climate is moist subhumid and the average annual precipitation ranges from 15 to 25 inches. The mean annual temperature is 38 to 45 degrees F. The mean summer temperature is 59 to 62 degrees F., and the freeze-free period ranges from 50 to 90 days. These soils are used for range, wildlife habitat, and watershed. The potential vegetation is serviceberry, snowberry, slender wheatgrass, bluebunch wheatgrass, native bluegrass, nodding bromegrass, and big sagebrush. (NRCS 2010)

Strickland soils are on concave side slopes of basalt plateaus, mountains, and hills. These soils formed in colluvium or alluvium derived from basalt and tuff. Slopes are 2 to 30 percent. Elevations are 6,000 to 7,600 feet. The mean annual precipitation is 18 to 22 inches; mean annual temperature is 35 to 40 degrees F., and the frost-free season is 20 to 50 days. Rangeland and wildlife habitat vegetation is mainly mountain big sagebrush, western snowberry, serviceberry, common chokecherry, mountain brome, slender wheatgrass, and mulesear wyethia. (NRCS 2010)

Zecanyon soils are gently sloping to hilly on foothills and tablelands at elevations of 4950 to 6050 feet. Slopes range from 1 to 20 percent. The soils formed in residuum and slope alluvium from extrusive rocks and volcanic ash. The climate is cool and moist in winter and warm and dry in summer. Average annual precipitation ranges from 13 to 16 inches and average annual temperature ranges from 41 to 45 degrees F. The frost-free period is 70 to 95 days. These soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is alkali sagebrush, mountain big sagebrush, Idaho fescue, and bluebunch wheatgrass. Basin big sagebrush occurs at lower elevations. (NRCS 2010)

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action – North Access

Under the Proposed Action, there would be approximately 8.9 acres of new surface disturbance and 3.8 acres of disturbance to existing roads and trails. The total disturbance on BLM and private land would be 12.8 acres (see **Tables 1** and **2**).

Direct impacts to soils would result from drilling and the development of new access roads and improvements of existing access roads. Impacts to soils would result from mainly the removal of the upper layer, typically the topsoil horizon, of soil during access road construction and improvements of existing roads. Soil resources would be disturbed from blading, compaction, and excavating activities on approximately 12.8 acres. Actual drilling would occur within, or immediately adjacent to, the disturbance footprint of new/improved temporary roads; no drill pads would be constructed. The Project would have a minor and short-term impact on soil productivity, lasting until reclamation vegetation has been established. An increase in soil erosion is expected on disturbed areas, but because the disturbance would be limited to 2 to 3 months, soils should regain vegetative cover for adequate protection.

Multiple, multi-disciplinary field visits to reclamation sites at the adjacent Dairy Syncline lease area from past exploration activities, have verified the minor and short-term impacts resulting from erosion, compaction, and soil productivity, as these previously disturbed sites have well established vegetation from reclamation efforts.

Topsoil from development of drill holes and new access roads would be side-casted and used for reclamation of the site. Simplot would follow the guidelines presented in “BMPs for Mining in Idaho” (IDDL 1992) to minimize soil erosion and potential sedimentation. If soils become highly compacted, appropriate measures would be taken to loosen up the compacted soil to allow for successful reclamation. No indirect impacts to soils are anticipated.

The EPM’s described in the Proposed Action in **Section 2.4** should adequately address the erosion, sedimentation, and water quality issues associated with the project. No additional mitigation measures are proposed.

Residual impacts to soils are not anticipated over the long term; available topsoil would be returned to disturbed areas and seeded, soils would be fertilized if necessary, and compacted soils would be ripped upon completion of the drilling activities. As previously stated, under the Proposed Action, there would be approximately 12.8 acres of new, temporary surface disturbance. Following successful reclamation efforts, which have been verified and proven from past exploration projects, there would be little impact associated with the disturbed soils.

3.4.2.2 Alternative – East Access

As for the Proposed Action, only soils in the proposed tailings impoundment have been mapped. Under the East Access Alternative, there would be approximately 11.73 acres of new surface disturbance and 2.08 acres of disturbance to existing roads and trails. The total disturbance on BLM and private land would be 13.8 acres (see **Table 3 and 4**).

Otherwise, the impacts to soils would be the same as for the Proposed Action.

3.4.2.3 No Action

Under the No Action, there would be no project-related surface disturbance, including direct or indirect impacts. Under the No Action Alternative, all previously undisturbed soils would remain unaltered and erosion and sedimentation would continue at the present rate.

3.5 Migratory Birds

3.5.1 Affected Environment

A wide variety of migratory birds may be found in the vicinity of the Project Area, and several are expected to occur. Migratory birds are protected by the Migratory Bird Treaty Act of 1918, which prohibits the “taking and killing” of any migratory bird (16 U.S.C. 703-712). In January 2001, Executive Order 13186 was established that required some federal agencies to develop a MOU with the USFWS to promote the recommendations of various migratory bird programs and conservation considerations. The BLM developed an MOU with USFWS in 2010 (USDI 2010). The coordinated implementation plans (e.g., Intermountain West Joint Venture; IWJV), are to assist federal agencies with the MOU. Director’s Order 146, which indicated that joint ventures should “deliver the full spectrum of bird conservation,” was issued on 12 September 2002 by the USFWS Director.

Partners in Flight (PIF) began in 1988 as a coordinated, nationwide effort to document and reverse apparent declines in neotropical migratory birds and was later expanded to include all nongame land birds. The PIF chapter in Idaho was formed in 1992, and released Version 1.0 of the Bird Conservation Plan (BCP), based on an assessment of 243 species of breeding birds in Idaho, including 119 species of neotropical migrants, in 2000 (Ritter 2000).

The Idaho Bird Conservation Plan (Ritter 2000) identifies riparian, wetlands not associated with rivers, and sagebrush as high priority habitats for migratory birds. The Coordinated Implementation Plan for Bird Conservation in Idaho (IWJV 2005) was revised and updated to include aspen woodlands as priority habitats. The relative abundance of each habitat type in the Project Area that pertains to migratory birds is discussed below and is based upon field surveys of the Project Area.

Riparian and Wetland: Riparian and wet/mesic meadow vegetation is uncommon in the Project Area. However, some wetland vegetation can be found where the East Access Road crosses a wet meadow area in Section 17, T9S, R44E.

Sagebrush: Sagebrush is found in the proposed tailings impoundment area and in the vicinity of Drill Holes #4-8. Sagebrush plants provide nesting habitat for birds such as the BLM Sensitive species' brewer's sparrow and sage sparrow.

Aspen woodlands: The Project Area contains aspen mixed with conifer. Aspen stands mainly occur on the east and southeast-facing slopes; drill holes #1-3 and #9-11 are within or near aspen woodlands. Large aspen trees provide potential nesting for cavity-nesting birds.

Limited snag habitat is also present in the Project Area, and is important for some migratory birds that nest in forests, such as cavity nesters (e.g., flammulated owls) and tree-nesting raptors such as northern goshawks.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action – North Access

Under the Proposed Action, total surface disturbance to vegetation/habitat associated with the construction of 3.7 miles of temporary roads and improvement of 3.2 miles of existing roads and trails would be approximately 12.8 acres, of which 9.3 acres would be on BLM Land.

Exploration noise could cause migratory birds to avoid portions of the Project Area. A total of 2.17 acres of forested habitat would be impacted, of which 2.16 acres would be for new roads or reopening of previously reclaimed roads. The remaining 0.01 acre would result from improvement of existing roads. Numerous acres of forested habitat and sagebrush habitat are available within and immediately adjacent to the Project Area, allowing dispersal for potentially impacted individuals. Implementation of the EPMs described in **Section 2.4** would greatly minimize and/or avoid potential impacts to migratory birds and their nesting. All potential impacts would be temporary and minor. Impacts to suitable habitat for migratory birds would primarily be narrow and linear; the amount of proposed disturbance is small in comparison to the amount of undisturbed habitat within and surrounding the Project Area; and all disturbed areas would be

reclaimed. Consequently, impacts to habitat would be minor and temporary to long term (with duration directly correlating with the time for reclamation activities, particularly vegetation restoration, to re-establish).

As a result of implementing the EPMs described in **Section 2.4** (e.g., minimize disturbance, conduct pre-disturbance migratory bird nesting surveys, avoid stick raptor nests, reclamation, etc.), no additional mitigation measures are proposed. Minimal residual impacts to migratory birds would result from the Project following reclamation and reestablishment of the vegetation.

3.5.2.2 Alternative – East Access

Under the East Access Alternative, total surface disturbance of vegetation/habitat associated with the construction of temporary roads and improvement of existing roads and trails would be approximately 13.8 acres, of which 11.3 acres would be on BLM land. Aside from the difference in disturbance acres, the East Access Alternative would have the same effects on migratory birds as the Proposed Action.

3.5.2.3 No Action

Under the No Action Alternative no Project-related disturbance or displacement would occur to existing migratory bird habitat. Migratory birds would continue to use the area as they currently do.

3.6 Tribal Treaty Rights and Interests

3.6.1 Affected Environment

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserved the Tribes' right to hunt, fish, gather, and exercise other traditional used and practices on unoccupied federal lands. In addition to these rights, the Shoshone-Bannock have the right to graze Tribal livestock and cut timber for Tribal use on those lands of the original Fort Hall Reservation that were ceded to the federal government under the Agreement of February 5, 1898, ratified by the Act of June 6, 1900.

The federal government has a unique trust relationship with federally-recognized American Indian Tribes, including the Shoshone-Bannock Tribes. BLM has a responsibility and obligation to consider and consult on potential impacts to natural resources related to the Tribes' treaty rights or cultural use. Resources or issues of interest to the Tribes that could have a bearing on their traditional use and/or treaty rights include the following:

- Tribal historic and archaeological sites;
- Sacred sites and traditional cultural properties;
- Traditional use sites;
- Fisheries;
- Traditional use plant and animal species;
- Vegetation (including noxious and non-native, invasive species);

- Air and water quality;
- Wildlife;
- Access to lands and continued availability of traditional resources;
- Land status; and
- The visual quality of the environment.

The Project would be located on unoccupied federal lands outside of the ceded boundary. Therefore, Tribal treaty rights, as defined, are applicable to the Project Area.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action – North Access

As discussed in **Section 3.3**, no prehistoric cultural or archaeological resources were identified in the Project Area. Potential impacts to fisheries (**Section 3.2**), vegetation (**Section 3.9**), air quality (**Section 3.2**), water resources (**Section 3.10**), wildlife (**Section 3.11**), and visual resources (**Section 3.2**) have been previously discussed, and the types and degree of these impacts would be the same for Tribal traditional use and/or treaty rights as for the resources themselves. Land status would remain unchanged for the Project Area both during and after the Project, although access may be temporarily limited in selected locations while exploration drilling occurs.

3.6.2.2 Alternative – East Access

Under the East Access Alternative, potential impacts to Tribal Treaty Rights and Interests would be the same as described for the Proposed Action.

3.6.2.3 No Action

Under the No Action Alternative, the current condition of the Project Area would persist, allowing for Tribal use of resources to continue.

3.7 Riparian/Wetlands

3.7.1 Affected Environment

There are no perennial streams in the Project Area besides Slug Creek that would be crossed over via an existing dirt access road and culverts along the East Access Alternative. Riparian habitat is associated with Slug Creek. Several unnamed intermittent/ephemeral drainages occur within the Project Area, but do not possess the characteristics and definition of a Waters of the U.S., regulated by the Army Corps of Engineers. There are no riparian areas associated with these drainages.

A wetland area does occur in the NW1/4NE1/4 of Section 17, T9S, R44E. This wetland is described as jurisdictional because of its connection with Slug Creek. It has been impacted by grazing. The wetland occurs on both BLM and private land, but only the portion on BLM land would be disturbed by the East Access Alternative. At its upper (southernmost) end, the wetland is spring fed. It covers 2.16 acres on BLM land before flowing onto a broad wet meadow on private land and eventually discharging to Slug Creek. The wetland has woody vegetation that is browsed and the herbaceous

vegetation has been heavily trampled. During the wetland evaluation, cattle were observed in and around the wetland system, resulting in turbidity of the surface water.

No wetlands occur along the North Access route.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action – North Access

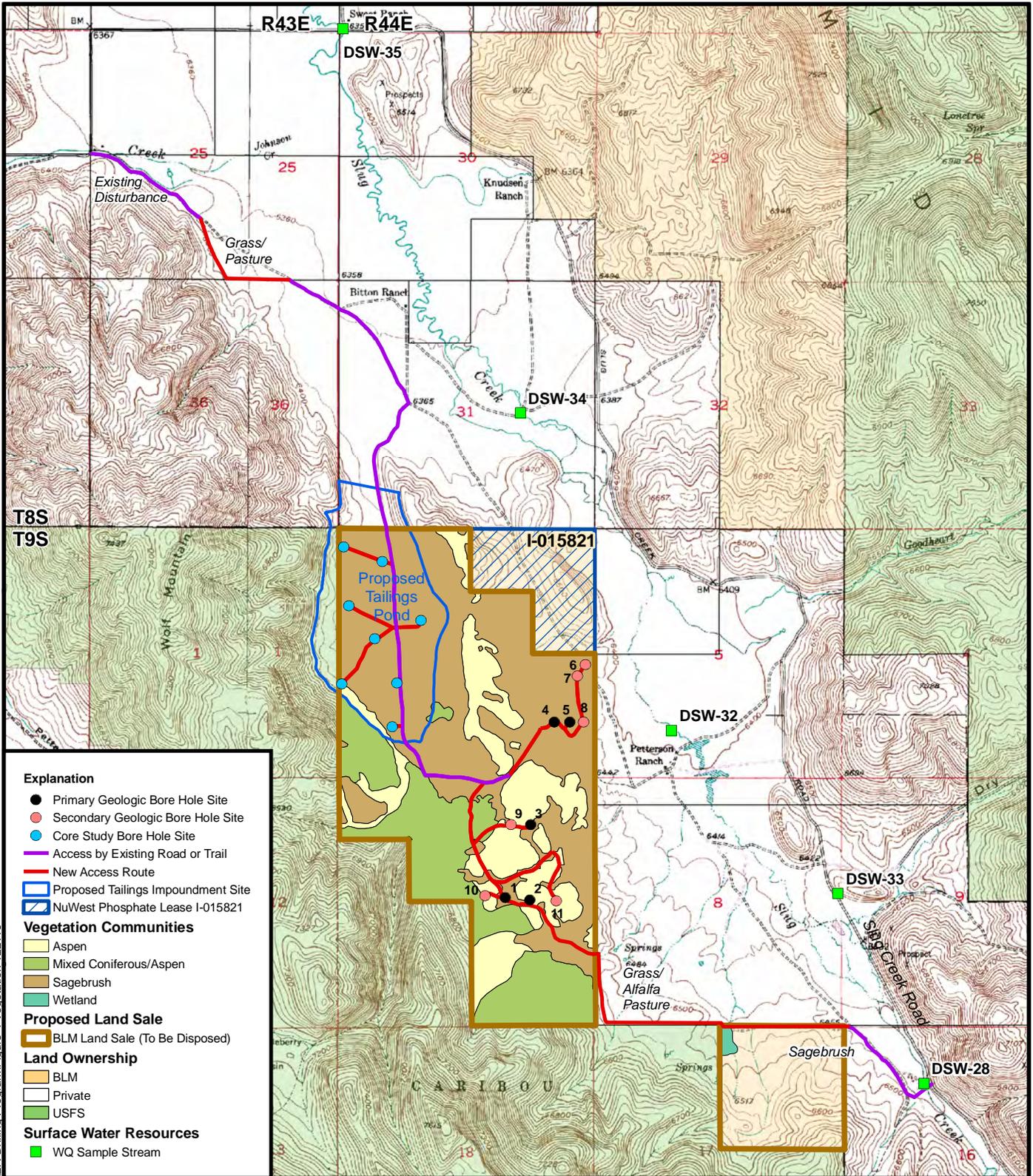
No impacts to riparian vegetation or wetlands would occur under the Proposed Action. Surface disturbance associated with the Proposed Action (North Access) consists of improvement of existing roads and construction of temporary access roads. A total of 12.8 acres would be disturbed. Less than half a mile of existing road for the north access route, where it comes off of the Slug Creek Road, drains to Johnson Creek which is tributary to Slug Creek. This section of road is well used and would not need to be improved. None of the remaining access, existing or new, would drain to a stream or wash which reaches a perennial stream (e.g., Slug Creek). Increase in erosion potential would essentially occur twice, during road construction (either re-disturbance of existing roads or new access road construction) and then again during road decommission and reclamation, although the actual surface area/footprint would not change during reclamation. The use of EPMs (see **Section 2.4**) and State of Idaho BMPs would reduce the potential impacts from erosion and sedimentation to a negligible level.

Drilling would require approximately 1,000 gallons per day (0.69 gallons per minute [gpm] or 0.0015 cubic feet per second [cfs]) of water, which would be pumped from Slug Creek at the location marked DSW-35 on **Figure 4**. No other activities would occur within the ordinary high water mark of any stream channels (intermittent, ephemeral or perennial), nor would any activities directly impact water troughs, stock ponds, or seeps/springs.

3.7.2.2 Alternative – East Access

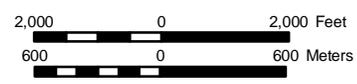
Surface disturbance associated with the East Access Alternative consists of improvement of existing roads and construction of temporary access roads. A total of 13.8 acres would be disturbed, all within the middle Slug Creek drainage, except for approximately one half mile where the access route leaves the Slug Creek Road. This section of road is within the upper Slug Creek drainage, is well used, and would not need to be improved. The East Access Alternative road would cross several intermittent or ephemeral drainages before entering Section 7, although none of these drainages have characteristics that meet the definition of a Waters of the U.S.

The East Access Alternative route would temporarily disturb approximately 0.03 acres of a wetland in the NW1/4 of Section 17, T9S, R44E on BLM lands. This wetland is described as jurisdictional because of its connection with Slug Creek and has been impacted by grazing. The crossing would be exempt from Section 404 permitting under 33CFR 323.4(a)(6), which is for “Construction or maintenance of ... temporary roads for moving mining equipment.” Under this exemption Simplot would be required to construct, maintain, and restore the crossing “in accordance with best management practices (BMPs) to assure that flow and circulation patterns and chemical and biological characteristics of waters of the United States are not impaired, that the reach



drawings\Simplot Dairy Syncline EOS\Figures\EA-Drilling Program\Figure 4 Vegetation 122110

Base from USGS 1:24,000 Topographic Quadrangles.



DAIRY SYNCLINE DRILLING PROJECT									
FIGURE 4 PROJECT AREA MAP VEGETATION RESOURCES AND SURFACE WATER RESOURCES									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">DRAWN BY</td> <td style="font-size: small;">DATE DRAWN</td> </tr> <tr> <td style="text-align: center;">CP</td> <td style="text-align: center;">12/21/2010</td> </tr> <tr> <td colspan="2" style="font-size: small;">SCALE</td> </tr> <tr> <td colspan="2" style="text-align: center;">1:36,000</td> </tr> </table>	DRAWN BY	DATE DRAWN	CP	12/21/2010	SCALE		1:36,000		
DRAWN BY	DATE DRAWN								
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of the waters of the United States is not reduced, and that any adverse effect on the aquatic environment be otherwise minimized,” including those BMPs described in 33CFR 323.4(a)(6), and “BMPs described in the state’s approved program description pursuant to the requirements of 40 CFR Part 233.22(i).” Simplot would use a type of temporary crossing that would meet these requirements both during the active phase of the project and after the crossing is removed and reclaimed.

An increase in erosion potential would essentially occur twice, during road construction (either re-disturbance of existing roads or new access road construction) and then again during road decommission and reclamation, although the actual surface area/footprint would not change during reclamation. The use of EPMs (see **Section 2.4**) and State of Idaho BMPs would reduce the potential impacts from erosion and sedimentation to a negligible level.

Drilling would require approximately 1,000 gallons per day (0.69 gallons per minute [gpm] or 0.0015 cubic feet per second [cfs]) of water, which would be pumped from Slug Creek at the location marked DSW-28 on **Figure 4**. No other activities would occur within the ordinary high water mark of any stream channels (intermittent, ephemeral or perennial), nor would any activities directly impact water troughs, stock ponds, or seeps/springs.

3.7.2.3 No Action Alternative

Under the No Action Alternative, the Project would not occur, there would be no disturbance to riparian vegetation and wetlands and current trends would continue.

3.8 Range Resources

3.8.1 Affected Environment

Livestock grazing is the main land use within the Project Area. Livestock grazing relies heavily on the vegetation resources within the allotment area. Grazing occurs on 91 percent (556,300 acres) of the land administered by the Pocatello Field Office of the BLM. Grazing use by livestock is measured in terms of animal unit months (AUMs). One AUM is to the amount of forage used to support one cow and one calf for one month (approximately 800 pounds of forage). The Pocatello Field Office normally licenses up to 74,358 AUMs. The Project Area is part of three Livestock Grazing Allotments, as shown in **Table 7**. All of these allotments include both public and private land.

Table 7. Grazing Allotments in the Project Area

Allotment #	Allotment Name	AUMs (cattle)	Approximate Acreage	Average AUMs/acre
04371	North Petterson Ranch	148	713.6	0.21
04287	South Petterson Ranch	148	1,046.3	0.14
14110	Unit 4 Slug Creek	32	6,807.5	0.005
Total		328	8,567.4	

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action – North Access

Under the Proposed Action there would be no disturbance on the Unit 4 Slug Creek Allotment and approximately 10.6 acres of disturbance on the North and South Petterson Allotments combined. Of this amount, 9.3 acres would be on BLM land. This would amount to approximately 0.6 percent of the allotments or less than two AUMs. Use of EPMs (see **Section 2.4**) provides for cooperation with allotment permittees to ensure that drilling activities are timed so as to minimize disruption of normal grazing activities. Reclamation following drilling activities would restore or improve the productivity of the allotments within a few seasons.

3.8.2.2 Alternative – East Access

Under the East Access Alternative there would be 1.83 acres of disturbance on the Unit 4 Slug Creek Allotment and approximately 11.98 acres of disturbance on the North and South Petterson Allotments combined. Of this total 13.8 acres, 11.3 acres would be on BLM land. The total disturbance would amount to approximately 0.16 percent of the allotments or 2.6 AUMs. Use of EPMs (see **Section 2.4**) provides for cooperation with allotment permittees to ensure that drilling activities are timed so as to minimize disruption of normal grazing activities. Reclamation following drilling activities would restore or improve the productivity of the allotments within a few seasons.

3.8.2.3 No Action Alternative

Under the No Action Alternative, the Project would not occur, there would be no change in land use or disturbance to grazing allotments, and the existing trends would continue.

3.9 Vegetation, including Special Status Species, and Noxious Weeds/Non-Native Invasive Species

3.9.1 Affected Environment

3.9.1.1 Vegetation Cover Types

Five vegetative cover types were identified within the Project Area based on aerial photo interpretation and preliminary field data collection (**Figure 4**). These were:

- Sagebrush
- Aspen
- Aspen/Mixed Conifer
- Wet Meadow/Wetland
- Grassland/Pasture

The grassland/pasture cover type has not been mapped and is noted only in text on **Figure 4**.

Sagebrush Cover Type

The Sagebrush cover type is typically found in lower elevations and on dry south-facing slopes and comprises almost 60% of the Project Area. Vegetation is dominated by

mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). However, other shrubs associated with sagebrush include antelope bitterbrush (*Purshia tridentata*) and mountain snowberry (*Symphoricarpos oreophilus*) (in more mesic sites). Forb and grass species occurring in this cover type include arrowleaf balsamroot (*Balsamorhiza sagittata*), silky lupine (*Lupinus sericeus*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Kentucky bluegrass (*Poa pratensis*), and western needlegrass (*Stipa occidentalis*).

Aspen Cover Type

Aspen (*Populus tremuloides*) stands are located primarily on east and southeast-facing slopes, often intergrading with conifer-dominated stands and comprises approximately 20% of the Project Area. Aspen communities are composed of *aspen* stands with closed canopies. Occasional conifers, typically Douglas fir (*Pseudotsuga menziesii*), subalpine fir (*Abies lasiocarpa*), or lodgepole pine (*Pinus cortorta*), may be found in the overstory or invading in the understory. The understory is often dominated by mountain snowberry, sweet cicely (*Osmorhiza chilensis*), sticky geranium (*Geranium viscosissimum*), meadowrue (*Thalictrum occidentale*), and silvery lupine (*Lupinus argenteus* var. *parviflorus*). The majority of the intermediate age and mature aspen stands are located at higher elevations, while younger stands are common on lower elevation sites within the Project Area, typically in drainages. These lower elevation stands may represent a persistent seral or climax condition, as they are below the range of conifers.

Aspen/Mixed Conifer Cover Type

The Aspen/Mixed Conifer is composed of both aspens and conifers because these communities grade together without sharp, discernable divisions and are often interspersed among otherwise contiguous aspen or conifer stands. This cover type comprises approximately 20% of the Project Area.

Dominant canopy species within this cover type include quaking aspen, Douglas fir, subalpine fir, and lodgepole pine. Common understory species included mountain snowberry, meadowrue, sticky geranium, and pinegrass (*Calamagrostis rubescens*). Conifers and aspen in this cover type are composed of intermediate to mature trees, and many of these stands are in a seral stage succeeding from aspen to conifer. In general, Aspen and Aspen/Mixed Conifer stands at lower elevations develop into climax communities dominated by Douglas fir, while at higher elevations they tend to develop into climax communities dominated by subalpine fir.

Wet Meadow/Wetland Cover Type

The wet meadow/wetland in the NE1/4 of Section 17, T9S, R44E, is dominated by Nebraska sedge (*Carex nebrascensis*) and beaked sedge (*Carex rostrata*). Mixed in with the sedges are Sandberg's bluegrass (*Poa secunda*) and short-awn foxtail (*Alopecurus aequilus*). The wetland extends beyond BLM land onto private land and occurs within the East Access Alternative. On BLM land the total wetland area is approximately 2.16 acres. On private land and within the East Access Alternative footprint, the wetland area is approximately 0.03 acres (approximately 60 feet long by 20 feet wide).

Grassland/Pasture Cover Type

The grassland/pasture cover type occurs strictly on private land. One portion of this cover type occurs in Section 25, T8S, R43E within the North Access road alignment where a new portion of road is proposed. This area is comprised of native grasses that is fenced off and used as pastureland. The second portion of this cover type occurs in Section 8, T9S, R44E within the East Access Alternative alignment as the route crosses from BLM land to private land. Native grasses and alfalfa fields dominate this pastureland.

3.9.1.2 Threatened, Endangered, and Sensitive Plants (Special Status)

Special status species include those species listed by the U.S. Fish and Wildlife Service (USFWS) as Threatened, Endangered, Proposed, or Candidate and those species listed as Sensitive by the BLM Pocatello Field Office. Element occurrence searches of the Idaho Department of Fish and Game Conservation Data Center (CDC) database indicate that no special status plant species have been documented in the Project Area or in the immediate vicinity. Further, no special status plant species were identified as potentially occurring within the Project Area based upon the available habitats known to occur.

3.9.1.3 Noxious Weeds

The Idaho State Department of Agriculture has documented 16 species of noxious weeds within Caribou County. These are shown in **Table 8**.

Table 8. Noxious Weeds Documented in Caribou County

Common Name	Scientific Name	Common Name	Scientific Name
Black Henbane	<i>Hyoscyamus niger</i>	Musk Thistle	<i>Carduus nutans</i>
Canada Thistle	<i>Cirsium arvense</i>	Perennial Pepperweed	<i>Lepidium latifolium</i>
Dalmatian Toadflax	<i>Linaria dalmatica</i> subsp. <i>Dalmatica</i>	Poison Hemlock	<i>Conium maculatum</i>
Diffuse Knapweed	<i>Centaurea diffusa</i>	Russian Knapweed	<i>Acroptilon repens</i>
Dyers Woad	<i>Isatis tinctoria</i>	Scotch Thistle	<i>Onopordum acanthium</i>
Field Bindweed	<i>Convolvulus arvensis</i>	Spotted Knapweed	<i>Centaurea maculosa</i>
Houndstongue	<i>Cynoglossum officinale</i>	Whitetop	<i>Cardaria draba</i>
Leafy Spurge	<i>Euphorbia esula</i>	Yellow Toadflax	<i>Linaria vulgaris</i>

Source: Idaho's Official Noxious Weeds. Idaho State Department of Agriculture. Retrieved January 29, 2009, and November 21, 2009, from: <http://www.idahoag.us/Categories/PlantsInsects/NoxiousWeeds/watchlist.php>

Of the 16 species of noxious weeds documented in Caribou County, four were found within the Project Area: Houndstongue (*Cynoglossum officinale*), Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), and Scotch thistle (*Onopordum acanthium*). These species were most common along the sides of existing roads and in recently disturbed areas.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action – North Access

Total surface disturbance associated with the construction of temporary roads and improvement of existing roads and trails would be approximately 12.8 acres, of which 9.3 acres would be on BLM land. Up to approximately 12.8 acres of vegetation, including trees, shrubs, grassland/pastureland, and ground cover, would be removed or somehow disturbed.

Any merchantable timber to be removed would be bought and paid for prior to removal. Impacts to vegetation would be negligible as the affected communities are common throughout the area. Impacts to herbaceous groundcover and shrubs would be short-term until the disturbed areas were successfully reclaimed and revegetated. Impacts to canopy vegetation, if any, would be long-term as replacement of mature trees would take much longer, approximately 100 years, although harvest of mature trees would be avoided wherever possible.

There would be no impacts to special status plant species or their habitat. Sensitive plant species would not be impacted and the approved seed mix with native plant species would be used for reclamation activities.

As a result of implementing the EPMs described in **Section 2.4** (e.g., minimize disturbance, topsoil salvage, reseeding, etc.), no additional mitigation measures are proposed. Residual impacts from vegetation disturbance, such as erosion, could occur until reclamation efforts are successful. No residual impacts from vegetation disturbance are expected from the Project following reclamation and re-establishment of native communities, particularly in the herbaceous and shrub strata.

Use of EPMs (**Section 2.4**) and BMPs would minimize the potential spread of noxious weeds, and reclamation seeding following completion of drilling activities would help reestablish plant communities in disturbed areas.

3.9.2.2 Alternative – East Access

Total surface disturbance associated with the construction of temporary roads and improvement of existing roads and trails would be approximately 13.8 acres, of which 11.3 acres would be on BLM land. Up to approximately 13.8 acres of vegetation, including trees, shrubs, grassland/pastureland, and ground cover, would be removed or somehow disturbed. Under this alternative, approximately 100 feet of wetland vegetation would be temporarily impacted during installation of the temporary access road crossing in this area. The crossing would be exempt from Section 404 permitting under 33CFR 323.4(a)(6), which is for “Construction or maintenance of ... temporary roads for moving mining equipment.” Under this exemption Simplot would be required to construct, maintain, and restore the crossing “in accordance with best management

practices (BMPs) to assure that flow and circulation patterns and chemical and biological characteristics of waters of the United States are not impaired, that the reach of the waters of the United States is not reduced, and that any adverse effect on the aquatic environment be otherwise minimized,” including those BMPs described in 33CFR 323.4(a)(6), and “BMPs described in the state’s approved program description pursuant to the requirements of 40 CFR Part 233.22(i).” Simplot would use a type of temporary crossing that would meet these requirements both during the active phase of the project and after the crossing is removed and reclaimed.

Any merchantable timber to be removed would be bought and paid for prior to removal. Impacts to vegetation would be negligible, as the affected communities are common throughout the area. Impacts to herbaceous groundcover, wet meadow species, and shrubs would be short-term until the disturbed areas were successfully reclaimed and revegetated, estimated to be approximately three to five years for early seral vegetation recovery. Impacts to canopy vegetation, if any, would be long-term, as replacement of mature trees would take much longer, approximately 100 years, although harvest of mature trees would be avoided wherever possible.

There would be no impacts to special status plant species or their habitat. Sensitive plant species would not be impacted and the approved seed mix with plant species would be used for reclamation activities.

As a result of implementing the EPMs described in **Section 2.4** (e.g., minimize disturbance, topsoil salvage, reseeding, etc.), no additional mitigation measures are proposed. Residual impacts from vegetation disturbance, such as erosion, could occur until reclamation efforts are successful. No residual impacts from vegetation disturbance are expected from the Project following reclamation and re-establishment of plant communities, particularly in the herbaceous and shrub strata.

Use of EPMs in **Section 2.4** and BMPs would minimize the potential spread of noxious weeds, and reclamation seeding following completion of drilling activities would help reestablish plant communities in disturbed areas.

3.9.2.3 No Action Alternative

Under the No Action Alternative, the Project would not occur, there would be no disturbance to vegetation, and the existing vegetation trends would continue.

3.10 Water Quality

3.10.1 Affected Environment

The Project Area is within the Blackfoot River basin (USGS Hydrologic Unit Code (HUC) 17040207), and within the Slug Creek watershed, which is within the Upper Blackfoot River watershed (5th level HUC 1704020703). The Slug Creek watershed can be further subdivided into several smaller sub-watersheds, including Upper Slug Creek (170402070203), Goodheart Creek-Middle Slug Creek (170402070207), and Lower Slug Creek-Blackfoot River (170402070208). Although no perennial waters or any portion of Slug Creek occur within the Project Area, several unnamed intermittent/ephemeral streams flow downstream from the Project Area and could eventually discharge to Slug Creek. These intermittent/ephemeral streams are the

primary runoff conveyance features from the high-elevation mountains located within the Project Area. Several of these drainages empty to a broad alluvial fan located between the Project Area and Slug Creek, and there is no defined channel connecting these drainages to Slug Creek. Two small, unnamed seeps/springs are located just east and down gradient of the proposed access road for the East Access Alternative.

Slug Creek begins south of the Project Area and flows approximately 8 miles to the northwest, where it drains into the Blackfoot River. It is mapped by the USGS as a perennial stream from the headwaters and upper reach north to the wider valley containing Petterson Ranch, intermittent within this area, and then perennial from the confluence with Goodheart Creek to the confluence with the Blackfoot River. During fall low flow sampling in 2008 and spring high flow sampling in 2009, Slug Creek flowed continuously from the headwaters to its confluence with the Blackfoot River. However, the reach identified as intermittent on USGS maps was a losing reach (see **Table 9**). (Simplot 2010)

The Upper Slug Creek sub-watershed includes the proposed water withdrawal site for the East Access Alternative, which is designated as sampling site DSW-28 (see **Figure 4**). Within the middle reach are three stream sample sites: DSW-32, 33, and 34. In this area, Slug Creek transitions to a slightly wider stream with some willows and increasing agricultural use. Agricultural use and its associated impacts include agricultural diversions, grazing, and an increased sediment load caused primarily by heavy livestock use. Slug Creek is a perennial stream below DSW-34 and includes the proposed water withdrawal site for the Proposed Action, at DSW-35.

Table 9. Discharge Measurements for Upper, Middle, and Lower Slug Creek

Discharge Measurement Location (Figure 4)	Fall 2008 (Low Flow) (cfs/gpm)	Spring 2009 (cfs/gpm)
DSW-28 (Upper Slug Creek)	0.79/355	3.19/1,432
DSW-33 (Middle Slug Creek)	0.47/211	3.10/1,391
DSW-32 (Middle Slug Creek)	0.35/157	2.05/920
DSW-34 (Middle Slug Creek, below Goodheart Creek)	0.98/440	7.30/3,276
DSW-35 (Lower Slug Creek)	3.31/1,486	18.43/8,272

Source: Simplot 2010

Slug Creek is listed in Section 4c, Water Impaired by Non-Pollutants, in Idaho Department of Environmental Quality's (IDEQ's) Principles and Policies for the 2008 Integrated (303[d]/305[b]) Report (2008). Slug Creek is listed from source to mouth (18.15 miles) for low flow alterations and physical substrate habitat alterations, while the 2nd order to 3rd order reaches from source to mouth (4.79 miles) are listed for physical substrate habitat alterations. Environmental Protection Agency (EPA)-approved total maximum daily loads (TMDLs) exist for those same reaches for sedimentation/siltation.

Slug Creek is not specifically designated for a beneficial use, according to Idaho Administrative Code 58.01.02.150.09, Blackfoot Subbasin, although IDEQ presumes most waters in the state will support cold water aquatic life and primary or secondary contact recreation beneficial uses and attributes in all non-designated surface waters as such (58.01.02.101.01). As a non-designated water, water quality standards for cold water aquatic life and primary contact recreation would apply for Slug Creek. Water quality for cold water aquatic life should be appropriate for the protection and maintenance of a viable aquatic community for cold water species. Water quality for primary contact recreation should be appropriate for prolonged and intimate contact by humans or for recreation activities when the ingestion of small quantities of water is likely to occur (secondary contact recreation is slightly less restrictive, where ingestion of raw water is not likely to occur).

3.10.2 Environmental Consequences

There are three potential sources of direct or indirect environmental impacts to water resources from the Project. The first would be from erosion and mobilization of sediment from soil disturbance; the second would be impacts from withdrawal of water from Slug Creek for use as a drilling fluid; and the third would be impacts to wetlands. This section analyzes those aspects of the Project for each of the three alternatives.

3.10.2.1 Proposed Action – North Access

Surface disturbance associated with the Proposed Action (North Access) consists of improvement of existing roads and construction of temporary access roads. A total of 12.8 acres would be disturbed. Less than half a mile of existing road for the north access route, where it comes off of the Slug Creek Road, drains to Johnson Creek which is tributary to Slug Creek. This section of road is well used and would not need to be improved. None of the remaining access, existing or new, would drain to a stream or wash which reaches a perennial stream (e.g., Slug Creek). Increase in erosion potential would essentially occur twice, during road construction (either re-disturbance of existing roads or new access road construction) and then again during road decommission and reclamation, although the actual surface area/footprint would not change during reclamation. The use of EPMS (see **Section 2.4**) and State of Idaho BMPs would reduce the potential impacts from erosion and sedimentation to a negligible level.

Drilling would require approximately 1,000 gallons per day (0.69 gallons per minute [gpm] or 0.0015 cubic feet per second [cfs]) of water, which would be pumped from Slug Creek at the location marked DSW-35 on **Figure 4**. No other activities would occur within the ordinary high water mark of any stream channels (intermittent, ephemeral or perennial), nor would any activities directly impact water troughs, stock ponds, or seeps/springs. **Table 9** shows stream discharge measurements at DSW-35 taken in the fall of 2008 (low flow of 1,486 gpm) and the spring of 2009 (high flow of 8,272 gpm). DSW-35 is located in the lower Slug Creek reach as described in **Section 3.10.1**. Access to DSW-35 is available from Slug Creek Road using a standard water tanker truck and inlet hose attached to the tanker truck. No surface disturbance of riparian areas or wetlands from heavy equipment would occur. As shown in **Table 9**, the withdrawal would represent less than 0.05 percent of daily low flow at that location. The

effect on water quality, downstream fisheries, and other aquatic resources as a result of the water pumping would be temporary and negligible. Simplot would remove the water under a temporary water right issued by IDWR.

Simplot would follow the guidelines presented in “BMPs for Mining in Idaho” (IDDL 1992), resulting in temporary and negligible impacts related to surface water quality, including the 303(d)-listed reach of Slug Creek and its tributaries. No changes to the current beneficial use designations would occur, as the only involvement with Slug Creek would be the temporary placement of a suction hose from the water supply pump truck into the creek.

3.10.2.2 Alternative – East Access

Surface disturbance associated with the East Access Alternative consists of improvement of existing roads and construction of temporary access roads. A total of 13.8 acres would be disturbed, all within the middle Slug Creek drainage, except for approximately one half mile where the access route leaves the Slug Creek Road. This section of road is within the upper Slug Creek drainage, is well used, and would not need to be improved. The East Access Alternative road would cross several intermittent or ephemeral streams and a dry wash before entering Section 7. The proposed access road would cross a wetland in Section 17 which drains to Slug Creek and is further described at the end of this section. An increase in erosion potential would essentially occur twice, during road construction (either re-disturbance of existing roads or new access road construction) and then again during road decommission and reclamation, although the actual surface area/footprint would not change during reclamation. The use of EPMs (see **Section 2.4**) and State of Idaho BMPs would reduce the potential impacts from erosion and sedimentation to a negligible level.

Drilling would require approximately 1,000 gallons per day (0.69 gallons per minute [gpm] or 0.0015 cubic feet per second [cfs]) of water, which would be pumped from Slug Creek at the location marked DSW-28 on **Figure 4**. No other activities would occur within the ordinary high water mark of any stream channels (intermittent, ephemeral or perennial), nor would any activities directly impact water troughs, stock ponds, or seeps/springs. **Table 9** shows stream discharge measurements at DSW-28 taken in the fall of 2008 (low flow of 355 gpm) and the spring of 2009 (high flow of 1,432 gpm). DSW-28 is located in the upper section of Slug Creek, as described in **Section 3.10.1**. Access to DSW-28 is available from Slug Creek Road using a standard water tanker truck inlet hose attached to the tanker truck. No surface disturbance of riparian areas or wetlands from heavy equipment would occur. The withdrawal would represent less than 0.2 percent of daily low flow at that location. The effect on water quality, downstream fisheries, and other aquatic resources as a result of the water pumping would be temporary and negligible. Simplot would remove the water under a temporary water right issued by IDWR.

Simplot would follow the guidelines presented in “BMPs for Mining in Idaho” (IDDL 1992), resulting in temporary and negligible impacts related to surface water quality, including the 303(d)-listed reach of Slug Creek and its tributaries. No changes to the current beneficial use designations would occur, as the only involvement with Slug Creek would be the temporary placement of a suction hose from the water supply pump truck into the creek.

3.10.2.3 No Action Alternative

Under the No Action Alternative, the Project would not occur, there would be no disturbance to water resources, including wetlands and current trends would continue.

3.11 Wildlife, Including Threatened, Endangered, and Sensitive (Special Status) Species

3.11.1 Affected Environment

3.11.1.1 General Wildlife

The major vegetation communities and habitats found within the Project Area do not represent unique habitats that are not widely available in the general vicinity. The lower elevations contain a relatively flat expanse of sagebrush habitat sandwiched between two slopes to the east and west. The west slope is part of the Aspen Range, and contains aspen-conifer habitat while the east slope contains further sagebrush.

Based on available data, mule deer, elk, moose, and black bear are known to occur in the area. The greatest diversities of nongame wildlife occur in spring and summer, when a variety of migratory birds occur throughout the area. The migrant and resident avian species, as well as small mammals, support the area's raptor population and several mammalian predator species.

3.11.1.2 Threatened, Endangered, and Sensitive Species (Special Status)

Endangered, Threatened, and Sensitive species, collectively referred to as Special Status Species, that are most likely to occur within the Project Area include those that prefer sagebrush or aspen-conifer habitats, and are known to occur within one mile of the Project Area. **Table 10** shows the Special Status Species that may occur in the Project Area based on known habitat associations, distribution, and local occurrence.

Table 10. Endangered, Threatened, or Sensitive (Special Status) Species that may occur in the Project Area.

Common Name	Scientific Name	Idaho	Federal	BLM
AVIAN SPECIES				
Brewer's sparrow	<i>Spizella breweri</i>	S3B		Type 3
Flammulated owl	<i>Otus flammeolus</i>	S3B		Type 3
Greater sage-grouse	<i>Centrocercus urophasianus</i>	S2	C	Type 2
Northern goshawk	<i>Accipiter gentiles</i>			Type 3
Prairie falcon	<i>Falco mexicanus</i>			Type 3
Sage sparrow	<i>Amphispiza belli</i>			Type 3
MAMMAL SPECIES				
Gray wolf	<i>Canis lupus</i>	S3	XN	Type 1

Common Name	Scientific Name	Idaho	Federal	BLM
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	S3		Type 3
Wolverine	<i>Gulo gulo</i>	S2	C	Type 3
AMPHIBIAN and REPTILE SPECIES				
Common garter snake	<i>Thamnophis sirtalis</i>			Type 3
Northern leopard frog	<i>Rana pipens</i>	S2		Type 2
Western toad	<i>Bufo boreas</i>			Type 3
Boreal toad	<i>Bufo boreas boreas</i> (southeast Idaho population)			Type 2

Idaho: S1= Critically imperiled: at high risk because of extreme rarity (often 5 or fewer occurrences), rapidly declining numbers, or other factors that make it particularly vulnerable to rangewide extinction or extirpation. S2 = Imperiled: at risk because of restricted range, few populations (often 20 or fewer), rapidly declining numbers, or other factors that make it vulnerable to rangewide extinction or extirpation. S3 = Vulnerable: at moderate risk because of restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors that make it vulnerable to rangewide extinction or extirpation. S4 Apparently secure: uncommon but not rare; some cause for long-term concern due to declines or other factors. S5 = Secure: common, widespread, and abundant. B = Breeding: conservation status refers to the breeding population of the species. N = Nonbreeding: conservation status refers to the non-breeding population of the species.

USFWS: E = Endangered: species in danger of extinction throughout all or a significant portion of its range. T = Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range, XN = Experimental/Nonessential Population: a population (including its offspring) of a listed species designated by rule published in the Federal Register that is wholly separate geographically from other populations of the same species. C = Candidate Species.

BLM: Type 1 = Threatened, endangered, proposed and candidate species listed by the USFWS. Type 2 = Rangewide/Globally imperiled: species that are experiencing significant declines throughout their range with a high likelihood of being listed in the foreseeable future due to their rarity and/or significant endangerment factors. Type 3 = Regional/ State imperiled: species that are experiencing significant declines in population or habitat and are in danger of regional or local extinctions in Idaho in the foreseeable future if factors contributing to their decline continues. Type 4 = Peripheral: species that are generally rare in Idaho with the majority of their breeding range largely outside the state. Type 5 = Watch list: these species are not considered BLM sensitive species and associated sensitive species policy guidance does not apply. Watch list species include species that may be added to the sensitive species list depending on new information concerning threats, species' biology, or statewide trends.

3.11.1.3 Species Descriptions

Brewer's sparrow

Brewer's sparrows are considered sagebrush obligates. The species is tightly associated with sagebrush shrublands that have abundant, scattered shrubs and short grass. Brewer's sparrows breed in high densities and tend to be the most abundant bird species where they occur. They build open cup-shaped nests in a large sagebrush plant. One Idaho study found that Brewer's sparrows select taller shrubs ranging from 16-41 inches (Ritter 2000). This species was very abundant in North America Breeding Bird Survey (BBS) counts on the Blackfoot and Henry routes (<http://www.pwrc.usgs.gov/BBS/>). This species may occur in the Project Area within the proposed tailings impoundment area or near drill holes #4-8.

Flammulated Owl

Flammulated owls are small, secretive owls that nest in cavities and feed exclusively on insects. Flammulated owls occur year-round in cool, temperate, semi-arid climates, migrating when necessary to maintain access to their insect prey. Habitat consists primarily of open ponderosa pine or similar dry montane forests, which include an

interspersed with dense thickets for roosting within open, mature to old-growth stands of ponderosa pine, Douglas-fir, or aspen (McCallum 1994). Three flammulated owl observations were documented by the CDC approximately nine miles east of the Project Area in the Webster Range. The Project Area contains suitable habitat in mature forest stands. Any of drill holes #1-3 or #9-11 could be close to a flammulated owl nest, since these holes are in or near aspen/conifer forest. Any of the drill holes (including those in sagebrush) could be within 0.5 miles of a nest. Thus far no nests have been identified during field surveys.

Greater sage-grouse

Greater sage-grouse depend on sagebrush, particularly big sagebrush (*Artemisia tridentata*) and silver sagebrush (*A. cana*), for food and cover year-round. Sage-grouse utilize riparian and upland meadows and sagebrush grasslands during summer; sagebrush dominated rangelands with herbaceous cover during breeding (lekking, nesting, and early brood-rearing); and upland meadows, riparian areas, greasewood bottoms, and agricultural fields, in addition to sagebrush, during autumn (Connelly et al. 2004). As described in Connelly et al. (2004), the spatial distribution of sage-grouse in winter often is related to snow depth. At the onset of winter sage-grouse typically move to lower elevations with greater exposure of sagebrush above snow and taller sagebrush; in migratory populations this movement may extend up to 160 km.

A greater sage-grouse lek is located about one mile northeast of drill hole #6. No sage grouse were observed or heard at this lek during surveys conducted in 2010. Due to the proximity of the known lek and a habitat buffer surrounding the lek, key sage grouse habitat has been identified within the Project Area. Within the Project Area, key sage grouse habitat occurs essentially throughout Section 6, T9S, R44E, encompassing drill holes #4 through #8, the entire proposed tailings impoundment area, and north into T8S, encompassing the North Access route. Drill holes #4-8, all of the drill holes within the proposed tailings impoundment area, and the entire North Access area are situated within potential early brooding habitat for greater sage-grouse.

Northern goshawk

Northern goshawks inhabit montane coniferous and deciduous woodland in the western U.S., preferring woodland stands of intermediate to high canopy-closure and a thin understory interspersed with small openings, fields, or wetlands. Goshawks generally nest in large trees adjacent to open flight corridors. This species is primarily associated with mature to old growth stands of Douglas-fir, pines, or aspen. Stands of mature, closed-canopy Douglas-fir, lodgepole pine, and aspen occur in patches on north or easterly facing slopes within the Project Area and may be suitable to provide adequate nesting habitat. Mainly, the Project Area provides suitable foraging habitat, and nesting habitat is found nearby. Any of drill holes #1-3 or #9-11 could be close to a goshawk nest, since these holes are in or near aspen/conifer forest. Any of the drill holes (including those in sagebrush) could be within 0.5 miles of a nest. Thus far no nests have been identified in the Project Area, but goshawks were observed 1-2 miles south of the Project Area.

Sage sparrow

Sage sparrows are found in sagebrush, saltbush brushlands, and chaparral. During migration and winter months, sage sparrows are also found in arid plains with sparse bushes, in grasslands, and in open situations with scattered brush (Groves et al. 1997). Sage sparrows build a cup-shaped nest, usually in a sagebrush plant. This species may occur in the Project Area within the proposed tailings impoundment area or near drill holes #4-8.

Gray wolf

Wolves are sociable animals, frequently traveling and hunting in packs of 2-12 wolves. Packs typically occupy and defend territories of 50-550 square km (20-214 square mi) from other wolf packs. Wolves prey on a wide variety of mammals, including white-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hemionus*), elk (*Cervus canadensis*), caribou (*Rangifer sp*), bighorn sheep (*Ovis Canadensis*), mountain goats (*Oreamnos americanus*), and beaver (*Castor canadensis*). Idaho wolf numbers have grown steadily since the mid-1990s (as of 2007; Federal Register (FR) 74(62):15123-15188). Any habitat in the Project Area could provide movement routes for wolves. Wolves have been observed in areas adjacent to the Project Area.

Wolverine

In North America, wolverines occur within a wide variety of arctic and alpine habitats, but primarily boreal forests, tundra, and mountains. The southern portion of their range extends into Idaho (FR 73(48):12929-12941; March 11, 2008). A general trait of areas occupied by wolverines is their remoteness from humans and human developments (Banci 1994). Historical records in USFWS (2008) report 16 current (1995-2005) and verifiable records of wolverine in Idaho, mainly in the northern and western parts of the state. In southeast Idaho, scattered occurrences of wolverine have been reported (e.g., Groves 1988). The CDC data revealed that wolverine tracks were observed in February 2008, approximately 10 miles east of the Project Area in Smoky Canyon. No suitable habitat for denning is found in Project Area. However, travel through the Project Area is possible because wolverines could occur on mountain ranges near the area.

Townsend's big-eared bat

The Townsend's big-eared bat occurs in much of western North America. Townsend's big-eared bats occur in a variety of habitats from desert shrub to deciduous and coniferous forest over a wide range of elevations. However, its distribution is strongly correlated with the availability of caves or cave-like roosting habitat such as abandoned mines (Pierson et al. 1999). No suitable cave habitat is present in the Project Area. Snags in the Project Area may be marginally suitable for roosting and the species may forage in the Project Area. Townsend's big-eared bats were recorded in the Dairy Syncline Project Area in 2009 during baseline surveys being conducted for the Dairy Syncline Mine and Reclamation Plan EIS project.

Common garter snake

Garter snakes are found in a variety of habitats such as grasslands, shrublands, woodlands, and open areas in forests. In Idaho, however, they are generally associated

with marshes and water areas (Groves et al. 1997). This species may occur in the Project Area within the wetland/wet meadow habitat along the East Access Alternative.

Northern leopard frog

Northern leopard frogs are associated with a variety of wetland situations, including marshes, pond margins, and slow-moving sections of streams and rivers. In southern Idaho, northern leopard frog populations have been reported in the Snake River and tributaries, including Portneuf River, Bear River, and Marsh Valley in the SE. This species was observed in wetlands along Slug Creek Road in 2009 during baseline surveys being conducted for the Dairy Syncline Mine and Reclamation Plan EIS project. Shive and Peterson (2009) reported that northern leopard frog was the second most abundant species found in their study area in south-central Idaho. This species may occur in the Project Area within the wetland/wet meadow habitat along the East Access Alternative.

Western toad

Western toads are found in a variety of habitats such as desert springs and streams, meadows and woodlands, and in and around ponds, lakes, reservoirs, and slow-moving rivers and streams. Breeding areas are typically shallow water areas at the edges of ponds, or lakes, stream or river edges with slow-moving water, or other flooded or ponded areas (Keinath and McGee 2005). After breeding, western toads move to more terrestrial habitats and eventually to hibernacula that may be a substantial distance from the breeding site (up to 2.5 km, but usually much less; Keinath and McGee 2005). Western toads dig a burrow in loose soil or use burrows of small mammals (Groves et al. 1997) and remain in hibernation until the following spring. This species may occur in the Project Area within the wetland/wet meadow habitat along the East Access Alternative access route.

Boreal toad

Boreal toads are a subspecies of Western toads and share most, if not all, of their traits. Five boreal toad subspecies have been documented through mitochondrial DNA analyses, with one of the five groups identified as specific to Caribou County, Idaho (Hogrefe et al. 2005). Boreal toad occupies relatively high elevation habitats compared to other western amphibians, ranging from 5,000 to 10,000 feet above sea level. Occupied wetlands are surrounded by a variety of upland vegetation communities, including sagebrush and grasslands, pinyon-juniper, mountain shrubs, and coniferous forest (Hogrefe et al. 2005). This species may occur in the Project Area within the wetland habitat along the East Access Alternative access route.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action – North Access

Under the Proposed Action, total surface disturbance to vegetation/habitat associated with the construction of 3.7 miles of temporary roads and improvement of 3.2 miles of existing roads and trails would be approximately 12.8 acres, of which 9.3 acres would be on BLM Land. Approximately 8.0 acres of key sage grouse habitat would be disturbed, of which 4.5 acres would be on BLM land. EPMs specific to sage grouse

(EPM #8) would be implemented to minimize impacts (see **Section 2.4**). Given that key sage grouse habitat represents a buffer of approximately two miles around the nearest lek, 8 acres would be less than 0.1 percent of the key habitat area, although the temporary and existing roads would fragment a larger amount of habitat.

Exploration noise could cause wildlife, including Special Status Species to avoid portions of the Project Area. Most wildlife species would displace and/or leave the immediate area prior to being contacted by Project equipment and/or vehicles. Some smaller, less mobile individuals may be impacted; however, it is unlikely that any game or Special Status Species would be directly injured or killed. A total of 2.17 acres of forested habitat would be impacted, of which 2.16 acres would be for new roads or reopening of previously reclaimed roads. The remaining 0.01 acre would result from improvement of existing roads. Numerous acres of forested habitat is available within and immediately adjacent to the Project Area, allowing dispersal for potentially impacted individuals. Implementation of the EPMs described in **Section 2.4** would minimize the potential for injury or death to wildlife as a result of the Project, and it has been shown that local wildlife are actively using reclaimed disturbance corridors from previous exploration drilling activity.

The potential for Project-related activities to injure or kill wildlife species would be temporary and minor. Impacts to wildlife habitat would primarily be narrow (20 feet in width) and linear; the amount of proposed disturbance is small in comparison to the amount of undisturbed habitat within and surrounding the Project Area; and all disturbed areas would be reclaimed. Consequently, impacts to wildlife habitat would be minor and temporary to long term (with duration directly correlating with the time for reclamation activities, particularly vegetation restoration, to re-establish). Following reclamation activities and the reestablishment of vegetation, typically the smaller animals with generally smaller home ranges, should tend to re-colonize the disturbed areas.

The BLM land within the Project Area is actively used by hunters, although access is limited by the surrounding private land. While overall existing road length would increase temporarily during the construction period, temporary roads would not be open and available for unauthorized use. Simplot would ensure that all gates through private property that allow access to BLM land in the Project Area would be closed and locked each day to prevent unauthorized access. Further, upon completion of drilling activities, all newly constructed and improved roads would be reclaimed and closed (reclamation would be undertaken as individual roads are no longer needed). Following the Project, the permanent road base on BLM land would return to current levels.

As a result of implementing the EPMs described in **Section 2.4** (e.g., minimize disturbance, conduct pre-disturbance migratory bird nesting surveys, avoid stick raptor nests, reclamation, etc.), no additional mitigation measures are proposed. Minimal residual impacts to wildlife would result from the Project following reclamation and reestablishment of the vegetation.

3.11.2.2 Alternative – East Access

Under the East Access Alternative, total surface disturbance of vegetation/habitat associated with the construction of temporary roads and improvement of existing roads and trails would be approximately 13.8 acres, of which 11.3 acres would be on BLM

land. Approximately 4.4 acres of key sage grouse habitat would be disturbed, all on BLM land. EPMs specific to sage grouse (EPM #8) would be implemented to minimize impacts (see **Section 2.4**). Given that key sage grouse habitat represents a buffer of approximately two miles around the nearest lek, 4.4 acres would be less than 0.06 percent of the key habitat area.

Aside from the difference in disturbance acres, the East Access Alternative would have the same effects on wildlife, including Special Status Species as the Proposed Action.

3.11.2.3 No Action Alternative

Under the No Action Alternative no Project-related disturbance or displacement would occur. There would be no additional temporary roads to increase vehicle access or hunting vulnerability to big game. Wildlife would continue to use the area as they currently do. Over two acres of key sage grouse habitat on private access roads would continue to be used.

4.0 Cumulative Impact Assessment

Cumulative effects are those impacts to the environment which result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (RFFAs). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (see 40 CFR 1508.7).

This section of the document discloses the incremental impacts that the action alternatives and no action alternative are likely to have when considered in the context of impacts associated with past, present, and RFFAs that have occurred, or are likely to occur, in the area over the next 30 years. This temporal framework was chosen because it represents the approximate life of the Dairy Syncline Mine and Reclamation Plan which is a RFAA considered in the analysis.

The Cumulative Impact Assessment Area (CIAA) for this analysis includes the Slug Creek and Johnson Creek watersheds to their confluence with the Blackfoot River (**Figure 5**). For most resources considered, this CIAA is the landscape unit that defines the bounds of the analysis. However, because of the distribution of some resources considered in the analysis, the CIAA as described above is not the most appropriate landscape unit from which to consider cumulative effects. In some cases, therefore, the assessment area will vary as indicated below.

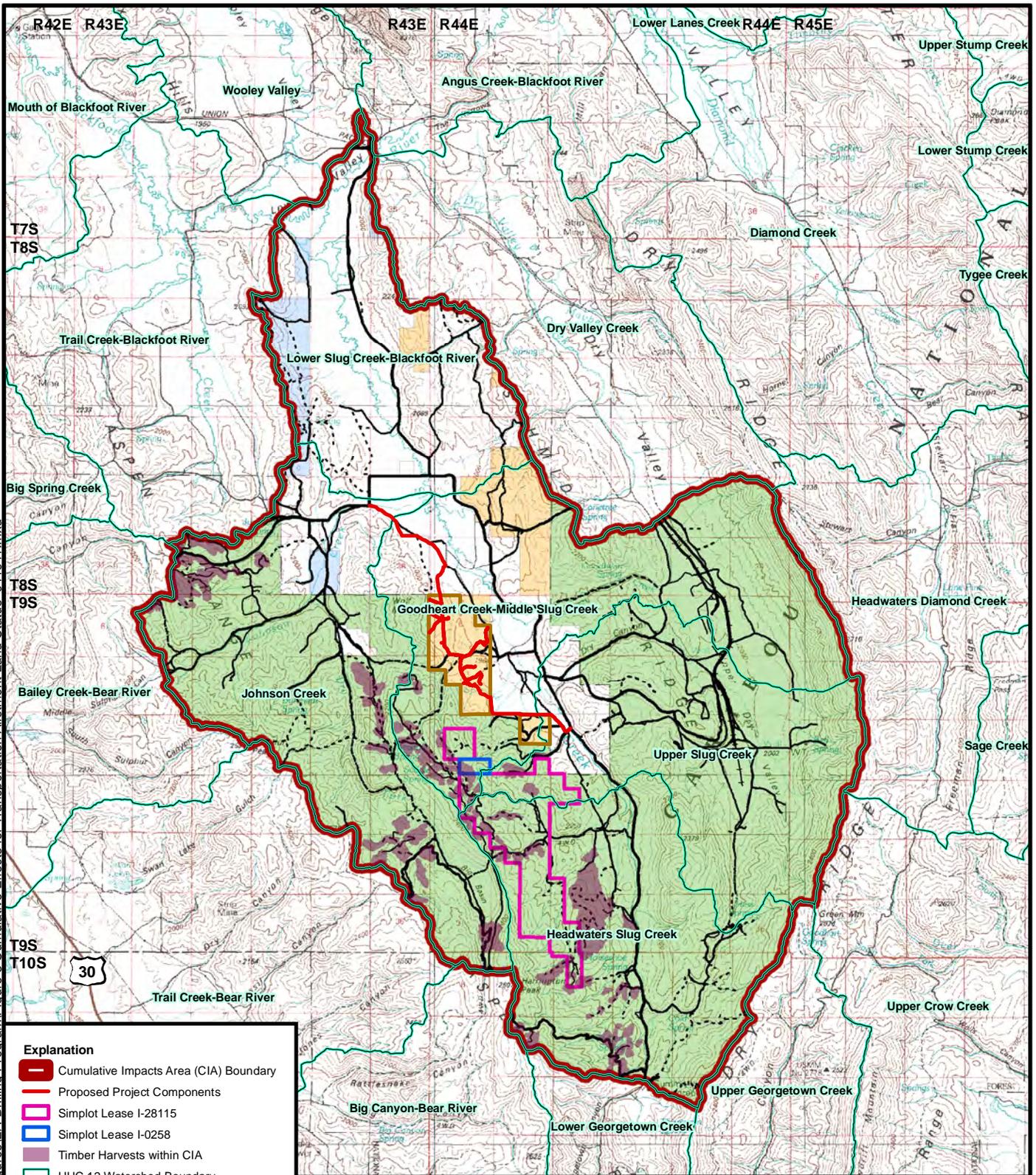
The CIAA comprises 62,251 acres (97.3 sq mi) of which approximately 42,729 acres are administered by the USFS, 15,084 are private holdings, about 2,978 acres are managed by the BLM, and 1,460 acres are owned by the State of Idaho.

4.1 Past, Present, and Reasonably Foreseeable Future Actions

4.1.1 Past and Present Actions

On the basis of aerial photographic data, agency records and GIS analysis, the following past and present actions, which have impacted the CIAA to varying degrees, have been identified: livestock grazing, timber harvesting, mineral exploration and development, and the local transportation network. These actions do not represent every individual action that may have impacted the CIAA, but they are the suite of actions most likely to have contributed substantial impacts based on the aerial photographic and GIS analysis.

drawings\Simplelot Dairy Syncline IEA-Drilling Program\Figure 5 Cumulative Effects for Transportation Allotment Land Status_011911.mxd



Explanation

- Cumulative Impacts Area (CIA) Boundary
- Proposed Project Components
- Simplot Lease I-28115
- Simplot Lease I-0258
- Timber Harvests within CIA
- HUC 12 Watershed Boundary

Roads and Trails within CIA

- Light Duty Road, hard or improved
- Unimproved Road
- Trails

Proposed Land Sale

- BLM Land Sale (To Be Disposed)

Land Status within CIA

- BLM
- Private
- State
- USFS

BASE FROM USGS 1:100,000-SCALE METRIC TOPOGRAPHIC MAP: SODA SPRINGS, IDAHO

N

1 0 1 Miles

2 0 2 Kilometers

DAIRY SYNCLINE DRILLING PROJECT

FIGURE 5
CUMULATIVE IMPACTS AREA

DRAWN BY CP	DATE DRAWN 01/19/2011
SCALE 1:150,000	

4.1.1.1 Livestock Grazing

Livestock grazing has a long history in the region dating back to the late 1800's. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use. Today, it remains an important use of the CIAA.

All or parts of 15 different federally-administrated allotments are located within the CIAA. Four of the allotments, totaling approximately 13,425 acres, are administered by the BLM, but many of these allotments are intermingled with private lands. The majority of these allotments are used for grazing cattle. Late spring to late fall is the typical season of use.

The USFS, Soda Springs Ranger District, manages all or parts of 11 allotments within the CIAA. These allotments occupy approximately 42,486 acres of the CIAA.

4.1.1.2 Timber Harvesting

Data obtained from the CTNF showed that 2,345 acres of timber cuts occurred in the CIAA between 1964 and 2001 (USFS 2009b).

4.1.1.3 Mineral Development and Exploration

Phosphate leases are found throughout the CIAA. Phosphate mining has occurred in the CIAA in the past, but no mining is occurring in the CIAA at this time. Phosphate exploration drilling has occurred on various phosphate leases and known phosphate lease areas throughout the CIAA. From 2003-2005, and from 2009-2010, phosphate exploration and environmental data collection activities in the Dairy Syncline lease area have temporarily disturbed approximately 100 acres, as a result of the temporary construction of access roads. All disturbance areas associated with these exploration and data collection activities have been reclaimed.

4.1.1.4 Transportation Network

There are approximately 226 miles of roads in the CIAA, of which 97 miles are local, neighborhood, or rural roads; 102 miles are vehicular trails; and 27 miles of other roads and trails (USFS 2009a). At an average estimated width of 20 feet, this totals nearly 550 acres of roads in the CIAA.

4.1.2 Reasonably Foreseeable Future Actions

All of the past and present actions discussed above are expected to persist through the 30-year time frame, though the relative intensity of these actions could vary depending on a variety of economic factors or changes in management direction. Few projects are proposed for the CIAA that would require NEPA compliance, with the exception of the proposed Dairy Syncline Mine and Reclamation Plan EIS project described above. The CIAA is shown as having potential for geothermal energy development in the joint BLM USFS Geothermal Leasing Programmatic Environmental Impact Statement (BLM 2008), but there are no pending leases within the CIAA.

4.1.2.1 Livestock Grazing

The intensity and character of livestock grazing is anticipated to remain consistent on both public and private lands into the foreseeable future. It is reasonably foreseeable that small-scale range improvements, such as enclosures, troughs, water pipelines, or

fences, or adjustments to grazing management, such as alterations in stocking rate or seasons of use could be proposed in support of allotment-specific objectives, on either public or private lands. However, the proposed Dairy Syncline Mine and Reclamation Plan, which is proposed to develop the Dairy Syncline phosphate leases, has the potential to remove approximately 3,200 acres from livestock grazing.

4.1.2.2 Timber Harvesting

Implementation of the Dairy Syncline Mine and Reclamation Plan, if approved, would result in the harvesting of woody vegetation, at least some of which would be commercially marketable.

4.1.2.3 Mineral Development and Exploration

Based on recent exploration data, Simplot has submitted a proposed Mine and Reclamation Plan to develop the Dairy Syncline lease area. Potential future disturbance associated with the Dairy Syncline project could total approximately 2,100 acres and proposes to encompass essentially all of the current Project Area for this Project. An EIS was previously completed (see USFS and BLM 1997) to issue the Dairy Syncline lease and a new EIS is currently being prepared in order to consider the potential impacts of this reasonably foreseeable action. In addition, as part of the proposed Dairy Syncline Mine and Reclamation Plan application, a BLM mitigated land sale of approximately 1,142 acres and a USFS land exchange of approximately 630 acres is being proposed and would be evaluated in the new EIS being prepared for the Dairy Syncline Mine and Reclamation Plan application.

Phosphate exploration drilling is expected to continue on the various phosphate leases and known phosphate lease areas throughout the CIAA, and the phosphate exploration and environmental data collection activities described above are likely to continue for the next 1-2 years in the vicinity of the Dairy Syncline lease area. Further, additional geotechnical drill holes are proposed to be drilled by Simplot on private land along the proposed tailings impoundment dam. It is anticipated that no federal authorization/approval is needed for these drill holes.

4.1.2.4 Transportation Network

Although additional temporary roads are proposed as part of the Dairy Syncline Mine and Reclamation Plan application, the number of acres of disturbance associated with their construction is considered as part of the overall disturbance footprint (e.g., approximately 2,100 acres) and not a permanent part of the local transportation network.

4.2 Cumulative Impacts by Resource

4.2.1 Cultural Resources

The CIAA for cultural resources is limited to the Project Area, plus a 100-meter buffer.

4.2.1.1 Impacts from Past and Present Actions

Although systematic data is not available, it is likely that cultural resources have been impacted by past and present actions. The mostly likely impacts, which would include alterations to the physical and visual integrity of cultural resource sites, would be

associated with ground disturbing activities in areas of high cultural resource sensitivity, such as perennial water sources like Slug Creek.

Livestock grazing is a likely source of impacts as it is clear that livestock have extensively used the riparian habitat associated with Slug Creek. Another probable source of disturbance to cultural resources would be associated with the construction of the local transportation system. Many routes have been constructed on private lands or on public lands prior to the adoption of the National Historic Preservations Act (NHPA) which currently affords protection to these resources.

Inactive mines and many episodes of exploration, involving public, state and private lands, have occurred within the CIAA over the years. Mining activities that occurred prior to the passage of the NHPA may have impacted cultural resources, though the extent of the effects is unknown. More recent activities involving Federal subsurface have been conducted pursuant to the NHPA, and these more recent operations have likely not affected cultural resources substantially.

Past and present timber harvesting is not likely to have had substantial impacts on cultural resources because timber harvesting is not typically associated with large amounts of ground disturbance.

4.2.1.2 Impacts from Reasonably Foreseeable Future Actions

Reasonably foreseeable future livestock grazing will likely continue to impact cultural resources near perennial water sources, especially near Slug Creek. These impacts, which are primarily associated with trampling, will continue at approximately the same rate as in the past because the intensity of grazing on these privately held lands should remain consistent through time.

There are not likely to be further impacts to cultural resources associated with reasonably foreseeable mineral exploration and development or timber harvesting because the area of the proposed Dairy Syncline Mine and Reclamation Plan will be inventoried for cultural resources at a Class III level. Any cultural resources considered eligible for the National Register of Historic Places (NRHP) would either be avoided or any potential adverse impacts would be mitigated in consultation with the Idaho SHPO and the appropriate Native American tribes.

4.2.1.3 Impacts of the Proposed Action

The Idaho SHPO has determined that the implementation of the Proposed Action would result in no adverse impacts to eligible cultural resources.

4.2.1.4 Impacts of the Alternative - East Access

The Idaho SHPO has determined that the implementation of this alternative would result in no adverse impacts to eligible cultural resources.

4.2.1.5 Impacts of the No Action Alternative

The No Action Alternative would result in no impacts to cultural resources.

4.2.1.6 Cumulative Impacts

It is likely that the majority of cumulative impacts to cultural resources are a result of past and present livestock grazing and the historic construction of the local

transportation system, though the intensity of the impacts are not well known. Reasonably foreseeable future livestock grazing could add to the collective impact if previous undisturbed cultural sites are trampled, especially on private lands. Future mineral development and exploration would have little potential to add to the collective impact because the area considered for development under the Dairy Syncline Mine and Reclamation Plan would be surveyed for cultural resources and potential impacts mitigated prior to any ground disturbance as mandated by the NHPA.

Neither the Proposed Action, the East Access Alternative, nor the No Action Alternative would contribute to the collective impact.

4.2.2 Soils

The CIAA is the same as described in **Section 4.0**.

4.2.2.1 Impacts from Past and Present Actions

Although there are no specific data that quantify soil loss in the CIAA, impacts from past and present actions have resulted in impacts to soils through disturbance, compaction, and erosion, all of which contribute to a loss in soil productivity. Livestock grazing is a likely source of impacts to soils as it is clear that livestock tend to focus their grazing efforts in riparian and wetland areas. Concentration of livestock in these areas may produce a loss in soil productivity through soil compaction and erosion.

Timber harvesting, mineral exploration and development activities, as well as the transportation network in the CIAA, have adversely impacted soils through disturbance, compaction, and erosion.

4.2.2.2 Impacts From Reasonably Foreseeable Future Actions

Timber harvesting and mineral development and exploration in the CIAA (potentially up to 2,100 acres for the proposed Dairy Syncline Mine and Reclamation Plan) would disturb native soil, which could cause an increase in erosion and loss of soil productivity. Impacts to soils as a result of grazing could decrease due to the proposed Dairy Syncline Mine and Reclamation Plan, which may remove acreage from grazing management. Impacts to soils as a result of the future use of the transportation network are not anticipated to change.

4.2.2.3 Impacts of the Proposed Action

The Proposed Action would result in a minor, temporary increase in soil erosion and loss of productivity on 12.8 acres.

4.2.2.4 Impacts of the Alternative – East Access

The implementation of this alternative would result in 13.8 acres of temporary soil disturbance.

4.2.2.5 Impacts of the No Action Alternative

The No Action alternative would not result in impacts to soils.

4.2.2.6 Cumulative Impacts

Past, present, and RFFAs have resulted in increased soil compaction, erosion potential, and productivity losses over portions of the CIAA. It is reasonably foreseeable that over 2,100 acres of soil would be disturbed as a result of proposed mining activity under the proposed Dairy Syncline Mine and Reclamation Plan, adding substantially to the collective impact to soils.

Neither the Proposed Action nor the East Access alternative would contribute substantially to the collective impact because little soil would be disturbed (12.8 acres and 13.8 acres, respectively). The No Action Alternative would not add to cumulative impacts.

4.2.3 Migratory Birds

The CIAA for migratory birds generally includes suitable habitat within a 5-mile radius around the Project Area. This area was chosen because direct and indirect impacts to migratory birds, would primarily occur immediately within the Project disturbance areas (habitat loss and noise/human disturbance) and would not be transported offsite (like soil/vegetation disturbance impacts to water resources).

4.2.3.1 Impacts from Past and Present Actions

Impacts from past and present actions have resulted in forested and non-forested habitat loss, habitat fragmentation and modification, and temporary displacement of individuals birds.

4.2.3.2 Impacts from Reasonably Foreseeable Future Actions

Potential impacts to migratory birds and their habitat from timber harvesting, mineral exploration and development, and livestock grazing are likely to continue. The proposed Dairy Syncline Mine and Reclamation Plan would disturb approximately 2,100 acres of forested and non-forested habitat, which would result in a substantial amount of both long- and short-term displacement and fragmentation, forcing migratory birds to adjacent habitat.

4.2.3.3 Impacts of the Proposed Action

Implementation of the Proposed Action would result in the disturbance of 12.8 acres of habitat and the short-term displacement of migratory birds during drilling operations.

4.2.3.4 Impacts of the Alternative – East Access

The East Access Alternative would result in the short-term displacement of migratory birds during drilling operations and the short-term disturbance of 13.8 acres of habitat.

4.2.3.5 Impacts of the No Action Alternative

The No Action alternative would not result in impacts to migratory birds.

4.2.3.6 Cumulative Impacts

Past, present, and RFFAs would result in a substantial amount of direct and indirect habitat loss and habitat fragmentation. The majority of the impact would occur as a consequence of the proposed implementation of the Dairy Syncline Mine and

Reclamation Plan which would impact approximately 2,100 acres of habitat. This acreage constitutes approximately 3 percent of the CIAA for migratory birds and would force birds to adjacent habitat.

The Proposed Action and the East Access Alternative would contribute slightly to the cumulative impact because they would each disturb small amounts of acreage (12.8 and 13.8 acres, respectively) and displace birds over the short-term due to temporary habitat loss and noise associated with drilling activity. These impacts would be short-term and negligible. The No Action alternative would not contribute to cumulative impacts to migratory birds because no habitat disturbance or noise associated with drilling would occur.

4.2.4 Tribal Treaty Rights and Interests

The CIAA for Tribal treaty rights impacts is southeastern Idaho. This CIAA is used because it encompasses the majority of the area currently used by tribal members.

4.2.4.1 Impacts from Past and Present Actions

While the development of the local transportation system has led to increased access to resources used by the Tribes, past and present livestock grazing and mineral exploration and development have tended to decrease the availability of these resources. This is particularly true of mineral development which has disturbed large amounts of acreage throughout southeastern Idaho that contains natural vegetative communities, game species, and other resources and places that are important to exercising the Tribes treaty rights.

4.2.4.2 Impacts from Reasonably Foreseeable Future Actions

The proposed Dairy Syncline Mine and Reclamation Plan would limit access and disturb natural resources over a 2,100 acre area of unoccupied land on which the Tribes have a right to exercise their treaty rights. As part of the proposed Dairy Syncline Mine and Reclamation Plan, a BLM mitigated land sale of approximately 1,142 acres and a USFS land exchange of approximately 630 acres is being proposed and would be evaluated in the EIS being prepared for the Dairy Syncline Mine and Reclamation Plan application.

The proposed BLM mitigated land sale is a reasonably foreseeable action that would potentially remove approximately 1,142 acres of public land from federal ownership to private ownership, thus preventing access and use by the Tribes. However, BLM is considering a *mitigated* land sale, meaning that in addition to receiving fair market value for the sold lands, BLM would acquire mitigation lands to assist in offsetting the impacts to Tribal treaty rights and interests due to the land sale.

The proposed USFS land exchange would be a value for value exchange, so Tribal treaty rights and interests would not be lost, but transferred from one location to another.

4.2.4.3 Impacts of the Proposed Action

The Proposed Action would result in a short-term, temporary loss of access to 12.8 acres of unoccupied Federal lands for which the Tribes would normally have access to under the 1868 Fort Bridger Treaty.

4.2.4.4 Impacts of the Alternative – East Access

The implementation of this alternative would result in the temporary loss of access to 13.8 acres of unoccupied Federal land that the Tribes would normally have access to for the purpose of exercising their treaty rights.

4.2.4.5 Impacts of the No Action Alternative

The No Action Alternative would have no affect on tribal treaty rights because drilling operations would not take place and access to these unoccupied Federal lands would not change.

4.2.4.6 Cumulative Impacts

Past and present actions, particularly mineral development, has lead to a general decline in access to unoccupied lands that the Tribes formerly used to exercise their treaty rights. Reasonably foreseeable future developments are likely to further the decline to a degree because access to additional lands would be restricted. This situation would be offset to a large degree if the BLM mitigated land sale and USFS land exchange are approved as part of the Dairy Syncline Mine and Reclamation Plan.

The Proposed Action and East Access Alternative would result in minimal short-term losses in access to unoccupied Federal lands. This negligible cumulative effect would be eliminated once the drilling has been completed and rehabilitation has taken place. The No Action Alternative would not contribute to the cumulative impact because the drilling, and hence, the temporary loss in access, would not occur.

4.2.5 Riparian/Wetlands

The CIAA is the same as described in **Section 4.0**.

4.2.5.1 Impacts from Past and Present Actions

Although no quantifiable data is available, riparian areas and wetlands have been adversely impacted by past and present actions. As observed in various areas near Slug Creek and other isolated springs within the CIAA, livestock grazing is a source of impacts as it is clear that livestock have extensively utilized the riparian habitat associated with these features. Timber harvesting, construction and use of the transportation network, as well as ground disturbance associated with mineral exploration and development have likely contributed to impacts to riparian areas and wetlands through direct disturbance and sedimentation.

4.2.5.2 Impacts from Reasonably Foreseeable Future Actions

Continued timber harvesting and mineral development and exploration in the CIAA (potentially up to 2,100 acres for the proposed Dairy Syncline Mine and Reclamation Plan) could impact riparian areas or wetlands through direct disturbance or through sedimentation. Impacts to riparian areas and wetlands as a result of grazing would likely continue throughout the CIAA, but may decrease due to the proposed Dairy Syncline Mine and Reclamation Plan, which may remove acreage from grazing management. Impacts to riparian areas or wetlands as a result of roads are not anticipated to change.

4.2.5.3 Impacts of the Proposed Action

The Proposed Action would contribute temporary, negligible impacts to Slug Creek as a result of water withdrawal. No impacts to wetlands or riparian areas are anticipated.

4.2.5.4 Impacts of the Alternative - East Access

The East Access Alternative would contribute temporary, negligible impacts to Slug Creek as a result of water withdrawal. Negligible to minor temporary impacts to a wetland/wet meadow are anticipated.

4.2.5.5 Impacts of the No Action Alternative

The No Action Alternative would have no impacts on riparian and wetland areas because no drilling or water removal would take place.

4.2.5.6 Cumulative Impacts

Past and present actions have resulted in direct disturbances to riparian and wetland areas within the CIAA. The majority of the impact is associated with cattle grazing, which has led to ground disturbance and increased sedimentation, decreasing the quality of this habitat. Timber harvesting, construction, and use of the transportation network as well as ground disturbance associated with mineral exploration and development have likely contributed to impacts to riparian areas and wetlands through direct disturbance and sedimentation, though the extent of these impacts are not well known.

The Proposed Action and East Access Alternative would contribute a negligible amount to the collective impact for a short period of time due to water withdrawal and the installation, use, and reclamation of a temporary crossing. However, once the drilling has been completed and the reclamation of the crossing has been completed, the contribution to the cumulative effect will cease. The No Action Alternative would not contribute to cumulative impacts to riparian areas and wetlands.

4.2.6 Range Resources

The CIAA for range resources is limited to the three allotments that encompass the Project Area, plus a 100-meter buffer. Grazing is currently the primary land use in this CIAA.

4.2.6.1 Impacts from Past and Present Actions

Past and present timber harvesting have generally improved livestock grazing and range resources through the removal of canopy vegetation, which is typically replaced with herbaceous vegetation. Mineral exploration and development has and continues to result in temporary impacts to livestock grazing through the temporary disturbance of soils and removal of vegetation utilized for livestock grazing. Following reclamation activities, vegetation has become re-established in these disturbed areas. The transportation network has removed approximately 550 acres of range resources from the CIAA, thus reducing potential livestock grazing through road construction and use.

4.2.6.2 Impacts from Reasonably Foreseeable Future Actions

The intensity and character of livestock grazing is anticipated to remain consistent on both public and private lands into the foreseeable future. Timber harvesting would continue to generally improve range resources and livestock grazing opportunities. Mineral exploration and development activities are anticipated to continue to result in temporary impacts to livestock grazing through the temporary disturbance of soils and removal of vegetation utilized for livestock grazing. However, the proposed Dairy Syncline Mine and Reclamation Plan has the potential to remove approximately 3,200 acres from livestock grazing, and would likely have an additional and longer term impact on available AUMs in the CIAA. Impacts to range resources as a result of roads are not anticipated to change.

4.2.6.3 Impacts of the Proposed Action

Under the Proposed Action, disturbance would be temporary and limited to 12.8 acres (less than 2 AUMs), as a result of temporary road construction and improvements to existing roads for drilling access. Implementation of the Proposed Action would result in negligible, short-term impacts to livestock grazing.

4.2.6.4 Impacts of the Alternative - East Access

Under the East Access Alternative, disturbance would be temporary and limited to 13.8 acres (2.6 AUMs), as a result of temporary road construction and improvements to existing roads for drilling access. Implementation of the East Access Alternative would result in negligible, short-term impacts to livestock grazing.

4.2.6.5 Impacts of the No Action Alternative

The No Action Alternative would have no impacts on range resources because no temporary road construction would take place.

4.2.6.6 Cumulative Impacts

Past and present actions related to the construction, and use of the transportation network as well as ground disturbance associated with mineral exploration and development have resulted in permanent and temporary impacts to livestock grazing through the disturbance of soils and removal of vegetation. Timber harvesting has generally improved livestock grazing and range resources through the removal of canopy vegetation, which is typically replaced with herbaceous vegetation. The proposed Dairy Syncline Mine and Reclamation Plan has the potential to remove approximately 3,200 acres from livestock grazing, and would likely have an additional and longer term impact on available AUMs in the CIAA.

The Proposed Action and East Access Alternative would contribute a negligible amount to the collective impact for a short period of time to livestock grazing due to disturbance of soils and removal of vegetation until the disturbed areas are fully reclaimed. The No Action Alternative would not add to cumulative impacts.

4.2.7 Vegetation, including Special Status Species, and Noxious Weeds/Non-Native Invasive Species

The CIAA is the same as described in **Section 4.0**.

4.2.7.1 Impacts from Past and Present Actions

Timber harvesting activities within the CIAA have removed approximately 2,345 acres of merchantable timber, some of which was likely mature forest. These activities have changed the vegetation type from canopy vegetation to herbaceous vegetation. Mineral exploration and development activities impact vegetation through construction of temporary roads, pits, and related disturbances. Various species of vegetation are removed from production through these activities. However, reclamation activities assist in revegetation of these disturbed areas. Initial construction of the transportation network would have removed up to 550 acres of vegetation from production within the CIAA. Livestock grazing has impacted vegetation through general consumption of vegetation, as well as through intensive grazing in wetland and riparian areas. Impacts in wetland and riparian areas tend to be more adverse than in upland areas due to livestock's tendency to congregate in and overgraze these areas.

Although specific data is not available, the identified past and present actions are likely to have adversely impacted Special Status Species within the CIAA. Special Status Species are likely to have been impacted from vegetation disturbance associated with the activities described above.

Due to the inherent soil disturbance associated with timber harvesting, mineral exploration and development, and construction of the transportation network, temporary impacts to vegetation through noxious weeds infestations are likely to have occurred. Disturbance associated with timber harvesting and mineral exploration and development in recent years has typically been reclaimed, thus reducing the potential of noxious weed infestations. For those areas of past disturbance where reclamation has proven to be not successful, the potential for noxious weeds infestations is greater. In addition to initial soil disturbance during road construction, the transportation network within the CIAA is likely to have increased the potential of noxious weed infestations through vehicular transport of noxious weeds from other areas.

4.2.7.2 Impacts from Reasonably Foreseeable Future Actions

Impacts to vegetation resources as a result of past and present actions are likely to remain consistent on both public and private lands into the foreseeable future. Timber harvesting would continue to change canopy vegetation to herbaceous vegetation. Mineral exploration and development activities are anticipated to continue to result in temporary impacts to vegetation resources through the temporary disturbance of soils and removal of vegetation. Impacts to vegetation resources as a result of the transportation network are not anticipated to change.

The proposed Dairy Syncline Mine and Reclamation Plan has the potential to remove approximately 2,100 acres of vegetation. In many areas within the disturbance footprint of the proposed mine there would be a change in function from mature forest to early seral, although the communities impacted are common throughout the CIAA and

reclamation would serve to advance the goal within the watershed of converting conifer to aspen through disturbance.

4.2.7.3 Impacts of the Proposed Action

It is anticipated that the Proposed Action would contribute a minor, short-term loss of understory vegetation and a minor, long-term loss of mature forest canopy trees. No impacts to Special Status Species plants are anticipated, and a minor loss of productivity through compaction are expected.

While minimized through use of EPMs, a minor, temporary increase in potential noxious weed infestation could occur.

4.2.7.4 Impacts of the Alternative – East Access

It is anticipated that the East Access Alternative would contribute a minor, short-term loss of understory vegetation and a minor, long-term loss of mature forest canopy trees. No impacts to Special Status Species plants are anticipated, and a minor loss of productivity through compaction are expected.

While minimized through use of EPMs, a minor, temporary increase in potential noxious weed infestation could occur.

4.2.7.5 Impacts of the No Action Alternative

The No Action Alternative would have no affect on vegetation resources, because drilling operations would not occur and no temporary road construction would take place.

4.2.7.6 Cumulative Impacts

Cumulatively, past, present, and RFFAs could result in a substantial amount of impacts to vegetation resources. Timber harvesting, construction of the transportation network, livestock grazing, and mineral exploration and development have contributed to impacts to vegetation resources through soil disturbance, vegetation consumption and removal, and altering vegetation cover types. The proposed Dairy Syncline Mine and Reclamation Plan has the potential to remove approximately 2,100 acres of vegetation. The vegetation disturbance associated with the activities described above have likely had adverse impacts to Special Status Species, and have likely contributed to noxious weed infestations.

The Proposed Action and East Access Alternative would result in minimal short-term impacts to vegetation resources, including Special Status Species, due to disturbance of soils, removal of vegetation, and increasing the potential of noxious weed infestations. The No Action Alternative would not contribute to cumulative impacts to vegetation resources.

4.2.8 Water Quality

The CIAA is the same as described in **Section 4.0**.

4.2.8.1 Impacts from Past and Present Actions

Water quality within the CIAA has been adversely impacted by past and present actions. As indicated in **Section 3.10.1**, Slug Creek is listed in Section 4c in IDEQ's

Principles and Policies for the 2008 Integrated (303[d]/305[b]) Report (2008) as waters impaired by non-pollutants. These listings are for low flow alterations and physical substrate habitat alterations. EPA-approved TMDLs exist for those same reaches for sedimentation/siltation.

As observed in various riparian areas near creeks, streams, and springs within the CIAA, including Slug Creek, livestock have intensively utilized the riparian habitat associated with these creeks and streams. As a result of this intensive use, livestock grazing has directly disturbed and contributed sediment to these water features. Timber harvesting, construction and use of the transportation network, as well as ground disturbance associated with mineral exploration and development have likely contributed to impacts to water quality through direct disturbance and sedimentation.

Although no specific data is available, timber harvesting and the construction and use of the transportation network have not contributed adverse impacts to water quantity within the CIAA. Although not anticipated to be substantial, livestock grazing and mineral exploration and development are likely to have impacted water quantity within the CIAA.

4.2.8.2 Impacts from Reasonably Foreseeable Future Actions

Continued timber harvesting and mineral development and exploration (including the proposed Dairy Syncline Mine) within the CIAA could impact water quality through direct disturbance or through sedimentation. Impacts to water quality as a result of grazing would likely continue throughout the CIAA, but may decrease due to the proposed Dairy Syncline Mine and Reclamation Plan, which may remove acreage from grazing management. Impacts to water quality as a result of sedimentation from roads may increase due to the anticipated increased traffic from mine workers employed by the proposed Dairy Syncline Mine, if approved.

Impacts to water quantity from the activities described above are likely to continue into the foreseeable future with similar intensity as has occurred in the past.

4.2.8.3 Impacts of the Proposed Action

Negligible, temporary impacts to water quality from sedimentation would occur during water withdrawal from Slug Creek. No impact from site drainage is expected because no direct connection to Slug Creek exists. Minor, temporary impact to water quantity in Slug Creek from withdrawals of 1,000 gallons per day for drilling is anticipated. No changes to the current beneficial use designations of Slug Creek would occur.

4.2.8.4 Impacts of the Alternative – East Access

Negligible, temporary impacts to water quality from sedimentation would occur during water withdrawal from Slug Creek. No impact from site drainage is expected because no direct connection to Slug Creek exists. Minor, temporary impact to water quantity in Slug Creek from withdrawals of 1,000 gallons per day for drilling is anticipated. No changes to the current beneficial use designations of Slug Creek would occur.

4.2.8.5 Impacts of the No Action Alternative

The No Action Alternative would have no affect on water quality and quantity, because soil disturbance associated with temporary road construction and water withdrawal from Slug Creek would not occur.

4.2.8.6 Cumulative Impacts

Livestock grazing, timber harvesting, construction and use of the transportation network, and mineral exploration and development have contributed to impacts to water quality through direct disturbance and sedimentation. Timber harvesting and the construction and use of the transportation network have not contributed adverse impacts to water quantity within the CIAA, while livestock grazing and mineral exploration and development have likely contributed minor impacts to water quantity within the CIAA. The proposed Dairy Syncline Mine and Reclamation plan has the potential to impact nearby waterbodies through direct disturbance and sedimentation.

Cumulatively, the Proposed Action and the East Access Alternative would contribute negligible impacts to water quality from sedimentation during water withdrawal for drilling, and would contribute minimal, incremental impacts to water quantity in Slug Creek through water withdrawal.

The No Action Alternative would not contribute to cumulative impacts to water quality or water quantity because no water would be pumped from Slug Creek.

4.2.9 Wildlife, Including Threatened, Endangered, and Sensitive (Special Status Species)

The CIAA for wildlife, including special status species generally includes suitable habitat within a 5-mile radius around the Project Area. This area was chosen because direct and indirect impacts to wildlife, including special status species, would primarily occur immediately within the Project disturbance areas (habitat loss and noise/human disturbance) and would not be transported offsite (like soil/vegetation disturbance impacts to water resources).

4.2.9.1 Impacts from Past and Present Actions

Although abundant suitable habitat is available regionally, timber harvesting has likely adversely impacted wildlife through reducing forested habitat and temporarily displacing individuals. Conversely, it may have also beneficially impacted wildlife through creating habitat diversity. Mineral exploration and development has likely contributed to adverse impacts to wildlife through the construction of temporary roads and development of pits and other mining related disturbances. Impacts from these activities may have resulted in the form of some forested and non-forested habitat loss, habitat fragmentation and modification, temporary displacement of individuals, and mortality of small, less mobile individuals.

Generally, the transportation network has created habitat fragmentation, has caused temporary displacement of individuals, and has contributed to wildlife mortality as a result of vehicle collisions. Livestock grazing has been known to adversely impact wildlife through competing with wildlife for food resources, causing adverse impacts to riparian areas and wetlands upon which many wildlife species rely, and detrimentally impacting waterbodies in the CIAA through sedimentation.

Although specific data is not available, the identified past and present actions are likely to have adversely impacted special status species within the CIAA. Impacts to special status species are likely a result of forested and non-forested habitat loss, habitat

fragmentation and modification, temporary displacement of individuals, and mortality of individuals associated with the activities described above.

4.2.9.2 Impacts from Reasonably Foreseeable Future Actions

Impacts to wildlife resources and their habitat as a result of past and present actions are likely to continue on both public and private lands into the foreseeable future. Timber harvesting would continue to reduce forested habitat and create habitat diversity. Mineral exploration and development activities are anticipated to continue to result in temporary impacts in the form of some forested and non-forested habitat loss, habitat fragmentation and modification, temporary displacement of individuals, and mortality of individuals. Impacts to wildlife resources and their habitat as a result of the transportation network and livestock grazing are not anticipated to change.

The potential habitat impacts of approximately 2,100 acres of disturbance associated with the proposed Dairy Syncline Mine and Reclamation Plan could contribute to impacts to wildlife resources in the form of forested and non-forested habitat loss, habitat fragmentation and modification, and temporary displacement of individuals. Current habitats within the CIAA could change, most dramatically with the proposed Dairy Syncline Mine and Reclamation Plan in the short term. The habitat types to be impacted are common and widespread in the CIAA, and few barriers to dispersal are present that would prevent wildlife species from moving to new, undisturbed habitat.

4.2.9.3 Impacts of the Proposed Action

It is anticipated that minor, short-term loss of early seral wildlife habitat and minor, long-term loss of mature forest wildlife habitat would occur as a result of implementation of the Proposed Action. Temporary, negligible impacts to big game as a result of increased hunting vulnerability could occur. Negligible potential impacts to Special Status Species and minor temporary disturbance (approximately 8 acres) within key sage grouse habitat are expected.

4.2.9.4 Impacts of the Alternative – East Access

It is anticipated that minor, short-term loss of early seral wildlife habitat and minor, long-term loss of mature forest wildlife habitat would occur as a result of implementation of the East Access Alternative. Temporary, negligible impacts to big game as a result of increased hunting vulnerability could occur. Negligible potential impacts to Special Status Species, and minor temporary disturbance (approximately 4.5 acres) within key sage grouse habitat are expected.

4.2.9.5 Impacts of the No Action Alternative

The No Action Alternative would result in no impacts to wildlife, including Special Status Species.

4.2.9.6 Cumulative Impacts

Cumulatively, past, present, and RFFAs would result in impacts to wildlife resources and their habitat. Timber harvesting, construction of the transportation network, livestock grazing, and mineral exploration and development have contributed to impacts to wildlife resources through forested and non-forested habitat loss, habitat fragmentation and modification, temporary displacement of individuals, and mortality of

individuals. The proposed Dairy Syncline Mine and Reclamation plan has the potential to disturb approximately 2,100 acres of wildlife habitat. The implementation of and disturbance associated with the activities described above have likely had adverse impacts to Special Status Species.

The Proposed Action and the East Access Alternative would contribute slightly to the cumulative impact because they would each disturb small amounts of acreage (12.8 and 13.8 acres, respectively) and displace wildlife, including Special Status Species, over the short-term due to temporary habitat loss and noise associated with drilling activity. These impacts would be short-term and negligible. The No Action Alternative would not contribute to cumulative impacts to wildlife resources because no habitat disturbance or noise associated with drilling would occur.

4.3 Summary

As described above, under the Action Alternatives, the Project would only temporarily disturb a maximum of approximately 13.8 acres of soil, vegetation, and wildlife habitat within the CIAA. Additionally, any impacts associated with either of the Action Alternatives, including traffic levels on rural roads and disruption of grazing activities, would be minimal and temporary. Thus, potential cumulative impacts of adding a maximum of 13.8 acres of temporary disturbance to thousands of acres of past, present, and reasonably foreseeable timber, mining, recreation, and road disturbances within the CIAA would be minimal.

Under the No Action Alternative, drilling activities would not be approved and any cumulative impacts to resources would continue from past, present, and reasonably foreseeable disturbances.

5.0 Consultation, Coordination, and List of Preparers

This EA was prepared by the BLM Pocatello Field Office, Pocatello, Idaho. Technical assistance for the preparation of the EA was provided by JBR. The following individuals either provided consultation and coordination during the preparation of this EA or were responsible for the preparation of the document.

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6.0 References

- Banci, V. A. 1994. Wolverine. Pages 99-127 in L. F. Ruggiero, K. B. Aubry, S. W. Buskirk, L. J. Lyon, and W. J. Zielinski, eds. The scientific basis for conserving forest carnivores, American marten, fisher, lynx and wolverine in the western United States. USDA For. Serv. Rocky Mt. For. and Range Exp. Stn., Gen. Tech. Rep. RM-254, Fort Collins, Colo.
- Bureau of Land Management (BLM). 1988. Pocatello Resource Management Plan and Environmental Impact Statement. Draft. Idaho Falls District. Idaho Falls, Idaho.
- Bureau of Land Management (BLM) and US Forest Service (USFS). 2007. Final Environmental Impact Statement, Smoky Canyon Mine, Panels F & G. October 2007.
- Bureau of Land Management (BLM). 2008. BLM Handbook H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered.
- Bureau of Land Management (BLM) and US Forest Service (USFS). 2008. Final Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States. October 2008.
- Bureau of Land Management (BLM). 2010a. Mineral Potential Report for the Lands in the Proposed Direct Sale to the J.R. Simplot Company, IDI-36468. January 2010.
- Bureau of Land Management (BLM) Pocatello Field Office. 2010b. Pocatello Field Office Proposed Resource Management Plan and FINAL Environmental Impact Statement. April 2010.
- CEQ. 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Council on Environmental Quality, Executive Office of the President, Washington, DC. January.
- Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.
- Groves, Craig R. 1988. Distribution of the Wolverine in Idaho as Determined by Mail Questionnaire, Idaho Natural Heritage Program, Idaho Department of Fish and Game.
- Groves, Craig R., Bart Butterfield, Abigail Lippincott, Blair Csuti, and J. Michael Scott. 1997. Atlas of Idaho's Wildlife, Integrating Gap Analysis and Natural Heritage Information. Idaho Department of Fish and Game Nongame and Endangered Wildlife Program.
- Hogrefe, Thomas C., Carmen L. Bailey, Paul D. Thompson, and Ben Nadolski. 2005. Boreal Toad (*Bufo boreas boreas*) Conservation Plan in the State of Utah, Publication Number 05-37, Utah Division of Wildlife Resources. November 2005.
- Idaho Department of Agriculture. 2009. Noxious weeds list retrieved from: <http://www.idahoag.us/Categories/PlantsInsects/NoxiousWeeds/watchlist.php> January 29, 2009, and November 21, 2009.

- Idaho Department of Environmental Quality (IDEQ). 2008. Department of Environmental Quality Working Principles and Policies for the 2008 Integrated (303[d]/305[b]) Report.
- Idaho Department of Lands (IDDL). 1992. Best management practices for mining in Idaho. Idaho.
- Idaho Sage-grouse Advisory Committee. 2006. Conservation Plan for the Greater Sage-grouse in Idaho.
- Intermountain West Joint Venture (IWJV). 2005. Coordinated Implementation Plan for Bird Conservation in Idaho.
- J.R. Simplot Company (Simplot). 2009. Dairy Syncline Soil Survey Report, J.R. Simplot Company, Caribou County, Idaho, Draft. October 2009.
- J.R. Simplot Company (Simplot). 2010. Draft Baseline Technical Report - Surface Water Resources, Dairy Syncline Mine Project, Caribou County, Idaho. October 2010.
- Johnson, Wendy Simmons, and Thomas B. Jones. 2010. A Class III Cultural Resource Inventory of Proposed Access Roads for the J.R. Simplot Dairy Syncline Project, Caribou County, Idaho. Cultural Resources Report No. 1805.
- Jones, Thomas B. and Michael R. Polk. 2010. A Cultural Resources Survey for the J. R. Simplot Dairy Syncline Project, Bear Lake and Caribou Counties, Idaho. Caribou-Targhee National Forest Survey Report No. CB-10-591. Sagebrush Consultants, LLC, Ogden, Utah. Sagebrush Cultural Resource Report No. 1749.
- Keinath, D. and M. McGee. 2005. Boreal Toad (*Bufo boreas boreas*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/borealtoad.pdf> [date of access]. May 25, 2005.
- McCallum, D. A. 1994. Review of technical knowledge: flammulated owls. In Hayward, G. D. and Verner, J. eds., *Flammulated, boreal, and great gray owls in the United States: a technical conservation assessment*. General Technical Report RM-253. Fort Collins, Colorado: US Forest Service, Rocky Mountain Forest and Range Experiment Station.
- NRCS (Natural Resources Conservation Service). 2010. National Cooperative Soil Survey web site, accessed at <http://soils.usda.gov/partnerships/ncss/> on April 20, 2010.
- Pierson, E. D., M. C. Wackenhut, J.C. Altenbach, P. Bradley, P. Call, D. L. Genter, C. E. Harris, B. L. Keller, B. Lengus, L. Lewis, B. Luce, K. W. Navo, J. M. Perkins, S. Smith, and L. Welch. 1999. Species conservation assessment and conservation strategy for the Townsend's big-eared bat (*Corynorhinus townsendii*). Idaho State Conservation Effort, Idaho Department of Fish and Game, Boise, Idaho.
- Polk, Michael R. and Thomas B. Jones. 2009. A Cultural Resources Survey for the J. R. Simplot Dairy Syncline Project, Caribou County, Idaho. Caribou-Targhee

- National Forest Survey Report No. CB-09-572. Sagebrush Consultants, LLC, Ogden, Utah. Sagebrush Cultural Resource Report No. 1708.
- Ritter, S. et al. 2000. Idaho Partners in Flight: Idaho bird conservation plan. Version 1.0. Available online at http://www.blm.gov/wildlife/plan/pl_id_10.pdf.
- Shive, J. P. and C. R. Peterson. 2002. Herptological survey of southcentral Idaho. Idaho State University, Department of Biological Sciences. Idaho Bureau of Land Management Technical
- US Department of the Interior (USDI). 2010. Memorandum of Understanding between the U.S. Department of Interior Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. BLM MOU WO-230-2010-04.
- US Fish and Wildlife Service (USFWS). 2008. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the North American Wolverine as Endangered or Threatened, Federal Register: March 11, 2008 (Volume 73, Number 48). Page 12929-12941.
- US Fish and Wildlife Service (USFWS). 2010. Listings for Threatened, Endangered and Candidate species, accessed online at <http://www.fws.gov/endangered/> April 15, 2010.
- US Forest Service (USFS). 1977. Final Environmental Impact Statement and Land Management Plan, Diamond Creek Planning Unit, Caribou National Forest.
- US Forest Service (USFS). 1982. Final Environmental Impact Statement Smoky Canyon phosphate mine, Caribou County, Idaho. J.R. Simplot Company. Caribou National Forest and Minerals Management Service, United States Department of the Interior. March 1982.
- United States Forest Service (USFS). 2009a. Caribou National Forest Transportation GIS data, provided by Martha Mousel, March 30, 2009.
- United States Forest Service (USFS). 2009b. Personal communication from Wayne Beck Montpelier Ranger District. CTNF. Forester & Recreation Program Manager. January 29, 2009.
- US Forest Service (USFS) and Bureau of Land Management (BLM). 1997. Draft Environmental Impact Statement (DEIS): Caribou National Forest phosphate leasing proposal. Also 1998 supplements to DEIS which constitute final Environmental Impact Statement. ROD issued 1998. US Department of Agriculture and the Department of the Interior.