

Centennial Water Discharge Permit

DOI-BLM-WY-R010-2011-0044-EA

Worland Field Office, Wind River/Bighorn Basin District, Wyoming

BLM

May 2011



The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

DOI-BLM-WY-R010-2011-0044-EA

DECISION RECORD
for DOI-BLM-WY-R010-2011-0044-EA
Centennial Water Discharge Permit, Sundry Notice

I. DECISION

It is my decision to approve the associated Sundry Notice as described as Alternative 2 of Environmental Assessment No. DOI-BLM-WY-R010-2011-0044-EA, and to include those measures proposed by Centennial Energy's Sundry Notice application.

Authorities

The authority for this decision is contained in Onshore Oil and Gas Order No. 1 – Approval of Operations; Onshore Oil and Gas Order No. 7 – Disposal of Produced Water; and 43 CFR 3162.3-2 (a).

Compliance and Monitoring

To assure compliance with the approved action, the operator will be responsible for contacting the Authorized Officer 5 days prior to installation to allow for inspection of operations.

The approved action would be monitored during regularly scheduled field I&E program inspections.

Terms / Conditions / Stipulations

This Authorization will be granted subject to the Conditions of Approval as attached.

II. PLAN CONFORMANCE AND CONSISTENCY:

The Proposed Action conforms to the Record of Decision and Approved Resource Management Plan for the Washakie Resource Area dated 1988. The decisions in the Washakie Resource Management Plan provide general management direction and allocation of uses and resources on the public lands in the area.

III. ALTERNATIVES CONSIDERED

The Environmental Assessment (EA) for the Project considered three alternatives.

Alternative 1 -- The "Proposed Action" alternative, assessed and disclosed the projected effects of the operator's proposal as detailed in the "Proposed Action" portion of the environmental assessment.

Alternative 2 -- The "Proposed Action with BLM implemented Design Features" alternative assessed the proposed action and BLM staff specialists input. It was felt that certain mitigation measures were necessary and proper to provide adequate protection of the surface and subsurface. For the purpose of analysis, the Conditions of Approval are part of this alternative.

Alternative 3 -- The "No Action" alternative assessed the effects of not implementing any portion of the proposal. Under the No Action Alternative, the WFO analyzed the effects of a denial of any further development associated with this project. This alternative provides a benchmark, enabling the decision-maker to compare the magnitude of the environmental effects of the alternatives.

IV. RATIONALE FOR DECISION

Alternative 2 was chosen as being the most environmentally sound alternative. This decision is in conformance with the Washakie Resource Management Plan. Conditions of Approval necessary for this action are attached and are considered a part of this approval.

V. APPEALS

Under BLM regulations, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this Decision Record is received or considered to have been received.

Any party who is adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4

Authorized Officer

Date

Attachments --

EA: DOI-BLM-WY-R010-2011-0044-EA; Conditions of Approval

FONSI

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FINDING OF NO SIGNIFICANT IMPACT
for DOI-BLM-WY-R010-2011-0044-EA
Centennial Water Discharge Permit, Sundry Notice

Based on the analysis of potential environmental impacts contained in the environmental assessment DOI-BLM-WY-R010-2011-0044-EA, and considering the significance criteria in 40 CFR 1508.27, I have determined that the selected action will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Authorized Officer

Date

ENVIRONMENTAL ASSESSMENT

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INTRODUCTION

Centennial Energy has proposed to install a tank for the purpose of water discharge into an unnamed drainage within the Centennial Oil Field.

Type of Project:

Sundry Notice

General Location of Proposed Action:

232' FSL & 195' FWL SW1/4 SW1/4; sec 15; T.43N., R.94W.

Name and Location of Preparing Office:

*Worland Field Office
101 S. 23rd St.
Worland, WY 82401*

Lease/Serial/Case File Number:

WYW90509,

Applicant Name:

Centennial Energy

Purpose and Need for the Proposed Action

The purpose of this action is to allow the operator to complete work on their Oil & Gas leases for further recovery of mineral resources. This would result in maintaining the goals and objectives of the operators lease rights and are in compliance with Section 6 of their Lease Terms.

The need for the action is established by the BLM's responsibility under FLPMA to respond to this type of request.

Decision to be Made:

The BLM will decide whether or not to approve the application submitted by the operator, and if so, what conditions of approval would apply.

Conformance

The EA is in conformance with the WY - Washakie RMP - 1988.

The Proposed Action conforms to the Record of Decision and Approved Resource Management Plan for the Washakie Resource Area dated 1988. The decisions in the Washakie Resource Management Plan provide general management direction and allocation of uses and resources on the public lands in the area.

The Washakie RMP provides that the entire planning area (about 1.6 million acres of BLM-administered mineral estate) is open to oil and gas leasing consideration. About 86,100 acres of BLM-administered mineral estate are open to leasing consideration with a “no surface occupancy” stipulation. The rest of the Planning area is subject to standard lease terms and conditions, and seasonal or other requirements.

Relationship to Statutes, Regulations, Plans or Other Environmental Analyses

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA) and complies with applicable regulations and laws passed subsequent to the Act. In addition, this EA is prepared utilizing the stipulations and format outlined in the BLM NEPA Handbook H-1790-1 (BLM 1988). The Proposed Action and alternatives will comply with relevant federal, state, and local regulations, plans, and policies.

Scoping, Public Involvement and Issues

The Proposed Action was reviewed by an interdisciplinary team. Based on the size and routine nature of the proposed project, it was determined that external scoping was not necessary.

PROPOSED ACTION AND ALTERNATIVES

Project Description

The operator has recently converted a state well into a water supply well, supplying water from the Dakota formation for re-injection into the Hans Harry 3-15 well for water flood recovery of the Phosphoria oil reserves. Centennial Energy proposes that in order to maintain pressure via a pressure regulator valve, that any water the well could not accommodate would be discharged off location into a stock tank system. The 100 gal stock tank is proposed to be placed adjacent to or in the drainage system. The well would discharge approximately 2 gallons per minute. The operator has received a permit from the State of Wyoming to appropriate ground water.

Alternatives Considered

Alternative 1 -- Proposed Action: This alternative would permit the action as proposed and discussed in the Project Description.

Alternative 2 -- Modified Action: This alternative analyzes the Proposed Action with BLM imposed design features. These features include:

Cultural –

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.

Vegetation (Invasive Species) –

Regular monitoring of the site will be necessary to detect the presence of noxious weeds before they can become established and spread. If noxious weeds are detected, the operator will be responsible for treatment in accordance with BLM policy.

Livestock Grazing –

Livestock can be excluded from the project area by permanently or temporarily fencing off the area. Fencing off the stock tank and/or the overflow areas would prevent accelerated erosion caused by livestock, while still allowing access for wildlife use.

Paleontology –

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing paleontological localities, or for collecting vertebrate fossils. If paleontological materials are uncovered during operations, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO).

Within five (5) working days the AO will evaluate the discoveries and take necessary actions to protect or remove the resource. Decisions regarding the appropriate measures to mitigate effects to such resources will be made in consultation with the operator.

Soils, Vegetation & Hydrology –

The discharge point shall be stabilized using geo-fabric and cobble and stone size aggregate.

Hydrology –

Sign the tank “not for human consumption”.

Wildlife –

An escape ramp or bird ladder should be installed in the stock tank that provides a means of escape for any bird or small mammal that may enter the water-filled tank.

Alternative 3 -- No Action: The action would not be approved and the operator would have to find alternative means of disposal of this water or eliminate their water flood system.

AFFECTED ENVIRONMENT

Resources and features not present, and not discussed in this EA, include: Land Use, Socioeconomics, Human Health and Safety, Hazardous Materials/Waste, Environmental Justice, Prime or Unique Farmlands, Flood Plains, Native American Religious Concerns, riparian areas, Class I visual management areas, Class I Airsheds, Wild and Scenic Rivers, Wilderness Values or Inventoried Lands with Wilderness Characteristics, Recreation and Visual Resource Management.

Cultural Resources, Traditional Cultural Properties, Native American Religious Concerns

1511027N--

A Class III Cultural Inventory was previously conducted of the project area (BLM Project #15194066N). No cultural resources were identified.

Vegetation

Native Vegetation

Historic Climax Plant Community Characteristics

Potential vegetation on this site is dominated by mid cool-season perennial grasses. Other significant vegetation includes winterfat, big sagebrush, and a variety of forbs. The expected potential composition for this site is about 75% grasses, 10% forbs and 15% woody plants. The major grasses include bluebunch wheatgrass, needleandthread, Indian ricegrass, and rhizomatous wheatgrass. Other grasses occurring on the site include Sandberg bluegrass, prairie junegrass, and bottlebrush squirreltail. Green needlegrass and spike fescue occur in the upper limit of this precipitation zone. Black and big sagebrush are conspicuous elements of this site, which can make up 10% of the annual production. A variety of forbs also occurs in this state and plant diversity is high.

Invasive, Non Native Species Noxious Weeds

It is unknown whether any noxious or invasive weeds occur at the project site. Weeds documented in the surrounding area include Russian olive, saltcedar and whitetop, primarily in drainages.

Livestock Grazing

Home Place #00518, 150 Cattle from 10/10 to 12/2

This project is located within the Home Place Allotment which is operated by Axtell Ranches LLC under authorization number 4901115. The Allotment consists of 1,734 acres in which 65 percent is made up by federal lands. It is currently authorized for a total of 173 AUMs in the grazing year with fall and winter season use. The Allotment is within the 10 to 14 inch precipitation zone and the majority of the Range Sites are in the Shallow Loamy, Shallow Clayey, and Rock Outcrops; consisting of mostly Perennial Grasses and Mixed Shrubs. Grazing utilization is limited by low annual vegetation production associated with shallow sites as well as steep rocky slopes and the one water source, which is a small section of the Bighorn River, located on the eastern edge of the allotment boundary.

Paleontology

The surface formation is Cloverly/Morrison which has a PFYC (Potential Fossil Yield Classification) rating of 4 or high. This means the formation has a high sensitivity for paleontological resources. Significant fossils are common within this formation and include Jurassic and Cretaceous age vertebrate fossils. No fossil localities have been identified within the project area. A paleontological inventory was not necessary for the project location. Project is within an area of soil development and vegetation growth with little chance for significant fossils.

Soils

The area of the water discharge and proposed tank are in soil map unit 490 Shingle - Thedalund Loams. The Shingle series is a shallow, well drained soil supporting a Shallow Loamy 10-14 in. pz. ecological site and the Thedalund series is a deep, well drained soil supporting a Loamy 10-14 in. pz. ecological site. Slopes across the landscape range from 3 to 45 percent with slopes of 15 to 25 percent being common. Within the drainage where the discharged water has accumulated, the soils have yet to take on hydric characteristics and wetland vegetation has not become established. The drainage supports a Loamy ecological site; it is well vegetated with adequate vegetation and litter cover. Slopes within the drainage range from 4 to 7 percent. The hill slope immediately below the discharge point has a 12 to 15 percent slope. The area of the water discharge and proposed tank are on soil map unit 490 Shingle - Thedalund Loams. The Shingle series is a shallow, well drained soil supporting a Shallow Loamy 10-14 in. pz. ecological site and the Thedalund series is a deep, well drained soils.

Hydrology (Water Quality and Prime or Sole Source of Drinking Water, Wetlands and Riparian Zones)

The project area of the sundry notice is located along a drainage in the Bighorn River Black Willow Draw watershed. This is known by the United States Geologic Survey (USGS) as a level 6 subwatershed. The watershed is a lower elevation watershed in the upper Bighorn watershed basin. Within the project area there are ephemeral drainages that flow in a northwestern direction to confluence with the Bighorn River that is the nearest perennial stream located 1.5 miles to the northwest. The drainage where the discharge is proposed is on a 4 percent gradient with steep sides and no prominent floodplain. The watershed has been impacted by several well pads and roads in the watershed that affect surface stormwater runoff following storm events. There is a perennial spring located on state land downstream of the project area that provides a natural lentic wetland area that is used by cattle and wildlife.

Wildlife

The project area described within the Home Place allotment is characterized by steep, sparsely vegetated, rocky slopes with ravines draining generally to the west towards the Bighorn River near the western boundary. Vegetation is predominately a mix of perennial grasses, sage brush, and other shrubs. Although the western portion of the allotment lies within an area designated by Wyoming Game & Fish as crucial big game habitat along the Bighorn River corridor, wildlife use in the project area is likely limited and transient at most due to the steep slopes and limited vegetation production. Pronghorn antelope, mule deer, and white-tail deer use the habitat in a transient pattern. Wildlife habitat in the project area also exists that is capable of supporting a wide variety of small mammals and predators, raptors, chukar and grey partridge, sage grouse, numerous passerines, and various reptiles. No threatened or endangered wildlife species are known to utilize habitat in the project area, and the project area is not within a sage grouse core breeding and nesting area.

ENVIRONMENTAL EFFECTS

Cultural Resources, Traditional Cultural Properties, Native American Religious Concerns

Alternative 1 --

A Class III Cultural Inventory was previously conducted of the project area. No cultural resources were identified.

Alternative 2 --

No additional consequences would be expected under this alternative. The project authorization is recommended with standard stipulations.

Alternative 3 --

Under the No Action Alternative, the development of the Proposed Action would not occur. No resulting effects on cultural resources would be expected to occur beyond the current situation.

Vegetation

Native Vegetation

Alternative 1 –

It is anticipated with the introduction of a constant water source that over time the vegetation would represent those characteristically found in riparian areas.

A narrow trench would be dug to bury the polyline to the tank and discharge point. No additional disturbance would occur under this alternative.

Alternative 2 –

Under this alternative the operator would lay cobble and/or geotextile fabric to control surface runoff and protect the soils from erosion. This would cause a larger area of disturbance to vegetation in the short-term (6 months-1yr) but would be done to protect the drainage, soils and long-term health of the vegetation.

Alternative 3 –

Under the No Action Alternative, the development of the Proposed Action would not occur. No resulting effects on vegetation would be expected to occur beyond the current situation.

Invasive, Non Native Species Noxious Weeds

Alternative 1 –

Overflow from the tank and subsequent increased soil moisture would increase the risk for noxious weed seeds to germinate and establish. The increased surface disturbance from livestock and wildlife use of the tank would also result in greater chance of weed infestation. The animals can also serve as vectors for weed seeds, importing them from other areas.

Alternative 2 –

Eliminating the tank and controlling erosion would result in less surface disturbance and decrease the risk for new weed infestations. The water discharge would have the same effect as Alternative 1.

Alternative 3 –

No change from current level of weed infestation risk.

Livestock Grazing

Alternative 1 --

Under the Proposed Action, livestock grazing management and permitted authorization on the Home Place Allotment would occur in the same manner as in the past. The addition of the stock tank and its location in the center of the allotment will increase forage utilization levels on sites that are difficult for cattle to graze because of the distance from the river. In effect, use levels on sites closest to the river and its riparian zone would likely decrease and no longer be heavily targeted. The increase in distribution would also ensure that adequate residual forage would remain following livestock grazing for watershed protection on the areas nearest to the river. This ground cover, or litter, would help to reduce soil erosion by wind and water, retain soil moisture, reduce soil surface temperatures, and maintain nutrient cycling.

Consequently, the addition of the Stock Tank and its overflow into the drainage could create a new utilization focus area and cause a decrease in residual cover leading to increased soil erosion. Since grazing is permitted in the cool season only, cattle do not tend to congregate around water sources as much and especially if a riparian green zone is lacking as in this case. It is also possible that hoof impact could destroy vegetation and cause increased soil erosion in the saturated areas created by the overflow of water from the tank. Due to the steepness of the drainage's side slopes cattle will mostly avoid the drainage area and perennial vegetation will continue to stabilize the area.

Alternative 2 --

Under the Modified Action, livestock grazing management on the Home Place Allotment would occur in the same manner as in the past and the overflow would still occur as planned. The effects would be the same as in Alternative 1 except design features would be utilized to prevent any adverse effects caused by livestock.

Alternative 3 --

Under the No Action Alternative, livestock grazing management on the Home Place Allotment would occur in the same manner as in the past. Livestock would continue to utilize the Allotment without the additional water source and the drainage would remain in its current condition. No Action would also result in no change in animal distribution. Opportunities and benefits related to improved water access for both livestock and wildlife would also not be realized. The grazing permittee would continue to depend on the river as the Allotment's only water source and current grazing pressure would remain on the riparian and uplands nearest to the River.

Paleontology

Alternative 1--

The surface formation is Cloverly/Morrison Formation which has a high sensitivity for paleontological resources. Project is within an area of soil development and vegetation growth with little chance for significant fossils. No additional consequences would be expected under this alternative

Alternative 2 --

No additional consequences would be expected under this alternative. The project authorization is recommended with standard stipulations.

Alternative 3 --

Under the No Action Alternative, the development of the Proposed Action would not occur. No resulting effects on paleontological resources would be expected to occur beyond the current situation.

Soils

Alternative 1 --

The installation of a stock tank would result in soil trampling with soil compaction around the tank. This impact should not extend more than 10 feet beyond the tank. Any wetland characteristics and values that have developed will be lost. The bare soil will be susceptible to the erosive forces of rain drop impact and overland flow.

Impacts are not anticipated to extend beyond the tank, however, in the event that a livestock and wildlife trail were to develop in the drainage bottom, such a trail could be subject to accelerated erosion. In a worst case scenario, water flowing down the drainage in response to a runoff event (rainfall or snow melt) could result in an incised channel developing. Given the limited size of the drainage area above the channel, this is not a likely scenario.

Alternative 2 --

Under this alternative the stock tank would not be installed. This alternative would include stabilizing the point of discharge with geo-fabric covered with cobble and stone size aggregate. A small wetland could develop within the existing channel, providing that the water flow is consistent. Since livestock are currently not congregating at the discharge point, soil trampling would be limited to occasional use by livestock and wildlife. There would be no soil compaction.

Alternative 3 --

Under the No Action Alternative, the development of the Proposed Action would not occur. No resulting effects on soil resources would be expected to occur beyond the current situation.

Hydrology (Water Quality and Prime or Sole Source of Drinking Water, Wetlands and Riparian Zones)

Alternative 1 --

The hydrological environmental effects are from the discharge of groundwater to the surface. Under this alternative there would be an additional water source created from the discharge of the facility into a stock tank and onto the surface around the drainage. The estimated flow from the facility is to be around 2 gallons per minute. Some water will be consumed by livestock during the permitted use of the allotment and likely consumed by wildlife year round. Overflow water will enter the channel and saturate the soil

and provide a limited amount of moisture and flow to the channel for a few hundred yards downstream of the discharge point, where surface water will return to the subsurface. Possible minor amounts of water erosion will occur where concentrated use occurs along the drainage where new surface water would be made available. Riparian vegetation could potentially establish and stabilize the drainage along the length of the channel where additional water would be made available. Indirect effects include a minor change in channel stability following storm events. Increased overall runoff would likely occur with the reduction of additional water to the channel.

Alternative 2 --

This alternative would allow for the discharge water to the stock tank and overflow into the channel. The effects would be the same as alternative 1 except for the placement of erosion prevention material around the overflow. The installation of cobble and a lining material below the overflow pipe would dissipate energy from the overflow and minimize soil loss and erosion from the introduction of produced water into a historically ephemeral channel. The lining and cobble should be sufficient to protect the channel from the bottom of the channel to the terrace as to not create unnecessary erosion from the action. This alternative would reduce the erosion rate surrounding the overflow pipe and provide soil protection from erosion. Riparian vegetation would possibly develop from this alternative.

Alternative 3 --

There would be no additional water source created from the facility. There would be no use by livestock or wildlife around the facility. The current channel conditions would remain ephemeral and unchanged. No riparian vegetation would be created.

Wildlife

Alternative 1 --

Placement of the stock tank at the project site where water was not previously available will introduce an additional water source which numerous wildlife species will locate and utilize. However the close proximity of the Bighorn River as a reliable source of water tends to make the additional water in the stock tank of little benefit to wildlife. No detrimental effect to wildlife resources would be expected as a result of this project either.

Alternative 2 --

Wildlife tend to use the site on a transient and limited basis. Eliminating the stock tank would likely reduce the availability of additional water for wildlife, however the effect on wildlife resources would be expected to be insignificant.

Alternative 3 --

No change in the current status of wildlife resources would result in the event that the proposed project is not carried out.

Cumulative Effects

Cumulative Impact Area – approximately 10' x 10' area for tank installation.

Cumulative effects would result in the initial loss of vegetation in installing the fabric and cobble. This would be a short term effect that would be completed in order to reduce effects of the runoff and animal

use. There would also be an expected increase of livestock and wildlife benefiting from the new water source. The vegetation is expected to change to characteristics of riparian vegetation over time.

Cumulative effects also include the addition of converting groundwater to surface water through mineral development that has occurred throughout the Bighorn Basin. The water quality has been analyzed by a certified laboratory and meets State of Wyoming DEQ criteria for safe consumption by wildlife and livestock. The water is not safe for human consumption. Congregation of animals around a channel could possibly impact downstream bacterial water quality following storm events.

Because the No Action Alternative will not result in any direct or indirect impacts, it will not result in an accumulation of impacts.

Residual Effects

All identified mitigation has been made into design features of Alternative 2. Therefore residual effects are those disclosed in Alternative 2.

PERSONS, GROUPS, AND AGENCIES CONSULTED

Person Consulted	Agency/Tribe/Organization
Dan Wychgram	Centennial Energy
Roland Peterson, P.G.	Wyoming DEQ; WYPDES Permitting

LIST OF PREPARERS

The following Worland Field Office personnel reviewed or have been contacted with regard to this EA.

List of Reviewers

Name	Title
Marit Bovee	Archaeologist
Ted Igleheart	Wildlife Biologist
Mike Peterson	Recreation/Visual Specialist
Mike Peck	Range Management Specialist
Karen A. Hepp	Range Management Specialist (T&E/Sensitive Plants)
Monica Goepferd	Civil Engineer
Steve Kiracofe	Soils Scientist
CJ Grimes	NRS/Weeds
Jared Dalebout	Hydrologist

Conditions of Approval

Centennial Water Discharge Permit, Sundry Notice

The operator shall contact the authorized officer a minimum of 5 days prior to beginning any construction activities.

Cultural –

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.

Vegetation (Invasive Species) –

Regular monitoring of the site will be necessary to detect the presence of noxious weeds before they can become established and spread. If noxious weeds are detected, the operator shall be responsible for treatment in accordance with BLM policy.

Livestock Grazing –

Livestock shall be excluded from the project area by fencing off the area.

Paleontology –

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing paleontological localities, or for collecting vertebrate fossils. If paleontological materials are uncovered during operations, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO).

Within five (5) working days the AO will evaluate the discoveries and take necessary actions to protect or remove the resource. Decisions regarding the appropriate measures to mitigate effects to such resources will be made in consultation with the operator.

Soils, Vegetation & Hydrology –

The discharge point shall be stabilized using geo-fabric and cobble and stone size aggregate.

Hydrology –

Sign the tank “not for human consumption”.

Wildlife –

An escape ramp or bird ladder shall be installed in the stock tank that provides a means of escape for any bird or small mammal that may enter the water-filled tank.