

Appendix A

Proposed Action and Subalternative Mitigation Summary

Appendix A: Proposed Action and Subalternative Mitigation Summary

Resource Area	Proposed Action Design Mitigations	Subalternative Proposed Action with Additional Mitigation
	<p>As identified in the Proposed Action, Chevron would implement the following design criteria and mitigation:</p>	<p>In addition to mitigation and design criteria identified in the Proposed Action, BLM would require Chevron to:</p>
<p>Air Quality</p>	<ul style="list-style-type: none"> • Comply with CDPHE Air Pollution Control Division (APCD) construction emissions permits, complying with permit stipulations • Implement emission control measures. 	<ul style="list-style-type: none"> • Cooperate with existing atmospheric deposition and visibility impact monitoring programs. • Cooperate in the implementation of a coordinated air quality monitoring program. • Surface roads and well locations on soils susceptible to wind erosion. • Use dust inhibitors (surfacing materials, non-saline dust suppressants, water, etc.) as necessary on unpaved collector, local and resource roads. • Establish and enforce speed limits (15 to 30 mph) on all project-required roads in and adjacent to the project area.
<p>Cultural Resources</p>	<ul style="list-style-type: none"> • Survey for and mitigate any cultural resources found on the project site prior to construction. 	<ul style="list-style-type: none"> • Inform all persons associated with the project operations that they would be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. • Stop all activity in the area if historic or archaeological materials are uncovered. • Notify the BLM Authorized Officer immediately upon discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony.
<p>Floodplains</p>	<ul style="list-style-type: none"> • Comply with the Army Corps of Engineers Nationwide Permit 12 conditions; Colorado Department of Public Health and Environment-Water Quality Control Commission (CDPHE-WQCC) permit requirements; EPA NPDES storm water regulations. • Apply BLM Gold Book guidelines for pipelines and flowlines. 	<ul style="list-style-type: none"> • Limit construction equipment to that essential for clearing, installation, and restoration • Perform routine daily inspections to identify leaks and initiate corrective actions. • Manage all soil materials such that erosion and sediment transport are minimized. • Install erosion controls for bank stabilization and sediment runoff into surface waters. • Monitor surface water quality and flow • Revegetate disturbed areas with BLM-approved seed mixes. • Complete all construction activities at the stream crossing during no-flow period. • Complete stream crossing within 24 hours if possible. • Limit grading, topsoil segregation, and excavation along the stream banks to only that area required for installation.
<p>Invasive, Non-Native Species</p>	<ul style="list-style-type: none"> • Conduct surveys to identify any invasive, non-native species 	<ul style="list-style-type: none"> • Revegetate disturbed areas with BLM-approved seed mixes. • Keep all disturbed areas as free of noxious weeds and undesirable species.

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	<p>at the proposed lease site.</p> <ul style="list-style-type: none"> • Use certified weed-free erosion control and reclamation materials (e.g., straw bales and seed mixes). • Monitor the distribution and density of noxious weeds on the tract. • Control and/or eradicate new or expanded populations for the life of the RD&D project and throughout final reclamation. 	<ul style="list-style-type: none"> • Conduct pre-construction field surveys each spring. • Consult with BLM and local weed agencies to develop treatment strategies for any noxious weed infestations identified during spring surveys. • Require vehicles and equipment to arrive at the work site clean, and free of soil and vegetative debris capable of transporting weed seeds or other propagules . • Install wash stations at designated infestation areas if any are identified in Spring 2007. • Conduct pre-construction field surveys each spring prior to construction, to identify existing noxious weed infestations within the project area. • Seed disturbed areas as discussed in the Vegetation section.
Migratory Birds	<ul style="list-style-type: none"> • Re-survey for evidence of raptor and migratory bird nesting prior to construction if that construction occurs between February 1 and August 15. 	<ul style="list-style-type: none"> • Survey for nesting migratory birds, including raptors, would be needed before project initiation if the project initiation and construction are delayed until February 1, 2007. • Comply with No surface occupancy stipulations. • Comply with Timing Limitation stipulations. • Prohibit vegetation disturbance while migratory birds are nesting (February 1 through August 15). • Construct reserve pits in accordance with BLM Gold Book Standards, and ensure that reserve pits are lined, fenced on all four sides with net-wire and covered with plastic barrier to exclude both large and small animals and netted to prevent birds from accessing these pits, and reclaiming the pits as soon as possible after use.
Threatened, Endangered, and Sensitive Animal Species	<ul style="list-style-type: none"> • Re-survey for evidence of raptor nesting prior to construction if that construction occurs between February 1 and August 15. 	<ul style="list-style-type: none"> • Conduct follow-up raptor surveys if construction activities do not begin prior to the 2007 raptor nesting season; • Conduct surveys prior to construction activities to determine which species would require clearance surveys in the project area if construction occurs in spring of 2007. • Comply with No surface occupancy stipulations. • Comply with Timing Limitation stipulations. • Prevent vegetation clearing while migratory birds are nesting (February 1 through August 15).
Threatened, Endangered, and Sensitive Plant Species	<ul style="list-style-type: none"> • Coordinate with BLM to determine conservation measures and the need for FWS consultation for threatened and endangered and BLM sensitive plant species. 	<ul style="list-style-type: none"> • Avoid plants that occur outside the project area and install exclusion fencing to prevent disturbance from construction activities. • Conduct source population surveys in areas where plants could not be avoided to determine the magnitude of impact on the entire population • Evaluate the potential for site design modifications in areas where plants occur.
Wastes, Solid or Hazardous	<ul style="list-style-type: none"> • Implement measures to minimize solid and hazardous wastes. • Maintain project area in sanitary condition at all times. • Dispose of wastes at appropriate waste disposal facilities. • Provide adequate number of trash containers on-site. • Provide portable sanitation facilities on-site. 	<ul style="list-style-type: none"> • Watch for signs of hazardous or solid wastes and take appropriate reporting and mitigative measures. • Comply with applicable laws and regulations. • Use, store, transport, and/or dispose of hazardous materials in accordance with applicable federal and state laws. • Implement spill prevention measures, inspection and training requirements, and spill response and notification procedures to minimize the potential for accidental spills or leak.

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Water Quality, Surface and Ground	<ul style="list-style-type: none"> • Obtain necessary federal and state permits • Comply with the Corps of Engineers. Nationwide Permit 12 conditions, CDPHE Water Quality Control Division (WQCD) Permit conditions, Stormwater discharge permit. • Install an extensive and comprehensive groundwater monitoring system. 	<ul style="list-style-type: none"> • Obtain all necessary federal and state permits and comply with all applicable water quality permitting requirements. • Develop a groundwater monitoring and response plan in cooperation with the BLM. • Continue groundwater monitoring as long as needed to determine that the site is acceptable for abandonment. • Prepare and implement a spill prevention, control and countermeasure (SPCC) plan for BLM approval. • Adhere to Gold Book surface operating standards. • Continue groundwater monitoring as long as needed to determine that the site is acceptable for abandonment. • Submit a water monitoring and response plan to the Authorized Officer prior to project implementation.
Wetlands and Riparian Zones	<ul style="list-style-type: none"> • Comply with the Corps of Engineers Nationwide Permit 12 conditions. • Implement measures to lessen duration and intensity of soil disturbance, and enhance restoration. • 	<ul style="list-style-type: none"> • Install monitoring wells on the tract and collect surface water data from Hunter Creek and Dry Gulch.
Soils	<ul style="list-style-type: none"> • Implement appropriate stormwater BMPs. • Handle all soil materials in accordance with BLM stipulations. 	<ul style="list-style-type: none"> • Strip to a depth of 6 to 12 inches, depending on its depth • Store any subsoil stripped during grading separately from topsoil to prevent mixing. • Seed soil stockpiles and cover. • Return soils to their pre-construction locations. • Install and maintain temporary erosion and sediment controls immediately following clearing and grading of the site to control erosion. Remove them during reclamation, as appropriate. • Loosen compacted soils using a tractor-pulled ripper or similar device. Return the site to its pre-construction contours. • Seed all disturbed areas with BLM-recommended seed mixes. • Install permanent erosion control measures where needed. • Prepare and implement an SPCC plan for BLM approval.
Vegetation	<ul style="list-style-type: none"> • Minimize vegetation removal to only the extent necessary to allow for safe and efficient construction activities • Install and maintain erosion control measures until vegetation becomes established • Restore pre-construction contours, drainage patterns, and topsoil. 	<ul style="list-style-type: none"> • Cut trees and cutting brush with as close to the ground as possible • Leave stumps and root balls in place except in areas requiring topsoiling, or as necessary to create a safe and level workspace • Shred or chip brush and salvage with topsoil • Salvage and replace topsoil, to preserve and replace existing seed banks and return organic matter needed for seed establishment to the soil • Prepare a seedbed (scarifying, tilling, harrowing, or roughening) prior to seeding where needed to improve revegetation potential • Control noxious weeds • Use certified weed-free seed purchased from and blended by qualified producers and dealers • Use drill or broadcast seed methods as appropriate • Redistribute large, woody material salvaged during clearing operations in order to meet fire management objectives, provide wildlife habitat and seedling protection.

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Wildlife, Aquatic	<ul style="list-style-type: none"> • Monitor groundwater surface water. • Monitor stream flow and water quality in nearby streams and springs. • Install erosion control measures. • Maintain erosion and sediment control measures. 	<ul style="list-style-type: none"> • Comply with USFWS Recovery Implementation Program requirements for water depletions, if necessary, although none are anticipated due to the project depleting far less than the 125 acre-feet criteria. • Prohibit storage of hazardous materials, chemicals, fuels and lubricating oils, and prohibit concrete coating and refueling activities within 200 feet of any water body or wetland. • Minimize erosion from upland areas by restoring and seeding disturbed areas.
Wildlife, Terrestrial	<ul style="list-style-type: none"> • Encourage carpooling and establish a policy of reduced vehicular speed • Ensure that reserve pits are lined, fenced and covered to exclude both large and small animals and netted to prevent birds from accessing • Reclaim the pits as soon as possible after use. 	<ul style="list-style-type: none"> • Prohibit construction activities in severe/critical mule deer and elk winter range between December 1st and April 30th. • Redistribute large, woody material salvaged during clearing operations so as not to exceed 3 to 5 tons/acre, and mulch excess woody materials. • Limit fencing on the tract to facilities that otherwise would present a hazard to humans and/or wildlife. • Seed disturbed areas according to BLM standard.
Access and Transportation	<ul style="list-style-type: none"> • Encourage carpooling programs. • Control dust along unsurfaced access roads. • Minimize tracking of soil onto paved roads. • Consult with Rio Blanco County regarding potential impacts and mitigation measures 	<ul style="list-style-type: none"> • Comply with county weight and load restrictions • Maintain unsurfaced roads during construction and operations of the project • Restore unsurfaced roads to equal or better condition than pre-construction condition.
Fire Management	<ul style="list-style-type: none"> • Control noxious weeds and cheatgrass • Seed disturbed areas • Develop a fire management plan • Inspect and maintain all equipment that might provide an ignition source • Require all employees to strictly adhere to all of Chevron's hot-work procedures. 	<ul style="list-style-type: none"> • Coordinate with the BLM and Rio Blanco County emergency response teams in developing fire suppression priorities, identifying management restrictions, and determining appropriate fire suppression strategies. • Equip construction equipment operating with internal combustion engines with approved spark arresters. • Carrying fire-fighting equipment on motor vehicles and equipment. • Take immediate action to suppress accidental fires • Control noxious weeds. • Create defensible space around the facilities in accordance with Colorado Firewise guidelines • Test, construct and operate in accordance with BLM fire management requirements. • Redistribute large, woody material salvaged during clearing operations on WRFO-administered lands and disperse materials over the portion of the tract from which they were originally removed. • Refer to the BLM Fire Management Activity Plan (FMAP) for additional mitigation requirements • Provide all employees on site, as well as county and BLM officials, with a developed evacuation plan.

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Forestry Management	<ul style="list-style-type: none"> • Seed disturbed areas. • Control noxious weeds. 	<ul style="list-style-type: none"> • Cut trees with a maximum stump height of six inches and disposing of the trees. • Cut the trees into four-foot length, down to four inches in diameter, and placing the trees along the edge of the disturbance. • Remove the trees from federal land for resale or private use. • Chip and scattering the trees. • Acquire a fuel woods permit and compensate the BLM for trees removed.
Noise	<ul style="list-style-type: none"> • Apply sound suppression devices on all noise generating equipment and facilities in accordance with COGCC rule 802 for Noise Abatement. • Comply with Rio Blanco County noise level standard of 65 dBA. 	<ul style="list-style-type: none"> • Install and maintain appropriate mufflers and silencers on construction equipment and facility machinery. • House or cover noise producing sources with appropriate insulated facilities.
Paleontology	<ul style="list-style-type: none"> • Comply with BLM monitoring requirements. 	<ul style="list-style-type: none"> • Require a paleontologic monitor be on site prior to any ground-disturbing activities that may intercept underlying rock and also to spot check during surface clearing activities associated with the facility construction. • Train construction and operation personnel that collection of paleontological specimens is not allowed.
Rangeland Management	<ul style="list-style-type: none"> • Seed disturbed areas. • Control noxious weeds. • Maintain and/or relocate existing range controls. 	<ul style="list-style-type: none"> • No additional mitigation is required to minimize the impacts to range management at the proposed location.
Realty Authorizations	<ul style="list-style-type: none"> • Comply with all ROW grant stipulations contained within the conditions of approval. • Comply with all applicable state and county laws and regulations. • Work with other lease holders in the area to minimize conflicts. 	<ul style="list-style-type: none"> • Use the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area of the proposed excavation. • Provide 48-hour notification to the owner/operator of any foreign pipeline prior to performing any work within 10 feet of buried or aboveground pressurized gas piping • Prohibit machine excavation within 5 feet from any known or proposed existing pipeline encountered in the ROW unless authorized by the pipeline owners/operators.
Socioeconomics	<ul style="list-style-type: none"> • Work with county governments and local communities to offset any impacts. • Provide emergency training. • Encourage carpooling. • Obey weight restrictions on county roads. 	<ul style="list-style-type: none"> • Initiate discussions with Rio Blanco County to determine appropriate mitigation measures to offset the demands on local services.
Visual Resources	<ul style="list-style-type: none"> • Water roads and construction areas. • seed disturbed areas as soon as possible. • Encourage carpooling. 	<ul style="list-style-type: none"> • Paint all aboveground facilities in accordance with BLM-recommended color schemes. • Restore disturbed portions of the tract to original contours to the degree possible after monitoring well installation, facility construction, and finally upon site restoration to restore natural drainage and runoff patterns. • Site structures off ridge lines where feasible. • Use low-profile structures. • Site slash/debris piles in low visibility areas.

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		<ul style="list-style-type: none">• Feather and thin edges of cleared areas outside the site buffer zone, and inside the facility (where applicable and feasible)• Co-locate utility services in combined right-of-way.

Appendix B

General Permits, License, and Plans For Shale Oil Research Programs

Federal Permits or Authorizations

Bureau of Land Management:
Oil Shale RDD Lease
Federal Rights-of Way
NEPA Compliance

Environmental Protection Agency:
EPCRA Planning and Reporting
EPCRA Risk Management
Hazardous Waste Generator Number
Spill Prevention, Control and Countermeasures (SPCC) Plan
Underground Injection Control (UIC)
(depending on UIC required 6 months to 1 year)

Federal Communication Commission:
Radio Permit

Department of Transportation
Hazardous Materials Registration

Occupational, Safety, and Health Administration:
Process Safety Management

County Permits and Authorizations

Rio Blanco County Development Department:
County Special Use License
Traffic Management Plan
Sanitary Wastewater Permit
Right Of Way Access Permit
Building Permit
Open Burn Permit

State Permits of Authorizations

Colorado Air Pollution Control Division:
Air Pollutant Emission Notice (APEN)
(APEN) Construction Permit

Colorado Department of Labor and Employment:
Storage Tank Permits

Colorado Division of Reclamation, Mining & Safety(CDRMS):
112d-3 Operation Reclamation Permit
(4 months up to 1 year)

Colorado Division of Water Resources /
Office of the State Engineer:
Water Well Permits
Dam Safety Permit
Water Appropriations

Colorado Water Quality Control Division:
Colorado Discharge Permit System (CDPS) Permit
Storm Water Permit – Construction
Storm Water Permit – Industrial
Wastewater Permit

