



Waste Management Plan Rule  
905.a.(4) pursuant to 304.c.(11)

## **Mohee Fed 0297-17**

SWNE Section 17, Township 2 North, Range 97 West

Rio Blanco County, Colorado

October 2023

**Anschutz Exploration Corporation**

Mohee Fed 0297-17 OGD

SWNE Section 17, T2N R97W

Lat/Long: 40.143422 -108.297264

Rio Blanco County, CO

**Waste Management Plan ECMC Rule 304.c.(11)*****Introduction:***

Anschutz Exploration Corporation (Anschutz) has developed the following Waste Management Plan to address Exploration and Production (E&P) and other wastes related to the proposed development of the Mohee Fed 0297-17 Well Pad. This plan provides an overview of methods Anschutz will utilize for managing, treating, characterizing, storing and disposal of waste materials required by Energy Carbon Management Commission Rule 905.a.(4) pursuant to Rule 304.c.(11).

The Mohee Fed 0297-17 Well Pad will develop eight (8) horizontal wells in Rio Blanco County, Colorado.

**Development Phase and Potential Waste Streams**

Development of the proposed oil and gas location and the proposed wells will generally occur in the following operational phases:

- Construction operations
- Drilling operations
- Well completion operations
- Flowback operations
- Production operations
- Interim reclamation activities
- Plugging and abandonment
- Final site reclamation

Spill response and remediation efforts may also generate waste streams and are addressed in this Plan but not anticipated at the Mohee Fed 0297-17.

The potential waste streams identified for operations at the Mohee Fed 0297-17 Well Pad are listed in Table 1, Potential Waste Streams by Operational Phase. This table identifies the type of waste streams likely to be generated during development of the proposed wells and the operational phase when the waste may occur. Specifics regarding the quality of waste, disposal frequency, sampling requirements, and disposal options are included in Table 2: Waste Handling Summary.

**All Phases*****Sewage***

A portable, self-contained chemical toilet will be provided for human waste disposal during several operational phases. Sanitary waste will be contained in portable toilets or other storage tanks with

waste materials regularly pumped and transported off-site for proper disposal at an approved sanitary waste disposal facility.

### ***Trash and Construction Debris***

Construction trash and debris will be collected in appropriate containers and hauled off-site for disposal in suitable landfills according to County and State Regulations. All trash and debris will be transported to a permitted solid waste landfill within 30 days following termination of drilling or completion operations or more often, if needed. No trash or debris will be disposed of on-location. The well site and access road will be kept free of trash and debris during long-term production operations. No hazardous substances or hazardous wastes are anticipated to be generated during construction, drilling, and completions operations. Such materials are strictly prohibited for disposal at a solid waste landfill.

### ***Spills and Contaminated Soil***

Occasionally, spills of production fluids may occur during oil and gas operations that result in localized impacts to soils on or near the well pad. All spills are immediately investigated by Anschutz or a third-party contractor. Contaminated soils are assessed to determine if they exceed regulatory cleanup standards and require removal, treatment, or disposal. Characterizing potentially contaminated soils is accomplished either by field-screening the impacted soils to determine relative hydrocarbon concentrations, and/or by collecting samples of the impacted soils and submitting the samples to an accredited laboratory for analysis of COGCC Table 915-1 constituents of concern. Proper field protocol will be followed during all sampling events.

All contaminated soils exceeding regulatory cleanup standards are remediated and disposed of appropriately or otherwise remediated. If a spill incident is subject to agency reporting requirements, the appropriate agencies are notified within the regulatory timelines. Impacted soils that exceed applicable cleanup standards are typically excavated and taken to an off-site commercial disposal facility that is authorized to accept the waste type.

### ***Spills and Contaminated Water***

The release of production fluids may occur during any phase of the oil and gas operations and result in localized impacts to groundwater or surface water near the well pad. All spills are immediately investigated by Anschutz or a third-party contractor. Potentially impacted groundwater and surface water are assessed to determine whether the water source(s) exceed regulatory cleanup standards and require removal and disposal or treatment. Characterization of potentially contaminated water is accomplished by collecting samples of the water and submitting the samples to an approved laboratory for analysis of COGCC Table 915-1 groundwater constituents of concern. Proper field protocol will be followed during all sampling events.

All contaminated water exceeding regulatory cleanup standards are remediated and disposed of appropriately or otherwise remediated. If a spill incident is subject to agency reporting requirements, the appropriate agencies are notified within the regulatory timelines. Impacted groundwater that exceeds applicable cleanup standards is typically remediated in-situ.

## **Construction**

### ***Trees and Shrubs***

Trees and shrubs will be removed during the construction phase. These will be piled along the toe of fill slopes to provide additional sediment control.

## **Drilling**

### ***Drilling Fluid Management***

Unless noted otherwise, water-based drilling fluids will be utilized during drilling operations on the proposed oil and gas location and are classified as E&P waste. During drilling operations, water-based drilling fluids are necessary to ensure well control and to return cuttings generated during construction of the well. Drilling fluid is pumped down hole, returned to the annulus, and processed through a closed loop drilling system separating liquids and solids. Drilling fluids will be re-used throughout the drilling process on the oil and gas location.

### ***Drill Cuttings Management***

Drill cuttings generated during drilling operations on the Mohee Fed 0297-17 Well Pad, along with 50 barrels (bbl) of cement brought to surface during cementing of the surface casing, will be managed within cutting boxes located northeast of the drilling rig. The cuttings boxes will be three sides bins measuring 40 feet by 10.5 feet by 8 feet deep with a ramp and berm. The estimated volume of drill cuttings generated per well at this location is approximately 2,500 cubic yards (cy), and the total volume of drill cuttings estimated for the 8 wells to be drilled at this location is approximately 20,000 cy. The bins are designed with a maximum capacity of 33,600 cy. Drill cuttings will be hauled to an approved third-party commercial facility for disposal.

### ***Protocol for Managing Cuttings***

As drill cuttings are brought to the surface, they will be run through screened shakers then processed through a centrifuge to remove additional liquids. Finally, the cuttings will be stored in containers removed for disposal. If needed, sawdust, wood pellets, or another acceptable, inert material may be mixed with the cuttings to remove excess moisture prior to disposal.

### ***Drilling Cuttings Sampling Protocol***

Drill cuttings generated during construction of the proposed wells will be sampled and characterized for compliance with COGCC Table 915-1 Cleanup Concentrations. All drilling cuttings generated from the proposed well will be characterized based on the following sampling procedure:

Well Sampling: Samples generated from the first well drilled on the pad will include one (1) grab sample from the surface horizon (above production zone), and one (1) grab sample from each formation within the production section. Samples collected from the first well will be representative of subsequent wells drilled in the same formations on this multi-well pad. The grab samples will be

submitted to an approved analytical laboratory certified to run analysis on analytes according to COGCC 915-1 standards.

Sample Analysis: All drill cuttings will be analyzed in accordance with the applicable regulatory and third-party disposal facility standards that are in effect at the time of sampling.

### ***Drilling Mud***

Once drilling operations are complete, the water-based drilling mud will be dewatered and recycled. Oil-based mud will be returned to the drilling contractor.

## **Completions/Flowback**

### ***Flowback***

Returned stimulation fluids generated during flowback operations are processed through separators to remove gas, water, condensate, and sand. Water will be reused during future well completion operations on the Mohee Fed 0297-17 Well Pad or transported off-site for disposal.

Flowback fluids are typically recovered for approximately 30-days after the frac has been completed. After the 30-day window, those fluids recovered will be considered part of the produced water from the well.

### ***Frac Sands***

Frac sand will be managed within bin or tanks surrounded by earthen berms. The frac sand management area will be located on pad within the pad perimeter berm. Once flowback operations are complete, returned frac sand will be hauled off-site to an approved third-party commercial disposal facility.

### ***Frac Fluid***

Frac fluid makeup water will be stored in onsite tanks, with leftover remnants of frac makeup water either used for Drill Out Operations or transported to a third-party contractor for disposal.

### ***Filter socks***

Spent filter socks generated during the completions / flowback process are collected and stored separately from garbage / trash. The filters have been sampled and profiled for disposal at an approved third-party commercial disposal facility that is permitted and authorized to accept waste filter socks for disposal.

## **Production**

### ***Produced Water***

Produced water is water produced from the wells after the wells are turned over to production. Over the course of well's life, the amount of water generated will change. The amount takes into consideration the high volumes that occur during the initial 40 to 50-days of production. Produced water will be transported through flowlines to onsite aboveground storage tanks. Produced water is then transported offsite to the approved Anschutz-operated underground injection control (UIC) facility or to an approved third party, commercial disposal facility.

Analytical data will be required if the fluids are transported off site to an approved third-party disposal facility. The analytical suite and sample collection methods will be dependent upon the disposal facilities waste characterization requirements.

### ***Facility Decommissioning***

Waste associated with facility decommissioning is limited to trash/debris and impacted soil/water.

### ***Plugging and Abandonment***

Waste associated with facility plugging and abandonment includes unused equipment, trash/debris, and impacted soil/water.

## **Approved Disposal Facilities**

### ***UIC Facilities***

Disposal of produced water at permitted underground injection control facilities is an option for disposal of excess produced water. Currently, Anschutz owns and operates 1 UIC injection well (see below) that is used for produced water disposal as needed. All UIC facilities have been permitted per the Rule 800 series.

<b>Well Name</b>	<b>Location</b>	<b>UIC Facility Number</b>
Pinyon Ridge Fed C-1W Disposal Well	NESE 21 3N97W	159082

### ***Third-Party Disposal Facilities***

The third-party disposal facility available to Anschutz for management and disposal of liquids and solids include:

<b>Facility Name</b>	<b>Location</b>	<b>Permit Number</b>
R.N. Industries	6878 Bluebell Road Roosevelt, UT 84066	1901

### ***Record Keeping***

Anschutz will be in compliance with COGCC Rule 905.b.(3), Waste Generator Requirement, which states that operators that generates E&P Waste that is transported off-site will maintain records of invoices, bills, or tickets, for a minimum of five years including the following information:

- The date of the transport.
- The identity of the waste generator.
- The identity of the waste transporter.
- The location of the waste pickup site.
- The type and volume of waste; and
- The name and location of the treatment or disposal site.

Records will be maintained in compliance with COGCC Rule 206, Record keeping and Access to Records. Records will be maintained at Anschutz's office.

### ***Best Management Practices***

- A portable, self-contained chemical toilet will be provided for human waste disposal during several operational phases. Sanitary waste will be contained in portable toilets or other storage tanks with waste materials regularly pumped and transported off-site for proper disposal at an approved sanitary waste disposal facility.
- Construction trash and debris will be collected in appropriate containers and hauled off-site for disposal in suitable landfills according to County and State Regulations. All trash and debris will be transported to a permitted solid waste landfill within 30 days following termination of drilling or completion operations or more often, if needed. No trash or debris will be disposed of on-location. The well site and access road will be kept free of trash and debris during long-term production operations.
- All spills are immediately investigated by Anschutz or a third-party contractor. Contaminated soils are assessed to determine if they exceed regulatory cleanup standards and require removal, treatment, or disposal.
- Trees and shrubs will be removed during the construction phase. These will be piled along the toe of fill slopes to provide additional sediment control.
- Closed loop system will be utilized. Drilling fluids will be re-used throughout the drilling process on the oil and gas location.
- Water-based drilling mud will be dewatered and recycled.
- Water will be reused during future well completion operations on the Mohee Fed 0297-17 Well Pad or transported off-site for disposal.
- Once flowback operations are complete, returned frac sand will be hauled off-site to an approved third-party commercial disposal facility.

### ***Attachments***

- Table 1: Potential Waste Streams by Operational Phase
- Table 2: Waste Handling Summary
- OGDG Overview Map depicting disposal routes for produced water

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**Table 1: Potential Waste Streams by Operational Phase**

Operational Phase	Potential Waste Stream	Description
<b>All Phases</b>		
	Trash and construction debris	Solid waste materials produced during any phase of development at the oil and gas location.
	Sanitary sewage	Sewage generated while location is occupied.
<i>Spill response and remediation</i>	Contaminated soil – E&P exempt	Soils/solids impacted with E&P exempt materials
	Contaminated soil – Non-hazardous	Soils/solids impacted with non-E&P exempt materials
	Contaminated soil – Hazardous	Soils/solids impacted with non-E&P exempt materials that are hazardous.
	Contaminated water – E&P exempt, non-hazardous, and hazardous	Water/fluids impacted with E&P exempt materials
	Contaminated water – E&P exempt	Water/fluids impacted with non-E&P exempt materials
	Contaminated water – Non-hazardous	Water/fluids impacted with non-E&P exempt materials that are hazardous.
<b>Construction</b>		
	Trees and shrubs	Trees/brush cut down to clear the pad site.
<b>Drilling</b>		
	Drill cuttings	Drill cuttings generated by drilling into the subsurface geological formations including cured cement carried to surface with the water-based drilling fluid.
	Drilling fluids	Water-based circulating fluid/mud used in drilling operations to clean and condition the hole and to counterbalance formation pressure.
	Chemicals for drilling	Unused drilling chemicals
	Chemical containers used for drilling	Empty drilling chemical containers
<b>Completion/flowback</b>		
	Flowback	Fluids brought up through the well casing during well stimulation
	Filter socks	Spent filter socks from completion/flowback equipment
	Chemicals for flow enhancement	Unused chemicals used for flow enhancement
	Chemical containers used for completions	Empty chemical containers
	Frac sand	Returned frac sand following completion operations.
<b>Production</b>		
	Chemicals for flow enhancement	Unused chemicals used for flow enhancement
	Chemical containers used for completions	Empty chemical containers
	Filter socks	Spent filter socks from production equipment
<b>Interim reclamation</b>		
	Unused fertilizers/pesticides	Unused fertilizers/pesticides
<b>Plugging and abandonment</b>		
	Scrap metal	Equipment, flowlines, buildings, etc.
<b>Final reclamation</b>		
	Unused fertilizers/pesticides	Unused fertilizers/pesticides



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**Table 2: Waste Handling Summary**

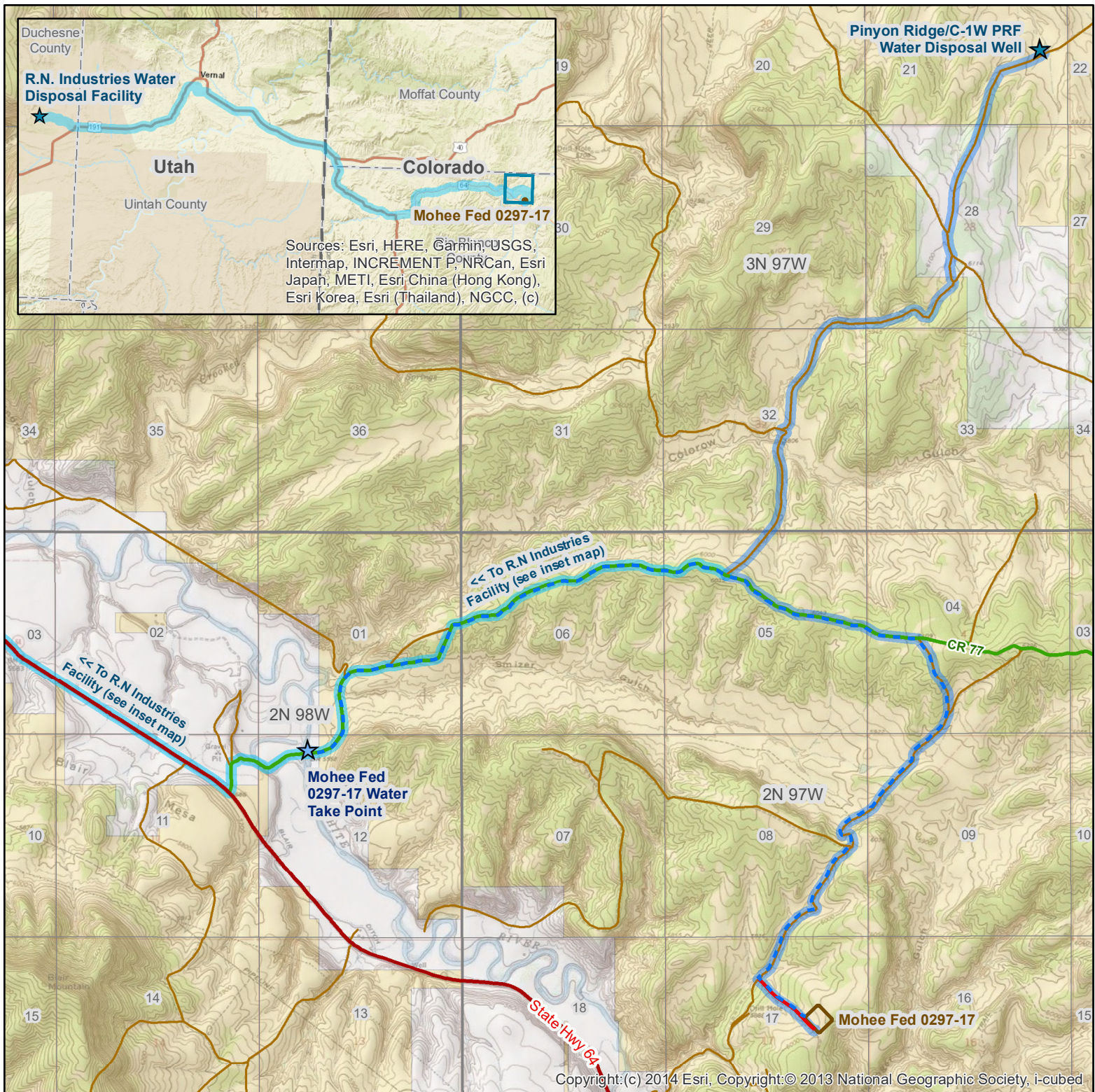
Waste Type	Waste Classification	Waste Description	Waste Per Well	Total Waste Volume	Disposal Frequency	Containment Description	Analysis Required for Disposal	Disposal Type	Disposal Location
Drill Cuttings	E&P Exempt	Water-based Bentonitic Drill Cuttings	2,500 cy	15,000 cy	One-time	Steel bins	Yes	Commercial Facility	Commercial
Water-based Drilling fluids	E&P Exempt	Water-based Bentonitic Drill Cuttings	2,000 bbl	24,000 bbl	One-time	Steel water tanks	Yes	Commercial Facility	Commercial
Oil-based Drilling fluids	E&P Exempt	Oil-based Bentonitic Drill Cuttings	NA	NA	NA	Steel water tanks	Yes	Recycled	NA
Cement	E&P Exempt		50 bbl	300 bbl	One-time	Steel bins	Yes	Commercial Facility	Commercial
Sewage	Non-E&P Exempt Waste	Sewage generated while location is occupied	45 gallons	45 gallons	Monthly	Sewage is contained	No	Commercial Facility	Commercial
Trash and construction debris	Non-E&P Exempt Waste	Solid waste materials produced during any phase of development at the oil and gas location.	9000 pounds	9000 pounds	Monthly	Metal enclosed trash containers.	No	Commercial Facility	Commercial
Flowback fluids	E&P Exempt	Liquid waste materials produced during the fracturing of the well.	30,000 bbl	120,000 bbl	One-time	Steel tanks	Yes	Commercial Facility	Commercial
Frac sand	E&P Exempt	Solid waste materials produced during the fracturing of the well.			One-time	Steel bins	Yes	Commercial Facility	Commercial
Frac fluids	E&P Exempt	Liquid waste materials produced during the fracturing of the well.	10,000 bbl	60,000 bbl	One-time	Steel tanks	Yes	Commercial Facility	Commercial

Waste Type	Waste Classification	Waste Description	Waste Per Well	Total Waste Volume	Disposal Frequency	Containment Description	Analysis Required for Disposal	Disposal Type	Disposal Location
Produced water	E&P Exempt	Liquids produced from the well casing during any phase of development at the oil and gas location.	4,000 bbl	24,000 bbl	Weekly	Steel water tanks	No	UIC	NESE 21 3N97W
							Yes	Commercial Facility	Commercial
Tank bottoms	E&P Exempt	Emulsified fluids	400 bbl	Dependent Upon Well Life	As needed	Steel water tanks	Yes	Commercial Facility	Commercial
Separator bottoms	E&P Exempt	Solids collected in the bottom of the separator	400 bbl	Dependent Upon Well Life	As needed	Separator tanks	Yes	Commercial Facility	Commercial
Contaminated soil	E&P Exempt	Soils contaminated at any phase of development with E&P exempt waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent runoff or contamination to surrounding soils, typically drums, or roll off containers	Yes	Commercial Facility	Commercial
Contaminated soil	Non-E&P Exempt Waste	Soils contaminated at any phase of development with non-E&P exempt waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent runoff or contamination to surrounding soils, typically drums, or roll off containers	Yes	Commercial Facility	Commercial
Contaminated soil	Non-E&E Exempt Hazardous	Soils contaminated at any phase of development with hazardous waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent runoff or contamination to surrounding soils, typically drums, or roll off containers	Yes	Commercial Facility	Commercial
Contaminated water/fluids	E&P Exempt	Water/fluids contaminated at any phase of development with E&P exempt waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent contamination to surrounding materials, typically drums, tanks or other covered structures.	No	UIC	NESE 21 3N97W
							Yes	Commercial Facility	Commercial

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Waste Type	Waste Classification	Waste Description	Waste Per Well	Total Waste Volume	Disposal Frequency	Containment Description	Analysis Required for Disposal	Disposal Type	Disposal Location
Contaminated water/fluids	Non-E&P Exempt Waste	Water/fluids contaminated at any phase of development with non-E&P exempt waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent contamination to surrounding materials, typically drums, tanks or other covered structures.	Yes	Commercial Facility	Commercial
Contaminated water/fluids	Non-E&E Exempt Hazardous	Water/fluids contaminated at any phase of development with hazardous waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent contamination to surrounding materials, typically drums, tanks or other covered structures.	Yes	Commercial Facility	Commercial
Non-Hazardous Solids & E&P Waste	E&P Exempt Waste	Solids contaminated at any phase of development with non-hazardous waste	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent contamination to surrounding materials, typically drums, tanks or other covered structures.	Yes	Commercial Facility	Commercial
Hazardous Solid & Liquid Waste	Non-E&E Exempt Hazardous	Water/fluids contaminated at any phase of development with hazardous waste.	Not anticipated	Not anticipated	As needed	Stored in a manner to prevent contamination to surrounding materials, typically drums, tanks or other covered structures.	Yes	Commercial Facility	Commercial





- ★ Pinyon Ridge/C-1W PRF Water Disposal Well
  - ★ R.N. Industries Water Disposal Facility
  - ★ Mohee Fed 0297-17 Water Take Point
  - - Mohee Fed 0297-17 Lay Flat Water Pipeline
  - - Mohee Fed 0297-17 Gas Pipeline
  - Mohee Fed 0297-17 Location
  - Pinyon Ridge/C-1W PRF Water Transportation Route
  - R.N. Industries Water Transportation Route
- Surface Ownership:**
- BLM
  - Private
- Public Land Survey:**
- Township - Range
  - Section

## Anschutz Exploration Corporation

### Mohee Fed 0297-17 Proposed Location

#### OGDP Overview Map

~~ Location Information ~~  
 Township Range 2N-97W Section 17 SWNE  
 Surface Ownership: BLM  
 Rio Blanco County, Colorado

0 0.5 1 Miles  
 1 inch = 3,500 feet 1:42,000

Coordinate System: NAD 1983 State Plane CO North FIPS 0501 Feet  
 Data: BLM, Timberline, US Census



Prepared for Anschutz Exploration Corp  
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 Geographic Information Services, 10/17/2023

