



Waste Management Plan

Date: 5/12/2023

Location: OGDG DP455 / YY18-07 Pad

Legal Description: SWNE Section 18, Township 2 North, Range 63 West, 6th P.M., Weld County, Colorado

Location Information

This document provides site-specific information for the OGDG DP455 YY18-07 Pad. The information in this document relates specifically to the time during the construction, drilling, completion, and production of the eight (8) proposed horizontal wells on this location.

The proposed location is northeast of the intersection of Weld County Road 59 and Weld County Road 20. The Pad will be in the SWNE Section 18, Township 2 North, Range 63 West, 6th P.M. zoned agricultural within the Weld County Near-Urban Planning Area.

The proposed YY18-07 Pad oil and gas location disturbance will be 9.6 acres, reduced to 2.3 acres after interim reclamation. The proposed working pad surface will be 6.4 acres. The YY18-07 Pad will be on Weld County Parcel 130318000012 owned by Guttersen Ranches LLC. The location is currently used for rangeland.

The YY18-07 Pad will produce to the existing Y11-28 Multi (COGCC Location ID: 450627) located to the northwest. Equipment at the YY18-07 Pad will include chemical injection skids, meter buildings, multi-phase flow meters, a communication tower, flowline manifolds, a temporary MLVT, and solar skids.

Phase	Duration (days)	Estimated Start Date
Construction (Daylight Only)	60 days	4th Quarter 2024
Drilling	40 days	1st Quarter 2025
Completion	40 days	4th Quarter 2025
Flowback	N/A	Flowing back directly to permanent facility
Production	30 years	4th Quarter 2025
Interim Reclamation (Daylight Only)	60 days	1st Quarter 2026

Potentially Impacted Parties

The Working Pad Surface of the YY18-07 Pad is within 2,000 feet of zero (0) Residential Building Units, zero (0) High Occupancy Building Units (HOBUs), and zero (0) Designated Outside Activity Areas. The nearest Disproportionately Impacted Community (DIC) is over 1 mile from the location. The location is not within COGCC designated High Priority Habitat (HPH).

The YY18-07 Pad is within 2,000 feet of the municipal boundary of Keenesburg. Noble has submitted a COGCC Rule 302.e. Notice to Proximate Local Government and has consulted with the Town of Keenesburg. The Town of Keenesburg has no objections to the location of the proposed Pad. Noble is in the process of amending an existing Road Maintenance Agreement (RMA) with the Town of Keenesburg to address use of Town roads for this project.

Background and Regulations

In compliance with Weld County Ordinance Sec. 21-5-450, COGCC Rules 905 and 1000 Series Reclamation Regulations, and the Drill Cuttings Management Policy (9/15/14), Noble Energy, Inc. (Noble) submits the following general plan for handling and disposing of E&P waste, including drilling mud and cuttings.

The wastes described in this plan are characterized as solid wastes, per COGCC definitions. All wastes, except for general trash and sewage, are specifically exempt from the Resource Conservation Recovery

Act (RCRA) Subtitle C hazardous waste regulations. 40 CFR 261.4(b)95) states the following wastes are not hazardous wastes: drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.

Wastes stored onsite will be stored in compatible containers and inspected to ensure they are in good condition and free of excessive wear, structural issues or other defects that may impact their effectiveness. Noble utilizes only licensed third-party transporters for all waste transport and coordinates with Relevant Local Governments on haul routes for transport of waste.

Records are maintained as required for all waste management-related activities. These include invoices, manifests, bills of lading and disposal logs. Disposal records include the date of transport, identity of the transporter, location of the waste pickup, type and volume of waste, and the name and location of the disposal site. Records, either electronic or hard copy, are retained, for not less than five years.

Requirements

1. ***The Waste Management Plan will be organized into sections to discuss management of each waste stream, and by operational phases, as applicable to the location:***
 - a. *Construction;*
 - b. *Drilling;*
 - c. *Completions;*
 - d. *Flowback;*
 - e. *Production;*
 - f. *Spill response and remediation;*
 - g. *Facility decommissioning; and*
 - h. *Plugging and abandonment.*
2. ***For each operational phase listed above, Operators will:***
 - a. *Provide a descriptive list of all waste streams anticipated to be generated at the location. For each waste stream identified, include:*
 - i. *The name or type of waste (e.g., oil-based drill cuttings, water-based bentonitic drilling fluids, produced water, trash, tank bottoms);*
 - ii. *The regulatory classification of the waste (e.g., E&P Waste, non-E&P Waste, hazardous waste, non-hazardous solid waste);*
 - iii. *A general description of the process(es) that generated the waste;*
 - iv. *An estimate of expected volumes or amounts of waste generated, and a frequency and duration of the waste stream generation;*

Operational Phase	Type of Waste	Classification	Generating Process	Amount & Frequency
Construction, Drilling, Completions, Flowback, Production, Spill Response & Remediation, Facility Decommissioning, Plugging & Abandonment	General Trash	Non-E&P Waste	General trash disposed in on-site containers	9 cubic yards per well per week
	Sewage	Non-E&P Waste	Human waste from site personnel	95 barrels per well per week
Drilling, Completions, Plugging & Abandonment	Water-based Bentonitic Drilling Fluids	E&P Waste	Well installation, plugging activities	67 barrels per well, one-time
Drilling	Drill Cuttings	E&P Waste	Well installation	339 cubic yards per well, one-time
Completions, Flowback	Frac Sands	E&P Waste	Removed from production separators	500 lbs. per well per month
Flowback, Production	Produced Water	E&P Waste	After well turned over to production	1,500 barrels per well first 3 months, then reduced to ~300 barrels, daily
Spill Response & Remediation	Soil impacted from spills of production fluids	E&P Waste	Potential cleanup of spills	Varies per well/incident

- v. *Any physical or chemical hazards the waste stream may pose, and whether or not field testing or environmental laboratory analyses are needed to further assess these hazards;*

None of the anticipated waste streams are expected to pose a health or environmental risk to employees; however, to assure the protection of employees, contractors, and the environment, each worker wears a four-gas monitor. Additionally, Noble Energy works with each disposal facility and transporter to assure that we abide by all regulatory requirements regarding shipping and disposal of all wastes generated from operations.

- vi. *A detailed description of all intended onsite treatment, storage, and disposal, including the use of any pits;*

Noble does not anticipate conducting any onsite treatment or disposal of waste and no pits will be used. All wastes will be temporarily stored onsite, as detailed under vii below, prior to being transported to permitted offsite commercial disposal facilities.

- vii. *A detailed description of the placement and use of storage areas, and treatment methods; and*

Construction

- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Drilling

- Water-based Bentonitic Drilling Fluids: contained in steel tanks, hauled to commercial facility
- Oil-based drilling fluids returning up the annulus will be filtered to remove solids through the closed loop system, cuttings shaken out into impervious bins above a mat and hauled off for off-site disposal while fluids will be routed through a suction tank and mud pump, remixed and recirculated.
- Drill cuttings: contained in 3-sided high wall steel bins, hauled to commercial facility
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Completions

- Frac sands: direct placement into truck, hauled to commercial facility
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Flowback

- Frac sands: periodically drained via vacuum truck, hauled to commercial facility
- Produced water: piped into existing infrastructure, private disposal by off-lease injection
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Production

- Produced water: piped into existing infrastructure, private disposal by off-lease injection
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Spill Response and Remediation

- Soil impacted from spills of production fluids: excavated and direct placement into dump trucks or storage bins, hauled to commercial facility
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Facility Decommissioning

- Equipment and materials removed during decommissioning: characterized and segregated appropriately, hauled to commercial facility
- Soil impacted from spills of production fluids: excavated and direct placement into dump trucks or storage bins, hauled to commercial facility
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

Plugging and Abandonment

- Equipment and materials removed during plugging and abandonment: characterized and segregated appropriately, hauled to commercial facility
- Soil impacted from spills of production fluids: excavated and direct placement into dump trucks or storage bins, hauled to commercial facility
- General trash: enclosed trash containers, hauled to commercial facility
- Sewage: chemical toilets or enclosed sewer system, hauled to commercial facility

- viii. *An evaluation of applicable surface owner and lease agreement conditions pertaining to waste treatment, storage, and disposal.*

Noble does not plan to treat or dispose of any wastes onsite. As noted above, all wastes are temporarily stored onsite in appropriate containers before being transported to offsite commercial disposal facilities.

- b. *For wastes disposed onsite, reused, recycled, and for remediation, describe how the Operator will comply with Table 915-1 by detailing:*
- i. *Methods for adequate collection of representative waste profile samples;*
 - ii. *The number of samples needed for waste characterization;*
 - iii. *What analyses will be run and what analytical methods will be used; and*
 - iv. *A certification that the analyses will be run by an accredited or certified environmental laboratory and that proper field protocol will be employed during sampling.*

Noble does not plan to dispose onsite or reuse any wastes. The only recycling that may occur will be for metal wastes, such as drill pipe, casing, and tubing, that may be recycled after it has been screened for release. In the event that remediation is required in response to a spill or release, Noble will detail the methods and procedures that will be used to collect samples to adequately characterize the spill or release and verify that the location has been adequately remediated in the Form 19 and/or Form 27 submitted to COGCC in accordance with the 900 Series of Rules. All samples will be analyzed by an accredited or certified laboratory for the analytes prescribed in Table 915-1 or an alternative suite of analytes approved by the COGCC.

- c. *For E&P Waste being transported offsite¹, include:*
- i. *A description of the Operator's recordkeeping system for all required transport records, including verification of where and for how long the records will be kept (see General Notes section, Rule 905.b.(3));*
 - ii. *A description of all intended offsite treatment, storage, and disposal methods;*
 - iii. *A description of haul routes; the plan may reference the Access Road Map so long as haul routes are clearly identified on that map. Additional information can be found in Rule 905.b;*
 - iv. *Information about the receiving facility (e.g., name and location of spread field or name of disposal well operator and location of disposal well facility); and*
 - v. *A description of the methodology for collecting waste characterization and profile samples for selected management or disposal of waste if required by the disposal facility.*

All shipments of wastes are documented and tracked via manifests and/or other appropriate documentation (invoice, bill or ticket), and all records of E&P waste transportation comply with COGCC Rule 905.b. Disposal records include the date of transport, identity of the transporter, location of the waste pickup, type and volume of waste, and the name and location of the disposal site. Records, either electronic or hard copy, are retained, for not less than five years.

The haul routes for this location are those identified on the Access Road Map submitted as part of the COGCC Form 2A permitting application.

Produced water will be injected, recycled, or beneficially reused per Noble Energy or its

business partners current or future approved permits, and solid wastes will be disposed of in third party landfills that are approved by CDPHE to accept E&P exempt wastes.

All third-party transporters and disposal sites meet the state requirements to accept E&P waste streams. Additionally, Noble Energy inspects each facility as a part of its internal Third-party Waste Stewardship (TWS) process to provide additional assurance that disposed wastes will have no unintended environmental impacts. Currently, Noble Energy utilizes the following third-party transporters and disposal facilities:

Third-Party transporters

- Waste Management
- 1888 Industrial Services
- Atlas Energy Services
- Fortress Development Solutions
- Northern Plains Trucking
- Frontrange Hydro Bandits

Third-Party disposal facilities

- Waste Management
 - Buffalo Ridge Landfill
 - CSI Landfill
 - North Weld Landfill (Ault)
- Republic Services
 - Tower Landfill
- NGL Water Solutions DJ, LLC
- High Sierra Injection Facilities

Noble maintains multiple waste profiles for wastes that are transported to permitted offsite disposal facilities. If a receiving facility requires a profile not previously established, Noble will work closely with the facility to ensure that the number of samples collected, and analyses performed, will adequately characterize the waste according to the receiving facility's requirements.

3. ***For all waste streams, provide an evaluation of opportunities to reduce the volume generated, reduce toxicity, put to a beneficial use, reuse, or recycle.***

Reuse and Recycling

At this time, Noble does not anticipate implementing beneficial land reuse and does not have the necessary infrastructure in place in this area to support widescale produced water/flowback recycling. Noble may propose plans in the future for managing these waste streams through beneficial use, reuse, and recycling for approval, by the Director.

Noble will continue to evaluate new technology for effective and efficient application for the management of E&P waste. If opportunities for reuse and recycling become practicable, a reuse and recycling plan will be submitted as described in Rule 905.a.(3).

4. ***Provide a contingency plan for managing waste streams in the event the E&P Waste exemption no longer applies to a given waste stream.***

If E&P Waste exemptions no longer apply to a given waste stream, the waste stream would require shipment to a facility that can accept hazardous waste. Currently, Clean Harbors handles the small amount of hazardous waste disposal generated for operations.

5. ***Best Management Practices (BMPs)***

- Wastes stored onsite will be stored in compatible containers that are regularly inspected to ensure they are in good condition and free of excessive wear, structural issues or other defects that may impact their effectiveness.
- All trash receptacles will be designed, maintained, and operated to exclude wildlife, and to protect public safety, the environment, and wildlife from exposure to overflowing, leak prone or insecure trash receptacles.
- Noble utilizes only licensed third-party transporters for all waste transport and coordinates with Relevant Local Government on haul routes for transport of waste.
- Noble will not bury or burn trash or other waste materials at an oil and gas location.
- Some wastes generated from oil and gas operations have the potential to be subject to TENORM regulation and, when required, will be disposed of at licensed facility authorized to receive TENORM wastes. Noble will comply with the requirements of 6 CCR 1007-1 Part 20 – Registration and Licensing of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), which became effective on January 14, 2021.