



## **Fluid Leak Detection Plan**

Date: 5/12/2023

Location: OGDG DP455 / YY18-07 Pad

Legal Description: SWNE Section 18, Township 2 North, Range 63 West, 6<sup>th</sup> 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 Gutttersen 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.

## **Drilling and Completion Fluids Procedures and Schedules**

### *Monitoring*

- There will be no tanks or separators at the YY18-07 Pad. Facilities will be located at the existing Y11-28 Multi.
- A closed-loop system will be used for drilling operations as required by Rule 408.a.

- Noble Energy will use SCADA to continuously monitor line pressures, flow rates, temperature, and open and closed valve positions. Any irregularities indicating a leak or change in production of oil, water, or gas will trigger immediate action by the SCADA system to shut-in the well/facility until troubleshooting and/or repairs are completed.

#### *Inspection*

- All on-site facilities shall be subjected to an instrument-based leak detection and repair (LDAR) inspection at least monthly during drilling and completion and quarterly during production.

#### *Testing*

- Noble Energy will utilize volumetric testing to identify and locate leaks. This involves measuring the liquid volume which must be added or removed from a system to maintain constant pressure; volume changes unexplained by thermal expansion/contraction will indicate potential leaks.

#### *Maintenance*

- Noble Energy utilizes additional engineering controls, which may include use of appropriate materials, corrosion inhibitors, protective coatings, and cathodic protection techniques to minimize the potential for fluid leaks.

### **Produced Fluids Procedures and Schedules**

#### *Monitoring*

- Routine site visits will be made by lease operators (aka pumpers) to the well pad for maintenance and inspection. Periodic site inspections will be conducted by third party environmental contractors to look for any signs of leaks and/or potential leaks. Infrared surveys will be used to identify any leaks coming from the flowlines on a regular basis. New flowlines will be hydrotested to manufacturer's recommended levels before being placed into use.
- Noble Energy will use SCADA to continuously monitor line pressures, flow rates, temperature, and open and closed valve positions. Any irregularities indicating a leak or change in production of oil, water, or gas will trigger immediate action by the SCADA system to shut-in the well/facility until troubleshooting and/or repairs are completed.

#### *Inspection*

- Flowlines will be inspected per COGCC 1100 regulations.
- Infrared surveys will be used to identify any leaks coming from the flowlines on a regular basis.

#### *Testing*

- New flowlines will be hydrotested to manufacturer's recommended levels before being placed into use.
- Pressure testing of flowlines will be conducted on an annual basis.
- Documented Audible, Visual, and Olfactory (AVO) inspections and optical gas imaging surveys will be conducted monthly by a third-party specialist.

## *Maintenance*

- If a leak is discovered or suspected, the well will be shut-in, and the line will be hydrotested. If hydrotesting confirms a leak, the well will remain shut-in while the leak is located and repaired. The well will be brought back online after the line has passed hydrotesting.

## **Record Keeping**

Spill response includes notifications, reporting, response actions, remediation, and corrective actions. Waste is properly classified as E&P or non-E&P wastes. For E&P waste, all spills greater than 1 barrel (outside containment) or greater than 5 barrels (inside containment) will be reported to the COGCC using a Form 19.

Should remediation be required, a Form 27 will also be submitted. Spills related to non-E&P waste will be managed in accordance with CDPHE and EPA regulations depending on the volume spilled. Noble Energy tracks and cleans up all spills, including those that are not reportable. Noble Energy documents the monitoring process, and copies of inspection and maintenance logs are available upon request.

Records of inspections and tests are kept under usual and customary business practices as set forth in §112.7(e). These records will be kept according to the procedure set forth in Noble Energy's written Records Retention Policy and copies of these records will be kept with the SPCC Plan for a period of three (3) years. Spill and remedial action records will be maintained at the field office for a period of five (5) years.

## **Site-Specific BMPs**

- During pre-production activities, two topographically downgradient channels will be constructed along the working pad surface edge and routed to a detention pond to prevent offsite migration of sediment or contaminants into nearby surface water features. The channels extend around the north and west sides of the location and will help contain a potential on-site release and prevent contamination of un-plated soil. Construction details for the channels and detention pond are provided within the site-specific Stormwater Management Plan.
- The surface of the location will be plated with 3-5 inches of compacted road base aggregate that will deter releases from easily seeping into the soil.
- During drilling and completion operations, a temporary impermeable layer (e.g., synthetic, geosynthetic, cement-modified soil) will be utilized under equipment to provide an additional layer of protection against spills. Secondary containment devices, such as duck ponds or equivalent type products, will be used to protect soils under any pipe connections or equipment that carry, mix, or could possibly leak fluids or chemicals.
- Audible, Visual, and Olfactory (AVO) inspections of the facility will be conducted regularly by Noble Energy. Any valve or fitting that is found to be ineffective will be repaired immediately, or well shut-in procedures will be implemented.
- The location will be equipped with remote monitoring and shut-in capabilities.
- All flowlines will be designed/constructed/tested to ASME B31.4 and API 1104 standards. Only materials with Material Test Reports (MTRs) provided by the pipeline supplier will be used in the construction of the flowlines.

- No pits will be used on location, therefore pit level indicators will not be used on location.
- Spill prevention and response will continue to be addressed in training of employees and contractor personnel on at least an annual basis.