

Objective Criteria Review Memo - Mallard Exploration LLC

Canvasback Fed 32-33-1HC -- Form 2 Application for Permit to Drill (APD) Doc# 402344757

Canvasback Pad -- Form 4 Sundry to update Location BMPs Doc# 402446956

Approved Form 2A Oil & Gas Location Assessment (Doc# 401809209, approved 2/11/2019)

Location ID# 461821

This memo summarizes COGCC's technical review of the subject well within the context of SB 19-181 and the required Objective Criteria. The Form 2A and 14 APDs were approved on 2/11/2019. Mallard has since submitted this subject refile APD (one of eight refile APDs total) on this approved, unbuilt Oil & Gas Location.

For Oil & Gas Locations approved prior to SB 19-181, the Objective Criteria apply to any wells proposed on those approved or existing Oil & Gas Locations. This APD meets the following Objective Criteria:

1. (Criteria 8) Oil and Gas Locations with storage of hydrocarbon or produced liquid in more than 18 tanks or in excess of 5,200 barrels. The location is planned for 28 oil tanks and 14 water tanks (42 tanks total).

The following sections provide details regarding the evaluation of each criterion:

Criteria 8: Oil and Gas Locations with storage of hydrocarbon or produced liquid in more than 18 tanks or in excess of 5,200 barrels.

Site Specific Description of Applicability of Criteria 8: The location is planned for 28 oil tanks and 14 water tanks (42 tanks total).

Site Specific Measures to Address Criteria 8: The Operator provided the following BMPs to mitigate having more than 18 tanks on location:

- **Stormwater Management Controls:** Operator shall install stormwater controls, prior to construction activities, constructed in a manner that is consistent with good engineering practices, and will include measures including, but not limited to, construction of a berm or diversion dike, site grading, or other comparable measures, sufficient to prevent offsite migration of sediment or contaminant.
- **Lined Containment:** perimeter metal walls that are post driven into the ground around a flexible geotextile base. All components are then sprayed with a polyurea liner technology. Secondary containment will be installed around separators and treaters consisting of metal berm walls. The separators and treaters will be set on top of compacted road base.
- **Site Inspections:** Audible, Visual, and Olfactory (AVO) inspections of the facility are conducted daily by the Operator. Any valve or fitting that is found to be ineffective is either repaired immediately or well shut-in procedures are implemented.

- Remote Monitoring/Shut-in Capabilities: The location will utilize a SCADA (remote monitoring) system to monitor facility pressures and flows. Sensors are placed on multiple points throughout the facility and are designed to measure the system for irregularities that would indicate a leak in the system or change in production of oil, water, or gas. The SCADA system is designed with alarms that are triggered by irregularities and will activate automatic shut-in of the well and facility.

Additionally, the Operator provided the following information regarding Emergency Management preparations for the location:

- Operator consulted with the Pawnee Fire Protection District and the Weld County Office of Emergency Management (OEM) regarding the proposed facility and emergency response for this location. The site-specific Emergency Action Plan was approved by the OEM on December 17, 2018.

Summary: Mallard provided BMPs that address possible impacts to having more than 18 tanks on location. The BMPs include stormwater management controls, lined containment for tanks and separators, leak inspections, remote monitoring/shut-in capabilities, and an Emergency Response Plan.

Director Determination: Based on the Objective Criteria review, the Director has determined that this permit application meets the standard for protection of public health, safety, welfare, the environment and wildlife resources set by SB 19-181.