

Objective Criteria Review Memo - Mallard Exploration LLC

Gadwall 30-31-1HN -- Form 2 Application for Permit to Drill (APD) Doc# 402343428

Gadwall Pad -- Form 4 Sundry to update Location BMPs Doc# 402392013

Approved Form 2A Oil & Gas Location Assessment (Doc# 401393767, approved 6/09/2018)

Location ID# 455385

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 was originally approved on 6/09/2018 with 16 APDs. 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 5c) Oil and Gas Locations within: a Sensitive Area for water resources. The location is in a sensitive area for water resources due to the distance to the nearest surface water feature (491' to a wetland).
2. (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 Form 2A lists that the location is planned for 32 oil tanks and 16 water tanks.

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

Criteria 5c: Oil and Gas Locations within: a Sensitive Area for water resources.

Site Specific Description of Applicability of Criteria 5c: The location is in a sensitive area for water resources due to the distance to the nearest surface water feature (491' to a wetland).

Site Specific Measures to Address Criteria 5c: The Operator provided the following BMPs via Form 4 Sundry (dco# 402343428):

- Stormwater Controls: Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Gas and water gathering lines will be co-located to minimize potential of erosion associated with construction of any pipeline(s).
- Remote Monitoring: The location will utilize a SCADA (remote monitoring) system to monitor facility pressures and flows. The SCADA system is designed with alarms that are triggered by irregularities and will activate automatic shut-in of the well and facility.
- Operator will install an engineered containment system around the tank battery. The containment system is constructed of a perimeter of 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.

Summary: Mallard provided BMPs that address possible impacts to nearby surface water features. The BMPs include stormwater controls, remote monitoring/shut-in controls, and lined containment for the tank and separator areas.

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 Form 2A lists that the location is planned for 32 oil tanks and 16 water tanks.

Site Specific Measures to Address Criteria 8: In addition to the previously mention BMPs discussed under Criteria 5c, the Operator provided the following information regarding emergency management plans for this location with large storage volumes:

- Mallard Exploration has consulted with the Briggsdale 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 and Tactical Response Plan was submitted as part of the 1041 WOGLA Application and was approved by Briggsdale Fire and the OEM.

Summary: Mallard provided BMPs that address possible impacts to having a large storage volume on location. The BMPs include remote monitoring/shut-in controls, lined containment for the tank area, and an Emergency Action 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.