

Objective Criteria Review Memo, *Mallard Exploration LLC Silver Appleyard Fed Pad, Form 2A Document # 401816359*

This summary explains how COGCC staff conducted its technical review of the Mallard Exploration LLC (Mallard), Silver Appleyard Fed Pad Form 2A, Document #401816359 within the context of SB 19-181 and for the required Objective Criteria. This Form 2A was submitted for a new Oil & Gas Location to drill 15 wells, install 30 oil tanks, 15 water tanks, 15 separators, 15 gas or diesel motors, eight emission control devices (ECD), four vapor recovery units (VRU), two vapor recovery towers (VRT), two electric generators, two modular large volume tanks (MLVT), two gas compressors, and two lease automatic custody transfer (LACT) units. This Location meets the following Objective Criteria:

(Criteria #8) Location has hydrocarbon storage or produced liquid in more than 18 tanks or in excess of 5,200 barrels.

COGCC staff met with the Director to discuss the Objective Criteria for the Form 2A with the proposed Best Management Practices (BMPs) and applied Conditions of Approval (COAs). The following sections provide details regarding the evaluation of each criterion.

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

Site Specific Description of Applicability of Criteria 8: A total of 30 oil tanks and 15 water tanks are proposed for the Location for a total of 45 tanks.

Site Specific Measures to Address Criteria 8: Mallard will institute the following BMPs on this Location to mitigate the large volume of hydrocarbon and produced water storage on Location.

- Mallard prepared a site specific emergency action plan (EAP) and tactical response plan approved by the Briggsdale Fire Protection District (F.P.D) on June 26, 2019, and the Weld County Office of Emergency Management (OEM) on July 31, 2019, following a meeting regarding the facility and emergency response.
- Mallard will install an engineered containment system around the tank battery constructed with a perimeter of metal walls post driven into the ground around a flexible geotextile base. All components will be sprayed with a polyurea liner technology to maintain impermeability, puncture resistant, and resistant to UV ray exposure, weather extremes, and chemicals commonly encountered in oil and natural gas production. The seamless liner is then topped with pea gravel.
- 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.
- Mallard performs audible, visual, and olfactory (AVO) daily inspections of the facility. Ineffective valves or fittings are repaired. A third-party specialist performs and documents monthly AVO inspections and optical gas imaging surveys.

- A supervisory control and data acquisition (SCADA) system monitors facility pressure and flow with sensors placed on multiple points throughout the facility that are designed to monitor for system irregularities such as a leak or change in production of oil, gas, or water which trigger alarms that activate automatic shut-in of the well and facility.
- Hydrotesting is conducted if a leak is suspected or discovered, by shutting-in the well and testing the lines. The well remains shut-in until the leak is located and repaired.
- All flowlines are designed, constructed, tested to industry standards. Operator only allows materials with material test reports (MTR) from pipeline supplier to be used in flowline construction.

Summary:

Mallard coordinated with the Briggsdale F.P.D. and Weld County OEM regarding the facility and emergency response. A site-specific EAP and Tactical Response Plan were approved by the F.P.D. and OEM during the summer of 2019. Mallard will construct a lined metal secondary containment system that includes a flexible geotextile base and an impermeable coating beneath and around the storage tanks. The impermeable liner is resistant to punctures, chemicals, and weather. Containment will also be placed around the separators and treaters set on top of compacted road base. Mallard has installed a SCADA system that monitors production and has alarms that automatically shut-in the well and facility if production irregularities or a leak is detected. Hydrostatic testing is performed and wells are shut-in until leaks are located and repaired. Flowlines are constructed only with materials that have a MTR from the pipeline supplier.

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.