

Installation

Lines are either to be welded or threaded, some lines may be non-metallic the following comes with assistance from COGCC Operator guidance on Rules 1101 and 1102 issued 5.15.2015:

- Welded Flowlines be installed with welded or flanged connections. The welders of pipe and components should have welding qualification in accordance with Section 6 of API 1104 or Section IX of the ASME Boiler and Pressure Vessel Code or equivalent qualification.
 - Welding to be performed by a qualified welder in accordance with welding procedures specified in Section 5 of API 1104 or Section IX of the ASME Boiler and Pressure Vessel Code or equivalent.
- All threaded metallic pipe should be joined with recommended lubricant/sealant.
- All non-metallic pipes that require welded joints should be installed with appropriate equipment to meet manufacturer recommendations and welded with qualified welders.
- All buried non-metal Flowline installation should contain a continuous metallic tracer line attached to the pipeline with surface access or other means of surface location.
 - Unless line was laid prior to integrity program
 - Some Ward lines did not have tracer wire prior to Ward purchasing
- All flowlines are to be pressure tested to their maximum manufactured value (at minimum 80%) prior to hydrocarbon production use.

Maintenance

Ward Petroleum will employ auditory, visual, olfactory testing to determine if flowlines require maintenance and/or repair. Basic repairs will be made to ensure that surface lines remain in proper shape and functionality.

Lines that are identified as having potential for corrosion will be treated with appropriate chemical or cathodic protection accordingly.

Should a leak be suspected, an inspection will take place. Prior to pressuring up the line, a walk-through will occur to check for any on-going leaks. If leak is occurring underground, a pressure test will confirm. The resulting inspection will be performed per the procedure below. Repairs will follow the repair procedure below as well.

Inspections/Testing

Ward Petroleum will perform yearly flowline inspections to ensure flowline integrity and prevent leaks/spills.

Inspection Procedure: While the well is open, the flowline will be shut in at various valves and the pressure from the well will test line pressure up to maximum anticipated operating pressures, which can be checked using past gauge sheets. Should the well pressure be too great for the flowline or too low, a hydrotest will be performed to the necessary pressure. Lines are to be tested for a minimum of 15 minutes a maximum of 60 minutes. Results are to be recorded on Attachment 1, any failures are to be recorded on Attachment 2. Any failures that are reportable or if a spill is discovered during a test, the proper authorities will be notified, including the COGCC, CDPHE, local municipality(s), county, BLM, USFS, surface owner, and surface user.

Repair Procedure: Repairs will be made by blowing down and draining the flowline first. Should it appear that the line cannot be drained properly, great care will be taken to minimize fluid loss

while breaking apart leaking area. Should the leak be below surface, digging will commence after locates clear unless the leak is considered an immediate hazard. Soil samples are to be taken surrounding the leaking area and the proper authorities notified should the spill be considered over 1 bbl. Soil will be disposed at the proper site and the leak repair made. A root-cause of the leak is also required to be performed.

