CONCHO

Clydesdale 1 Fee 1H Tank Battery

Tank Battery Operational Description

Summary

The following is a description of the facility operations at the Clydesdale 1 Fee 1H tank battery operated by COG Operating, LLC. The battery has a total of 4 producing wells. The 1H & 2H wells have common ownership and the 3H & 4H wells have common ownership.

Operational Description

1. Flowlines from the producing wells terminate into the test/production header which serves as the inlet to the tank battery. From the header, wells can be sent to production or test separators. At the Clydesdale 1 Fee 1H facility, the 1H and 2H wells will be produced into a continuously metered test separator and the 3H and 4H wells will be produced into a continuously metered test separator. Using the valves in the header, any single well can be isolated from the remaining wells and placed into test or production. In order to determine allocation volumes, a well will be taken out of the test separator and produced into the production separator. The production volume for the well being produced into the production separator will be determined by the subtraction method. This method will allow for allocation of production through well tests. A sample well testing schedule can be seen in Table 1.

Table 1. Well Testing Schedule

Week	Week 1	Week 2	Week 3	Week 4
Test Separator	1H	1H & 2H	2H	1H & 2H
Test Separator	3H & 4H	3H	3H & 4H	4H
Production Separator	2H	4H	1H	3H

2. The test separator is a 3-phase horizontal separator used for measuring produced fluids from a given well. Separate meters are used for measuring oil, water, and gas from the production well. Turbine meters are used for measuring oil and water flow while an orifice meter is used for measuring gas flow. Once the produced fluids have been metered, all three phases are recombined and routed to the 2-phase separator where the well is tied in with the bulk fluids from other wells. A diagram of the test separator is shown in Figure 2 below.

BEFORE THE OIL CONVERSATION DIVISION
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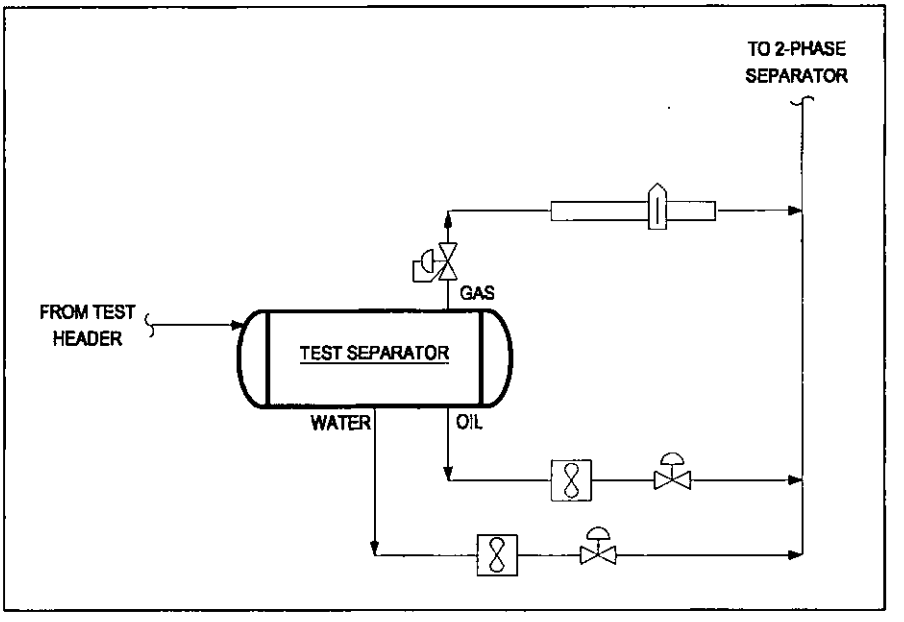

Figure 1: Test Separator with 3-Phase Metering

3. Fluids from the production header and test separators are routed to the 2-Phase Separator where gas and liquids are separated. Gas is sent directly to the gas sales system and liquids are sent to the FWKO for further separation. In addition to providing a means of bulk gas/liquid separation, this vessel also helps to alleviate slugs of fluid which enter the system and would otherwise disrupt the separation process.

4. Liquids from the 2-Phase Separator are sent to the Free Water Knock Out (FWKO). The primary function of this vessel is to provide sufficient retention time for oil and water to separate. Water from the FWKO is sent to water storage tanks. Oil from the FWKO is sent to the Heater-Treater for a final stage of polishing and water removal. Any gas that flashes off in this stage of separation is tied directly into the gas sales system.

5. Oil from the FWKO is routed to the Heater-Treater where heat is applied to help break any remaining emulsions and remove water from the oil stream. Oil from the Heater-Treater is sent to the oil storage tanks. Water from the Heater-Treater is tied into the water line from the FWKO going to the storage tanks. Any gas that flashes off in this stage of separation is tied directly into the gas sales system.

6. Oil from the Heater-Treater is sent to 500 BBL oil tanks located on site. These tanks allow for storage of oil prior to sales through a pipeline LACT or trucking. Valves are installed on each tank to provide the ability to isolate a tank for sales or to further treat the fluids by circulating back through the separation process. Oil tanks are connected together with a common overflow line that serves to prevent spills caused by over running a single tank.

7. Water from the FWKO and Heater Treater is sent to 500 BBL water tanks located on site. These tanks provide water storage prior to being pumped into the salt water disposal (SWD) system. One water tank is used as the primary tank for water handling while the second tank provides overflow protection and operational flexibility. A transfer pump is connected to the water tanks and is operated automatically by the facility PLC based on the level of water in the tanks. This pump discharges into the SWD system which gathers and disposes of produced water.