



Gas Processing Plant Stabilized Condensate

September 2019

Background

The customer's 200,000 mmcf/d gas plant is delivering plant-recovered stabilized condensate to a nearby receiving terminal/pipeline system at rates of 5,000 bopd.

Problem

Condensate samples at the LACT between the customer's pipeline and the 3rd party receiving pipeline have shown high levels of black powder contamination. The receiving pipeline specification for Fe is < 8 mg/kg, so the condensate is considerably off spec.

Fe Content in Black Powder Specifications

Range of Fe Content Found in Black Powder Samples	17 - 192 mg/kg
Receiving Pipeline Specifications for Fe	< 8 mg/kg

Lact Unit Discharge Sample

Fe Content: 37.5 mg/kg

Customer Product Description: Crude Oil	Sample ID: 2019-MIDL-000422-001
Location: Midland, TX USA, Midland, Texas, United States	Date Sampled: 20-Jun-2019
Sample Representing: Lact Unit Discharge	Date Submitted: 26-Jun-2019
Drawn By: Client	Date Tested: 26-Jun-2019
Sample Point: All Clients	

Method	Property	Result	Units
ASTM D5708	Procedure	Test Method A	
	Vanadium Content	0.175	mg/kg
	Nickel Content	0.0120	mg/kg
	Iron Content	37.5	mg/kg
ASTM D4929	Procedure Used	Procedure C	
	Organic Chloride Content of Naphtha Fraction	< 1.0	µg/g
	Organic Chloride Content of Crude Oil	0.50	µg/g

*Sample is 37 mg/kg of Fe; mislabeled as Crude Oil

Solution

- Daily volumes of black powder contamination at 37 mg/kg and 5,000 bopd are > 50 lbs/day.
- Due to the anticipated large volume of material, BPS proposed a system comprised of 2 units in parallel (1 unit shown below).

Magnetic Separator System	2 units in parallel
Internal Magnetic Arrays	14 magnetic elements (2" OD x 54" L)
Contamination Holding Capacity	882 lbs (14 lbs/lft per magnetic element)
Estimated Cleaning Cycle	~ 2 weeks at 100% loading
Option	Larger system for extended cleaning intervals
Cost	\$275,000 USD

ROI

If receiving pipeline rejects high Fe condensate and condensate price is WTI less \$5/bbl (ie. \$55/bbl), the pay-out is **2 days** of foregone condensate revenue.

