

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED

DATE: 25-AUG-2018 TIME: 0730 HOURS

2. OPERATOR: Fieldwood Energy LLC

REPRESENTATIVE:
TELEPHONE:

CONTRACTOR:
REPRESENTATIVE:
TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER **Spill**

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT: 8. OPERATION:

4. LEASE: G02161

AREA: GI LATITUDE: 28.73805
BLOCK: 76 LONGITUDE: -90.02613

5. PLATFORM: A
RIG NAME:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO. 8217
- OTHER

6. ACTIVITY: EXPLORATION(POE)
 DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:

- HISTORIC INJURY
 - REQUIRED EVACUATION
 - LTA (1-3 days)
 - LTA (>3 days)
 - RW/JT (1-3 days)
 - RW/JT (>3 days)
 - Other Injury

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

- LWC HISTORIC BLOWOUT
- UNDERGROUND
 - SURFACE
 - DEVERTER
 - SURFACE EQUIPMENT FAILURE OR PROCEDURES

COLLISION HISTORIC >\$25K <=\$25K

9. CAUSE:

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER **3/8 hole in pipeline**

- 10. WATER DEPTH: 150 FT.
- 11. DISTANCE FROM SHORE: 26 MI.
- 12. WIND DIRECTION:
SPEED: M.P.H.
- 13. CURRENT DIRECTION:
SPEED: M.P.H.
- 14. SEA STATE: FT.
- 15. PICTURES TAKEN:
- 16. STATEMENT TAKEN:

17. INVESTIGATION FINDINGS:

On 25 August 2018, at 0730 hours, a pipeline pollution event occurred at the Fieldwood Energy LLC Grand Isle (GI) 76-A, OCS-G 02161 platform. A 3/8" hole developed in the departing pipeline which discharged an estimated 8.35 barrels of hydrocarbons into the Gulf of Mexico (GOM). The pipeline subsequently shut-in due to a pressure sensor measuring pressure below the set point.

SEQUENCE OF EVENTS:

On 25 August 2018, during normal operations, the operators at the GI 76-A platform experienced a Pressure Safety Low (PSL) trip on the departing 12" pipeline, KAH-101 segment #8217. The pipeline pressure sensor detected the leak, shutting in the platform. The operators then observed a sheen on the surface of the water. When the operators observed the sheen, they suspected it could be from the pipeline with the PSL that tripped.

While investigating the cause of the PSL activation, operators bled down the pipeline to stop additional pollution. The operators then contacted the Field Foreman located on Fieldwood Energy's main structure, GI 47-AQ. The Field Foreman conducted a fly-over in order to estimate the size of the sheen. The Field Foreman reported the pollution event to the National Response Center (NRC #1222650) as well as the BSEE New Orleans District after hours engineer. The sheen measured 6.5 miles long and 1.5 miles wide, totaling 352.27 gallons (8.35 bbls). The Field Foreman called for a dive boat contracted to Fieldwood. Upon arrival, the diver identified the leak near a weld located approximately a quarter-mile from the platform. Fieldwood began monitoring the sheen hourly from the time of its discovery at 10:50 am on 25 August 2018 until the sheen had completely dissipated at 3:00 pm on 26 August 2018.

After the diver identified the leak, Fieldwood submitted a pipeline repair plan to the BSEE Pipeline Section to install a 12" Plidco split-sleeve clamp. BSEE gave approval for the repair on 28 August 2018. The clamp was installed and leak tested at the normal operating pressure of 1060 psi for 2 hours while being observed by the diver. After a successful test, the pipeline was bled down to ambient pressure and buried 3' below the mudline.

BSEE INVESTIGATION:

On 27 August 2018, BSEE New Orleans District Production Inspectors arrived on location, gathered information, issued an E100 and G111 Incident of Noncompliance, and conducted interviews.

The interviews revealed the operators followed Fieldwood Energy's oil spill procedure. During the Fieldwood overflight, the latitude and longitude of the leak were matched to a 12" Right of Way (ROW) pipeline, segment #8217 belonging to Fieldwood Energy.

The investigation revealed this pipeline was originally used for gas sales and condensate. Fieldwood Energy converted the pipeline to a bulk oil pipeline without BSEE's approval, failing to comply with 30 Code of Federal Regulations (CFR) 250.1000 (3) Modification or relinquishment of a pipeline right-of way. This information was confirmed during a follow up inspection of the platform by BSEE investigators on 16 January 2019.

Investigators also discovered the pipeline pumps' (PAX-231/232) Maximum Discharge Pressure (MDP) of 1800 psi was greater than the pipeline's MAOP of 1203 psi. Therefore, the pipeline is required by API RP 14C to be protected by a primary and secondary means of overpressure protection, a Pressure Safety High (PSH) and Pressure

Safety Valve (PSV) respectively.

The pipeline's primary means of overpressure protection was the PSH set at 1200 psi. Although this set point is below the MAOP of the pipeline, it is too close to MAOP to allow for set pressure tolerance. 30 CFR 250.865 states that the PSH must be set sufficiently below the maximum allowable working pressure of the discharge piping. API RP 14C Section D.3.2 states the set pressure tolerance for set pressures greater than 5 psi is plus or minus 5 percent; however, the trip pressure should not exceed the pressure rating of the equipment protected. In summary, the pipeline pumps may have overpressured the pipeline without activating the PSH due to the MAOP of the pipeline being within 5 percent of the set point. The improper PSH set point has been identified as a possible contributing cause to the incident because an overpressure event may have gone undetected and caused a hole in the pipeline.

The pipelines secondary means of protection was the PSV on the PAX pumps as referenced on Fieldwood's Safety Analysis Function Evaluation (SAFE) Chart. However, the pumps' PSV was set at 1323 psi which does not sufficiently protect the pipeline's MAOP at 1203 psi. Therefore, the pipelines did not have proper secondary overpressure protection. The improper PSV set point on the pipeline pumps has also been identified as a possible contributing cause.

CONCLUSION:

The investigation concluded that Fieldwood properly followed oil spill reporting procedures. However, Fieldwood failed to set the PSH on the pipeline properly, failed to set the PSV on the pipeline pumps properly, and lastly failed to obtain approval from BSEE Pipeline Section before converting the pipeline from gas sales to bulk oil.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

- Equipment Failure - Capacity of equipment exceeded: Fieldwood Energy identified a 3/8" hole in the line approximately a quarter-mile from the platform near a weld in the line.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

- Human error - Incorrect PSH set point: The improper PSH set point has been identified as a possible contributing cause to the incident because an overpressure event may have gone undetected and caused a hole in the pipeline.
- Human error - Incorrect PSV set point: The PSV set point was too high to protect the pipeline from overpressure.
- Management Systems - Pipeline permits out of date: Pipeline segment #8217 was being used as a bulk oil pipeline; however, the pipeline was originally permitted to handle gas and condensate only.

20. LIST THE ADDITIONAL INFORMATION:

Fieldwood Operators informed the BSEE Investigator that the facility is to remain shut-in indefinitely due to uneconomical to flow from depleting wells.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

- The BSEE New Orleans District Office has referred their finding to the BSEE regional pipeline division for further review into Fieldwood Energy's pipeline modifications.
- The BSEE New Orleans District Accident Investigator has referred the findings of the discrepancies on the SFD and SAFE chart to the New Orleans District Production Operations Section Chief to return the drawings to the operator for correction.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

- E100 Lessee had an unauthorized discharge of approximately 352.27 Gallons of Oil into offshore waters.
- G111 Lessee failed to properly maintain the KAH-0101 (Departing oil/gas Pipeline) which resulted in a leak in the pipeline discharging approximately 352.27 gallons of oil into offshore waters.

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

27-AUG-2018

26. INVESTIGATION TEAM MEMBERS:

29. ACCIDENT INVESTIGATION

Pierre Lanoix / Terrence Hayes / Nathan Bradley /

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

David Trocquet

27. OPERATOR REPORT ON FILE:

APPROVED

DATE: **06-MAY-2019**