

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

ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: 11-JUL-2018 TIME: 1200 HOURS

2. OPERATOR: BP Exploration & Production Inc.

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 Ethylene Glycol

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

4. LEASE:

AREA: MC LATITUDE:
BLOCK: 474 LONGITUDE:

5. PLATFORM: A(NA KIKA FPDS)
RIG NAME:

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

10. WATER DEPTH: 6340 FT.
11. DISTANCE FROM SHORE: 59 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 July 11, 2018, at 1200 hours a pollution event discharging an estimated 17,098 gallons of Mono Ethylene Glycol (MEG) occurred at BP Exploration & Production Inc. (BP) Mississippi Canyon (MC) 474-A RUE OCS-G 23624 (Na Kika) Platform following repair work on PZZ 2591/92 MEG pumps.

Sequence of Events:

On July 15, 2018, while performing maintenance work on PZZ-2591/92 MEG pumps, BP production operations observed the MEG consumption was more than usual. While investigating the cause, focus was drawn to the MEG injection line at the umbilical for the MC 608 OCS-G 09838 East Anstey Well EA2. The well was permanently abandoned in 2014. The production operator stated that the pipeline was warm to the touch. The operators started troubleshooting in order to determine the reason the injection line was warm. While troubleshooting, the production operators discovered that the Automatic Operated Valve (AOV) and Shut Down Valve (SDV) were leaking, causing MEG to flow through the valves into the EA2 umbilical circuit and most likely to the Gulf of Mexico (GOM). The valves were immediately isolated and pumps were stopped. The BP operations team performed calculations of the MEG loss, determining the amount of 17,098 gallons leaked. The lost amount of MEG was unrecoverable and assumed to be dissipated before it could reach the surface of the GOM.

BSEE Investigation:

During the BSEE onsite investigation conducted on July 24, 2018, witnesses and management involved with the incident were interviewed. Investigators reviewed documents pertaining to the MEG leak and walked down the topside equipment involved in the incident.

The leak occurred between July 11-15, 2018, with an estimated total of 17,098 gallons (407 bbls) of MEG released subsea from the EA2 umbilical circuit. The operators calculated the volumes pumped from the MEG 21,000 gallon storage tank by running trends on the pumps. The leak to EA2 umbilical went undetected although low and high-pressure alarms were active on the transmitters. The high alarm was never reached during the time of the leak, and the low-pressure alarm only activated when the pumps were shut down.

Conclusion:

The investigation revealed the leaking AOV and SDV to have caused the pollution event. The location of the leak subsea and the dissipation of the pollutant before reaching the GOM surface contributed to the leak being undetected for several days.

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

- Equipment Failure - Inadequate Equipment Inspection: The leaking of the AOV and SDV, allowing MEG to flow through the valves into the EA2 umbilical circuit.

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

- The location of the leak subsea and the dissipation of the pollutant before reaching the GOM surface contributed to the leak being undetected for several days.

20. LIST THE ADDITIONAL INFORMATION:

BP's report contained the following corrective actions:

1. Perform a survey to determine whether any other OOS lines should be positively isolated or documented.
2. Positively isolate the EA-2 MEG line.
3. Consider removing SDV from Sempcheck, safe charts, etc.
4. Plans for P&A of wells should include topsides interfaces for hydraulics, chemical services, HMI, etc.
5. Confirm there are no metallurgy issues for other subsea kit currently in service.
6. Consider monitoring methods to provide earlier detection including a real time "unallocated MEG" calculation to be displayed on the HMI, using the same calculation which were used to estimate the MEG inventory loss or other human monitoring systems to raise awareness.
7. Survey existing services that are shared with multiple wells for any passing AOV's and SDV's and ensure the passing valves are properly labelled and recorded.

21. PROPERTY DAMAGED: **None**

NATURE OF DAMAGE:

N/A

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The BSEE New Orleans District makes no recommendations to the Office of Incident Investigation.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. **E-100 (W) 250.107(a) During the BSEE Investigation, an unauthorized discharge of Ethylene Glycol estimated volume at 17,098 gallons between July 11, 2018 to July 15, 2018 was discharged into the Gulf of Mexico Offshore waters. (NRC Report # 1218851)**

26. **G-132 (W) 250.189 During the BSEE investigation, Lessee failed to notify the BSEE New Orleans District Office of an unauthorized discharge greater than one barrel of liquid pollutants from July 11-15, 2018. Estimated volume discharged of 17,098 gallons of Ethylene Glycol into the Gulf of Mexico offshore waters (NRC Report # 1218851)**

25. DATE OF ONSITE INVESTIGATION: **24-JUL-2018**

28. ACCIDENT CLASSIFICATION:

26. INVESTIGATION TEAM MEMBERS:

Pierre Lanoix

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR: **David Trocquet**

APPROVED DATE: **07-MAY-2019**

