

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

ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: **15-JAN-2022** TIME: **1610** HOURS

2. OPERATOR: **Murphy Exploration & Production** (
REPRESENTATIVE:
TELEPHONE:
CONTRACTOR: **NOBLE DRILLING (U.S.) INC.**
REPRESENTATIVE:
TELEPHONE:

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

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

4. LEASE: **G35864**
AREA: **GC** LATITUDE:
BLOCK: **389** LONGITUDE:

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

5. PLATFORM:
RIG NAME: **NOBLE STANLEY LAFOSSE (FKA PACIFIC SHARAV)**

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

9. CAUSE:

7. TYPE:
INJURIES:
 HISTORIC INJURY
OPERATOR CONTRACTOR

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER **420 bbls. ZnBr2**

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

10. WATER DEPTH: **3604** FT.
11. DISTANCE FROM SHORE: **106** MI.

- POLLUTION
- FIRE
- EXPLOSION

12. WIND DIRECTION: **NW**
SPEED: **69** M.P.H.

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

13. CURRENT DIRECTION:
SPEED: M.P.H.

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

14. SEA STATE: FT.
15. PICTURES TAKEN:
16. STATEMENT TAKEN:

17. INVESTIGATION FINDINGS:

On January 15, 2022, an incident occurred on the drillship Noble Stanley Lafosse which was working under contract for Murphy Exploration and Production Company. Completion operations were being conducted at Green Canyon Block 389, OCS-G35864 Well SS01. There was a reported discharge of approximately of 558 barrels of Zinc Bromide (ZnBr₂) into the Gulf of Mexico due to the activation of the Emergency Disconnect Sequence (EDS) on the Lower Marine Riser Package (LMRP) due to inclement weather.

On January 14, 2022, the operator had just finished fracking the well and tested the Gravel Pack Assembly and the Mechanical Closing Sleeves (MCS) to 1,000 psi for 10 minutes resulting in a good test. The drill crew proceeded to pull out of the hole (POOH) with the drill string while monitoring the trip tank for proper displacement.

On January 15, 2022, at 00:07 hours, the operator received verbal approval from the BSEE Houma District to prepare the wellbore as requested for a weather event. After holding a Pre-Job Safety Meeting, the lower blind shear rams (LBSR) were closed to test the LBSR, Gravel Pack Assembly and the closed MCS with 15.1 pounds per gallon (PPG) ZnBr₂ which resulted in a failed pressure test. An attempt was made to test again closing the Upper Blind Shear Rams (UBSR) resulting in another failed pressure test. The operator decided to have the drill crew make up a weighted bottom hole assembly (BHA) to hang below the storm packer and trip in the hole (TIH). On January 15, 2022, at 14:21 hours, the operator received verbal approval to proceed with running the storm packer as requested and retest the blind shear rams. At 15:00 hours, the drill crew was instructed by the operator to stop TIH in the hole, and at 15:30 hours, to start POOH after a discussion with their management in town. At approximately 16:10 hours, the weather event occurred which compromised the rig's Dynamic Position (DP) into a red alert status. The EDS sequence was initiated from the drill floor panel and the LMRP was unlatched from the Blow Out Preventers (BOP). All the BOP fail safe valves, UBSR, and LBSR were confirmed closed and the rig transited 30 meters to the south of the well location, arriving in the safe zone area at approximately 16:29 hours. Visual deck checks for damage were made with none noted and a calculated volume of 15.1 PPG ZnBr₂ lost in the Gulf of Mexico was estimated to be 558 barrels.

Due to Covid-19 pandemic protocols, the Bureau of Safety and Environmental Enforcement (BSEE) team was unable to conduct an initial onsite investigation at the time of this incident. However, an investigation team was able to collect documentation and photos furnished by the operator at the team's request. The investigation team reviewed the documentation and noted that the operator had set the gravel pack assembly and pumped the frac pack. The frac sleeves were closed and a successful 1000-pound pressure test was performed on the gravel pack assembly and the sliding sleeves before POOH. Due to inclement weather approaching, the operator submitted a procedure to the BSEE Houma District in preparation if an EDS sequence was initiated to disconnect the LMRP from the BOP. The kill line was displaced with seawater and then closed. The LBSR were then closed, a 250 PSI low pressure test was initiated and successful, immediately followed by a high-pressure test of 1,000 psi. This test failed and the operator began to troubleshoot by investigating for leaks on the surface BOP equipment but to no success. The UBSR were then closed, and a similar 1,000 psi test was performed, resulting in a failed test. With the leak suspected to be below the BSRs due to no gains in the trip tank while pressure testing, the operator was granted approval from the BSEE Houma District to set a storm packer below the BSRs. At 12:00 hours on January 15, 2022, a storm packer assembly was made up and ran in the hole, but with the weather conditions worsening, the operator decided to stop TIH. At 15:30 hours, the drill crew started POOH to displace the riser with seawater. At approximately 16:10 hours on January 15, 2022, the drillship's DP position was compromised into a red alert status due to high winds and a misaligned thruster. The EDS sequence was initiated from the drill floor panel, successfully disconnecting the LMRP from the BOP stack. All BOP fail safe valves, UBSR, and LBSR were confirmed closed and the LBSR

moved to the block position as per EDS sequence initiation. The drillship proceeded to the safe zone and waited on the weather conditions to subside.

The team determined that on January 15, 2022, the operator failed to complete the submitted Well Suspension Procedure in a safe and timely manner knowing inclement weather was approaching. This resulted in an EDS instead of a planned and safe disconnect of the LMRP. At the time of the EDS, Noble estimated that 558 barrels of ZnBr₂ from the riser was discharged into the Gulf of Mexico, but revised the amount to approximately 420 barrels based on calculations from recovered volumes.

The investigation team also noted in reviewing the operator's investigation report that there was an issue with Thruster-2 when it was enabled in the DP system. Thruster-2 is located on the port bow and was found to be 180 degrees out of alignment. As the DP system detected an increase in wind speed, the thrust commands were increased towards the wind to maintain the drillship's position. When the DP system increased the thrust on Thruster-2, it increased but in the opposite direction, thus going in the same direction as the wind. Due to sudden changes in the wind direction and speed triggered significant forces from Thruster-2 causing the drillship to not maintain its position.

Since this incident, the operator has corrected the misalignment of Thruster-2 and will perform a DP and Thruster Control System verification by the manufacturer.

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

Misalignment of thruster # 2.
Inclement weather.

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

Operator failed to complete the submitted Well Suspension Procedure in a safe and timely manner knowing inclement weather was approaching.

20. LIST THE ADDITIONAL INFORMATION:

n/a

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

N/A

N/A

ESTIMATED AMOUNT (TOTAL): \$

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

BSEE Houma District has no recommendations for the office of Incident Investigations at this time.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

2 INC's issued for this incident:

E-100 On January 15, 2022 the rig entered the red watch circle and an Emergency Disconnect Sequence occurred. This resulted in unauthorized discharge of 550 barrels of Zinc Bromide (ZnBr₂) spilling into the Gulf of Mexico.

G-110 On January 15, 2022 the Operator failed to complete the submitted Well Suspension Procedure in a safe and timely manner knowing inclement weather was approaching, resulting in an Emergency Disconnect Sequence (EDS) instead of a planned and safe disconnect of the Lower Marine Riser Package (LMRP). At the time of EDS 550 barrels of Zinc Bromide

(ZnBr2)from the riser was discharged into the Gulf of Mexico. Operator is required to send a letter of explanation to the Houma District Office addressing this INC and detailing how it will be prevented in the future.

25. DATE OF ONSITE INVESTIGATION:

27-JAN-2022

28. ACCIDENT CLASSIFICATION:

26. INVESTIGATION TEAM MEMBERS:

Chris Treland / Cedric Bernard / Robert Reeves (Author) /

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

27. OPERATOR REPORT ON FILE:

30. DISTRICT SUPERVISOR: **Amy**

Pellegrin

APPROVED

DATE:

23-MAY-2022