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: **01-APR-2022** TIME: **0815** HOURS
2. OPERATOR: **Shell Offshore Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **Helix Well Ops Group**
   REPRESENTATIVE:
   TELEPHONE:

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

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

4. LEASE: **G19409**
   AREA: **AC** LATITUDE:
   BLOCK: **815** LONGITUDE:

5. PLATFORM:
   RIG NAME: **HELIX Q-4000**

6. ACTIVITY:
   - [ ] EXPLORATION(POE)
   - [X] DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:
   INJURIES:
   - [ ] HISTORIC INJURY

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

   - [ ] POLLUTION
   - [ ] FIRE
   - [ ] EXPLOSION

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

   COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

8. OPERATION:
   - [ ] PRODUCTION
   - [ ] DRILLING
   - [ ] WORKOVER
   - [ ] COMPLETION
   - [ ] HELICOPTER
   - [ ] MOTOR VESSEL
   - [ ] PIPELINE SEGMENT NO.
   - [X] OTHER **Abandonment**

9. CAUSE:
   - [ ] EQUIPMENT FAILURE
   - [X] HUMAN ERROR
   - [ ] EXTERNAL DAMAGE
   - [ ] SLIP/TRIP/FALL
   - [ ] WEATHER RELATED
   - [ ] LEAK
   - [ ] UPSET H2O TREATING
   - [ ] OVERBOARD DRILLING FLUID
   - [ ] OTHER _____

10. WATER DEPTH: **9356** FT.
11. DISTANCE FROM SHORE: **159** 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:

Summary

On 1 April 2022, Shell Offshore, Inc. (Shell) reported an incident concerning the disconnection of Heavy Weight Drill Pipe (HWDP) and Bottom Hole Assembly (BHA) dropping to the sea floor. The incident occurred on Shell's G-19409 Lease located in Alaminos Canyon (AC) 815, well SA001, while conducting well abandonment operations from the Helix Q-4000.

Sequence of events

On 1 April 2022, during well abandonment operations, the Helix Q-4000 semi-submersible rig was conducting wireline logging operations over the side of the of the Q-4000 in well SA001, while simultaneously making up drill pipe in open water. At 08:20 it was identified via the Q-4000 remote operated vehicle (ROV) monitor, the Bottom Hole Assembly (BHA) was no longer attached to the drill string. The HWDP and attached BHA weighed 6000 pounds and was 123 feet long. Shell Drilling Supervisor ceased drilling operations aboard the Q-4000 and notified the Perdido Spar of the incident. Following notification of the incident to Perdido Spar, the Senior Production Operator shut-in the Silvertip subsea infrastructure. At 13:30 the MV ROV began a 14-element survey inspection of the subsea infrastructure. The survey inspection was completed and sent to BSEE on 1 April 2022 at 20:55. The Helix Q-4000 crew estimated three sections of 5-7/8" HWDP and the mule shoe were no longer attached to the bottom of the drill string. After the MV ROV completed the site survey and found no infrastructure damage, the ROV was began to search the sea floor for the lost drill string section. The MV found the disconnected HWDP and BHA, 92 meters from well center, and 377 meters from the center of the safe operating zone. The MV confirmed that four sections of HWDP and the BHA had disconnected from the drill string.

Investigation

On 1 April 2022, the BSEE Accident Investigator (AI) was onsite conducting a follow up inspection for a previous incident. Investigator arrived 40 minutes after the lost BHA was identified at 08:20. The crew did not mention the incident to the onboard BSEE investigator. BSEE was notified of the incident at 13:50 via phone by the Shell Duty Engineer 4 hours after the BSEE AI departed the facility. Due to the pandemic, scheduling and the departure of the Q-4000 the district was unable to complete an onsite investigation.

BSEE requested statements, procedure in use, job safety analysis, data log of drill string weight indicator, maintenance, and calibration logs for the Iron Roughneck. Maintenance and calibration of the Iron Roughneck was found to be acceptable. Review of the drill string weight indicator data log identified a loss of five thousand pounds on 31 March 2022 at 15:42. This indicates the (4) sections of HWDP with the bottom hole assembly mule shoe separated from the drill string at that time, while the rig was 92 meters south of well center. While pulling the remaining drill string to surface, all connections were checked and found to be properly torqued using the Iron Roughneck. Photographic documentation of the threaded end (pin) connection, where the drill string separated, showed no visual evidence of damage or excessive wear. After recovery of the dropped sections of pipe, photographic documentation of the threaded end (box) connection, showed no visual evidence of damage or excessive wear. An in-depth DS-1 Cat 5 inspection (measurements and ultrasonic testing) of the threaded box connection was conducted in Houma Louisiana. All measurements were within limits and no defects were found during ultrasonic testing. These findings indicate the HWDP was suitable for use.

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

Human Error

Operator failed to properly torque the drill pipe connection

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

Human Error.
Drill crew failed to torque and verify the torque of the connection.
Movement of the rig between the safe zone and well center, and underlying sea currents, provided the force required to unscrew the drill string

20. LIST THE ADDITIONAL INFORMATION:

Visual inspection of the threaded connections that separated showed no signs of damage.
Ultrasonic inspection did not reveal any damage, excessive wear or anomalies in the drill pipe connections.
DS-1 Cat 5 inspection completed on the HWDP.

21. PROPERTY DAMAGED:

Cost of recovery and inspection of HDWP is estimated at $2,300,000.

NATURE OF DAMAGE:

Drill-pipe Was cut into three sections for recovery.

ESTIMATED AMOUNT (TOTAL): **$2,300,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

Lessee failed to perform all operations in a safe and workman like manner. On 31 March 2022 at 3:42 pm the Q-4000 lost approximately 5000 pounds of weight from the drill string in open water. The missing four joints of 5-7/8" Heavy Weight Drill Pipe (HWDP) and Bottom Hole Assembly (BHA) was identified as missing on 1 April 2022 at 08:20 am during the Remote Operated Vehicle (ROV) Inspection of the drill string. The Lessee failed to identify the missing weight from the drill string for over 16 hours. The cause for the dropped pipe and BHA appears to be a single improperly torqued connection of 5-7/8" HWDP. The dropped pipe and BHA came to rest 92 feet from well center. This failure could have severely impacted the subsea infrastructure.
Lessee needs to ensure all drill string connections are properly torqued to required specifications.

25. DATE OF ONSITE INVESTIGATION:

26. INVESTIGATION TEAM MEMBERS:

Perry Brady /

27. OPERATOR REPORT ON FILE:

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Stephen Martinez