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: **20-NOV-2021** TIME: **0215** HOURS
2. OPERATOR: **Shell Offshore Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **Transocean Offshore**
   REPRESENTATIVE:
   TELEPHONE:

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

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

4. LEASE: **G08852**
   AREA: **MC** LATITUDE:
   BLOCK: **764** LONGITUDE:

5. PLATFORM:
   RIG NAME: **T.O. DEEPWATER PONTUS**

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
- [X] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [ ] OTHER

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

10. WATER DEPTH: **3291** FT.
11. DISTANCE FROM SHORE: **46** MI.
12. WIND DIRECTION: **NE**
    SPEED: **14** M.P.H.
13. CURRENT DIRECTION: **ESE**
    SPEED: **1** M.P.H.
14. SEA STATE: **0** FT.
15. PICTURES TAKEN:
16. STATEMENT TAKEN:

INCIDENT SUMMARY:

On November 20, 2021, at 02:15 hours, Shell Offshore Inc. (Shell) incurred an incident onboard the Transocean Deepwater Pontus Drillship while performing well completion operations on the King Embayment (KE) 002 Well located in Mississippi Canyon Block 764. The incident involved the riser system and subsea blowout preventer (BOP/lower marine riser package (LMRP) unexpectedly dropping approximately 15 feet contacting the KE002 Well housing. There was no environmental release or injuries reported. Shell reported the incident to the Bureau of Safety and Environmental (BSEE) New Orleans District.

SEQUENCE OF EVENTS:

On November 20, 2021, Shell had just finished installing the upper completion on the KE002 well. The planned operations were to unlatch the blowout preventers (BOP), install the tree and hop (move) to the next well.

The unlatch and hop plan was supported by Transocean's procedures for "Utilizing BLAT (BOP Landing Assist Tool) to unlatch/latch BOP."

The procedures consisted of transferring weight to the traveling block by connecting the BLAT to the inside of the riser approximately 133 feet below the drill floor. The operation consisted of making up the Cameron BLAT on drill pipe, then lowering the BLAT through the riser to inside the BLAT's riser sub and extending the BLAT's load dogs inside the riser sub lifting profile.

The BOP was unlatched from the KE002 well with the aid of the BLAT, the BOP was lifted 15 feet above the wellhead utilizing the drillship's tensioners and travel block. The weight of the riser/ BOP/ LMRP string was predetermined to be split 40/60 with the tensioners carrying 40% and the travel block carrying 60% of the load.

The driller stopped the lift to facilitate the rig move to a safe work location. Then about 45 seconds after stopping, the BOP descended in an uncontrolled manner and struck the wellhead. The BOP subsequently bent sideways, parted from the riser string at the riser adapter and fell onto the seafloor.

According to the Tool Pusher's written statements on November 20, 2021, at approximately 0000 hours the BLAT assembly was picked up off the skate. The well operation crew vertically suspended, function tested, and visually inspected the BLAT assembly on surface. With the rig oriented in the proper 270-degree un-latch heading, the BLAT assembly was run in the riser on drill pipe to 133 feet below the drill floor.

The driller set down 5,000 to 9,000 lbs of weight on the BLAT profile and turned the assembly 1/4 to 1/2 of a turn in the clockwise (CW) direction using the chain tongs. Due to rig movement, the pipe handler was used to rotate the tool string counterclockwise (CCW). The driller rotated the tool string 8.5 turns CCW. The driller then performed a 150,000 lb overpull on the tool string.

The driller then slacked off to maintain a 30,000 to 50,000 lb overpull on the tool string. With the travel block maintaining an upward lifting force on the tool string of 30,000 to 50,000 lbs over the tool string weight. The subsea crew proceeded to transfer a portion of the riser weight from the tensioners to the travel block and perform a 60% travel block/40% tensioner split. The subsea engineer then gave the order for the BOP to unlatch from the high-pressure wellhead housing.

According to the Tool Pusher's statement, the driller needed to chase (pick up) the weight back and forth while the active heave was in the “on” position. The driller set the landing weights in landing mode (900k lb min/950k lb max). The remote operating vehicle (ROV) lock and un-lock functions were then performed. The landing mode was then turned off and the driller proceeded to hoist the BOP and riser. As soon as the planned pick-up height (approximately 15 feet) was obtained, the BOP descended abruptly on top of the wellhead.

BSEE INVESTIGATION:

On November 23, 2021, BSEE personnel performed an onsite investigation. During the onsite investigation, BSEE received documentation, conducted interviews, and took pictures of the relevant equipment.

BSEE discovered the following during the investigation:
- According the ROV video provided to BSEE, the hook load just prior to dropping the BOP was 1,161,610 lbs. The approximate hook load after dropping the BOP was 201,000 lbs. The differential between the two hook load weights (also considered the weight dropped) is 960,610 lbs.

- According to the BLAT’s original equipment manufacturer documentation supplied by Shell, the BLAT has an operational rating of 1.5 million lbs. This indicates the BLAT tool should have held the 960,610 lbs without risk of exceeding the tool's operational limit.

- BSEE personnel performed an onsite investigation after the BLAT tool string and the BLAT Riser Joint were recovered and laid on the deck to view.

- BSEE investigators did not observe scratch marks on the BLAT riser joint’s designated “load dog” profile area or on the key slot area. This would indicate the load dogs were not fully extended and locked inside the BLAT’s riser joint load dog profile during the riser/BOP lift.

- BSEE investigators observed scratch marks on the interior portion of the BLAT riser joint. The scratch marks were spaced and shaped in a way to resemble the BLAT’s load dogs. The marks were located above the key slot area on the first tapered profile with a smaller ID above the key slot area. This indicates the load dogs were extended in the (wrong) upper profile area.

- BSEE investigators observed the BLAT’s load dogs were extended approximately 50% of the fully extended position. The dog retrieval key’s position also reflected the 50% extension of the load dogs. This could indicate the dogs were extended to 50% in the wrong area at the time of the lift.

CONCLUSIONS:

The BSEE's conclusion is based on observations made during the investigation, through interviews, and documents collected from Shell. When the BLAT was installed inside the BLAT riser profile, the weather was less than ideal. Due to rig movement caused by weather, the pipe handler was used to rotate the tool string counterclockwise (CCW). The procedure required 5,000 lbs to be set down on the BLAT profile while making the 8 CCW turns. However, the tool pusher noted the driller needed to chase the weight back and forth while the active heave drawworks was in the “on” position. The 5,000 lb set down weight would be difficult to obtain in these conditions.

On December 2, 2021, Shell started their BOP/LMRP recovery operations to retrieve the

Deepwater Pontus BOP from the seafloor. The BOP was located at the MC 764, KE002 wellhead and it was secured onboard the Transocean Deepwater Pontus.

The BOP had moved approximately 27 feet from the KE002 wellhead. The recovery of the BOP required simultaneously jetting the soil below the bottom plate of the BOP (to break the suction effect of the sea floor) and applying 980,000 lbs of vertical pull utilizing a spear assembly.

The spear and the existing rigging arrangement had the potential to pull a combined 2,000,000 lbs but the breakout value was expected to be much less. On December 18, 2021, the BOP/LMRP was recovered to surface.

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

-BOP Landing Assist Tool (BLAT) was not correctly engaged/installed in the BLAT riser spool.

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

-Weather conditions forced the driller to chase (pick up and down) the tool set-down weight while the active heave drawworks was in the “on” position.
-Transocean’s rig procedure, (“Utilizing BLAT to Latch/Unlatch”) was not followed. The procedure indicated using two chain tongs to rotate the pipe, however, the pipe handler was used.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED: NATURE OF DAMAGE:

pipe handler, funnel guide, tubing head spool, tubing hanger, 1-joint of riser

ESTIMATED AMOUNT (TOTAL): **$28,000,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The BSEE New Orleans District has no recommendations for the Office of Incident Investigations at this time.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **NO**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

23-NOV-2021

26. INVESTIGATION TEAM MEMBERS:

Frank Musacchia / Jason Schollian /

27. OPERATOR REPORT ON FILE:

28. ACCIDENT CLASSIFICATION:

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

David Trocquet

APPROVED DATE: **05-APR-2022**