

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-JAN-2015** TIME: **0100** HOURS

2. OPERATOR: **BHP Billiton Petroleum (GOM) Inc.**

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: **Transocean Offshore -**

REPRESENTATIVE:

TELEPHONE:

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

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

6. OPERATION:

4. LEASE: **G16765**

AREA: **GC** LATITUDE:

BLOCK: **610** LONGITUDE: -

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

5. PLATFORM:

RIG NAME: **T.O. DEEPWATER INVICTUS**

6. ACTIVITY:

- EXPLORATION (POE)
- DEVELOPMENT/PRODUCTION (DOCD/POD)

8. CAUSE:

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE -
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER _____

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. WATER DEPTH: **4275** FT.

10. DISTANCE FROM SHORE: **112** MI.

11. WIND DIRECTION: **WNW** -
SPEED: **10** M.P.H.

12. CURRENT DIRECTION: **NW**
SPEED: **3** M.P.H.

13. SEA STATE: **4** FT.

On January 25, 2015, the Driller noticed an increase in torque on the MDDM (Modular Derrick Drilling Machine) of the rig. As he reduced the torque, a loud noise was heard coming from the top drive, followed by an actuator plate falling to the rig floor. It was discovered that the bolts for the upper actuator plate in the top drive had been sheared, allowing the plate to fall approximately 90 feet to the rig floor. After inspecting the equipment, the crew found that one of the bolts located on the middle actuator plate had also been sheared, although the plate remained in place. The actuator plate's dimensions were 10" x 7.5" x 1.5" and weighed 19 pounds.

At the time of the incident, all crew members were located outside of the area where the plate struck the floor due to the rigs 'Red Zone' restrictions. The 'Red Zone' is an area of the drill floor that personnel are instructed to stay clear of while certain operations are taking place. The Driller spaced out the drill pipe and checked the well to make sure it was not flowing. The area was secured and the crew began an investigation into the incident.

MHWirth/Aker (the equipment manufacturer) was contacted and they sent their technical advisors to evaluate the cause of the bolts shearing off of the actuator plates. MHWirth/Aker stated the tolerances were too tight between the actuator plates and the lever arms, which occasionally allowed the plates and arms to come into contact while drilling/rotating. The large amount of force was enough to shear the bolts and allow the plates to fall.

MHWirth/Aker's recommended action to correct this issue was to machine grind the areas which were at risk for impact on the plates and the lever arms. They also slightly repositioned the fork assembly for the lever arm to give even more clearance. Once all of this work had been done to MHWirth/Aker's liking, they issued a new Certificate of Compliance for the equipment.

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

-The tight tolerances between the actuator plates and lever arms on the top drive were allowing impact to occur during drilling operations.

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

N/A

20. LIST THE ADDITIONAL INFORMATION:

Further investigation revealed this to be a problem with all like equipment by MHWirth/Aker. BSEE notified all rigs that had the same equipment of the safety concerns and had them make the appropriate corrections.-

21. PROPERTY DAMAGED:

N/A

NATURE OF DAMAGE:

N/A

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ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The Houma District has no recommendations for the BSEE Region at this time.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

N/A

25. DATE OF ONSITE INVESTIGATION:

11-FEB-2015

26. ONSITE TEAM MEMBERS:

**James Richard / Josh Ladner / Clint
Campo / Jerry Freeman /**

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan Domangue

APPROVED

DATE: **30-MAR-2015**