

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: **23-MAY-2014** TIME: **2300** HOURS

2. OPERATOR: **Apache Deepwater LLC**

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: **Diamond Offshore Drilling, Inc.**

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- 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:

6. OPERATION:

4. LEASE: **G31613**

AREA: **GB** LATITUDE: **27.79830694**
BLOCK: **213** LONGITUDE: **-92.14269583**

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

5. PLATFORM:

RIG NAME: **DIAMOND OCEAN ONYX**

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: **919** FT.
10. DISTANCE FROM SHORE: **113** MI.
11. WIND DIRECTION: **E**
SPEED: **10** M.P.H.
12. CURRENT DIRECTION: **NNE**
SPEED: **1** M.P.H.
13. SEA STATE: **3** FT.

17. INVESTIGATION FINDINGS:-

At approximately 23:00 hours on 23 May 2014, the Diamond Ocean Onyx semi-submersible, moored, drilling rig under contract to Apache Deepwater LLC (Apache) reported an initial loss of 107 barrels (bbl) of 16.9 pounds per gallon (ppg) of synthetic base mud (SBM) during abandonment operations on Well #1 (Bimini Well) permitted at the subsurface location of Garden Banks (GB) Block 213; surface location at GB Block 169. However, after strapping calculations were completed, the SBM discharge amount was revised from 107 bbl to 61 bbl. There were no injuries or property damage during this incident.

Prior to the SBM spill, the mud line from the Mud Pit Room to the auxiliary recirculation line on the Schlumberger Cement Unit had blockage and required cleaning. Several attempts to remove the blockage between Batch Mixing Tank #2 and Cement Unit by flushing with water were unsuccessful; therefore, the line was removed, cleaned out and reinstalled. While cleaning out the line, the two mud line valves were functioned several times but were left in the open position.

At approximately 22:45 hours, the Schlumberger Cementer began mixing cement from Batch Mixing Tank #2 to the Cement Unit Auxiliary Tub. When he began pumping the first 8 bbl of cement, the Diamond Ocean Toolpusher observed that Batch Mixing Tank #2 was over flowing and discovered that SBM was spilling into the Gulf of Mexico. The Diamond Ocean Toolpusher responded by closing the two open valves on the overboard drain line located below the Main Deck at 23:30 hours that prevented any additional SBM discharge.

On Tuesday 27 May 2014, Bureau of Safety & Environmental Enforcement (BSEE) inspectors from the Lafayette District mobilized to the Diamond Ocean Onyx rig located at the surface location of GB Block 169 to conduct an incident investigation. BSEE inspectors met with representatives from Apache, Diamond Ocean and Schlumberger and obtained documentation related to the SBM spill. The Apache Company Man informed BSEE that a total of 61 bbl of SBM was discharged into the Gulf of which approximately 26 bbl consisted of synthetic based oil. Apache reported that the preliminary cause of the SBM spill was attributed to improperly aligned mud line valves on the Schlumberger Cement Unit. The Schlumberger Cement Unit mud line valves were left in the open position that allowed the SBM to overflow from the 50 bbl Batch Mixing Tank #2 and the Cement Unit 15 bbl Auxiliary Tub. The SBM spilled into the secondary containment areas for both vessels, then flowed into drains that lead to the overboard discharge line. Since the overboard discharge line valves were also left in the open position, this provided a conduit for the SBM to spill into the offshore waters.

Incident investigations conducted by Apache and Schlumberger have attributed the probable causes of the SBM spill to the Cement Unit mud line valves that connected the mud line to auxiliary recirculation lines that were left in the open position after cleaning and were not checked to verify their position prior to the cement job.

The contributing causes to the SBM spill identified by Apache and Schlumberger included: 1) the design of the Cement Unit package did not provide the Cementer with a clear view to monitor Batch Mixing Tank #2 nor was it equipped with a device to remotely monitor the fluid level in the tank; 2) inadequate cement unit start-up procedures; 3) the failure to identify risk associated with handling of SBM with the Cement Unit; and 4) the two valves on the rig's overboard discharge line were in the open position during the cement that provided a pathway for the SBM to spill into offshore waters.

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

Incident investigations conducted by Apache and Schlumberger have attributed the probable causes of the SBM spill to the Cement Unit mud line valves that connected the mud line to auxiliary recirculation lines that were left in the open position after cleaning and were not checked to verify their alignment prior to the cement job.

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

The contributing causes to the SBM spill identified by Apache and Schlumberger included: 1) the design of the Cement Unit package did not provide the Cementer with a clear view to monitor Batch Mixing Tank #2 nor was it equipped with a device to remotely monitor the fluid level in the tank; 2) inadequate cement unit start-up procedures; 3) the failure to identify risk associated with handling of SBM with the Cement Unit; and 4) the two valves on the rig's overboard discharge line were in the open position during the cement job and that provided a pathway for the SBM to spill into offshore waters.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

No property was damaged during this incident.

NATURE OF DAMAGE:

Not applicable.

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The BSEE Lafayette District makes no recommendations to the Office of Safety Management.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

Based on the incident investigation findings, a G-110 Incident of Non-Compliance was issued to Apache Deepwater, LLC (Apache) on 27 May 2014 to document its failure to protect health, safety, property, and the environment by performing operations in an unsafe and unworkmanlike manner. On 23 May 2014, Apache allowed an unauthorized discharge of 61 bbl of 16.9 ppg SBM into the Gulf of Mexico from open valves on the Cement Unit mud line and the overboard discharge line.

25. DATE OF ONSITE INVESTIGATION:

27-MAY-2014

26. ONSITE TEAM MEMBERS:

Troy Naquin /

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott S. Smith

APPROVED

DATE: **28-JUL-2014**