UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

1. OCCURRED
DATE: **17-AUG-2006** TIME: **0200** HOURS

2. OPERATOR: **BHP Billiton Petroleum (GOM) Inc.**
REPRESENTATIVE: **Mark Jackson**
TELEPHONE: **(281) 925-7600**
CONTRACTOR: **Global Marine Drilling Co.**
REPRESENTATIVE: **Andy Dywan**
TELEPHONE: **(713) 599-6303**

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

4. LEASE: **G08035**
AREA: **AT** LATITUDE:
BLOCK: **574** LONGITUDE:

5. PLATFORM:
RIG NAME: **GSF DEVELOPMENT DRILLER I**

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

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
- [X] POLLUTION
- [ ] FIRE
- [ ] EXPLOSION
- LWC
  - [ ] HISTORIC BLOWOUT
  - [ ] UNDERGROUND
  - [ ] SURFACE
  - [ ] DEVERTER
  - [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES
- COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K
- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING DEVICE
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [ ] INCIDENT >$25K
- [ ] H2S/15MIN./20PPM
- [ ] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [X] OTHER **Pollution**

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

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

9. WATER DEPTH: **6213** FT.

10. DISTANCE FROM SHORE: **100** MI.

11. WIND DIRECTION: **NE**
SPEED: **5** M.P.H.

12. CURRENT DIRECTION: **E**
SPEED: **1** M.P.H.

13. SEA STATE: **2** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

While a Subsea engineer was carrying out his daily check around 01.00 am (third check on the night), he observed fluid on the moonpool deck. He went to observe tensioner # 11 and # 12 and noticed the "can catchers" were overflowing with tensioner fluid, he continued to go to tensioner # 9 and # 10 and they were the same, the can catchers were overflowing. The Toolpusher was notified and Subsea engineer made his was to the rig floor and noticed when he brought up the riser tensioner screen on the X-Com panel that "RARS Recoil Mode Activated" red alarm. This was reset and when looking at the tensioner pairs (#11 and # 12) across the readings were approximately 305 Kips each. They were brought up to 333 kips each.

Findings:

1. On 08/16/06 the BOP was tested, at 18:30 hours the Subsea engineer switched from Sem A to Sem B on the inactive blue pod on the BOP stack. (Sem is a control computer in the pod). The switching resulted in a spurious signal being sent the BOP control computer on surface indicating that the LMRP had released. The BOP control computer then sends a signal to the riser tensioner system which in turns actives the Olmsted valves on the tensioners venting hydraulic fluid. However, in this case the venting went unnoticed for 7 hours. In total 500 gallons were vented, 50 gallons remain in the vent tanks, 200 gallons was contained on the deck and a catch pan and 250 gallons spilled into the sea.

2. Riser recoil system was not physically activated by anyone on the rig floor.

3. Recoil system when fired is designed to release fluid out the Olmstead valve.

4. NOV continued checking the alarms and data logger for problems. Also contacted Sense Norway to down load data information and send to rig.

5. The LMRP did not disconnect and riser integrity maintained through the incident.

6. The BOP vender is working on a software solution to the problem. The alarm system is being revised.

7. Presently a strict monitoring program is in place to identify any repeat of the event.

8. Recoil alarm is set at the lowest priority which does not give the Driller an audible alarm and there is no pop up screen. In this case the venting went unnoticed on for seven hours.

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

On 08/16/06 the BOP was tested, at 18:30 hours the Subsea engineer switched from Sem A to Sem B on the inactive blue pod on the BOP stack. (Sem is a control computer in the pod). The switching resulted in a spurious signal being sent the BOP control computer on surface indicating that the LMRP had released. The BOP control computer then sends a signal to the riser tensioner system which in turns actives the valves, Olmsted valves, on the tensioners venting hydraulic fluid. However, in this case the venting went unnoticed for 7 hours. In total 500 gallons were vented, 50 gallons remain in the

vent tanks, 200 gallons was contained on the deck and a catch pan and 250 gallons spilled into the sea.

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

Recoil alarm is set at the lowest priority which does not give the Driller an audible alarm and there is no pop up screen.

21. PROPERTY DAMAGED: NATURE OF DAMAGE:

250 gallons of hydraulic fluid. **Lost overboard**

ESTIMATED AMOUNT (TOTAL): **$3,250**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

No recommendations to MMS

The MMS concurs with the Operators recommendations to prevent recurrence.

1. In the mean time we are pulling the fuse and jumpers between Hydril and NOV recoil system during a SEM switch which eliminates the possibility of firing the recoil system.

2. We are looking into a modification which will return the fluid from the overflow tank back to the high pressure accumulator, in other words making it a closed loop system which would reduce the possibility of fluid discharge.

3. Hydril is working on a software fix which will not be implemented until they have one and the LMRP/BOP's must be unlatched. We would prefer to do this software upgrade once the BOP is back on surface due to the whole system will require rebooting.

4. We have requested for Sense to change the alarm priority from low to high which will give the Driller an audible and pop-up screen alarm. This software change can not be performed during normal Drilling operations.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

26. ONSITE TEAM MEMBERS:

n/a /

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

FPausina for TTrosclair

APPROVED

DATE: **16-OCT-2006**

POLLUTION ATTACHMENT

1. VOLUME: GAL **5.95** BBL

   YARDS LONG X YARDS WIDE

   APPEARANCE:

2. TYPE OF HYDROCARBON RELEASED:
   - ☐ OIL
   - ☐ DIESEL
   - ☐ CONDENSATE
   - ☒ HYDRAULIC
   - ☐ NATURAL GAS
   - ☐ OTHER _____

3. SOURCE OF HYDROCARBON RELEASED: **Riser tensioner can catchers.**

4. WERE SAMPLES TAKEN? **NO**

5. WAS CLEANUP EQUIPMENT ACTIVATED? **NO**

   IF SO, TYPE:
   - ☐ SKIMMER
   - ☐ CONTAINMENT BOOM
   - ☐ ABSORPTION EQUIPMENT
   - ☐ DISPERSANTS
   - ☐ OTHER _____

6. ESTIMATED RECOVERY: **0** GAL BBL

7. RESPONSE TIME: HOURS

8. IS THE POLLUTION IN THE PROXIMITY OF AN ENVIRONMENTALLY SENSITIVE AREA (CLASS I)? **NO**

9. HAS REGION OIL SPILL TASK FORCE BEEN NOTIFIED? **NO**

10. CONTACTED SHORE: **NO** IF YES, WHERE:

11. WERE ANY LIVE ANIMALS OBSERVED NEAR: **NO**

12. WERE ANY OILED OR DEAD ANIMALS OBSERVED NEAR SPILL: **NO**