

UNITED STATES DEPARTMENT OF THE INTERIOR  
 MINERALS MANAGEMENT SERVICE  
 GULF OF MEXICO REGION  
**ACCIDENT INVESTIGATION REPORT**

1. OCCURRED  
 DATE: **08-JAN-2009** TIME: **0130** HOURS

2. OPERATOR: **Apache Corporation**  
 REPRESENTATIVE: **Dugas, David**  
 TELEPHONE: **(337) 354-8124**  
 CONTRACTOR: **Helmerich & Payne**  
 REPRESENTATIVE: **Deer, Wade**  
 TELEPHONE: **(800) 647-5338**

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

4. LEASE: **G21685**  
 AREA: **ST** LATITUDE:  
 BLOCK: **308** LONGITUDE:

5. PLATFORM: **A (Tarantula)**  
 RIG NAME: **H&P 105**

6. ACTIVITY:  EXPLORATION (POE)  
 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
- 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
- OTHER

6. OPERATION:

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

8. CAUSE:

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

9. WATER DEPTH: **484** FT.

10. DISTANCE FROM SHORE: **66** MI.

11. WIND DIRECTION: **N**  
 SPEED: **1** M.P.H.

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

13. SEA STATE: FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

With routine circulating and conditioning operations in progress, the driller's instrument display indicated flow had stopped from the mud pumps, indicating a loss of power to the pumps. At the same time, rig personnel noticed smoke coming from the rig's engine room. As two rig hands approached the engine room, fire was observed coming from the #3 engine. The rig's fire alarm was sounded and the platform's Emergency Shut Down (ESD) system was activated to shut-in the production process. The well was overbalanced with no flow observed after the mud pumps lost power. The well was secured with the closing of the Blow Out Preventer (BOP). Rig and platform personnel mustered, but did not evacuate, while the initial response team assembled and responded to the fire. The fire was contained after approximately one hour by using hand held extinguishers and light water from the platforms fire water system. The damage was confined to the engine room. Four of the rig's crew were treated for minor smoke inhalation with no other injuries and no fatalities or pollution.

The rig's power was able to be restored, in part, with power returning to engine's #1 & #2 in order to reestablish circulation in the well. The well remained in a circulation and monitoring condition until all repairs were made to the engine room and the rig's power system was restored in full. All repairs and recommissioning was completed on 12-Jan-09. All used dry chemical was replenished and drilling operations resumed.

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

A failed check valve assembly on the #3 engine's diesel return line resulted in fuel escaping. The uncontained fuel came into contact with the engine and was ignited by its heat.

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

It was discovered that some of the threads on the connection for the check valve assembly were partially flattened. The nature of the damage to the threads gives way to an external side-loading force having been applied to the area. The specific nature of the force and exactly when it occurred is unknown.

20. LIST THE ADDITIONAL INFORMATION:

The manufacturer of the engine is Caterpillar and the model is 3516B. The last complete engine report was from the previous day with no documented abnormal conditions or leaks with the engine. The engine was originally placed in service in April of 2006. The engine was running continuously since 5-Jan-09. As a result of not knowing the source of the force responsible for the check valve assembly damage, guards have been installed around the area on all the engines at each respective offshore location.

The engine was running at the time the fire was discovered and did not stop until the fuel was shut off. An automatic fuel shut-off valve will be installed on the diesel supply lines and connected to the emergency engine stop system, in addition to the manual valves already in place. A remote emergency engine stop station will be installed outside the engine room, in addition to the stations located on the engines.

Additional fire water hose reels will be installed at each end of the engine room and tied into the platform firewater system.

The check valve assembly was replaced and the same was inspected on engines #1 & #2 with each being deemed fit for service but are scheduled to be replaced. An inspection procedure will be added to the rig's preventative maintenance program. The failed check valve assembly was sent to the manufacturer for a full failure analysis.

The specific hand held dry chemical extinguishers consisted of: 3-30# ABC, 1-30# BC, 3-5# ABC, 2-10# ABC, and 16-20# ABC.

The operator supplied report may be viewed under Attachment B and pictures taken under Attachment C.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

Engine main wiring harness, control boards, rubber hoses. Engine room wiring and lighting. Cold start air compressor, air dryer, various tools and items stored in engine room.

Burning / melting and heat deformaton.

ESTIMATED AMOUNT (TOTAL): \$200,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

Due to the nature of the event, the Houma District has no recommendations to the GOMR at this time.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: NO

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

08-JAN-2009

26. ONSITE TEAM MEMBERS:

James Richard / Freddie Mosely /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan A. Domangue

APPROVED

DATE: 16-MAR-2009

# FIRE/EXPLOSION ATTACHMENT

1. SOURCE OF IGNITION: **Heat from rig's engine.**

2. TYPE OF FUEL:  GAS  
 OIL  
 DIESEL  
 CONDENSATE  
 HYDRAULIC  
 OTHER

3. FUEL SOURCE: **Broken return fuel line for engine.**

4. WERE PRECAUTIONS OR ACTIONS TAKEN TO ISOLATE  
KNOWN SOURCES OF IGNITION PRIOR TO THE ACCIDENT ? **NO**

5. TYPE OF FIREFIGHTING EQUIPMENT UTILIZED:  HANDHELD  
 WHEELED UNIT  
 FIXED CHEMICAL  
 FIXED WATER  
 NONE  
 OTHER