

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

1. OCCURRED

DATE: **05-DEC-2006** TIME: **1800** HOURS

2. OPERATOR:

Apache Corporation

REPRESENTATIVE: **Gary Wetzel**

TELEPHONE: **(337) 344-3050**

CONTRACTOR: **United Production & Constructio**

REPRESENTATIVE: **RONNIE LEGE**

TELEPHONE: **(337) 365-4400**

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

4. LEASE:

G01220

AREA: **EI** LATITUDE:

BLOCK: **158** LONGITUDE:

5. PLATFORM:

C

RIG NAME:

6. ACTIVITY:

EXPLORATION(POE)

DEVELOPMENT/PRODUCTION
(DOCD/POD)

7. TYPE:

HISTORIC INJURY

REQUIRED EVACUATION 1

LTA (1-3 days)

LTA (>3 days) 1

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: **80** FT.

10. DISTANCE FROM SHORE: **40** MI.

11. WIND DIRECTION: **NE**
SPEED: **12** M.P.H.

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

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

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

Two contract employees with United Production and Construction Services (UPCS) sustained flash fire injuries on December 5, 2006 as a result of a flash fire that occurred inside a skim tank as the tank was undergoing major renovations.

, UPCS Supervisor, sustained a small flash burn to his neck but did not seek medical attention. who was nearest to the entrance of the manway of the skim tank sustained second degree burns to both hands and a flash burn to his face, neck and ears.

An initial inspection of the 9,250 barrel (bbl) compartmentalized (wet oil and dry oil) skim tank was conducted in late September 2006. A determination was made that a full and complete clean out of the skim tank would be necessary in order to conduct a more thorough inspection of the interior of the tank and to change out and/or add anodes. An inspection of the skim tank subsequent to the interior clean out dictated that the necessary repair operation would require completely bypassing all production into the tank and placing the tank completely out of service. This would require that all water production be routed to the floatation cell and all oil production be routed to two (2) temporary portable storage tanks. Approval to utilize the modified production process system and temporary storage tanks was granted by the Lafayette District MMS subsequent to an onsite inspection and evaluation.

The skim tank was isolated from the production process system by closing all block valves and placing skilllets (blinds) on all outgoing and incoming lines. Confined space entry work encompassing the removal of basic sediments and water blasting the inside walls and bottom of the tank was accomplished. Inspection of the tank subsequent to the water blasting revealed extensive areas of corrosion pitting that would require welded patches. Since hot work would be required on the skim tank, a Marine Chemist was called in to certify the skim tank "gas free" and safe for hot work. Stipulations put forth by the Marine Chemist Certificate No. 85737 that must be met prior to hot work were completion of all proper permits (hot work and confined space); use of forced ventilation; gas monitoring of spaces prior to entry or hot work; and placing and maintaining skilllets (blinds) in all outgoing and incoming lines.

Throughout the entire repair operation, daily pre-job planning plotted the scope of work through the use of Job Safety Analysis (JSAs); forced ventilation utilized; hole watch and rescue attendants posted; full bodied harnesses for entrants enforced; fire extinguishers and rescue lines in place at all times; continuous gas monitoring conducted and permits (hot work and confined space entry) completed daily.

Work involving confined space entry to include sediment removal, cleaning, water blasting, welding of patches and epoxy coating within the skim tank interior were successfully completed on December 4, 2006 with no irregularities or incidents. With all work completed, the final work process to be conducted on December 5, 2006 would be the hydrostatic testing of the skim tank to confirm integrity.

On the morning of December 5, 2006 at approximately 06:00 hours, the United Production and Construction Services (UPCS) work crew conducted their daily pre-job meeting and discussed all activities that would be performed to complete any outstanding miscellaneous repair work and verify the integrity of all work performed on the skim tank. Hot work and confined space entry permits were properly completed. During all phases of the work performed on the interior of the skim tank, the tank had been isolated from the production process system by closed block valves and skilllets (blinds) on all outgoing and incoming lines. In order to hydrostatically test the integrity of the skim tank, potable water would be pumped from the M/V Linda into the skim tank. It was estimated to take 5 to 7 hours to fill the skim tank and verify integrity. The M/V Linda arrived on location at 16:00 hours on December 5, 2006. During the hydrostatic testing of the skim tank, everyone involved in this operation had a clear understanding that no other work would be performed. Also, since the

hydrostatic water integrity test was expected to take 5 to 7 hours, all contractor and supervisory personnel with the exception of _____, UPCS Supervisor, and Messrs. _____ and _____, had ended their work day and retired to the living quarters to clean up for dinner.

(NOTE: Prior to initiating pumping operations of potable water from the M/V Linda to the skim tank, _____, UPCS Supervisor, made a decision to pull the skillets (blinds) from the lines exiting the skim tank based on his thoughts that the skim tank was water tight and that the hydrostatic pressure inside the skim tank, when full of water, would make removal of the skillets (blinds) too difficult. Based on _____ thoughts, a total of six (6) skillets (blinds) were removed from lines exiting the skim tank between 10:00 hours and 13:00 hours on December 5, 2006.)

Once pumping operations were initiated, a water level of two feet was reached in the skim tank at approximately 17:00 hours. A water leak along the north-west seam base was observed by _____, UPCS Supervisor, and a decision was made to halt the transfer of water from the M/V to the skim tank and drain the existing two feet of water from the tank. Once draining the two feet of water was completed, a UPCS welder crawled into the skim tank and made a weld on the seam that was leaking. Water pumping operations from the M/V to the skim tank were initiated again at approximately 17:15. Within approximately ten (10) minutes, a second leak was observed on the north side of the skim tank. Pumping operations were once again stopped and the skim tank was drained.

At approximately 17:45 hours _____, UPCS Supervisor and Messrs. _____ and _____ entered the skim tank through an open manway after water had been drained for the second time to assess the leak situation. As the three UPCS personnel were assessing the skim tank for leaks, _____, UPCS Supervisor, instructed _____ to string out the welding leads and to bring his () welding hood and rods into the skim tank. _____ re-entered the skim tank as instructed with the equipment and placed _____ welding hood and rods on a section of scaffolding inside the skim tank. _____ then turned to exit the skim tank and was surrounded by an immediate flash of fire. The time was approximately 18:00 hours. _____ later related that the welding electrode holder had fallen off a section of scaffolding and had arced causing ignition of gas vapors inside the skim tank. The fire was a momentary flash which self extinguished. All operations were suspended immediately subsequent to the flash fire to provide medical aid to the injured.

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

Hydrocarbon gas inside the skim tank was ignited when a welding electrode holder fell off a section of scaffolding inside the skim tank and arced.

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

Just prior to initiating the pumping of potable water into the skim tank for a hydrostatic integrity test, _____, UPCS Supervisor, elected to remove six (6) skillets (blinds) from the skim tank outgoing lines.

_____, UPSC Supervisor, failed to realize the potential of hydrocarbon gas

migrating into the skim tank once the skillets (blinds) had been removed from the skim tank outgoing lines.

The removal of the skillets (blinds) from the outgoing lines was a contravention of the Marine Chemist's stipulations for "gas free" certification.

Removal of the skillets (blinds) apparently resulted in hydrocarbon gas migrating into the skim tank through leaking block valves and piping which were common to an in-service floatation cell.

Actions taken by the UPCS crew to re-enter the skim tank without prior approval from platform supervisory personnel and without adhering to the "gas free" stipulations of the Marine Chemist Certificate No. 85737 to include the completion of proper permits (hot work and confined space); use of forced ventilation; gas monitoring of spaces prior to entry or hot work; and placement and maintenance of skillet (blinds) in all piping to the skim tank during work.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

None

None

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

MMS recommendation to Apache: 1. Reiterate to Apache that as the Operator of Record for the EI 158, C platform, Apache is responsible for all activities conducted on the Lease. 2. Advise that Apache failed to properly supervise the activities of the hydrostatic test of the skim tank by permitting _____, UPCS Supervisor, to remove the skillets (blinds) from the skim tank outgoing lines. 3. Advise that Apache failed to properly supervise the activities of the hydrostatic test of the skim tank by permitting _____, UPCS Supervisor and Messrs. _____ and _____ to reenter the skim tank and conduct hot work operations without following the hot work and confined space stipulations put forth by Marine Chemist Certificate No. 85737. 4. Advise that Apache failed to assure that welding shall not be done on containers, tanks, or other vessels which have contained flammable substance unless the contents of the vessels have been rendered inert and determined to be safe for welding or burning by the designated person in charge as outlined in its January 20, 2000 approved "Welding Burning and Hot Tapping Safe Practices and Procedures Plan".

The 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:

Incident of Noncompliance G-110 is issued to document that:

1. Apache failed to properly supervise the activities of the hydrostatic test of the skim tank by permitting _____, UPCS Supervisor, to remove the skillets (blinds) from the skim tank outgoing lines.

2. Apache failed to properly supervise the activities of the hydrostatic test of the skim tank by permitting _____, UPCS Supervisor and Messrs. _____ and _____ to reenter the skim tank and conduct hot work operations without following hot work and confined space stipulations put forth by Marine Chemist Certificate No. 85737.

3. Apache failed to follow its January 20, 2000 approved "Welding Burning and Hot Tapping Safe Practices and Procedures Plan".

25. DATE OF ONSITE INVESTIGATION:

06-DEC-2006

26. ONSITE TEAM MEMBERS:

Patrick Sarsfield / Jason Abshire /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott S. Smith

APPROVED

DATE: 01-MAR-2007

INJURY/FATALITY/WITNESS ATTACHMENT

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 233-9594 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: ISLAND OPERATORS CO. INC. / 20324

BUSINESS ADDRESS: 108 ZACHARY

CITY: LAFAYETTE STATE: LA

ZIP CODE: 70583

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 233-9594 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: United Production & Construction Services / 20291

BUSINESS ADDRESS: Route 3, Box 592

CITY: Abbeville STATE: LA

ZIP CODE: 70510

INJURY/FATALITY/WITNESS ATTACHMENT

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 233-9594 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: ISLAND OPERATORS CO. INC. / 20324

BUSINESS ADDRESS: 108 ZACHARY

CITY: LAFAYETTE

STATE: LA

ZIP CODE: 70583

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 233-9594 TOTAL OFFSHORE EXPERIENCE: YEARS

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CITY: LAFAYETTE

STATE: LA

ZIP CODE: 70583

INJURY/FATALITY/WITNESS ATTACHMENT

| | | | |
|-------------------------------------|---|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input checked="" type="checkbox"/> | OTHER <u>Acadiana Integrated Solution</u> | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY: STATE:

WORK PHONE: (337) 893-2451 TOTAL OFFSHORE EXPERIENCE: EARS

EMPLOYED BY:

BUSINESS ADDRESS:

CITY: STATE:

ZIP CODE:

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY: STATE:

WORK PHONE: (337) 365-4400 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: **United Production & Construction Services / 20291**

BUSINESS ADDRESS: **Route 3, Box 592**

CITY: **Abbeville** STATE: **LA**

ZIP CODE: **70510**

INJURY/FATALITY/WITNESS ATTACHMENT

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 365-4400 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: United Production & Construction Services / 20291

BUSINESS ADDRESS: Route 3, Box 592

CITY: Abbeville

STATE: LA

ZIP CODE: 70510

| | | | |
|-------------------------------------|---------------------------|-------------------------------------|----------|
| <input type="checkbox"/> | OPERATOR REPRESENTATIVE | <input type="checkbox"/> | INJURY |
| <input checked="" type="checkbox"/> | CONTRACTOR REPRESENTATIVE | <input type="checkbox"/> | FATALITY |
| <input type="checkbox"/> | OTHER _____ | <input checked="" type="checkbox"/> | WITNESS |

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE: (337) 365-4400 TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY: United Production & Construction Services / 20291

BUSINESS ADDRESS: Route 3, Box 592

CITY: Abbeville

STATE: LA

ZIP CODE: 70510