

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: 19-JUN-2015 TIME: 0605 HOURS

2. OPERATOR: W & T Offshore, Inc.

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

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: G11881

AREA: VR LATITUDE:

BLOCK: 279 LONGITUDE:

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

5. PLATFORM: A

RIG NAME:

6. ACTIVITY:  EXPLORATION(POE)  
 DEVELOPMENT/PRODUCTION  
(DOCD/POD)

8. CAUSE:

7. TYPE:

- HISTORIC INJURY
  - REQUIRED EVACUATION
  - LTA (1-3 days)
  - LTA (>3 days)
  - RW/JT (1-3 days)
  - RW/JT (>3 days)
  - Other Injury

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

- LWC
- HISTORIC BLOWOUT
  - UNDERGROUND
  - SURFACE
  - DEVERTER
  - SURFACE EQUIPMENT FAILURE OR PROCEDURES

9. WATER DEPTH: 180 FT.
10. DISTANCE FROM SHORE: 75 MI.
11. WIND DIRECTION:  
SPEED: M.P.H.
12. CURRENT DIRECTION:  
SPEED: M.P.H.
13. SEA STATE: FT.

COLLISION  HISTORIC  >\$25K  <=\$25K

On 19-June-2015, W&T Offshore reported a casing failure on Vermilion 279 (VR-279) well A3/A3D. A production operator was making his morning rounds and found gas and oil leaking from the A3/A3D well. The gas and oil was leaking through a hole in the 20 inch drive pipe at the +10 bell guide and from the 20 inch x 10 3/4 inch annulus from below the well head base plate. W&T reported an estimated .67 gallons of oil leaked into the waters of the Gulf of Mexico.

An Application to Modify (APM) was approved on 29-Aug 2014, to set pump through plugs in the short string (SS) and long string (LS) tubing to eliminate sustained casing pressure. On 31-Aug-2014 and 01-Sep-2014, pump through plugs were set at 12,802ft wire-line measured depth (WLM) and 13,202ft WLM in the SS and LS tubing respectively. Casing pressure was bled to zero and monitored.

An APM was approved on 10-Sep-2014, to pull the pump through plug from the SS tubing since W&T felt that there were holes in the LS tubing and the SS tubing had integrity. On 13-Sep-2014, the pump through plug was pulled, casing pressure returned and the plug was reset at 12,802 ft. WLM. Casing pressure was again bled to zero psi and monitored.

Shut-In Casing Pressure (SICP) was recorded at 1,160psi in October and an APM was approved on 09-Dec-2014, to permanently abandon the 11,000ft sand in the LS. Leak diagnostic test were performed to locate the leak in the SS tubing and repair it with a pack-off isolation assembly. On 31-Dec-2014, a Sondex Memory Leak Detection tool was run and holes were located in the SS tubing at 8,009ft, 11,960ft, and 11,974ft. Approval was obtained on 01-Jan-2015, to set pack-off isolation assemblies across the holes in the SS tubing. The holes were isolated by pack-off isolation assemblies and the casing pressure was bled to zero psi on 07-Jan-2015.

Casing pressure diagnostics were performed on 27-Jan- 2015. The pressure at the beginning of the bleed off was 1,250psi and could not be bled to zero psi. On 27-Feb-2015, an APM was approved to diagnose the leak source and reinstall the pack-off isolation assemblies. In March of 2015, attempts to isolate the leaks in the SS tubing with pack-off isolation assembly failed. On 24-Mar-2015, a pump through plug was set in the X nipple profile at 12,821ft. Pack-offs with a pump through plug was set in the SS tubing immediately above at 12,820ft on 25-Mar-2015.

W&T abandoned efforts to produce the 10,800ft sand up the SS and obtained approval on 27-Mar-2015, to produce the sand up the long string (which still had integrity) by perforating the LS tubing below the dual packer. This was performed on 05-Apr-2015. The monthly casing pressure recordings remained at or below 100psi.

On the 19-Jun-2015 and 3-Aug-2015 APMs were approved for zonal isolation and to temporary abandon the well and perform diagnostics to find the cause of the casing failures in well A3/A3D. After reviewing weekly activity reports (WARs), W&T root cause report, W&T VR-279 production reports the following was determined.

On the 16-Jun-2015 the gas compressor on VR-279 started experiencing mechanical issues leading to significant down time. During this down time the A3D well had little to no production. This down time of production allowed the reservoir sand at 10,800ft shut-in pressure to build. The reservoir shut-in pressure caused the plugs set at 12,820ft WLM and 12,821ft WLM in SS to fail allowing reservoir shut-in pressure/gas and oil to enter the deteriorated SS. The deteriorated SS allowed reservoir shut-in pressure/gas and oil to enter the production 7 5/8 inch casing. W&T engineers concluded there was a leak in the 7 5/8 inch production casing between 500ft WLM and 3500ft WLM allowing reservoir shut-in pressure/gas and oil to build in the 7 5/8 inch and 10 3/4 inch annulus. W&T engineers concluded there was a leak in the 10 3/4 inch surface casing +-10ft below the well head allowing reservoir shut-in pressure/gas and oil to enter the non-pressure containing 20 inch drive pipe finding open paths to the atmosphere.

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

- 1. The buildup of reservoir shut-in pressure caused the pump through plugs set at 12,820ft WLM and 12,821ft WLM in SS to fail allowing reservoir shut-in pressure/gas and oil to enter the deteriorated SS.
- 2. The deteriorated SS allowed reservoir shut-in pressure/gas and oil to enter the production 7 5/8 inch casing.
- 3. A leak in the 7 5/8 inch production casing between 500ft WLM and 3500ft WLM allowed reservoir shut-in pressure/gas and oil to build in the 7 5/8 inch and 10 3/4 inch annular.
- 4. A leak in the 10 3/4 inch surface casing +/-10ft below the well head allowed reservoir shut-in pressure/gas and oil to enter the non-pressure holding 20 inch casing finding open leak paths to the atmosphere.

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

- 1. The deteriorated SS did not allow the pump through plugs to hold at their set point allowing them to unseat.
- 2. The deteriorated SS had multiple holes that could not be repaired and was out of service.
- 3. BSEE determined that the 7 5/8 inch production casing may have been weakened by contacting corrosive wellbore fluids from past instances of sustained casing pressure.
- 4. BSEE determined the leak in the 10 3/4 inch surface casing +/-10ft below the well head may have been caused by exceeding the internal burst rating of 3,580psi. The last highest shut-in tubing pressure for the SS was recorded at +/-3500psi on 27-Jan-2015.

20. LIST THE ADDITIONAL INFORMATION:

The Well Shut-In Tubing Pressure was 3500psi.

7 5/8 inch 33.7ppf P-110 casing has an internal burst rating of 10,860psi.

10 3/4 inch 45.5ppf K-55casing has an internal burst rating of 3,580psi.

21. PROPERTY DAMAGED:

N/A

NATURE OF DAMAGE:

N/A

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

N/A

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

**For Public Release**

E-100 - On 19-Jun-2015, W&T allowed .67 gallons of oil to leak into the waters of the Gulf of Mexico during the incident of the casing failures on well A3/A3D.  
Authority Title 30 CFR Part 250.300(a)

25. DATE OF ONSITE INVESTIGATION:

24-JUN-2015

26. ONSITE TEAM MEMBERS:

Royce Buford / Carl Matte /  
Mitchell Klumpp /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Mark Osterman

APPROVED

DATE: 08-DEC-2015