# RAILROAD COMMISSION OF TEXAS

**Form W-2**

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

**Status:** Approved
**Date:** 03/03/2017
**Tracking No.:** 163738

# OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

## OPERATOR INFORMATION

**Operator Name:** SHELL WESTERN E&P **Operator No.:** 774719
**Operator Address:** PO BOX 576 HOUSTON, TX 77001-0000

## WELL INFORMATION

**API No.:** 42-301-32849 **County:** LOVING
**Well No.:** 2304H **RRC District No.:** 08
**Lease Name:** UNIVERSITY 19 PW UNIT **Field Name:** PHANTOM (WOLFCAMP)
**RRC Lease No.:** 42401 **Field No.:** 71052900
**Location:** Section: 23, Block: 19, Survey: UNIVERSITY LAND, Abstract:

**Latitude:** **Longitude:**
**This well is located** 12.4 **miles in a** SE **direction from** MENTONE, **which is the nearest town in the county.**

## FILING INFORMATION

**Purpose of filing:** Initial Potential
**Type of completion:** New Well
**Well Type:** Producing **Completion or Recompletion Date:** 10/19/2016

| Type of Permit | Date | Permit No. |
|---|---|---|
| Permit to Drill, Plug Back, or Deepen | 02/03/2016 | 813641 |
| Rule 37 Exception | | 0299591 |
| Fluid Injection Permit | | |
| O&G Waste Disposal Permit | | |
| Other: | | |

## COMPLETION INFORMATION

**Spud date:** 04/28/2016 **Date of first production after rig released:** 10/19/2016
**Date plug back, deepening, recompletion, or drilling operation commenced:** 04/28/2016 **Date plug back, deepening, recompletion, or drilling operation ended:** 06/20/2016
**Number of producing wells on this lease in this field (reservoir) including this well:** 10 **Distance to nearest well in lease & reservoir (ft.):** 1320.0
**Total number of acres in lease:** 8588.11 **Elevation (ft.):** 2830 GL
**Total depth TVD (ft.):** 11948 **Total depth MD (ft.):** 18241
**Plug back depth TVD (ft.):** **Plug back depth MD (ft.):**
**Was directional survey made other than inclination (Form W-12)?** Yes **Rotation time within surface casing (hours):** 78.5
**Is Cementing Affidavit (Form W-15) attached?** Yes
**Recompletion or reclass?** No **Multiple completion?** No
**Type(s) of electric or other log(s) run:** Gamma Ray (MWD)
**Electric Log Other Description:**
**Location of well, relative to nearest lease boundaries of lease on which this well is located:** 1478.0 **Feet from the** NE **Line and** 1500.0 **Feet from the** SE **Line of the** UNIVERSITY 19 B **Lease.** **Off Lease :** No

### FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

| Field & Reservoir | Gas ID or Oil Lease No. | Well No. | Prior Service Type |
|---|---|---|---|

PACKET: N/A

W2: N/A

**FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:**

**GAU Groundwater Protection Determination** **Depth (ft.):** 1075.0 **Date:** 02/01/2016

**SWR 13 Exception** **Depth (ft.):** 5072.0

## INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

**Date of test:** 10/31/2016 **Production method:** Flowing

**Number of hours tested:** 24 **Choke size:** 28/64

**Was swab used during this test?** No **Oil produced prior to test:** 5003.00

**PRODUCTION DURING TEST PERIOD:**

**Oil (BBLS):** 536.00 **Gas (MCF):** 900

**Gas - Oil Ratio:** 1679 **Flowing Tubing Pressure:** 2219.00

**Water (BBLS):** 4394

**CALCULATED 24-HOUR RATE**

**Oil (BBLS):** 536.0 **Gas (MCF):** 900

**Oil Gravity - API - 60.:** 46.0 **Casing Pressure:** 3298.00

**Water (BBLS):** 4394

## CASING RECORD

| Row | Type of Casing | Casing Size (in.) | Hole Size (in.) | Setting Depth (ft.) | Multi - Stage Tool Depth (ft.) | Multi - Stage Shoe Depth (ft.) | Cement Class | Cement Amount (sacks) | Slurry Volume (cu. ft.) | Top of Cement (ft.) | TOC Determined By |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Surface | 9 5/8 | 12 1/4 | 5057 | 1224 | | PREM PLUS | 900 | 1774.0 | 0 | Circulated to Surface |
| 2 | Surface | 9 5/8 | 12 1/4 | 5057 | | | PREM PLUS | 3170 | 5703.0 | 1224 | Calculation |
| 3 | Intermediate | 7 | 8 3/4 | 11841 | | | CLASS H | 750 | 1601.0 | 4000 | Calculation |

## LINER RECORD

| Row | Liner Size (in.) | Hole Size (in.) | Liner Top (ft.) | Liner Bottom (ft.) | Cement Class | Cement Amount (sacks) | Slurry Volume (cu. ft.) | Top of Cement (ft.) | TOC Determined By |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 1/2 | 6 1/8 | 11245 | 18226 | CLASS H | 640 | 789.0 | 11245 | Calculation |

## TUBING RECORD

| Row | Size (in.) | Depth Size (ft.) | Packer Depth (ft.)/Type |
|---|---|---|---|
| 1 | 2 7/8 | 11234 | 11210 / 7" VERSASET |

## PRODUCING/INJECTION/DISPOSAL INTERVAL

| Row | Open hole? | From (ft.) | To (ft.) |
|---|---|---|---|
| 1 | No | L1 12127 | 18003.0 |

## ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

**Was hydraulic fracturing treatment performed?** Yes

**Is well equipped with a downhole actuation sleeve?** Yes **If yes, actuation pressure (PSIG):** 8449.0

**Production casing test pressure (PSIG) prior to hydraulic fracturing treatment:** 9900 **Actual maximum pressure (PSIG) during hydraulic fracturing:** 9492

**Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)?** Yes

| Row | Type of Operation | Amount and Kind of Material Used | Depth Interval (ft.) |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | Fracture | WELL DATA HAS BEEN UPLOADED INTO FRAC FOCUS. | 12127 | 18003 |

## FORMATION RECORD

| Formations | Encountered | Depth TVD (ft.) | Depth MD (ft.) | Is formation isolated? | Remarks |
|---|---|---|---|---|---|
| RED BLUFF | No | | | No | FORMATION NOT GEOLOGICALLY PRESENT |
| BELL CANYON | Yes | 5160.0 | 5206.0 | Yes | |
| BRUSHY CANYON | Yes | 7277.0 | 7327.0 | Yes | |
| DELAWARE | Yes | 5137.0 | 5184.0 | Yes | |
| CHERRY CANYON | Yes | 6099.0 | 6148.0 | Yes | |
| BONE SPRINGS | Yes | 8671.0 | 8722.0 | Yes | |
| WOLFCAMP | Yes | 11458.0 | 11512.0 | Yes | |
| PENNSYLVANIAN | No | | | No | BELOW WELLBORE DEPTH |
| STRAWN | No | | | No | BELOW WELLBORE DEPTH |
| ATOKA - HIGH PRESSURE | No | | | No | BELOW WELLBORE DEPTH |
| MORROW | No | | | No | BELOW WELLBORE DEPTH |
| DEVONIAN | No | | | No | BELOW WELLBORE DEPTH |
| FUSSELMAN | No | | | No | BELOW WELLBORE DEPTH |
| ELLENBURGER | No | | | No | BELOW WELLBORE DEPTH |

**Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)?** No

**Is the completion being downhole commingled (SWR 10)?** No

## REMARKS

KOP AT 11322

## RRC REMARKS

**PUBLIC COMMENTS:**

[RRC Staff 2016-12-06 13:54:25.445] EDL=5876 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well

**CASING RECORD :**

**TUBING RECORD:**

**PRODUCING/INJECTION/DISPOSAL INTERVAL :**

**ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :**

**POTENTIAL TEST DATA:**

| OPERATOR'S CERTIFICATION | |
|---|---|
| **Printed Name:** Maureen Kovacic | **Title:** Regulatory Specialist |
| **Telephone No.:** (832) 337-0953 | **Date Certified:** 03/03/2017 |

# RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

**Form W-15**
Rev. 08/2014

## CEMENTING REPORT

Cementer: Fill in shaded areas.
Operator: Fill in other items.

### OPERATOR INFORMATION

| | |
|---|---|
| **Operator Name:** SHELL WESTERN E&P-EBUS | **Operator P-5 No.:** 774719 |
| **Cementer Name:** HALLIBURTON ENERGY SERVICES | **Cementer P-5 No.:** 347151 |

### WELL INFORMATION

| | | |
|---|---|---|
| **District No.:** 08 | **County:** LOVING | |
| **Well No.:** 2304 H | **API No.:** 42-301-32849 | **Drilling Permit No.:** 813641 |
| **Lease Name:** UNIVERSITY 19 B | **Lease No.:** | |
| **Field Name:** Phantom (Wolfcamp) | **Field No.:** | |

### I. CASING CEMENTING DATA

**Type of casing:** ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☐ Production

| | | |
|---|---|---|
| **Drilled hole size (in.):** | **Depth of drilled hole (ft.):** | **Est. % wash-out or hole enlargement:** |
| **Size of casing in O.D. (in.):** | **Casing weight (lbs/ft) and grade:** | **No. of centralizers used:** |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☐ NO If no for surface casing, explain in Remarks. | **Setting depth shoe (ft.):** | **Top of liner (ft.):** / **Setting depth liner (ft.):** |
| **Hrs. waiting on cement before drill-out:** | **Calculated top of cement (ft.):** | **Cementing date:** |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Total | 0 | | | 0 | 0 |

### II. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☑ Multi-stage cement shoe ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** 12 1/4' | **Depth of drilled hole (ft.):** 5,057 | **Est. % wash-out or hole enlargement:** 200% |
| **Size of casing in O.D. (in.):** 9 5/8' | **Casing weight (lbs/ft) and grade:** 40/J55 | **No. of centralizers used:** 27 |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☑ YES ☐ NO | | **Setting depth shoe (ft.):** 5057 |
| **Hrs. waiting on cement before drill-out:** +12 | **Calculated top of cement (ft.):** 1224 | **Cementing date:** 05/02/16 |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | 2670 | PREM PLUS | SEE REMARKS | 5035.62 | 16079 |
| 2 | 500 | PREM PLUS | SEE REMARKS | 668 | 2133 |
| 3 | | | | | |
| Total | 3170 | | | 5703.62 | 18212 |

### III. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☑ Multi-stage cement/DV tool ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** 12 1/4" | **Depth of drilled hole (ft.):** 5,057 | **Est. % wash-out or hole enlargement:** 200% |
| **Size of casing in O.D. (in.):** 9 5/8" | **Casing weight (lbs/ft) and grade:** 40/J55 | **No. of centralizers used:** 8 |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☑ YES ☐ NO | | **Setting depth tool (ft.):** 1224 |
| **Hrs. waiting on cement before drill-out:** +12 | **Calculated top of cement (ft.):** Surface | **Cementing date:** 05/03/16 |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | 900 | PREM PLUS | SEE REMARKS | 1774.8 | 5667 |
| 2 | | | | | |
| 3 | | | | | |
| Total | 900 | | | 1774.8 | 5667 |

| CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON | | | | | | | |
|---|---|---|---|---|---|---|---|
| | PLUG #1 | PLUG #2 | PLUG #3 | PLUG #4 | PLUG #5 | PLUG #6 | PLUG #7 |
| Cementing Date | | | | | | | |
| Size of hole or pipe (in.) | | | | | | | |
| Depth to bottom of tubing or drill pipe (ft.) | | | | | | | |
| Cement retainer setting depth (ft.) | | | | | | | |
| CIBP setting depth (ft.) | | | | | | | |
| Amount of cement on top of CIBP (ft.) | | | | | | | |
| Sacks of cement used | | | | | | | |
| Slurry volume pumped (cu. ft.) | | | | | | | |
| Calculated top of plug (ft.) | | | | | | | |
| Measured top of plug, if tagged (ft.) | | | | | | | |
| Slurry weight (lbs/gal) | | | | | | | |
| Class/type of cement | | | | | | | |
| Perforate and squeeze (YES/NO) | | | | | | | |

**REMARKS**

11 STAGE SLURRY 3 % SALT, .65% HR-800, 1ST STAGE 2ND SLURRY .50% BENTONITE, .35%HR-800
2ND STAGE SLURRY 2% CALCIUM CHLORIDE , .70 LBA ECONOLITE, 5% SALT
CIRCULATED 150 BBLS, 446 SACKS TO SURFACE OFF TOOL
CIRCULATED 124 BBLS 353 SACKS TO SURFACE ON 2ND STAGE

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

| OSCAR RODRIGUEZ SERVICE SUPERVISOR III | Halliburton | | |
|---|---|---|---|
| Name and title of cementer's representative | Cementing Company | Signature | |
| 6155 W. Murphy St. | Odessa, TX, 79763 | 432-571-8600 | 03/23/16 |
| Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr. |

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

| Maureen Kovacic | Regulatory Specialist | | |
|---|---|---|---|
| Typed or printed name of operator's representative | Title | Signature | |
| 150 N. Dairy Ashford | Houston TX 77079 | 832-337-0953 | 11/16/2016 |
| Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr. |

# Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

# RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

## CEMENTING REPORT

**Form W-15**
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

### OPERATOR INFORMATION

| | |
|---|---|
| **Operator Name:** SHELL WESTERN | **Operator P-5 No.:** 774719 |
| **Cementer Name:** HALLIBURTON ENERGY SERVICES | **Cementer P-5 No.:** 347151 |

### WELL INFORMATION

| | | |
|---|---|---|
| **District No.:** 08 | **County:** LOVING | |
| **Well No.:** 2304H | **API No.:** 42-301-32849 | **Drilling Permit No.:** 813641 |
| **Lease Name:** UNIVERSITY 19 B | **Lease No.:** | |
| **Field Name:** Phantom (Wolfcamp) | **Field No.:** | |

### I. CASING CEMENTING DATA

**Type of casing:** ☐ Conductor ☐ Surface ☑ Intermediate ☐ Liner ☐ Production

| | | |
|---|---|---|
| **Drilled hole size (in.):** 8 3/4" | **Depth of drilled hole (ft.):** 11857' | **Est. % wash-out or hole enlargement:** 40% |
| **Size of casing in O.D. (in.):** 7" | **Casing weight (lbs/ft) and grade:** 29#/p110 | **No. of centralizers used:** 49 |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☑ NO **If no for surface casing, explain in Remarks.** | **Setting depth shoe (ft.):** 11,841' | **Top of liner (ft.):** / **Setting depth liner (ft.):** |
| **Hrs. waiting on cement before drill-out:** +12 | **Calculated top of cement (ft.):** 4,000 | **Cementing date:** 5-26-16 |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | 510 | H | SEE REMARKS | 1306 | 5487 |
| 2 | 240 | H | SEE REMARKS | 295 | 1160 |
| 3 | | | | | |
| Total | 750 | | | 1601 | 6647 |

### II. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** | **Depth of drilled hole (ft.):** | **Est. % wash-out or hole enlargement:** |
| **Size of casing in O.D. (in.):** | **Casing weight (lbs/ft) and grade:** | **No. of centralizers used:** |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☐ NO | | **Setting depth shoe (ft.):** |
| **Hrs. waiting on cement before drill-out:** | **Calculated top of cement (ft.):** | **Cementing date:** |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Total | 0 | | | 0 | 0 |

### III. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** | **Depth of drilled hole (ft.):** | **Est. % wash-out or hole enlargement:** |
| **Size of casing in O.D. (in.):** | **Casing weight (lbs/ft) and grade:** | **No. of centralizers used:** |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☐ NO | | **Setting depth tool (ft.):** |
| **Hrs. waiting on cement before drill-out:** | **Calculated top of cement (ft.):** | **Cementing date:** |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Total | 0 | | | 0 | 0 |

| CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON | | | | | | | |
|---|---|---|---|---|---|---|---|
| | PLUG #1 | PLUG #2 | PLUG #3 | PLUG #4 | PLUG #5 | PLUG #6 | PLUG #7 |
| Cementing Date | | | | | | | |
| Size of hole or pipe (in.) | | | | | | | |
| Depth to bottom of tubing or drill pipe (ft.) | | | | | | | |
| Cement retainer setting depth (ft.) | | | | | | | |
| CIBP setting depth (ft.) | | | | | | | |
| Amount of cement on top of CIBP (ft.) | | | | | | | |
| Sacks of cement used | | | | | | | |
| Slurry volume pumped (cu. ft.) | | | | | | | |
| Calculated top of plug (ft.) | | | | | | | |
| Measured top of plug, if tagged (ft.) | | | | | | | |
| Slurry weight (lbs/gal) | | | | | | | |
| Class/type of cement | | | | | | | |
| Perforate and squeeze (YES/NO) | | | | | | | |

**REMARKS**

LEAD= SA-1015, BENTONITE, SALT, D-AIR 5000, HR-800 TAIL= SA-1015, CFR-3, LAP-1, D-AIR 5000,

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

| LOUIS GENOVESI SERVICE SUPERVISOR | Halliburton | | |
|---|---|---|---|
| Name and title of cementer's representative | Cementing Company | Signature | |
| 6155 W. Murphy St. | Odessa, TX, 79763 | 432-571-8600 | 5-26-16 |
| Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr. |

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

| Maureen Kovacic | Regulatory Specialist | | |
|---|---|---|---|
| Typed or printed name of operator's representative | Title | Signature | |
| 150 N. Dairy Ashford | Houston TX 77079 | 832-337-0953 | 11/16/2016 |
| Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr. |

# Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

# RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

## CEMENTING REPORT

**Form W-15**
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

### OPERATOR INFORMATION

| | |
|---|---|
| **Operator Name:** SHELL WESTERN | **Operator P-5 No.:** |
| **Cementer Name:** HALLIBURTON | **Cementer P-5 No.:** 347151 |

### WELL INFORMATION

| | | |
|---|---|---|
| **District No.:** 08 | **County:** LOVING | |
| **Well No.:** 2304H | **API No.:** 42-301-32849 | **Drilling Permit No.:** 813641 |
| **Lease Name:** UNIVERSITY 19B | **Lease No.:** | |
| **Field Name:** Phantom (Wolfcamp) | **Field No.:** | |

### I. CASING CEMENTING DATA

**Type of casing:** ☐ Conductor ☐ Surface ☐ Intermediate ☑ Liner ☐ Production

| | | |
|---|---|---|
| **Drilled hole size (in.):** 6 1/8 | **Depth of drilled hole (ft.):** 18,700 | **Est. % wash-out or hole enlargement:** 15% |
| **Size of casing in O.D. (in.):** 4 1/2 | **Casing weight (lbs/ft) and grade:** 13.5/P110 | **No. of centralizers used:** |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☑ NO **If no for surface casing, explain in Remarks.** | **Setting depth shoe (ft.):** | **Top of liner (ft.):** 11245<br>**Setting depth liner (ft.):** 18226 |
| **Hrs. waiting on cement before drill-out:** n/a | **Calculated top of cement (ft.):** 11245 | **Cementing date:** 6/7/16 |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | 640 | H | SEE REMARKS | 789.12 | 6981 |
| 2 | | | | | |
| 3 | | | | | |
| Total | 640 | | | 789.12 | 6981 |

### II. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** | **Depth of drilled hole (ft.):** | **Est. % wash-out or hole enlargement:** |
| **Size of casing in O.D. (in.):** | **Casing weight (lbs/ft) and grade:** | **No. of centralizers used:** |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☐ NO | | **Setting depth shoe (ft.):** |
| **Hrs. waiting on cement before drill-out:** | **Calculated top of cement (ft.):** | **Cementing date:** |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Total | 0 | | | 0 | 0 |

### III. CASING CEMENTING DATA

**Type of casing:** ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

| | | |
|---|---|---|
| **Drilled hole size (in.):** | **Depth of drilled hole (ft.):** | **Est. % wash-out or hole enlargement:** |
| **Size of casing in O.D. (in.):** | **Casing weight (lbs/ft) and grade:** | **No. of centralizers used:** |
| **Tapered string drilled hole size (in.)** Upper: Lower: | **Tapered string depth of drilled hole (ft.)** Upper: Lower: | |
| **Tapered string size of casing in O.D. (in.)** Upper: Lower: | **Tapered string casing weight(lbs/ft) and grade** Upper: Lower: | **Tapered string no. of centralizers used** Upper: Lower: |
| **Was cement circulated to ground surface (or bottom of cellar) outside casing?** ☐ YES ☐ NO | | **Setting depth tool (ft.):** |
| **Hrs. waiting on cement before drill-out:** | **Calculated top of cement (ft.):** | **Cementing date:** |

**SLURRY**

| Slurry No. | No. of Sacks | Class | Additives | Volume (cu. ft.) | Height (ft.) |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| Total | 0 | | | 0 | 0 |

| CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON | | | | | | | |
|---|---|---|---|---|---|---|---|
| | PLUG #1 | PLUG #2 | PLUG #3 | PLUG #4 | PLUG #5 | PLUG #6 | PLUG #7 |
| Cementing Date | | | | | | | |
| Size of hole or pipe (in.) | | | | | | | |
| Depth to bottom of tubing or drill pipe (ft.) | | | | | | | |
| Cement retainer setting depth (ft.) | | | | | | | |
| CIBP setting depth (ft.) | | | | | | | |
| Amount of cement on top of CIBP (ft.) | | | | | | | |
| Sacks of cement used | | | | | | | |
| Slurry volume pumped (cu. ft.) | | | | | | | |
| Calculated top of plug (ft.) | | | | | | | |
| Measured top of plug, if tagged (ft.) | | | | | | | |
| Slurry weight (lbs/gal) | | | | | | | |
| Class/type of cement | | | | | | | |
| Perforate and squeeze (YES/NO) | | | | | | | |

**REMARKS**

PRIMARY - .5% CFR-3, 1% LAP-1 .05% SA-1015, .5LBM D-AIR 3000

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

| JASON WELTON - SSIII | Halliburton | | | |
|---|---|---|---|---|
| Name and title of cementer's representative | Cementing Company | | Signature | |
| 6155 W. Murphy St. | Odessa, TX, 79763 | | 432-571-8600 | 6/7/16 |
| Address | City, State, Zip Code | | Tel: Area Code Number | Date: mo. day yr. |

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

| Maureen Kovacic | Regulatory Specialist | | |
|---|---|---|---|
| Typed or printed name of operator's representative | Title | Signature | |
| 150 N. Dairy Ashford | Houston TX 77079 | 832-337-0953 | 11/16/2016 |
| Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr. |

# Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

**A.** **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

**B.** **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

**C.** **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

**D.** **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

**E.** **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

**F.** **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

**G.** **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

# RAILROAD COMMISSION OF TEXAS

## OIL AND GAS DIVISION

**OPERATOR Name:** SHELL WESTERN E&P
**Address1:** PO BOX 576
**Address2:**
**City:** HOUSTON
**State:** TX

**RE: Lease:** UNIVERSITY 19 B
**Well No:** 2304H
**Sec:** 23 **Block:** 19
**County:** LOVING
**Survey Name:** UNIVERSITY LAND

**SWR13EX Application Number:** 7367
**Drilling Permit No:** 813641

## SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 19 B ;
**WELL NUMBER:** 2304H has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 5072 feet of surface casing with a multistage tool set at a depth of not less than 1226 feet. Circulate cement from the multistage tool to the ground surface. If cement does not circulate to surface during the first stage, the multistage tool MUST be opened and neat cement be circulated from the tool to the surface.

Please notify the Midland District Office immediately if any gas, H2S or otherwise, is encountered before surface casing is set.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted on 03/30/2016 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: Erik Hanson DATE: 04/04/2016

DISTRICT DIRECTOR

**RAILROAD COMMISSION OF TEXAS**
**Oil and Gas Division**

# ELECTRIC LOG STATUS REPORT

# FORM L-1

Tracking No.: 163738

*This facsimile L-1 was generated electronically from data submitted to the RRC.*

Instructions

**When to File Form L-1:**
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

**When is Form L-1 NOT required:**
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

**Where to File Form L-1:**
- with the appropriate Commission district office

**Filling out Form L-1:**
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

**Type of log required:**
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

## SECTION I. IDENTIFICATION

| | | |
|---|---|---|
| Operator Name: SHELL WESTERN E&P | District No. 08 | Completion Date: 10/19/2016 |
| Field Name PHANTOM (WOLFCAMP) | Drilling Permit No. 813641 | |
| Lease Name UNIVERSITY 19 PW UNIT | Lease/ID No. 42401 | Well No. 2304H |
| County LOVING | API No. **42-** 301-32849 | |

## SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

| | |
|---|---|
| Maureen Kovacic<br>Signature | Regulatory Specialist<br>Title |
| SHELL WESTERN E&P<br>Name (print) | (832) 337-0953<br>Phone<br>11/16/2016<br>Date |

-FOR RAILROAD COMMISSION USE ONLY-

PHOENIX
TECHNOLOGY SERVICES

**MD**
**1:1200**
**Feet**

***MWD Gamma / ROP (1")***

***ent:*** *SWEPI*

**ll Name:** University 19 B 2304H
**/UWID:** 42301328490000
**unty:** Loving **Field:** Wolfcamp
**mit #:** 813641
**te:** TEXAS **Country:** USA

**ude:** 103° 23' 44.07141 W
**e:** 31° 39' 36.4124 N

| | |
|---|---|
| Rig Name: | Precision 565 |
| Job Number: | 60041 |
| Ground Level: | 2831.50 ft |
| Kelly Bushing: | 2860.00 ft |
| Drill Floor: | 28.50 ft |
| ermanent Datum: | Mean Sea Level |
| g Measured From: | Kelly Bushing |
| Spud Date: | April 28, 2016 |
| ottom Hole Temp: | 203.0 °F |
| Log Start Depth: | 150.00 ft |
| Log End Depth: | 18250.00 ft |

## Reference Data

| | |
|---|---|
| North Reference: | Grid North |
| gnetic Declination: | 7.17 |
| Grid Convergence: | -1.58 |
| al Mag Correction: | 8.75 |

## Personnel

**Company Representative**
Tyrome Russell

**Geologist**

**Directional Driller(s)**
Travis Marlboro
Dustin St.Clair
John Spencer

**MWD Operator(s)**
Shane Metcalf
Joe Owens

**nts:**

***Main Leg***



## Operational Run Summary — 60041

| | Run 1 | Run 2 | Run 3 | Run 4 | Run 5 | Run 6 |
|---|---|---|---|---|---|---|
| Run Start Depth (ft) | 0.00 | 5059.97 | 9132.01 | 9132.00 | 11359.17 | 11876.66 |
| Run End Depth (ft) | 5059.97 | 9132.01 | 9132.00 | 11359.17 | 11876.66 | 15748.23 |
| Run Start Date | 4/28/2016 | 5/2/2016 | 5/21/2016 | 5/22/2016 | 5/23/2016 | 5/26/2016 |
| Run Start Time | 12:06 PM | 4:42 AM | 12:03 PM | 6:40 AM | 10:53 PM | 6:26 PM |
| Run End Date | 5/1/2016 | 5/21/2016 | 5/22/2016 | 5/23/2016 | 5/26/2016 | 5/31/2016 |
| Run End Time | 8:32 PM | 10:33 AM | 5:39 AM | 9:57 PM | 4:51 AM | 7:04 AM |

| | Run 7 | Run 8 | Run 9 | Run 10 | | |
|---|---|---|---|---|---|---|
| Run Start Depth (ft) | 15748.23 | 17219.57 | 17483.82 | 18240.98 | | |
| Run End Depth (ft) | 17219.57 | 17483.82 | 18240.98 | 18240.98 | | |
| Run Start Date | 5/31/2016 | 6/3/2016 | 6/4/2016 | 6/6/2016 | | |
| Run Start Time | 9:40 AM | 2:08 AM | 6:58 PM | 11:36 PM | | |
| Run End Date | 6/2/2016 | 6/4/2016 | 6/6/2016 | 6/6/2016 | | |
| Run End Time | 11:04 PM | 2:38 PM | 7:29 AM | 11:36 PM | | |

## Tool Information Summary — 60041

| | Run 1 | Run 2 | Run 3 | Run 4 | Run 5 | Run 6 |
|---|---|---|---|---|---|---|
| Gamma Probe Serial No | G0195 | G0428 | G0282 | G0428 | G0610 | G0284 |
| Probe Cal Ratio | 1.53 | 1.52 | 1.53 | 1.52 | 1.52 | 1.51 |
| Gamma Scale Factor | 18.514 | 10.602 | 10.672 | 10.602 | 10.625 | 3.87 |
| Tool Carrier ID (in) | 3.250 | 2.880 | 2.880 | 2.880 | 2.875 | 2.750 |
| Tool Carrier OD (in) | 8.140 | 6.550 | 6.550 | 6.550 | 6.550 | 4.380 |

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
PO Box 12967
Austin TX 78711-2967
www.rrc.texas.gov

# CERTIFICATE OF COMPLIANCE AND TRANSPORTATION AUTHORITY

P-4

This facsimile P-4 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

Tracking No.: 163738

| 1. Field name exactly as shown on proration schedule | 2. Lease name as shown on proration schedule | | | |
|---|---|---|---|---|
| PHANTOM (WOLFCAMP) | UNIVERSITY 19 PW UNIT | | | |
| 3. Current operator name exactly as shown on P-5 Organization Report | 4. Operator P-5 no. | 5. Oil Lse/Gas ID no | 6. County | 7. RRC district |
| SHELL WESTERN E&P | 774719 | 42401 | LOVING | 08 |
| 8. Operator address including city, state, and zip code | 9. Well no(s) *(see instruction E)* | | | |
| PO BOX 576<br>HOUSTON, TX 77001 | 2304H | | | |
| | 10. Classification ☒ Oil ☐ Gas ☐ Other *(see instruction A)* | | 11. Effective Date | 10/19/2016 |

12. Purpose of Filing. (Complete section a or b below.) *(See instructions B and G)*

**a. Change of:** ☐ operator ☐ oil or condensate gatherer ☐ gas gatherer ☐ gas purchaser ☐ gas purchaser system code
☐ field name from _____
☐ lease name from _____

**OR**

**b. New RRC Number for:** ☒ oil lease ☐ gas well ☐ other well (specify) _____ **Due to:** ☒ new completion or recompletion ☐ reclass oil to gas ☐ reclass gas to oil ☐ consolidation, unitization, or subdivision (oil lease only)

13. Authorized GAS WELL GAS or CASINGHEAD GAS Gatherer(s) and/or Purchaser(s). *(See instruction G).*

| Gatherer | Purchaser | Name of GAS WELL GAS or CASINGHEAD GAS Gatherer(s) or Purchaser(s) As Indicated in Columns to the Left *(Attach an additional sheet in same format if more space is needed)* | Purchaser's RRC Assigned System Code | Percent of Take | Full-well stream |
|---|---|---|---|---|---|
| X | | DELAWARE BASIN JV GATHERING LLC(211490) | | 100.0 | |
| | X | SHELL ENERGY NORTH AM. (US), LP(773822) | 0001 | 100.0 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

14. Authorized OIL or CONDENSATE Gatherer(s). *(See instruction G).*

| Name of OIL or CONDENSATE Gatherer(s) - List Highest Volume Gatherer First *(Attach an additional sheet in same format if more space is needed)* | Percent of Take |
|---|---|
| SHELL WESTERN E&P(774719) | 100.0 |
| | |
| | |

**RRC USE ONLY:** Reviewer's initials: RRC Staff Approval date: 03/03/2017

**15. PREVIOUS OPERATOR CERTIFICATION FOR CHANGE OF OPERATOR P-4 FILING.** Being the PREVIOUS OPERATOR, I certify that operating responsibility for the well(s) designated in this filing, located on the subject lease has been transferred in its entirety to the above named Current Operator. I understand, as Previous Operator, that designation of the above named operator as Current Operator is not effective until this certificate is approved by the Commission.

Name of Previous Operator

Signature

Name (print)

☐ **Authorized Employee of previous operator**

☐ **Authorized agent of previous operator** *(see instruction G)*

Title

Date

Phone with area code

**16. CURRENT OPERATOR CERTIFICATION.** By signing this certificate as the Current Operator, I certify that all statements on this form are true and correct and I acknowledge responsibility for the regulatory compliance of the subject lease including plugging of well(s) pursuant to Rule 14. I further acknowledge that I assume responsibility for the physical operation, control, and proper plugging of each well designated in this filing. I also acknowledge that I will remain designated as the Current Operator until a new certificate designating a new Current Operator is approved by the Commission.

SHELL WESTERN E&P
Name (print)

Maureen Kovacic
Signature

Regulatory Specialist
Title

☒ **Authorized Employee of current operator**

☐ **Authorized agent of current operator** *(see instruction G)*

maureen.kovacic@shell.com
E-mail Address (optional)

10/19/2016
Date

(832) 337-0953
Phone with area code

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
PO Box 12967
Austin, Texas 78711-2967
*www.rrc.state.tx.us*

# CERTIFICATE OF POOLING AUTHORITY

*Revised 05/2001*

# P-12

| 1. Field Name(s) | 2. Lease/ID Number *(if assigned)* | 3. RRC District Number |
|---|---|---|
| Phantom (Wolfcamp) | | 08 |
| **4. Operator Name** | **5. Operator P-5 Number** | **6. Well Number** |
| Shell Western E&P | 774719 | 2304H |
| **7. Pooled Unit Name** | **8. API Number** | **9. Purpose of Filing** |
| University 19 B | | ☑ Drilling Permit (W-1) |
| **10. County** | **11.Total acres in pooled unit** | ☐ Completion Report |
| Loving | 1282.3 | |

DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

| TRACT/PLAT IDENTIFIER | TRACT NAME | ACRES IN TRACT *(See inst. #7 below)* | INDICATE UNDIVIDED INTERESTS UNLEASED | NON-POOLED |
|---|---|---|---|---|
| | University 19-18 LOV | 641.31 | ☐ | ☐ |
| | University 19-23 LOV | 640.99 | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |

CERTIFICATION:

I declare under penalties prescribed pursuant to the Sec. 91.143, Texas Natural Resources Code, that I am authorized to make the foregoing statements and that the information provided by me or under my direction on this Certificate of Pooling Authority is true, correct, and complete to the best of my knowledge.

George J Mullen — George Mullen

Signature — Print Name

| Sr. Reg. Specialist | george.mullen@shell.com | 02/02/2016 | (832) 337-0549 |
|---|---|---|---|
| Title | E-mail *(if available)* | Date | Phone |

INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

1. When two or more tracts are pooled to form a unit to obtain a drilling permit, file completion paperwork, or reform a pooled unit pursuant to Rule 38(d)(3) the operator must file an original Certificate of Pooling Authority and certified plat.
2. The certified plat shall designate each tract with an outline and a tract identifier. The tract identifier on the plat shall correspond to the tract identifier and associated information listed on the Certificate.
3. If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
4. If the Purpose of Filing is to obtain a drilling permit, in box #1 list all applicable fields separately or enter "All Fields" if the Certificate pertains to all fields requested on Form W-1.
5. If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
6. Identify the drill site tract with an * to the left of the tract identifier.
7. The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.

Clear Form

# RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

**Form P-16**
**Page 1**
Rev. 01/2016

## Acreage Designation

### SECTION I. OPERATOR INFORMATION

| | |
|---|---|
| **Operator Name:** Shell Western E&P | **Operator P-5 No.:** 774719 |
| **Operator Address:** P.O. Box 576, Houston, Texas 77001 | |

### SECTION II. WELL INFORMATION

| | | |
|---|---|---|
| **District No.:** 08 | **County:** Loving and Ward | **Purpose of Filing:** |
| **Well No.:** 2304H | **API No.:** 42-301-32849 | ☐ Drilling Permit Application (Form W-1) |
| **Total Lease Acres:** 8588.11 | **Drilling Permit No.:** 813641 | ■ Completion Report (Form G-1/W-2) |
| **Lease Name:** University 19 PW Unit | **Lease No.:** 42401 | |
| **Field Name:** Phantom (Wolfcamp) | **Field No.:** 71052900 | |

Filer is the owner or lessee, or has been authorized by the owner or lessee, of all or an undivided portion of the mineral estate under each tract for which filer is listed as operator below. For all leases operated by other entities, the number of assigned acres shown are reflected on current Commission records or the filer has been authorized by the current operator to change the assigned acreage of that operator as shown below.

### SECTION III. LISTING OF ALL WELLS IN THE APPLIED-FOR FIELD ON THE SAME ACREAGE AS THE LEASE, POOLED UNIT, OR UNITIZED TRACT DESIGNATED IN SECTION II ABOVE BY FILER

| RRC ID No. or Lease No. | Well No. | H-Horizontal D-Directional V-Vertical | Lease Name | API No. | Acres Assigned | SWR 38 Except. (Y/N) | Operator Name and Operator No. (If different from filing operator) |
|---|---|---|---|---|---|---|---|
| 42401 | 1902H | H | University 19 PW Unit | 42-301-31709 | 640.00 | N | |
| 42401 | 2202H | H | University 19 PW Unit | 42-301-31708 | 160.23 | N | |
| 42401 | 1702H | H | University 19 PW Unit | 42-301-31703 | 566.65 | N | |
| 42401 | 2502H | H | University 19 PW Unit | 42-475-35995 | 151.24 | N | |
| 42401 | 2802H | H | University 19 PW Unit | 42-475-35996 | 160.33 | N | |
| 42401 | 1302H | H | University 19 PW Unit | 42-301-31705 | 640.00 | N | |
| 42401 | 1502H | H | University 19 PW Unit | 42-301-31872 | 640.00 | N | |
| 42401 | 1802H | H | University 19 PW Unit | 42-301-32460 | 640.00 | N | |
| 42401 | 2302H | H | University 19 PW Unit | 42-301-32579 | 640.00 | N | |
| DP# 813641 | 2304H | H | University 19 PW Unit | 42-301-32849 | 640.00 | N | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Total Well Count > | 10 | 4878.45 | < A. Total Assigned Horiz. Acreage | 4878.45 | < C. Total Assigned Acreage |
| | | 3709.66 | < Total Remaining Horiz. Acreage | 3709.66 | < Total Remaining Acreage |
| | | | < B. Total Assigned Vert./Dir. Acreage | | |
| | | | < Total Remaining Vert./Dir. Acreage | | |

### SECTION IV. REMARKS / PURPOSE OF FILING (see instructions)

Well permited as an allocation well, prior to unitization of block 19. This well should be assigned to University 19 PW Unit, lease ID 42401

Attach Additional Pages As Needed. ■ No additional pages ☐ Additional Pages: _____ (No. of additional pages)

CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that this report was prepared by me or under my supervision or direction, that I am authorized to make this report, and that the information contained in this report is true, correct, and complete to the best of my knowledge.

| Signature | Name and title (type or print) | Email (include email address *only* if you affirmatively consent to its public release) |
|---|---|---|
| | Maureen Kovacic, Regulatory Specialist | maureen.kovacic@shell.com |

| Address | City, State, Zip Code | Tel: Area Code | Number | Date: mo. day yr. |
|---|---|---|---|---|
| 150 N. Dairy Ashford | Houston TX 77079 | 832 | 337-0953 | 03/02/2017 |

# GROUNDWATER PROTECTION DETERMINATION

**Form GW-2**

**Groundwater Advisory Unit**

| | | | |
|---|---|---|---|
| **Date Issued:** | 01 February 2016 | **GAU Number:** | 150534 |

| | | | |
|---|---|---|---|
| **Attention:** | SHELL WESTERN E&P<br>PO BOX 576<br>HOUSTON, TX 77001 | **API Number:** | |
| | | **County:** | LOVING |
| | | **Lease Name:** | University 19 A |
| | | **Lease Number:** | |
| **Operator No.:** | 774719 | **Well Number:** | 2303H |
| | | **Total Vertical Depth:** | 12300 |
| | | **Latitude:** | 31.660075 |
| | | **Longitude:** | -103.395619 |
| | | **Datum:** | NAD27 |

**Purpose:** New Drill

**Location:** Survey-UL; Abstract-U23; Block-19; Section-23

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Water-bearing strata from the land surface to a depth of 350 feet and the Rustler, which is estimated to occur from 675 to 1075 feet must be protected.

This recommendation is applicable to all wells within a radius of 200 feet of this location.

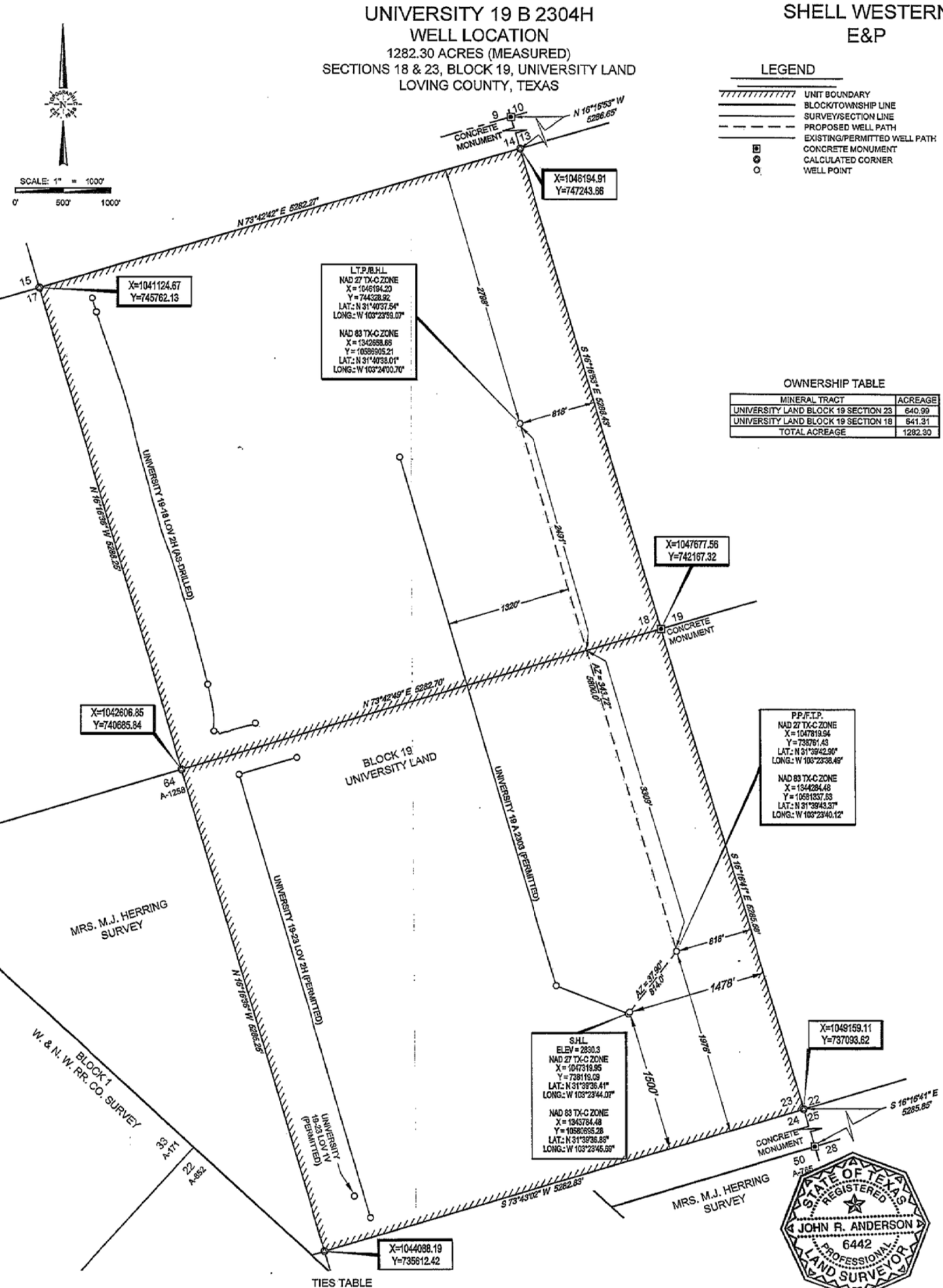
Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. This recommendation is for normal drilling, production, and plugging operations only. It does not apply to saltwater disposal operation into a nonproductive zone (RRC Form W-14).

This determination is based on information provided when the application was submitted on 02/01/2016. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

# UNIVERSITY 19 B 2304H
## WELL LOCATION
1282.30 ACRES (MEASURED)
SECTIONS 18 & 23, BLOCK 19, UNIVERSITY LAND
LOVING COUNTY, TEXAS

**SHELL WESTERN E&P**




### OWNERSHIP TABLE

| MINERAL TRACT | ACREAGE |
|---|---|
| UNIVERSITY LAND BLOCK 19 SECTION 23 | 640.99 |
| UNIVERSITY LAND BLOCK 19 SECTION 18 | 641.31 |
| TOTAL ACREAGE | 1282.30 |

### TIES TABLE

| POINT | UNIT | SURVEY/SECTION |
|---|---|---|
| S.H.L. | 1478' FNEL | 1478' FNEL & |
| | 1500' FSEL | 1500' FSEL |
| P.P. / F.T.P. | 818' FNEL | 818' FNEL & |
| | 1976' FSEL | 1976' FSEL |
| L.T.P. / B.H.L. | 818' FNEL | 818' FNEL & |
| | 2491' FSEL | 2491' FSEL |

STATE OF TEXAS
REGISTERED
JOHN R. ANDERSON
6442
PROFESSIONAL
LAND SURVEYOR

John R. Anderson 2/2/16

John R. Anderson, R.P.L.S. No. 6442
FEBRUARY 2, 2016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TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM


| | REVISION: | |
|---|---|---|
| UNIVERSITY 19 B 2304H | INT | DATE |
| | O.M. | 02/02/2016 |
| DATE: 02/01/2016 | | |
| FILE: UN_UNIVERSITY_19_B_2304H_REV1 | | |
| DRAWN BY: O.M. | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 11" X 17"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.
3. THIS LOCATION AND/OR UNIT/LEASE BOUNDARY HAS BEEN CAREFULLY SURVEYED ON THE GROUND UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE ACCORDING TO THE EVIDENCE, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL WESTERN E&P. THIS PLAT WAS CREATED FOR THE SOLE PURPOSE OF FILING A PERMIT WITH THE RAILROAD COMMISSION OF TEXAS AND SHOULD NOT BE CONSTRUED AS A "BOUNDARY SURVEY" IN COMPLIANCE WITH T.S.P.L.S. MINIMUM STANDARDS OF PROCEDURES FOR BOUNDARY SURVEYS. THIS CERTIFICATION IF MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT IS NON-TRANSFERRABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.
5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

NOTES CONT'D:
6. THE LEASE AND WELL SHOWN HEREON ARE LOCATED APPROXIMATELY ±12.4 MILES SOUTHEAST OF THE CITY/TOWNSHIP/MUNICIPALITY OF MENTONE WITHIN THE COUNTY OF LOVING IN THE STATE OF TEXAS.
7. THE PRELIMINARY LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF JANUARY 15, 2016, AT A GROUND LEVEL ELEVATION OF 2830.3 SURVEY FEET.
8. S.H.L. = SURFACE HOLE LOCATION
9. P.P. = POINT OF PENETRATION
10. F.T.P. = FIRST TAKE POINT
11. L.T.P. = LAST TAKE POINT
12. B.H.L. = BOTTOM HOLE LOCATION

# UNIVERSITY 19 B 2304 H
## AS-DRILLED LOCATION
1282.30 ACRES (MEASURED)
SECTIONS 18 & 23, BLOCK 19, UNIVERSITY LAND
LOVING COUNTY, TEXAS

SHELL WESTERN E&P




### OWNERSHIP TABLE

| MINERAL TRACT | ACREAGE |
|---|---|
| UNIVERSITY LAND BLOCK 19 SECTION 23 | 640.99 |
| UNIVERSITY LAND BLOCK 19 SECTION 18 | 641.31 |
| TOTAL ACREAGE | 1282.30 |

### TIES TABLE

| POINT | UNIT | SURVEY/SECTION |
|---|---|---|
| S.H.L. | 1478' FNEL | 1478' FNEL & |
| | 1500' FSEL | 1500' FSEL |
| P.P. | 773' FNEL | 773' FNEL & |
| | 1228' FSEL | 1228' FSEL |
| F.T.P. | 743' FNEL | 743' FNEL & |
| | 1678' FSEL | 1678' FSEL |
| L.T.P. | 749' FNEL | 749' FNEL & |
| | 2252' FSEL | 2252' FSEL |
| B.H.L. | 724' FNEL | 724' FNEL & |
| | 2487' FSEL | 2487' FSEL |


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STATE OF TEXAS
REGISTERED
JOHN R. ANDERSON
6442
PROFESSIONAL
LAND SURVEYOR

John R. Anderson 11/16/16

John R. Anderson, R.P.L.S. No. 6442
NOVEMBER 16, 2016

| | REVISION: | |
|---|---|---|
| UNIVERSITY 19 B 2304 H | INT | DATE |
| | O.M. | 11/16/2016 |
| DATE: 11/15/16 | | |
| FILE: AD_UNIVERSITY_19_B_2304_H_REV1 | | |
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3. THIS LOCATION AND/OR UNIT/LEASE BOUNDARY HAS BEEN CAREFULLY SURVEYED ON THE GROUND UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE ACCORDING TO THE EVIDENCE, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL WESTERN E&P. THIS PLAT WAS CREATED FOR THE SOLE PURPOSE OF FILING A PERMIT WITH THE RAILROAD COMMISSION OF TEXAS AND SHOULD NOT BE CONSTRUED AS A "BOUNDARY SURVEY" IN COMPLIANCE WITH T.B.P.L.S. MINIMUM STANDARDS OF PROCEDURES FOR BOUNDARY SURVEYS. THIS CERTIFICATION IF MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT IS NON-TRANSFERRABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.
5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

NOTES CONT'D:
6. THE LEASE AND WELL SHOWN HEREON ARE LOCATED APPROXIMATELY ±12.4 MILES SOUTHEAST OF THE CITY/TOWNSHIP/MUNICIPALITY OF MENTONE WITHIN THE COUNTY OF LOVING IN THE STATE OF TEXAS.
7. THE AS-DRILLED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF APRIL 19, 2016, AT A GROUND LEVEL ELEVATION OF 2832.4 SURVEY FEET.
8. THE SUBSURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.
9. S.H.L. = SURFACE HOLE LOCATION
10. P.P. = POINT OF PENETRATION
11. F.T.P. = FIRST TAKE POINT
12. L.T.P. = LAST TAKE POINT
13. B.H.L. = BOTTOM HOLE LOCATION

S:\SURVEY\SHELL\PERMIAN_BASIN\UNIVERSITY_19_23_LOV\FINAL_PRODUCTS\AD_UNIVERSITY_19_B_2304_H_REV1.DWG 11/16/2016 11:52:55 AM omorrow