RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 09/01/2016
Tracking No.: 156972

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.: 42-301-32766 **County:** LOVING
Well No.: 1D **RRC District No.:** 08
Lease Name: UNIVERSITY 19-10 LOV **Field Name:** QUITO, WEST (DELAWARE)
RRC Lease No.: 47873 **Field No.:** 73933500
Location: Section: 10, Block: 19, Survey: UL, Abstract:

Latitude: **Longitude:**
This well is located 12.2 **miles in a** SE **direction from** MENTONE, **which is the nearest town in the county.**

FILING INFORMATION

Purpose of filing: Well Record Only
Type of completion: New Well
Well Type: Active UIC **Completion or Recompletion Date:** 05/16/2016

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or Deepen	10/20/2015	811257
Rule 37 Exception		
Fluid Injection Permit		
O&G Waste Disposal Permit		
Other:		

COMPLETION INFORMATION

Spud date: 05/02/2016 **Date of first production after rig released:** 05/16/2016
Date plug back, deepening, recompletion, or drilling operation commenced: 05/02/2016 **Date plug back, deepening, recompletion, or drilling operation ended:** 05/16/2016
Number of producing wells on this lease in this field (reservoir) including this well: 0 **Distance to nearest well in lease & reservoir (ft.):** 0.0
Total number of acres in lease: 641.07 **Elevation (ft.):** 2821 GL
Total depth TVD (ft.): 8521 **Total depth MD (ft.):**
Plug back depth TVD (ft.): 8521 **Plug back depth MD (ft.):**
Was directional survey made other than inclination (Form W-12)? Yes **Rotation time within surface casing (hours):** 31.0
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: 467.0 **Feet from the** NE **Line and** 1500.0 **Feet from the** SE **Line of the** UNIVERSITY 19-10 LOV **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:** 10/20/2015

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

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of test: **Production method:**

Number of hours tested: 24 **Choke size:**

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

PRODUCTION DURING TEST PERIOD:

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

Gas - Oil Ratio: 0 **Flowing Tubing Pressure:**

Water (BBLS):

CALCULATED 24-HOUR RATE

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

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

Water (BBLS):

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	1163			C	700	1193.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	5000			C	1435	2554.0	0	Circulated to Surface

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	4953	8495	NO CEMENT JOB	0	0.0	0	Calculation

TUBING RECORD

Row	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	4 1/2	4940	4940 / L80, INT COATED W TK-70XT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Row	Open hole?	From (ft.)	To (ft.)
1	Yes	L1 4990	8521.0

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

Was hydraulic fracturing treatment performed? No

Is well equipped with a downhole actuation sleeve? No

If yes, actuation pressure (PSIG):

Production casing test pressure (PSIG) prior to hydraulic fracturing treatment:

Actual maximum pressure (PSIG) during hydraulic fracturing:

Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)? No

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

1	Other	N/A	4990	8521

FORMATION RECORD

Formations	Encountered	Depth TVD (ft.)	Depth MD (ft.)	Is formation isolated?	Remarks
RED BLUFF	No			No	NOT IN THIS PART OF THE COUNTY
BELL CANYON	Yes	5101.0		Yes	PERMITTED INJECTION FORMATION
BRUSHY CANYON	Yes	7289.0		Yes	PERMITTED INJECTION FORMATION
DELAWARE	Yes	5076.0		Yes	PERMITTED INJECTION FORMATION
CHERRY CANYON	Yes	6063.0		Yes	PERMITTED INJECTION FORMATION
BONE SPRINGS	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
WOLFCAMP	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
PENNSYLVANIAN	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
STRAWN	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
ATOKA - HIGH PRESSURE	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
MORROW	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
DEVONIAN	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
FUSSELMAN	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE
ELLENBURGER	No			No	FORMATION NOT ENCOUNTERED BELOW DEPTH OF WELLBORE

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

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2016-09-01 15:30:23.888] set forms lacking for initial H-5

CASING RECORD :

TUBING RECORD:

THERE IS NO CEMENT JOB FOR LINER RECORD. PERFORATED LINER.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

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

NO HYDRAULIC FRACTURING DONE ON THIS WELL. PERMITTED INJECTION PRESSURE IS 2495 PSI

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed Name: Byron Yoo **Title:** Env Engineer

Telephone No.: (832) 337-0082 **Date Certified:** 08/10/2016

RAILROAD COMMISSION OF TEXAS

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

Form W-15
Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION

Operator Name: SHELL Western E&P	Operator P-5 No.: 774719
Cementer Name: SAUL SAUCEDO JR	Cementer P-5 No.:

WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 1D	API No.: 42-301-32766	Drilling Permit No.: 811257
Lease Name: UNIVERSITY 19-10 lov	Lease No.: N/A	
Field Name: QUITO, WEST (DELEWARE)	Field No.: 73933500	

I. CASING CEMENTING DATA

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

Drilled hole size (in.): 12.25	Depth of drilled hole (ft.): 1163	Est. % wash-out or hole enlargement: 200
Size of casing in O.D. (in.): 9.625	Casing weight (lbs/ft) and grade: 40#--J-55	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: 12+	Calculated top of cement (ft.): 0	Cementing date: 5-3-16

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	460	C	REMARKS 1	874	2790
2	240	C	REMARKS 2	319	1018
3					
Total	700			1193	3808

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					

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					

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

Remarks1. 35:65:Poz:Premium Plus C Cement+0.005lb/sk static free+5%bwow sodium chloride+0.01 gps lp-6L+4%bwoc bentonite+2.5%bwoc sms
Remarks2. Premium Plus C Cement+0.005lb/sk static free+0.1%bwoc r-3+0.01gps lp-6L+0.15% sms
60 BBL CEMENT TO SURFACE OR 177 SACKS CEMENT TO SURFACE

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.

Saul Saucedo Jr. -Field Specialist | Baker Hughes Pressure Pumping Services | Saul Saucedo

Name and title of cementer's representative | Cementing Company | Signature

2929 Allen Parkway Suite 2100 Houston, Texas, 77019 | (713) 439-8600 | 5-3-16

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.

Byron Yoo | Environmental Engineer |

Typed or printed name of operator's representative | Title | Signature

150 North Dairy Ashford | Houston, TX 77079 | (832)-337-0082 | 06/14/2016

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

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CEMENTING REPORT

Form W-15
Rev. 08/2014

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

OPERATOR INFORMATION

Operator Name: SHELL Western E&P	**Operator P-5 No.:** 774719
Cementer Name: LUIS RIOS	**Cementer P-5 No.:**

WELL INFORMATION

District No.: 08	**County:** LOVING	
Well No.: 1D	**API No.:** 42-301-32766	**Drilling Permit No.:** 811257
Lease Name: UNIVERSITY 19-10 LOV	**Lease No.:**	
Field Name: QUITO WEST	**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.):** 5,000	**Est. % wash-out or hole enlargement:** 40%
Size of casing in O.D. (in.): 7"	**Casing weight (lbs/ft) and grade:** 23#, 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.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out: 36+	**Calculated top of cement (ft.):** 0	**Cementing date:** 05/06/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1195	C	REMARK1	2235	14867
2	240	C	REMARK2	319	2122
3					
Total	1,435			2,554	16989

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					

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					

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							
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Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
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Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

REMARK #1 35:65 POZ .005 LBS / SK STATIC FREE +5%SODIUM CHLORIDE + .75% R-3 +4% BENTONITE +65%SMS REMARK #2 .005 LBS/ SK STATIC FREE +.20%R-3 +.15%SMS

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FEILD SPECIALIST - LUIS RIOS	BAKER HUGHES INC.	
Name and title of cementer's representative	Cementing Company	Signature

2929 ALLEN PARKWAY SUITE 2100	HOUSTON TX. 77019	(713) 439- 8600	5/6/2016
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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Byron Yoo	Environmental Engineer	
Typed or printed name of operator's representative	Title	Signature

150 North Dairy Ashford, Houston, TX 77079	832-337-0082	06/14/2016
Address City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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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.

LWD REALTIME/MEMORY LOG COMPOSITE

BAKER HUGHES

Gamma Ray

Scale:	1:1200 MD
Depth Reference:	Driller's Depth
Company:	Shell Western E&P
Well:	University 19-10 Lov No. 1D
Field:	Quito, West (Delaware)
County:	Loving
Country:	United States
Status:	Final Print
API No:	423013276600
Job ID:	7935801
Surface Location:	
Latitude:	031° 42' 24.924" N
Longtitude:	103° 23' 31.044" W
SEC: N/A	TWN: N/A RGE: N/A
Other Services:	N/A
Permanent Datum (P.D.):	Ground Level
Elevation:	2820.80 ft
Log Measured From:	Rig Floor
Above P.D.	30.20 ft
KB:	N/A
DF:	2851.00 ft
GL:	2820.80 ft

Dates

Date From:	2016-05-02
Date To:	2016-05-11
Spud Date:	N/A

Interval Logged

Top: (ft)	96.00
Bottom: (ft)	8529.00

Magnetic Field Reference

Azi Reference North: Grid	Dip Angle: (deg) 59.68
Total Magnetic Field Strength: (nT)	47917
Mag to Reference North Correction: (deg)	8.64 E

Borehole Record

Hole Size (in)	From (ft)	To (ft)
12.250	0.00	1163.00
8.750	1163.00	5000.00
6.125	5000.00	8529.00

Casing Record

Size (in)	Weight (lb/ft)	From (ft)	To (ft)
9.625	N/A	0.00	1163.00
7.000	N/A	1163.00	5000.00

Mud Record

Type	From (ft)	To (ft)
Water Based Mud	4.78	8556.00

Deviation Record

Hole Size (in)	Interval (ft)	Inc | Az (Start)	Inc | Az (End)
12.250	1161.77	0.57 | 189.91	0.81 | 232.61
8.750	3840.75	0.81 | 232.61	3.01 | 83.33
6.125	3556.00	3.01 | 83.33	0.36 | 184.91

Acquisition System / Software Version

Baker Hughes Cadence	G3.3
Plot Studio	3.3.7410.1

Other

Rig:	Ensign 776
Contractor:	Ensign Energy Services Inc.

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.: 156972

1. Field name exactly as shown on proration schedule	2. Lease name as shown on proration schedule			
QUITO, WEST (DELAWARE)	UNIVERSITY 19-10 LOV			
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	47873	LOVING	08
8. Operator address including city, state, and zip code	9. Well no(s) *(see instruction E)*			
PO BOX 576 HOUSTON, TX 77001	1D			
	10. Classification ☐ Oil ☐ Gas ☒ Other *(see instruction A)*		11. Effective Date	05/16/2016

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

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
N/A	

RRC USE ONLY: Reviewer's initials: RRC Staff Approval date: 09/01/2016

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)

Byron Yoo
Signature

Env Engineer
Title

☒ **Authorized Employee of current operator**

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

byron.yoo@shell.com
E-mail Address (optional)

06/14/2016
Date

(832) 337-0082
Phone with area code

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

PERMIT TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL AND GAS

PROJECT NO. F-20427

SHELL WESTERN E&P
PO BOX 576
HOUSTON, TX 77001

Authority is granted to inject into the well identified herein in accordance with Statewide Rule 46 of the Railroad Commission of Texas and based on the information contained in the application (Forms H-1 and H-1A) dated January 18, 2016 for the permitted interval of the BELL CANYON, CHERRY CANYON, BRUSHY CANYON formations and subject to the following terms and special conditions:

UNIVERSITY 19-10 LOV 1D (000000) LEASE
QUITO, WEST (DELAWARE) FIELD
LOVING COUNTY, DISTRICT 08

WELL IDENTIFICATION AND PERMIT PARAMETERS:

Well No.	API No.	UIC Number	Permitted Fluids	Top Interval (feet)	Bottom Interval (feet)	Maximum Liquid Daily Injection Volume (BBL/day)	Maximum Gas Daily Injection Volume (MCF/day)	Maximum Surface Injection Pressure for Liquid (PSIG)	Maximum Surface Injection Pressure for Gas (PSIG)
1D	30132766	000113518	Salt Water	4990	8755	30000	N/A	2495	N/A

SPECIAL CONDITIONS:

Well No.	API No.	Special Conditions
1D	30132766	**1. If the well is drilled to a Total Depth more than 100 feet below the permitted injection interval, the plug back TD must be within 100 feet of the base of the injection interval.**

STANDARD CONDITIONS:

1. Injection must be through tubing set on a packer.

2. The District Office must be notified 48 hours prior to:
   a. running tubing and setting packer;

b. beginning any work over or remedial operation;
c. conducting any required pressure tests or surveys.

3. The wellhead must be equipped with a pressure observation valve on the tubing and for each annulus.

4. Prior to beginning injection and subsequently after any work over, an annulus pressure test must be performed. The test pressure must equal the maximum authorized injection pressure or 500 psig, whichever is less, but must be at least 200 psig. The test must be performed and the results submitted in accordance with the instructions of Form H-5.

5. The injection pressure and injection volume must be monitored at least monthly and reported annually on Form H-10 to the Commission's Austin office.

6. Within 30 days after completion, conversion to disposal, or any work over which results in a change in well completion, a new Form W-2 or G-1 must be filed to show the current completion status of the well. The date of the disposal well permit and the permit number must be included on the new Form W-2 or G-1.

7. Written notice of intent to transfer the permit to another operator by filing Form P-4 must be submitted to the Commission at least 15 days prior to the date of the transfer.

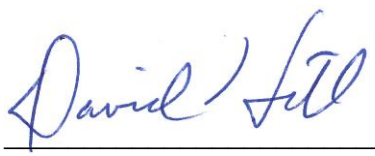
8. A well herein authorized cannot be converted to a producing well and have an allowable assigned without filing an amended Form W-1 and receiving Commission approval.

9. Unless otherwise required by conditions of the permit, completion and operations of the well shall be in accordance with the information represented on the application (Forms H-1 and H-1A).

10. This permit will expire when the Form W-3, Plugging Record, is filed with the Commission. Furthermore, permits issued for wells to be drilled will expire three (3) years from the date of the permit unless drilling operations have commenced.

Provided further that, should it be determined that such injection fluid is not confined to the approved interval, then the permission given herein is suspended and the fluid injection operation must be stopped until the fluid migration from such interval is eliminated. Failure to comply with all of the conditions of this permit may result in the operator being referred to enforcement to consider assessment of administrative penalties and/or the cancellation of the permit.

APPROVED AND ISSUED ON February 16, 2016.



David Hill, P.E., P.G.
Manager for Injection-Storage
Permits and Support

PROJECT NO. F-20427

Note: This document will only be distributed electronically.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	20 October 2015	**GAU Number:**	17243

Attention:	SHELL WESTERN E&P PO BOX 576 HOUSTON, TX 77001	**API Number:**	30132766
		County:	LOVING
		Lease Name:	UNIVERSITY 19-10 LOV
		Lease Number:	
Operator No.:	774719	**Well Number:**	1D
		Total Vertical Depth:	9000
		Latitude:	31.706922
		Longitude:	-103.391956
		Datum:	NAD27

Purpose: New Drill

Location: Survey-UL; Abstract-U10; Block-19; Section-10

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 325 feet and the Rustler, which is estimated to occur from 600 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 10/20/2015. 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.

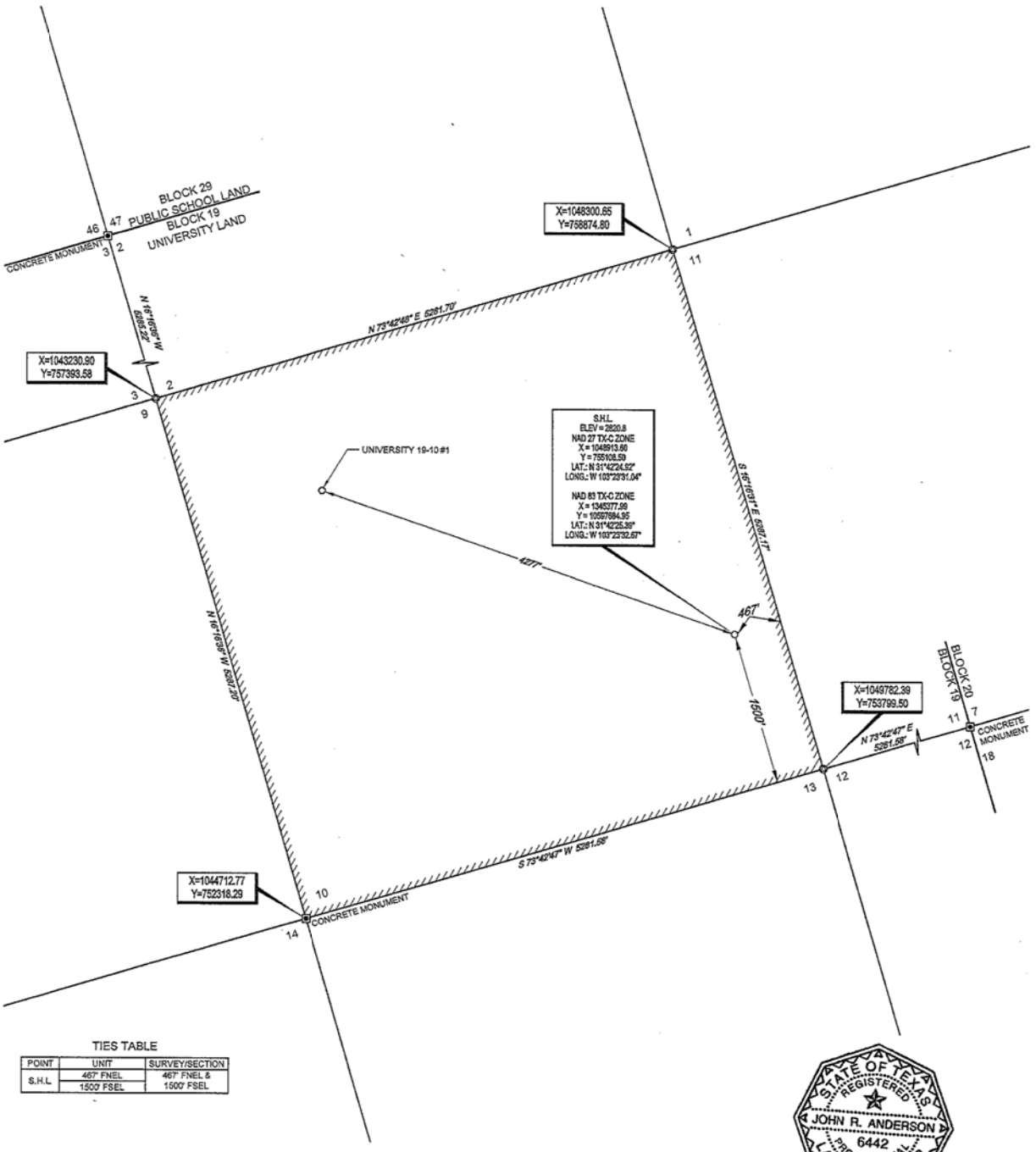
Groundwater Advisory Unit, Oil and Gas Division

UNIVERSITY19-10 LOV 1D
WELL LOCATION
641.07 ACRES (MEASURED)
SECTION 10, BLOCK 19, UNIVERSITY LAND
LOVING COUNTY, TEXAS

SHELL WESTERN E&P

LEGEND
- UNIT BOUNDARY
- BLOCK/TOWNSHIP LINE
- SURVEY/SECTION LINE
- PROPOSED WELL PATH
- CONCRETE MONUMENT
- CALCULATED CORNER
- WELL POINT

SCALE: 1" = 1000'
0' 500' 1000'



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	467' FNEL	467' FNEL &
	1500' FSEL	1500' FSEL

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

John R. Anderson, R.P.L.S. No. 6442
SEPTEMBER 9, 2015

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 107 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

UNIVERSITY19-10 LOV 1D	REVISION: INT	DATE
DATE: 09/09/2015		
FILE: LO_UNIVERSITY_19_10_LOV_1D		
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.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. OWNERSHIP OF ANY EXCESS ACREAGE SHOWN WAS NOT DETERMINED BY THIS SURVEYOR.

NOTES CONT'D:
6. THE LEASE AND WELL SHOWN HEREON ARE LOCATED APPROXIMATELY ±12.2 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 JULY 23, 2015. AT A GROUND LEVEL ELEVATION OF 2820.8 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

S:\SURVEY\SHELL\PERMIAN_BASIN\UNIVERSITY_19_10_LOV\FINAL_PRODUCTS\LO_UNIVERSITY_19_10_LOV_1D.DWG 9/9/2015 3:51:47 PM omorrow