



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 10/31/2018
Tracking No.: 188157

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Table with Operator, SHELL WESTERN E&P, Operator 774719, PO BOX 576 HOUSTON, TX 77001-0000

WELL INFORMATION

Table with API 42-301-33232, Well No.: 0910H, Lease UNIVERSITY 19 PW UNIT, RRC Lease 42401, Location Section: 9, Block: 19, Survey: UL, Abstract: U9, County: LOVING, RRC District 08, Field PHANTOM (WOLFCAMP), Field No.: 71052900, Latitude 31, Longitud -103, This well is 10.6 miles in a SE direction from MENTONE, which is the nearest town in the

FILING INFORMATION

Table with Purpose of Initial Potential, Type of New Well, Well Type: Producing, Completion or Recompletion 01/20/2018, Type of Permit, Date 05/01/2017, Permit No. 823264, Permit to Drill, Plug Back, or Rule 37 Exception, Fluid Injection, O&G Waste Disposal, Other:

COMPLETION INFORMATION

Table with Spud 06/14/2017, Date of first production after rig 01/20/2018, Date plug back, deepening, drilling operation 06/14/2017, Date plug back, deepening, recompletion, drilling operation 10/07/2017, Number of producing wells on this lease this field (reservoir) including this 25, Distance to nearest well in lease & reservoir 505.0, Total number of acres in 13511.20, Elevation 2772 GL, Total depth TVD 11569, Total depth MD 18610, Plug back depth TVD, Plug back depth MD, Was directional survey made other inclination (Form W- Yes, Rotation time within surface casing Is Cementing Affidavit (Form W-15) 65.0 Yes, Recompletion or No, Multiple No, Type(s) of electric or other log(s) Gamma Ray (MWD), Electric Log Other Description:, Location of well, relative to nearest lease of lease on which this well is 1461.0 Feet from the SW Line and 6550.0 Feet from the NW Line of the UNIVERSITY 19 J Lease. Off Lease : No

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

Field & Reservoir Gas ID or Oil Lease 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	1000.0	Date	02/01/2017
SWR 13 Exception	Depth	4900.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of	02/21/2018	Production	Flowing
Number of hours	24	Choke	26/64
Was swab used during this	No	Oil produced prior to	20199.00
PRODUCTION DURING TEST PERIOD:			
Oil	936.00	Gas	759
Gas - Oil	810	Flowing Tubing	2373.00
Water	2568		
CALCULATED 24-HOUR RATE			
Oil	936.0	Gas	759
Oil Gravity - API - 60.:	44.0	Casing	2102.00
Water	2568		

CASING RECORD

<u>Ro</u>	<u>Type of Casing</u>	<u>Casing Size (in.)</u>	<u>Hole Size</u>	<u>Setting Depth</u>	<u>Multi - Stage Tool</u>	<u>Multi - Stage Shoe</u>	<u>Cement Class</u>	<u>Cement Amoun</u>	<u>Slurry Volume (cu.)</u>	<u>Top of Cement (ft.)</u>	<u>TOC Determined By</u>
1	Surface	9 5/8	12 1/4	4920	1210		CLASS C	3121	5578.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	11837			CLASS C AND CLASS H	731	1534.0	3922	Calculation

LINER RECORD

<u>Ro</u>	<u>Liner Size</u>	<u>Hole Size</u>	<u>Liner Top</u>	<u>Liner Bottom</u>	<u>Cement Class</u>	<u>Cement Amoun</u>	<u>Slurry Volume (cu.)</u>	<u>Top of Cement (ft.)</u>	<u>TOC Determined</u>
1	4 1/2	6 1/8	10978	18610	CLASS H	688	829.0	10978	Calculation

TUBING RECORD

<u>Ro</u>	<u>Size (in.)</u>	<u>Depth</u>	<u>Size (ft.)</u>	<u>Packer Depth (ft.)/Type</u>
1	2 7/8	10959		10928 / VERSASET PACKER

PRODUCING/INJECTION/DISPOSAL INTERVAL

<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
1	No	L1 11851	18339.0

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

Was hydraulic fracturing treatment	Yes
Is well equipped with a downhole sleeve?	Yes
Production casing test pressure (PSIG) during hydraulic fracturing	9500
Actual maximum pressure (PSIG) during fracturin	9382
Has the hydraulic fracturing fluid disclosure been	Yes
If yes, actuation pressure	5890.0

<u>Ro</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>

FORMATION RECORD

<u>Formations</u>	<u>Encountere</u>	<u>Depth TVD</u>	<u>Depth MD</u>	<u>Is formation</u>	<u>Remarks</u>
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
BELL CANYON	Yes	5005.0	5044.0	Yes	
BRUSHY CANYON	Yes	7142.0	7190.0	Yes	
DELAWARE	Yes	4981.0	5020.0	Yes	
CHERRY CANYON	Yes	5942.0	5988.0	Yes	
BONE SPRINGS	Yes	8592.0	8641.0	Yes	
WOLFCAMP	Yes	11360.0	11437.0	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					No
Is the completion being downhole commingled					No

REMARKS

KOP AT 11659

THE P-6 REVISING THE LEASE ACREAGE TO 13511.2 IS CURRENTLY BEING SUBMITTED TO THE RRC. ONCE APPROVED, THE P-16 WILL BE PROVIDED AS PART OF THIS PACKET.

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2018-04-26 16:19:49.795] EDL=6488 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well

CASING RECORD :

DV TOOL SET AT 1210, BUT NOT OPENED AS APPROVED IN SWR 13.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

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

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Maureen Kovacic	Title:	Regulatory Specialist
Telephone	(832) 337-0953	Date	04/23/2018



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 EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BJ SERVICES, LLC	Cementer P-5 No.: 403101

WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 0910H	API No.: 4230133232	Drilling Permit No.: 823264
Lease Name: University 19 PW Unit	Lease No.: 42401	
Field Name: Phantom (Wolfcamp)	Field No.: 92100050	

I- CASING CEMENTING DATA

Type of casing: Conductor Surface Intermediate Liner Production

Drilled hole size (in.): 12.25 Depth of drilled hole (ft.): 4,923 Est. % wash-out or hole enlargement: 22%

Size of casing in O.D. (in.): 9.625 Casing weight (lbs/ft) and grade: 40 LB/FT, J-55 No. of centralizers used: 29

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.): 4920 Top of liner (ft.):
Setting depth liner (ft.):

Hrs. waiting on cement before drill-out: +12 Calculated top of cement (ft.): 0 Cementing date: 06/17/2017

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2,620	C	SEE REMARK #1	4912	15685
2	501	C	SEE REMARK #2	666	2126
3					
Total	3121			5578	17811

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.) Tapered string depth of drilled hole (ft.)
Upper: Lower: Upper: Lower:

Tapered string size of casing in O.D. (in.) Tapered string casing weight (lbs/ft) and grade Tapered string no. of centralizers used
Upper: Lower: Upper: Lower: 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.) Tapered string depth of drilled hole (ft.)
Upper: Lower: Upper: Lower:

Tapered string size of casing in O.D. (in.) Tapered string casing weight (lbs/ft) and grade Tapered string no. of centralizers used
Upper: Lower: Upper: Lower: 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)							

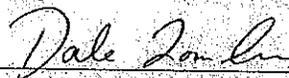
REMARKS

REMARK #1: C65/35POZ+ 4% BENTONITE+ 1% R-3+ 0.65% SMS+ 5% SALT+ 0.01 GAL/SK FP-6L+ 0.005 LB/SK STATIC FREE. REMARK #2: C+ 0.35% R-3+ 0.15% SMS+ 0.01 GAL/SK FP-6L+ 0.005 LB/SK STATIC FREE. CIRCULATED 364 BBLs @ 12.8 PPG (1,090 SACKS) BACK 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.

Dale Tomlinson

BJ SERVICES, LLC



Name and title of cementer's representative

Cementing Company

Signature

11211 FM 2920 RD.

TOMBALL, TX 77375 (281) 408-2361

06/17/2017

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

02/27/2018

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](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.



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 P.O. Box 12967
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Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION	
Operator Name: SHELL EXPLORATION & PRODUCTION	Operator P-5 No.: 774719
Cementer Name: BJ SERVICES,LLC	Cementer P-5 No.: 403101

WELL INFORMATION	
District No.: 08	County: LOVING
Well No.: 0910 H	API No.: 42301332320000
Lease Name: University 19 PW Unit	Drilling Permit No.: 823264
Field Name: Phantom (wolfcamp)	Lease No.: 42401
	Field No.: 71052900

I. CASING CEMENTING DATA		
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input checked="" type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production		
Drilled hole size (in.): 8.75	Depth of drilled hole (ft.): 11847	Est. % wash-out or hole enlargement: 10%
Size of casing in O.D. (in.): 7	Casing weight (lbs/ft) and grade: 29 LB / P-110	No. of centralizers used: 102
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 11,837	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 3,922'	Cementing date: 07/05/2017

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	265	C	REMARKS 1	975	6487
2	466	H	REMARKS 2	559	3719
3					
Total	731			1534	10206

II. CASING CEMENTING DATA		
Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement shoe <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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

REMARKS 1 35:65:6 CLASS C + 10.00% BA-90 + 5.00% A-10 + 1.50% CD-32 + 2.25% SMS + 3.00% KCL (5.593 LB/SK) + 1.20% R-3 + 0.005 LB/SK STATIC FREE + 0.005 GPS FP-6L
 REMARKS 2 50:50:2 CLASS H + 0.60% FL-66 + 0.35% SMS + 0.40% R-3 + 0.005 LB/SK STATIC FREE + 0.01 GPS FP-6L

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.

Field Specialist-MARIO G OLIVARES BJ SERVICES, LLC *Mario G Olivares*
 Name and title of cementer's representative Cementing Company Signature
 11211 FM 2920 RD. TOMBALL, TEXAS 77375 (281) 408-2361 07/05/2017
 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 *Maureen Kovacic*
 Typed or printed name of operator's representative Title Signature
 150 N. Dairy Ashford Houston TX 77079 832-337-0953 02/27/2018
 Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

Instructions for Form W-15, Cementing Report

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- 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](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/OV 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.



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Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION	
Operator Name: SHELL EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BJ SERVICES LLD	Cementer P-5 No.: 403101

WELL INFORMATION		
District No.: 08	County: LOVING	
Well No.: 091014	API No.: 4230133232.01	Drilling Permit No.: 823264
Lease Name: University 19 PW Unit	Lease No.: 42401	
Field Name: Phantom (Wolfcamp)	Field No.: 71052900	

I. CASING CEMENTING DATA		
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input checked="" type="checkbox"/> Liner <input type="checkbox"/> Production		
Drilled hole size (in.): 6.125	Depth of drilled hole (ft.): 18610	Est. % wash-out or hole enlargement: 15%
Size of casing in O.D. (in.): 4.5	Casing weight (lbs/ft) and grade: 11.6# P-110	No. of centralizers used:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 18610	Top of liner (ft.): 10978
		Setting depth liner (ft.): 18610
Hrs. waiting on cement before drill-out: n/a	Calculated top of cement (ft.): 10978	Cementing date: 8/14/17

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	688	H	REMARKS	629	8432
2					
3					
Total	688			629	8432

II. CASING CEMENTING DATA		
Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement shoe <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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

LEAD:50:50:2 CLASS H+.65%FL-66+.3%CD-32+.35%SMS+.5%R-3+.005#SF+.01GPS FP-6L

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.

BRIAN LEVANDOWSKI- FIELD SPECIALIST III BJ SERVICES LLC

Name and title of cementer's representative: Brian Levandowski Cementing Company: BJ SERVICES LLC Signature: [Signature]

11211 FM 2920 RD. TOMBALL, TX 77375 (281) 408-2361 8/14/17

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 Signature: [Signature]

Typed or printed name of operator's representative Title

150 N. Dairy Ashford Houston TX 77079 832-337-0953 02/27/2018

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=&p_n1&p_tac=&ti=16&pi=1&cha3&ra14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&p_n1&p_tac=&ti=16&pi=1&cha3&ra14)). 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 callper 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.

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 03/06/2017
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: 03/09/2017

D. CRAIG PEARSON
DISTRICT DIRECTOR



**APPLICATION FOR APPROVAL OF SURFACE CASING > 3500 FEET
Statewide Rule 13(b)(1)(A)
RAILROAD COMMISSION OF TEXAS**

Operator's Name and Address: Shell Western E&P
150 N. Dairy Ashford
Houston, Texas 77079

P5 Number: 774719

Area for review: District 8
Lease Name: UNIVERSITY 19 J 0910H
Field Name: Phantom (Wolfcamp) County: Loving
Survey: University Land Abstract: A-
Drilling Permits: 823264

Note: Attach a map if the request is for more than one pad.

How will the operator maintain well control during drilling operations:

While drilling the surface hole Shell utilizes drilling fluid of sufficient weight to overbalance the formations being penetrated. In the event that flow is encountered a low-pressure rotating head is rigged-up under the rig floor to divert flow to the reserve pit.

How will the operator ensure cement is circulated to surface and that there is adequate bonding of cement:

A DV tool is placed below the water table (as defined by the GAU), and Shell pumps a minimum of 250% excess cement for the second stage of the surface cement job. Depending on nearby offsets the amount of excess pumped has been as high as 300%. Adequate bonding of cement is achieved by utilizing the centralizer program as outlined in RRC Rule 3.13 (b) (1) (G). A second stage of cement is only included in this request plan as a contingency measure to achieve cement returns to surface, in which case the DV tool would be opened.

How will the operator prevent the migration of formation fluids thru the annular space:

All cement slurries pumped by Shell comply with RRC Rule 3.13 (b) (1) (D) and Rule 3.13 (b) (1) (E). These slurries have been effective in preventing migration of formation fluids after the cement has been placed in the 100+ wells Shell has drilled in the Permian.

Signature: Sondra Bienvenu Name: Sondra Bienvenu Date: 03/06/2017 Phone: 832-337-3100

RRC District Office Action:	
<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Approved as Modified
<input type="checkbox"/> Denied	By: <u>Crik Hanson</u> Date: <u>3-9-17</u>
Remarks/Modifications:	

RRC Use Only ▶

Tracking No.: 188157

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: 01/20/2018
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 823264	
Lease Name UNIVERSITY 19 PW UNIT	Lease/ID No. 42401	Well No. 0910H
County LOVING	API No. 42- 301-33232	

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
Signature
SHELL WESTERN E&P
Name (print)

Regulatory Specialist
Title
(832) 337-0953
Phone
02/27/2018
Date

-FOR RAILROAD COMMISSION USE ONLY-

**CERTIFICATE OF
 POOLING AUTHORITY**

P-12

Revised 05/2001

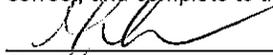
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 0910H
7. Pooled Unit Name University 19 PW Unit	8. API Number 42-301-33232	9. Purpose of Filing <input type="checkbox"/> Drilling Permit (W-1) <input checked="" type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 13511.20	

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
Tr. 1	University Lands	160.24	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 2	University Lands	480.71	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 3	University Lands	520.93	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 4	University Lands	641.05	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 5	University Lands	280.46	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 6	University Lands (below 11710')	40.07	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tr. 7	University Lands	320.50	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 8	University Lands	641.06	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 9	University Lands	566.27	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 10	University Lands	641.31	<input type="checkbox"/>	<input type="checkbox"/>

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.

	Maureen Kovacic
Signature	Print Name
Reg. Specialist	maureen.kovacic@shell.com
Title	E-mail (if available)
	03/06/2018
	Date
	(832) 337-0953
	Phone

INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

- 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.
- 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.
- If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
- 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.
- If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
- Identify the drill site tract with an * to the left of the tract identifier.
- The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.

CERTIFICATE OF POOLING AUTHORITY

P-12

Revised 05/2001

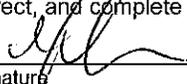
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 0910H
7. Pooled Unit Name University 19 PW Unit	8. API Number 301-33232	9. Purpose of Filing <input type="checkbox"/> Drilling Permit (W-1) <input checked="" type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 13511.20	

DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

TRACT/PLAT IDENTIFIER	TRACT NAME	ACRES IN TRACT <i>(See inst. #7 below)</i>	INDICATE UNDIVIDED INTERESTS	
			UNLEASED	NON-POOLED
Tr. 11	University Lands	641.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 12	University Lands	320.60	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 13	University Lands	320.61	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 14	University Lands	640.92	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 15	University Lands	640.99	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 16	University Lands	465.34	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	640.96	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	624.55	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 20	University Lands	120.21	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 22	University Lands	320.45	<input type="checkbox"/>	<input type="checkbox"/>

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.



 Signature

Maureen Kovacic

Reg. Specialist maureen.kovacic@shell.com

Print Name

03/06/2018

(832) 337-0953

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.

**CERTIFICATE OF
 POOLING AUTHORITY**

P-12

Revised 05/2001

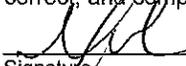
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 0910H
7. Pooled Unit Name University 19 PW Unit	8. API Number 301-33232	9. Purpose of Filing <input type="checkbox"/> Drilling Permit (W-1) <input checked="" type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 13511.20	

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
Tr. 23	University Lands	640.99	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 24	University Lands	640.90	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 25	University Lands	640.86	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 26	University Lands	639.62	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 27	University Lands	638.33	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 28	University Lands	200.31	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 29	University Lands	120.19	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 30	University Lands	320.50	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 32	University Lands	320.48	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 34	University Lands	320.52	<input type="checkbox"/>	<input type="checkbox"/>

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.

	Maureen Kovacic
Signature	Print Name
Reg. Specialist	Maureen.kovacic@shell.com
E-mail (if available)	03/06/2018
Title	Date
	(832) 337-0549
	Phone

INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

- 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.
- 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.
- If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
- 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.
- If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
- Identify the drill site tract with an * to the left of the tract identifier.
- The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.



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.: 0904H API No.: 301-33226
Total Lease Acres: 13511.2 Drilling Permit No.: 823212
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.

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

Table with 8 columns: 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)

Summary table for well counts and acreage: Total Well Count > 37, Total Assigned Horiz. Acreage 6881, Total Remaining Horiz. Acreage 6630.2, etc.

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

Attach Additional Pages As Needed. [] No additional pages [x] Additional Pages: 1 (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: Maureen Kovacic, Name and title (type or print), Email (include email address only if you affirmatively consent to its public release)

150 N. Dairy Ashford Houston TX 77079 832-337-0953 07/12/2018
Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 01 February 2017**GAU Number:** 166499

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

API Number:
County: LOVING
Lease Name: University 19 PW Unit

Operator No.: 774719

Lease Number:
Well Number: 1407H
Total Vertical Depth: 12000
Latitude: 31.699414
Longitude: -103.410281
Datum: NAD27

Purpose: New Drill**Location:** Survey-UL; Block-19; Section-9

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

The interval from the land surface to a depth of 300 feet, and the Rustler, the top of which is estimated to occur from 500 to 550 feet depth and the base of which is estimated to occur from 950 to 1000 feet depth by reconnaissance-level evaluation, must be protected.

This recommendation is applicable for all wells drilled in this sec. 9.

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 01/25/2017. 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

Form GW-2 P.O. Box 12967 Austin, Texas 78771-2967 512-463-2741 Internet address: www.rrc.texas.gov
Rev. 02/2014

UNIVERSITY 19 PW UNIT

13511.20 ACRES (MEASURED)

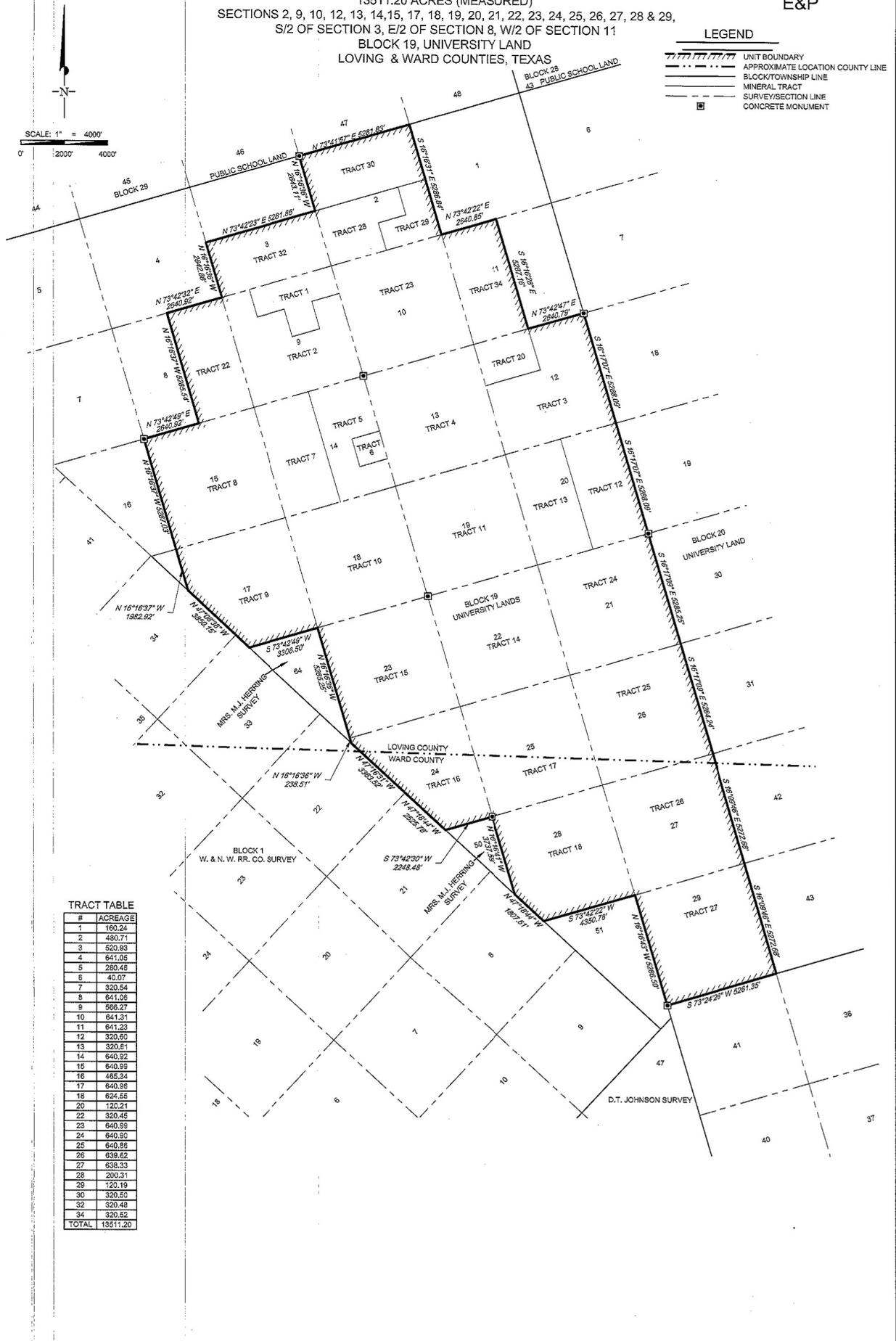
SECTIONS 2, 9, 10, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 & 29,
S/2 OF SECTION 3, E/2 OF SECTION 8, W/2 OF SECTION 11
BLOCK 19, UNIVERSITY LAND
LOVING & WARD COUNTIES, TEXAS

SHELL WESTERN
E&P

LEGEND

- UNIT BOUNDARY
- APPROXIMATE LOCATION COUNTY LINE
- BLOCK/TOWNSHIP LINE
- MINERAL TRACT
- SURVEY/SECTION LINE
- CONCRETE MONUMENT

SCALE: 1" = 4000'
0' 2000' 4000'



TRACT TABLE

#	ACREAGE
1	160.24
2	480.71
3	320.85
4	641.06
5	280.48
6	40.07
7	320.54
8	641.06
9	566.27
10	641.31
11	641.23
12	320.60
13	320.61
14	640.92
15	640.99
16	465.34
17	640.96
18	624.56
20	120.21
22	320.45
23	640.99
24	640.90
25	640.96
26	638.62
27	638.33
28	200.31
29	120.19
30	320.50
32	320.48
34	320.52
TOTAL	13511.20



SHELL WESTERN
E&P

WELL LOCATION

LEASE NAME & WELL NO.:

UNIVERSITY 19 J 0910H

UNIT/LEASE ACREAGE:

PW UNIT: 8588.11 ACRES, ALLOCATION UNIT: 320.48 ACRES (MEASURED)

TOTAL ACREAGE:

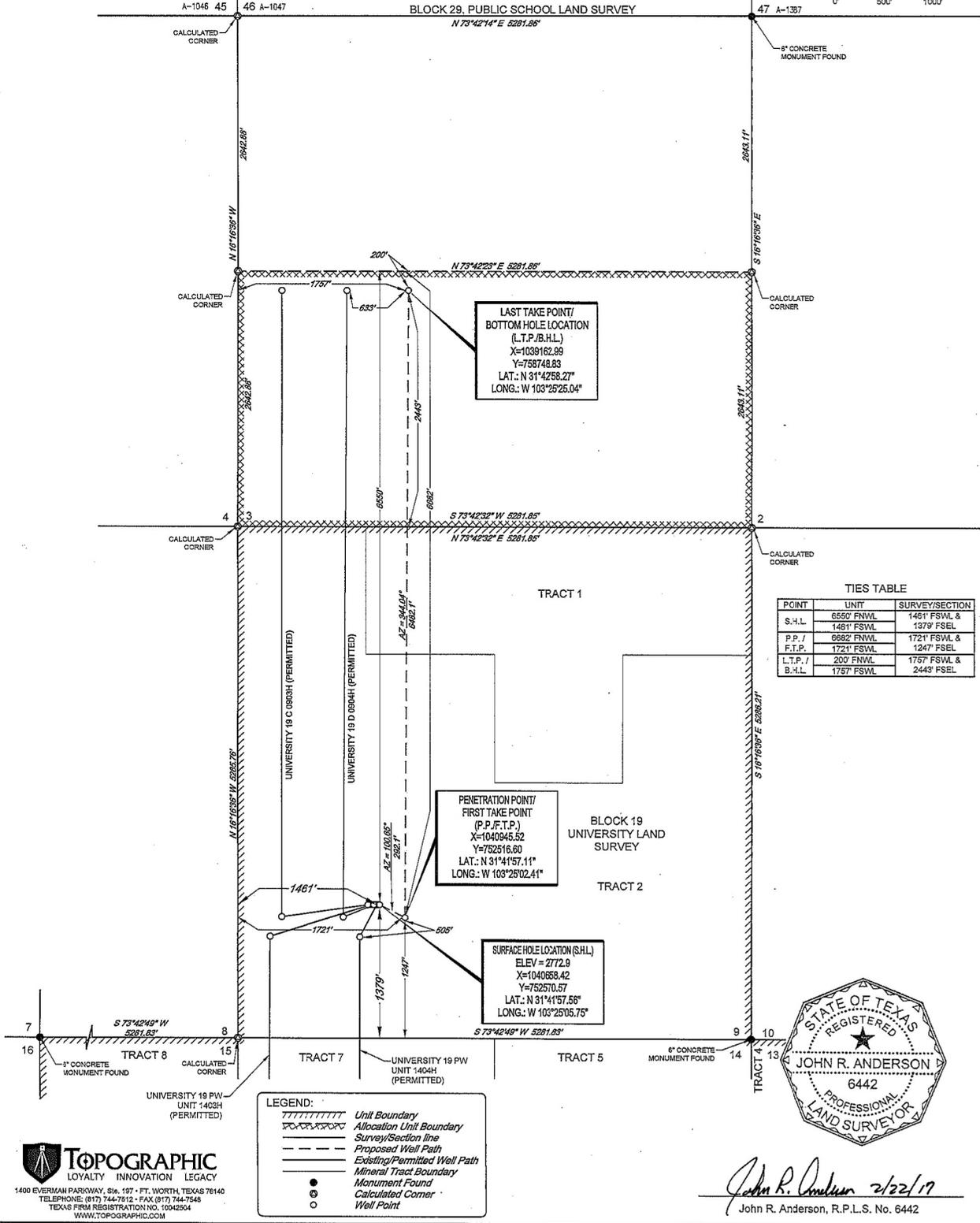
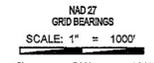
8908.59 ACRES (MEASURED)

NEAREST TOWN IN COUNTY:

±10.6 MILES SOUTHEAST OF MENTONE, TEXAS

DESCRIPTION:

S/2 OF SECTION 3 & SECTION 9, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING COUNTY, TEXAS



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	6562' FNWL	1421' FSWL & 1379' FSEL
P.P./	6882' FNWL	1721' FSWL & 1247' FSEL
F.T.P.	1721' FNWL	1247' FSWL
L.T.P./	200' FNWL	1757' FSWL & 2449' FSEL
B.H.L.	1757' FSWL	



John R. Anderson 2/22/17
John R. Anderson, R.P.L.S. No. 6442

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 197 - FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 - FAX: (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

LEGEND:

	Unit Boundary
	Allocation Unit Boundary
	Survey/Section line
	Proposed Well Path
	Existing/Permitted Well Path
	Mineral Tract Boundary
	Monument Found
	Calculated Corner
	Well Point

UNIVERSITY 19 J 0910H	REVISION:	
	INT	DATE
	O.M.	02/22/2017
DATE:	02/07/2017	
FILE:	LO_UNIVERSITY_19_J_0910H_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 1983, 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, ORIGINAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL WESTERN E&P. THIS PLAN 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 IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAN IN NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
4. ALL ELEVATION VALUES CONTAINED HEREIN ARE CRYOMETRIC 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 PRELIMINARY LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF NOVEMBER 3, 2016, AT A GROUND LEVEL ELEVATION OF 2722.9 SURVEY FEET.
7. S.H.L. = SURFACE HOLE LOCATION
8. P.P. = POINT OF PENETRATION
9. F.T.P. = FIRST TAKE POINT
10. L.T.P. = LAST TAKE POINT
11. B.H.L. = BOTTOM HOLE LOCATION



**SHELL WESTERN
E&P**

AS-DRILLED LOCATION

LEASE NAME & WELL NO.:

UNIVERSITY 19 PW UNIT 0910H

UNITLEASE ACREAGE:

PW UNIT: 6587.74 ACRES, ALLOCATION UNIT: 320.48 ACRES (MEASURED)

TOTAL ACREAGE:

8908.22 ACRES (MEASURED)

NEAREST TOWN IN COUNTY:

±10.6 MILES SOUTHEAST OF MENTONE, TEXAS

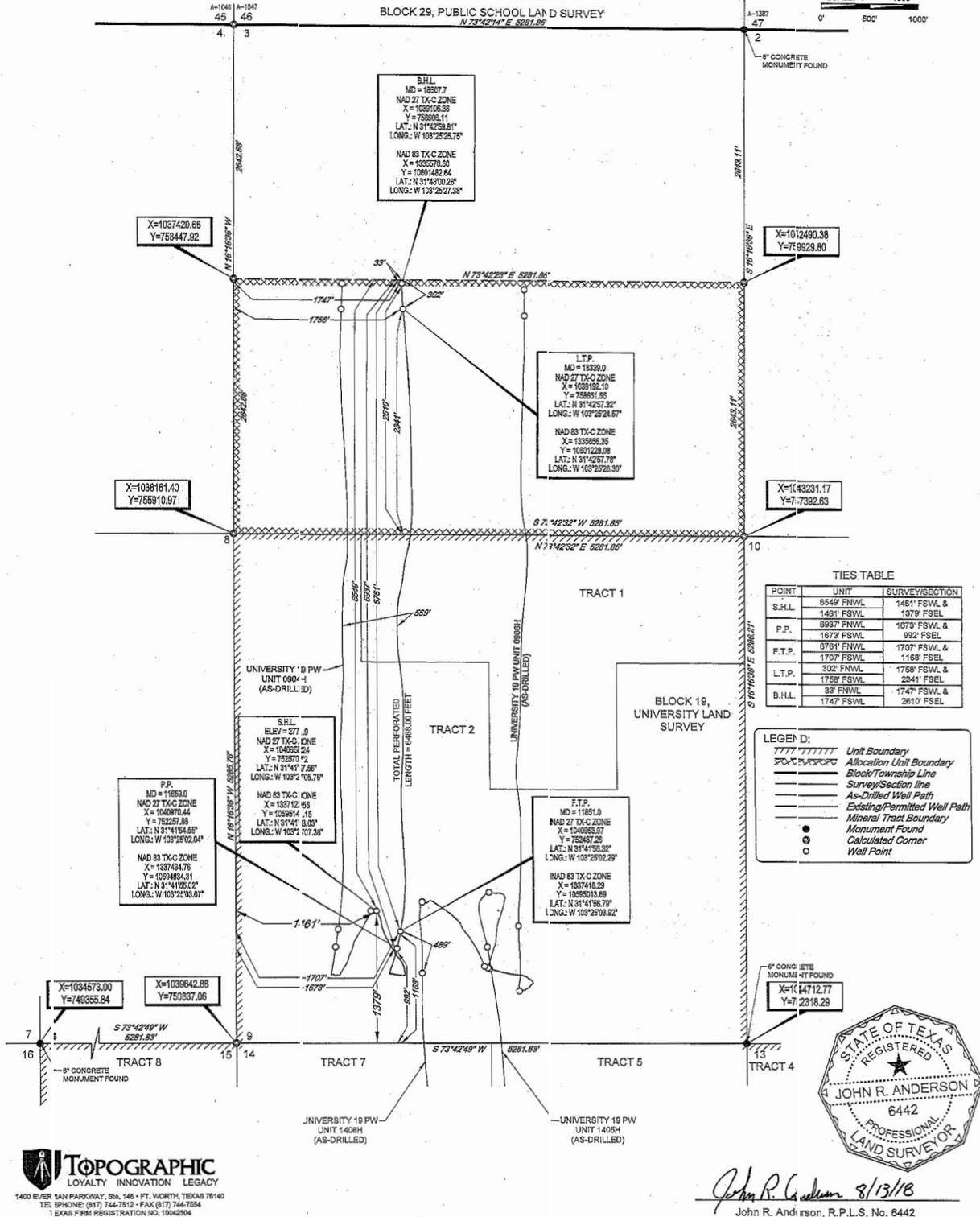
DESCRIPTION:

**3/2 OF SECTION 3 & SECTION 9, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING COUNTY, TEXAS**

BLOCK 29, PUBLIC SCHOOL LAND SURVEY

N 73°42'14" E 5281.85'

SCALE: 1" = 1000'



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	6549' FNWL	1461' FSWL & 1379' FSEL
P.P.	8957' FNWL	1673' FSWL & 932' FSEL
F.T.P.	6761' FNWL	1707' FSWL & 1158' FSEL
L.T.P.	302' FNWL	1758' FSWL & 2341' FSEL
B.H.L.	33' FNWL	1747' FSWL & 2610' FSEL

LEGEND:

- Unit Boundary
- Allocation Unit Boundary
- Block/Township Line
- Survey/Section Line
- As-Drilled Well Path
- Existing/Permitted Well Path
- Mineral Tract Boundary
- Monument Found
- Calculated Corner
- Well Point



John R. Anderson 8/13/18
John R. Anderson, R.P.L.S. No. 6442

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LOYALTY INNOVATION LEGACY
1400 BIVIER SAN PARKWAY, Ste. 145 - FT. WORTH, TEXAS 76104
TEL: (817) 744-7512 - FAX: (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042804
WWW.TOPOGRAPHIC.COM

UNIVERSITY 19 PW UNIT 0910H	REVISION:		NOTES:	NOTES CONT'D:
	INT	DATE		
DATE: 08/13/2018			1. ORIGINAL DOCUMENT SIZE: 11" X 17"	6. THE AS-DRILLED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF MAY 11, 2017.
FILE: AD UNIVRSITY_19_PW_UNIT_0910H			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 1983, UNLESS OTHERWISE NOTED.	7. THE SUBSURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.
DRAWN BY: T.H.A.C.L.			3. THIS LOCATION AND/OR UNITLEASE 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 EVIDENTIAL, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL WESTERN E&P. THIS PLAN WAS CREATED FOR THE SOLE PURPOSE OF FILING A TRACT WITH THE PUBLIC COMMISSION OF TEXAS AND SHOULD NOT BE CONSIDERED AS A "WELL DRY SURVEY" IN COMPLIANCE WITH T.B.P.L.S. MINIMUM STANDARDS OF PROCEDURES FOR SURVEY SURVEYS. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN IN THE FACE OF THIS PLAN WHOSE INTERESTS ARE IDENTIFIED FOR THIS TRANSACTION ONLY.	8. S.H.L. = SURFACE HOLE LOCATION
SHEET: 1 OF 1			4. ALL ELEVATION VALUES CONTAINED HEREIN ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD 83), U.S. SURVEY FEET.	9. P.P. = POINT OF PENETRATION
			5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.	10. F.T.P. = FIRST TAKE POINT
				11. L.T.P. = LAST TAKE POINT
				12. B.H.L. = BOTTOM HOLE LOCATION