



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 02/15/2018
Tracking No.: 177795

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

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

WELL INFORMATION			
API	42-301-33170	County:	LOVING
Well No.:	1503H	RRC District	08
Lease	UNIVERSITY 19 PW UNIT	Field	PHANTOM (WOLFCAMP)
RRC Lease	42401	Field No.:	71052900
Location	Section: 8, Block: 19, Survey: UL, Abstract:		
Latitude	31	Longitud	-103
This well is	9.7	miles in a	SOUTHEAST
direction from	MENTONE,		
which is the nearest town in the			

FILING INFORMATION			
Purpose of	Well Record Only		
Type of	New Well		
Well Type:	Shut-In Producer	Completion or Recompletion	04/12/2017
Type of Permit	Date	Permit No.	
Permit to Drill, Plug Back, or	05/12/2017	821060	
Rule 37 Exception		0304941	
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	01/29/2017	Date of first production after rig	04/12/2017
Date plug back, deepening, drilling operation	01/29/2017	Date plug back, deepening, recompletion, drilling operation	04/12/2017
Number of producing wells on this lease this field (reservoir) including this	21	Distance to nearest well in lease & reservoir	386.0
Total number of acres in	8588.11	Elevation	2736 GL
Total depth TVD	11550	Total depth MD	19580
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)	97.0 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	1266.0 Feet from the	Off Lease :	No
	586.0 Feet from the	SW Line and	
		SE Line of the	
		UNIVERSITY 19 PW UNIT	Lease.

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.			
Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type
W2:	N/A		

PACKET:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth	1050.0	Date 11/30/2016
SWR 13 Exception	Depth	4895.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of		Production	
Number of hours	24	Choke	
Was swab used during this	No	Oil produced prior to	
PRODUCTION DURING TEST PERIOD:			
Oil		Gas	
Gas - Oil	0	Flowing Tubing	
Water			
CALCULATED 24-HOUR RATE			
Oil		Gas	
Oil Gravity - API - 60.:		Casing	
Water			

CASING RECORD											
Ro	Type of Casing	Casing	Hole	Setting	Multi -	Multi -	Cement	Cement	Slurry	Top of	TOC
		Size (in.)	Size	Depth	Stage Tool	Stage Shoe	Class	Amoun	Volume (cu.	Cement (ft.)	Determined By
1	Surface	9 5/8	12 1/4	4895	1225		C	3130	5584.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	11900			C,H	740	1571.0	1450	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	10950	19580	H	750	903.0	10950	Calculation

TUBING RECORD			
<u>Ro</u>	<u>Size (in.)</u>	<u>Depth</u>	<u>Size (ft.)</u>
Packer Depth (ft.)/Type			
/			
N/A			

PRODUCING/INJECTION/DISPOSAL INTERVAL			
<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
L			
N/A			

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment		No	
Is well equipped with a downhole sleeve?		If yes, actuation pressure	
No			
Production casing test pressure (PSIG) during hydraulic fracturing		Actual maximum pressure (PSIG) during fracturin	
Has the hydraulic fracturing fluid disclosure been		No	
<u>Ro</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>

OPERATOR'S CERTIFICATION			
Printed	Maureen Kovacic	Title:	Regulatory Specialist
Telephone	(832) 337-0953	Date	02/13/2018



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

CEMENTING REPORT

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

OPERATOR INFORMATION

Operator Name: Shell Exploration & Production Co

Operator P-5 No.: 774719

Cementers Name: Baker Hughes Inc

Cementers P-5 No.: 048262

WELL INFORMATION

District No.: 08

County: LOVING

Well No.: UNIT #1603H

API No.: 42301331700000

Drilling Permit No.: 821060

Lease Name: UNIVERSITY 10 PW

Lease No.:

Field Name: Phantom (Wolfcamp)

Field No.:

I. CASING CEMENTING DATA

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

Drilled hole size (in.): 12 1/4"

Depth of drilled hole (ft.): 4895

Est. % wash-out or hole enlargement: 29%

Size of casing in O.D. (in.): 9 5/8"

Casing weight (lbs/ft) and grade: #40 J-55

No. of centralizers used: 31

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.): 4895

Top of liner (ft.):

Hrs. waiting on cement before drill-out: +12

Calculated top of cement (ft.): 0

Setting depth liner (ft.):

Cementing date: 2/2/2017

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2630	C	SEE REMARKS	4920	16709
2	600	C	SEE REMARKS	664	2120
3					
Total	3130			664	17829

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					



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

CEMENTING REPORT

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

OPERATOR INFORMATION					
Operator Name: SHELL EXPLORATION & PRODUCTION CO			Operator P-S No.: 774719		
Cementer Name: BJ SERVICES, LLO			Cementer P-S No.: 403101		
WELL INFORMATION					
District No.: 08			County: LOVING		
Well No.: 1503H			API No.: 42301331700000		
Lease Name: UNIVERSITY 10 PW UNIT			Drilling Permit No.: 821060		
Field Name: Phantom (Wolfcamp)			Lease No.:		
			Field No.:		
PLACING 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 3/4"		Depth of drilled hole (ft.): 11,915		Est. % wash-out or hole enlargement: 15%	
Size of casing in O.D. (in.): 7		Casing weight (lbs/ft) and grade: 29, P-110		No. of centralizers used: 67	
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.): 11,900		Top of liner (ft.):	
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 11,883 1450		Cementing date: 03/02/2017	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	275	O	SEE REMARK #1	1,011	9,726
2	465	H	SEE REMARK #2	560	9,726
3					
Total	740			1,571	10,450
PLACING 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.)		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:		
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					
PLACING 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.)		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:		
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					

	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 liner 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)							

REMARK #1: C65/35POZ+ 6% BENTONITE+ 10% BA-90+ 5% A-10+ 1.5% FL-52+ 1% CD-32+ 2.26% SMS+ 3% KCL+ 1.4% R-3+ 0.005 LB/SK STATIC FREE+ 0.01 GAL/SK FP-6L. REMARK #2: H80/80POZ+ 2% BENTONITE+ 0.6% FL-68+ 0.36% CD-32+ 0.35% SMS+ 0.6% R-3+ 0.005 LB/SK STATIC FREE+ 0.01 GAL/SK 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.

JESUS ALFREDO ESPARZA

BJ SERVICES, LLC

Name and title of cementer's representative
11211 FM 2920 RD.

Cementing Company
TOMBALL, TX 77375

Signature
(281) 408-2361

03/02/2017

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.

Sondra Bienvenu

US Onshore Waste SME

Signature

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

08/24/2017

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.

- 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.
- 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).
- 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_dlr=&p_rloc=&p_floc=&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_dlr=&p_rloc=&p_floc=&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.
- Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a calliper log to show how the estimated % wash-out was obtained.
- 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.
- 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.
- Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

CEMENTING REPORT

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

OPERATOR INFORMATION

Operator Name: SHELL EXPLORATION & PRODUCTION COU Operator P-5 No.: 774719
Cementer Name: PJ SERVICES, LLC Cementer P-5 No.: 403101

WELL INFORMATION

District No.: 09 County: LOVING
Well No.: #1603H API No.: 42301331260000 Drilling Permit No.: 621060
Lease Name: UNIVERTY 10 PW UNIT Lease No.:
Field Name: Phantom (Wolfcamp) Field No.:

CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☒ Liner ☐ Production
Drilled hole size (in.): 6 1/8" Depth of drilled hole (ft.): 19580 Est. % wash-out or hole enlargement: 15%
Size of casing in O.D. (in.): 4 1/2" Casing weight (lbs/ft) and grade: P-110/ 13.5 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.): 19580' Top of liner (ft.): 10950
Setting depth liner (ft.): 19580
Hrs. waiting on cement before drill-out: Calculated top of cement (ft.): 10950 Cementing date: 03-15-17

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	760	H	SEE REMARKS	903	9589
2					
3					
Total	760	H	SEE REMARKS	903	9589

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:
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					

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:
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 SLURRY:50:50:POZ+H+0.005H/SKSF+0.55%R-3+0.65%FL-66+2%GEL+0.35%SMS+0.30%CD-32 CIRCULATED:35 BBLS /163 SK
--

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 III VICTOR M ROSAS BJ SERVICES, LLC

Name and title of cementer's representative	Cementing Company	Signature
11211 FM 2920 TOMBALL, TEXAS 77375	(281) 408-2361	03-15-17
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.

Sandra Blenvenu	US Onshore Waste SME	Signature
Typed or printed name of operator's representative	Title	
150 N. Dairy Ashford	Houston, TX 77079	832-337-2100
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.

- 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.
- 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).
- 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/readac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_pluc=&pg=1&p_tac=&tl=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_pluc=&pg=1&p_tac=&tl=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.
- 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.
- 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.
- 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.
- Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CHRISTI CRADDICK, CHAIRMAN
RYAN SITTON, COMMISSIONER
WAYNE CHRISTIAN, COMMISSIONER



LORI WROTENBERY
DIRECTOR, OIL AND GAS DIVISION
D. CRAIG PEARSON
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name: SHELL WESTERN E&P

RE: Lease: UNIVERSITY 19 PW UNIT

Address1: PO BOX 576

Address2:

City: HOUSTON

State: TX

Well No: 1503H

Sec: 8 **Block:** 19

County: LOVING

Survey Name: UL

SWR13EX Application Number: 12569

Drilling Permit No: 821060

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 19 PW UNIT ;
WELL NUMBER: 1503H has been approved by the Railroad Commission of Texas District Office.

- a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.
- b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.
- c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.
- d. The casing and cement program shall adhere to the following specifications:

Set 4895 feet of surface casing and circulate cement from the shoe to the ground surface.

*******Contingency Plan*******

Set 4895 feet of surface casing with a multistage tool set at a depth of not less than 1200 feet. Circulate cement from the multistage tool to the ground surface. If cement does not circulate to surface during the first stage, the multistage tool MUST be opened and neat cement be circulated from the tool to the surface.

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

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

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

This exception is based on information provided when the application was submitted on 02/08/2018 .
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: Wade Goode

DATE: 02/12/2018

D. CRAIG PEARSON

DISTRICT DIRECTOR

Tracking No.: 177795

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: 04/12/2017
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 821060	
Lease Name UNIVERSITY 19 PW UNIT	Lease/ID No. 42401	Well No. 1503H
County LOVING	API No. 42- 301-33170	

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

09/06/2017

Date

-FOR RAILROAD COMMISSION USE ONLY-



M17030_Vertical-Curve-Lateral

MD
1":100'

Company: Shell Western E&P
Well Name: University 19 PW Unit 1503H
API: 42301331700000
County/Parish: Loving County
State: Texas
Country: United States
Job number: M17030
Field: Delaware Basin
Rig Id: Precision 563
Survey Company: Premier Directional Drilling

Log measurements: EVO-One

Depth measured from: Pason ft

Maximum temperature: 212

	Depth	Date
Start:	138 ft	01/29/17
End:	19580 ft	03/13/17

	Casing	Depth	Size
Surface:		4900 ft	9 5/8"
Intermediate:		11903 ft	7"

Mud Type: Brine - OBM

Density: 9.1 - 13.4

Viscosity: 28 - 71

Rm: N/A

Rmf: N/A

Rmc: N/A

Elevations

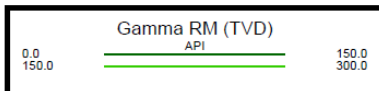
KB: 2761.20 ft

DF: 2761.20 ft

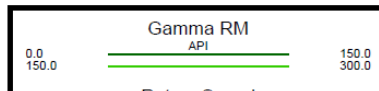
GL: 2736.20 ft

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	12 1/4"	79.14 ft	80.00 ft	138 ft	4900 ft	01/29/17	02/01/17
2	8 3/4"	76.43 ft	78.00 ft	4900 ft	10992 ft	02/24/17	02/27/17
3	8 3/4"	54.43 ft	56.00 ft	10992 ft	11915 ft	02/27/17	03/01/17
4	6 1/8"	56.80 ft	58.00 ft	11915 ft	13395 ft	03/04/17	03/06/17
5	6 1/8"	55.73 ft	57.00 ft	13395 ft	19580 ft	03/06/17	03/13/17
6							
7							
8							
9							
10							
11							

Premier Directional Drilling uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.



MD



Depth: 5000

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.: 177795

1. Field name exactly as shown on proration schedule PHANTOM (WOLFCAMP)		2. Lease name as shown on proration schedule UNIVERSITY 19 PW UNIT					
3. Current operator name exactly as shown on P-5 Organization Report SHELL WESTERN E&P		4. Operator P-5 no. 774719	5. Oil Lse/Gas ID no 42401	6. County LOVING	7. RRC district 08		
8. Operator address including city, state, and zip code PO BOX 576 HOUSTON, TX 77001		9. Well no(s) (see instruction E) 1503H			11. Effective Date 04/12/2017		
		10. Classification <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Other (see instruction A)					
12. Purpose of Filing. (Complete section a or b below.) (See instructions B and G) a. Change of: <input type="checkbox"/> operator <input type="checkbox"/> oil or condensate gatherer <input type="checkbox"/> gas gatherer <input type="checkbox"/> gas purchaser <input type="checkbox"/> gas purchaser system code <input type="checkbox"/> field name from _____ <input type="checkbox"/> lease name from _____ ----- OR ----- b. New RRC Number for: <input checked="" type="checkbox"/> oil lease <input type="checkbox"/> gas well Due to: <input checked="" type="checkbox"/> new completion or recompletion <input type="checkbox"/> reclass oil to gas <input type="checkbox"/> reclass gas to oil <input type="checkbox"/> other well (specify) _____ <input type="checkbox"/> consolidation, unitization, or subdivision (oil lease only)							
13. Authorized GAS WELL GAS or CASINGHEAD GAS Gatherer(s) and/or Purchaser(s). (See instruction G).							
Gatherer	Purchaser	Name of GAS WELL GAS or CASINGHEAD GAS Gatherer(s) or Purchaser(s) As Indicated in Columns to the Left (Attach an additional sheet in same format if more space is needed)			Purchaser's RRC Assigned System Code	Percent of Take	Full-well stream
X		DELAWARE BASIN JV GATHERING LLC(211490)				100.0	
	X	SHELL ENERGY NORTH AM. (US), LP(773822)			0001	100.0	
14. Authorized OIL or CONDENSATE Gatherer(s). (See instruction G).							
Name of OIL or CONDENSATE Gatherer(s) - List Highest Volume Gatherer First (Attach an additional sheet in same format if more space is needed)						Percent of Take	
SHELL WESTERN E&P(774719)						100.0	
RRC USE ONLY: Reviewer's initials: <u>RRC Staff</u> Approval date: <u>02/15/2018</u>							
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) _____ <input type="checkbox"/> Authorized Employee of previous operator <input type="checkbox"/> 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 _____ Maureen Kovacic Name (print) _____ Signature _____ Regulatory Specialist _____ <input checked="" type="checkbox"/> Authorized Employee of current operator <input type="checkbox"/> Authorized agent of current operator (see instruction G) Title _____ Date <u>09/06/2017</u> Phone with area code <u>(832) 337-0953</u> E-mail Address (optional) <u>maureen.kovacic@shell.com</u>							

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12


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 1503H
7. Pooled Unit Name University 19 PW Unit	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 8588.1	

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	160.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 2	University Lands	480.72	<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	280.50	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 6	University Lands (below 11710')	40.07	<input 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.

		George Mullen	
Signature		Print Name	
Sr. Reg. Specialist	george.mullen@shell.com	12/07/2016	(832) 337-0549
Title	E-mail (if available)	Date	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**

Revised 05/2001

P-12

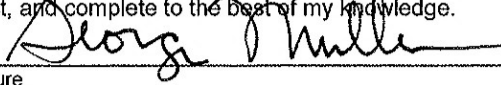
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1503H
7. Pooled Unit Name University 19 PW Unit	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 8588.1	

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. 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	465.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	640.96	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	624.93	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<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.



George Mullen

Signature

Print Name

Sr. Reg. Specialist

george.mullen@shell.com

12/07/2016

(832) 337-0549

Title

E-mail (if available)

Date

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: <input type="checkbox"/> Drilling Permit Application (Form W-1) <input checked="" type="checkbox"/> Completion Report (Form G-1/W-2)
Well No.: 1503H	API No.: 42-301-33170	
Total Lease Acres: 8588.11	Drilling Permit No.: 821060	
Lease Name: University 19 PW Unit	Lease No.: 42401	
Field Name: Phantom (Wolfcamp)	Field No.: 71052900	

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

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

RRC ID No. or Lease No.	Well No.	H-Horizontal D-Directional V-Vertical	Lease Name	API No.	Acres Assigned	SWR 38 Except. (Y/N)	Operator Name and Operator No. (if different from filing operator)
42401	1902H	H	University 19 PW Unit	42-301-31709	160	N	
42401	2202H	H	University 19 PW Unit	42-301-31708	160	N	
42401	1702H	H	University 19 PW Unit	42-301-31703	160	N	
42401	2502H	H	University 19 PW Unit	42-475-35995	160	N	
42401	2802H	H	University 19 PW Unit	42-475-35996	160	N	
42401	1302H	H	University 19 PW Unit	42-301-31705	160	N	
42401	1502H	H	University 19 PW Unit	42-301-31872	160	N	
42401	1802H	H	University 19 PW Unit	42-301-32460	160	N	
42401	2302H	H	University 19 PW Unit	42-301-32579	160	N	
42401	2304H	H	University 19 PW Unit	42-301-32849	160	N	
DP# 813604	2303H	H	University 19 PW Unit	42-301-32848	160	N	
DP# 819356	2503H	H	University 19 PW Unit	301-33047	160	N	
DP# 819356	2504H	H	University 19 PW Unit	301-33048	160	N	
DP# 819392	2505H	H	University 19 PW Unit	301-33049	160	N	
DP# 819392	2506H	H	University 19 PW Unit	301-33054	160	N	
DP# 820924	1506H	H	University 19 PW Unit	301-33126	160	N	
DP# 821114	1507H	H	University 19 PW Unit	301-33144	160	N	

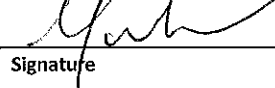
Total Well Count >	21	3360	< A. Total Assigned Horiz. Acreage	3360	< C. Total Assigned Acreage
		5228.11	< Total Remaining Horiz. Acreage	5228.11	< Total Remaining Acreage
			< B. Total Assigned Vert./Dir. Acreage		
			< Total Remaining Vert./Dir. Acreage		

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

This well should be assigned to University 19 PW Unit, lease ID 42401

Attach Additional Pages As Needed. ☐ No additional pages ☒ 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, Regulatory Specialist Name and title (type or print)	maureen.kovacic@shell.com Email (include email address only if you affirmatively consent to its public release)
150 N. Dairy Ashford Address	Houston TX 77079 City, State, Zip Code	832 337-2100 09/06/2017 Tel: Area Code Number Date: mo. day yr.

Total Well Count >	21	3360	< A. Total Assigned Horiz. Acreage	3360	< C. Total Assigned Acreage
		5228.11	< Total Remaining Horiz. Acreage	5228.11	< Total Remaining Acreage
			< B. Total Assigned Vert./Dir. Acreage		
			< Total Remaining Vert./Dir. Acreage		

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 30 November 2016**GAU Number:** 163817**Attention:** SHELL WESTERN E&P
PO BOX 576
HOUSTON, TX 77001**Operator No.:** 774719**API Number:**
County: LOVING
Lease Name: University 19 PW Unit
Lease Number:
Well Number: 1503H
Total Vertical Depth: 12000
Latitude: 31.692625
Longitude: -103.434239
Datum: NAD27**Purpose:** New Drill**Location:** Survey-University Lands; Block-19; Section-8

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 250 feet and the Rustler, which is estimated to occur from 550 to 1050 feet must be protected.

Please send Gamma Ray/Porosity log of this well when it is available.

This recommendation is applicable to all wells within a radius of 300 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 11/29/2016. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

UNIVERSITY 19 PW UNIT

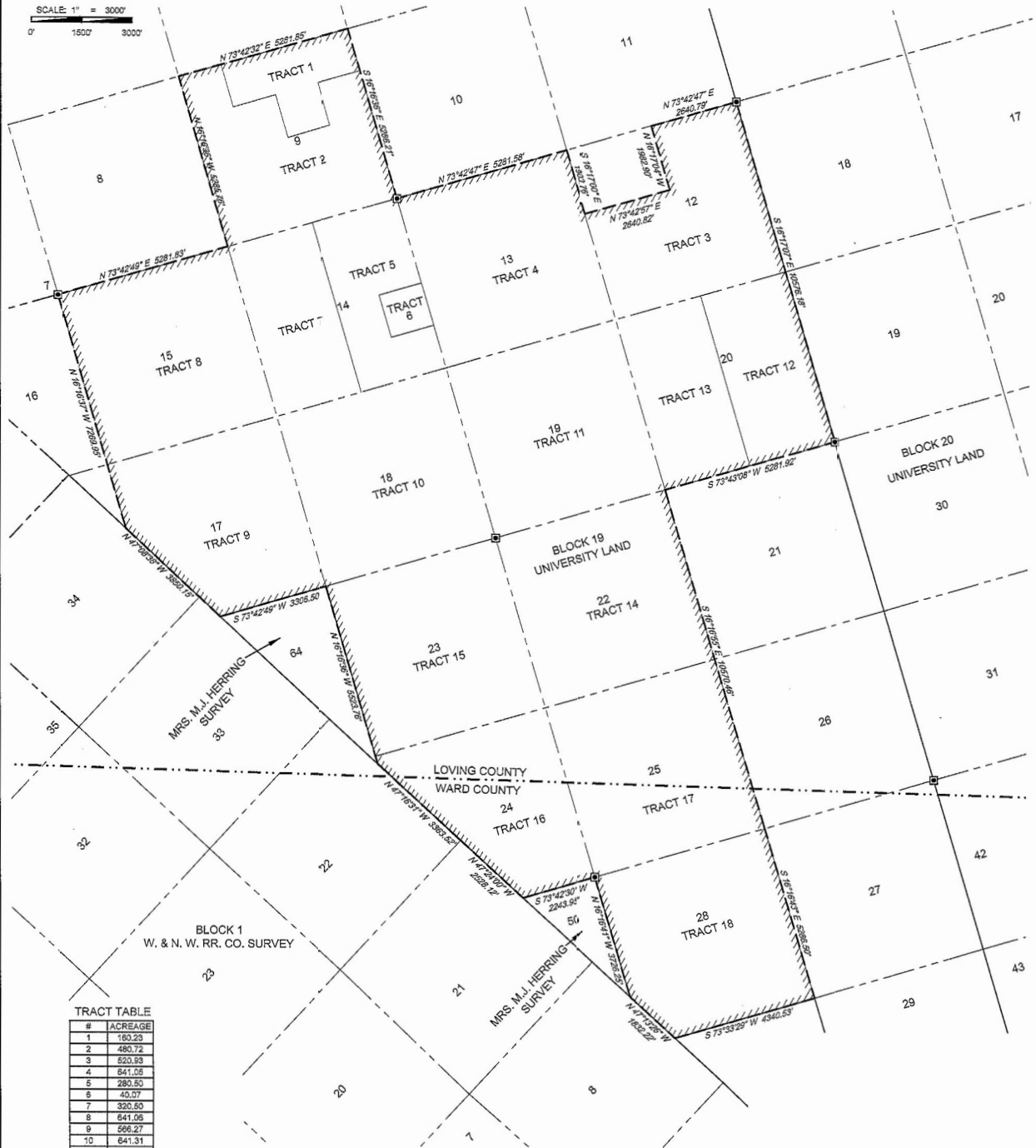
8588.11 ACRES (MEASURED)
SECTIONS 9, 15, 14, 13, 12, 17, 18, 19, 20, 22, 23, 24, 25 & 28,
SAVE & EXCEPT NW/2 NW/4 AND NW/2 SE/2 NW/4 OF SECTION 12
BLOCK 19, UNIVERSITY LAND
LOVING & WARD COUNTIES, TEXAS

SHELL WESTERN
E&P

LEGEND

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

SCALE: 1" = 3000'
0' 1500' 3000'



TRACT TABLE

#	ACREAGE
1	180.23
2	480.72
3	520.93
4	641.06
5	280.50
6	40.07
7	320.55
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	465.23
17	640.96
18	624.93
TOTAL	8588.11

I certify this plat is true and correct
to the best of my knowledge.

George Mullen

George Mullen
Senior Regulatory Specialist



SHELL WESTERN E&P

WELL LOCATION

LEASE NAME & WELL NO.:

UNIVERSITY 19 PW UNIT 1503H

UNIT/LEASE ACREAGE:

8588.11 ACRES

NEAREST TOWN IN COUNTY:

±9.7 MILES SOUTHEAST OF MENTONE, TEXAS

DESCRIPTION:

SECTIONS 15 & 17, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING COUNTY, TEXAS

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 is made and limited to those persons or entities shown on the face of this plat is non-transferable. This Survey is Certified for this transaction only.

Survey date of October 26, 2016.



John R. Anderson 1/10/17

John R. Anderson, R.P.L.S. No. 6442

I, John R. Anderson, a Registered Professional Land Surveyor, and an authorized agent of Topographic Land Surveyors, do hereby certify that the above described well location was surveyed on the ground as shown herein. This plat is for Texas Railroad Commission permitting only.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET.
ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.
ALL INSTRUMENTS, PREPOST DRILLING DATA, PREPOST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

ORIGINAL DOC. SIZE: 8.5"x14"



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

DATE:	11/22/2016
DRAWN BY:	O.M.
LO UNIVERSITY 19 PW UNIT 1503H OPT 1 REV2	
SHEET:	1 OF 1

REV#	BY	DATE	REVISION
01	O.M.	12/16/2016	
02	O.M.	01/10/2017	

TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	586' FNWL 1395' FWC	1266' FSWL & 586' FSEL
P.P.	377' FNWL 572' FWC	430' FSWL & 377' FSEL
F.T.P.	200' FNWL 430' FSWL	200' FNWL & 430' FSWL
L.T.P. / B.H.L.	368' FSWL 7273' FNWL	1986' FNWL & 368' FSWL

LEGEND:

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

