



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 04/20/2018
Tracking No.: 185267

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

OPERATOR INFORMATION

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

WELL INFORMATION

API No.: 42-301-33264 County: LOVING
Well No.: 1804H RRC District No.: 08
Lease Name: UNIVERSITY 19 PW UNIT Field Name: PHANTOM (WOLFCAMP)
RRC Lease No.: 42401 Field No.: 71052900
Location: Section: 18, Block: 19, Survey: UNIVERSITY LAND, Abstract:
Latitude: 31 Longitude: -103
This well is located 11.5 miles in a SE direction from MENTONE, which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Well Record Only
Type of completion: New Well
Well Type: Shut-In Producer Completion or Recompletion Date: 10/25/2017
Type of Permit Date Permit No.
Permit to Drill, Plug Back, or Deepen 03/14/2017 824167
Rule 37 Exception
Fluid Injection Permit
O&G Waste Disposal Permit
Other:

COMPLETION INFORMATION

Spud date: 08/05/2017 Date of first production after rig released: 10/25/2017
Date plug back, deepening, recompletion, or drilling operation commenced: 08/05/2017 Date plug back, deepening, recompletion, or drilling operation ended: 10/25/2017
Number of producing wells on this lease in this field (reservoir) including this well: 17 Distance to nearest well in lease & reservoir (ft.): 835.0
Total number of acres in lease: 8587.74 Elevation (ft.): 2762 GL
Total depth TVD (ft.): 11612 Total depth MD (ft.): 22500
Plug back depth TVD (ft.): Plug back depth MD (ft.):
Was directional survey made other than inclination (Form W-12)? Yes Rotation time within surface casing (hours): 68.5
Is Cementing Affidavit (Form W-15) attached? Yes
Recompletion or reclass? No Multiple completion? No
Type(s) of electric or other log(s) run: Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease boundaries Off Lease : No
of lease on which this well is located: 14061.0 Feet from the NE Line and
14224.0 Feet from the NW 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 No. Well No. Prior Service Type

PACKET: N/A

FORMATION RECORD

<u>Formations</u>	<u>Encountered</u>	<u>Depth TVD (ft.)</u>	<u>Depth MD (ft.)</u>	<u>Is formation isolated?</u>	<u>Remarks</u>
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
BELL CANYON	Yes	5048.0	5116.0	Yes	
BRUSHY CANYON	Yes	7188.0	7258.0	Yes	
DELAWARE	Yes	5019.0	5087.0	Yes	
CHERRY CANYON	Yes	6005.0	6077.0	Yes	
BONE SPRINGS	Yes	8595.0	8668.0	Yes	
WOLFCAMP	Yes	11376.0	11480.0	Yes	
PENNSYLVANIAN	No			No	BELOW WELLBORE DEPTH
STRAWN	No			No	BELOW WELLBORE DEPTH
ATOKA - HIGH PRESSURE	No			No	BELOW WELLBORE DEPTH
MORROW	No			No	BELOW WELLBORE DEPTH
DEVONIAN	No			No	BELOW WELLBORE DEPTH
FUSSELMAN	No			No	BELOW WELLBORE DEPTH
ELLENBURGER	No			No	BELOW WELLBORE DEPTH

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

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

REMARKS

KOP AT 11092
 AFTER DRILL PERMIT WAS FILLED, SECTION 18 WAS RESURVEYED AND CORRECTED LEASE ACREAGE FOR LEASE ID 42401 HAS BEEN SHOWN CORRECT ON CORRECT ON W-2, UNIT PLAT AND P16. LEASE ACREAGE WILL BE CORRECTED IN AD PLAT, PROVIDED IN THE IP FILLING.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

DV TOOL SET AT 1195

TUBING RECORD:

WELL HAS NOT BEEN COMPLETED.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

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

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed Name: Maureen Kovacic

Title: Regulatory Specialist

Telephone No.: (832) 337-0953

Date Certified: 01/04/2018



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	Operator P-5 No.: 774719
Cementer Name: BJ SERVICES, LLC	Cementer P-5 No.: 403101

WELL INFORMATION	
District No.: 08	County: LOVING
Well No.: UNIT 1804	API No.: 42-301-33264
Lease Name: UNIVERSITY 19 PW	Drilling Permit No.: 824167
Field Name: Phantom (Wolfcamp)	Lease No.: 42401
	Field No.: 71052900

I. CASING CEMENTING DATA		
Type of casing: <input type="checkbox"/> Conductor <input checked="" type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production		
Drilled hole size (in.): 12 1/4	Depth of drilled hole (ft.): 4965	Est. % wash-out or hole enlargement: 9%
Size of casing in O.D. (in.): 9 5/8	Casing weight (lbs/ft) and grade: 40# / J-55	No. of centralizers used: 29
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 4938	Top of liner (ft.):
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 0	Setting depth liner (ft.):
		Cementing date: 08/13/2017

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2637	C	REMARKS 1	4944	15785
2	497	C	REMARKS 2	681	2110
3					
Total	3134			5605	17895

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.)	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? <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.)	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? <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 35.65/4 CLASS C + 0.65% SMS + 5.00% SALT (4.169 LB/SK) + 1.00% R-3 + 0.005 LB/SK STATIC FREE + 0.01 GPS FP-6L
 REMARKS 2 CLASS C + 0.15% SMS + 0.95% R-3 + 0.005 LB/SK STATIC FREE + 0.01 GPS FP-6L
 CIRCULATED CEMENT 597 BBLS = 1788 SACKS

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 08/13/2017
 Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

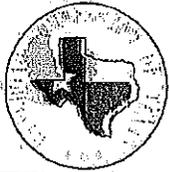
OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are 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 01/04/2018
 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/readtacSext.TacPage?si=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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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.: 1804	API No.: 42301332640000
Lease Name: UNIVERSITY 19 PW UNIT	Lease No.: 42401
Field Name: Phantom (Wolcamp)	Field No.: 71052900
Drilling Permit No.: 824167	

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 3/4	Depth of drilled hole (ft.): 12,010	Est. % wash-out or hole enlargement: 10%
Size of casing in O.D. (in.): 7	Casing weight (lbs/ft) and grade: 29#/P110	No. of centralizers used: 64
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.): 11261	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 3938	Cementing date: 09/23/2017

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	302	C	REMARKS 1	132	6862
2	241	H	REMARKS 2	269	1922
3					
Total	603			1081	10784

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 collar) 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/OV 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 collar) 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 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 1:35.65:0 CLASS C+ 10.00% BA-90 + 5.00% A-10 + 1.50% FL-52 + 1.80% CD-32 + 2.25% SMS + 3.00% KCL (5.502 LB/SK) + 1.05% 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% CD-32 + 0.35% SMS + 0.30% R-3 + 0.005 LB/SK STATIC FREE + 0.005 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 09/23/2017
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Maureen Kovacic Regulatory Specialist *Maureen Kovacic*
 Typed or printed name of operator's representative Title Signature
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- D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.
- E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool. 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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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.: UNIT #1804	API No.: 42-301-33264	Drilling Permit No.: 824167
Lease Name: UNIVERSITY 19 PW	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.): 22500	Est. % wash-out or hole enlargement: 15%
Size of casing in O.D. (in.): 4.5	Casing weight (lbs/ft) and grade: (#11.6) P110	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.): 22506	Top of liner (ft.): 11044
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 10/13/2017

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1115	H	SEE REMARKS	1343	14261
2					
3					
Total	1115			1343	14261

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

SLURRY: 50% FLY ASH + 50% CLASS 'H' + 2% BENTONITE + .65% FL-66 + .3% CD-32 + 0.35% SMS + 0.5% R-3 + .01 gps FP-6L + .005 lb/sk STATIC FREE

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-GUADALUPE E GARCIA BJ SERVICES, LLC

Name and title of cementer's representative	Cementing Company	Signature
11211 FM 2920 RD	TOMBALL, TEXAS 77375 (218) 408-2361	
Address	City, State, Zip 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
		
150 N. Dairy Ashford	Houston TX 77079	832-337-0953
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&ri=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&ri=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.

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
Address1: PO BOX 576
Address2:
City: HOUSTON
State: TX

RE: Lease: UNIVERSITY 19 PW UNIT
Well No: 1804H
Sec: 18 **Block:** 19
County: LOVING
Survey Name: UNIVERSITY LAND

SWR13EX Application Number: 13782 **Drilling Permit No:** 824167

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: 1804H 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 4924 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.

The proposed alternative drilling fluid program for the fresh water protected interval is hereby approved.

The multistage tool is included as a contingency measure to achieve cement returns to surface.

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

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

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

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

This exception is based on information provided when the application was submitted on 03/21/2017
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: 03/22/2017

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 PW UNIT 1804H
Field Name: Phantom (Wolfcamp) County: Loving
Survey: UNIVERSITY LAND Abstract: A-
Drilling Permits: 824167

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: 03/21/2017 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>Erik Hanson</u> Date: <u>3-22-17</u>
Remarks/Modifications:			

RRC Use Only ►

Tracking No.: 185267

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

Instructions

When to File Form L-1:

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

When is Form L-1 NOT required:

- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:

- with the appropriate Commission district office

Filling out Form L-1:

- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:

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

SECTION I. IDENTIFICATION

Operator Name: SHELL WESTERN E&P	District No. 08	Completion Date: 10/25/2017
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 824167	
Lease Name UNIVERSITY 19 PW UNIT	Lease/ID No. 42401	Well No. 1804H
County LOVING	API No. 42- 301-33264	

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
 03/07/2018

 Date

-FOR RAILROAD COMMISSION USE ONLY-

**CERTIFICATE OF
 POOLING AUTHORITY**

P-12

Revised 05/2001

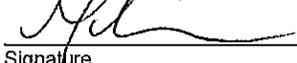
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1804H
7. Pooled Unit Name University 19 Unit PW Unit	8. API Number 42-301-33264	9. Purpose of Filing <input type="checkbox"/> Drilling Permit (W-1) <input checked="" type="checkbox"/> Completion Report
10. County Loving and Ward	11. Total acres in pooled unit 8567.74	

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	320.5	<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

01/03/2018

(832) 337-0953

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

P-12

Revised 05/2001

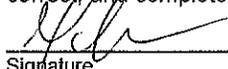
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1804H
7. Pooled Unit Name University 19 Unit PW Unit	8. API Number 42-301-33264	9. Purpose of Filing <input type="checkbox"/> Drilling Permit (W-1) <input checked="" type="checkbox"/> Completion Report
10. County Loving and Ward	11. Total acres in pooled unit 8587.74	

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	465.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	640.96	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	624.56	<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.

 Signature	Maureen Kovacic Print Name
Reg. Specialist Title	01/03/2018 Date
maureen.kovacic@shell.com E-mail (if available)	(832) 337-0953 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.



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.: 1804H	API No.: 42-301-33264	
Total Lease Acres: 8587.74	Drilling Permit No.: 824167	
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 Exempt. (Y/N)	Operator Name and Operator No. (if different from filing operator)
42401	1902H	H	University 19 PW Unit	42-301-31709	640.00	N	
42401	2202H	H	University 19 PW Unit	42-301-31708	160.23	N	
42401	1702H	H	University 19 PW Unit	42-301-31703	566.85	N	
42401	2502H	H	University 19 PW Unit	42-475-35995	151.24	N	
42401	2802H	H	University 19 PW Unit	42-475-35996	160.33	N	
42401	1302H	H	University 19 PW Unit	42-301-31705	640.00	N	
42401	1502H	H	University 19 PW Unit	42-301-31872	640.00	N	
42401	1802H	H	University 19 PW Unit	42-301-32460	640.00	N	
42401	2302H	H	University 19 PW Unit	42-301-32579	640.00	N	
42401	2304H	H	University 19 PW Unit	42-301-32849	640.00	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# 824160	1803H	H	University 19 PW Unit	301-22283	160	N	
DP # 824167	1804H	H	University 19 PW Unit	301-33264	160	N	

Total Well Count >	17	5998.45	< A. Total Assigned Horiz. Acreage	5998.45	< C. Total Assigned Acreage
		2589.29	< Total Remaining Horiz. Acreage	2589.29	< 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: ____ (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 <i>only</i> if you affirmatively consent to its public release)
150 N. Dairy Ashford Address	Houston TX 77079 City, State, Zip Code	832 337-0953 01/04/2018 Tel: Area Code Number Date: mo. day yr.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 07 March 2017**GAU Number:** 168500

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: 1803H
Total Vertical Depth: 12000
Latitude: 31.672653
Longitude: -103.407117
Datum: NAD27

Purpose: New Drill**Location:** Survey-UL; Block-19; Section-18

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 350 feet, and the Rustler, the top of which is estimated to occur from 650 to 700 feet depth and the base of which is estimated to occur from 1000 to 1050 feet depth by reconnaissance-level evaluation, must be protected.

This recommendation is applicable to all wells within a radius of 800 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 03/07/2017. 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

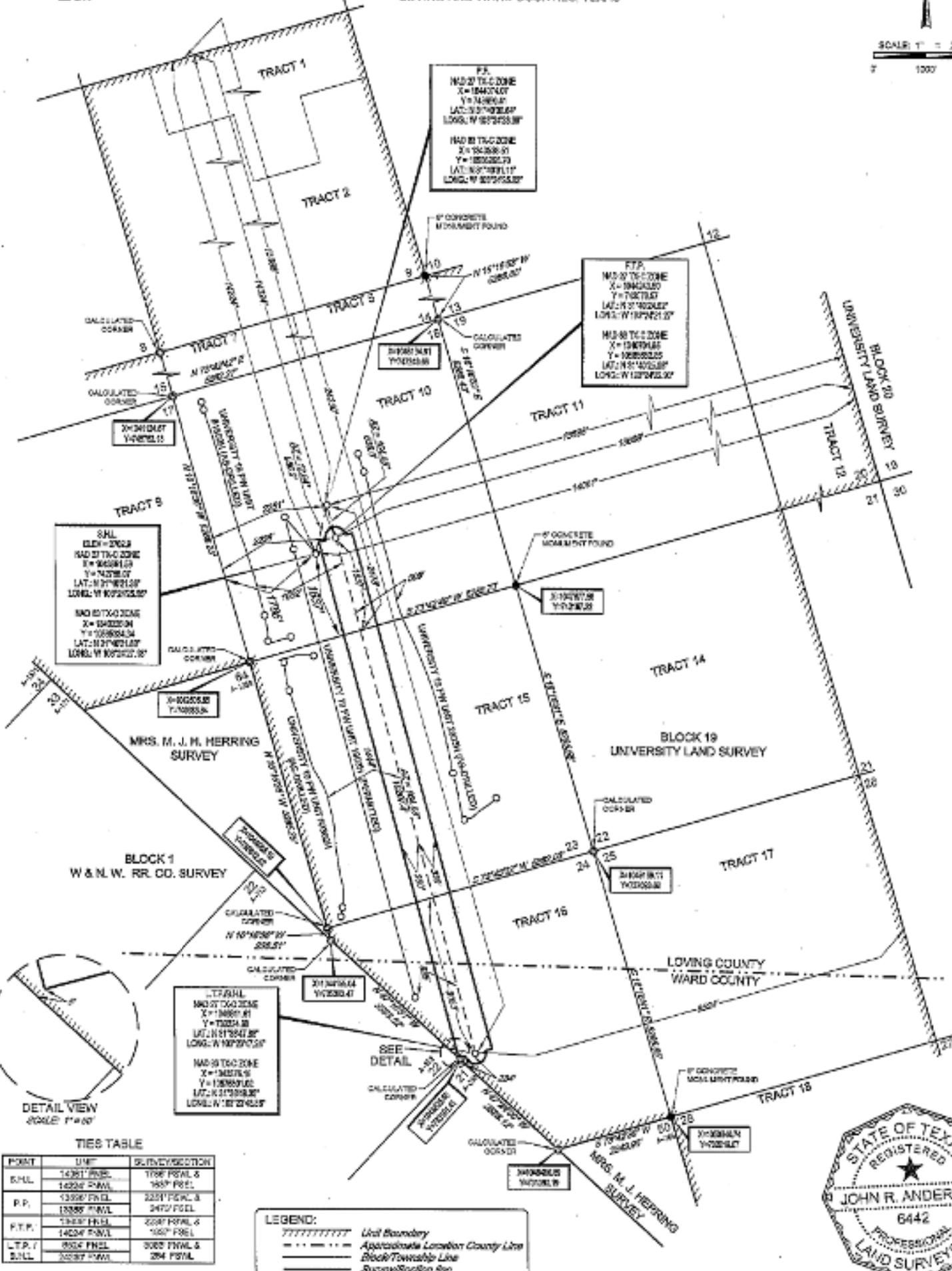
Form GW-2 P.O. Box 12967 Austin, Texas 78771-2967 512-463-2741 Internet address: www.rrc.texas.gov
Rev. 02/2014



SHELL WESTERN E&P

WELL LOCATION
UNIVERSITY 19 PW UNIT 1804H
UTLINSAGE ADDRESS
8558.11 ACRES (MEASURED)
SOUTHWEST TOWN COUNTY
±11.8 MILES SOUTH-EAST OF MENTONE, TEXAS

DESCRIPTION
SECTIONS 18, 23 & 24, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING AND WARD COUNTIES, TEXAS



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	14281' P.W.L.	1198' P.W.L. 3
	14226' P.W.L.	1857' P.W.L.
P.P.	13358' P.W.L.	2237' P.W.L. 3
	13358' P.W.L.	2472' P.W.L.
F.T.P.	13037' P.W.L.	2297' P.W.L. 4
	14024' P.W.L.	1057' P.W.L.
L.T.P. / S.H.L.	8554' P.W.L.	3003' P.W.L. 3
	22287' P.W.L.	284' P.W.L.

LEGEND:

- Unit Boundary
- Approximate Loveland County Line
- Block/Township Line
- Survey Section line
- Proposed Well Path
- Existing/Permitted Well Path
- Adjoining Tract Boundary
- Monument Point
- Calculated Corner
- Well Point



John R. Anderson 3/2/17
John R. Anderson, R.P.L.S. No. 6442

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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TELEPHONE: (817) 244-7252 - FAC: (817) 244-7249
TEXAS PERM REGISTRATION NO. 134254
WWW.TOPOGRAPHIC.COM

UNIVERSITY 19 PW UNIT 1804H

REVISION	INT	DATE

DATE: 03/02/2017
DRAWN BY: O.M.
SHEET: 1 OF 1

NOTES:

1. ORIGINAL DOCUMENT SIZE: 11" X 17"
2. ALL DIMENSIONS, DISTANCES, AND COORDINATE VALUES ON THIS PLAN ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, WITHIN AMERICAN DATUM 1983, UNLESS OTHERWISE NOTED.
3. THE LOCATION AND/OR UTILITIES INFORMATION HAS BEEN CASUALLY OBTAINED ON THE GROUND AND IS NOT SURVEYED AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE ACCORDING TO THE SURFACE COURSE SURVEY RECORDS, NOTES, AND OTHER DATA PROVIDED BY SHELL WESTERN CO. THIS PLAN WAS PREPARED FOR THE SOLE PURPOSE OF TIES AND PERMIT WITH THE NEAREST CORNER OF THIS BLOCK AND SHOULD NOT BE CONSIDERED AS A "DETAILED SURVEY" IN COMPLIANCE WITH T.E.P. 1.01. MINIMUM DISTANCES OF 100 FEET FOR BOUNDARY SURVEYS THIS CERTIFICATION IS MADE AND, ACCORDING TO THESE PERMITS OR BUTTERS SHOWN ON THE FACE OF THIS PLAN IS 1:250 THRU 1:500 ONLY. THIS SURVEY IS CONFINED FOR THIS TRANSACTION ONLY. ALL SURVEYING SHALL BE ACCORDING TO THE SURVEYING ACT, METRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD 83), U.S. SURVEY FEET.
4. ALL METRIC DIMENSIONS OF DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN CO. OR ITS SUBSIDIARIES AND AFFILIATES.

NOTES CONT'D:

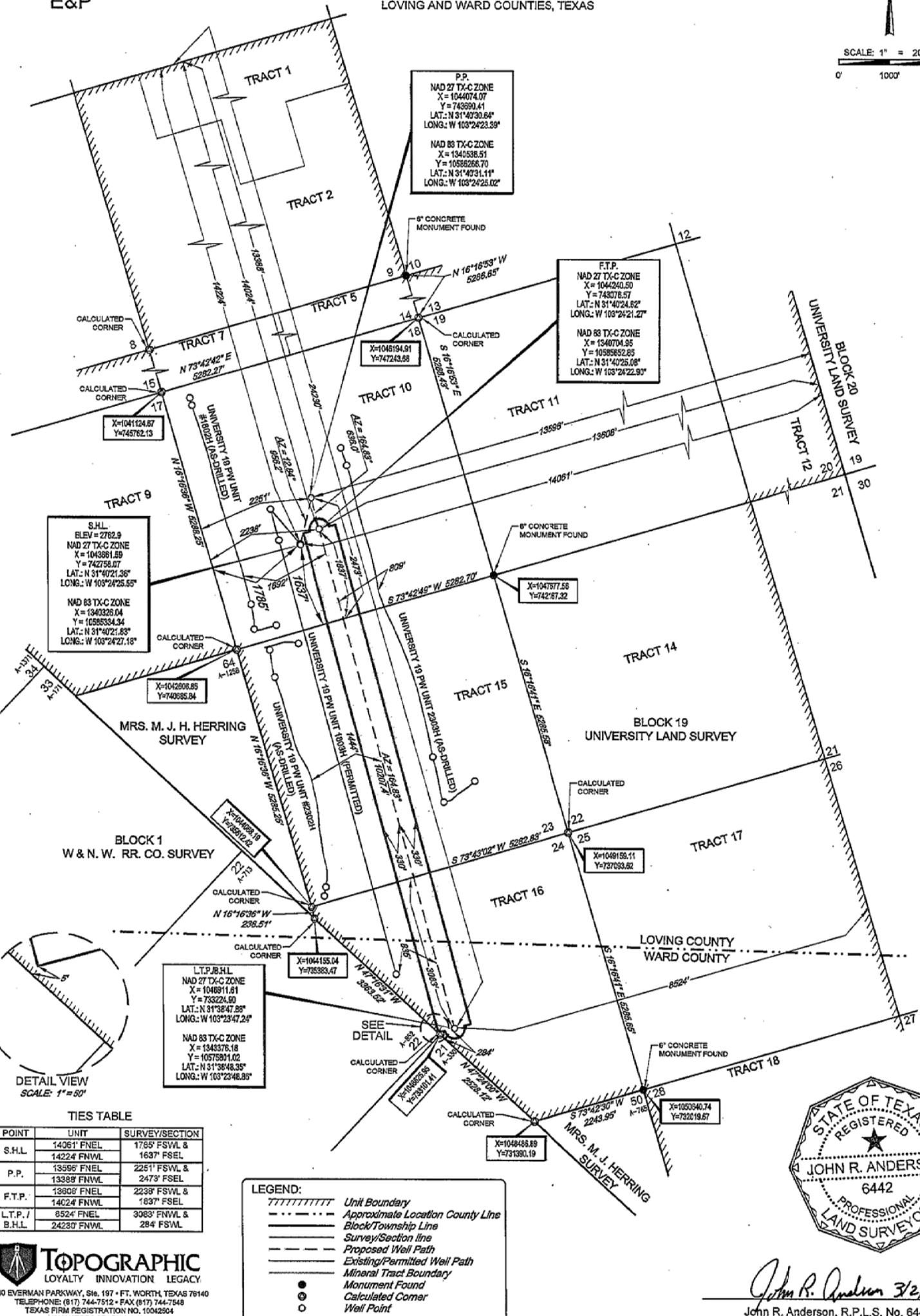
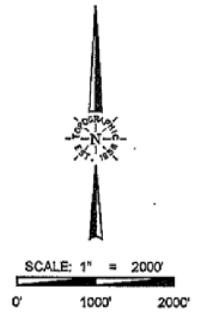
5. THE PRELIMINARY LOCATION HAS BEEN CASUALLY OBTAINED BY THE CLIENT DURING THE DATE OF FEBRUARY 14, 2017. AT A LOCATION NEAR, SUBJECT OF THIS SURVEY PERMIT.
7. O.H.L. = SURFACE HOLES LOCATION
8. P.P. = POINT OF PENETRATION
9. F.T.P. = FIRST TAKE POINT
10. L.T.P. = LAST TAKE POINT
11. S.H.L. = BOTTOM HOLE LOCATION



SHELL WESTERN E&P

WELL LOCATION
LEASE NAME & WELL NO.: UNIVERSITY 19 PW UNIT 1804H
UNITLEASE ACREAGE: 8588.11 ACRES (MEASURED)
NEAREST TOWN IN COUNTY: ±11.5 MILES SOUTHEAST OF MENTONE, TEXAS

DESCRIPTION: SECTIONS 18, 23 & 24, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING AND WARD COUNTIES, TEXAS



TIES TABLE with columns: POINT, UNIT, SURVEY/SECTION, and specific survey data.

LEGEND: Unit Boundary, Approximate Location County Line, Block/Township Line, Survey/Section line, Proposed Well Path, Existing/Permitted Well Path, Mineral Tract Boundary, Monument Found, Calculated Corner, Well Point.



John R. Anderson 3/2/17
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TOPOGRAPHIC LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140

REVISION table with columns: INT, DATE, and description of changes.

NOTES: 1. ORIGINAL DOCUMENT SIZE: 11" X 17"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.

NOTES CONT'D: 8. THE PRELIMINARY LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF FEBRUARY 24, 2017, AT A GRID/LEVEL ELEVATION OF 2762.9 SURVEY FEET.