



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 12/20/2017
Tracking No.: 177467

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	42-301-32938	County:	LOVING
Well No.:	2004H	RRC District	08
Lease	UNIVERSITY 20 PW UNIT	Field	PHANTOM (WOLFCAMP)
RRC Lease	44020	Field No.:	71052900
Location	Section: 29, Block: 20, Survey: UNIVERSITY LAND, Abstract:		
Latitude	31	Longitud	-103
This well is	15.8	miles in a	SOUTHEAST
direction from	MENTONE,		
which is the nearest town in the			

FILING INFORMATION			
Purpose of	Initial Potential		
Type of	Other/Recompletion		
Well Type:	Producing	Completion or Recompletion	09/08/2016
Type of Permit	Date	Permit No.	
Permit to Drill, Plug Back, or	06/28/2016	816416	
Rule 37 Exception		0300947	
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	08/01/2016	Date of first production after rig	09/08/2016
Date plug back, deepening, drilling operation	08/01/2016	Date plug back, deepening, recompletion, drilling operation	09/08/2016
Number of producing wells on this lease this field (reservoir) including this	8	Distance to nearest well in lease & reservoir	1004.0
Total number of acres in	13144.15	Elevation	2780 GL
Total depth TVD	11967	Total depth MD	19700
Plug back depth TVD		Plug back depth MD	19695
Was directional survey made other inclination (Form W-	Yes	Rotation time within surface casing Is Cementing Affidavit (Form W-15)	69.0 Yes
Recompletion or	Yes	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	337.0 Feet from the	Off Lease :	Yes
	1633.0 Feet from the	NW Line and	
		NE Line of the	
		UNIVERSITY 20 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
PACKET:	N/A		

W2:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth	1100.0	Date 06/14/2016
SWR 13 Exception	Depth	5048.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of	07/28/2017	Production	Flowing
Number of hours	24	Choke	14/64
Was swab used during this	No	Oil produced prior to	13776.00
PRODUCTION DURING TEST PERIOD:			
Oil	312.00	Gas	1248
Gas - Oil	4000	Flowing Tubing	3316.00
Water	1560		
CALCULATED 24-HOUR RATE			
Oil	312.0	Gas	1248
Oil Gravity - API - 60.:	47.0	Casing	2161.00
Water	1560		

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	5015	1247		C	3340	5989.0	1247	Calculation
2	Surface	9 5/8	12 1/4	5015	1247		C	1141	2156.0	270	Calculation
3	Surface	9 5/8	12 1/4	5015	1247		C	1785	3373.0	270	Calculation
4	Surface	9 5/8	12 1/4	5015	1247		C	400	1132.0	270	Calculation
5	Surface	9 5/8	12 1/4	5015	1247		C	3570	6747.0	270	Cement Evaluation Log
6	Intermediate	7	8 3/4	11164			C,H	710	1430.0	4000	Calculation

LINER RECORD									
Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.)	Top of Cement (ft.)	TOC Determined
1	4 1/2	6 1/4	10983	19695	H	790	948.0	10983	Calculation

TUBING RECORD			
Ro	Size (in.)	Depth	Size (ft.)
1	2 7/8	10940	
			10912 / 6.0" HES VERSA SET PACKER

PRODUCING/INJECTION/DISPOSAL INTERVAL			
Ro	Open hole?	From (ft.)	To (ft.)
1	No	L1 12202	19526.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment		No	
Is well equipped with a downhole sleeve?		No	
Production casing test pressure (PSIG)		Actual maximum pressure (PSIG) during	
hydraulic fracturing	9500	fracturin	9399
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>
1	Fracture	WELL DATA HAS BEEN SUBMITTED IN FRACFOCUS	12202 19526

FORMATION RECORD					
<u>Formations</u>	<u>Encountere</u>	<u>Depth TVD</u>	<u>Depth MD</u>	<u>Is formation</u>	<u>Remarks</u>
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
BELL CANYON	Yes	5137.0	5150.0	Yes	
BRUSHY CANYON	Yes	7370.0	5150.0	Yes	
DELAWARE	Yes	5109.0	5122.0	Yes	
CHERRY CANYON	Yes	6085.0	6098.0	Yes	
BONE SPRINGS	Yes	8748.0	8760.0	Yes	
WOLFCAMP	Yes	11660.0	11750.0	Yes	
PENNSYLVANIAN	No			No	BELOW WELLBORE DEPTH
STRAWN	No			No	BELOW WELLBORE DEPTH
ATOKA - HIGH PRESSURE	No			No	BELOW WELLBORE DEPTH
MORROW	No			No	BELOW WELLBORE DEPTH
DEVONIAN	No			No	BELOW WELLBORE DEPTH
FUSSELMAN	No			No	BELOW WELLBORE DEPTH
ELLENBURGER	No			No	BELOW WELLBORE DEPTH
Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm					No
Is the completion being downhole commingled					No

REMARKS
KOP: 11,236' THIS PACKAGE IS FOR SUBMITTAL OF INITIAL POTENTIAL. FOR ALL OTHER ATTACHMENTS, PLEASE REFERENCE TRACKING NO. 168156. THIS IS NOW A POOLED UNIT.

RRC REMARKS	
PUBLIC COMMENTS: [RRC Staff 2017-08-17 11:14:55.516] EDL=7324 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well	
CASING RECORD : SURFACE CASING SET, DV TOOL OPENED, CEMENT NOT CIRCULATED TO SURFACE ON 08/05/2016. SECOND ATTEMPT TO CIRCULATE MADE ON 08/06/16; THIRD ATTEMPT ON 08/07/2016; FOURTH ATTEMPT WAS ON 08/08/16; FINAL TOP JOB ON 08/19/2016 AND ACHIEVED CEMENT TO SURFACE - NO W-15 PROVIDED BY VENDOR.	
TUBING RECORD:	
PRODUCING/INJECTION/DISPOSAL INTERVAL :	
ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :	
POTENTIAL TEST DATA:	

OPERATOR'S CERTIFICATION			
Printed	Maureen Kovacic	Title:	Regulatory Specialist
Telephone	(832) 337-0953	Date	11/30/2017



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION					
Operator Name: SHELL EXPLORATION & PRODUCTION CO			Operator P-5 No.: 774719		
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.			Cementer P-5 No.: 046292		
WELL INFORMATION					
District No.: 08		County: LOVING			
Well No.: 2004H		API No.: 42301329380000		Drilling Permit No.: 816416	
Lease Name: UNIVERSITY 20 B		Lease No.:			
Field Name: PHANTOM WOLF CAMP		Field No.:			
I. CASING CEMENTING DATA					
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
Drilled hole size (in.):		Depth of drilled hole (ft.):		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):		Casing weight (lbs/ft) and grade:		No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.		Setting depth shoe (ft.):		Top of liner (ft.):	
				Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					
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 checked="" type="checkbox"/> Multi-stage cement shoe <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 8	
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 checked="" type="checkbox"/> NO		Setting depth shoe (ft.): 5015'			
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 1247'		Cementing date: 08/05/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2,840	C	SEE REMARK #1	5,326	17,002
2	600	C	SEE REMARK #2	884	2,120
3					
Total	3,340			5,999	19,122
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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 26	
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 checked="" type="checkbox"/> NO		Setting depth tool (ft.): 1,247'			
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 270'		Cementing date: 08/05/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,141	C	SEE REMARK #3	2,166	6,884
2					
3					
Total	1,141			2,166	6,884

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

REMARKS
REMARK #1: C65/35POZ+ 4% BENTONITE+ 0.65% SMS+ 5% SALT+ 1% R3+ 0.005 LB/SK STATIC FREE+ 0.005 GAL/SK FP-6L. REMARK #2: C+ 0.15% SMS+ 0.35% R-3+ 0.005 LB/SK STATIC FREE+ 0.005 GAL/SK FP-6L. REMARK #3: C65/35POZ+ 4% BENTONITE+ 2% SMS+ 5% SALT+ 0.005 LB/SK STATIC FREE+ 0.005 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

BAKER HUGHES OILFIELD OPS, INC.

Alfred Esparza
Signature

Name and title of cementer's representative

Cementing Company

Signature

2929 Allen Parkway Suite 2100 Houston, Texas, 77019

(713) 439-8600

08/05/2016

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

Onshore Waste SME

Sondra Bienvenu
Signature

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/01/2017

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_dir=&p_rloc=&p_tloc=&p_ploc=&pg=3&p_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=3&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 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.



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Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION					
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Cementer Name: BAKER HUGHES OILFIELD OPS, INC.			Cementer P-5 No.: 046292		
WELL INFORMATION					
District No.: 08		County: LOVING			
Well No.: 2004H		API No.: 42301326380600		Drilling Permit No.: 816416	
Lease Name: UNIVERSITY 20 B		Lease No.:			
Field Name: PHANTOM WOLFCAMP		Field No.:			
I. CASING CEMENTING DATA					
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
Drilled hole size (in.):		Depth of drilled hole (ft.):		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):		Casing weight (lbs/ft) and grade:		No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.			Setting depth shoe (ft.):		Top of liner (ft.):
			Setting depth liner (ft.):		
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					
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:	
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:	
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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 8	
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)			
Upper:		Lower:		Upper:	
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:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			Setting depth tool (ft.): 1,247		
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 270		Cementing date: 08/06/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,785	C	SEE REMARK #1	3,373	10,769
2					
3					
Total	1,785			3,373	10,769

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

REMARKS
REMARK #1: C65/35POZ+ 4% BENTONITE+ 2% SMS+ 5% SALT+ 0.005 LB/SK STATIC FREE+ 0.005 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

BAKER HUGHES OILFIELD OPS, INC.

Jesus Alfredo Esparza
Signature

Name and title of cementer's representative

Cementing Company

2929 Allen Parkway Suite 2100 Houston, Texas, 77019

(713) 439-8600

08/06/2016

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

Onshore Waste SME

Sondra Bienvenu
Signature

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/10/2017

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.

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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_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.
- 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.



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-5 No.: 774719		
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.			Cementer P-5 No.: 048292		

WELL INFORMATION			
District No.: 08		County: LOVING	
Well No.: 2004H		API No.: 42301320380000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B		Lease No.:	
Field Name: PHANTOM WOLFCAMP		Field No.:	

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

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

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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 8	
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 checked="" type="checkbox"/> NO				Setting depth tool (ft.): 1,247'	
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 270'		Cementing date: 08/07/2016	

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	400	C	SEE REMARK #1	1,132	3,614
2					
3					
Total	400			1,132	3,614

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

REMARKS
REMARK #1: C+ 12% A-10+ 10% BENTONITE+ 1% SMS+ 0.005 LB/SK STATIC FREE+ 0.005 GAL/SK FP-6L. AFTER THE CEMENT, 30 BBLs OF FRESH WATER AND 570 BBLs BRINE WATER WERE PUMPED, WHEN PUMPING THE BRINE WATER, 24 BBLs OF CEMENT @ 12.0 PPG (48 SACKS) CAME BACK TO SURFACE.

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

JESUS ALFREDO ESPARZA

BAKER HUGHES OILFIELD OPS, INC.

Name and title of cementer's representative

Cementing Company

Signature

2929 Allen Parkway Suite 2100 Houston, Texas, 77019

(713) 439-8600

08/07/2016

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

Onshore Waste SME

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/01/2017

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).
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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_tloc=&p_ploc=&pg=1&p_tac=&tl=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_tloc=&p_ploc=&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.

**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-5 No.: 774719		
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.			Cementer P-5 No.: 048292		
WELL INFORMATION					
District No.: 08		County: LOVING			
Well No.: 2004H		API No.: 42301329380000		Drilling Permit No.: 818416	
Lease Name: UNIVERSITY 20 B		Lease No.:			
Field Name: PHANTOM WOLFCAMP		Field No.:			
I. CASING CEMENTING DATA					
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
Drilled hole size (in.):		Depth of drilled hole (ft.):		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):		Casing weight (lbs/ft) and grade:		No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.			Setting depth shoe (ft.):		Top of liner (ft.):
					Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					
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:		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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 8	
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)			
Upper: Lower:		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 checked="" type="checkbox"/> NO			Setting depth tool (ft.): 1,250 1,247		
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 0 270		Cementing date: 08/08/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	3,570	C	SEE REMARK #1	8,747	21,543
2					
3					
Total	3,570			8,747	21,543

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

REMARKS
REMARK #1: C65/35POZ+ 4% BENTONITE+ 2% SMS+ 5% SALT+ 0.005 LB/SK STATIC FREE+ 0.005 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

BAKER HUGHES OILFIELD OPS, INC.

Name and title of cementer's representative

Cementing Company

Signature

2929 Allen Parkway Suite 2100 Houston, Texas, 77019

(713) 439-8600

08/08/2016

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

Onshore Waste SME

Signature

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/01/2017

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_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14)). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.
- 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.



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			Operator P-5 No.: 774719		
Cementer Name: BAKER HUGHES			Cementer P-5 No.: 046202		
WELL INFORMATION					
District No.: 08			County: LOVING		
Well No.: 2004H			API No.: 42301329380000		Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B			Lease No.:		
Field Name: PHANTOM			Field No.:		
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.): 11180'		Est. % wash-out or hole enlargement: 40%	
Size of casing in O.D. (in.): 7		Casing weight (lbs/ft) and grade: 29# P110		No. of centralizers used: 43	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.			Setting depth shoe (ft.): 11164		Top of liner (ft.):
					Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 4,000'		Cementing date: 8-24-2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	470	C	REMARKS #1	1151	7656
2	240	H	REMARKS #2	288	1915
3					
Total	710			1439	9571
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 65.35,C.Poz+ 6% Bentonite+1% R-3+ 1% SMS+ 1% FL-52D+ 3% BWOW Potassium Chloride+ 0.01gps FP-6L+ 0.005 lb/sk Static Free Remarks #2 50.50,H.Poz+ 2% Bentonite+ 0.6% FL-66+ 0.35% CD-32A+ 0.35% R-3+ 0.35% SMS+ 0.01 gps FP-6L + 0.005 lb/sk Static Free CIRCULATED-NO CEMENT TO SURFACE

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

Matthew Valenzuela-Field Specialist	BAKER HUGHES, INC	
Name and title of cementer's representative	Cementing Company	Signature
2929 ALLEN PARKWAY SUITE 2100 HOUSTON, TEXAS 77019	(713) 439-8600	8-24-16
Address	City, State, Zip Code	Tel: Area Code Number Date: mo. day yr.

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

Sondra Bienvenu	Onshore Waste SME	
Typed or printed name of operator's representative	Title	Signature
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/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14)). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.
- 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.



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-5 No.: 774719		
Cementer Name: Baker Hughes Inc			Cementer P-5 No.: 048292		

WELL INFORMATION			
District No.: 08		County: LOVING	
Well No.: 2004H		API No.: 423013293800000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B		Lease No.:	
Field Name: Phantom (Wolfcamp)		Field No.:	

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 1/4"		Depth of drilled hole (ft.): 19700		Est. % wash-out or hole enlargement: 15%	
Size of casing in O.D. (in.): 4 1/2"		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.): 19,695'		Top of liner (ft.): 10983'	
				Setting depth liner (ft.): 19,695'	
Hrs. waiting on cement before drill-out: N/A		Calculated top of cement (ft.): 10983'		Cementing date: 9/8/2016	

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	790	H	SEE REMARKS	948	10066
2					
3					
Total	790			948	1068

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
SLURRY: 50% FLY ASH + 50% CLASS 'H' + 2% BENTONITE + .65% FL-66 + .3% CD-32A + 0.35% SMS + 0.6% R-3 + .005 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 BAKER HUGHES, INC

Name and title of cementer's representative

Cementing Company

Signature

2929 ALLEN PARKWAY SUITE 2100 HOUSTON, TEXAS 77019 (713) 439-8600

9/8/2016

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

Onshore Waste SME

Signature

Typed or printed name of operator's representative

Title

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/09/2017

Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr.

Instructions for Form W-15, Cementing Report

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

DAVID PORTER, CHAIRMAN
CHRISTI CRADDICK, COMMISSIONER
RYAN SITTON, 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 20 B

Address1: PO BOX 576

Address2:

City: HOUSTON

State: TX

Well No: 2004H

Sec: 29 **Block:** 20

County: LOVING

Survey Name: UNIVERSITY LAND

SWR13EX Application Number: 9080

Drilling Permit No: 816416

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 20 B ;
WELL NUMBER: 2004H 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 5048 feet of surface casing and circulate cement from the shoe to the ground surface.

Contingency Plan:

Set 5048 feet of surface casing with a multistage tool set at a depth of not less than 1250 feet. Circulate cement from the multistage tool to the ground surface. If cement does not circulate to surface during the first stage, the multistage tool MUST be opened and neat cement be circulated from the tool to the surface.

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

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

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

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

This exception is based on information provided when the application was submitted on 07/11/2016 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: Jeffery Morgan

DATE: 07/19/2016

D. CRAIG PEARSON

DISTRICT DIRECTOR

Tracking No.: 168156

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: 09/08/2016
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 816416	
Lease Name UNIVERSITY 20 B	Lease/ID No. 48423	Well No. 2004H
County LOVING	API No. 42- 301-32938	

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). _____

Sondra Bienvenu

Signature

SHELL WESTERN E&P

Name (print)

Regulatory Specialist

Title


(832) 337-0258

Phone

02/08/2017

Date

-FOR RAILROAD COMMISSION USE ONLY-

<div></div> <div>PHOENIX TECHNOLOGY SERVICES</div>		<div>MD 1:1200 Feet</div>	
<div>MWD Gamma / ROP (1")</div>			
<div>Client: Shell</div>			
<div>Well Name: University 20B 2004H</div>			
<div>API/UWID: 42301329380000</div>			
<div>County: Loving</div>		<div>Field: Wolfcamp B 1</div>	
<div>Permit #: 816416</div>			
<div>State: Texas</div>		<div>Country: USA</div>	
<div>Longitude: 103° 20' 5.2635 W</div>		<div>Personnel</div>	
<div>Latitude: 31° 41' 12.52813 N</div>			
<div>Rig Name: Precision 565</div>		<div>Company Representative Tyrome Russell</div> <div>Geologist</div> <div>Directional Driller(s) John Spencer Travis Malbrough</div> <div>MWD Operator(s) Shane Metcalf Blaine Amphion</div>	
<div>Job Number: 60215</div>			
<div>Ground Level: 2779.00 ft</div>			
<div>Kelly Bushing: 2807.50 ft</div>			
<div>Drill Floor: 28.50 ft</div>			
<div>Permanent Datum: Mean Sea Level</div>			
<div>Drilling Measured From: Kelly Bushing</div>			
<div>Spud Date: August 1, 2016</div>			
<div>Bottom Hole Temp: 195.8 °F</div>			
<div>Log Start Depth: 100.00 ft</div>			
<div>Log End Depth: 19700.00 ft</div>			
<div>Reference Data</div>			
<div>North Reference: Grid North</div>			
<div>Magnetic Declination: 7.13</div>			
<div>Grid Convergence: -1.55</div>			
<div>Total Mag Correction: 8.68</div>			
<div>Comments:</div>		<div>Main Leg</div>	
<div>-</div>			
<div>PHOENIX TECHNOLOGY SERVICES LP ("PHOENIX") DOES NOT MAKE AND EXPRESSLY DISCLAIMS ALL WARRANTIES, REPRESENTATIONS AND CONDITIONS, WITH RESPECT TO THE INFORMATION CONTAINED IN THIS DOCUMENT, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED OR ARISING FROM CONTRACT OR STATUTE INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, ACCURACY AND FITNESS FOR A PARTICULAR PURPOSE. ANYONE USING THIS INFORMATION DOES SO AT THEIR OWN RISK AND ACKNOWLEDGES AND AGREES THAT PHOENIX SHALL NOT BE LIABLE FOR ANY ERROR, OMISSION, DEFECT, DEFICIENCY, OR NONCONFORMITY IN THE INFORMATION AND WITHOUT LIMITING THE FOREGOING, PHOENIX DOES NOT WARRANT THAT THE INFORMATION (OR THE USE THEREOF) WILL BE FREE OF ALL ERRORS OR THAT IT DOES NOT INFRINGE ANY THIRD PARTY RIGHTS. ANYONE USING THE INFORMATION AGREES TO INDEMNIFY AND HOLD PHOENIX HARMLESS FROM ALL CLAIMS, ACTIONS, COSTS (INCLUDING LEGAL COSTS ON A SOLICITOR AND HIS OWN CLIENT BASIS) AND LIABILITIES ARISING FROM OR IN CONNECTION WITH THE USE OF THE INFORMATION.</div>			

Operational Run Summary						60215
Run Start Depth (ft)	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
	0.00	3531.55	5015.00	8446.12	10527.01	11180.05
Run End Depth (ft)		3531.55	5015.00	8446.12	10527.01	11180.05
Run Start Date		8/2/2016	8/3/2016	8/5/2016	8/22/2016	8/24/2016
Run Start Time		6:30 PM	3:30 AM	8:08 AM	7:00 AM	1:24 AM
Run End Date		8/2/2016	8/5/2016	8/21/2016	8/23/2016	8/26/2016
Run End Time		10:43 PM	8:08 AM	3:42 AM	5:23 PM	3:10 PM
Run Start Depth (ft)	Run 7	Run 8	Run 9	Run 10	Run 11	
	11247.63	11340.47	11564.95	15058.04	15417.59	
Run End Depth (ft)		11340.47	11564.95	15058.04	19700.02	
Run Start Date		8/26/2016	8/27/2016	8/29/2016	9/2/2016	
Run Start Time		9:48 PM	4:53 PM	7:37 PM	10:49 AM	
Run End Date		8/27/2016	8/29/2016	9/2/2016	9/6/2016	
Run End Time		2:04 PM	3:40 PM	12:19 AM	8:11 PM	
Tool Information Summary						60215
Gamma Probe Serial No	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
	G0166	G0060	G0172	G0060	G0172	G0195
Probe Cal Ratio	1.5	1.52	1.53	1.53	1.53	1.5
Gamma Scale Factor	16.794	17.312	9.944	8.954	8.954	4.229
Tool Carrier ID (in)	3.250	3.250	2.875	2.875	2.875	2.625
Tool Carrier OD (in)	8.000	8.000	6.750	6.500	6.500	4.500
Survey-to-Bit (PTB) (ft)	68.27	61.16	61.55	59.24	57.79	50.54
Gamma-to-Bit (GTB) (ft)	55.87	48.76	49.11	46.80	45.35	38.10

2004H Production from Phantom Wolfcamp Field

- Producing formation of the University 20 B 2004H is within the blue in this cross section and within the Phantom Wolfcamp Field. This cross section is in TVD and shows gamma through for the wells that define the field rules and the 2004H well. The 2004H lateral does not dip significantly and does not go outside of the Phantom Wolfcamp Field.

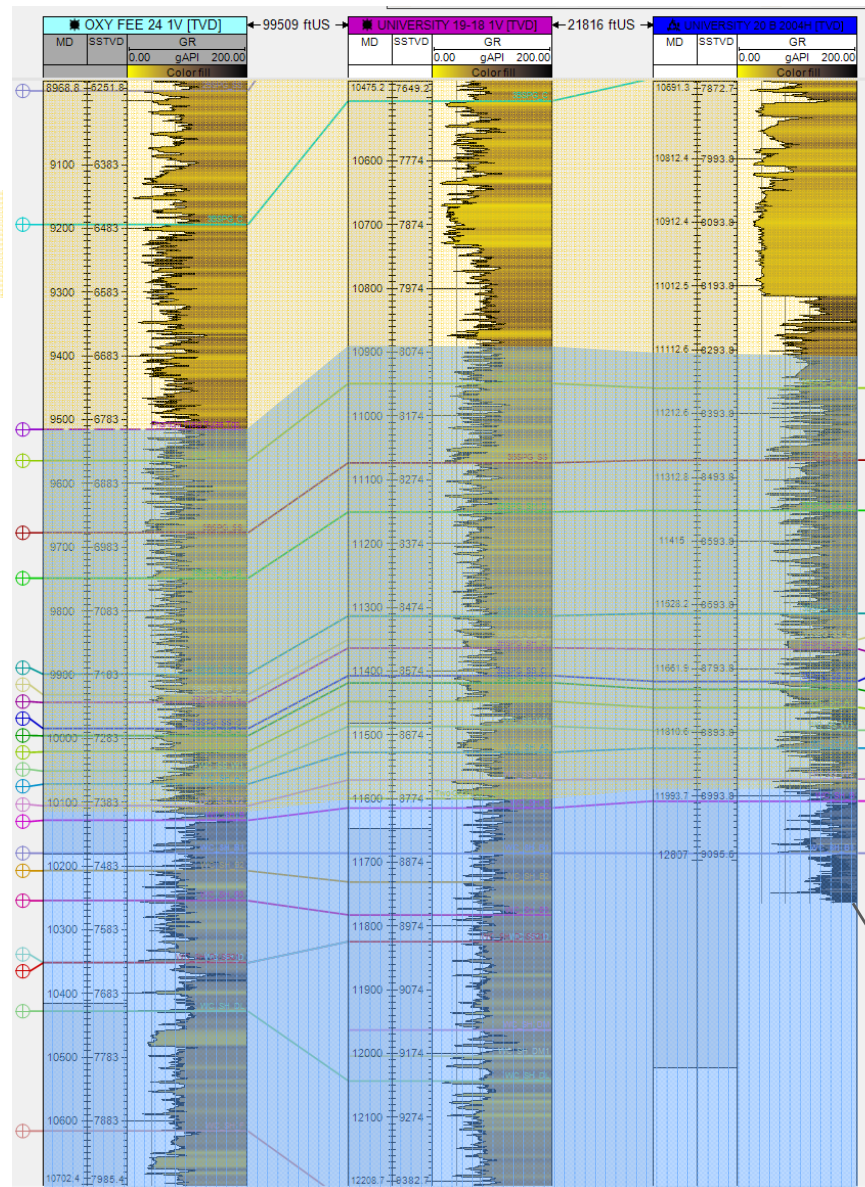
Two Georges Field

Overlap Between Fields – Two Georges

Top of Phantom Wolfcamp at 9,515' md in the Oxy Fee 1V well.
Base of Two Georges Field at 11,600' md in the University 19-18 1V well. Below this we are in the Phantom Wolfcamp field Until 12,447' md in Oxy Fee 24 1V which is significantly below the Depth interval targeted in the University 20 B 2004H well

Phantom Wolfcamp Field

Copyright of Shell International

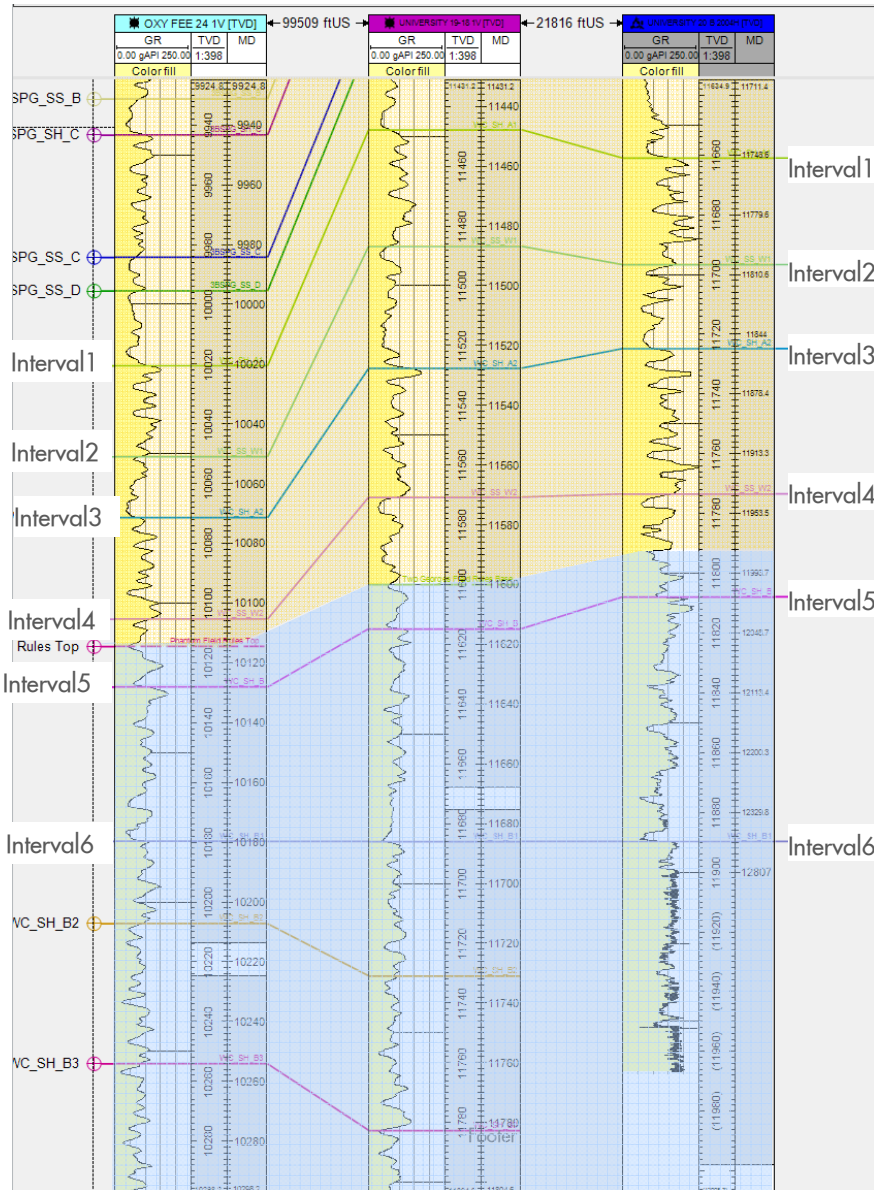


Zoom in of 2004H

Completed Interval
12,202 md and below

2004H Production from Phantom Wolfcamp Field

- Producing formation of the University 20 B 2004H is Interval 5 and 6 which are below the top of the Phantom Wolfcamp Field. This cross section is in TVD and the gamma through the producing interval in the 2004H well is on the cross section. The 2004H well does not dip significantly and does not go outside of the Phantom Wolfcamp Field.



Two Georges Field

Phantom Wolfcamp Field

Base of Two Georges Field at 11,600' md in the University 19-18 1V well. Below this we are in the Phantom Wolfcamp field Until 12,447' md in Oxy Fee 24 1V which is significantly below the Depth interval targeted in the University 20 B 2004H well

**CERTIFICATE OF
POOLING AUTHORITY**

Revised 05/2001

P-12

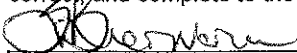
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 2004H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	

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	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 2	University Lands	641.16	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 3	University Lands	640.88	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 4	University Lands	640.98	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 5	University Lands	641.20	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 6	University Lands	641.33	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 8	University Lands	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 9	University Lands	641.38	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 10	University Lands	641.28	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 11	University Lands	320.63	<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

Sondra Bienvenu

US Onshore Waste SME

sondra.bienvenu@shell.com

Print Name

11/15/2017

(832) 337-2100

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) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 2004H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	

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. 12	University Lands	320.62	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 13	University Lands	641.30	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 14	University Lands	641.33	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 15	University Lands	641.37	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 16	University Lands	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	160.25	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	480.74	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 19	University Lands	640.97	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 20	University Lands	640.97	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 21	University Lands	640.98	<input type="checkbox"/>	<input type="checkbox"/>

CERTIFICATION:

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Sondra Bienvenu

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Print Name

US Onshore Waste SME sondra.bienvenu@shell.com

11/15/2017

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- 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) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1003H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	

DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

TRACT/PLAT IDENTIFIER	TRACT NAME	ACRES IN TRACT (See inst. #7 below)	INDICATE UNDIVIDED INTERESTS	
			UNLEASED	NON-POOLED
Tr. 23	University Lands	641.18	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 24	University Lands	320.59	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 25	University Lands	641.14	<input type="checkbox"/>	<input type="checkbox"/>
	TOTAL	13144.15	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<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

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Print Name

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sondra.bienvenu@shell.com

11/15/2017

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- 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.

SECTION VII. REMARKS

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	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.: 2004H	API No.: 42-301-32938	
Total Lease Acres: 1282.61	Drilling Permit No.: 816416	
Lease Name: University 20 B	Lease No.:	
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

[illegible]

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

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

This well is being drilled as an Allocation well on two (2) tracts, University 20-20 LOV and Sec. 17, Blk. 20, University Lands.

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

Sondra Bienvenu, Onshore Waste SME
Name and title (type or print)

sondra.bienvenu@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
Tel: Area Code

337-2100
Number

02/01/2017
Date: mo. day yr.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 14 June 2016**GAU Number:** 156203**Attention:** SHELL WESTERN E&P
PO BOX 576
HOUSTON, TX 77001**Operator No.:** 774719**API Number:**
County: LOVING
Lease Name: University 20 A
Lease Number:
Well Number: 2003H
Total Vertical Depth: 12400
Latitude: 31.686800
Longitude: -103.334858
Datum: NAD27**Purpose:** New Drill**Location:** Survey-UL; Block-20; Section-29

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 300 feet and the Rustler, which is estimated to occur from 700 to 1100 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 200 feet of this location.

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

This determination is based on information provided when the application was submitted on 06/14/2016. 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

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

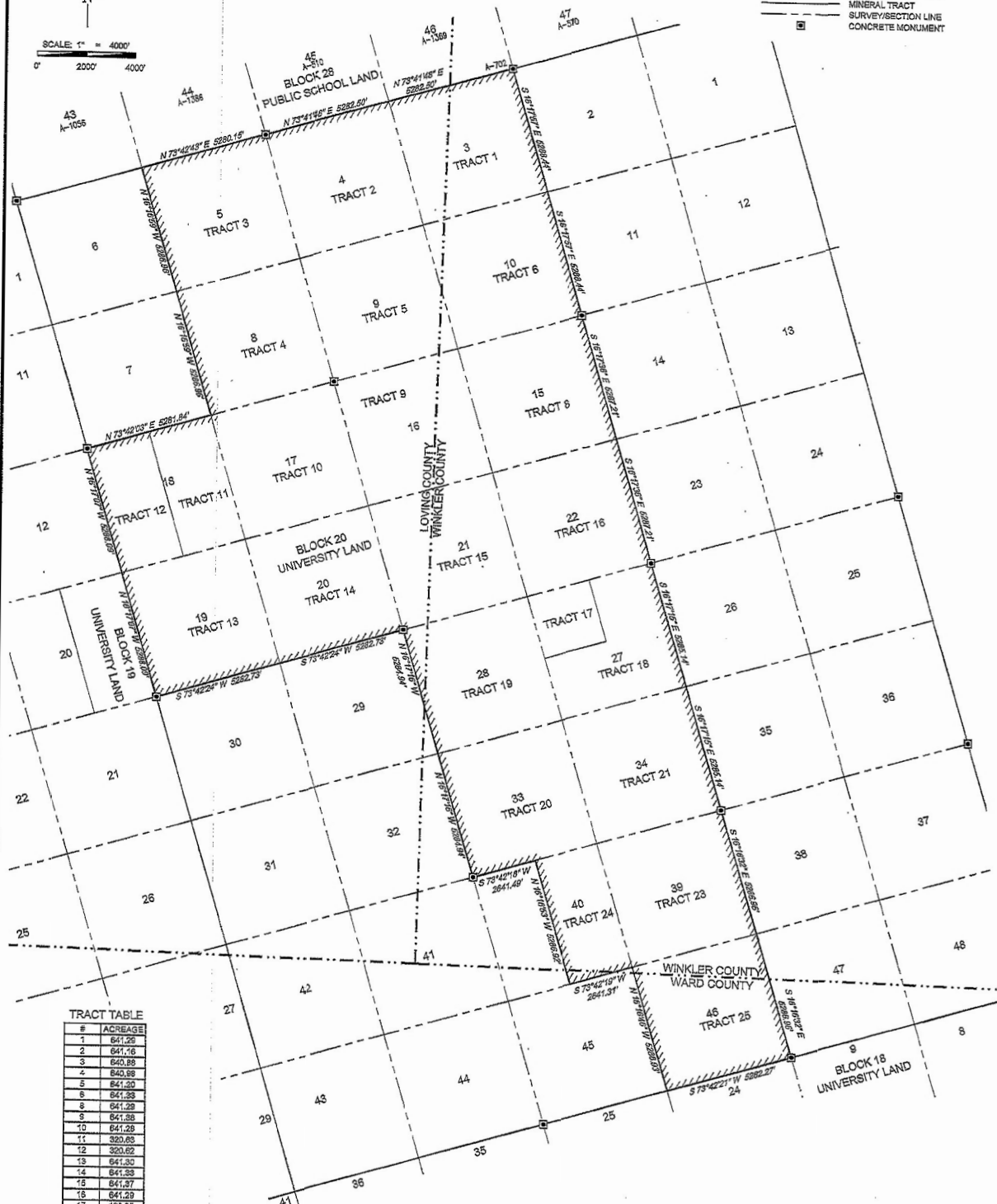
UNIVERSITY 20 PW UNIT
13144.15 ACRES (MEASURED)
SSECTIONS 3, 4, 5, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22
27, 28, 33, 34, 39, 46 AND E/2 OF SECTION 40
BLOCK 20, UNIVERSITY LANDS
LOVING, WINKLER & WARD COUNTIES, TEXAS

SHELL WESTERN
E&P

LEGEND

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

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



TRACT TABLE

#	ACREAGE
1	641.26
2	641.26
3	640.88
4	640.88
5	641.30
6	641.30
7	641.28
8	641.28
9	641.28
10	641.28
11	320.63
12	320.62
13	641.30
14	641.33
15	641.37
16	641.20
17	183.26
18	480.74
19	640.67
20	640.67
21	640.68
22	641.18
23	641.18
24	320.52
25	641.14
TOTAL	13144.15

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**

LEGEND:

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

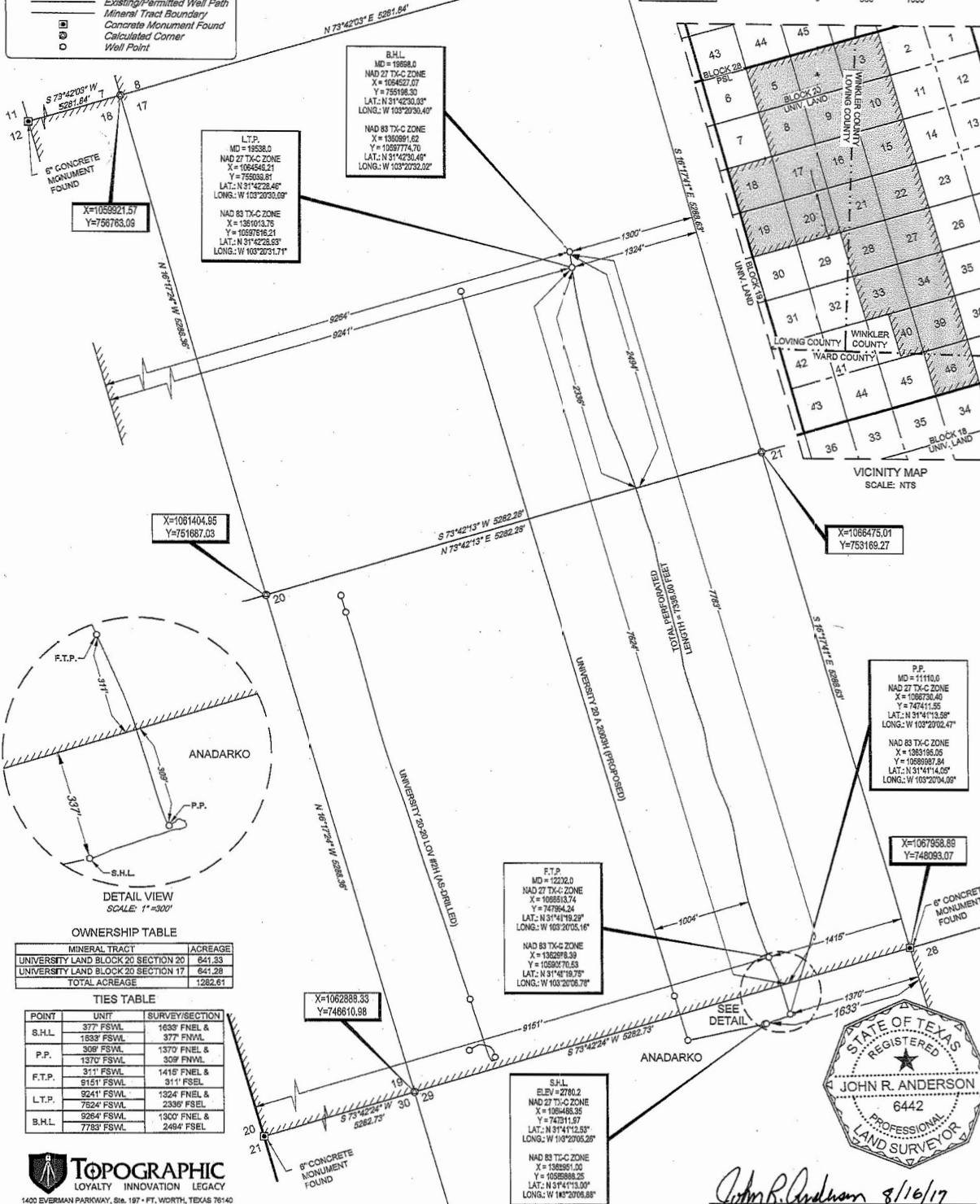
AS-DRILLED LOCATION
LEASE NAME & WELL NO.:
UNIVERSITY 20 PW UNIT 2004H

UNRELEASED ACREAGE:
13144.15 ACRES
NEAREST TOWN IN COUNTY:
±15.6 MILES SOUTHEAST OF MENTONE, TEXAS

DESCRIPTION:
SECTIONS 17 & 20, BLOCK 20
UNIVERSITY LAND SURVEY
LOVING COUNTY, TEXAS



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



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 187 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7812 • FAX: (817) 744-7848
TEXAS PLS REGISTRATION NO. 104624
WWW.TOPOGRAPHIC.COM

UNIVERSITY 20 PW UNIT 2004H	REVISION:		NOTES:
	INT	DATE	
DATE: 08/07/2017			<p>NOTES CONT'D:</p> <p>6. THE AS-DRILLED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF JULY 14, 2016, AT A GROUND LEVEL ELEVATION OF 2762.2 SURVEY FEET.</p> <p>7. THE SUBSURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.</p> <p>8. S.H.L. = SURFACE HOLE LOCATION</p> <p>9. P.P. = POINT OF PENETRATION</p> <p>10. F.T.P. = FIRST TAKE POINT</p> <p>11. L.T.P. = LAST TAKE POINT</p> <p>12. B.H.L. = BOTTOM HOLE LOCATION</p>
FILE: AD_UNIVERSITY_20_PW_UNIT_2004H			
DRAWN BY: O.M.T.H.			
SHEET: 1 OF 1			