



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 01/12/2017
Tracking No.: 166171

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION			
Operator	PERMIAN RESOURCES, LLC	Operator	655836
Operator	700 MILAM STE 3100 HOUSTON, TX 77002-0000		

WELL INFORMATION			
API	42-383-39598	County:	REAGAN
Well No.:	0612HA	RRC District	7C
Lease	UNIVERSITY 10 RE	Field	LIN (WOLFCAMP)
RRC Lease	18869	Field No.:	53613750
Location	Section: 6, Block: 10, Survey: UNIVERSITY LANDS, Abstract:		
Latitude		Longitud	
This well is	6.74	miles in a	NORTH
direction from	BIG LAKE,		
which is the nearest town in the			

FILING INFORMATION			
Purpose of	Initial Potential		
Type of	New Well		
Well Type:	Producing	Completion or Recompletion	09/18/2016
Type of Permit	Date	Permit No.	
Permit to Drill, Plug Back, or	03/16/2016	814406	
Rule 37 Exception			
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	03/18/2016	Date of first production after rig	09/18/2016
Date plug back, deepening, drilling operation	03/18/2016	Date plug back, deepening, recompletion, drilling operation	06/24/2016
Number of producing wells on this lease this field (reservoir) including this	5	Distance to nearest well in lease & reservoir	296.0
Total number of acres in	630.90	Elevation	2538 GL
Total depth TVD	7502	Total depth MD	17732
Plug back depth TVD	7502	Plug back depth MD	17732
Was directional survey made other inclination (Form W-	Yes	Rotation time within surface casing Is Cementing Affidavit (Form W-15)	180.0 Yes
Recompletion or	No	Multiple	No
Type(s) of electric or other log(s)	Gamma Ray (MWD)		
Electric Log Other Description:			
Location of well, relative to nearest lease of lease on which this well is	674.0 Feet from the	Off Lease :	No
	1243.0 Feet from the	South Line and	
		East Line of the	
		UNIVERSITY 10 RE Lease.	

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

PACKET:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth	550.0	Date 03/14/2016
SWR 13 Exception	Depth		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of	09/29/2016	Production	Flowing
Number of hours	24	Choke	64
Was swab used during this	No	Oil produced prior to	7156.00
PRODUCTION DURING TEST PERIOD:			
Oil	920.00	Gas	687
Gas - Oil	746	Flowing Tubing	0.00
Water	2353		
CALCULATED 24-HOUR RATE			
Oil	920.0	Gas	687
Oil Gravity - API - 60.:	41.4	Casing	239.00
Water	2353		

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	13 3/8	17 1/2	712			CLASS C 65/35	900	1444.0	0	Circulated to Surface
2	Intermediate	9 5/8	12 1/4	6551			CLASS C 50/50; C PLUS	1190	2925.0	0	Circulated to Surface
3	Conventional Production	5 1/2	8 3/4	17732			CLASS H 50/50	3825	5121.0	2004	Calculation

LINER RECORD									
<u>Ro</u>	<u>Liner Size</u>	<u>Hole Size</u>	<u>Liner Top</u>	<u>Liner Bottom</u>	<u>Cement Class</u>	<u>Cement Amoun</u>	<u>Slurry Volume (cu.</u>	<u>Top of Cement (ft.)</u>	<u>TOC Determined</u>
N/A									

TUBING RECORD			
<u>Ro</u>	<u>Size (in.)</u>	<u>Depth Size (ft.)</u>	<u>Packer Depth (ft.)/Type</u>
1	2 7/8	7722	/

PRODUCING/INJECTION/DISPOSAL INTERVAL			
<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
1	No	L1 7919	17638.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment		Yes	
Is well equipped with a downhole sleeve?		If yes, actuation pressure	
No			
Production casing test pressure (PSIG)		Actual maximum pressure (PSIG) during	
hydraulic fracturing	8500	fracturin	7494
Has the hydraulic fracturing fluid disclosure been			
		Yes	
<u>Ro</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>

FORMATION RECORD					
Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
GRAYBURG	Yes	2698.0	2718.0	Yes	
QUEEN	Yes	2125.0	2137.0	Yes	
SAN ANDRES - SALTWATER FLOW, POSSIBLY HEAVY CLEARFORK	Yes	2860.0	2883.0	Yes	
	No			No	PINCHED OUT IN THE AREA
SPRABERRY	Yes	5515.0	5571.0	Yes	
WOLFCAMP	Yes	7084.0	7159.0	Yes	
STRAWN	No			No	BELOW TD
FUSSELMAN	No			No	BELOW TD
ELLENBURGER	No			No	BELOW TD
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 FOR THIS WELL IS 6,990

RRC REMARKS
<p>PUBLIC COMMENTS:</p> <p>[RRC Staff 2016-12-20 13:15:38.652] EDL=9719 feet, max acres=380, LIN (WOLFCAMP) oil well</p>
<p>CASING RECORD :</p>
<p>TUBING RECORD:</p>
<p>PRODUCING/INJECTION/DISPOSAL INTERVAL :</p>
<p>ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :</p>
<p>POTENTIAL TEST DATA:</p>

OPERATOR'S CERTIFICATION			
Printed	Rian Hinds	Title:	Regulatory Technician
Telephone	(405) 968-4451	Date	12/13/2016



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 shade areas.

Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	American Energy Permian	Operator P-5 No.:	017996
Cementer Name:	Crest Pumping Technologies	Cementer P-5 No.:	189898

WELL INFORMATION

District No.:	7C	County:	Reagan
Well No.:	0612HA	API No.:	42-383-39598
Lease Name:	University 10RE	Drilling Permit No.:	814406
Field Name:	Lin (Wolfcamp)	Lease No.:	
		Field No.:	

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.):	17 1/2	Depth of drilled hole (ft.):	712	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	13 3/8	Casing weight (lbs/ft) and grade:	54.5# J-55	No. of centralizers used:	5
Was cement circulated to ground surface (or bottom of cellar) outside casing?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Setting depth shoe (ft.):	712	Top of liner (ft.):	
	If no for surface casing, explain in Remarks.			Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	3/18/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	475	Class C 65/35	Remarks 1	879	1,265
2	425	Class C	Remarks 2	565	814
3					
Total	900			1,444	2,079

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 of 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)							

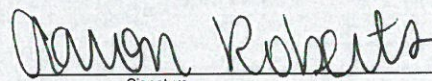
REMARKS

- 1 3% Salt; 6% Bentonite Gel; 0.25# Cellophane Flakes
- 2 2% Calcium Chloride; 0.25# Cellophane Flakes
- 3
- 4

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.

Aaron Roberts / Cementer

Crest Pumping Technologies



Name and title of cementer's representative

Cementing Company

Signature

P.O. Box 117 Jacksboro, TX 76458

940-567-3392

3/18/2016

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 the 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.

Rian Hinds

Regulatory Technician



Typed or printed name of operator's representative

Title

Signature

PO Box 13710 OKC, OK 73113

405-608-5477

04/04/2016

Address City, State, Zip Code

Tel: Area Code

Number

Date:

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&ptac=&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&ptac=&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-outs less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as 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-15's to show all data for multiple parallel strings.
- G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

RAILROAD COMMISSION OF TEXAS

1701 N. Congress

P.O. Box 12967

Austin, Texas 78701-2967

Form W-15

Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shade areas.

Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Permian Resources	Operator P-5 No.: 655836
Cementer Name: Crest Pumping Technologies	Cementer P-5 No.: 189898

WELL INFORMATION

District No.: 7C	County: Reagan
Well No.: 0612HA	API No.: 42-383-39598
Lease Name: University 10 RE	Drilling Permit No.: 814406
Field Name: Lin (Wolfcamp)	Lease No.: 18869
	Field No.: 53613750

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.): 12 1/4	Depth of drilled hole (ft.): 6,557	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.): 9 5/8	Casing weight (lbs/ft) and grade: 40# J55	No. of centralizers used: 54
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.): 6,551	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 6/11/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	980	Class C 50/50	Remarks 1	2,587	8,261
2	210	C PLUS	Remarks 2	338	1,080
3					
Total	1,190			2,925	9,341

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 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:
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 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

- 1 5% Salt; 7% Bentonite Gel; 0.05% GXT-C; 0.25% CPT-503p; 4# Kol Seal; 0.75# Dura Fiber-X; 0.5% CPT-45; 0.2% CPT-20A; 0.2% Citric Acid
- 2 3% Salt; 1% Bentonite Gel; 0.5% CPT-19; 0.4% CPT-35; 4# Kol Seal; 0.4% CPT-20A
- 3
- 4

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.

JAMES WEST / Cementer

Crest Pumping Technologies

Name and title of cementer's representative

Cementing Company

Signature

P.O. Box 117 Jacksboro, TX 76458

940-567-3392

6/12/2016

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Rian Hinds

Regulatory Technician

Typed or printed name of operator's representative

Title

Signature

PO Box 14670 OKC, OK 73113

405-968-4451

12/12/2016

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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- 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&ptac=&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&ptac=&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-outs less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as 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 tool.
- F. Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.
- G. Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

**RAILROAD COMMISSION OF TEXAS**

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P.O. Box 12967

Austin, Texas 78701-2967

Form W-15

Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shade areas.

Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Permian Resources	Operator P-5 No.:	655836
Cementer Name:	Crest Pumping Technologies	Cementer P-5 No.:	189898

WELL INFORMATION

District No.:	7C	County:	Reagan		
Well No.:	0612HA	API No.:	42-383-39598	Drilling Permit No.:	814406
Lease Name:	University 10 RE	Lease No.:	18869		
Field Name:	Lin (Wolfcamp)	Field No.:	53613750		

I. CASING CEMENTING DATA

Type of casing:	<input type="checkbox"/> Conductor	<input type="checkbox"/> Surface	<input type="checkbox"/> Intermediate	<input type="checkbox"/> Liner	<input checked="" type="checkbox"/> Production
Drilled hole size (in.):	8 3/4	Depth of drilled hole (ft.):	17,732	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	5 1/2	Casing weight (lbs/ft) and grade:	17# P110	No. of centralizers used:	152
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.):	17,732	Top of liner (ft.):	
	If no for surface casing, explain in Remarks.	Setting depth liner (ft.):			
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):	2,004	Cementing date:	6/22/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,405	Class H 50/50	Remarks 1	2,023	8,010
2	2,420	Class H 50/50	Remarks 2	3,098	12,263
3					
Total	3,825			5,121	20,273

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:		

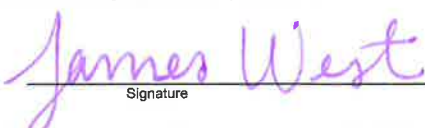
SLURRY

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	
1	2% Bentonite Gel; 0.25% CPT-503p; 0.5% CPT-19; 0.3% CPT-35; 0.3% CPT-45; 0.4% Citric Acid; 0.4% CPT-20A; 0.25# Cellophane Flakes
2	10% Salt; 2% Bentonite Gel; 0.4% CPT-12; 0.95% CPT-15; 0.2% CPT-20A
3	
4	

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.

JAMES WEST / Cementer		Crest Pumping Technologies		
Name and title of cementer's representative		Cementing Company	Signature	
P.O. Box 117 Jacksboro, TX 76458		940-567-3392	6/23/2016	
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 the 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.

Rian Hinds		Regulatory Technician		
Typed or printed name of operator's representative		Title	Signature	
PO Box 14670 OKC, OK 73113		405-968-4451	12/12/2016	
Address	City, State, Zip Code	Tel: Area Code Number	Date:	

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 on 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&ptac=&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&ptac=&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-outs less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as 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 W15's 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.

Tracking No.: 166171

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: PERMIAN RESOURCES, LLC	District No. 7C	Completion Date: 09/18/2016
Field Name LIN (WOLFCAMP)	Drilling Permit No. 814406	
Lease Name UNIVERSITY 10 RE	Lease/ID No. 18869	Well No. 0612HA
County REAGAN	API No. 42- 383-39598	

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). _____

Rian Hinds

Signature

PERMIAN RESOURCES, LLC

Name (print)

Regulatory Technician

Title


(405) 968-4451

Phone

12/12/2016

Date

-FOR RAILROAD COMMISSION USE ONLY-

	Gamma Ray Vertical	
	Job #: 168076	Well ID: 814406
	Scale: 5" = 100 ft	Type: MD

Well Site Information	
Oil Company	Cathedral Energy Services
Surface Location	University Lands Block 10, Sec. 6
Well Name	University 10 RE 0612HA
API	42-383-39598
Field	Lin (Wolfcamp)
State	TX
Country	USA
Surface Coordinates	
Well Type	Horizontal
Latitude	32° 17' 20 N
Longitude	-101° 28' 13 W
N / S Coordinates	591,818. ft
E / W Coordinates	1,644,879 ft
Azimuth Reference	True North
Grid Convergence	0.59"
MWD Engineers	
Lead Hand	A. Evans
Second Hand	A. Clark

Perm Datum	Mean Sea Level	Elevation	2,538.00 ft
Log depth measured from KB is	21.00 ft	above perm datum.	KB = 2,559.00 ft
Total Depth	17,843.00 ft	Spud Date	Jun/06/2016
(MD) Log Interval		End Date	Jun/01/2016
		Start Depth	605.78 ft
		End Depth	17,732.05 ft

Bore Hole Record		
Hole Size	From	To
13.38 in	0.00 ft	712.00 ft
12.25 in	712.00 ft	6,545.00 ft
8.75 in	6,545.00 ft	17,732.00 ft

Casing Record				
Type	Size	WGT	From	To
Surface	13.38 in	54.5	0.00 ft	712.00 ft
Intermediate	9.63 in	40	712.00 ft	

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12

1. Field Name(s) Lin (Wolfcamp)	2. Lease/ID Number (if assigned)	3. RRC District Number 7C
4. Operator Name American Energy-Perm Basin, LLC	5. Operator P-5 Number 017996	6. Well Number 0612HA
7. Pooled Unit Name University 10 RE	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Reagan	11. Total acres in pooled unit 630.90	

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
1	University Lands	313.100	<input type="checkbox"/>	<input type="checkbox"/>
2	University Lands	317.800	<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"/>
			<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.

Rena Carter
Signature

Rena Carter

Sr.Regulatory Specialist

rena.carter@aep-lp.com

Print Name

03/15/2016

(405) 607-5559

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.

Clear Form

STATEMENT OF PRODUCTIVITY OF ACREAGE
ASSIGNED TO PRORATION UNITS

Form P-15

Tracking No.: 166171

This facsimile P-15 was generated electronically
from data submitted to the RRC.

The undersigned states that he is authorized to make this statement; that he has knowledge of the facts concerning the PERMIAN RESOURCES, LLC ,

UNIVERSITY 10 RE LEASE , OPERATOR No. 0612HA ; that such well is WELL

completed in the LIN (WOLFCAMP) Field, REAGAN County,

Texas and that the acreage claimed, and assigned to such well for proration purposes as authorized by special rule and as shown on the attached certified plat embraces _____

157.725 acres which can reasonably be considered to be productive of hydrocarbons.

- CERTIFICATE -

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge,

Date 12/13/2016 Signature Rian Hinds

Telephone (405) 968-4451 Title Regulatory Technician
AREA CODE

	Rian Hinds, Regulatory Technician			rian.hinds@permanianresources.com		
Signature	Name and title (type or print)			Email (include email address <i>only</i> if you affirmatively consent to its public release)		
PO Box 14670	OKC	OK	73113	405	9684451	12/12/2016
Address	City.	State.	Zip Code	Tel: Area Code	Number	Date: mo. day yr.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 14 March 2016**GAU Number:** 152286**Attention:** AMERICAN ENERGY-PERM
PO BOX 13710
OKLAHOMA CITY, OK 73113**Operator No.:** 017996**API Number:**
County: REAGAN
Lease Name: University 10 RE
Lease Number:
Well Number: 0620HD
Total Vertical Depth: 13000
Latitude: 31.288955
Longitude: -101.470382
Datum: NAD27**Purpose:** New Drill**Location:** Survey-UL; Block-10; Section-6

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 550 feet must be protected.

This recommendation is applicable to all wells within a radius of 500 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 03/14/2016. 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

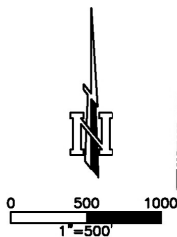
Form GW-2 P.O. Box 12967 Austin, Texas 78771-2967 512-463-2741 Internet address: www.rrc.texas.gov
Rev. 02/2014

NAD 27, Central Zone 4203
 Surface Hole Location (SEC. 6)
 Latitude: 31.288954° N
 Longitude: 101.470254° W
 X=1644879.60
 Y=591818.64
 Elev.=2538'
 674' FSL & 1243' FEL
 Point of Penetration (SEC. 6)
 Latitude: 31.287489° N
 Longitude: 101.469450° W
 X=1645125.20
 Y=591283.04
 143' FSL & 989' FEL
 First Take Point (SEC. 6)
 Latitude: 31.289166° N
 Longitude: 101.469417° W
 X=1645141.77
 Y=591892.92
 754' FSL & 981' FEL
 Last Take Point (SEC. 32)
 Latitude: 31.315878° N
 Longitude: 101.469217° W
 X=1645303.56
 Y=601607.16
 144' FNL & 960' FEL
 Bottom Hole Location (SEC. 32)
 Latitude: 31.316138° N
 Longitude: 101.469214° W
 X=1645305.51
 Y=601701.12
 50' FNL & 960' FEL

Unit Boundary Distance	
SHL	674' FSL & 1243' FEL
PP	143' FSL & 989' FEL
FTP	754' FSL & 981' FEL
LTP	144' FNL & 960' FEL
BHL	50' FNL & 960' FEL

University Lands
 Block 58, Sec. 31

University Lands
 Block 10, Sec. 5



PERMIAN RESOURCES

Well Name
 UNIVERSITY 10 RE 0612HA
 Drilling Field
 LIN (WOLFCAMP) FIELD
 Nearest Town
 6.74 MILES NORTH OF BIG LAKE, TEXAS



NOTE: This Plat does not, in anyway represent a "Boundary Survey", and does not comply with the current T.B.P.L.S. Minimum Standards of Procedures for Boundary Survey. Shown Acreages were furnished by others. The information contained on this plat is intended for the sole use of Permian Resources, LLC.

NOTE: Bearings and coordinates refer to the Texas Coordinate System of 1927, Central Zone (4203), as observed by GPS observations

I, Damian M. Jagers do hereby certify that the above described well location was surveyed on the ground under my supervision, as shown.

Damian M. Jagers 9/7/2016
 DATE
 Damian M. Jagers
 REGISTERED PROFESSIONAL LAND SURVEYOR
 TEXAS REGISTRATION NO. 6269

Tract	Lessor	Called Acreage	% of Total
1	University Lands	313.1000 Acres	49.8275
2	University Lands	317.8000 Acres	50.3725
	Total	630.9000 Acres	100.0000

G. C. & S. F. RR CO Survey
 Section 1, A-163

X=1643691.13
 Y=601782.81

University Lands
 Block 58, Sec. 32

University Lands
 Block 10, Sec. 6

X=1643507.64
 Y=591172.10

University Lands
 Block 10, Sec. 7

University 10 RE 0620HD // 0606HS

University 10 RE 0632HE

University 10 RE 0612HA (FTP-LTP: 9716.88')

University 10 RE 0616HS

UNIVERSITY 10 LEASE
 CALLED 530.9000 ACRES

X=1646189.60
 Y=596449.02

X=1646112.08
 Y=591119.84

SF-15560

SF-15548



As-Drilled Plat
 for
 Permian Resources, LLC

University 10 RE 0612HA
 University Lands Block 10, Section 6
 University Lands Block 58, Section 32
 Reagan County, Texas