



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 05/12/2016
Tracking No.: 155341

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

OPERATOR INFORMATION

Operator Name: AMERICAN ENERGY-PERM BASIN, LLC Operator No.: 017996
Operator Address: PO BOX 13710 OKLAHOMA CITY, OK 73113-0000

WELL INFORMATION

API No.: 42-383-39595 County: REAGAN
Well No.: 0620HD RRC District No.: 7C
Lease Name: UNIVERSITY 10 RE Field Name: LIN (WOLFCAMP)
RRC Lease No.: 18869 Field No.: 53613750
Location: Section: 6, Block: 10, Survey: UL, Abstract: U212

Latitude: Longitude:
This well is located 6.74 miles in a NORTH
direction from BIG LAKE,
which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Well Record Only
Type of completion: New Well
Well Type: Shut-In Producer Completion or Recompletion Date: 04/20/2016

Type of Permit Date Permit No.
Permit to Drill, Plug Back, or Deepen 04/06/2016 814372
Rule 37 Exception
Fluid Injection Permit
O&G Waste Disposal Permit
Other:

COMPLETION INFORMATION

Spud date: 03/15/2016 Date of first production after rig released: 04/20/2016
Date plug back, deepening, recompletion, or drilling operation commenced: 03/15/2016 Date plug back, deepening, recompletion, or drilling operation ended: 04/20/2016
Number of producing wells on this lease in this field (reservoir) including this well: 1 Distance to nearest well in lease & reservoir (ft.): 319.0
Total number of acres in lease: 630.90 Elevation (ft.): 2538 GL
Total depth TVD (ft.): 8390 Total depth MD (ft.): 18628
Plug back depth TVD (ft.): 8390 Plug back depth MD (ft.): 18628
Was directional survey made other than inclination (Form W-12)? Yes Rotation time within surface casing (hours): 192.0
Is Cementing Affidavit (Form W-15) attached? Yes
Recompletion or reclass? No Multiple completion? No
Type(s) of electric or other log(s) run: Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease boundaries Off Lease : No
of lease on which this well is located: 674.0 Feet from the South Line and
1303.0 Feet from the 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 No. 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 (ft.): 550.0	Date: 03/14/2016
SWR 13 Exception		Depth (ft.):	

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

CASING RECORD											
Row	Type of Casing	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi - Stage Depth (ft.)	Multi - Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	728			CLASS C	900	1444.0	0	Circulated to Surface
2	Intermediate	9 5/8	12 1/4	7204			CLASS C 50/50 PLUS	1300	3210.0	0	Circulated to Surface
3	Conventional Production	5 1/2	8 3/4	18616			CLASS H 50/50	4085	5281.0	21	Calculation

LINER RECORD									
Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
N/A									

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

PRODUCING/INJECTION/DISPOSAL INTERVAL			
Row	Open hole?	From (ft.)	To (ft.)
N/A			

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment performed?		No	
Is well equipped with a downhole actuation sleeve?		If yes, actuation pressure (PSIG):	
No			
Production casing test pressure (PSIG) prior to hydraulic fracturing treatment:		Actual maximum pressure (PSIG) during hydraulic fracturing:	
Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)?		No	
<u>Row</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>

N/A

FORMATION RECORD					
<u>Formations</u>	<u>Encountered</u>	<u>Depth TVD (ft.)</u>	<u>Depth MD (ft.)</u>	<u>Is formation isolated?</u>	<u>Remarks</u>
GRAYBURG	Yes			No	
QUEEN	Yes			No	
SAN ANDRES - SALTWATER FLOW, POSSIBLY HEAVY	Yes			No	
CLEARFORK	Yes			No	
SPRABERRY	Yes			No	
STRAWN	Yes			No	
FUSSELMAN	Yes			No	
ELLENBURGER	Yes			No	

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)?

No

Is the completion being downhole commingled (SWR 10)?

No

REMARKS

RRC REMARKS
<div>PUBLIC COMMENTS:</div> <div></div> <div>CASING RECORD :</div> <div></div> <div>TUBING RECORD:</div> <div>TUBING WILL BE RECORDED WITH W2-IP</div> <div>PRODUCING/INJECTION/DISPOSAL INTERVAL :</div> <div></div> <div>ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :</div> <div></div> <div>POTENTIAL TEST DATA:</div> <div></div>

OPERATOR'S CERTIFICATION	
Printed Name: Rian Hinds	Title: Regulatory Technician
Telephone No.: (405) 680-5477	Date Certified: 05/11/2016

**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.:	0620HD	API No.:	42-383-39595	Drilling Permit No.:	814372
Lease Name:	University 10RE	Lease No.:			
Field Name:	Lin (Wolfcamp)	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.):	728	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.):	728	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:	3/16/2016

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)							

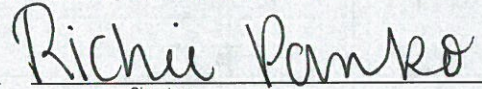
REMARKS

- 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.

Richie Panko / Cementer

Crest Pumping Technologies



Name and title of cementer's representative

Cementing Company

Signature

P.O. Box 117 Jacksboro, TX 76458

940-567-3392

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.

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

WELL INFORMATION

District No.:	7C	County:	Reagan		
Well No.:	0620HD	API No.:	42-383-39595	Drilling Permit No.:	814372
Lease Name:	University 10 RE	Lease No.:			
Field Name:	Lin (Wolfcamp)	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.):	12 1/4	Depth of drilled hole (ft.):	7204	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	9 5/8	Casing weight (lbs/ft) and grade:	40# J-55	No. of centralizers used:	53
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.):	7204	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.):	0	Cementing date:	4/3/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,095	Class C 50/50	Remarks 1	2,880	9,195
2	205	C PLUS	Remarks 2	330	1,054
3					
Total	1,300			3,210	10,249

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	5% Salt; 7% Bentonite Gel; 0.05% GXT-C; 0.25% CPT-503p; 4# Kol Seal; 2# Dura Fiber-X
2	3% Salt; 1% Bentonite Gel; 0.5% CPT-19; 0.4% CPT-35; 4# Kol Seal; 0.1% CPT-20A
3	
4	

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Richie Panko / Cementer		Crest Pumping Technologies	
Name and title of cementer's representative		Cementing Company	Signature
P.O. Box 117 Jacksboro, TX 76458		940-567-3392	
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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Rian Hinds		Regulatory Technician	
Typed or printed name of operator's representative		Title	Signature
PO Box 13710 OKC, OK 73113		405-968-4451	04/29/2016
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

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- 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-out is 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**

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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.:		
Cementer Name: Crest Pumping Technologies			Cementer P-5 No.: 189898		
WELL INFORMATION					
District No.: 7C		County: Reagan			
Well No.: 0620HD		API No.: 42-383-39595		Drilling Permit No.: 814372	
Lease Name: University 10 RE		Lease No.:			
Field Name: Lin (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 checked="" type="checkbox"/> Production					
Drilled hole size (in.): 8 3/4		Depth of drilled hole (ft.): 18618		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.): 5 1/2		Casing weight (lbs/ft) and grade: 17# P-110		No. of centralizers used: 155	
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.): 18616		Top of liner (ft.):
Setting depth liner (ft.):					
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.): 21		Cementing date: 4/20/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,415	Class H 50/50	Remarks 1	2,023	8,011
2	2,670	Class H 50/50	Remarks 2	3,257	12,896
3					
Total	4,085			5,281	20,907
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; 1% CPT-16 A; 0.3% CPT-35; 0.3% CPT-45; 0.1% CPT-20A; 0.1% Citric Acid
- 2 2% Bentonite Gel; 0.25% CPT-503p; 1% CPT-16 A; 0.2% CPT-35; 0.25% 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.

Jody Damron / Cementer Crest Pumping Technologies Jody Damron
 Name and title of cementer's representative Cementing Company Signature
P.O. Box 117 Jacksboro, TX 76458 940-567-3392 4/20/2016
 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 Rian Hinds
 Typed or printed name of operator's representative Title Signature
PO Box 13710 OKC, OK 73113 405-968-4451 04/29/2016
 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_loc=&p_loc=&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_loc=&p_loc=&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-out is 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.

Tracking No.: 155341

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: AMERICAN ENERGY-PERM BASIN, LLC	District No. 7C	Completion Date: 04/20/2016
Field Name LIN (WOLFCAMP)	Drilling Permit No. 814372	
Lease Name UNIVERSITY 10 RE	Lease/ID No. 18869	Well No. 0620HD
County REAGAN	API No. 42- 383-39595	

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

Name (print)

Regulatory Technician

Title


(405) 680-5477

Phone

05/11/2016

Date

-FOR RAILROAD COMMISSION USE ONLY-

	Gamma Ray Build and Lateral			
	Job #:	168046	Well ID:	814372
	Scale:	5"/100	Type:	MD

Well Site Information	
Oil Company	American Energy-Perm Basin, LLC
Surface Location	674.0' FSL & 1282.0' FEL
Well Name	University 10 RE 0620HD
API	42-383-39595
Field	Lin (Wolfcamp)
State	Texas
Country	USA

Surface Coordinates	
Well Type	Horizontal
Latitude	31.288956° N
Longitude	101.470446° W
N / S Coordinates	591,819.67 ft
E / W Coordinates	1,644,819.61 ft
Azimuth Reference	True North
Grid Convergence	0.59°

MWD Engineers	
Lead Hand	T.Studer
Second Hand	H.Corrals

Perm Datum	Mean Sea Level	Elevation	2,538.00 ft		
Log depth measured from KB is	21.00 ft	above perm datum.	KB = 2559.00 ft		
Total Depth	18628.00 ft	Spud Date	Mar/27/2016	End Date	Apr/15/2016
(MD) Log Interval		Start Depth	813.00 ft	End Depth	18628.50 ft

Bore Hole Record		
Hole Size	From	To
12 1/4"	699.00 FT	7,216.00 FT
8 3/4"	7,217.00 FT	18,628.00

Casing Record				
Type	Size	WGT	From	To
Surface	13 3/8"	54.5	0.00 FT	721.00 FT
Intermediate	9 5/8"	40.0	0.00 FT	7,216.00 FT

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12

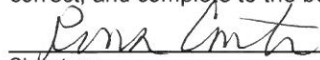
1. Field Name(s) Lin (Wolfcamp)	2. Lease/ID Number (if assigned)	3. RRC District Number 7C
4. Operator Name American Energy-Perm Basin, LLC	5. Operator P-5 Number 017996	6. Well Number 0620HD
7. Pooled Unit Name University 10 RE	8. API Number 42-383-39595	9. Purpose of Filing <input checked="" type="checkbox"/> 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	Print Name
Sr. Regulatory Specialist	03/11/2016
rena.carter@aep-lp.com	(405) 607-5559
Title	Date
E-mail (if available)	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

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