

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
OCD ArtesiaFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*Lease Serial No.
NMNM82886

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM1333718. Well Name and No.
HARROUN TRUST 31-30 FED COM 2H9. API Well No.
30-015-41963-00-S110. Field and Pool or Exploratory Area
HARROUN RANCH-DELAWARE11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

DEVON ENERGY PRODUCTION COMPANY

Contact: ERIN WORKMAN

Email: Erin.workman@devon.com

3a. Address

333 WEST SHERIDAN AVENUE
OKLAHOMA, OK 73102

3b. Phone No. (include area code)

Ph: 405-552-7970

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 31 T23S R29E SWSW 330FSL 1305FWL

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐
- Notice of Intent
-
- ☒
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|---|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☐ Other |
| ☐ Change Plans | ☐ Plug and Abandon | ☒ Temporarily Abandon | |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy Production Co., LP respectfully submits the procedures for the TA of the Harroun Trust 31-30 Fed Com 2H. Please see attached procedures, wellbore schematic, & MIT results.

RECEIVED

ATTACHMENTS: Procedures, wellbore schematic, & MIT

APR 01 2019

TA Status Approved till 9/11/2019

DISTRICT II-ARTESIA O.C.D.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #456880 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COMPANY LP, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 03/05/2019 (18PP2548SE)

Name (Printed/Typed) ERIN WORKMAN

Title REGULATORY COMPLIANCE PROF.

Signature (Electronic Submission)

Date 03/05/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Accepted for record - NMOCD

Accepted for record - NMOCD

Approved By

Accepted for record - NMOCD

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title

Accepted for Record

Jonathon Shepard
Carlsbad Field Office

Office

MAR 22 2019

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Harroun Trust 31-30 Fed Com 2H ESP Pull and Re-Design

Summary: TOO H grounded ESP; provide to Schlumberger for evaluation; TIH packer; Circulate packer fluid to pickle well; perform MIT; Cut wellhead and cap for future drilling activity

****Rig anchors on location have been tested SATISFACTORY****

WBS MM-129931.##.WWO is approved for \$.

This WBS to be used for ESP pull and MIT only

Potato Basin Workover Team,

The **Harroun Trust 31-30 Fed Com 2H ESP** is grounded. The ESP had been downhole since May, 2014. Additionally, we will need to remove the existing wellhead and install a well cap at least 6" below ground level to prepare for future drilling operations (Spud Muffin). This will include setting a packer filling the wellbore with corrosion inhibition fluid. Anticipated work includes:

- 1) TOO H existing tubing string and ESP. ****This well has a capillary tube per WellView****
- 2) Lay down ESP and send to Schlumberger for evaluation.
- 3) Install packer and circulate corrosion inhibited fluid above packer.
- 4) Perform 500 psig MIT (well is to be TA'd per regulation)
- 5) Coordinate with construction and cut wellhead minimum 6" below surface; install well cap.

Note the following in WellView (Daily Report) and highlight for engineering:

- 1) Depth of paraffin, corrosion, scale, or wear on the tubing while POOH
 - a. Provide samples of encountered material to Aegis and Schlumberger with any associated failed components for analysis.
- 2) Complete all data under PIC responsibility in the Wellview Failure Report.

****H2S: No history of H2S on the Harroun Trust 31-30 Fed Com 2H; however, all normal H2S monitoring precautions are still required****

Harroun Trust 31-30 Fed Com 2H Pre-Pull Notes:

- Delaware ~6,580' MD lateral with 15 perforated intervals; 1st perf @ 6,529' MD
 - 5 ½", 17# P-110RY production casing set from 13,217' to surface (ID = 4.892"; Drift: 4.767")
 - Schlumberger 400 Series mixed flow ESP
 - 177 joints of 2 7/8" L-80 tubing currently in hole
 - Tubing drain at 5,578' MD.
1. Hold tailgate safety meetings prior to R.U., each morning and before each operational change or event. Clearly identify the PIC.

2. Bleed down casing pressure and top kill well as needed with KCL brine.
3. This ESP is being pulled due to a ground and to prepare for future drilling operations on the pad. ND wellhead. NU BOP, ESP cable spooler, and other required services.
 - a. Test 5,000 psig BOP with 1 set of blind rams on bottom and 1 set of 2 7/8" tubing rams on top to Devon specifications. Ensure 2 7/8" TIW available on location for well control.
4. TOOH tubing and ESP as per Wellview and below. Lay down ESP.

Tubing String - Currently in Hole														
Run Date		Tubing Description						Run Job			Cat Depth / EOT (ftKB)			
5/12/2014		TUBING - PRODUCTION						DRILLING/COMPLETIONS - DRILLING - 1/22/2014 11:30			6,112.4			
Wellbore		Casing		Comment										
OH														
Jct	Item Desc	Type	OD (in)	ID (in)	Wt (lb/ft)	Grade	Len (ft)	Make	Model	Cond Run	Top (ftKB)	Botm (ftKB)	Bin Incl (°)	Cum Len (ft)
175	Tubing	Tubing	2 7/8	2.441	6.50	L-80	5,550.94		T&C Upset		26.7	5,577.6	9.91	6,085.71
1	Tubing Orphan	Other	2 7/8	1.750			0.60				5,577.6	5,578.2	9.91	534.77
2	Tubing	Tubing	2 7/8	2.441	6.50	L-80	83.80		T&C Upset		5,578.2	5,641.8	10.20	534.17
1	Tubing Sub	Tubing	2 7/8	2.441	6.50	L-80	4.15		T&C Upset		5,641.8	5,646.0	10.20	470.57
	ESP PUMP - SCHLUMBERGER D3500N 400 SERIES (91 STAGES) MIXED FLOW COMPRESSION	ESP Pump	4				22.00	SCHLUMBERGER	D3500N		5,646.0	5,668.0	10.23	466.42
	ESP PUMP - SCHLUMBERGER D3500N 400 SERIES (91 STAGES) MIXED FLOW COMPRESSION	ESP Pump	4				22.00	SCHLUMBERGER	D3500N		5,666.0	5,690.0	10.25	444.42
	ESP PUMP - SCHLUMBERGER D3500N 400 SERIES (47 STAGES) MIXED FLOW COMPRESSION	ESP Pump	4				12.00	SCHLUMBERGER	D3500N		5,690.0	5,702.0	10.26	422.42
	ESP PUMP - SCHLUMBERGER AGH D20-60 400 SERIES (10 STAGES) UNKNOWN COMPRESSION	ESP Pump	4				6.60	SCHLUMBERGER	AGH D20-60		5,702.0	5,708.6	10.27	410.42
	ESP GAS SEP - SCHLUMBERGER 400 SERIES BOLT ON INTAKE SINGLE INTAKE		2				13.30	SCHLUMBERGER			5,708.6	5,711.9	10.28	403.82
	ESP SEAL - SCHLUMBERGER 400 SERIES LABS		4				5.90	SCHLUMBERGER		NEW	5,711.9	5,717.8	10.30	400.52
	ESP SEAL - SCHLUMBERGER 400 SERIES LABS		4				7.40	SCHLUMBERGER		NEW	5,717.8	5,725.2	10.33	394.62
	ESP MOTOR - SCHLUMBERGER 458 MAX SERIES TANDEM	ESP Motor & Cable	4.58				31.50	SCHLUMBERGER			5,725.2	5,756.7	10.44	387.22
	ESP MOTOR - SCHLUMBERGER 458 MAX SERIES TANDEM	ESP Motor & Cable	4.58				31.50	SCHLUMBERGER			5,756.7	5,788.2	10.55	355.72
	ESP SENSOR - SCHLUMBERGER		3.34				1.80	SCHLUMBERGER			5,788.2	5,790.0	10.55	324.22
1	Tubing Desander CAVINS	Other	5	1.500			4.47				5,790.0	5,794.5	10.57	322.42
10	Tubing	Tubing	2 7/8	2.441	6.50	L-80	1,317.45		T&C Upset		5,794.5	6,111.9	31.80	317.95
1	Ball Plug	Other	2 7/8	0.000			0.50				6,111.9	6,112.4	31.83	0.50

NORM Check required for equipment leaving location & downhole parts left on surface

5. TIH with AS1-X packer with solid stinger.
 - a. Set packer at 5,600'.
 - b. Sting off packer; circulate Aegis packer fluid above packer.
 - c. TOO H tubing. Fill wellbore with corrosion inhibited, biocide included packer fluid (up to 150 bbls). Aegis recommendation below:
1 drum of corrosion inhibited packer fluid (approximately 10000 ppm at 150 bbls of fluid) and 10g of Biocide

Cost Data:

Product	Description	\$/Gal*	Rec Gals	\$/Total
CS-1101	CI/Packer Fluid		55	
Aquacide 12:3	Biocide		10	
Total*				

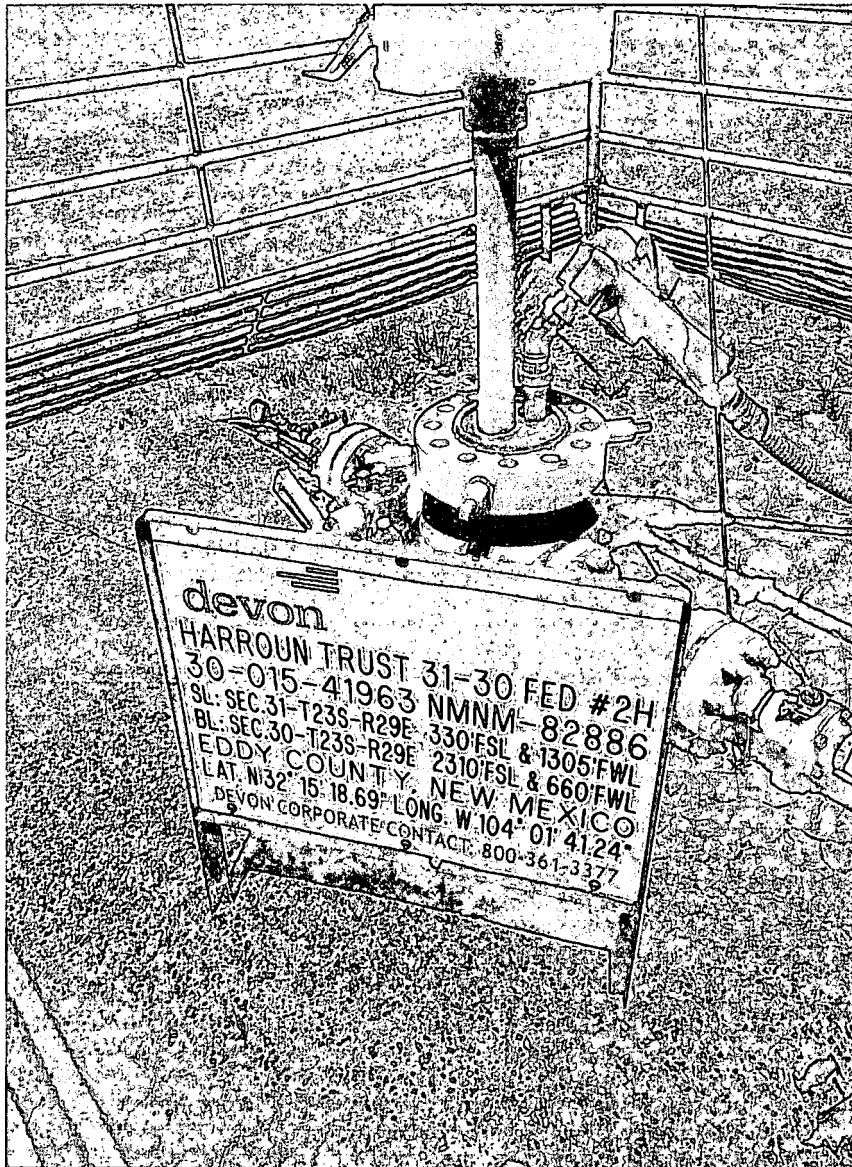
6. Rig up MIT test.
 - a. Perform well MIT to 500 psig for 1 hr. Chart results for submission to the BLM.
 - b. Contact BLM Field office 24 hours prior to executing test to allow time for BLM witness.

For the remaining wellhead work, utilize the following WBSs (Split costs evenly between these):

Spud Muffin 31-30 Fed Com 331H Preliminary WBS: XX-129470.01.SLC

Spud Muffin 31-30 Fed Com 621H Preliminary WBS: XX-129474.01.SLC

1. Coordinate with Field Construction and Field Completions. Remove wellhead components and cut casing at least 6" below current pad surface.
2. Install wellhead cap with double valve isolated pressure gauge. Mark well location on pad. Maintain all buried electrical and flowline connections at the wellhead below pad surface.



Additional Notes:

- Send any paraffin/scale/solids samples to Aegis to have analyzed so that we can seek a recommendation on adjusting our chemical treatment.
- Record any relevant information in daily reports – too much information/data will never be an issue.
- **SAFETY FIRST** – anyone has the authority to stop work if an activity appears unsafe. Be proactive on any procedural or technical recommendations and relay any ideas along for discussion.

Contact	Company	Office #	Mobile #
Tracy Egeland	Devon - Workover Foreman	(575) 746-5593	(575) 513-9290
Joe Koessler	Devon – Engineer	(405) 228-8407	(405) 880-6627
Steve McGlasson	Devon – Foreman	(575) 746-5548	(575) 703-2741
Ray Carter	Devon – Assistant Foreman	(575) 234-0213	(575) 513-0956
Jacey Kidd	Devon – Chemical Program Coord.	(575) 748-1857	(575) 513-9742
Matthew Wilkins	Aegis – Chemical Acct. Manager		(432) 254-7710
Eric Hale	FlowCo Solutions (Packer sales)		(432)-234-7129
Jonathan Shepherd	BLM Engineering Representative		(575) 234-2237
Oswaldo La Corte	SLB ESP Representative	(432) 681-6915	(281) 382-7720

Graphic Controls LLC
DEVON

Harlow 31/30
METER NUMBER
FED Com 2H

TIME PUT ON

M

DATE PUT ON

20

Eddy Co
TUBE & ORF. SIZE

NM

TIME TAKEN OFF

M

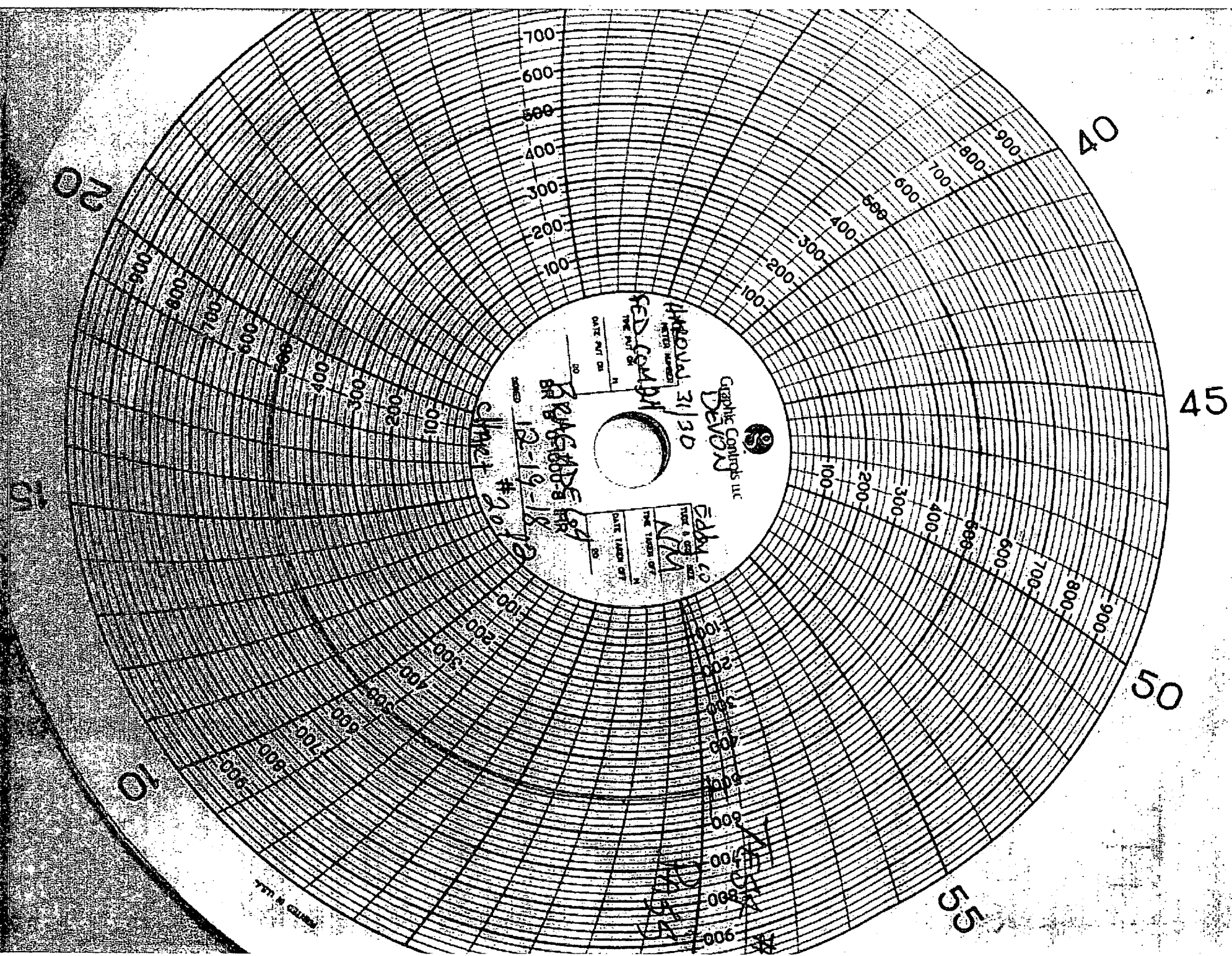
DATE TAKEN OFF

20

BRIGADE 64
BR B 0-1000-8 IHR

SIGNED

12-19-18
Chart # 1012



Graphic Controls LLC
DEVON

DATE PUT ON: 12-19-18
THE TACKER OF: Eddy Co
NO. 12-19-18

DATE TAKEN OFF: 12-19-18
THE TACKER OF: Eddy Co
NO. 12-19-18

Sheet #201

BR 6-100-25

1771 & 1772



HARROUN TRUST 31-30 FED COM 2H

Data Cleanup Schematic

AP/VJWI 3001541963	Surface Legal Location SEC31 T23S R29E	Field Name POTATO BASIN	Permit No. 157035	State/Province NM	Well Configuration Type HORIZONTAL
Ground Elevation (MSL) (ft) 2,956.90	Casing Flange Elevation (ft)	KB - Ground Level (ft) 25.00	KB - Casing Flange (ft)	Original Drig Spud Date 1/27/2014 13:00	Original Drig Rig Release Date 2/24/2014 10:00

HORIZONTAL - OH, 2/22/2019 3:42:36 PM

Wellbore Sections

Wellbore Name	Section Des	Start Date	Act Top (ftKB)	Act Btm (ftKB)	Hole Size (in)
OH CONDUCTOR		1/16/2014	25.0	120.0	26
OH SURFACE 1		1/27/2014	120.0	353.0	17 1/2
OH INTERMEDIATE 1		1/30/2014	353.0	2,697.0	12 1/4
OH PRODUCTION 1		2/5/2014	2,697.0	13,217.0	8 3/4

Casing Strings

Csg Des	OD (in)	Wt/Len (lb/ft)	Grade	Top (ftKB)	Set Depth (ftKB)
CONDUCTOR	20	133.00	J-55	25.0	120.0
SURFACE 1	13 3/8	48.00	H-40	25.0	353.0
INTERMEDIATE 1	9 5/8	40.00	K-55	25.0	2,697.0
PRODUCTION 1	5 1/2	17.00	P-110RY	25.0	13,217.0

Cement Fluids

Des	Sig #	Fluid	Amount of Cement (sacks)	Cement Class	Est Top (ftKB)	Est Btm (ftKB)	Yield (ft ³ /sack)	Dens (lb/gal)	Top (ftKB)	Top Meas Meth
CONDUCTOR CEMENT	1	TAIL	300	C	25.0	120.0	1.34	14.8	25.0	RETURNS
SURFACE CASING CEMENT		LEAD	490	C	25.0	353.0	1.33	14.8	25.0	RETURNS
INTERMEDIATE CASING CEMENT	1	LEAD	830	C	25.0	1,930.0	1.85	12.9	25.0	RETURNS
INTERMEDIATE CASING CEMENT	1	TAIL	220	C	1,930.0	2,697.0	1.33	14.8	25.0	RETURNS
PRODUCTION CASING CEMENT	1	LEAD	345	C	3,514.0	3,235.0	2.65	11.0	3,514.0	RETURNS
PRODUCTION CASING CEMENT	1	TAIL	2,415	H	3,235.0	13,217.0	1.20	14.5	3,514.0	RETURNS
PRODUCTION CASING CEMENT	2	LEAD	425	C	25.0	2,755.0	2.71	11.0	25.0	RETURNS
PRODUCTION CASING CEMENT	2	TAIL	160	C	2,755.0	3,514.0	1.33	14.8	25.0	RETURNS

Zones

Zone Name	Top Depth (ftKB)	Bottom Depth (ftKB)	Current Status	Current Status Date
DELAWARE				

Stimulation Intervals

Type	Start Date	Vol Clean Total (bbl)	Proppant In Formation (lb)	Top (ftKB)	Btm (ftKB)	Zone
HYBRID SW PAD - XLG	5/2/2014	93,602.36	352,072	6,529.0	6,876.0	DELAWARE, OH
HYBRID SW PAD - XLG	5/2/2014	93,602.36	329,834	6,974.0	7,322.0	DELAWARE, OH
HYBRID SW PAD - XLG	5/2/2014	93,602.36	364,063	7,420.0	7,767.0	DELAWARE, OH
HYBRID SW PAD - XLG	5/1/2014	93,602.36	351,451	7,865.0	8,212.0	DELAWARE, OH
HYBRID SW PAD - XLG	5/1/2014	93,602.36	350,177	8,310.0	8,657.0	DELAWARE, OH
HYBRID SW PAD - XLG	5/1/2014	93,602.36	351,792	8,755.0	9,103.0	DELAWARE, OH
HYBRID SW PAD - XLG	4/30/2014	93,602.36	335,936	9,201.0	9,548.0	DELAWARE, OH
HYBRID SW PAD - XLG	4/30/2014	93,602.36	335,936	9,201.0	9,548.0	DELAWARE, OH
HYBRID SW PAD - XLG	4/30/2014	93,602.36	357,142	9,646.0	9,993.0	DELAWARE, OH



HARROUN TRUST 31-30 FED COM 2H

Data Cleanup Schematic

AP/UWI 3001541963		Surface Legal Location SEC31 T23S R29E		Field Name POTATO BASIN		Permit No. 157035		State/Province NM		Well Configuration Type HORIZONTAL					
Ground Elevation (MSL) (ft) 2,956.90		Casing Flange Elevation (ft)		KB - Ground Level (ft) 25.00		KB - Casing Flange (ft)		Original Drig Spud Date 1/27/2014 13:00		Original Drig Rig Release Date 2/24/2014 10:00					
HORIZONTAL - OH, 2/22/2019 3:42:36 PM															
Stimulation Intervals															
MD (ftKB)	Vertical schematic (actual)			Type	Start Date	Vol Clean Total (bbl)	Proppant In Formation (lb)	Top (ftKB)	Btm (ftKB)	Zone					
24.9				HYBRID SW PAD - XLG	4/30/2014	93,602.36	346,993.1	10,091.0	10,438.0	DELAWARE, OH					
113.8				HYBRID SW PAD - XLG	4/29/2014	93,602.36	336,596.0	10,536.0	10,884.0	DELAWARE, OH					
120.1				HYBRID SW PAD - XLG	4/29/2014	93,602.36	337,693.1	10,982.0	11,329.0	DELAWARE, OH					
305.4				HYBRID SW PAD - XLG	4/29/2014	93,602.36	341,649.9	11,427.0	11,774.0	DELAWARE, OH					
306.8				HYBRID SW PAD - XLG	4/28/2014	93,602.36	330,726.0	11,872.0	12,219.0	DELAWARE, OH					
350.7				HYBRID SW PAD - XLG	4/28/2014	93,602.36	346,154.0	12,317.0	12,665.0	DELAWARE, OH					
353.0				HYBRID SW PAD - XLG	4/28/2014	93,602.36	341,968.1	12,763.0	13,110.0	DELAWARE, OH					
2,652.9				<des> set at <depthbtm>ftKB on <dtmrun>											
2,654.2				Tubing/Description				Run Date		String Length (ft)		Set Depth / EOT (ftKB)			
2,695.2				Item Des				Jts	OD (in)	Wt (lb/ft)	Grade	Len (ft)	Top (ftKB)	Btm (ftKB)	
2,696.9				<des> on <dtmrun>											
3,488.8				Rod Description				Run Date		String Length (ft)		Set Depth (ftKB)			
3,491.5				Item Des				Jts	OD (in)	Grade	Cond Run	Cond Pull	Len (ft)	Top (ftKB)	Btm (ftKB)
3,514.1				Other In Hole											
3,514.8				Des				Run Date		Pull Date		OD (in)	ID (in)	Top (ftKB)	Btm (ftKB)
3,530.2				PACKER - RETRIEVABLE				12/18/2018				5		5,915.0	5,916.0
5,618.8	FRAC PLUG - COMPOSITE				4/11/2014				5		13,118.0	13,120.0			
5,642.1	Production Failures														
5,915.0	Failure Date				Failure Des		Failure Type		Cause		Total Est. Cost (Cost)				
5,916.0	8/25/2018				ESP		WORN								
6,528.9	Jobs														
6,528.9	Job Cat				Job Subtype		Job Start		Job End		Total Fld Est (Cost)				
6,529.0	DRILLING/COMPLETION				ORIGINAL		11/16/2014		11/17/2014		\$51,343				
6,529.0-6,876.0	NS						11/22/2014		7/4/2014		\$6,041,671				
6,529.0-7,322.0	DRILLING/COMPLETION				NS		12/17/2018		12/20/2018		\$37,299				
6,529.0-7,677.0	WORKOVER				TEMPORARY										
6,529.0-7,677.0	ABANDON														
6,529.0-8,212.0	Production Tests & Emissions														
6,529.0-8,212.0	Date				Q Oil (bbl/day)		Rate Gas (MCF/day)		Q Water (bbl/day)		Tub Pres (psi)		Cas Pres (psi)		
6,529.0-8,212.0	6/30/2014				382.00		592.00		3,258.00		470.0		300.0		
6,529.0-8,212.0	7/1/2014				394.00		488.00		2,756.00		470.0		300.0		
6,529.0-8,212.0	7/2/2014				402.00		571.00		2,480.00		470.0		310.0		
6,529.0-8,212.0	7/3/2014				394.00		553.00		3,012.00		460.0		300.0		
6,529.0-8,212.0	Production Settings														
6,529.0-8,212.0	Method				Method Detail				Start Date		End Date				
6,529.0-8,212.0	ESP Detail				SB				5/12/2014		12/17/2018				
6,529.0-8,212.0	Perforation Intervals														
6,529.0-8,212.0	Date				Top (ftKB)		Btm (ftKB)		Shot Dens (shots/ft)		Phasing (*)		Linked Zone		
6,529.0-8,212.0	5/2/2014				6,529.0		6,876.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	5/2/2014				6,974.0		7,322.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	5/2/2014				7,420.0		7,767.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	5/1/2014				7,865.0		8,212.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	5/1/2014				8,310.0		8,657.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	5/1/2014				8,755.0		9,103.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	4/30/2014				9,201.0		9,548.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	4/30/2014				9,646.0		9,993.0		3.5				DELAWARE, OH		
6,529.0-8,212.0	Plug Back Total Depth: 13,171.3; 2/23/2014														
6,529.0-8,212.0	5 1/2; 13,217.0														



HARROUN TRUST 31-30 FED COM 2H

Data Cleanup Schematic

API/UWI 3001541963	Surface Legal Location SEC31 T23S R29E	Field Name POTATO BASIN	Permit No. 157035	State/Province NM	Well Configuration Type HORIZONTAL
Ground Elevation (MSL) (ft) 2,956.90	Casing Flange Elevation (ft)	KB - Ground Level (ft) 25.00	KB - Casing Flange (ft)	Original Drig Spud Date 1/27/2014 13:00	Original Drig Rig Release Date 2/24/2014 10:00

HORIZONTAL - OH, 2/22/2019 3:42:36 PM

Perforation Intervals

MD (ftKB)	Vertical schematic (actual)	Date	Top (ftKB)	Blm (ftKB)	Shot Dens (shots/ft)	Phasing (°)	Linked Zone
24.9		4/30/2014	10,091.0	10,438.0	3.5		DELAWARE, OH
113.8		4/29/2014	10,536.0	10,884.0	3.5		DELAWARE, OH
120.1		4/29/2014	10,982.0	11,329.0	3.5		DELAWARE, OH
305.4		4/29/2014	11,427.0	11,774.0	3.5		DELAWARE, OH
306.8		4/28/2014	11,872.0	12,219.0	3.5		DELAWARE, OH
350.7		4/28/2014	12,317.0	12,665.0	3.5		DELAWARE, OH
353.0		4/11/2014	12,763.0	13,110.0	3.5		DELAWARE, OH
2,652.9							
2,654.2							
2,695.2							
2,696.9							
3,488.8							
3,491.5							
3,514.1							
3,514.8							
3,530.2							
5,618.8	5,915.0; Other in Hole						
5,642.1	HYBRID SW PAD - XLG; 6,529.0- 6,876.0						
5,915.0	HYBRID SW PAD - XLG; 6,974.0- 7,322.0						
5,916.0							
6,528.9	HYBRID SW PAD - XLG; 7,420.0- 7,767.0						
6,876.0							
6,871.5	HYBRID SW PAD - XLG; 7,865.0- 8,212.0						
6,974.1							
6,994.8	HYBRID SW PAD - XLG; 8,310.0- 8,657.0						
7,321.9							
7,419.9	HYBRID SW PAD - XLG; 8,755.0- 9,103.0						
7,767.1							
7,865.2	HYBRID SW PAD - XLG; 9,201.0- 9,548.0						
8,211.9							
8,310.0	HYBRID SW PAD - XLG; 9,646.0- 9,993.0						
8,657.2							
8,754.9	HYBRID SW PAD - XLG; 10,091.0- 10,438.0						
9,103.0							
9,201.1	HYBRID SW PAD - XLG; 10,536.0- 10,884.0						
9,547.9							
9,646.0	HYBRID SW PAD - XLG; 10,982.0- 11,329.0						
9,993.1							
10,090.9	HYBRID SW PAD - XLG; 11,427.0- 11,774.0						
10,438.0							
10,536.1	HYBRID SW PAD - XLG; 11,872.0- 12,219.0						
10,863.9							
10,962.0	HYBRID SW PAD - XLG; 12,317.0- 12,665.0						
11,329.1							
11,426.8	HYBRID SW PAD - XLG; 12,763.0- 13,110.0						
11,773.9							
11,872.0	HYBRID SW PAD - XLG; 13,118.0; Other in Hole						
12,219.2							
12,316.9							
12,600.4							
12,623.7							
12,665.0							
12,763.1							
13,109.9							
13,116.1							
13,120.1							
13,133.5							
13,135.2							
13,171.3							
13,172.6							
13,214.9							
13,216.9							

Plug Back Total
Depth: 13,171.3;
2/23/2014