

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD
Artesia

FORM 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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		8. Well Name and No. HUMMINGBIRD FEDERAL COM 16H
2. Name of Operator APACHE CORPORATION		9. API Well No. 30-015-43481
3a. Address 303 VETERANS AIRPARK LANE SUITE 1000 MIDLAND, TX 79705	3b. Phone No. (include area code) Ph: 432-818-1801	10. Field and Pool or Exploratory Area FREN:GLORIETA-YESO
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 1 T17S R31E NWNW 530FNL 100FWL		11. County or Parish, State EDDY COUNTY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Production Start-up
	☐ 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 recompleat 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 recompleat 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.

Apache has completed the following:

Spud-04/16/17
RR - 04/30/17
TOC@16

SC 8-29-17
Accepted for record - NMOCD

05/23/17 Run CN-CBL-GR-CCL Test Casing to 5000#. RU SU & Reverse unit RIH W/7" bit & 148 Jts 2-7/8"
Tbg leave swinging
05/25/17 Do DV Tool & Debris sub CIRC clean
05/26/17 POOH LD TBG & BHA SI SD RDMO
06/08/07 MIRU FRAC AND ALL PARTIES

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 29 2017

14. I hereby certify that the foregoing is true and correct.		Electronic Submission #384397 verified by the BLM Well Information System For APACHE CORPORATION, sent to the Carlsbad Committed to AFMSS for processing by JENNIFER SANCHEZ on 08/14/2017 ()	
Name (Printed/Typed)	EMILY FOLLIS	Title	REGULATORY ANALYST
Signature	(Electronic Submission)	Date	08/11/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved By _____		Title	Date
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.		Office	BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE

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)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #384397 that would not fit on the form

32. Additional remarks, continued

06/10-12/17 FRAC - PUMPCO-PACKERS PLUS (16 STAGE FRAC)(5817'-10,047')

TOTAL SAND - #3,994,540
TOTAL ACID -2813 BBL

07/13/17 TOH LD Tbg & BHA SI WELL RD ALL PARTIES. WELL CLOSED IN WITH ZERO PRESURE ON PRODUCTION
WELL WAS KILLED WITH #10 BRINE

07/21/17 24 SFTY MTG, MIRU, 0# ON WELL, ND FRAC VALVE, NU GT6 WELL HEAD & BOP/HYDRIL, RACK & TALLY
PRODUCTION STRING, PU & RIH W/150 JNTS 2-7/8" TBG, POH (STAND BACK) 150 JNTS 2-7/8" TBG. SI, SDFN
07/25/17 24 SFTY MTG, 0# ON CSG, RIH W/BP, 10 JNTS 2-7/8" TBG, XO, DS, RU SPOOLERS, RIH W/GE ESP, 1
JNT 2-7/8" TBG, 6' SUB, SAND GUARD, 6' SUB, SN, 143 JNTS 2-7/8" TBG, RD SPOOLER, MAKE UPPER SPLICE,
LAND TBG, ND BOP, RDMO

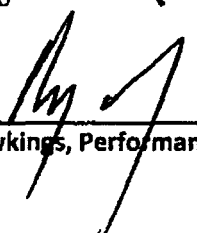
07/29/17 24 BUILT WELLHEAD, RAN FLOW LINE TO BATTERY, RAN POWER FROM DRIVE TO WELLHEAD, RAN
AUTOMATION FROM WELLHEAD TO RACK.

07/28/17 First Flow-POP

Operator: Apache Corporation
Well / Lease: Hummingbird Federal COM 16H
County: Lea

State Of New Mexico
Deviation Report

305	0.3	4366	0.7
357	0.5	4556	0.6
419	0.6	4744	0.6
480	0.7		
562	0.7		
748	0.6		
904	0.6		
1154	0.1		
1341	0.1		
1528	0.2		
1716	0		
1841	0.1		
2090	0.4		
2277	0.3		
2464	0.3		
2650	0.4		
2837	0.7		
3022	0.7		
3209	0.6		
3460	0.7		
3586	0.5		
3799	0.8		
3989	0.7		
4179	0.6		

SIGNED BY: 

Ryan Hawkings, Performance Drilling Manager

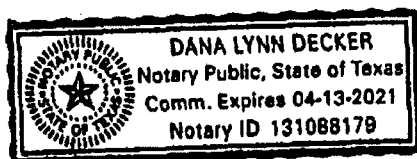
State of Texas
County of Midland

NM OIL CONSERVATION
ARTESIA DISTRICT

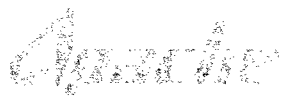
AUG 29 2017

RECEIVED

On this 16 day of MAY, 2017, before me, D Decker, a Notary Public, personally appeared Ryan Hawkings, who acknowledged and executed this document
Witness my hand and official seal.



Dana Lynn Decker
Notary Public



EXPLORING WHAT'S POSSIBLE

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 29 2017

RECEIVED

Apache Corporation

Eddy County, NM (NAD27 NME)

Hummingbird Federal Com

#16H

OH / Job #61124

Design: Surveys (Trinidad 436)

Standard Survey Report

29 April, 2017



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services LP

Survey Report



Company: Apache Corporation
Project: Eddy County, NM (NAD27 NME)
Site: Hummingbird Federal Com
Well: #16H
Wellbore: OH / Job #61124
Design: Surveys (Trinidad 436)

Local Co-ordinate Reference: Well #16H
TVD Reference: GL + KB @ 4053.50usft (Trinidad 436)
MD Reference: GL + KB @ 4053.50usft (Trinidad 436)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Hummingbird Federal Com

Site Position: Northing: 677,262.80 usft Latitude: 32° 51' 39.07462 N
From: Map Easting: 655,481.80 usft Longitude: 103° 49' 37.14798 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.27 °

Well #16H

Well Position +N/-S 0.00 usft Northing: 680,351.80 usft Latitude: 32° 52' 9.69771 N
+E/-W 0.00 usft Easting: 654,265.30 usft Longitude: 103° 49' 51.23729 W
Position Uncertainty 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 4,037.00 usft

Wellbore OH / Job #61124

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/26/2017	7.33	60.83	48,430

Design Surveys (Trinidad 436)

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.57

Survey Program Date 4/29/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
81.77	4,795.00	Phoenix Gyro Surveys (OH / Job #61124)	PHX_SPT_GTD	PHX Continuous north-seeking gyro
4,847.00	10,073.00	Phoenix MWD Surveys (OH / Job #61124)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Survey

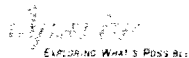
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
81.77	0.28	245.15	81.77	-0.08	-0.18	-0.18	0.34	0.34	0.00
112.66	0.15	300.89	112.66	-0.09	-0.28	-0.29	0.75	-0.42	180.45
203.35	0.21	292.86	203.35	0.03	-0.54	-0.54	0.07	0.07	-8.85
292.86	0.29	295.03	292.86	0.19	-0.90	-0.89	0.09	0.09	2.42
376.14	0.36	277.08	376.14	0.31	-1.35	-1.34	0.15	0.08	-21.55
477.20	0.18	320.46	477.20	0.47	-1.76	-1.76	0.26	-0.18	42.92
508.40	0.15	177.28	508.40	0.47	-1.79	-1.79	1.00	-0.10	-458.91
570.70	0.39	226.37	570.70	0.24	-1.94	-1.94	0.50	0.39	78.80
633.50	0.86	227.27	633.49	-0.22	-2.44	-2.44	0.75	0.75	1.43

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Survey Calculation Method: Minimum Curvature
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
696.27	0.84	219.91	696.25	-0.90	-3.08	-3.09	0.18	-0.03	-11.73
758.43	0.78	221.20	758.41	-1.57	-3.65	-3.67	0.10	-0.10	2.08
820.89	0.85	236.20	820.86	-2.14	-4.32	-4.34	0.36	0.11	24.02
882.81	0.77	228.81	882.78	-2.67	-5.01	-5.03	0.21	-0.13	-11.93
945.28	0.69	242.56	945.24	-3.12	-5.66	-5.69	0.31	-0.13	22.01
1,008.18	0.62	259.52	1,008.14	-3.36	-6.33	-6.36	0.33	-0.11	26.96
1,070.58	0.63	264.39	1,070.53	-3.45	-7.01	-7.03	0.09	0.02	7.80
1,133.40	0.59	267.06	1,133.35	-3.50	-7.68	-7.70	0.08	-0.06	4.25
1,195.45	0.60	270.54	1,195.40	-3.52	-8.32	-8.34	0.06	0.02	5.61
1,257.72	0.57	275.88	1,257.66	-3.48	-8.95	-8.98	0.10	-0.05	8.58
1,319.96	0.44	325.82	1,319.90	-3.25	-9.40	-9.42	0.71	-0.21	80.24
1,382.30	0.41	332.62	1,382.24	-2.86	-9.63	-9.65	0.09	-0.05	10.91
1,444.62	0.42	331.98	1,444.56	-2.46	-9.84	-9.86	0.02	0.02	-1.03
1,507.45	0.38	348.47	1,507.39	-2.05	-9.99	-10.01	0.19	-0.06	26.25
1,569.93	0.43	350.65	1,569.86	-1.62	-10.07	-10.08	0.08	0.08	3.49
1,632.51	0.42	356.52	1,632.44	-1.15	-10.12	-10.13	0.07	-0.02	9.38
1,694.92	0.45	0.51	1,694.85	-0.68	-10.14	-10.14	0.07	0.05	6.39
1,757.36	0.48	327.98	1,757.29	-0.21	-10.27	-10.27	0.42	0.05	-52.10
1,819.46	0.49	327.91	1,819.39	0.23	-10.55	-10.55	0.02	0.02	-0.11
1,882.16	0.49	312.61	1,882.08	0.64	-10.89	-10.89	0.21	0.00	-24.40
1,944.67	0.15	303.53	1,944.59	0.87	-11.16	-11.15	0.55	-0.54	-14.53
2,007.00	0.06	291.77	2,006.92	0.92	-11.25	-11.25	0.15	-0.14	-18.87
2,068.89	0.02	177.89	2,068.81	0.92	-11.28	-11.28	0.11	-0.06	-184.00
2,131.36	0.10	119.07	2,131.28	0.89	-11.24	-11.23	0.15	0.13	-94.16
2,193.70	0.24	143.23	2,193.62	0.76	-11.11	-11.10	0.25	0.22	38.76
2,255.48	0.23	118.27	2,255.40	0.59	-10.92	-10.92	0.17	-0.02	-40.40
2,317.86	0.19	123.14	2,317.78	0.48	-10.73	-10.72	0.07	-0.06	7.81
2,388.69	0.24	114.26	2,388.61	0.35	-10.49	-10.49	0.08	0.07	-12.54
2,441.68	0.41	96.31	2,441.60	0.29	-10.20	-10.20	0.37	0.32	-33.87
2,504.01	0.35	105.70	2,503.93	0.21	-9.80	-9.80	0.14	-0.10	15.06
2,566.69	0.35	192.60	2,566.61	-0.03	-9.66	-9.66	0.77	0.00	138.64
2,629.46	0.31	184.90	2,629.38	-0.38	-9.71	-9.71	0.10	-0.06	-12.27
2,691.61	0.08	192.58	2,691.53	-0.59	-9.74	-9.74	0.37	-0.37	12.36
2,753.80	0.21	238.79	2,753.72	-0.70	-9.84	-9.85	0.27	0.21	74.30
2,814.93	0.56	263.24	2,814.85	-0.79	-10.24	-10.24	0.62	0.57	40.00
2,876.87	0.60	262.00	2,876.78	-0.87	-10.86	-10.86	0.07	0.06	-2.00
2,939.13	0.69	264.80	2,939.04	-0.95	-11.55	-11.56	0.15	0.14	4.50
3,001.61	0.72	262.24	3,001.51	-1.04	-12.32	-12.32	0.07	0.05	-4.10
3,064.98	0.79	259.42	3,064.88	-1.17	-13.14	-13.15	0.13	0.11	-4.45
3,127.90	0.68	252.02	3,127.79	-1.37	-13.92	-13.93	0.23	-0.17	-11.76
3,190.46	0.76	251.34	3,190.35	-1.61	-14.67	-14.68	0.13	0.13	-1.09
3,253.54	0.93	251.10	3,253.42	-1.91	-15.55	-15.56	0.27	0.27	-0.38
3,316.59	0.95	247.44	3,316.46	-2.28	-16.52	-16.53	0.10	0.03	-5.80



Phoenix Technology Services LP

Survey Report



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Site: Hummingbird Federal Com
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,378.92	0.92	240.67	3,378.78	-2.72	-17.43	-17.45	0.18	-0.05	-10.86
3,440.79	0.98	240.83	3,440.65	-3.22	-18.32	-18.35	0.10	0.10	0.26
3,502.40	0.99	243.60	3,502.25	-3.72	-19.26	-19.29	0.08	0.02	4.50
3,564.81	0.95	239.08	3,564.65	-4.22	-20.19	-20.22	0.14	-0.06	-7.24
3,631.71	0.87	237.37	3,631.54	-4.78	-21.09	-21.13	0.13	-0.12	-2.56
3,691.00	0.88	241.79	3,690.82	-5.24	-21.87	-21.91	0.12	0.02	7.45
3,754.42	0.84	240.45	3,754.24	-5.70	-22.71	-22.75	0.07	-0.06	-2.11
3,817.79	0.69	233.48	3,817.60	-6.15	-23.42	-23.46	0.28	-0.24	-11.00
3,881.14	0.69	230.12	3,880.94	-6.63	-24.02	-24.06	0.06	0.00	-5.30
3,944.41	0.72	218.94	3,944.21	-7.18	-24.56	-24.61	0.22	0.05	-17.67
4,007.77	0.74	229.64	4,007.56	-7.75	-25.12	-25.18	0.22	0.03	16.89
4,071.02	0.77	225.13	4,070.81	-8.32	-25.73	-25.79	0.11	0.05	-7.13
4,134.35	0.75	225.61	4,134.13	-8.91	-26.33	-26.39	0.03	-0.03	0.76
4,197.83	0.75	230.94	4,197.61	-9.46	-26.95	-27.02	0.11	0.00	8.40
4,261.29	0.74	231.62	4,261.06	-9.98	-27.59	-27.67	0.02	-0.02	1.07
4,324.53	0.75	232.34	4,324.30	-10.48	-28.24	-28.32	0.02	0.02	1.14
4,387.88	0.71	232.34	4,387.64	-10.98	-28.88	-28.96	0.06	-0.06	0.00
4,451.23	0.68	234.26	4,450.99	-11.44	-29.50	-29.58	0.06	-0.05	3.03
4,514.44	0.69	248.58	4,514.19	-11.79	-30.15	-30.24	0.27	0.02	22.65
4,576.90	0.68	235.97	4,576.65	-12.14	-30.81	-30.90	0.24	-0.02	-20.19
4,639.00	0.62	236.43	4,638.75	-12.53	-31.40	-31.49	0.10	-0.10	0.74
4,701.25	0.54	239.21	4,700.99	-12.87	-31.93	-32.02	0.14	-0.13	4.47
4,764.38	0.55	238.87	4,764.12	-13.18	-32.44	-32.54	0.02	0.02	-0.54
4,795.00	0.58	128.02	4,794.74	-13.35	-32.45	-32.55	3.04	0.10	-362.02
4,847.00	0.50	240.98	4,846.74	-13.62	-32.44	-32.54	1.73	-0.15	217.23
First Phoenix Survey									
4,910.00	1.40	87.47	4,909.73	-13.72	-31.91	-32.01	2.95	1.43	-243.67
4,972.00	9.44	89.99	4,971.40	-13.69	-26.06	-26.16	12.97	12.97	4.06
5,035.00	18.26	85.41	5,032.51	-12.89	-11.02	-11.12	14.10	14.00	-7.27
5,098.00	26.65	84.66	5,090.69	-10.78	12.92	12.84	13.32	13.32	-1.19
5,160.00	33.18	88.29	5,144.40	-8.98	43.76	43.69	10.93	10.53	5.85
5,223.00	38.13	89.74	5,195.58	-8.38	80.47	80.40	7.97	7.86	2.30
5,286.00	44.05	90.06	5,243.04	-8.31	121.85	121.79	9.40	9.40	0.51
5,348.00	48.36	90.75	5,285.93	-8.64	166.59	166.53	7.00	6.95	1.11
5,410.00	51.46	91.75	5,325.86	-9.68	214.01	213.93	5.15	5.00	1.61
5,473.00	58.81	91.71	5,361.85	-11.24	265.64	265.55	11.67	11.67	-0.06
5,535.00	63.64	91.02	5,391.68	-12.53	319.95	319.85	7.85	7.79	-1.11
5,598.00	66.92	91.27	5,418.03	-13.67	377.16	377.05	5.22	5.21	0.40
5,661.00	75.18	91.22	5,438.47	-14.97	436.68	436.56	13.11	13.11	-0.08
5,686.00	78.80	91.17	5,444.09	-15.47	461.03	460.90	14.48	14.48	-0.20
5,725.00	82.53	91.37	5,450.42	-16.33	499.50	499.36	9.58	9.56	0.51
5,786.00	88.26	90.44	5,455.31	-17.29	560.27	560.12	9.52	9.39	-1.52
5,847.00	88.23	90.24	5,457.18	-17.65	621.24	621.09	0.33	-0.05	-0.33



Phoenix Technology Services LP

Survey Report

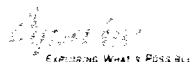


Company: Apache Corporation
Project: Eddy County, NM (NAD27 NME)
Site: Hummingbird Federal Com
Well: #16H
Wellbore: OH / Job #61124
Design: Surveys (Trinidad 436)

Local Co-ordinate Reference: Well #16H
TVD Reference: GL + KB @ 4053.50usft (Trinidad 436)
MD Reference: GL + KB @ 4053.50usft (Trinidad 436)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,909.00	88.10	89.86	5,459.17	-17.70	683.20	683.05	0.65	-0.21	-0.61
5,972.00	88.38	89.48	5,461.10	-17.34	746.17	746.02	0.75	0.44	-0.60
6,034.00	90.59	88.48	5,461.66	-16.24	808.16	808.01	3.91	3.56	-1.61
6,096.00	93.11	87.68	5,459.66	-14.16	870.08	869.96	4.26	4.06	-1.29
6,159.00	93.64	88.13	5,455.95	-11.86	932.93	932.82	1.10	0.84	0.71
6,222.00	91.20	90.17	5,453.29	-10.93	995.86	995.75	5.05	-3.87	3.24
6,283.00	90.17	90.96	5,452.56	-11.53	1,056.85	1,056.74	2.13	-1.69	1.30
6,345.00	89.75	90.63	5,452.60	-12.39	1,118.85	1,118.72	0.86	-0.68	-0.53
6,408.00	88.01	90.39	5,453.83	-12.95	1,181.83	1,181.70	2.79	-2.76	-0.38
6,470.00	88.35	90.73	5,455.80	-13.56	1,243.80	1,243.66	0.78	0.55	0.55
6,532.00	88.60	90.89	5,457.45	-14.43	1,305.77	1,305.62	0.48	0.40	0.26
6,594.00	88.93	90.90	5,458.79	-15.40	1,367.74	1,367.59	0.53	0.53	0.02
6,656.00	89.02	90.24	5,459.90	-16.02	1,429.73	1,429.57	1.07	0.15	-1.06
6,718.00	89.11	90.10	5,460.91	-16.20	1,491.72	1,491.56	0.27	0.15	-0.23
6,781.00	87.25	89.46	5,462.91	-15.96	1,554.69	1,554.53	3.12	-2.95	-1.02
6,843.00	87.34	89.80	5,465.84	-15.56	1,616.62	1,616.46	0.57	0.15	0.55
6,905.00	87.43	88.83	5,468.67	-14.82	1,678.55	1,678.39	1.57	0.15	-1.56
6,967.00	86.73	87.67	5,471.82	-12.93	1,740.44	1,740.29	2.18	-1.13	-1.87
7,030.00	87.31	87.70	5,475.10	-10.39	1,803.30	1,803.17	0.92	0.92	0.05
7,092.00	90.00	86.71	5,476.56	-7.36	1,865.20	1,865.10	4.62	4.34	-1.60
7,155.00	88.66	87.09	5,477.29	-3.96	1,928.10	1,928.02	2.21	-2.13	0.60
7,217.00	88.77	87.26	5,478.68	-0.90	1,990.01	1,989.95	0.33	0.18	0.27
7,279.00	89.05	87.19	5,479.86	2.10	2,051.93	2,051.89	0.47	0.45	-0.11
7,341.00	89.37	87.49	5,480.72	4.98	2,113.86	2,113.84	0.71	0.52	0.48
7,403.00	89.52	87.68	5,481.32	7.59	2,175.80	2,175.80	0.39	0.24	0.31
7,466.00	89.81	87.66	5,481.69	10.15	2,238.75	2,238.76	0.46	0.46	-0.03
7,528.00	89.83	87.95	5,481.88	12.52	2,300.70	2,300.73	0.47	0.03	0.47
7,590.00	88.71	87.81	5,482.67	14.82	2,362.65	2,362.70	1.82	-1.81	-0.23
7,652.00	88.80	88.02	5,484.02	17.07	2,424.60	2,424.66	0.37	0.15	0.34
7,714.00	89.27	88.26	5,485.06	19.08	2,486.55	2,486.63	0.85	0.76	0.39
7,776.00	89.44	87.84	5,485.76	21.19	2,548.51	2,548.60	0.73	0.27	-0.68
7,838.00	89.55	87.73	5,486.31	23.59	2,610.46	2,610.57	0.25	0.18	-0.18
7,900.00	89.61	88.01	5,486.76	25.89	2,672.42	2,672.54	0.46	0.10	0.45
7,962.00	89.64	87.84	5,487.17	28.14	2,734.38	2,734.51	0.28	0.05	-0.27
8,025.00	89.69	87.85	5,487.53	30.51	2,797.33	2,797.48	0.08	0.08	0.02
8,087.00	89.91	88.07	5,487.75	32.71	2,859.29	2,859.46	0.50	0.35	0.35
8,149.00	90.17	89.50	5,487.71	34.03	2,921.28	2,921.45	2.34	0.42	2.31
8,211.00	89.94	89.18	5,487.65	34.74	2,983.27	2,983.45	0.64	-0.37	-0.52
8,274.00	88.80	89.82	5,488.34	35.29	3,046.27	3,046.44	2.08	-1.81	1.02
8,336.00	89.05	89.48	5,489.50	35.67	3,108.25	3,108.43	0.68	0.40	-0.55
8,398.00	89.30	89.73	5,490.40	36.10	3,170.25	3,170.43	0.57	0.40	0.40
8,460.00	89.58	90.20	5,491.00	36.14	3,232.24	3,232.42	0.88	0.45	0.76
8,522.00	88.77	91.32	5,491.90	35.32	3,294.23	3,294.40	2.23	-1.31	1.81
8,584.00	88.99	91.03	5,493.11	34.04	3,356.20	3,356.36	0.59	0.35	-0.47



Phoenix Technology Services LP

Survey Report



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Project: Eddy County, NM (NAD27 NME)
Site: Hummingbird Federal Com
Well: #16H
Wellbore: OH / Job #61124
Design: Surveys (Trinidad 436)

Local Co-ordinate Reference: Well #16H
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MD Reference: GL + KB @ 4053.50usft (Trinidad 436)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,647.00	89.44	91.31	5,493.97	32.76	3,419.18	3,419.33	0.84	0.71	0.44
8,709.00	89.72	91.02	5,494.42	31.50	3,481.17	3,481.31	0.65	0.45	-0.47
8,772.00	89.44	91.31	5,494.89	30.22	3,544.16	3,544.28	0.64	-0.44	0.46
8,834.00	89.91	91.40	5,495.24	28.75	3,606.14	3,606.25	0.77	0.76	0.15
8,896.00	90.22	91.44	5,495.17	27.21	3,668.12	3,668.22	0.50	0.50	0.06
8,958.00	89.30	90.59	5,495.43	26.12	3,730.11	3,730.20	2.02	-1.48	-1.37
9,020.00	88.91	90.57	5,496.40	25.49	3,792.10	3,792.18	0.63	-0.63	-0.03
9,083.00	89.08	90.39	5,497.50	24.96	3,855.08	3,855.16	0.39	0.27	-0.29
9,145.00	89.24	90.59	5,498.41	24.43	3,917.07	3,917.15	0.41	0.26	0.32
9,208.00	89.52	90.40	5,499.09	23.89	3,980.07	3,980.14	0.54	0.44	-0.30
9,270.00	90.03	90.24	5,499.34	23.54	4,042.07	4,042.13	0.86	0.82	-0.26
9,332.00	88.35	89.08	5,500.21	23.91	4,104.06	4,104.12	3.29	-2.71	-1.87
9,395.00	88.52	88.90	5,501.93	25.02	4,167.02	4,167.09	0.39	0.27	-0.29
9,457.00	88.49	88.71	5,503.55	26.31	4,228.99	4,229.07	0.31	-0.05	-0.31
9,519.00	88.49	88.48	5,505.18	27.83	4,290.95	4,291.04	0.37	0.00	-0.37
9,582.00	88.63	88.45	5,506.77	29.52	4,353.91	4,354.00	0.23	0.22	-0.05
9,645.00	88.80	88.40	5,508.18	31.25	4,416.87	4,416.98	0.28	0.27	-0.08
9,707.00	88.96	88.55	5,509.39	32.90	4,478.83	4,478.95	0.35	0.26	0.24
9,770.00	89.05	88.64	5,510.49	34.44	4,541.80	4,541.93	0.20	0.14	0.14
9,833.00	88.99	88.37	5,511.56	36.09	4,604.77	4,604.91	0.44	-0.10	-0.43
9,895.00	89.11	88.94	5,512.59	37.54	4,666.75	4,666.90	0.94	0.19	0.92
9,957.00	89.47	89.19	5,513.36	38.55	4,728.73	4,728.89	0.71	0.58	0.40
10,006.00	89.75	89.91	5,513.69	38.94	4,777.73	4,777.89	1.58	0.57	1.47
Final Phoenix MWD Survey									
10,073.00	89.75	89.91	5,513.99	39.04	4,844.73	4,844.89	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,847.00	4,846.74	-13.62	-32.44	First Phoenix Survey
10,006.00	5,513.69	38.94	4,777.73	Final Phoenix MWD Survey
10,073.00	5,513.99	39.04	4,844.73	Projection to TD

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

NM OIL CONSERVATION
ARTESIA DISTRICT Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

AUG 29 2017

RECEIVED DAMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-43481	Pool Code 26770	Pool Name Fren: Glorieta - Yeso
Property Code 313695	Property Name HUMMINGBIRD FEDERAL COM	
OGRID No. 873	Operator Name APACHE CORPORATION	
		Well Number 16H
		Elevation 4037'

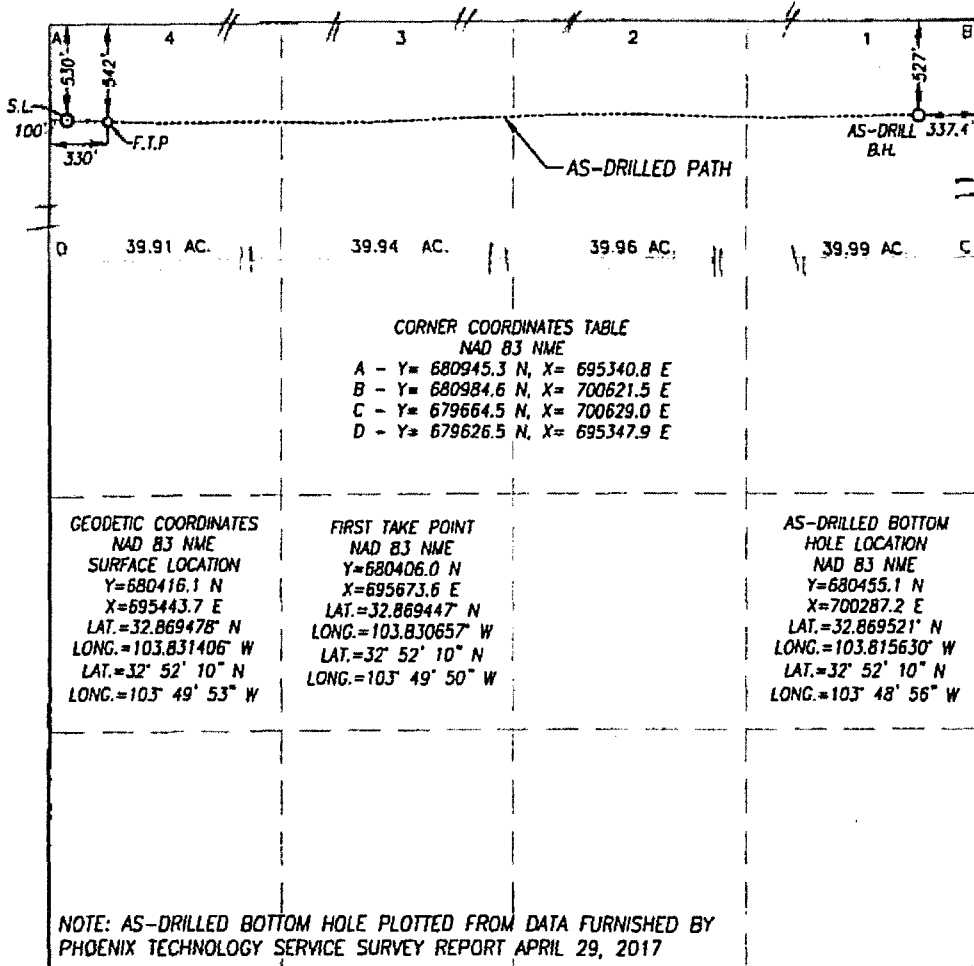
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	1	17-S	31-E		530	NORTH	100	WEST	EDDY

As-Drilled Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	1	17-S	31-E		527	NORTH	337.4	EAST	EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Emily Follis 8/7/17
Signature Date
Emily Follis
Printed Name
emily.follis@apachecorp.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JULY 30, 2013

Date of Survey
Signature of Professional Surveyor:
Ronald J. Eidson
3239
Certificate Number
Ronald J. Eidson 12641 3239

ACK REL W.O.:13110811 JWSC W.O.: 17.13.0492

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	6/12/2017
State:	New Mexico
County:	Eddy
API Number:	30-075-43481
Operator Name:	Apache Corporation Hummingbird
Well Name and Number:	Federal Com 16H
Longitude:	-103.831406
Latitude:	32.869478
Long/Lat Projection:	NAD27
Indian/Federal:	none
Production Type:	Oil
True Vertical Depth (TVD):	5,484
Total Water Volume (gal):*	3,811,458

Hydraulic Fracturing Fluid Composition:

[illegible]

Last Name	Email	Phone
Harrison	bobby.harrison@bvsp ecialty.sands.com	940-736-1239
Baggett	l.baggett@reacemtech nicals.com	432-366-4467
Wiggins	henry.wiggins@solva y.com	325-573-7298
Hahn	jr@blentech.org	713-673-3436
Dartez	cdartez@rockwater energy.com	713-986-2544
Dartez	cdartez@rockwater energy.com	713-986-2544
Williams	n.williams@kaimatch 470-779-5770	
Wiggins	henry.wiggins@solva y.com	325-573-7298
Hahn	jr@blentech.org	713-673-3436

[illegible]

v3 3

tent of the MSDS should be directed to the and "confidential business information" and the

WELL NAME: HUMMINGBIRD CENTRAL COM #100
API: 30-015-43481
SPUD DATE: 4/16/2017
PRODUCING FORMATION: CLORITA-YE-SO
FIELD: CEDAR LAKE (BP)
COUNTY: LEBY
STATE: NEW MEXICO
WORKING INTEREST: 100.00%

SURFACE LOC: 5309 NE & 100 EWE
SECTION: D-1
TOWNSHIP: 17S
RANGE: 3E
SURVEY: RONALD J. LEBY
BOTTOM HOLE LOC: 530 EWE, 330 FFL
SECTION: A-1
TOWNSHIP: 17S
RANGE: 3E
SURVEY: RONALD J. LEBY
DRILL RIG: GARDSTAR-19
RIG RELEASE: 4/20/2017

KB (ft): 4,053.56
GL (ft): 4,017.00
KB/GL DIFF (ft): 36.56
TMD (ft): 31,073.00
FC DEPTH (ft): 796.418, 375.40
PBMD (ft): 4,925.00
RDV DEPTH (ft): N/A
ORIO VALVE (ft): N/A
DEEPEST TVD (ft): 5,514.00

TAPERED CASING STRING:

7" 29# L-80 TO X-OVER @ 4946'
TAPERING TO 5.5" 20# L-80 SET @ 9,060'

KOP (ft):
LATERAL LENGTH (ft):
T.D. OF PILOT HOLE (ft):

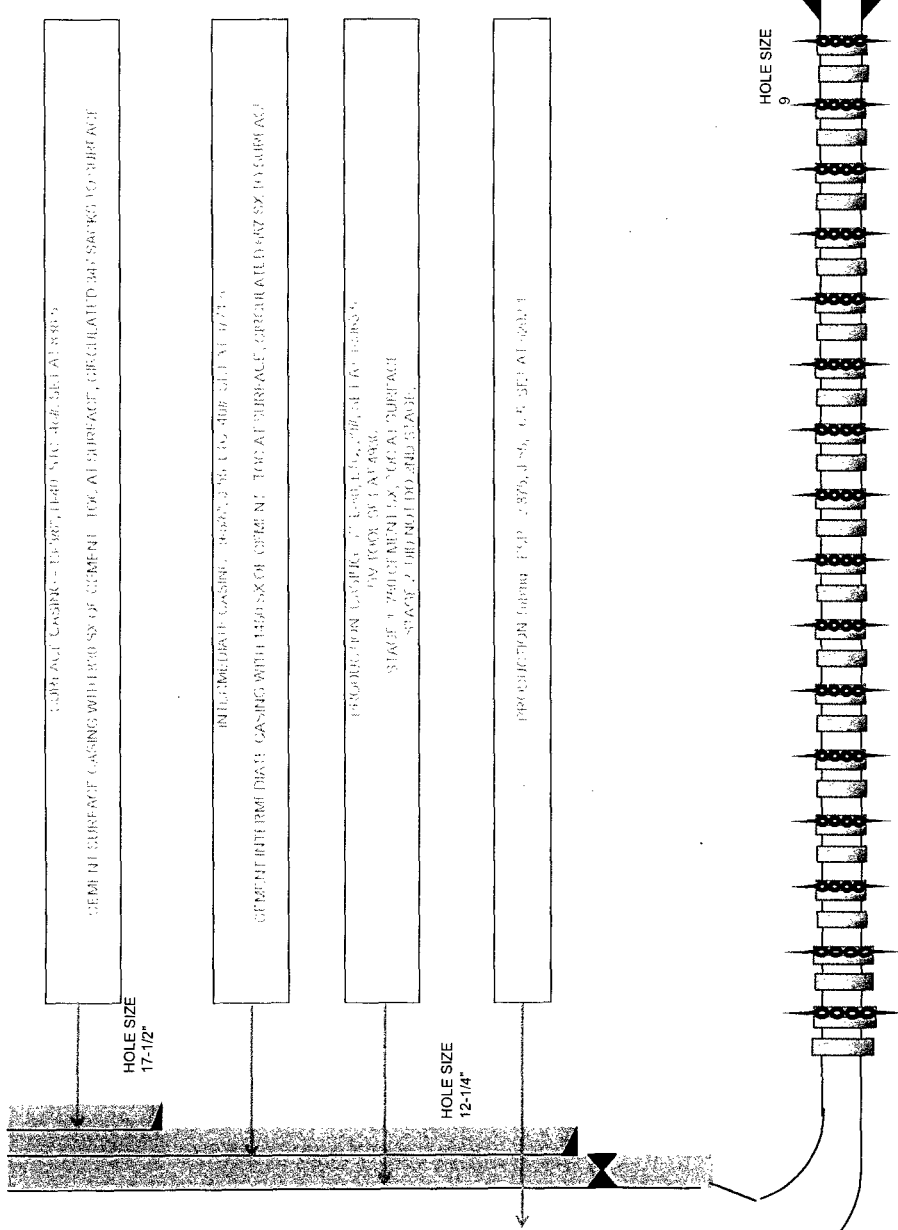
COMPLETION:

STIMULATON:

STATUS:

COMMENTS:

LAST UPDATED BY: MISTHAIR
LAST UPDATED: 8/26/2017



packers and sleeves
TOP PERF (MD):
BOTTOM PERF (MD):

TMD (ft): 10,173
FC DEPTH (ft): 796.418, 375.40
PBMD (ft): 4,925
RDV DEPTH (ft): N/A
ORIO VALVE (ft): N/A

PACKERS, SLEEVES, & STAGERS

TOTAL ACID (bbl)	TOTAL LTR (bbl)	TOTAL PROPPANT (lbs)	MAX WH RATE (bpm)	MAX WH PRESSURE (psi)
3,263	34,431	2,771,041	36.04	7,030

PRODUCTION METHOD	LIFT TYPE	SETTING DEPTH
Perforation	1,331'	0

Crossover Sub @ 4946'

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-104

State of New Mexico
Energy, Minerals & Natural Resources

AUG 29 2017

Revised August 1, 2011

Submit one copy to appropriate District Office

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED AMENDED REPORT

District I
1625 N. French Dr. Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address Apache Corporation 303 Veterans Airpark Lane Suite 1000 Midland TX 79705		² OGRID Number 873
⁴ API Number 30-015-43481		³ Reason for Filing Code/ Effective Date NW/ 07/28/17
⁵ Pool Name CEDAR LAKE; GLORIETA-YESO	⁶ Pool Code [96831]	
⁷ Property Code [313695]	⁸ Property Name 30-015-43481 HUMMINGBIRD FEDERAL COM	⁹ Well Number #016H

II. ¹⁰ Surface Location

Ul or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
D	1	17S	31E		530	NORTH	100	WEST	EDDY

¹¹ Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	1	17S	31E	1	527	NORTH	337	EAST	EDDY
¹² Lse Code F	¹³ Producing Method Code D	¹⁴ Gas Connection Date 07/28/17	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
252293	Holly Energy Pipeline 311 W Quay / PO Box 1360 Artesia NM 88210	O
221115	Frontier Field Services LLC 4200 East Skelly Drive Suite 700 Tulsa OK 74135	G

IV. Well Completion Data

²¹ Spud Date 04/16/17	²² Ready Date 07/28/17	²³ TD 10,073	²⁴ PBDT 10039	²⁵ Perforations 5817'-10,047'	²⁶ DHC, MC
²⁷ Hole Size 17.5'	²⁸ Casing & Tubing Size 13.375 48# H40	²⁹ Depth Set 838	³⁰ Sacks Cement 830 sx Class C		
12.25	9.625 40# J55	3755	1450 sx Class C		
8.5	7 29# L80/5.5 20#L80	4900/10,063	750 sx Class C		
Tubing	2.875 6.5# J55	5202			

V. Well Test Data

³¹ Date New Oil 07/28/17	³² Gas Delivery Date 07/28/17	³³ Test Date 08/04/17	³⁴ Test Length 24 hrs	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷ Choke Size	³⁸ Oil 237	³⁹ Water 1828	⁴⁰ Gas 327		⁴¹ Test Method P

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: *Emily Folks*
Printed name: Emily Folks
Title: Reg Analyst
E-mail Address: emily.folks@apachecorp.com
Date: 08/07/17
Phone: 432-818-1801

OIL CONSERVATION DIVISION

Approved by

Title

Approval Date

