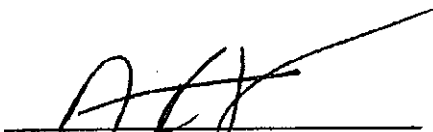


Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705
Cedar Lake Federal CA-950H 1100 FNL 515 FWL
Crow Federal Com #050H
Eddy County, New Mexico

API # 30-015-43326

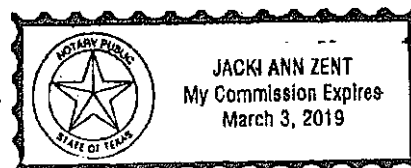
SAC. 9 17S R31E

222	2.22	0.10	0.18	0.39	0.39
519	2.97	0.50	0.88	2.60	2.99
731	2.12	0.40	0.70	1.48	4.47
982	2.51	0.50	0.88	2.20	6.67
1281	2.99	0.40	0.70	2.09	8.76
1494	2.13	0.80	1.40	2.98	11.74
1750	2.56	0.70	1.23	3.14	14.88
1958	2.08	1.80	3.15	6.55	21.43
2268	3.10	0.50	0.88	2.71	24.14
2481	2.13	0.40	0.70	1.49	25.63
2733	2.52	0.40	0.70	1.76	27.40
2988	2.55	0.60	1.05	2.68	30.08
3249	2.61	0.70	1.23	3.20	33.27
3468	2.19	0.30	0.53	1.15	34.42
3708	2.40	0.20	0.35	0.84	35.26
3964	2.56	0.20	0.35	0.90	36.16
4217	2.53	0.20	0.35	0.89	37.04
4475	2.58	0.30	0.53	1.35	38.40
4544	0.69	0.10	0.18	0.12	38.52
4619	0.75	3.10	5.43	4.07	42.59


Archie Brown - General Manager

The attached instrument was acknowledged before me on the 19th day of October, 2015 by
Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public



Apache Corporation

Eddy County, NM (NAD27 NME)

Grow Federal
#50H

Cedar Lake Federal/CA 950H

OH / Job #1514409

Survey: Phoenix MWD Surveys

Standard Survey Report

12 October, 2015

API #: 30-015-43326

See 17S-31E

1100 FNL 515 FWL

Phoenix Technology Services LP

Survey Report

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #50H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3886.00usft (Capstar 114)
Site:	Crow Federal	MD Reference:	KB @ 3886.00usft (Capstar 114)
Well:	#50H	North Reference:	Grid
Wellbore:	OH / Job #1514409	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	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	Crow Federal				
Site Position:		Northing:	671,130.90 usft	Latitude:	32° 50' 38.92796 N
From:	Map	Easting:	643,906.80 usft	Longitude:	103° 51' 53.16889 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well	#50H					
Well Position	+N/-S	0.00 usft	Northing:	674,396.60 usft	Latitude:	32° 51' 11.45943 N
	+E/-W	0.00 usft	Easting:	638,871.80 usft	Longitude:	103° 52' 52.02018 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,875.00 usft

Wellbore OH / Job #1514409

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/29/2015	7.60	60.80	48,576

Design Surveys (Capstar 114)

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	82.08

Survey Program Date 10/12/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
89.38	4,526.38	Gyrodata Surveys (OH / Job #1514409)	NS-GYRO-MS	North sensing gyrocompassing m/s
4,619.00	9,472.00	Phoenix MWD Surveys (OH / Job #1514409)	PHX+MWD+HDGM	PHX+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)
4,526.38	0.26	306.94	4,526.21	4.77	7.04	7.63	0.00	0.00	0.00
Tie In to Gyrodata Gyro Surveys									
4,619.00	3.10	50.10	4,618.78	6.50	8.79	9.60	3.42	3.07	111.38
First Phoenix MWD Survey									
4,662.00	7.60	53.30	4,661.59	8.95	11.96	13.08	10.48	10.47	7.44
4,705.00	12.50	53.60	4,703.91	13.41	17.99	19.67	11.40	11.40	0.70
4,747.00	17.20	54.50	4,744.50	19.72	26.71	29.17	11.20	11.19	2.14
4,790.00	21.40	55.50	4,785.07	27.86	38.36	41.83	9.80	9.77	2.33
4,833.00	25.60	58.50	4,824.50	37.16	52.75	57.37	10.15	9.77	6.98

Phoenix Technology Services LP

Survey Report

Company: Apache Corporation
 Project: Eddy County, NM (NAD27 NME)
 Site: Crow Federal
 Well: #50H
 Wellbore: OH / Job #1514409
 Design: Surveys (Capstar 114)

Local Co-ordinate Reference: Well #50H
 TVD Reference: KB @ 3886.00usft (Capstar 114)
 MD Reference: KB @ 3886.00usft (Capstar 114)
 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)
4,875.00	29.00	60.70	4,861.82	46.88	69.37	75.17	8.44	8.10	5.24
4,918.00	32.70	59.70	4,898.73	57.85	88.50	95.62	8.69	8.60	-2.33
4,960.00	37.10	57.80	4,933.17	70.33	109.02	117.67	10.79	10.48	-4.52
5,003.00	42.80	57.70	4,966.12	85.08	132.36	142.82	13.26	13.26	-0.23
5,046.00	47.90	58.30	4,996.33	101.26	158.30	170.74	11.90	11.86	1.40
5,089.00	52.90	58.20	5,023.73	118.69	186.46	201.04	11.63	11.63	-0.23
5,131.00	57.90	57.80	5,047.57	137.00	215.77	232.59	11.93	11.90	-0.95
5,174.00	63.20	57.10	5,068.70	157.15	247.32	266.61	12.41	12.33	-1.63
5,217.00	68.30	55.60	5,086.36	178.87	279.94	301.91	12.28	11.86	-3.49
5,259.00	74.30	54.80	5,099.82	201.57	312.59	337.38	14.40	14.29	-1.90
5,302.00	80.40	54.80	5,109.23	225.75	346.86	374.65	14.19	14.19	0.00
5,322.00	83.00	55.00	5,112.12	237.12	363.05	392.26	13.04	13.00	1.00
5,370.00	88.30	56.10	5,115.76	264.19	402.50	435.06	11.28	11.04	2.29
5,498.00	89.40	58.90	5,118.33	332.94	510.42	551.43	2.35	0.86	2.19
5,626.00	89.80	62.40	5,119.22	395.67	621.97	670.56	2.75	0.31	2.73
5,754.00	90.40	65.70	5,119.00	451.67	737.05	792.25	2.62	0.47	2.58
5,882.00	90.20	69.90	5,118.33	500.02	855.53	916.27	3.28	-0.16	3.28
6,010.00	89.80	73.90	5,118.33	539.78	977.17	1,042.23	3.14	-0.31	3.13
6,138.00	89.70	78.60	5,118.88	570.19	1,101.47	1,169.53	3.67	-0.08	3.67
6,266.00	88.80	82.60	5,120.56	591.09	1,227.71	1,297.45	3.20	-0.70	3.13
6,394.00	89.80	86.40	5,122.13	603.36	1,355.09	1,425.30	3.07	0.78	2.97
6,522.00	90.60	89.10	5,121.68	608.38	1,482.98	1,552.66	2.20	0.63	2.11
6,650.00	90.50	90.00	5,120.45	609.39	1,610.96	1,679.57	0.71	-0.08	0.70
6,778.00	90.20	90.00	5,119.67	609.39	1,738.96	1,806.34	0.23	-0.23	0.00
6,906.00	89.10	90.30	5,120.45	609.05	1,866.96	1,933.07	0.89	-0.86	0.23
7,034.00	88.90	90.10	5,122.68	608.61	1,994.94	2,059.77	0.22	-0.16	-0.16
7,162.00	89.20	90.10	5,124.81	608.38	2,122.92	2,186.50	0.23	0.23	0.00
7,290.00	88.30	90.10	5,127.60	608.16	2,250.89	2,313.21	0.70	-0.70	0.00
7,418.00	88.40	90.10	5,131.28	607.94	2,378.83	2,439.91	0.08	0.08	0.00
7,546.00	88.60	89.40	5,134.63	608.50	2,506.79	2,566.72	0.57	0.16	-0.55
7,674.00	89.10	89.80	5,137.20	609.39	2,634.76	2,693.59	0.50	0.39	0.31
7,802.00	89.10	89.90	5,139.21	609.72	2,762.74	2,820.40	0.08	0.00	0.08
7,930.00	89.10	90.10	5,141.22	609.72	2,890.73	2,947.17	0.16	0.00	0.16
8,058.00	87.60	90.20	5,144.91	609.39	3,018.67	3,073.84	1.17	-1.17	0.08
8,186.00	88.30	90.30	5,149.49	608.83	3,146.58	3,200.46	0.55	0.55	0.08
8,314.00	88.80	90.40	5,152.73	608.05	3,274.54	3,327.09	0.40	0.39	0.08
8,442.00	88.60	90.80	5,155.63	606.71	3,402.50	3,453.64	0.35	-0.16	0.31
8,570.00	88.40	89.60	5,158.98	606.26	3,530.45	3,580.32	0.95	-0.16	-0.94
8,698.00	88.90	89.80	5,162.00	606.93	3,658.42	3,707.15	0.42	0.39	0.16
8,826.00	89.20	89.40	5,164.12	607.83	3,786.39	3,834.03	0.39	0.23	-0.31
8,954.00	89.00	88.80	5,166.13	609.84	3,914.36	3,961.05	0.49	-0.16	-0.47
9,082.00	89.50	89.10	5,167.81	612.18	4,042.33	4,088.12	0.46	0.39	0.23
9,210.00	90.20	89.10	5,168.14	614.19	4,170.31	4,215.16	0.55	0.55	0.00

Phoenix Technology Services LP

Survey Report

Company: Apache Corporation
Project: Eddy County, NM (NAD27 NME)
Site: Crow Federal
Well: #50H
Wellbore: OH / Job #1514409
Design: Surveys (Capstar 114)

Local Co-ordinate Reference: Well #50H
TVD Reference: KB @ 3886.00usft (Capstar 114)
MD Reference: KB @ 3886.00usft (Capstar 114)
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)
9,338.00	90.90	89.30	5,166.91	615.98	4,298.29	4,342.17	0.57	0.55	0.16
9,398.00	91.20	89.30	5,165.81	616.71	4,358.28	4,401.68	0.50	0.50	0.00
Final Phoenix MWD Survey									
9,472.00	91.20	89.30	5,164.26	617.62	4,432.26	4,475.08	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,526.38	4,526.21	4.77	7.04	Tie In to Gyrodata Gyro Surveys
4,619.00	4,618.78	6.50	8.79	First Phoenix MWD Survey
9,398.00	5,165.81	616.71	4,358.28	Final Phoenix MWD Survey
9,472.00	5,164.26	617.62	4,432.26	Projection to TD

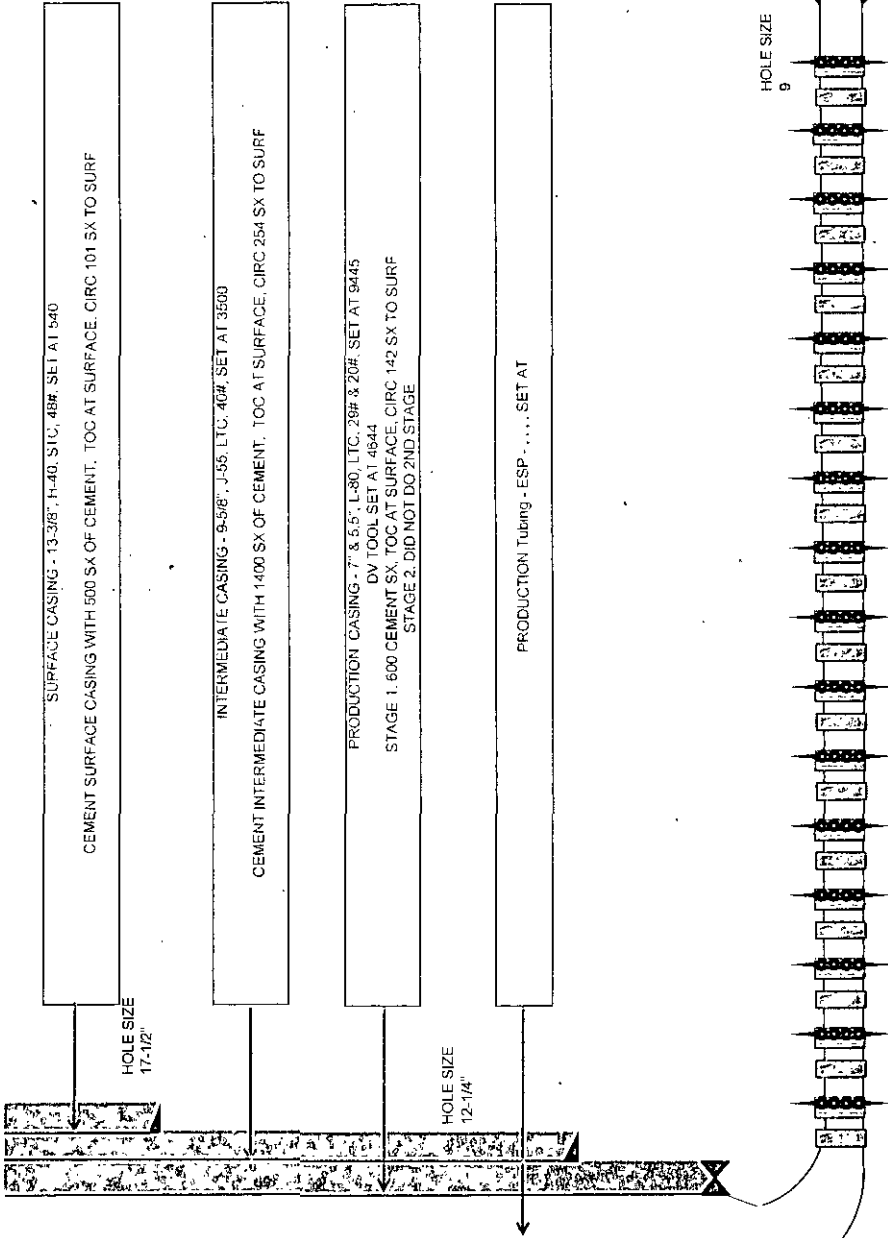
WELL NAME: CROW FEDERAL COM 50H
 API: 30-015-43326
 SPUD DATE: 10/2/2015
 PRODUCING FORMATION: YESO PADDOCK
 FIELD: CEDAR LAKE (BP)
 COUNTY: EDDY
 STATE: NEW MEXICO
 WORKING INTEREST: 60.00%

SURFACE LOC: 1100' FNL & 515' FWL
 SECTION: 9
 TOWNSHIP: 17-S
 RANGE: 31-E
 SURVEY: RONALD J. EIDSON
 BOTTOM HOLE LOC: 514.2' FNL & 332.3' FEL
 SECTION: 9
 TOWNSHIP: 17-S
 RANGE: 31-E
 SURVEY: RONALD J. EIDSON
 DRILL RIG: CAPSTAR 114
 RIG RELEASE: 10/15/2015

KB (ft): 3,885.00
 GL (ft): 3,875.00
 KB/GL DIFF (ft): 11.00
 TMD (ft): 9,472.00
 TD OF PILOT HOLE (ft): N/A
 FC DEPTH (ft): 9,435.00
 PBMD (ft): 9,472.00
 RDV DEPTH (ft): N/A
 ORIO VALVE (ft): N/A
 DEEPEST TVD (ft): 5,168.00

TAPERED CASING STRING
 7" 29# L-80 TO X-OVER @ 4,647'
 TAPERING TO 5.5" 20# L-80 SET @ 9,445'

KOP (ft):
 LATERAL LENGTH (ft):
 TD OF PILOT HOLE (ft): N/A



PACKERS & SLEEVES
 TOP PERF (MD):
 BOTTOM PERF (MD):

TMD (ft): 9,472
 FC DEPTH (ft): 9,435
 PBMD (ft): 9,472
 RDV DEPTH (ft): N/A
 ORIO VALVE (ft): N/A

PACKERS & SLEEVES - 15 STAGES

TOTAL ACID (bbl)	TOTAL LTR (bbl)	TOTAL PROPPANT (lbs)	MAX WH RATE (bpm)	MAX WH PRESSURE (psi)
2.726	65.369	2,850,520	95.03	5,855

PRODUCTION METHOD	LIFT TYPE	SETTING DEPTH
Pumping	ESP	0

CROSSOVER SUB @ 4,647'

COMPLETION:
 STIMULATION:
 STATUS:
 COMMENTS:

LAST UPDATED BY: HILLARI GOULD
 LAST UPDATED: 4/27/2016