30-025-43313

PHOENIX
TECHNOLOGY SERVICES

August 12, 2016

Oil Conservation Division
State of New Mexico
1625 N. French Drive
District 1 - Hobbs
Hobbs, New Mexico 88240

Attention: Regulatory Department

Re: Apache Corporation
Fire Eagle State San Andres Unit 2H
Lea County, NM
API #30-025-43313
Job No. 60255

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Seth Theriot	2H	5,898	12,235	07/29/16	08/06/16	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,
Claudia Carreon

Claudia Carreon
Operations Administrator

Certified mail receipt number: 7015 0640 0000 9907 5555

12329 Cutten Rd. Houston, TX 77066 • Phone (713) 337-0600 • Fax (713) 337-0599
www.phxtech.com

Phoenix Technology Services
SURVEY DATA CERTIFICATION

PHOENIX TECHNOLOGY SERVICES

PHOENIX JOB NUMBER	60255	ENERGY COMPANY	Apache
WELL NAME	Fire Eagle State San Andres Unit 2H	COUNTY & STATE	LEA, New Mexico

API WELL NUMBER	30-025-43313

PROPOSED DIRECTION	359.66

TIE-IN DATA

MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
5,874.00 ft	4,960.34 ft	92.35	1.97	1,174.72 ft	18.08 ft	Sperry

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
29-Jul-16	5,898.00 ft	92.10	2.20

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
6-Aug-16	12,235.00 ft	89.00	3.10

TO THE BEST OF MY KNOWLEDGE I CERTIFY THIS SURVEY DATA TO BE TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
6-Aug-16	12,297.00 ft	89.00	3.10

Seth Theriot
PRINT YOUR NAME ABOVE

Seth Theriot
SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.19
DECLINATION OR GRID	GRID

8/6/2016
TODAY'S DATE

MWD SUPERVISOR 1	Seth Theriot	DIRECTIONAL DRILLER 1	Terry Parker
MWD SUPERVISOR 2	Bernard Caldwell	DIRECTIONAL DRILLER 2	Monte Gordon

12329 Cutten Rd., Houston, Texas 777066 (713)337-0600 (Voice), (713)337-0599 (Fax)

Apache
EXPLORING WHAT'S POSSIBLE

Apache Corporation

Lea County, NM (NAD27 NME)
Fire Eagle State San Andres Unit
2H

OH / Job 60255

Survey: Phoenix MWD Surveys

Standard Survey Report

06 August, 2016

PHOENIX
TECHNOLOGY SERVICES

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well 2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 4014.00usft (Norton 2)
Site:	Fire Eagle State San Andres Unit	**MD Reference:**	RKB @ 4014.00usft (Norton 2)
Well:	2H	**North Reference:**	Grid
Wellbore:	OH / Job 60255	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Norton 2)	**Database:**	Compass 5000 GCR

Project Lea 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 Fire Eagle State San Andres Unit

Site Position:		**Northing:**	897,300.50 usft	**Latitude:**	33° 27' 41.98485 N
From:	Map	**Easting:**	839,799.70 usft	**Longitude:**	103° 13' 9.04346 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.61 °

Well 2H

Well Position	**+N/-S**	0.00 usft	**Northing:**	897,300.50 usft	**Latitude:**	33° 27' 41.98485 N
	+E/-W	0.00 usft	**Easting:**	839,799.70 usft	**Longitude:**	103° 13' 9.04346 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,997.00 usft

Wellbore OH / Job 60255

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/27/2016	6.80	61.20	48,855

Design Surveys (Norton 2)

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	0.88

Survey Program **Date** 8/6/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
211.00	5,874.00	Halliburton MWD Surveys (OH / Job 6025	MWD	MWD - Standard
5,898.00	12,297.00	Phoenix MWD Surveys (OH / Job 60255)	PHX+MWD+HDGM	PHX+OWSG 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)
5,874.00	92.35	1.97	4,960.34	1,174.72	18.08	1,174.86	0.00	0.00	0.00
Tie In to Sperry Surveys									
5,898.00	92.10	2.20	4,959.41	1,198.69	18.95	1,198.84	1.41	-1.04	0.96
First Phoenix MWD Survey									
5,929.00	92.20	2.40	4,958.25	1,229.64	20.20	1,229.80	0.72	0.32	0.65
5,961.00	92.00	1.40	4,957.07	1,261.60	21.26	1,261.78	3.18	-0.63	-3.13
5,992.00	90.80	359.90	4,956.32	1,292.59	21.61	1,292.77	6.20	-3.87	-4.84
6,023.00	90.00	358.50	4,956.10	1,323.58	21.17	1,323.75	5.20	-2.58	-4.52
6,055.00	89.50	357.10	4,956.24	1,355.56	19.95	1,355.70	4.65	-1.56	-4.38

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well 2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 4014.00usft (Norton 2)
Site:	Fire Eagle State San Andres Unit	**MD Reference:**	RKB @ 4014.00usft (Norton 2)
Well:	2H	**North Reference:**	Grid
Wellbore:	OH / Job 60255	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Norton 2)	**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)
6,086.00	89.90	355.90	4,956.40	1,386.50	18.05	1,386.61	4.08	1.29	-3.87
6,117.00	90.00	355.60	4,956.43	1,417.41	15.76	1,417.49	1.02	0.32	-0.97
6,149.00	90.00	356.00	4,956.43	1,449.33	13.41	1,449.36	1.25	0.00	1.25
6,243.00	89.70	354.20	4,956.67	1,542.98	5.38	1,542.88	1.94	-0.32	-1.91
6,337.00	89.80	355.10	4,957.08	1,636.57	-3.38	1,636.32	0.96	0.11	0.96
6,431.00	90.00	355.70	4,957.25	1,730.26	-10.92	1,729.89	0.67	0.21	0.64
6,525.00	88.80	358.50	4,958.23	1,824.13	-15.67	1,823.67	3.24	-1.28	2.98
6,619.00	90.20	0.20	4,959.05	1,918.11	-16.74	1,917.63	2.34	1.49	1.81
6,713.00	89.80	1.20	4,959.05	2,012.10	-15.59	2,011.63	1.15	-0.43	1.06
6,807.00	90.00	1.10	4,959.22	2,106.09	-13.71	2,105.63	0.24	0.21	-0.11
6,901.00	89.30	2.40	4,959.79	2,200.04	-10.83	2,199.61	1.57	-0.74	1.38
6,995.00	89.50	1.80	4,960.78	2,293.97	-7.39	2,293.58	0.67	0.21	-0.64
7,121.00	91.20	358.00	4,960.01	2,419.94	-7.61	2,419.54	3.30	1.35	-3.02
7,215.00	92.30	357.30	4,957.14	2,513.81	-11.46	2,513.34	1.39	1.17	-0.74
7,309.00	92.70	357.80	4,953.03	2,607.64	-15.48	2,607.09	0.68	0.43	0.53
7,403.00	91.30	359.00	4,949.75	2,701.54	-18.10	2,700.94	1.96	-1.49	1.28
7,497.00	90.00	0.40	4,948.69	2,795.53	-18.59	2,794.91	2.03	-1.38	1.49
7,591.00	90.30	0.60	4,948.44	2,889.52	-17.77	2,888.91	0.38	0.32	0.21
7,685.00	90.40	1.90	4,947.87	2,983.50	-15.72	2,982.90	1.39	0.11	1.38
7,779.00	91.10	0.30	4,946.64	3,077.47	-13.92	3,076.89	1.86	0.74	-1.70
7,873.00	91.50	359.00	4,944.50	3,171.44	-14.49	3,170.84	1.45	0.43	-1.38
7,965.00	91.10	359.80	4,942.42	3,263.41	-15.45	3,262.79	0.97	-0.43	0.87
8,055.00	91.90	358.20	4,940.06	3,353.36	-17.02	3,352.70	1.99	0.89	-1.78
8,145.00	92.20	357.80	4,936.84	3,443.25	-20.16	3,442.53	0.56	0.33	-0.44
8,237.00	91.40	357.80	4,933.95	3,535.14	-23.69	3,534.35	0.87	-0.87	0.00
8,328.00	90.80	357.80	4,932.20	3,626.05	-27.18	3,625.21	0.66	-0.66	0.00
8,417.00	90.50	356.90	4,931.20	3,714.95	-31.30	3,714.03	1.07	-0.34	-1.01
8,506.00	90.80	357.80	4,930.19	3,803.85	-35.41	3,802.85	1.07	0.34	1.01
8,596.00	91.30	358.20	4,928.54	3,893.78	-38.55	3,892.73	0.71	0.56	0.44
8,687.00	90.20	359.00	4,927.35	3,984.74	-40.78	3,983.64	1.49	-1.21	0.88
8,778.00	91.00	359.00	4,926.39	4,075.72	-42.37	4,074.59	0.88	0.88	0.00
8,868.00	89.10	0.80	4,926.31	4,165.71	-42.52	4,164.57	2.91	-2.11	2.00
8,957.00	89.30	0.90	4,927.56	4,254.69	-41.20	4,253.56	0.25	0.22	0.11
9,048.00	89.40	0.90	4,928.59	4,345.68	-39.77	4,344.55	0.11	0.11	0.00
9,139.00	88.40	359.60	4,930.34	4,436.66	-39.38	4,435.53	1.80	-1.10	-1.43
9,229.00	90.00	358.50	4,931.59	4,526.63	-40.87	4,525.47	2.16	1.78	-1.22
9,321.00	92.40	358.20	4,929.67	4,618.57	-43.52	4,617.35	2.63	2.61	-0.33
9,415.00	90.10	359.90	4,927.62	4,712.52	-45.07	4,711.27	3.04	-2.45	1.81
9,507.00	89.60	0.60	4,927.86	4,804.52	-44.67	4,803.27	0.94	-0.54	0.76
9,597.00	91.30	0.90	4,927.15	4,894.50	-43.49	4,893.26	1.92	1.89	0.33
9,686.00	92.20	0.70	4,924.43	4,983.45	-42.25	4,982.22	1.04	1.01	-0.22
9,780.00	92.70	1.40	4,920.41	5,077.35	-40.53	5,076.13	0.91	0.53	0.74
9,875.00	88.80	1.50	4,919.17	5,172.29	-38.13	5,171.10	4.11	-4.11	0.11

Company:	Apache Corporation	**Local Co-ordinate Reference:**	Well 2H
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Well:	2H	**North Reference:**	Grid
Wellbore:	OH / Job 60255	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (Norton 2)	**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)
9,969.00	89.00	1.20	4,920.97	5,266.25	-35.91	5,265.08	0.38	0.21	-0.32
10,063.00	90.00	0.40	4,921.79	5,360.24	-34.60	5,359.07	1.36	1.06	-0.85
10,158.00	88.90	359.90	4,922.71	5,455.23	-34.35	5,454.06	1.27	-1.16	-0.53
10,252.00	89.40	0.60	4,924.10	5,549.22	-33.94	5,548.04	0.92	0.53	0.74
10,346.00	90.40	0.30	4,924.26	5,643.21	-33.20	5,642.04	1.11	1.06	-0.32
10,439.00	91.00	359.50	4,923.13	5,736.20	-33.37	5,735.01	1.08	0.65	-0.86
10,532.00	90.90	0.00	4,921.59	5,829.19	-33.77	5,827.98	0.55	-0.11	0.54
10,626.00	91.90	359.90	4,919.29	5,923.16	-33.85	5,921.94	1.07	1.06	-0.11
10,720.00	92.60	0.00	4,915.60	6,017.09	-33.94	6,015.86	0.75	0.74	0.11
10,814.00	90.80	359.60	4,912.81	6,111.04	-34.26	6,109.79	1.96	-1.91	-0.43
10,909.00	88.70	359.60	4,913.23	6,206.03	-34.93	6,204.76	2.21	-2.21	0.00
11,003.00	89.10	0.20	4,915.03	6,300.02	-35.09	6,298.73	0.77	0.43	0.64
11,097.00	89.20	0.50	4,916.42	6,394.00	-34.52	6,392.72	0.34	0.11	0.32
11,191.00	90.00	1.30	4,917.08	6,487.99	-33.04	6,486.71	1.20	0.85	0.85
11,285.00	88.60	1.00	4,918.23	6,581.96	-31.15	6,580.70	1.52	-1.49	-0.32
11,379.00	89.10	1.00	4,920.12	6,675.93	-29.51	6,674.68	0.53	0.53	0.00
11,474.00	89.50	1.10	4,921.28	6,770.90	-27.77	6,769.68	0.43	0.42	0.11
11,569.00	89.50	1.60	4,922.11	6,865.87	-25.54	6,864.67	0.53	0.00	0.53
11,664.00	88.90	1.10	4,923.43	6,960.84	-23.30	6,959.66	0.82	-0.63	-0.53
11,759.00	90.00	1.50	4,924.34	7,055.81	-21.14	7,054.65	1.23	1.16	0.42
11,854.00	89.50	0.00	4,924.76	7,150.79	-19.90	7,149.64	1.66	-0.53	-1.58
11,950.00	90.00	1.30	4,925.18	7,246.78	-18.81	7,245.64	1.45	0.52	1.35
12,046.00	90.40	3.50	4,924.84	7,342.69	-14.79	7,341.60	2.33	0.42	2.29
12,141.00	89.20	1.90	4,925.17	7,437.58	-10.31	7,436.55	2.11	-1.26	-1.68
12,235.00	89.00	3.10	4,926.65	7,531.48	-6.22	7,530.50	1.29	-0.21	1.28
Final Phoenix MWD Survey									
12,297.00	89.00	3.10	4,927.73	7,593.38	-2.86	7,592.44	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,874.00	4,960.34	1,174.72	18.08	Tie In to Sperry Surveys
5,898.00	4,959.41	1,198.69	18.95	First Phoenix MWD Survey
12,235.00	4,926.65	7,531.48	-6.22	Final Phoenix MWD Survey
12,297.00	4,927.73	7,593.38	-2.86	Projection to TD

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Pecos District
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-2019
www.nm.blm.gov

TAKE PRIDE IN AMERICA

HOBBS OCD

SEP 21 2016

RECEIVED

SEP 16 2016

In Reply Refer To:
14-08-001-8486 (NM-71054X)
3183 (P0130)

Legacy Reserves Operating
303 West Wall, Suite 1400
Midland, TX 79701

Re: 2016 Plan of Development and Operations
West Cap Queen Sand Unit
Unitization Agreement No. 14-08-001-8486 (Case Recordation No. NM-71054X)
Chaves County, New Mexico

Gentlemen:

This office received your 2016 Plan of Development and Operations for the West Cap Queen Sand Unit under 43 CFR 3183.6 pursuant to Section 11 of the unit agreement on September 9, 2016. Our review shows that Legacy Reserves Operating has plugged 6 Federal wells (No. 1, 2, 7, 8, 9, and 22-West Cap Queen Sand Unit) and now plans to plug the remaining 9 Federal wells in West Cap Queen Sand Unit during the next 18 months (before March 31, 2018).

This 2016 Plan of Development and Operations for the West Cap Queen Sand Unit is approved for the calendar year ending September 30, 2017 subject to the following conditions of approval.

1. A 2017 Plan of Development and Operations for the West Cap Queen Sand Unit must be submitted to this office by September 30, 2017.
2. You continue to plug, receive approval to temporary abandon, or return to active status any Federal well in the West Cap Queen Sand Unit that may fall out of compliance.
3. This approval may be subject to like approval by the New Mexico Oil Conservation Division and Commissioner of Public Lands-State of New Mexico.

If you have any questions regarding this letter, please contact David Glass, Petroleum Engineer at the Division of Lands and Minerals at (575) 627-0275.

Sincerely,

\S\ Ruben J. Sanchez

Ruben J. Sanchez
Assistant Field Manager,
Lands and Minerals

cc:
NMOCD-Hobbs

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner
30-005-01079-00-00	WEST CAP QUEEN SAND L	012	LEGACY RESERVES OPEI	O	A	Chaves	S
~~30-005-01090-00-00~~	WEST CAP QUEEN SAND L	007	LEGACY RESERVES OPEI	O	P	Chaves	F
~~30-005-01091-00-00~~	WEST CAP QUEEN SAND L	008	LEGACY RESERVES OPEI	O	P	Chaves	F
30-005-01092-00-00	WEST CAP QUEEN SAND L	004	LEGACY RESERVES OPEI	O	A	Chaves	F
30-005-01094-00-00	WEST CAP QUEEN SAND L	003	LEGACY RESERVES OPEI	O	A	Chaves	F
30-005-01097-00-00	WEST CAP QUEEN SAND L	005	LEGACY RESERVES OPEI	I	A	Chaves	S
~~30-005-01098-00-00~~	WEST CAP QUEEN SAND L	011	LEGACY RESERVES OPEI	I	P	Chaves	S
30-005-01099-00-00	WEST CAP QUEEN SAND L	006	LEGACY RESERVES OPEI	I	A	Chaves	S
~~30-005-01100-00-00~~	WEST CAP QUEEN SAND L	010	LEGACY RESERVES OPEI	O	P	Chaves	S
~~30-005-01103-00-00~~	WEST CAP QUEEN SAND L	013	LEGACY RESERVES OPEI	O	P	Chaves	P
30-005-01107-00-00	WEST CAP QUEEN SAND L	016	LEGACY RESERVES OPEI	I	A	Chaves	F
30-005-01108-00-00	WEST CAP QUEEN SAND L	015	LEGACY RESERVES OPEI	O	A	Chaves	F
30-005-01109-00-00	WEST CAP QUEEN SAND L	021	LEGACY RESERVES OPEI	O	A	Chaves	F
30-005-01115-00-00	WEST CAP QUEEN SAND L	018	LEGACY RESERVES OPEI	I	A	Chaves	P
30-005-01116-00-00	WEST CAP QUEEN SAND L	017	LEGACY RESERVES OPEI	O	A	Chaves	P
30-005-01117-00-00	WEST CAP QUEEN SAND L	020	LEGACY RESERVES OPEI	I	A	Chaves	P
30-005-01118-00-00	WEST CAP QUEEN SAND L	025	LEGACY RESERVES OPEI	O	E	Chaves	F
30-005-01119-00-00	WEST CAP QUEEN SAND L	024	LEGACY RESERVES OPEI	I	E	Chaves	F
30-005-01120-00-00	WEST CAP QUEEN SAND L	023	LEGACY RESERVES OPEI	O	E	Chaves	F