PHOENIX
TECHNOLOGY SERVICES

January 8, 2015

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Attention: Regulatory Department

Re: Apache Corporation
Palmillo 14 State #4H
Eddy County, NM
API #30-015-42543
Job No. 1412661

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	
Leon Laskowski	4H	0	6,811	12/29/14	12/29/14	Gyro

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,

Dana Robinson

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 20 2015
RECEIVED

Dana Robinson
Operations Administrator
Certified mail receipt number: 7014 2120 0004 3423 7071

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

SURVEY CERTIFICATION FORM

3610 Elkins Road Midland, TX 79705 t:432-684-0057 f: 432-686-7964

PHOENIX TECHNOLOGY SERVICES

Company: Apache

Job #: 1411261

Well Name: Palmillo 14 State #4H

County/State: Eddy Co, New Mexico

Survey Instrument Type: North Seek Rate Gyro

API # 30-015-42543

TIE-IN DATA

Measure Depth (ft)	Vertical Depth (ft)	Inclination (°)	Azimuth (°)	N-S Coordinates	E-W Coordinates	Data Source
0	0	0	0	0	0	Surface

First Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
12-29-14	0	0	0

Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
12-29-14	6811	1.79	255.84

Projected TD Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
0	0	0	0

Grid Correction: -0.1

Gyro Operator: Leon Laskowski

Gyro Supervisor:

To the best of my knowledge I certify this survey data to be correct and true

Date: 12-29-14

Print Name: Leon Laskowski

Signature:

PHOENIX TECHNOLOGY SERVICES

Company:	Apache	Job Number:		Calculation Method	Minimum Curvature
Well:	Palimino 14 State #4H	Grid Corr.:	-0.10	Proposed Azimuth	
Location:	Eddy Co, New Mexico	Lat:	32.67	RKB - MSL in feet	25
Rig:	Pioneer 28	Long:	-104.15	Tie Into:	

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
Enter Tie-In Survey on Line 10							**Field Copy Non Definitive**						
TIE IN	0	0.00	0	0	0	0	0	0					
Gyro	100.00	0.09	100.40	100	100.00	-0.01	0.01 S	0.08 E	0.08	100.40	0.09	0.09	100.40
	200.00	0.07	223.17	100	200.00	-0.07	0.07 S	0.11 E	0.13	122.90	0.14	-0.02	122.77
	300.00	0.26	253.63	100	300.00	-0.18	0.18 S	0.15 W	0.23	218.98	0.20	0.19	30.46
	400.00	0.76	248.81	100	400.00	-0.49	0.49 S	0.98 W	1.10	243.73	0.50	0.50	-4.82
	500.00	1.09	50.94	100	499.99	-0.13	0.13 S	0.86 W	0.87	261.73	1.83	0.33	-197.87
	600.00	1.23	46.06	100	599.97	1.22	1.22 N	0.65 E	1.38	28.03	0.17	0.14	-4.88
	700.00	1.06	45.88	100	699.95	2.61	2.61 N	2.09 E	3.34	38.66	0.17	-0.17	-0.18
	800.00	0.91	5.20	100	799.94	4.04	4.04 N	2.82 E	4.93	34.92	0.70	-0.15	-40.68
	900.00	0.77	8.51	100	899.92	5.50	5.50 N	2.99 E	6.26	28.57	0.15	-0.14	3.31
	1000.00	0.52	5.26	100	999.92	6.61	6.61 N	3.13 E	7.32	25.35	0.25	-0.25	-3.25
	1100.00	0.59	11.31	100	1099.91	7.57	7.57 N	3.28 E	8.25	23.40	0.09	0.07	6.05
	1200.00	0.34	104.31	100	1199.91	8.00	8.00 N	3.67 E	8.80	24.61	0.70	-0.25	93.00
	1300.00	0.44	296.23	100	1299.91	8.10	8.10 N	3.61 E	8.87	24.01	0.78	0.10	191.92
	1400.00	0.36	154.21	100	1399.91	7.99	7.99 N	3.40 E	8.68	23.07	0.76	-0.08	-142.02
	1500.00	0.29	110.10	100	1499.91	7.62	7.62 N	3.77 E	8.50	26.37	0.25	-0.07	-44.11
	1600.00	0.32	345.70	100	1599.91	7.80	7.80 N	3.94 E	8.74	26.82	0.54	0.03	235.60
	1700.00	0.43	337.49	100	1699.91	8.42	8.42 N	3.73 E	9.21	23.91	0.12	0.11	-8.21
	1800.00	0.43	162.76	100	1799.90	8.40	8.40 N	3.70 E	9.18	23.75	0.86	0.00	-174.73
	1900.00	0.15	230.11	100	1899.90	7.96	7.96 N	3.71 E	8.78	24.98	0.40	-0.28	67.35
	2000.00	0.27	294.95	100	1999.90	7.98	7.98 N	3.40 E	8.67	23.05	0.25	0.12	64.84
	2100.00	0.26	62.65	100	2099.90	8.18	8.18 N	3.38 E	8.85	22.46	0.48	-0.01	-232.30
	2200.00	0.20	350.11	100	2199.90	8.46	8.46 N	3.55 E	9.17	22.80	0.28	-0.06	287.46
	2300.00	0.08	309.58	100	2299.90	8.67	8.67 N	3.47 E	9.34	21.81	0.15	-0.12	-40.53
	2400.00	0.12	302.32	100	2399.90	8.77	8.77 N	3.33 E	9.38	20.77	0.04	0.04	-7.26
	2500.00	0.22	202.03	100	2499.90	8.65	8.65 N	3.17 E	9.21	20.11	0.27	0.10	-100.29

PHOENIX TECHNOLOGY SERVICES

Company:	Apache	Job Number:		Calculation Method	Minimum Curvature
Well:	Palimino 14 State #4H	Grid Corr.:	-0.10	Proposed Azimuth	
Location:	Eddy Co, New Mexico	Lat:	32.67	RKB - MSL in feet	25
Rig:	Pioneer 28	Long:	-104.15	Tie Into:	

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
	2600.00	0.17	148.78	100	2599.90	8.35	8.35 N	3.17 E	8.93	20.81	0.18	-0.05	-53.25
	2700.00	0.10	301.52	100	2699.90	8.27	8.27 N	3.18 E	8.86	21.01	0.26	-0.07	152.74
	2800.00	0.19	59.98	100	2799.90	8.40	8.40 N	3.24 E	9.00	21.13	0.25	0.09	-241.54
	2900.00	0.14	84.61	100	2899.90	8.49	8.49 N	3.51 E	9.19	22.46	0.09	-0.05	24.63
	3000.00	0.04	216.29	100	2999.90	8.47	8.47 N	3.61 E	9.21	23.08	0.17	-0.10	131.68
	3100.00	0.15	43.18	100	3099.90	8.54	8.54 N	3.68 E	9.30	23.31	0.19	0.11	-173.11
	3200.00	0.36	288.54	100	3199.90	8.74	8.74 N	3.47 E	9.40	21.67	0.44	0.21	245.36
	3300.00	0.52	230.75	100	3299.90	8.55	8.55 N	2.82 E	9.00	18.27	0.45	0.16	-57.79
	3400.00	0.72	233.73	100	3399.89	7.89	7.89 N	1.96 E	8.13	13.98	0.20	0.20	2.98
	3500.00	0.69	310.78	100	3499.88	7.91	7.91 N	1.00 E	7.97	7.22	0.88	-0.03	77.05
	3600.00	0.83	237.71	100	3599.88	7.92	7.92 N	0.07 W	7.92	359.52	0.91	0.14	-73.07
	3700.00	0.90	235.81	100	3699.87	7.09	7.09 N	1.33 W	7.21	349.39	0.08	0.07	-1.90
	3800.00	1.04	256.45	100	3799.85	6.44	6.44 N	2.86 W	7.04	336.03	0.37	0.14	20.64
	3900.00	1.17	242.94	100	3899.83	5.76	5.76 N	4.65 W	7.40	321.07	0.29	0.13	-13.51
	4000.00	1.22	245.65	100	3999.81	4.85	4.85 N	6.53 W	8.14	306.62	0.08	0.05	2.71
	4100.00	1.22	250.34	100	4099.79	4.06	4.06 N	8.50 W	9.42	295.51	0.10	0.00	4.69
	4200.00	0.92	251.80	100	4199.77	3.45	3.45 N	10.27 W	10.83	288.56	0.30	-0.30	1.46
	4300.00	1.01	271.39	100	4299.76	3.22	3.22 N	11.91 W	12.34	285.12	0.34	0.09	19.59
	4400.00	0.56	187.06	100	4399.75	2.76	2.76 N	12.85 W	13.15	282.10	1.11	-0.45	-84.33
	4500.00	0.64	104.65	100	4499.75	2.13	2.13 N	12.37 W	12.56	279.77	0.79	0.08	-82.41
	4600.00	0.74	89.42	100	4599.74	1.99	1.99 N	11.19 W	11.36	280.11	0.21	0.10	-15.23
	4700.00	0.70	214.40	100	4699.74	1.50	1.50 N	10.89 W	10.99	277.83	1.28	-0.04	124.98
	4800.00	0.58	164.25	100	4799.73	0.51	0.51 N	11.09 W	11.11	272.61	0.55	-0.12	-50.15
	4900.00	0.52	214.73	100	4899.73	-0.35	0.35 S	11.22 W	11.22	268.19	0.47	-0.06	50.48
	5000.00	0.64	307.67	100	4999.72	-0.39	0.39 S	11.92 W	11.92	268.15	0.85	0.12	92.94
	5100.00	0.72	227.34	100	5099.72	-0.47	0.47 S	12.82 W	12.83	267.90	0.88	0.08	-80.33
	5200.00	0.48	301.78	100	5199.71	-0.68	0.68 S	13.64 W	13.65	267.17	0.75	-0.24	74.44

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	5300.00	0.69	303.21	100	5299.71	-0.12	0.12 S	14.50 W	14.50	269.51	0.21	0.21	1.43
	5400.00	0.91	317.29	100	5399.70	0.79	0.79 N	15.54 W	15.56	272.90	0.29	0.22	14.08
	5500.00	1.32	314.71	100	5499.68	2.18	2.18 N	16.90 W	17.04	277.36	0.41	0.41	-2.58
	5600.00	1.48	314.47	100	5599.65	3.90	3.90 N	18.64 W	19.04	281.81	0.16	0.16	-0.24
	5700.00	1.47	306.49	100	5699.62	5.56	5.56 N	20.59 W	21.33	285.12	0.21	-0.01	-7.98
	5800.00	1.54	297.25	100	5799.58	6.94	6.94 N	22.82 W	23.85	286.92	0.25	0.07	-9.24
	5900.00	1.58	294.72	100	5899.54	8.13	8.13 N	25.26 W	26.54	287.85	0.08	0.04	-2.53
	6000.00	1.65	296.27	100	5999.50	9.35	9.35 N	27.81 W	29.34	288.58	0.08	0.07	1.55
	6100.00	1.59	283.86	100	6099.47	10.32	10.32 N	30.44 W	32.15	288.72	0.36	-0.06	-12.41
	6200.00	2.08	273.02	100	6199.41	10.75	10.75 N	33.60 W	35.28	287.73	0.60	0.49	-10.84
	6300.00	1.60	268.71	100	6299.36	10.81	10.81 N	36.81 W	38.37	286.37	0.50	-0.48	-4.31
	6400.00	1.72	261.95	100	6399.32	10.57	10.57 N	39.69 W	41.08	284.91	0.23	0.12	-6.76
	6500.00	1.98	254.90	100	6499.27	9.91	9.91 N	42.85 W	43.98	283.02	0.35	0.26	-7.05
	6600.00	1.84	253.03	100	6599.21	8.99	8.99 N	46.05 W	46.92	281.05	0.15	-0.14	-1.87
	6700.00	1.93	257.03	100	6699.16	8.14	8.14 N	49.23 W	49.90	279.39	0.16	0.09	4.00
	6800.00	1.77	257.11	100	6799.11	7.42	7.42 N	52.37 W	52.90	278.06	0.16	-0.16	0.08
	6811.00	1.79	255.84	11	6810.10	7.34	7.34 N	52.71 W	53.21	277.93	0.40	0.18	-11.55