



PHOENIX
TECHNOLOGY SERVICES

July 28, 2014

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 31 2014

RECEIVED

Attention: Ms. Diane Crum

Re: RKI Exploration and Production
RDX Federal Com 17-20H (WB1)
Eddy County, NM
API #30-015-41318
Job No. 1410739

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	
Jeff Thomas	20H	1,003	13,195	05/08/14	05/25/14	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,

Dana Robinson

Dana Robinson
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 2254

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1410739

OPERATOR RKI Exploration

WELL NAME RDX Federal Com 17-20H (WB1)

COUNTY & STATE EDDY/New Mexico

API WELL NUMBER 30-015-41381

PROPOSED DIRECTION 175.47

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
900.ft	899.90 ft	2.02 ft	65.95 ft	7.86 ft	-3.23	Gyro

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
8-May-14	1,003 ft	2.9	70.1

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
25-May-14	13,195 ft	91.50	181.20

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
25-May-14	13,251 ft	91.50	181.20

Jeff Thomas

PRINT YOUR NAME ABOVE

Jeff Thomas

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.37
DECLINATION OR GRID	DECLINATION

25-May-14

TODAY'S DATE

MWD SUPERVISOR 1

Jeff Thomas

DIRECTIONAL DRILLER 1

John Schlottman

MWD SUPERVISOR 2

Shawn Ramnarine

DIRECTIONAL DRILLER 2

Lee Scoggins

NM OIL CONSERVATION
ARTESIA DISTRICT

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-6720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., 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

JUL 31 2014

RECEIVED

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code	Pool Name UNDESIGNATED BONE SPRING
Property Code	Property Name RDX FEDERAL COM. 17		Well Number 10H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION		Elevation 3079'

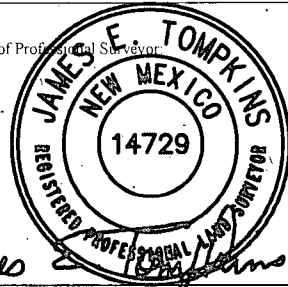
Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	17	26S	30E		275	NORTH	430	EAST	EDDY

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
P	17	26S	30E		330	SOUTH	330	EAST	EDDY
Dedicated Acres 160		Joint or Infill	Consolidated 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.

SHL: RDX FEDERAL COM. 17-10H NMSP-E (NAD 83) Y = 381880.0' N X = 676749.0' E N LAT. = 32° 02' 56.81" W LONG. = -103° 53' 46.50" NMSP-E (NAD 27) Y = 381822.5' N X = 635563.1' E N LAT. = 32.0489899° W LONG. = -103.8957945°		275' 430'	OPERATOR CERTIFICATION <i>I hereby certify that the information contained 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 a mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> Signature _____ Date _____ Print Name _____ E-mail Address _____	
		S 01° 19' 30" E 4716'		SURVEYORS CERTIFICATION <i>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.</i> February 22, 2012 Date of Survey _____ Signature and Seal of Professional Surveyor _____  James E. Tompkins
BHL: RDX FEDERAL COM. 17-10H NMSP-E (NAD 83) Y = 377168.6' N X = 676858.1' E N LAT. = 32° 02' 10.18" W LONG. = -103° 53' 45.5" NMSP-E (NAD 27) Y = 377111.1' N X = 635672.0' E N LAT. = 32.036037° W LONG. = -103.8955048°		330' 330'		
			Job No.: WTC48379 JAMES E. TOMPKINS 14729 Certificate Number _____	



PHOENIX
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ARTESIA DISTRICT
JUL 31 2014
RECEIVED

RKI Exploration

Eddy County, New Mexico (NAD 83)
RDX Federal Com 17
20H

WB #1 Job #1410739

Survey: Phoenix MWD Surveys

Standard Survey Report

29 June, 2014



Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #1 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 10)	Database:	Compass 5000 GCR DB

Project	Eddy County, New Mexico (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	RDX Federal Com 17		
Site Position:		Northing:	381,822.10 usft
From:	Map	Easting:	676,389.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 56.25408 N
		Longitude:	103° 53' 50.76837 W
		Grid Convergence:	0.23 °

Well	20H		
Well Position	+N/-S	0.00 usft	Northing: 381,822.10 usft
	+E/-W	0.00 usft	Easting: 676,389.30 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 2' 56.25408 N
		Longitude:	103° 53' 50.76837 W
		Ground Level:	3,081.00 usft

Wellbore	WB #1 Job #1410739		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	2014/05/01	(°)
			7.37
			59.90
			48,190

Design	Surveys (Silver Oak 10)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			181.12

Survey Program	Date 2014/06/03		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	900.00	Gyro Surveys (WB #1 Job #1410739)	NS-GYRO-MS
1,003.00	13,251.00	Phoenix MWD Surveys (WB #1 Job #1410)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
900.00	2.02	65.95	899.90	7.86	-3.23	-7.80	0.00	0.00	0.00	
1,003.00	2.90	70.10	1,002.80	9.49	0.88	-9.50	0.87	0.85	4.03	
First Phoenix Survey										
1,095.00	2.60	70.00	1,094.70	10.99	5.03	-11.09	0.33	-0.33	-0.11	
1,188.00	2.00	70.00	1,187.62	12.27	8.53	-12.43	0.65	-0.65	0.00	
1,280.00	2.50	55.80	1,279.55	13.95	11.70	-14.17	0.81	0.54	-15.43	
1,371.00	3.20	34.30	1,370.44	17.16	14.78	-17.45	1.39	0.77	-23.63	
1,467.00	4.60	3.60	1,466.23	23.22	16.53	-23.53	2.57	1.46	-31.98	
1,560.00	5.50	355.30	1,558.87	31.38	16.40	-31.69	1.24	0.97	-8.92	
1,655.00	6.90	336.40	1,653.32	41.15	13.74	-41.41	2.59	1.47	-19.89	

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #1 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 10)	Database:	Compass 5000 GCR DB

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)
1,748.00	7.70	331.00	1,745.56	51.72	8.48	-51.87	1.13	0.86	-5.81
1,843.00	8.70	332.90	1,839.59	63.68	2.12	-63.71	1.09	1.05	2.00
1,938.00	9.20	330.10	1,933.44	76.66	-4.94	-76.55	0.70	0.53	-2.95
2,032.00	9.20	326.10	2,026.23	89.41	-12.87	-89.14	0.68	0.00	-4.26
2,127.00	9.50	329.10	2,119.97	102.44	-21.14	-102.01	0.60	0.32	3.16
2,222.00	8.90	330.50	2,213.74	115.56	-28.78	-114.98	0.67	-0.63	1.47
2,317.00	9.30	333.20	2,307.55	128.81	-35.86	-128.09	0.62	0.42	2.84
2,412.00	8.90	330.50	2,401.35	142.06	-42.94	-141.19	0.62	-0.42	-2.84
2,506.00	9.50	326.70	2,494.14	154.87	-50.78	-153.85	0.91	0.64	-4.04
2,602.00	9.70	327.60	2,588.80	168.32	-59.46	-167.13	0.26	0.21	0.94
2,695.00	10.20	328.20	2,680.40	181.94	-68.00	-180.57	0.55	0.54	0.65
2,787.00	9.20	335.00	2,771.09	195.53	-75.40	-194.01	1.65	-1.09	7.39
2,882.00	7.90	339.90	2,865.03	208.54	-80.85	-206.92	1.57	-1.37	5.16
2,977.00	7.90	342.10	2,959.13	220.88	-85.10	-219.18	0.32	0.00	2.32
3,072.00	7.50	337.30	3,053.27	232.82	-89.50	-231.02	0.80	-0.42	-5.05
3,168.00	6.20	337.50	3,148.59	243.39	-93.91	-241.50	1.35	-1.35	0.21
3,262.00	5.50	342.60	3,242.10	252.37	-97.20	-250.43	0.93	-0.74	5.43
3,355.00	4.90	339.20	3,334.71	260.34	-99.94	-258.34	0.73	-0.65	-3.66
3,480.00	4.70	335.20	3,459.28	269.98	-103.98	-267.90	0.31	-0.16	-3.20
3,542.00	4.00	334.70	3,521.10	274.24	-105.97	-272.12	1.13	-1.13	-0.81
3,636.00	2.80	2.10	3,614.94	279.50	-107.29	-277.35	2.11	-1.28	29.15
3,730.00	1.10	39.30	3,708.88	282.49	-106.63	-280.35	2.17	-1.81	39.57
4,013.00	0.60	59.80	3,991.85	285.34	-103.63	-283.26	0.20	-0.18	7.24
4,297.00	0.60	43.10	4,275.83	287.17	-101.33	-285.14	0.06	0.00	-5.88
4,582.00	0.50	51.80	4,560.82	289.03	-99.33	-287.04	0.05	-0.04	3.05
4,866.00	0.70	48.40	4,844.80	290.95	-97.06	-289.00	0.07	0.07	-1.20
5,147.00	1.10	217.80	5,125.79	289.96	-97.43	-288.00	0.64	0.14	60.28
5,430.00	1.20	224.70	5,408.73	285.71	-101.18	-283.67	0.06	0.04	2.44
5,709.00	1.60	212.20	5,687.65	280.33	-105.31	-278.22	0.18	0.14	-4.48
5,991.00	1.50	90.10	5,969.60	277.00	-103.72	-274.91	0.96	-0.04	-43.30
6,276.00	0.80	88.10	6,254.54	277.05	-98.00	-275.09	0.25	-0.25	-0.70
6,560.00	1.20	131.20	6,538.50	275.16	-93.78	-273.28	0.29	0.14	15.18
6,845.00	1.30	154.30	6,823.44	270.28	-90.13	-268.47	0.18	0.04	8.11
7,128.00	0.20	18.10	7,106.41	267.86	-88.59	-266.08	0.51	-0.39	-48.13
7,411.00	0.40	181.70	7,389.41	267.34	-88.46	-265.56	0.21	0.07	57.81
7,698.00	3.70	243.70	7,676.20	262.24	-96.80	-260.29	1.23	1.15	21.60
7,818.00	2.20	282.20	7,796.05	261.01	-102.52	-258.95	2.00	-1.25	32.08
7,859.00	1.10	309.90	7,837.03	261.43	-103.59	-259.35	3.24	-2.68	67.56
7,890.00	0.30	111.30	7,868.03	261.59	-103.75	-259.51	4.48	-2.58	520.65
7,921.00	1.00	173.30	7,899.03	261.29	-103.64	-259.21	2.90	2.26	200.00
7,952.00	2.00	163.20	7,930.02	260.50	-103.45	-258.43	3.32	3.23	-32.58
7,983.00	3.70	170.60	7,960.98	259.00	-103.13	-256.93	5.60	5.48	23.87
8,014.00	4.90	182.40	7,991.89	256.69	-103.02	-254.62	4.79	3.87	38.06

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #1 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 10)	Database:	Compass 5000 GCR DB

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)
8,046.00	5.30	187.30	8,023.76	253.86	-103.27	-251.79	1.85	1.25	15.31
8,077.00	6.20	188.60	8,054.61	250.78	-103.70	-248.71	2.93	2.90	4.19
8,108.00	6.80	193.30	8,085.41	247.34	-104.37	-245.25	2.59	1.94	15.16
8,140.00	7.60	197.00	8,117.16	243.47	-105.43	-241.36	2.89	2.50	11.56
8,171.00	9.40	196.00	8,147.81	239.08	-106.72	-236.95	5.83	5.81	-3.23
8,202.00	11.50	190.40	8,178.30	233.60	-107.98	-231.45	7.52	6.77	-18.06
8,233.00	13.60	186.80	8,208.56	226.94	-108.97	-224.77	7.23	6.77	-11.61
8,264.00	17.20	181.50	8,238.44	218.74	-109.52	-216.56	12.46	11.61	-17.10
8,295.00	22.40	178.30	8,267.60	208.25	-109.47	-206.07	17.13	16.77	-10.32
8,327.00	28.20	176.50	8,296.52	194.59	-108.82	-192.43	18.28	18.13	-5.63
8,358.00	32.70	176.80	8,323.23	178.91	-107.91	-176.77	14.52	14.52	0.97
8,389.00	37.00	176.60	8,348.67	161.23	-106.89	-159.11	13.88	13.87	-0.65
8,420.00	41.20	176.40	8,372.72	141.72	-105.69	-139.63	13.55	13.55	-0.65
8,451.00	44.80	176.80	8,395.39	120.62	-104.44	-118.56	11.65	11.61	1.29
8,482.00	48.20	176.20	8,416.72	98.18	-103.07	-96.15	11.06	10.97	-1.94
8,513.00	52.80	178.30	8,436.44	74.30	-101.93	-72.29	15.73	14.84	6.77
8,545.00	58.60	178.10	8,454.46	47.89	-101.10	-45.90	18.13	18.13	-0.63
8,573.00	64.40	177.40	8,467.82	23.31	-100.13	-21.35	20.83	20.71	-2.50
8,604.00	67.50	174.60	8,480.45	-4.92	-98.15	6.84	12.96	10.00	-9.03
8,635.00	71.20	173.80	8,491.38	-33.78	-95.21	35.63	12.18	11.94	-2.58
8,667.00	73.90	174.50	8,500.98	-64.14	-92.11	65.93	8.69	8.44	2.19
8,698.00	76.10	174.40	8,509.00	-93.94	-89.21	95.67	7.10	7.10	-0.32
8,729.00	79.00	175.20	8,515.68	-124.09	-86.47	125.75	9.69	9.35	2.58
8,759.00	82.50	175.40	8,520.51	-153.59	-84.04	155.21	11.69	11.67	0.67
8,790.00	86.40	174.90	8,523.50	-184.33	-81.43	185.89	12.68	12.58	-1.61
8,821.00	89.90	176.30	8,524.50	-215.22	-79.06	216.72	12.16	11.29	4.52
8,852.00	90.50	178.00	8,524.40	-246.18	-77.52	247.65	5.82	1.94	5.48
8,946.00	92.00	177.80	8,522.35	-340.09	-74.07	341.47	1.61	1.60	-0.21
9,039.00	91.70	179.80	8,519.34	-433.02	-72.13	434.34	2.17	-0.32	2.15
9,132.00	88.50	181.00	8,519.18	-526.00	-72.77	527.32	3.67	-3.44	1.29
9,225.00	89.60	181.00	8,520.72	-618.97	-74.40	620.31	1.18	1.18	0.00
9,319.00	91.20	181.30	8,520.07	-712.95	-76.28	714.30	1.73	1.70	0.32
9,412.00	90.20	181.80	8,518.93	-805.91	-78.80	807.29	1.20	-1.08	0.54
9,505.00	91.00	181.70	8,517.96	-898.86	-81.64	900.28	0.87	0.86	-0.11
9,598.00	92.20	180.30	8,515.36	-991.80	-83.26	993.24	1.98	1.29	-1.51
9,692.00	92.20	181.40	8,511.75	-1,085.72	-84.66	1,087.17	1.17	0.00	1.17
9,785.00	90.70	182.40	8,509.40	-1,178.64	-87.74	1,180.13	1.94	-1.61	1.08
9,878.00	91.10	182.50	8,507.94	-1,271.54	-91.71	1,273.09	0.44	0.43	0.11
9,971.00	91.50	181.90	8,505.83	-1,364.45	-95.28	1,366.05	0.78	0.43	-0.65
10,064.00	94.00	180.80	8,501.37	-1,457.30	-97.47	1,458.93	2.94	2.69	-1.18
10,157.00	92.60	180.60	8,496.01	-1,550.14	-98.61	1,551.77	1.52	-1.51	-0.22
10,251.00	90.80	180.60	8,493.22	-1,644.09	-99.59	1,645.72	1.91	-1.91	0.00
10,344.00	90.40	180.30	8,492.25	-1,737.08	-100.32	1,738.71	0.54	-0.43	-0.32

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #1 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 10)	Database:	Compass 5000 GCR DB

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)	
10,437.00	90.20	179.60	8,491.76	-1,830.08	-100.24	1,831.69	0.78	-0.22	-0.75	
10,530.00	90.20	179.40	8,491.44	-1,923.08	-99.43	1,924.65	0.22	0.00	-0.22	
10,624.00	90.60	178.30	8,490.78	-2,017.05	-97.54	2,018.57	1.25	0.43	-1.17	
10,717.00	91.20	176.60	8,489.32	-2,109.95	-93.40	2,111.37	1.94	0.65	-1.83	
10,811.00	90.50	178.90	8,487.93	-2,203.86	-89.71	2,205.19	2.56	-0.74	2.45	
10,904.00	90.90	178.70	8,486.79	-2,296.83	-87.77	2,298.11	0.48	0.43	-0.22	
10,998.00	91.80	178.80	8,484.58	-2,390.78	-85.72	2,392.00	0.96	0.96	0.11	
11,091.00	92.30	178.80	8,481.25	-2,483.70	-83.77	2,484.86	0.54	0.54	0.00	
11,184.00	93.00	178.30	8,476.95	-2,576.57	-81.42	2,577.67	0.92	0.75	-0.54	
11,277.00	91.10	178.60	8,473.62	-2,669.47	-78.91	2,670.50	2.07	-2.04	0.32	
11,370.00	88.90	179.50	8,473.62	-2,762.45	-77.36	2,763.44	2.56	-2.37	0.97	
11,463.00	88.80	178.20	8,475.49	-2,855.41	-75.50	2,856.34	1.40	-0.11	-1.40	
11,557.00	88.90	178.00	8,477.38	-2,949.34	-72.38	2,950.19	0.24	0.11	-0.21	
11,651.00	89.60	177.10	8,478.61	-3,043.25	-68.36	3,044.00	1.21	0.74	-0.96	
11,745.00	90.40	180.20	8,478.61	-3,137.21	-66.15	3,137.90	3.41	0.85	3.30	
11,838.00	90.40	179.20	8,477.96	-3,230.20	-65.66	3,230.87	1.08	0.00	-1.08	
11,932.00	90.80	178.60	8,476.97	-3,324.18	-63.86	3,324.79	0.77	0.43	-0.64	
12,025.00	91.10	177.80	8,475.43	-3,417.12	-60.94	3,417.66	0.92	0.32	-0.86	
12,119.00	91.10	178.10	8,473.63	-3,511.04	-57.58	3,511.50	0.32	0.00	0.32	
12,212.00	91.50	179.60	8,471.52	-3,604.00	-55.71	3,604.40	1.67	0.43	1.61	
12,305.00	92.70	180.50	8,468.11	-3,696.93	-55.79	3,697.32	1.61	1.29	0.97	
12,399.00	93.60	180.50	8,462.94	-3,790.79	-56.61	3,791.17	0.96	0.96	0.00	
12,492.00	92.20	180.90	8,458.24	-3,883.66	-57.74	3,884.04	1.57	-1.51	0.43	
12,586.00	92.30	180.30	8,454.55	-3,977.58	-58.73	3,977.97	0.65	0.11	-0.64	
12,679.00	91.00	181.00	8,451.87	-4,070.53	-59.78	4,070.92	1.59	-1.40	0.75	
12,772.00	90.50	180.30	8,450.65	-4,163.52	-60.84	4,163.91	0.92	-0.54	-0.75	
12,865.00	90.70	180.00	8,449.68	-4,256.51	-61.08	4,256.89	0.39	0.22	-0.32	
12,959.00	91.30	180.80	8,448.04	-4,350.49	-61.74	4,350.87	1.06	0.64	0.85	
13,053.00	91.20	181.00	8,445.99	-4,444.46	-63.21	4,444.85	0.24	-0.11	0.21	
13,146.00	91.50	181.70	8,443.80	-4,537.41	-65.40	4,537.82	0.82	0.32	0.75	
Final Phoenix MWD Survey										
13,195.00	91.50	181.20	8,442.51	-4,586.37	-66.64	4,586.80	1.02	0.00	-1.02	
13,251.00	91.50	181.20	8,441.05	-4,642.34	-67.82	4,642.78	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)	
1,003.00	1,002.80	9.49	0.88	First Phoenix Survey
13,146.00	8,443.80	-4,537.41	-65.40	Final Phoenix MWD Survey
13,251.00	8,441.05	-4,642.34	-67.82	Projection to TD



Phoenix Technology Services
Survey Report



Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #1 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 10)	Database:	Compass 5000 GCR DB

Checked By:	_____	Approved By:	_____	Date:	_____
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PHOENIX
TECHNOLOGY SERVICES

July 28, 2014

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711

Attention: Ms. Diane Crum

Re: RKI Exploration and Production
RDX Federal Com 17-20H (WB2)
Eddy County, NM
API #30-015-41318
Job No. 1410739

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	
Jeff Thomas	20H	3,650	12,880	06/05/14	06/28/14	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,

Dana Robinson

Dana Robinson
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 2254

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1410739

OPERATOR

RKI Exploration

WELL NAME

RDX Federal Com-17-20H (WB2)

COUNTY & STATE

EDDY/New Mexico

API WELL NUMBER

30-015-41381

PROPOSED DIRECTION

175.47

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
3,542 ft	3,521.10 ft	4.0	334.7	274.24 ft	105.97 ft	Side Track

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
5-Jun-14	3,650 ft	5.6	51.3

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
28-Jun-14	12,880 ft	92.00	177.70

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
28-Jun-14	12,935 ft	92.00	177.70

Jeffrey Thomas

PRINT YOUR NAME ABOVE

Jeffrey Thomas

SIGN YOUR NAME ABOVE

28-Jun-14

TODAY'S DATE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	DECLINATION
7.37	
DECLINATION OR GRID	DECLINATION

MWD SUPERVISOR 1

Jeff Thomas

DIRECTIONAL DRILLER 1

John Schlottman

MWD SUPERVISOR 2

Shawn Ramnarine

DIRECTIONAL DRILLER 2

Lee Scoggins

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



PHOENIX
TECHNOLOGY SERVICES

RKI Exploration

Eddy County, New Mexico (NAD 83)

RDX Federal Com 17

20H

WB #2 Job #1410739

Survey: Phoenix MWD Surveys

Standard Survey Report

29 June, 2014





Phoenix Technology Services

Survey Report



Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #2 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	WB #2 Job #1410739	Database:	Compass 5000 GCR DB

Project	Eddy County, New Mexico (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	RDX Federal Com 17		
Site Position:	Map	Northing:	381,822.10 usft
From:		Easting:	676,389.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 56.25408 N
		Longitude:	103° 53' 50.76837 W
		Grid Convergence:	0.23 °

Well	20H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 2' 56.25408 N
		Longitude:	103° 53' 50.76837 W
		Ground Level:	3,081.00 usft

Wellbore	WB #2 Job #1410739		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	2014/05/30	7.36
			Dip Angle
			(°)
			59.90
			Field Strength
			(nT)
			48,183

Design	WB #2 Job #1410739		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	3,542.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			175.47

Survey Program	Date 2014/06/29		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	900.00	Gyro Surveys (WB #1 Job #1410739)	NS-GYRO-MS
1,003.00	3,542.00	Phoenix MWD Surveys (WB #1 Job #1410)	MWD
3,650.00	12,935.00	Phoenix MWD Surveys (WB #2 Job #1410)	PHX+MWD+IGRF
			Description
			North sensing gyrocompassing m/s
			MWD - Standard
			PHX+MWD+IGRF v3:standard declination

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
3,542.00	4.00	334.70	3,521.10	274.24	-105.97	-281.75	0.00	0.00	0.00	
3,650.00	5.60	51.30	3,628.81	280.95	-103.47	-288.24	5.63	1.48	70.93	
First WB2 Survey										
3,742.00	5.50	67.80	3,720.38	285.42	-95.88	-292.10	1.73	-0.11	17.93	
3,838.00	9.10	83.70	3,815.60	287.99	-84.07	-293.73	4.27	3.75	16.56	
3,933.00	10.40	87.90	3,909.23	289.13	-68.03	-293.60	1.56	1.37	4.42	
4,029.00	9.80	89.00	4,003.74	289.59	-51.21	-292.73	0.66	-0.63	1.15	
4,125.00	9.10	87.20	4,098.43	290.10	-35.45	-292.00	0.79	-0.73	-1.88	
4,219.00	9.40	87.10	4,191.21	290.86	-20.36	-291.56	0.32	0.32	-0.11	

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #2 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	WB #2 Job #1410739	Database:	Compass 5000 GCR DB

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)
4,314.00	9.10	86.50	4,284.98	291.71	-5.12	-291.20	0.33	-0.32	-0.63
4,408.00	9.70	91.70	4,377.72	291.93	10.22	-290.21	1.11	0.64	5.53
4,502.00	8.70	92.40	4,470.50	291.39	25.24	-288.49	1.07	-1.06	0.74
4,598.00	9.60	86.90	4,565.28	291.52	40.49	-287.41	1.31	0.94	-5.73
4,694.00	9.10	86.60	4,660.01	292.41	56.06	-287.06	0.52	-0.52	-0.31
4,790.00	9.50	96.90	4,754.75	291.90	71.50	-285.34	1.78	0.42	10.73
4,885.00	9.90	98.20	4,848.39	289.80	87.37	-281.99	0.48	0.42	1.37
4,980.00	9.40	98.70	4,942.05	287.46	103.12	-278.42	0.53	-0.53	0.53
5,075.00	9.30	91.40	5,035.79	286.10	118.46	-275.85	1.25	-0.11	-7.68
5,170.00	8.60	89.90	5,129.63	285.92	133.24	-274.51	0.78	-0.74	-1.58
5,265.00	8.00	92.30	5,223.64	285.67	146.95	-273.17	0.73	-0.63	2.53
5,358.00	8.00	92.40	5,315.73	285.14	159.88	-271.62	0.01	0.00	0.11
5,454.00	9.80	89.00	5,410.58	285.00	174.72	-270.31	1.95	1.88	-3.54
5,549.00	9.40	88.60	5,504.24	285.33	190.56	-269.39	0.43	-0.42	-0.42
5,643.00	8.90	87.20	5,597.05	285.88	205.50	-268.75	0.58	-0.53	-1.49
5,737.00	9.10	88.80	5,689.89	286.39	220.20	-268.10	0.34	0.21	1.70
5,831.00	8.40	89.30	5,782.80	286.63	234.49	-267.21	0.75	-0.74	0.53
5,927.00	8.20	90.10	5,877.79	286.70	248.35	-266.19	0.24	-0.21	0.83
6,022.00	7.80	89.50	5,971.87	286.74	261.57	-265.19	0.43	-0.42	-0.63
6,147.00	7.30	86.50	6,095.78	287.30	277.98	-264.45	0.51	-0.40	-2.40
6,243.00	6.60	98.80	6,191.08	286.83	289.52	-263.07	1.71	-0.73	12.81
6,338.00	6.60	101.10	6,285.45	284.94	300.27	-260.34	0.28	0.00	2.42
6,432.00	6.20	100.00	6,378.87	283.02	310.57	-257.61	0.45	-0.43	-1.17
6,526.00	6.30	106.20	6,472.31	280.70	320.53	-254.51	0.73	0.11	6.60
6,621.00	5.90	101.30	6,566.77	278.29	330.32	-251.33	0.69	-0.42	-5.16
6,715.00	6.20	103.90	6,660.25	276.13	339.98	-248.41	0.43	0.32	2.77
6,811.00	5.50	105.70	6,755.75	273.64	349.45	-245.18	0.75	-0.73	1.88
6,904.00	4.30	105.10	6,848.41	271.52	357.10	-242.47	1.29	-1.29	-0.65
7,000.00	1.80	104.30	6,944.26	270.21	362.04	-240.77	2.60	-2.60	-0.83
7,099.00	0.60	159.20	7,043.24	269.34	363.73	-239.77	1.55	-1.21	55.45
7,192.00	0.80	181.80	7,136.23	268.24	363.88	-238.66	0.36	0.22	24.30
7,285.00	0.90	164.30	7,229.22	266.89	364.06	-237.30	0.30	0.11	-18.82
7,379.00	0.90	218.70	7,323.21	265.60	363.80	-236.04	0.88	0.00	57.87
7,473.00	1.00	210.30	7,417.20	264.32	362.92	-234.83	0.18	0.11	-8.94
7,565.00	0.70	208.30	7,509.19	263.13	362.25	-233.69	0.33	-0.33	-2.17
7,659.00	0.70	205.80	7,603.18	262.10	361.73	-232.72	0.03	0.00	-2.66
7,723.00	0.70	179.40	7,667.18	261.36	361.56	-231.99	0.50	0.00	-41.25
7,802.00	0.80	200.90	7,746.17	260.36	361.37	-231.01	0.38	0.13	27.22
7,865.00	1.00	220.20	7,809.17	259.53	360.86	-230.22	0.57	0.32	30.63
7,897.00	0.70	233.20	7,841.16	259.20	360.52	-229.92	1.11	-0.94	40.63
7,928.00	5.00	184.60	7,872.12	257.74	360.26	-228.48	14.73	13.87	-156.77
7,960.00	7.20	189.70	7,903.94	254.38	359.81	-225.16	7.07	6.88	15.94
7,991.00	6.50	200.30	7,934.71	250.81	358.88	-221.69	4.65	-2.26	34.19

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #2 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	WB #2 Job #1410739	Database:	Compass 5000 GCR DB

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)
8,023.00	5.20	205.60	7,966.55	247.81	357.62	-218.79	4.40	-4.06	16.56
8,054.00	7.50	188.40	7,997.36	244.54	356.72	-215.60	9.55	7.42	-55.48
8,086.00	11.30	188.80	8,028.92	239.37	355.93	-210.51	11.88	11.88	1.25
8,117.00	17.60	186.10	8,058.93	231.70	354.97	-202.94	20.43	20.32	-8.71
8,149.00	22.90	177.30	8,088.95	220.66	354.75	-191.96	19.06	16.56	-27.50
8,180.00	26.20	171.80	8,117.14	207.86	356.01	-179.09	12.94	10.65	-17.74
8,212.00	27.80	170.80	8,145.65	193.50	358.21	-164.60	5.20	5.00	-3.13
8,244.00	31.80	170.60	8,173.42	177.81	360.78	-148.76	12.50	12.50	-0.63
8,275.00	34.50	173.80	8,199.37	161.02	363.06	-131.84	10.38	8.71	10.32
8,307.00	37.30	174.30	8,225.29	142.36	365.01	-113.09	8.80	8.75	1.56
8,338.00	40.10	176.50	8,249.48	123.04	366.55	-93.71	10.06	9.03	7.10
8,370.00	45.50	178.10	8,272.95	101.33	367.56	-71.99	17.21	16.88	5.00
8,401.00	48.40	178.10	8,294.11	78.69	368.31	-49.36	9.35	9.35	0.00
8,433.00	47.40	178.10	8,315.57	54.96	369.10	-25.64	3.13	-3.13	0.00
8,464.00	46.80	177.40	8,336.67	32.27	369.99	-2.95	2.55	-1.94	-2.26
8,496.00	47.00	177.20	8,358.53	8.93	371.09	20.40	0.77	0.63	-0.63
8,527.00	50.50	176.60	8,378.97	-14.33	372.35	43.70	11.38	11.29	-1.94
8,559.00	53.30	177.80	8,398.71	-39.48	373.58	68.87	9.23	8.75	3.75
8,590.00	56.90	179.60	8,416.45	-64.90	374.14	94.24	12.55	11.61	5.81
8,622.00	60.70	180.20	8,433.02	-92.26	374.19	121.53	11.98	11.88	1.88
8,653.00	63.50	181.60	8,447.53	-119.65	373.75	148.80	9.87	9.03	4.52
8,690.00	66.40	180.20	8,463.19	-153.16	373.23	182.16	8.55	7.84	-3.78
8,722.00	67.90	180.20	8,475.62	-182.65	373.13	211.55	4.69	4.69	0.00
8,753.00	70.10	179.50	8,486.73	-211.59	373.21	240.41	7.40	7.10	-2.26
8,785.00	71.80	179.20	8,497.17	-241.83	373.55	270.58	5.39	5.31	-0.94
8,816.00	73.20	179.60	8,506.49	-271.40	373.86	300.08	4.68	4.52	1.29
8,848.00	76.50	179.30	8,514.86	-302.28	374.16	330.89	10.35	10.31	-0.94
8,879.00	79.10	178.10	8,521.41	-332.57	374.84	361.13	9.20	8.39	-3.87
8,911.00	80.60	177.80	8,527.05	-364.05	375.97	392.60	4.78	4.69	-0.94
8,942.00	83.40	177.40	8,531.36	-394.71	377.26	423.28	9.12	9.03	-1.29
8,974.00	86.70	177.80	8,534.12	-426.56	378.59	455.13	10.39	10.31	1.25
9,006.00	89.90	179.10	8,535.07	-458.53	379.46	487.07	10.79	10.00	4.06
9,037.00	92.20	179.50	8,534.50	-489.52	379.84	517.99	7.53	7.42	1.29
9,069.00	91.00	179.50	8,533.61	-521.51	380.11	549.90	3.75	-3.75	0.00
9,163.00	92.50	181.00	8,530.74	-615.46	379.71	643.52	2.26	1.60	1.60
9,258.00	92.70	180.40	8,526.43	-710.35	378.55	738.03	0.67	0.21	-0.63
9,353.00	91.10	177.80	8,523.28	-805.28	380.04	832.78	3.21	-1.68	-2.74
9,447.00	91.90	180.30	8,520.82	-899.22	381.60	926.55	2.79	0.85	2.66
9,542.00	91.90	180.60	8,517.67	-994.17	380.85	1,021.14	0.32	0.00	0.32
9,637.00	91.80	181.00	8,514.60	-1,089.11	379.52	1,115.68	0.43	-0.11	0.42
9,732.00	91.50	180.60	8,511.86	-1,184.06	378.20	1,210.23	0.53	-0.32	-0.42
9,827.00	90.90	179.50	8,509.87	-1,279.04	378.12	1,304.91	1.32	-0.63	-1.16
9,921.00	93.40	181.70	8,506.35	-1,372.95	377.13	1,398.45	3.54	2.66	2.34
10,016.00	94.50	181.90	8,499.80	-1,467.68	374.16	1,492.65	1.18	1.16	0.21

Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #2 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	WB #2 Job #1410739	Database:	Compass 5000 GCR DB

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)
10,111.00	92.10	182.30	8,494.34	-1,562.45	370.68	1,586.85	2.56	-2.53	0.42
10,204.00	92.00	181.70	8,491.01	-1,655.33	367.44	1,679.18	0.65	-0.11	-0.65
10,267.00	90.70	181.40	8,489.52	-1,718.29	365.73	1,741.81	2.12	-2.06	-0.48
10,362.00	90.00	181.40	8,488.94	-1,813.26	363.41	1,836.30	0.74	-0.74	0.00
10,457.00	90.20	181.10	8,488.78	-1,908.24	361.34	1,930.82	0.38	0.21	-0.32
10,551.00	90.70	181.40	8,488.04	-2,002.21	359.29	2,024.34	0.62	0.53	0.32
10,646.00	90.00	180.50	8,487.46	-2,097.20	357.72	2,118.90	1.20	-0.74	-0.95
10,741.00	89.70	180.10	8,487.71	-2,192.20	357.22	2,213.56	0.53	-0.32	-0.42
10,835.00	89.90	180.30	8,488.04	-2,286.19	356.89	2,307.24	0.30	0.21	0.21
10,930.00	89.60	180.80	8,488.45	-2,381.19	355.98	2,401.87	0.61	-0.32	0.53
11,025.00	91.10	182.30	8,487.87	-2,476.15	353.41	2,496.32	2.23	1.58	1.58
11,120.00	91.40	183.10	8,485.80	-2,571.02	348.94	2,590.54	0.90	0.32	0.84
11,215.00	90.40	182.70	8,484.31	-2,665.88	344.13	2,684.73	1.13	-1.05	-0.42
11,309.00	89.90	180.60	8,484.06	-2,759.84	341.42	2,778.18	2.30	-0.53	-2.23
11,404.00	88.90	179.70	8,485.05	-2,854.83	341.17	2,872.86	1.42	-1.05	-0.95
11,499.00	88.50	180.60	8,487.21	-2,949.80	340.93	2,967.52	1.04	-0.42	0.95
11,594.00	91.10	179.90	8,487.54	-3,044.79	340.51	3,062.18	2.83	2.74	-0.74
11,688.00	91.70	179.10	8,485.25	-3,138.76	341.33	3,155.91	1.06	0.64	-0.85
11,783.00	90.80	178.80	8,483.17	-3,233.72	343.07	3,250.72	1.00	-0.95	-0.32
11,878.00	90.00	179.40	8,482.51	-3,328.71	344.56	3,345.52	1.05	-0.84	0.63
11,972.00	91.60	177.80	8,481.20	-3,422.66	346.86	3,439.37	2.41	1.70	-1.70
12,067.00	89.80	177.20	8,480.04	-3,517.56	351.00	3,534.30	2.00	-1.89	-0.63
12,162.00	89.90	175.90	8,480.29	-3,612.39	356.72	3,629.28	1.37	0.11	-1.37
12,256.00	91.90	178.10	8,478.81	-3,706.24	361.64	3,723.22	3.16	2.13	2.34
12,351.00	92.50	179.20	8,475.16	-3,801.14	363.88	3,818.00	1.32	0.63	1.16
12,446.00	91.40	179.30	8,471.93	-3,896.07	365.12	3,912.74	1.16	-1.16	0.11
12,541.00	90.00	178.10	8,470.77	-3,991.04	367.27	4,007.58	1.94	-1.47	-1.26
12,636.00	91.50	178.20	8,469.53	-4,085.98	370.34	4,102.46	1.58	1.58	0.11
12,730.00	91.60	177.40	8,466.98	-4,179.87	373.95	4,196.35	0.86	0.11	-0.85
12,825.00	91.80	177.40	8,464.16	-4,274.73	378.25	4,291.25	0.21	0.21	0.00
12,880.00	92.00	177.70	8,462.34	-4,329.65	380.60	4,346.19	0.66	0.36	0.55
Final Phoenix MWD Survey									
12,935.00	92.00	177.70	8,460.42	-4,384.57	382.81	4,401.11	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)	
3,650.00	3,628.81	280.95	-103.47	First WB2 Survey
12,880.00	8,462.34	-4,329.65	380.60	Final Phoenix MWD Survey
12,935.00	8,460.42	-4,384.57	382.81	Projection to TD



Phoenix Technology Services
Survey Report



Company:	RKI Exploration	Local Co-ordinate Reference:	Well 20H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Site:	RDX Federal Com 17	MD Reference:	WELL @ 3098.00usft (Silver Oak 10)
Well:	20H	North Reference:	Grid
Wellbore:	WB #2 Job #1410739	Survey Calculation Method:	Minimum Curvature
Design:	WB #2 Job #1410739	Database:	Compass 5000 GCR DB

Checked By: _____ Approved By: _____ Date: _____