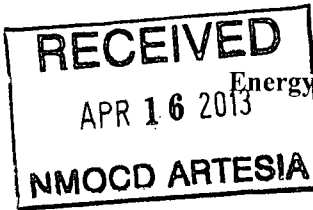


**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

**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 and Natural Resources  
Oil Conservation Division  
2220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-101  
Revised November 14, 2012

AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address RKI Exploration & Production, LLC 210 Park Avenue, Suite 900 Oklahoma City, OK 73102		<sup>2</sup> OGRID Number 246289
<sup>4</sup> Property Code 36900	<sup>3</sup> Property Name RDX 16	<sup>5</sup> API Number 30-015-41275
		<sup>6</sup> Well No. 17H

**7. Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
D	16	26S	30E		250	NORTH	675	WEST	EDDY

**8. Proposed Bottom Hole Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	16	26S	30E		330	SOUTH	395	WEST	EDDY

**9. Pool Information**

<sup>9</sup> Pool Name WILDCAT G-03 S263016K;BONE SPRING	<sup>10</sup> Pool Code 97863
---	----------------------------------

**Additional Well Information**

<sup>11</sup> Work Type N	<sup>12</sup> Well Type O	<sup>13</sup> Cable/Rotary R	<sup>14</sup> Lease Type S	<sup>15</sup> Ground Level Elevation 3,088 FEET
<sup>16</sup> Multiple No	<sup>17</sup> Proposed Depth 12,212 feet	<sup>18</sup> Formation Bone Spring	<sup>19</sup> Contractor	<sup>20</sup> Spud Date ASAP
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	17-1/2 in.	13-3/8 in.	54.5#/ft	850 feet	553	surface
Intermediate	12-1/2 in.	9-5/8 in.	40#/ft	3,480 feet	828	surface
Production	8-3/4 in.	5-1/2 in.	17#/ft	12,212 feet	941	3,180 feet

**Casing/Cement Program: Additional Comments**

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
REFER TO ATTACHED DRILLING PLAN	3,000 PSI	3,000 PSI	

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> , if applicable. Signature: <i>Charles K. Ahn</i> Printed name: Charles K. Ahn Title: EH&S/Regulatory Manager E-mail Address: cahn@rkixp.com Date: 4/15/2013 Phone: 405-996-5771	OIL CONSERVATION DIVISION	
	Approved By: <i>T. L. [Signature]</i>	
	Title: <i>Geologist</i>	
	Approved Date: <i>4/16/2013</i>	Expiration Date: <i>4/16/2015</i>
	Conditions of Approval Attached	

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 Huerfano 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

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office  
 AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-41275</b>	Pool Code <b>97863</b>	Pool Name WILDCAT G-03 S263016K;BONE SPRING
Property Code <b>36900</b>	Property Name RDX 16	Well Number 17H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION	Elevation 3088.0'

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	16	26 S	30 E		250	NORTH	675	WEST	EDDY

Bottom Hole Location If Different From Surface

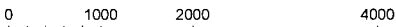
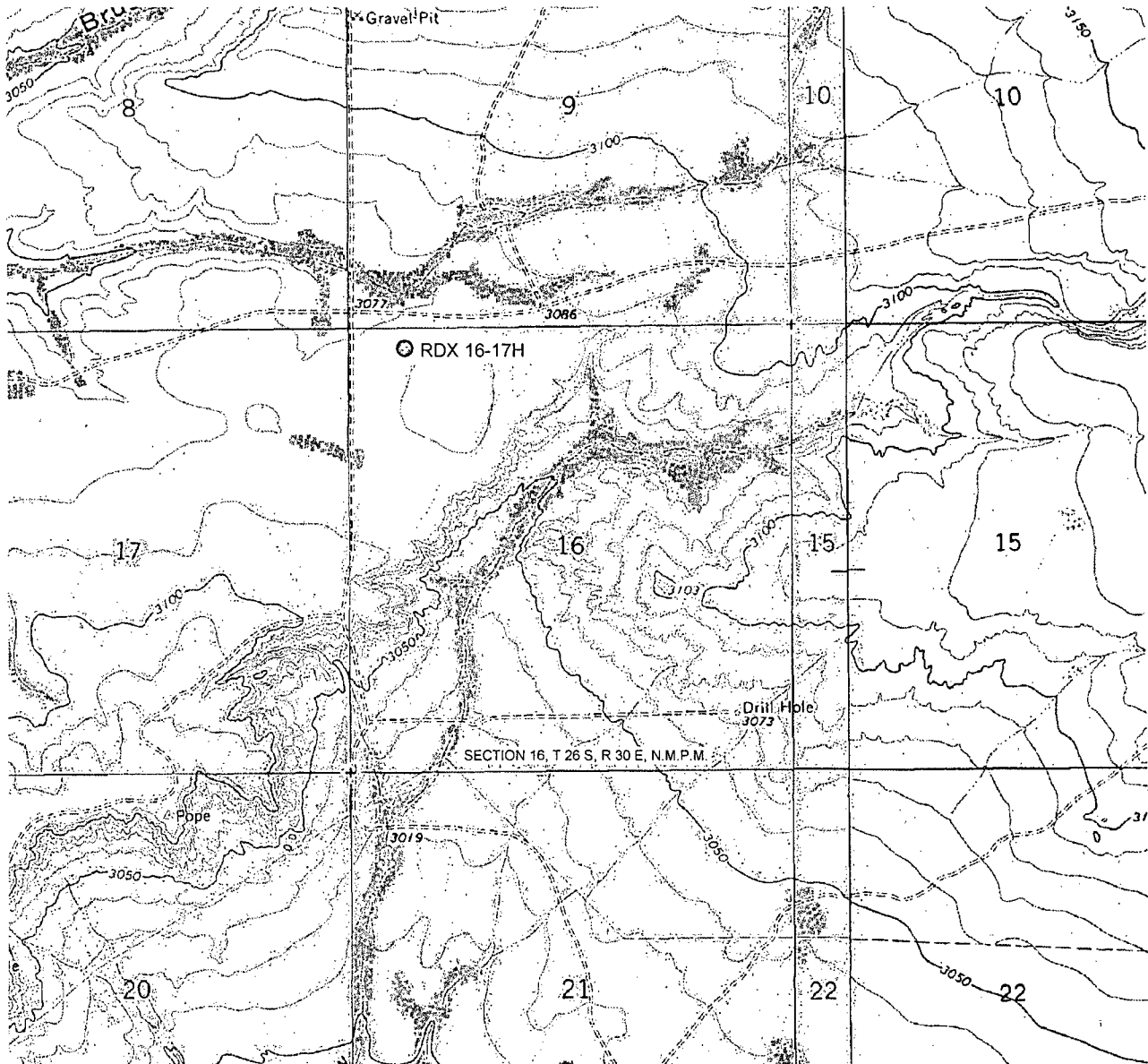
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	26 S	30 E		330	SOUTH	395	WEST	EDDY

Dedicated Acres <b>160</b>	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.

<p>675' 250'</p> <p>RDX 16-17H SHL ELEV. = 3088.0' NMSP-E (NAD 83) Y = 381912.3' N X = 677854.1' E LAT. = N32° 02' 57.09" LONG. = W103° 53' 33.74"</p> <p>S 03° 16' 23" W - 4746.6'</p> <p>395' 330'</p> <p>RDX 16-17H BHL NMSP-E (NAD 83) Y = 377173.4' N X = 677583.0' E LAT. = N32° 02' 10.20" LONG. = W103° 53' 37.12"</p>	<p>NW COR SEC 16 NMSP-E (NAD 83) Y = 382158.2' N X = 677178.6' E LAT. = N32° 02' 59.55" LONG. = W103° 53' 41.58"</p>	<p>NE COR SEC 16 NMSP-E (NAD 83) Y = 382192.9' N X = 682512.0' E LAT. = N32° 02' 59.67" LONG. = W103° 52' 39.61"</p>	<p><b>OPERATOR CERTIFICATION</b> 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.</p> <p><i>Charles K. Ahn</i> 4/12/13 Signature Date</p> <p>Charles K. Ahn Print Name</p> <p>cahn@rkixp.com E-mail Address</p>	
				<p><b>SURVEYORS CERTIFICATION</b> 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.</p> <p>Nov. 1, 2012 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p>
		<p>SW COR SEC 16 NMSP-E (NAD 83) Y = 376840.9' N X = 677188.7' E LAT. = N32° 02' 06.93" LONG. = W103° 53' 41.72"</p>	<p>SE COR SEC 16 NMSP-E (NAD 83) Y = 376876.3' N X = 682519.0' E LAT. = N32° 02' 07.06" LONG. = W103° 52' 39.79"</p>	<p><b>JAMES E. TOMPKINS</b> REGISTERED PROFESSIONAL SURVEYOR NEW MEXICO 14729</p> <p><i>James E. Tompkins</i></p> <p>Job No.: WTC48731 JAMES E. TOMPKINS 14729 Certificate Number</p>

# LOCATION VERIFICATION MAP



GRAPHIC SCALE 1" = 2000'

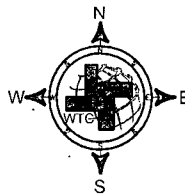
SECTION 16, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 250' FNL & 675' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-17H



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is ±692 feet east.

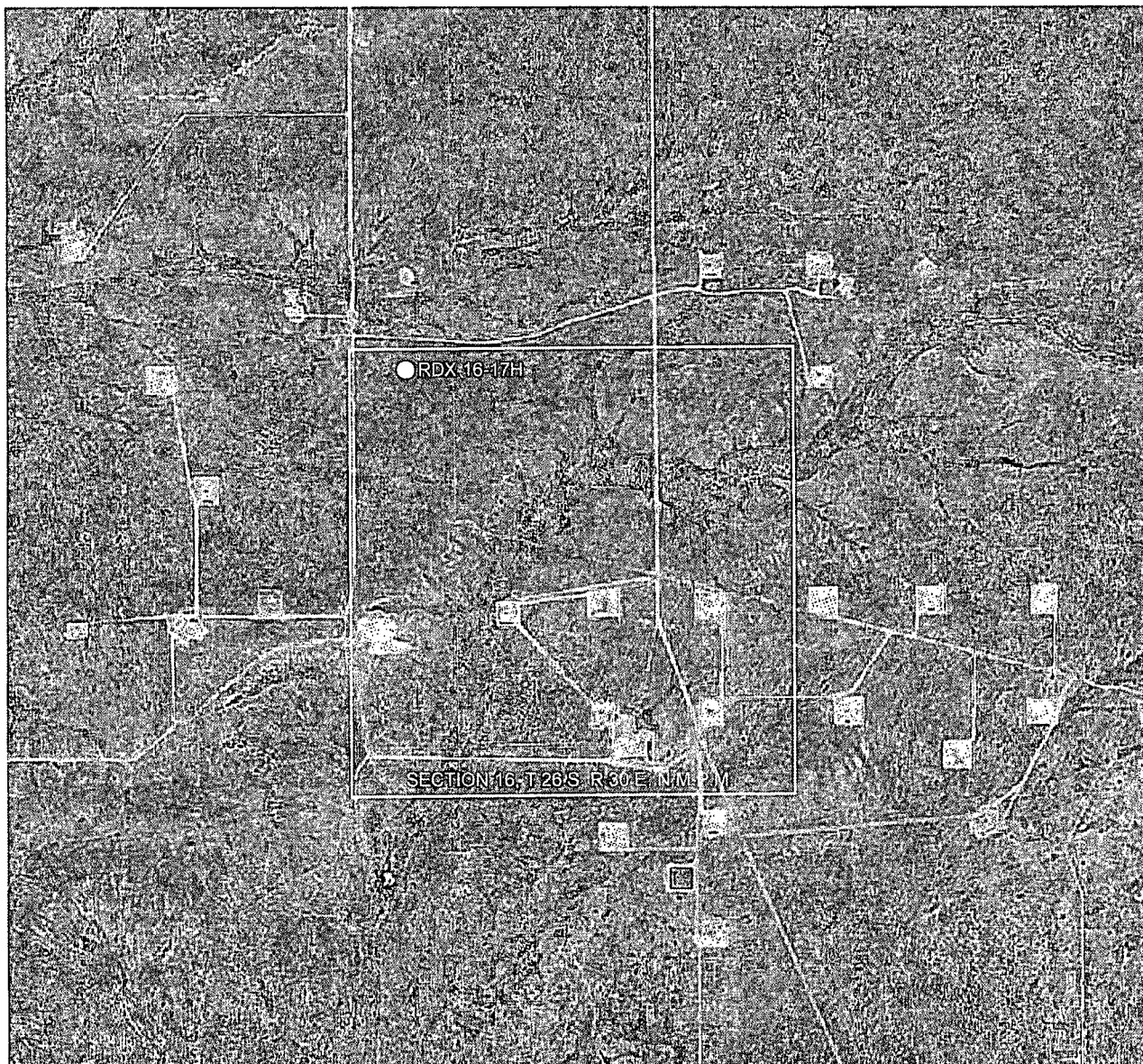


**WEST TEXAS CONSULTANTS, INC.**  
 ENGINEERS PLANNERS SURVEYORS  
 405 S.W. 1st. STREET  
 ANDREWS, TEXAS 79714  
 (432) 523-2181

**RKI EXPLORATION & PRODUCTION**

JOB No.: WTC48731

# AERIAL MAP



0 1000 2000 4000

GRAPHIC SCALE 1" = 2000'

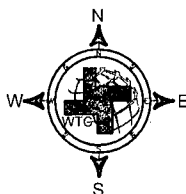
SECTION 16, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 250' FNL & 675' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-17H



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is  $\pm 692$  feet east.

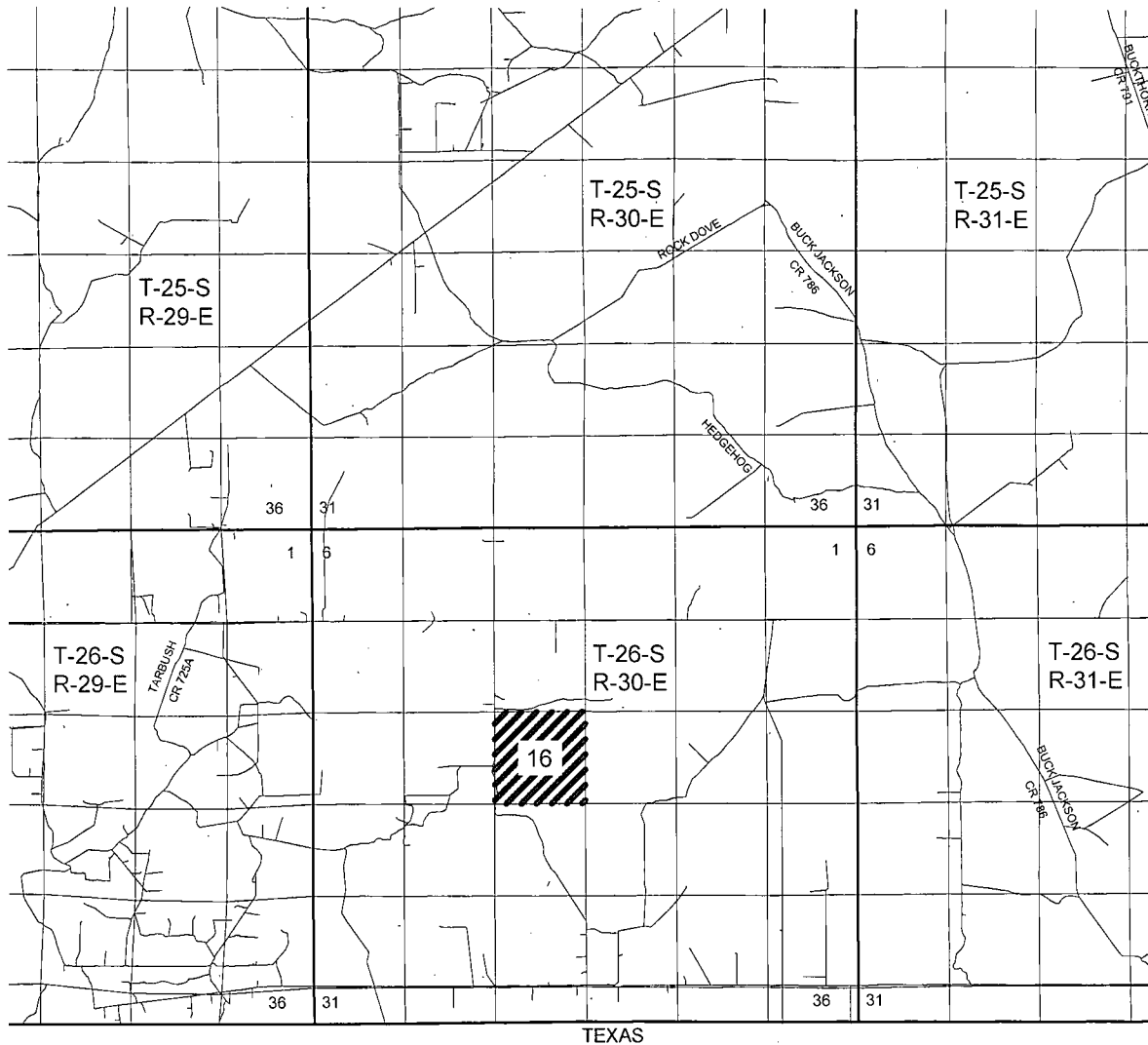


**WEST TEXAS CONSULTANTS, INC.**  
 ENGINEERS PLANNERS SURVEYORS  
 405 S.W. 1st. STREET  
 ANDREWS, TEXAS 79714  
 (432) 523-2181

**RKI EXPLORATION & PRODUCTION**

JOB No.: WTC48731

# VICINITY MAP



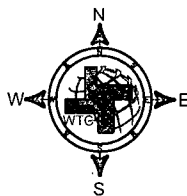
SECTION 16, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 250' FNL & 675' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-17H



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is ±692 feet east.



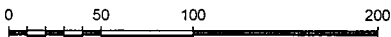
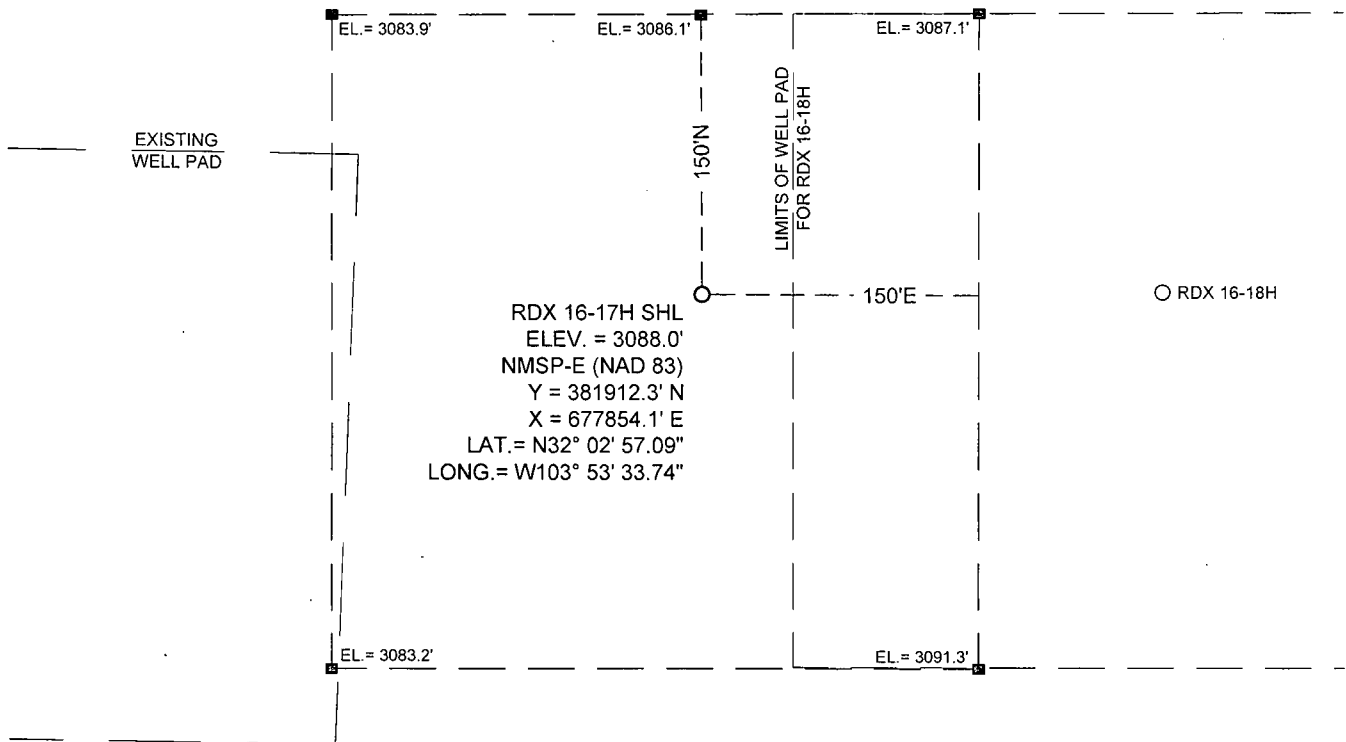
**WEST TEXAS CONSULTANTS, INC.**  
ENGINEERS PLANNERS SURVEYORS  
405 S.W. 1st. STREET  
ANDREWS, TEXAS 79714  
(432) 523-2181

**RKI EXPLORATION & PRODUCTION**

JOB No.: WTC48731

# SITE LOCATION

S9, T22S, R28E  
S16, T22S, R28E



GRAPHIC SCALE 1" = 100'

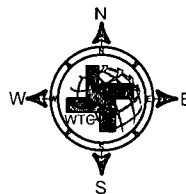
SECTION 16.T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 250' FNL & 675' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-17H



DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is ±692 feet east.



WEST TEXAS CONSULTANTS, INC.  
ENGINEERS PLANNERS SURVEYORS  
405 S.W. 1st. STREET  
ANDREWS, TEXAS 79714  
(432) 523-2181

RKI EXPLORATION & PRODUCTION

JOB No.: WTC48731

RKI Exploration & Production, LLC

Well RDX 16-17H  
 Location Surface: 250 FNL 675 FWL 16-26S-30E  
 Bottom Hole: 330 FSL 395 FWL 16-26S-30E  
 County Eddy  
 State New Mexico

- 1) The elevation for the unprepared ground is 3,088 feet above sea level.
- 2) The geologic name of the surface formation is Quaternary - Alluvium.
- 3) A rotary rig will be utilized to drill the well to 12,212 feet and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
- 4) Proposed depth is 12,212 feet

5) Estimated tops:

	MD	TVD		
Rustler	800			
Salado	1,100			
Castile	1,650			
Lamar Lime	3,467			
Base of Lime	3,492			
Delaware Top	3,517			
Bell Canyon Sand	3,517		Oil	BHP = .44 psi/ft x depth 1,547 psi
Cherry Canyon Sand	4,611		Oil	2,029 psi
Brushy Canyon Sand	5,678		Oil	2,498 psi
KOP	7,139	7,139	Oil	3,141 psi
Bone Spring Lime	7,362	7,357	Oil	3,239 psi
Landing Point (Avalon Shale)	8,039	7,712	Oil	3,393 psi
TD	12,212	7,712		3,393 psi

6) Casing program:

Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection Connection	Collapse Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0	850	13 3/8"	54.5#/J-55	ST&C	3.02	14.60	11.10
12 1/2"	0	3,480	9 5/8"	40#/J-55	LT&C	1.32	5.16	3.74
8 3/4"	0	12,212	5 1/2"	17#/HCP-110	LT&C	1.60	1.55	5.81
Collapse		1.125						
Burst		1.0						
Tension		2.0						

7) Cement program:

**Surface** 17 1/2" hole  
 Pipe OD 13 3/8"  
 Setting Depth 850 ft  
 Annular Volume 0.69462 cf/ft  
 Excess 0.5 50 %

Lead 353 sx 1.75 cf/sk 13.5 ppg  
 Tail 200 sx 1.34 cf/sk 14.8 ppg

Lead: "C" + 4% PF20 + 2% PF1 + .125 pps PF29 + .2% PF46

Tail: "C" + 1% PF1

Top of cement: Surface

**Intermediate** 12 1/2" hole  
 Pipe OD 9 5/8"  
 Setting Depth 3,480 ft  
 Annular Volume 0.31318 cf/ft 0.3627 cf/ft  
 Excess 0.5 50 %

Lead 628 sx 2.07 cf/sk 12.6 ppg  
 Tail 200 sx 1.33 cf/sk 14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + 3 pps PF42 + .125 pps PF29 + .2% PF46 + 1% PF1

Tail: "C" + .2% PF13

Top of cement: Surface

**Production** 8 3/4" hole  
 Pipe OD 5 1/2"  
 Setting Depth 12,212 ft  
 Annular Volume 0.2526 cf/ft 0.26074 cf/ft 300 ft  
 Excess 0.25 25 %  
 DV Tool Depth 5500 ft

Stage 1

Lead: 419 sx 2.08 cf/sk 11.5 ppg  
 Tail: 101 sx 1.8 cf/sk 13.0 ppg

Lead: PVL + .5% CC + .3% PF79 (extender) + .25 pps PF46 (defoamer) + 3 pps PF42 (Kolite) + .125 pps + .125 pps PF29 (Cellophane) + .2% PF13 (retarder)

Tail: PVL + 30% PF151 (calcium carbonate) + .5% PF174 (expanding agent) + .7% PF606 + .7% PF606 (gel suppressing agent) + .2% PF153 (antissettling agent) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)

Top of cement: DV tool

Stage 2

Lead: 246 sx 2.04 cf/sk 12.6 ppg  
 Tail: 175 sx 1.33 cf/sk 14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 (salt) + 6% PF20 (gel) + .125 pps PF29 (cellophane) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)

Tail: "C" + .2% PF13 (retarder)

Top of cement: 3,180 ft



8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (3,000 psi WP) preventer, a bag-type annular preventer (3,000 psi WP), and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" 3M casing head will be installed on the 13 3/8" casing and utilized until total depth is reached. All BOP and associated equipment will be tested to 3,000 psi and the annular will be tested to 1,500 psi after setting each casing string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1,500 psi whichever is greater, but not to exceed 70% of the minimum yield.

Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole. These function test will be documented on the daily driller's log.

A drilling spool or blowout preventer with 2 side outlets (choke side shall be 3" minimum diameter, kill side shall be at least 2" diameter).

2 kill line valves, one of which will be a check valve.

2 chokes on the manifold along with a pressure gauge.

Upper kelly cock valve with handle available.

Safety valve and subs to fit all drill string connections in use.

All BOP equipment connections subjected to pressure will be flanged, welded, or clamped.

Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	Fluid Loss	Type System	
	0	850	8.5 to 8.9	32 to 36	NC	Fresh Water
	850	3,480	9.8 to 10.0	28 to 30	NC	Brine
	3,480	12,212	8.9 to 9.1	28 to 36	NC	Fresh Water

10) Logging, coring, and testing program:

No drill stem test are planned

Total depth to intermediate: CNL, Caliper, GR, DLL,

Intermediate to surface: CNL, GR

No coring is planned

11) Potential hazards:

No abnormal pressures or temperatures are expected. There is no known presences of H2S in this area, although some form of H2S detection equipment will be utilized. Gas and pit level monitoring equipment will be utilized below the 9 5/8" casing as deemed necessary. Lost circulation and weighting material will be available.

12) Anticipated start date

ASAP

Duration

25 days

# **RKI Exploration & Production**

**Eddy County (NM83E)**

**Sec 16-T26S-R30E**

**RDX 16-17H**

**Wellbore #1**

**Plan: Prelim Plan**

## **Standard Planning Report**

**05 April, 2013**

# Wolverine Directional, LLC

## Planning Report

<b>Database:</b>	EDM:2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well RDX 16-17H
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Eddy County (NM83E)	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Sec 16-T26S-R30E	<b>North Reference:</b>	True
<b>Well:</b>	RDX 16-17H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim Plan		

<b>Project:</b>	Eddy County (NM83E)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Sec 16-T26S-R30E				
<b>Site Position:</b>		<b>Northing:</b>	381,848.41ft	<b>Latitude:</b>	32° 2' 56.352 N
<b>From:</b>	Map	<b>Easting:</b>	680,403.16ft	<b>Longitude:</b>	103° 53' 4.129 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.24 °

<b>Well</b>	RDX 16:17H					
<b>Well Position</b>	<b>+N-S</b>	74.3 ft	<b>Northing:</b>	381,912.30 ft	<b>Latitude:</b>	32° 2' 57.088 N
	<b>+E-W</b>	-2,548.8 ft	<b>Easting:</b>	677,854.10 ft	<b>Longitude:</b>	103° 53' 33.744 W
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	0.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b> (°)	<b>Dip Angle</b> (°)	<b>Field Strength</b> (nT)
	IGRF2010	04/05/13	7.50	59.92	48,321

<b>Design</b>	Prelim Plan				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD)</b> (ft)	<b>+N-S</b> (ft)	<b>+E-W</b> (ft)	<b>Direction</b> (°)	
	0.0	0.0	0.0	183.51	

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,139.0	0.00	0.00	7,139.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,039.0	90.00	183.51	7,712.0	-571.9	-35.1	10.00	10.00	0.00	183.51	
12,212.7	90.00	183.51	7,712.0	-4,737.8	-290.4	0.00	0.00	0.00	0.00	RDX 16-17H PBHL

# Wolverine Directional, LLC

## Planning Report

<b>Database:</b>	EDM:2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well:RDX 16-17H
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Eddy County (NM83E)	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Sec 16-T26S-R30E	<b>North Reference:</b>	True
<b>Well:</b>	RDX 16-17H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (%/100ft)	Build Rate (%/100ft)	Turn Rate (%/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

# Wolverine Directional, LLC

## Planning Report

<b>Database:</b>	EDM:2003.21;Single>User:Db	<b>Local Co-ordinate Reference:</b>	Well RDX 16-17H
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Eddy County (NM83E)	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Sec 16-T26S-R30E	<b>North Reference:</b>	True
<b>Well:</b>	RDX 16-17H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim Plan		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,139.0	0.00	0.00	7,139.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>KOP - 10/100</b>										
7,150.0	1.10	183.51	7,150.0	-0.1	0.0	0.1	10.00	10.00	0.00	
7,200.0	6.10	183.51	7,199.9	-3.2	-0.2	3.2	10.00	10.00	0.00	
7,250.0	11.10	183.51	7,249.3	-10.7	-0.7	10.7	10.00	10.00	0.00	
7,300.0	16.10	183.51	7,297.9	-22.4	-1.4	22.5	10.00	10.00	0.00	
7,350.0	21.10	183.51	7,345.3	-38.3	-2.3	38.4	10.00	10.00	0.00	
7,400.0	26.10	183.51	7,391.1	-58.3	-3.6	58.4	10.00	10.00	0.00	
7,450.0	31.10	183.51	7,435.0	-82.2	-5.0	82.3	10.00	10.00	0.00	
7,500.0	36.10	183.51	7,476.6	-109.8	-6.7	110.0	10.00	10.00	0.00	
7,550.0	41.10	183.51	7,515.7	-140.9	-8.6	141.2	10.00	10.00	0.00	
7,600.0	46.10	183.51	7,551.9	-175.3	-10.7	175.6	10.00	10.00	0.00	
7,650.0	51.10	183.51	7,584.9	-212.7	-13.0	213.1	10.00	10.00	0.00	
7,700.0	56.10	183.51	7,614.6	-252.9	-15.5	253.4	10.00	10.00	0.00	
7,750.0	61.10	183.51	7,640.6	-295.5	-18.1	296.0	10.00	10.00	0.00	
7,800.0	66.10	183.51	7,662.9	-340.2	-20.9	340.8	10.00	10.00	0.00	
7,850.0	71.10	183.51	7,681.1	-386.6	-23.7	387.3	10.00	10.00	0.00	
7,900.0	76.10	183.51	7,695.2	-434.5	-26.6	435.3	10.00	10.00	0.00	
7,950.0	81.10	183.51	7,705.1	-483.4	-29.6	484.3	10.00	10.00	0.00	
8,000.0	86.10	183.51	7,710.7	-532.9	-32.7	533.9	10.00	10.00	0.00	
8,039.0	90.00	183.51	7,712.0	-571.9	-35.1	573.0	10.00	10.00	0.00	
<b>EOC - Hold to TD</b>										
8,100.0	90.00	183.51	7,712.0	-632.7	-38.8	633.9	0.00	0.00	0.00	
8,200.0	90.00	183.51	7,712.0	-732.5	-44.9	733.9	0.00	0.00	0.00	
8,300.0	90.00	183.51	7,712.0	-832.4	-51.0	833.9	0.00	0.00	0.00	
8,400.0	90.00	183.51	7,712.0	-932.2	-57.1	933.9	0.00	0.00	0.00	
8,500.0	90.00	183.51	7,712.0	-1,032.0	-63.3	1,033.9	0.00	0.00	0.00	
8,600.0	90.00	183.51	7,712.0	-1,131.8	-69.4	1,133.9	0.00	0.00	0.00	
8,700.0	90.00	183.51	7,712.0	-1,231.6	-75.5	1,233.9	0.00	0.00	0.00	
8,800.0	90.00	183.51	7,712.0	-1,331.4	-81.6	1,333.9	0.00	0.00	0.00	
8,900.0	90.00	183.51	7,712.0	-1,431.2	-87.7	1,433.9	0.00	0.00	0.00	
9,000.0	90.00	183.51	7,712.0	-1,531.0	-93.9	1,533.9	0.00	0.00	0.00	
9,100.0	90.00	183.51	7,712.0	-1,630.9	-100.0	1,633.9	0.00	0.00	0.00	
9,200.0	90.00	183.51	7,712.0	-1,730.7	-106.1	1,733.9	0.00	0.00	0.00	
9,300.0	90.00	183.51	7,712.0	-1,830.5	-112.2	1,833.9	0.00	0.00	0.00	

# Wolverine Directional, LLC

## Planning Report

<b>Database:</b>	EDM:2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well:RDX-16-17H
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Eddy County (NM83E)	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Sec 16-T26S-R30E	<b>North Reference:</b>	True
<b>Well:</b>	RDX-16-17H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Prelim Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.0	90.00	183.51	7,712.0	-1,930.3	-118.3	1,933.9	0.00	0.00	0.00
9,500.0	90.00	183.51	7,712.0	-2,030.1	-124.5	2,033.9	0.00	0.00	0.00
9,600.0	90.00	183.51	7,712.0	-2,129.9	-130.6	2,133.9	0.00	0.00	0.00
9,700.0	90.00	183.51	7,712.0	-2,229.7	-136.7	2,233.9	0.00	0.00	0.00
9,800.0	90.00	183.51	7,712.0	-2,329.5	-142.8	2,333.9	0.00	0.00	0.00
9,900.0	90.00	183.51	7,712.0	-2,429.4	-148.9	2,433.9	0.00	0.00	0.00
10,000.0	90.00	183.51	7,712.0	-2,529.2	-155.0	2,533.9	0.00	0.00	0.00
10,100.0	90.00	183.51	7,712.0	-2,629.0	-161.2	2,633.9	0.00	0.00	0.00
10,200.0	90.00	183.51	7,712.0	-2,728.8	-167.3	2,733.9	0.00	0.00	0.00
10,300.0	90.00	183.51	7,712.0	-2,828.6	-173.4	2,833.9	0.00	0.00	0.00
10,400.0	90.00	183.51	7,712.0	-2,928.4	-179.5	2,933.9	0.00	0.00	0.00
10,500.0	90.00	183.51	7,712.0	-3,028.2	-185.6	3,033.9	0.00	0.00	0.00
10,600.0	90.00	183.51	7,712.0	-3,128.0	-191.8	3,133.9	0.00	0.00	0.00
10,700.0	90.00	183.51	7,712.0	-3,227.9	-197.9	3,233.9	0.00	0.00	0.00
10,800.0	90.00	183.51	7,712.0	-3,327.7	-204.0	3,333.9	0.00	0.00	0.00
10,900.0	90.00	183.51	7,712.0	-3,427.5	-210.1	3,433.9	0.00	0.00	0.00
11,000.0	90.00	183.51	7,712.0	-3,527.3	-216.2	3,533.9	0.00	0.00	0.00
11,100.0	90.00	183.51	7,712.0	-3,627.1	-222.4	3,633.9	0.00	0.00	0.00
11,200.0	90.00	183.51	7,712.0	-3,726.9	-228.5	3,733.9	0.00	0.00	0.00
11,300.0	90.00	183.51	7,712.0	-3,826.7	-234.6	3,833.9	0.00	0.00	0.00
11,400.0	90.00	183.51	7,712.0	-3,926.5	-240.7	3,933.9	0.00	0.00	0.00
11,500.0	90.00	183.51	7,712.0	-4,026.4	-246.8	4,033.9	0.00	0.00	0.00
11,600.0	90.00	183.51	7,712.0	-4,126.2	-252.9	4,133.9	0.00	0.00	0.00
11,700.0	90.00	183.51	7,712.0	-4,226.0	-259.1	4,233.9	0.00	0.00	0.00
11,800.0	90.00	183.51	7,712.0	-4,325.8	-265.2	4,333.9	0.00	0.00	0.00
11,900.0	90.00	183.51	7,712.0	-4,425.6	-271.3	4,433.9	0.00	0.00	0.00
12,000.0	90.00	183.51	7,712.0	-4,525.4	-277.4	4,533.9	0.00	0.00	0.00
12,100.0	90.00	183.51	7,712.0	-4,625.2	-283.5	4,633.9	0.00	0.00	0.00
12,200.0	90.00	183.51	7,712.0	-4,725.0	-289.7	4,733.9	0.00	0.00	0.00
12,212.7	90.00	183.51	7,712.0	-4,737.8	-290.4	4,746.7	0.00	0.00	0.00
TD at 12212.7 - RDX-16-17H PBHL									

Targets									
Target Name	Dip/Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
RDX 16-17H PBHL	0.00	0.00	7,712.0	-4,737.8	-290.4	377,173.40	677,583.00	32° 2' 10.202 N	103° 53' 37.118 W
- hit/miss target									
- Shape									
- plan hits target									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,139.0	7,139.0	0.0	0.0	KOP - 10/100
8,039.0	7,712.0	-571.9	-35.1	EOC - Hold to TD
12,212.7	7,712.0	-4,737.8	-290.4	TD at 12212.7

# RKI Exploration & Production

Project: Eddy County (NM83E)  
 Site: Sec 16-T26S-R30E  
 Well: RDX 16-17H  
 Wellbore: Wellbore #1  
 Design: Prelim Plan

**T** Azimuths to True North  
 Magnetic North: 7.50°

Magnetic Field  
 Strength: 48320.5snT  
 Dip Angle: 59.92°  
 Date: 04/05/2013  
 Model: IGRF2010

*Wolverine*  
*Directional*

## WELL DETAILS: RDX 16-17H

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	381912.30	677854.10	32° 2' 57.088 N	103° 53' 33.744 W

SHL: 250' FNL / 675' FWL  
 BHL: 300' FSL / 395' FWL

## SECTION DETAILS

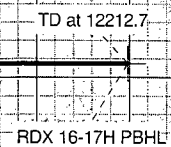
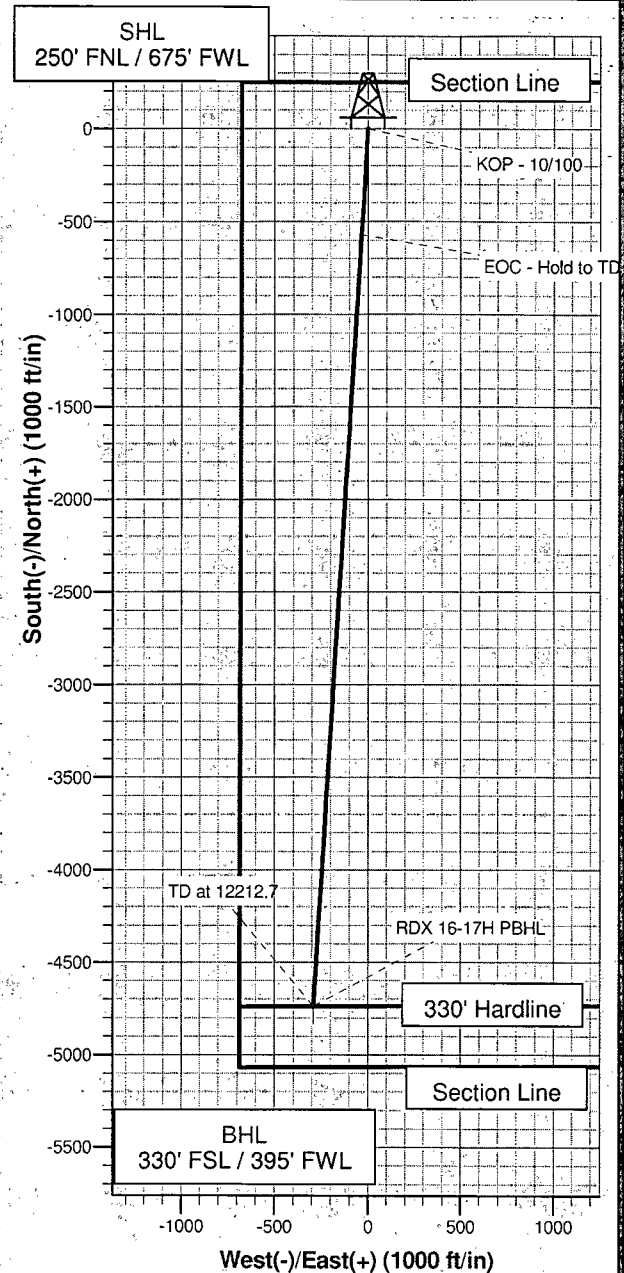
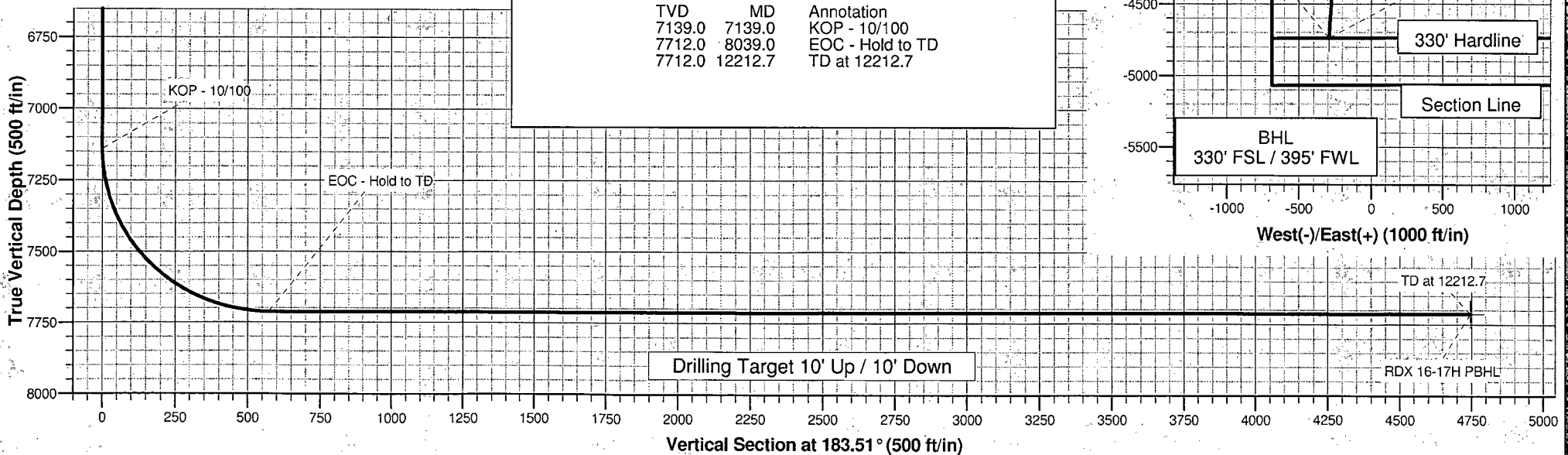
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7139.0	0.00	0.00	7139.0	0.0	0.0	0.00	0.00	0.0	
3	8039.0	90.00	183.51	7712.0	-571.9	-35.1	10.00	183.51	573.0	
4	12212.7	90.00	183.51	7712.0	-4737.8	-290.4	0.00	0.00	4746.7	RDX 16-17H PBHL

## PROJECT TARGET DETAILS (MAP CO-ORDINATES)

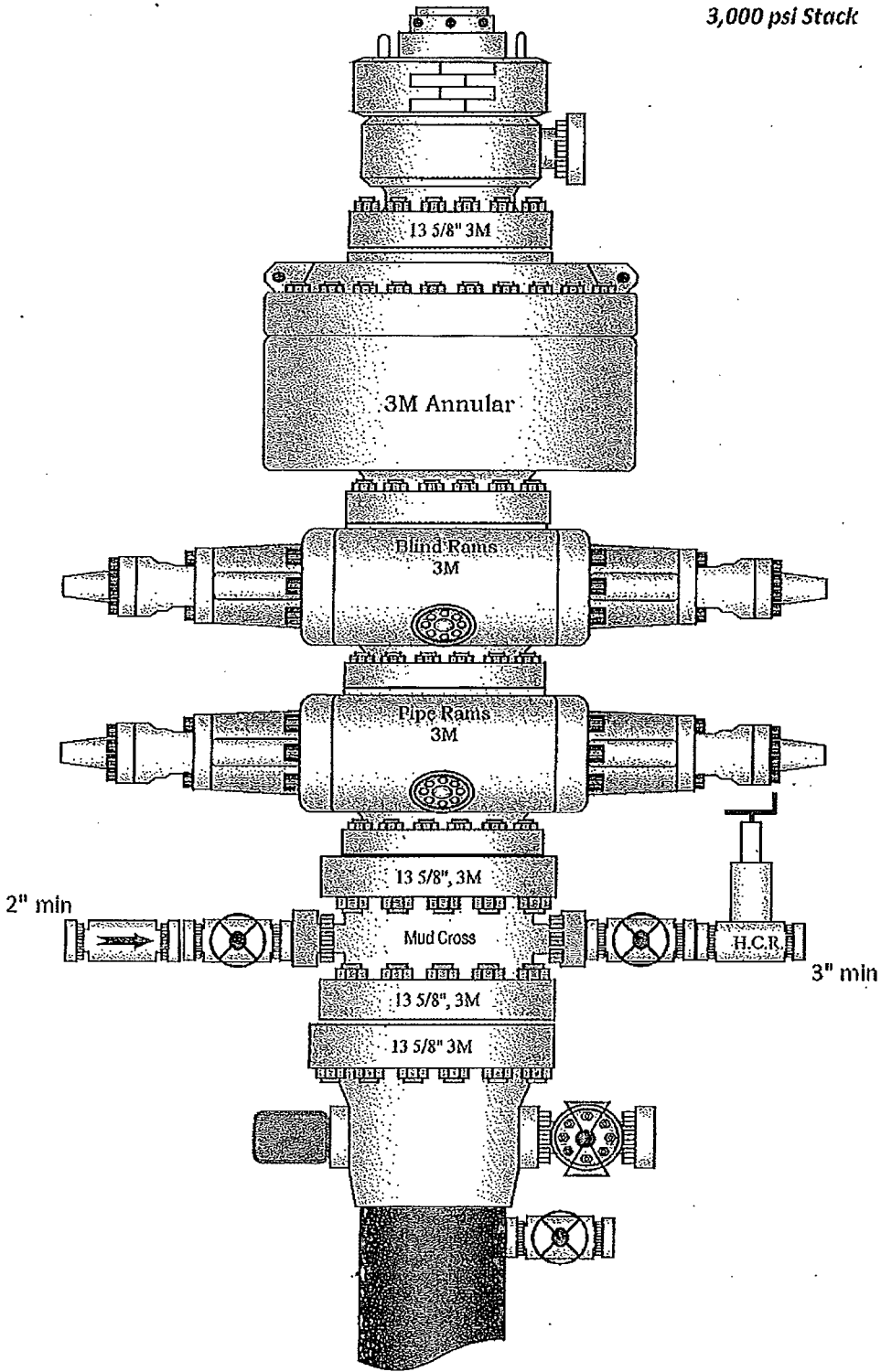
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
RDX 16-17H PBHL	12212.0	-4737.8	-290.4	377173.40	677583.00	Point

## Annotations

TVD	MD	Annotation
7139.0	7139.0	KOP - 10/100
7712.0	8039.0	EOC - Hold to TD
7712.0	12212.7	TD at 12212.7



3,000 psi Stack





3,000 psi Manifold

