District 1

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 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505

Phone: (505) 476-3460 Fax: (505) 476-3462

d L.

#### State of New Mexico

**Energy Minerals and Natural Resources** 

**MENDED REPORT** 

**Oil Conservation Division** 

1220 South St. Francis Dr.

#### Santa Fe, NM 87505

#### APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE OGRID Number Operator Name and Address

RKI Exploration & Production, LLC 210 Park Avenue, Suite 900 Oklahoma City, OK 73102								246289			
								30-	0/5 -	ber 4/1322	
Property Code					<sup>3</sup> Property Nam RDX 16	ne	: .5	15		Well No. 18H	
00 10		1		7	· Surface Loca	tion		,	-		
UL-Loi S D	Section ,	Township 26S	Range 30E	Lot Idn	Feet from 250		S Line ORTH	Feet From 700	E/W Line WEST	County EDDY	
		I		* Pror	osed Bottom	Hole Loc:					
UL - Lot S	Section	Township	Range	Lot Idn	Feet from		'S Line	Feet From	E/W Line	County	
M	16	26S	30E		330	SO	DUTH .	925	WEST	EDDY	
<u></u>		•		9	Pool Informa	ition			•		
		•	W		Pool Name S263016K; BONE SF	PRING				97863	
				Addit	ional Well Inf					-	
<sup>11.</sup> Work T N	уре		<sup>12.</sup> Well Type O		<sup>13.</sup> Cable/Rotary R			<sup>4</sup> Lease Type S	<ol> <li>Ground Level Elevation 3,088 FEET</li> </ol>		
<sup>16.</sup> Multip No	<sup>16.</sup> Multiple 17. Proposed Dept No 12,207 feet				<sup>18.</sup> Formation .			<sup>19</sup> Contractor		<sup>20.</sup> Spud Date ASAP	
Depth to Ground	water	;	Dist	ance from nea	nce from nearest fresh water well				to nearest surf	ace water	
		1	21	Proposed	Casing and C	ement Pr	ogram				
Туре	Hole S	Size	Casing Size	Casing	;Weight/ft	Setting	ng Depth Sacks o		Cement	Estimated TOC	
Surface	17-1/2	2 in.	13-3/8 in.	54	1.5#/ft	850	feet '	55.	3	surface	
Intermediate	12 -1/.	i in.	9-5/8 in.	4	0#/ft	3,48	0 feet	828		surface	
Production	8-3/4	in.	5-1/2 in.	1	7#/It	12,20	)7 feet	94	1	3,180 feet	
		1	Casi	ng/Cement	Program: Ad	ditional C	Comment	s			
		1 					·	·			
			22	Proposed	Blowout Prev	ention Pr	ogram				
	Туре			Working Pres	sure		Test Pres	sure		Manufacturer	
REFER TO ATTACHED DRILLING			3,000 PS	<u> </u>			SI				

<sup>25</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION						
I further certify that I have complied with 19.15.14.9 (A) NMAC 🛛 and/or 19.15.14.9 (B) NMAC 🖾, if applicable. Signature: Clarker K. Alm	Approved By:						
Printed name: Charles K. Ahn	Title: Obolocist //						
Title: EH&S/Regulatory Manager	Approved Date: 51/2/2013 Expiration Date: 51/2015						
E-mail Address: cahn@rkixp.com	19 11						
Date: 5/01/2013 Phone: 405-996-5771	Conditions of Approval Attached						

DISTRICT 1 1628 N, Fench IW, Holbw, NM 88240 Phone: (573) 394616 Fax: (578) 3940-DISTRICT 11 811 S, Find SE, Artesia, SM 88210 Phone: (573) 7484-18X Fax: (573) 748-9720 DISTRICT 111 1000 Rio Hanos Rd, Artes: ANI 87410 Phone: (593) 7461-748 Fax: (503) 346-670 DISTRICT IV 1220 S, R. Francis IN, Santa Fe, SM 87305 Phone: (505) 2476-3460 Fax: (554) 476-362

### 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

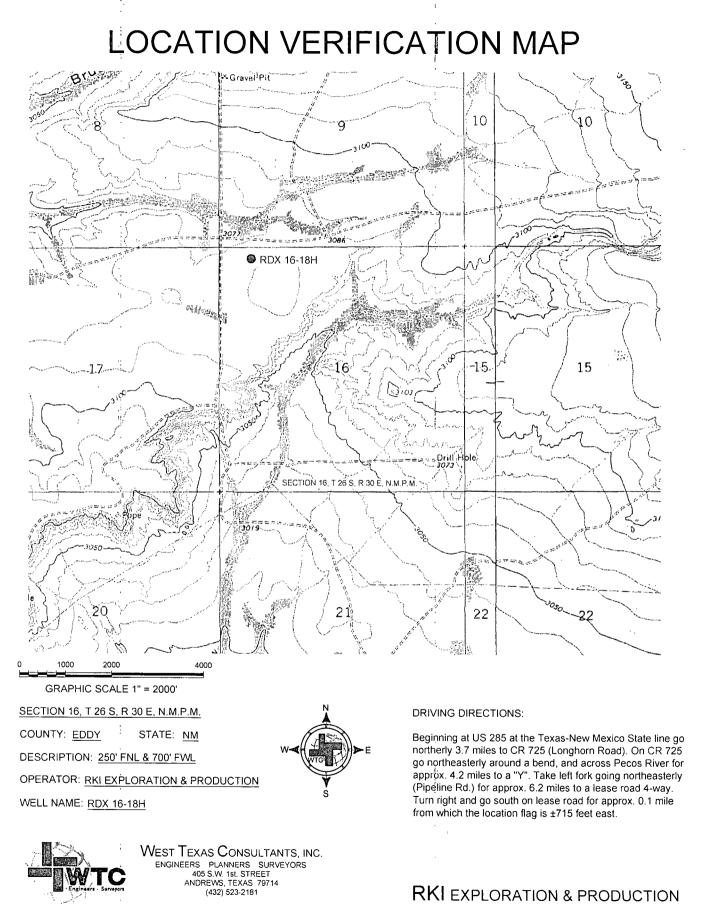
### WELL LOCATION AND ACREAGE DEDICATION PLAT

30-015	PI Number - 413	22	97	Pool Code		Pool Name WILDCAT G-03 S263016K; BONE SPRING					
Property Co	ode				Property Nan	ne		Well Number			
36.11	20				RDX 16	<b>3</b>		18H			
OGRID N	lo. 1				Operator Nar	ne ;		Elevation			
24628	9 )			RKI EXPL	ORATION &	PRODUCTION		3088.0'			
s					Surface Loc	ation					
UL or lot no.	Section f	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	700	WEST	EDDY		
			Bott	om Hole I	Location If Di	fferent From <sup>1</sup> Surfac	e	•			
UL or lot no.	Section !	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County		
М	16	26 S	30 E		330	SOUTH	925	WEST	EDDY		
Dedicated Acres	Joint ör	Infill	Consolidated Co	le Orde	r 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.

-XX		
250' NW COR SEC 16	NE COR SEC 16	OPERATOR CERTIFICATION
250 V NMSP-E (NAD 83)	NMSP-E (NAD 83)	
Y = 382158 2 N	Y = 382192.9' N	I hereby certify that the information contained
RDX 16-18H SHL X = 677178.6 E	X = 682512.0' E	herein is true and complete to the best of my
ELEV. = 3088.0' LAT. = N32° 02' 59.55"		knowledge and belief, and that this organization either owns a working interest or unleased
	LAT.= N32° 02' 59.67"	mineral interest in the land including the
NMSP-E (NAD 83) LONG = W103° 53' 41.58"	LONG.= W103° 52' 39.61"	proposed bottom hole location or has a right to
Y = 381912.5' N		drill this well at this location pursuant to a
X = 677879.1'E		contract with an owner of such a mineral or
LAT.= N32° 02' 57.09"		working interest, or to voluntary pooling
		agreement or a compulsory pooling order
LONG.= W103° 53' 33.45"		heretofore entered by the division.
	·	202
	:	Harles K. Alm 5101112
		Andrea K. Home
		<u></u>
		Signature Date
		- 0
		Charles K. Ahn
	,	Print Name
	;	cahn@rkivn.com
3°		<u>cahn@rkixp.com</u> E-mail Address
<b>5</b>		D-man Aduless
03°16'23"		
		SURVEYORS CERTIFICATION
	l l	I hereby certify that the well location shown on this
4746.6	1	plat was plotted from field notes of actual surveys
6	•	made by me or under my supervision, and that the
		same is true and correct to the best of my belief.
<b>Y I</b> 1: 1:		Nov. 1, 2012
		Date of Survey
	,	Date of Sulvey
		Simular and Seal of Description of the
		Signature and Sear of Processonial Surveyor
		MEXT
	· ·	
		5 2 6 3
		( 👳 ( (14729 ) ) 🚎 )
RDX 16-18H BHL		
NMSP-E (NAD 83)	• •	
Y = 377176.8' N		
X = 678113.1'E		WOFESSHOWN AND
LAT.= N32° 02' 10.22" SW COR SEC 16	SE COR SEC 16	Colored Carlos Carlos Carlos Carlos
LONG = W103° 53' 30 96" NMSP-E (NAD 83)	NMSP-E (NAD 83)	Xume ungam
Y = 3/6840.9 N	Y = 376876.3' N	
A=0//188./E	X = 682519.0' E	Job No.: WTC48731
330' LAT.= N32° 02' 06.93"	LAT.= N32° 02' 07.06"	JAMES E. TOMPKINS 14729
V LONG.= W103° 53' 41.72"	LONG.= W103° 52' 39.79"	Certificate Number
	·	

,



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 & 700' FWL

 OPERATOR:
 RKI EXPLORATION & PRODUCTION

 WELL NAME:
 RDX 16-18H



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

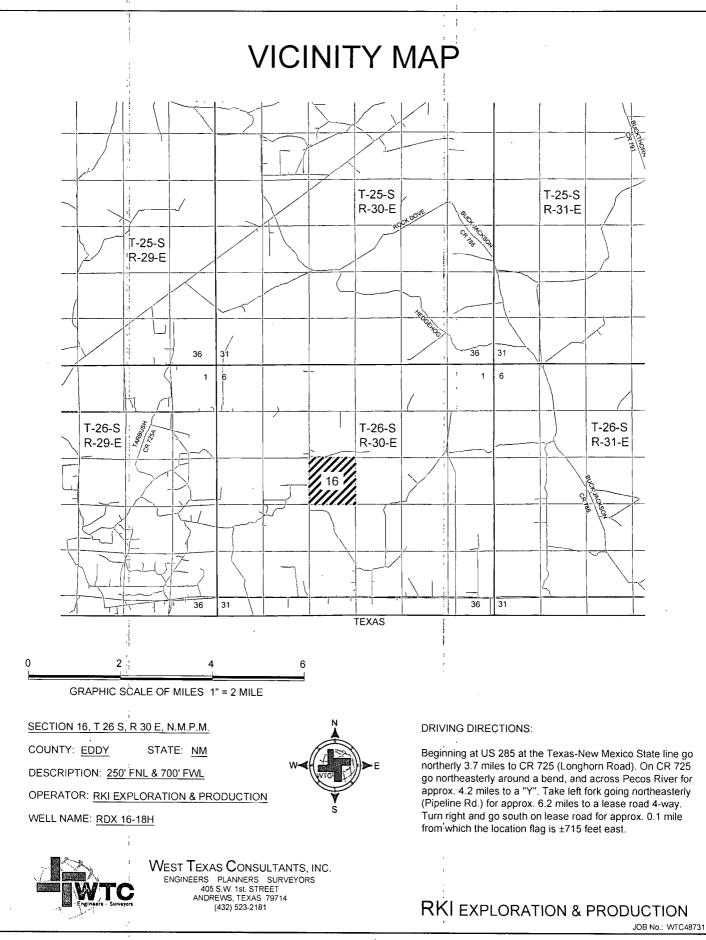
### DRIVING DIRECTIONS:

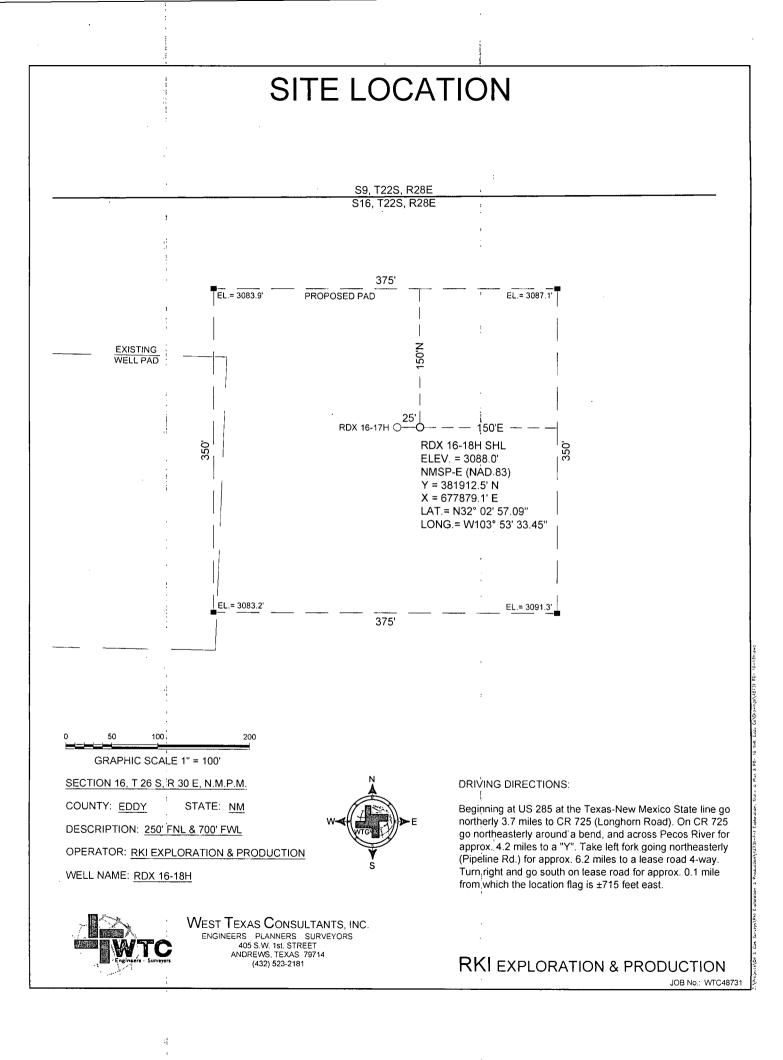
Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is  $\pm$ 715 feet east.

**RKI** EXPLORATION & PRODUCTION



JOB No.: WTC48731





RKI Explo	ration & Prod	uction, Ll	C						
Well Location County State	RDX 16-18H Surfa Bottom Ho Eddy New Mexico	ce: ple:	250 FNL 330 FSL		700 FWL 925 FWL	16-26S-30E 16-26S-30E			
1)	The elevatio	h for the	unprepared ground	d is	3,0	)88 feet above	sea level.		
2)	The geologic	: name of	the surface format	ion is Quatern	ary - Alluvium.	·			
	This equipm workover rig	ent will th g.	lized to drill the we	and the well		207 feet and run d with a	n casing.		
	Proposed de Estimated to		12,207	feet					
	Rustler Salado Castile Lamar Lime Base of Lime Delaware To Bell Canyon Cherry Cany Brushy Cany KOP Bone Spring Landing Poir TD Casing progr	Sand on Sand on Sand Lime it (Avalon	Shale)	1 3 3 3 3 4 4 5 7 7 7 8	800 100 650 467 492 517 517 611 678 139 7,7 362 7,7	TVD 39 57 12 12		BHP = .44 ps 1,547 2,029 2,498 3,141 3,239 3,393 3,393	psi psi psi psi psi psi
0)	Hole Size	Тор	Bottom	OD Csg	Wt/Grade	Connection Connection		Burst Design Factor	. Tension Design Factor
	17-1/2" 12-1/2" 8-3/4"	0 0 0		13 3/8" 9 5/8" 5 1/2"	54.5#/J-55 40#/J-55 17#/HCP-1	ST&C LT&C 10 LT&C	3.02 1.32 1.60	14.60 5.16 1.55	3.74
	Collapse Burst		1.125 1.0						

ł

Burst Tension

2.0

# 7) Cement program:

Surface			17 1/2"	hole					
Pipe OD			13 3/8"						
Setting Depth			850	ft					
Annular Volur	ne		0.69462	cf/ft	•				
Excess			0.5	-		:			50 %
			alon e citale Silo	<u>.</u>	•	! 			
Lead		353	sx		1.75	····	Maggar.	cf/sk	13.5 ppg
Tail		200	sx		1:34			cf/sk	14:8 ppg
-;	Lead:	"C" +	4% PF20 + 2	% PF1 + .125	5 pps PF29 + .2	2% PF46	· · ·	The second second	•
			1% PF1						
:			Top of ceme	ent:				Surface	2
Intermediate			12 1/2"	hole					
Pipe OD			9 5/8"	<i>c</i> .					
Setting Depth Annular Volúr			3,480			,		0	2627 6/6
	ne		0.31318	0				0.	3627 cf/ft
Excess									50 %
Lead		628	c v	la de la cel	2.07 cf/sk			12.6 ppg	
Tail ;		200			1.33 cf/sk		1 1 Martin	14.8 ppg	
, , , , , , , , , , , , , , , , , , ,	Lead:					DE42 + -		PF29 + .2% PF	16 ±1% DE1
			2% PF13	/0114410/0	1120 / 5 pps	11727.	120 pp3	FT 25 + .270 FT	+0 +1/0 +11
		-	Top of ceme	ent:				Surface	3
			· - p - · · · ·		,			barrace	•
Production '			8 3/4"	hole					
Pipe OD			5 1/2"						
Setting Depth			12,207	ft		ł			
Annular Volur	ne		0.2526	i cf/ft		0.26074	↓ cf/ft		300 ft
Excess			0.25			25	5 %		<i>x</i> · · · ·
DV Tool Dept	า		5500	) ft					
						;			
Stage 1									
Lead:		419			2.08 cf/sk			11.5 ppg	
Tail:		101			1.8 cf/sk			13.0 ppg	
1	Lead:								os PF42 (Kolite) +
	Taile				9 (Cellophane				
	Tail:							panding agent) + ttling agent) +	) + .7% PF606 +
					F13 (retarder)		s (anuse	tting agent) +	.25 pps
			Top of ceme		DV to				
Stage 2			rop or cent		0110	01			
Lead:		246	sx		2.04 cf/sk			12.6 ppg	
Tail:		175			1.33 cf/sk			14.8 ppg	
	Lead:	, <b>, , , , ,</b>		C" + 5% PF44		F20 (gel)	+ .125	ops PF29 (cello	phane)
					n) + .2% PF13	-			· · · · · · · · · · · · · · · · · · ·
	Tail:			-13 (retardei		,			
			Top of ceme			3,180	ft		
i	•								
						÷			
						;			

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#### 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.

5) Maa p	, oBraint						Type System
Тор	В	ottom	Mud Wt.	Vis	Fluid Loss		Fresh Water
	· 0	850	8.5 to 8.9	32 to 36	NC		Brine
	850	3,480	9.8 to 10.0	28 to 30	NC	I	Fresh Water
	3,480	12,207	8.9 to 9.1	28 to 36	NC	;	
						÷	
	ŧ						
10) Loggin	g, coring, ai	nd testing	program:			ł	
	<b>v</b> '						
No dril	lstem test a	are planne	d			ļ	
Total d	lepth to inte	ermediate	: CNL, Calipe	er, GR, DLL,		÷	
Interm	ediate to su	urface: CN	IL, GR			i	
No cor	ing is plann	ed					
•							

#### 11) Potential hazards:

9) Mud program:

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.

1

12) Anticipated start date Duration



# **RKI Exploration & Production**

Eddy County (NM83E) Sec 16-T26S-R30E RDX 16-18H

Wellbore #1

Plan: Prelim Plan

# **Standard Planning Report**

10 April, 2013

## Wolverine Directional, LLC

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Planning Report

Database: Company: Project: Site Well: Wellbore: Design: Project	RKI Exp Eddy Co Sec 16- RDX 16- Wellbore Prelim P	e #1	oduction		TVD Refe MD Refer North Ref	<ul> <li>Antimatical Solution</li> </ul>	W W M Ti	ell RDX 16-18 ELL @ 0.0ft ( IELL @ 0.0ft ( ue inimum Curva	Original Well Original Well	
Map System: Geo Datum: Map Zone:	US State F North Ame	Plane 1983 erican Datum co Eastern Zo	1983		System Da	itutiense in the second s		in Sea Level	<b>niiniini</b>	nyang mang kalaka mikali na alam di kalam kana di kalam d
Site Site Position: From: Position Uncertain	: Map	26S-R30E 0.0 ft	North Eastir Slot F			348.41ft 103.16ft "	Latitude: Longitude: Grid Converg	nna an	an de la constant a con La constant a	32° 2' 56.352 N 103° 53' 4,129 W 0.24 °
Well Well Position Position Uncertai	RDX 16-1 +N/-S +E/-W nty	18H 74.4 -2,523.8 0.0	ft Ea	orthing: sting: ellhead El	evation:	381,912.50 677,879.10	) ft Long	ude: gitude: and Level:		32° 2' 57.089 N 103° 53' 33.454 W 0.0 ft
Wellbore Magnetics Design Audit Notes:		I Name	Sample	e Date. 04/10/13	Declina (°)	tion 7.50	Dip Ar (?)		Field St (n)	and the second second and the second s
Version: Vertical Section:		Dep	Phas h From (T (ft) 0.0		PROTOTYPE +N/-S (ft) 0.0	+[	e On Depth: E/-W ft) 0.0	Dire (	D.0 ction °) 7.41	a ta kana ang ang ang ang ang ang ang ang ang
Plan Sections Measured Depth Incli (ft)	ination A (°)	zimuth	ertical Depth (ft)	+N/-S (ft)	+E/-W .(ft)	Dogleg Rate (°/100ft).	Build Rate (?/100ft)	Turn Rate (°/100ft)	ТFО _(°)	Target
0.0 7,139.0 8,039.0 12,207.6	0.00 0.00 90.00 90.00	0.00 0.00 177.41 177.41	0.0 7,139.0 7,712.0 7,712.0	0.1 0.1 -572 -4,736.1	0 0.0 4 25.9	0.00 0.00 10.00 0.00	0.00 10.00	0.00 0.00 0.00 0.00	0.00 0.00 177.41 0.00 F	RDX 16-18H PBHL
Planned Survey Measured Depth (ft)	Inclinati (°)	(°)	th De (	tical pth ft)	(ft)	E/-W (ft)	Section (ft) (	Rate 2/100ft) (°		Turn Rate (*/100ft)
0.0 7,139.0 KOP - 10/ 8,039.0 EOC - Ho 12,207.6 TD at 122	100 100 10 10 10 10 10 10 10 10	).00. ( ).00 17	7.41	0.0 7,139.0 7,712.0 7,712.0	0.0 0.0 -572.4 -4,736.6	0.0 0.0 25.9 214.7	0.0 0.0 573.0 4,741.5	0.00 0.00 10.00 0.00	0.00 0.00 10.00 0.00	0.00 0.00 0.00 0.00

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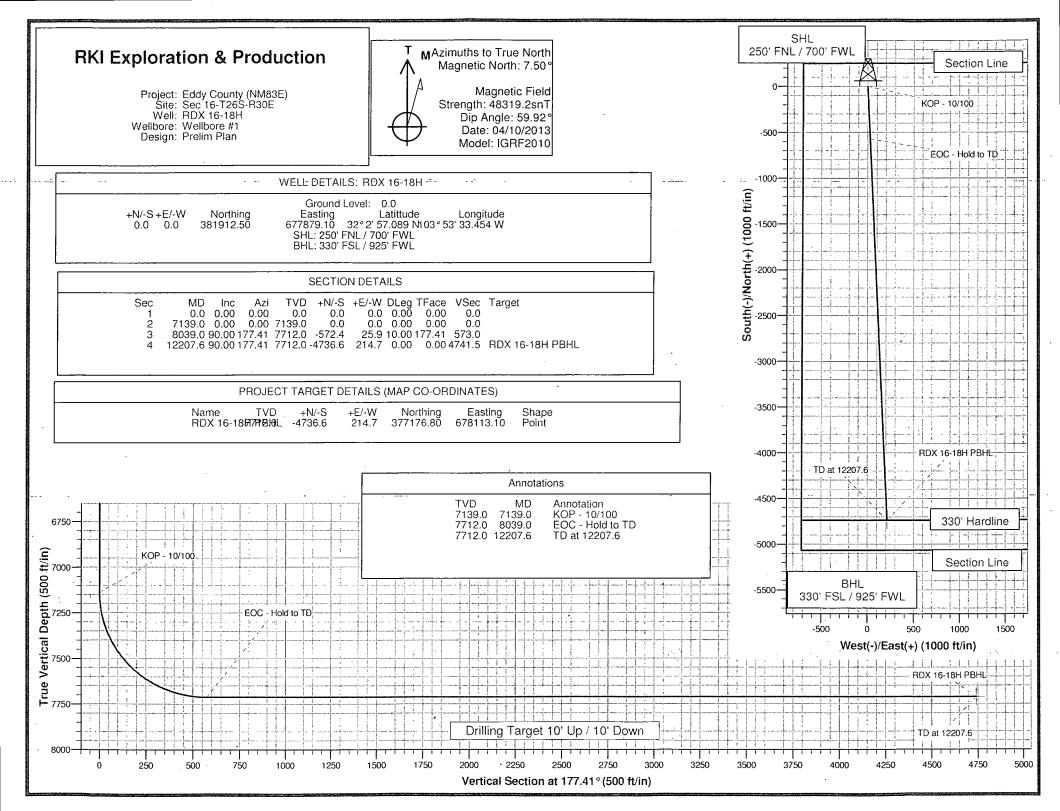
COMPASS 2003.21 Build 25

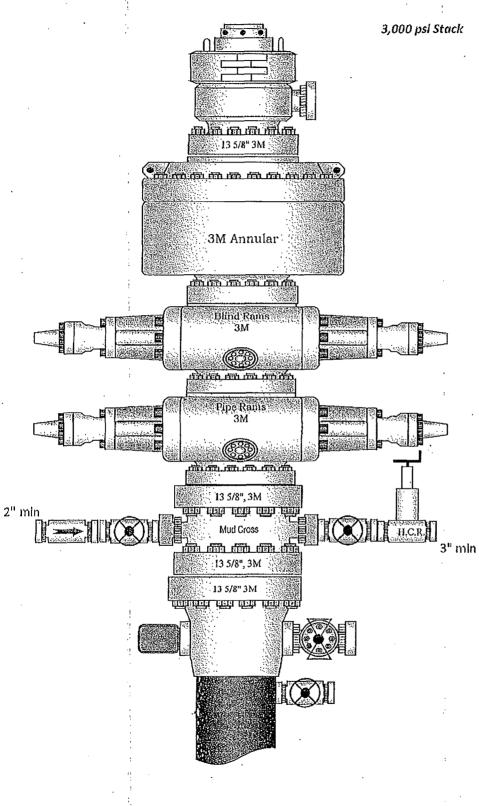
# Wolverine Directional, LLC

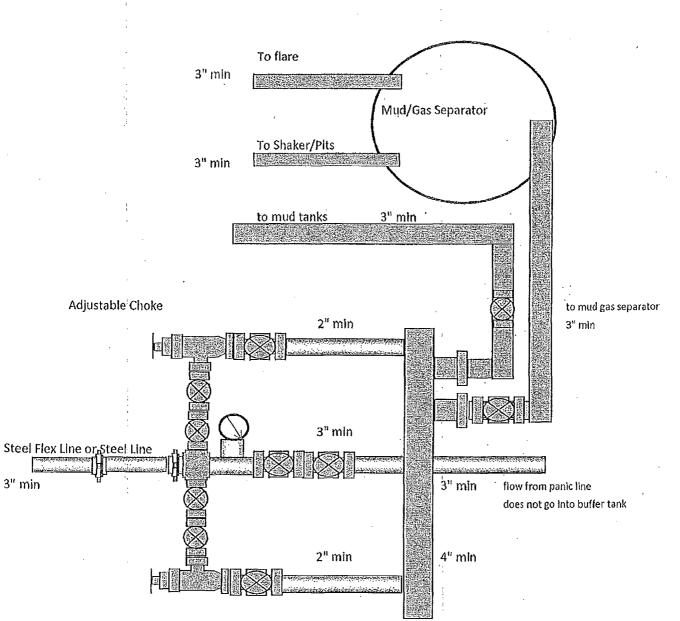
Planning Report

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			e andere an an an an and an an and an and an and an and an				000500 10000000000000000000000000000000
Company: RKI Project: Edd Site: Sec Well: RDX Wellbore: Wel	A 2003.21 Single Us Exploration & Produ y County (NM83E) 16-T26S-R30E (16-18H Ibore #1 im Plan	er Db Juction	TVD Refe MD Refer North Ref	ence:	WELL @ WELL @ True		
Targets Target Name • hit/miss target Dip • Shape	/Angle > Dip Dir; (°)' (°)	;TVD +N/-S (ft) (ft)	+E/±W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
RDX 16-18H PBHL - plan hits target - Point	0.00 0.00	7,712.0 -4,736.6	5 214.7	377,176.80	678,113.10	32° 2' 10.215 N	103° 53' 30.960 W
Plan Annotations Measured Depth (ft) 7,139.0 8,039.0 12,207.6	Vertical Depth (ft) 7,139.0 7,712.0 7,712.0	Local Coordina +N/-S (ft) -572.4 -4,736.6	ttes +E/W (ft) 0.0 25.9 214.7	Comment KOP - 10/100 EOC - Hold to TD TD at 12207.6			
!							
•	• •			1			
				:			
	1 1 1						
	:						







Adjustable Choke

3,000 psi Manifold