Form 3160-3 (August 2007) OCD Artesia

Expires July 31, 2010

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

5 Lease Serial No. NM-20965

If Indian, Allotee or Tribe Name

APPLICATION FOR PERMIT TO DRILL OR REENTER	

la. Type of work: DRILL - REENTE	ER .		7 If Unit or CA Agreeme	nt, Name and No.
lb. Type of Well: Oil Well Gas Well Other	Single Zone Multip	ole Zone	8. Lease Name and Well RDX Fed Com 17-6H	No.
2. Name of Operator RKI EXPLORATION & PRODUCTION,	LLC.		9 API Well No.	39308
3a. Address 3817 NW Expressway, Suite 950 Oklahoma City, Ok. 73112	3b Phone No. (include area code) 405-996-5750		10 Field and Pool, or Explo Undesignated Bone Sp	•
4. Location of Well (Report location clearly and in accordance with an	y State requirements *)		11. Sec, T. R. M. or Blk ar	nd Survey or Area
At surface 330 FSL & 2260 FEL			Section 17, T. 26 S., R	. 30 E.
At proposed prod. zone 330 FNL & 2310 FEL				
14 Distance in miles and direction from nearest town or post office* Approximately 10 miles southeast of Malaga, NM			12 County or Parish Eddy	13. State NM
15 Distance from proposed* location to pagest 330 ft.	16. No. of acres in lease	17 Spacin	g Unit dedicated to this well	
location to nearest property or lease line, ft (Also to nearest drig. unit line, if any)	520	160		
18 Distance from proposed location* 1650 ft. south of #1	19 Proposed Depth	20 BLM/	BIA Bond No. on file	
to nearest well, drilling, completed, 1000 R. South of #1 applied for, on this lease, ft	8400 ft. TVD	NLM-N	ИВ-000460	
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will sta	rt*	23. Estimated duration	
3134' GL			30 days	
	24. Attachments			
The following, completed in accordance with the requirements of Onshor	e Oil and Gas Order No.1, must be a	ttached to th	is form:	_
 Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest System 	Lands, the Item 20 above). 5 Operator certifications	cation	ns unless covered by an exis	
SUPO must be filed with the appropriate Forest Service Office)	6. Such other site BLM.	specific info	ormation and/or plans as may	be required by the
25 Signature	Name (Printed/Typed)		Date	1/26/11

Approved by (Signature)

Permit Agent for RKI Exploration & Production, LLC.

/s/ Don Peterson Title

Name (Printed/Typed)

Date

Title

FIELD MANAGER.

Office CARLSBAD FIELD OFFICE 1 9 2011 -

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

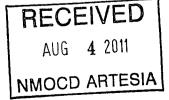
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)



Carlsbad Controlled Water Basin



RKI EXPLORATION & PRODUCTION, LLC.

RDX Federal Com 17-6H

Surface Location: 330' FSL & 2,260' FEL Bottom Hole Location: 330' FNL & 2,310' FEL

Section 17, T26S, R30E Eddy County, NM

- 1. The elevation of the unprepared ground is 3,132' 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 12,813' MD and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
- 4. Proposed total depth is 12,813' MD, 8,400' TVD.
- 5. Estimated tops of important geologic markers:

Salado 1,100' Castile 1,640' Lamar Lime 3,560' Base of Lime 3,582' Delaware Top 3,615' Bell Canyon Sand 3,615' Cherry Canyon Sand ' 4,690' Brushy Canyon Sand (KOP) 7,827' Bone Spring (TVD) 7,440' TVD (135 degree F)	Rustler	800'
Lamar Lime 3,560° Base of Lime 3,582° Delaware Top 3,615° Bell Canyon Sand 3,615° Cherry Canyon Sand of the Spring 4,690° Bone Spring 7,827° Bone Spring 7,440°	Salado	1,100'
Base of Lime 3,582' Delaware Top 3,615' Bell Canyon Sand 3,615' Cherry Canyon Sand ' 4,690' Brushy Canyon Sand 5,750' KOP 7,827' Bone Spring 7,440'	Castile	1,640'
Delaware Top 3,615' Bell Canyon Sand 3,615' Cherry Canyon Sand 4,690' Brushy Canyon Sand 5,750' KOP 7,827' Bone Spring 7,440'	Lamar Lime	3,560'
Bell Canyon Sand 3,615' Cherry Canyon Sand 4,690' Brushy Canyon Sand 5,750' KOP 7,827' Bone Spring 7,440'	Base of Lime	3,582'
Cherry Canyon Sand 4,690' Brushy Canyon Sand 5,750' KOP 7,827' Bone Spring 7,440'	Delaware Top	3,615'
Brushy Canyon Sand 5,750' KOP 7,827' Bone Spring 7,440'	Bell Canyon Sand	3,615'
KOP 7,827' Bone Spring 7,440'	Cherry Canyon Sand ⁷	4,690'
Bone Spring 7,440'	Brushy Canyon Sand	5,750'
,	KOP	7,827'
TVD 8,400' (135 degree F)	Bone Spring	7,440'
	TVD	8,400' (135 degree F)

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Oil (1,565 psi)
Oil (2,030 psi)
Oil (2,489 psi)
Oil (3,221 psi)

7. The proposed casing program is as follows:

Surface: 13-3/8" 54.5# J-55 ST&C new casing set from 0' - 900' Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Intermediate: 9-5/8" 40# J-55 LT&C new casing set from 0' – 3,300' Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Production: 5-1/2" 17# P-110 LT&C new casing set from 0'-12,833' Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

- 8. Casing setting depth and cementing program:
 - a. 13-3/8" surface casing set at 900 in 17-1/2" hole. Circulate cement to surface with 675 sx "C" with 4% D20, 2% S1, .2% D46, .125 pps D130 mixed at 12.9 ppg (1.97 cf/sk) followed by 200 sx "C" with 1% S1, .125 pps D130 mixed at 14.8 ppg (1.34 cf/sk).

930

- b. 9-5/8" intermediate casing set at 3,300' in 12 1/4" hole. Cement will be circulated to surface with 840 sx 35:65 Poz "C" with 5% D44, 6% D20, .2% D46, 2 pps D42, .125 pps D130, .1% D13 mixed at 12.6 ppg (2.07 cf/sk) followed by 200 sx "C" with .2% D13 mixed 14.8 ppg (1.33 cf/sk).
- c. 5-1/2" production casing set at 12,833' in 8 ¾" hole. Cement will be calculated to bring TOC to 3,000'. The well will be cemented in two stages as follows: Stage 1: 1,410 sx PVL with 30% D151, 2% D174, .2% D46, .5% D79, .8% D800, .05 gps D177 mixed at 13.0 ppg (1.83 cf/sk). Stage 2: 310 sx 35:65 Poz "C" with 5% D44, 6% D20, .2% D13, .2% D46, 2 pps D42, .125 pps D130 mixed at 12.6 ppg (2.07 cf/sk). DV tool at approximately 5,000'.
- 9. Pressure Control Equipment (5,000 psi system):

After setting the 13 3/8" casing a 13 5/8" 3M head will be installed and the 5M BOP equipment consisting of the follow will be utilized.

- Annular preventer
- Pipe ram and blind ram
- Drilling spool with 2 side outlets (choke side shall be a 3 inch minimum diameter, kill side shall be at least 2 inch diameter)
- 3 inch diameter choke line
- 2 choke line valves (3 inch minimum)
- Kill line (2 inch minimum) which runs to outer edge of the substructure
- 2 chokes with 1 remotely controlled from rig floor
- 2 kill line valves and a check valve (2 inch minimum)
- Upper kelly cock valve with handle available
- Lower kelly cock valve with handle available
- Safety valve and subs to fit all drill string connections
- Inside BOP or float sub
- Pressure gauge on choke manifold
- All connections subjected to well pressure shall be flanged or welded
- Fill up line above uppermost preventer

After setting the 9 5/8" casing a 11" 5M head will be installed and the 5M BOP equipment consisting of the follow will be utilized.

- Annular preventer
- Pipe ram and blind ram
- Drilling spool with 2 side outlets (choke side shall be a 3 inch minimum diameter, kill side shall be at least 2 inch diameter)
- 3 inch diameter choke line
- 2 choke line valves (3 inch minimum)
- Kill line (2 inch minimum) which runs to outer edge of the substructure
- 2 chokes with 1 remotely controlled from rig floor
- 2 kill line valves and a check valve (2 inch minimum)
- Upper kelly cock valve with handle available
- Lower kelly cock valve with handle available
- Safety valve and subs to fit all drill string connections
- Inside BOP or float sub
- Pressure gauge on choke manifold
- All connections subjected to well pressure shall be flanged or welded
- Fill up line above uppermost preventer

Equipment will be tested to full working pressure of the stack if isolated by a test plug or 70% of the internal yield pressure of the casing if the stack is not isolated by a test plug. The annular preventer shall be tested to 50% of the rated working pressure. Equipment shall be tested whenever any seal subject to test pressure is broken, following any repairs, and at 30 day intervals. Annular shall be functionally operated at least weekly, pipe and blind rams shall be activated each trip.

13 3/8" and the 9 5/8" casing shall be tested to .22 psi/ft of casing length or 1,500 psi whichever is greater, but not to exceed 70% of the minimum internal yield pressure.

10. Mud Program:

0' - 900' 930 Bentonite/Lime mud. Paper for losses and seepage. 8.4 to 9.0 ppg, PV 3 to 5, YP 5 to 7, WL NC.

900' - 3,300' Brine. As needed LCM for losses and seepage. 10.0 to 10.1 ppg, PV 1 to 3, YP 1 to 3, WL NC.

3,300' – 60 deg. Drill out fresh water/cut brine adding KCl increasing MW to 8.5 to 8.6 ppg, PV 1, YP 1, WL NC.

60 deg. - 12,813' 8.8 to 9.0 ppg, PV 12 - 14, YP 20 - 22, WL 12 - 15.

bee COA

Page 4 04/26/11 RDX 17-6H

11. Testing, Logging and Coring Program: See CA

Testing program: No drillstem tests are anticipated.

Electric logging program: CNL/CAL/GR, DLL/CAL/GR. From 9 5/8" casing to

kick off point. A gyro survey will also be run at kick off point.

Coring program: None.

12. No abnormal conditions or hazards are expected.

RDX 17-6H 17-26S-30E Eddy County, NM

Wellbore #1

Plan: Design #1

Standard Planning Report

25 April, 2011

Planning Report

EDM 5000.1 Single User Db Local Co-ordinate Reference: Site 17-26S-30E Database: RKI Exploration & Production Company: WELL @ 0.0ft (Original Well Elev) TVD Reference: RDX 17-6H WELL @ 0.0ft (Original Well Elev) Project: MD Reference: Site: 17-26\$-30E North Reference: Well: Eddy County, NM **Survey Calculation Method:** Minimum Curvature Wellbore #1 Wellbore: Design #1 Design:

Project RDX 17-6H

Map System: US State Plane 1983 System Datum: Mean Sea Level

Geo Datum: North American Datum 1983

Map Zone: New Mexico Central Zone

17-26S-30E Site Northing: 117,285 91 m 32° 2' 10.130 N Site Position: Latitude: 103° 54' 7.980 W Lat/Long Easting: 721,767.51 m Longitude: From: **Position Uncertainty:** 0 0 ft Slot Radius: 13.200 in **Grid Convergence:** 1.25

Well Eddy County, NM **Well Position** +N/-S 0.0 ft 117,285.91 m Latitude: 32° 2' 10.130 N 721,767.51 m 103° 54' 7.980 W +E/-W 0.0 ft Easting: Longitude: **Position Uncertainty** 0.0 ft Wellhead Elevation: Ground Level: 0.0 ft

Wellbore Wellbore #1 Field Strength Magnetics Model Name Sample Date Declination Dip Angle (°) (°) (nT) 7.73 IGRF200510 4/25/2011 59.98 48,542

Design Design #1 Audit Notes: **PROTOTYPE** Version: Phase: Tie On Depth: 0.0 +E/-W +N/-S Vertical Section: Depth From (TVD) Direction (ft) (ft) (ft) (°) 0.0 0.0 0.0 358.27

Measured			Vertical			Dogleg	Build	Turn		
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,827.0	0 00	0.00	7,827.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,727.0	90.00	358.27	8,400.0	572.7	-17.3	10.00	10 00	0.00	358.27	
12,813 3	90.00	358.27	8,400.0	4,657.1	-140.9	0.00	0 00	0.00	0.00 1	

4/25/2011 3·53:53PM Page 2 COMPASS 5000.1 Build 42

Planning Report

EDM 5000.1 Single User Db Database: Company:

RKI Exploration & Production

Wellbore #1

Design #1

RDX 17-6H Project: Site: 17-26S-30E Well: Eddy County, NM Local Co-ordinate Reference: TVD Reference:

MD Reference: North Reference: Survey Calculation Method: Site 17-26S-30E

WELL @ 0.0ft (Original Well Elev) WELL @ 0.0ft (Original Well Elev)

Grid

Minimum Curvature

Wellbore:

Design:

Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
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
7,200.0	0.00	0 00	7,200.0	0.0	0.0	0.0	0.00	0 00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0 0	0.0	0.00	0 00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0 00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,827.0	0 00	0.00	7,827.0	0.0	0.0	0.0	0.00	0.00	0.00
7,850.0	2.30	358.27	7,850.0	0.5	0.0	0.5	10.00	10.00	0.00
7,900.0	7.30	358.27	7,899.8	4.6	-0.1	4.6	10.00	10.00	0.00
7,950.0	12.30	358.27	7,949.1	13.1	-0.4	13.1	10.00	10.00	0.00
8,000.0	17.30	358.27	7,997.4	25.9	-0.8	25.9	10.00	10.00	0.00
8,050.0	22.30	358.27	8,044.4	42.8	-1.3	42.8	10.00	10.00	0.00
8,100.0	27 30	358.27	8,089.8	63.8	-19	63.8	10.00	10.00	0.00
8,150.0	32.30	358.27	8,133.2	88.6	-2.7	88.6	10.00	10.00	0.00
8,200.0	37.30	358.27	8,174.2	117.1	-3.5	117.2	10.00	10.00	0.00
8,250.0	42 30	358.27	8,212.6	149.1	-4.5	149.2	10.00	10.00	0.00
8,300.0	47.30	358.27	8,248.1	184.3	-5.6	184.4	10.00	10.00	0.00
8,350.0	52.30	358.27	8,280.4	222.4	-6.7	222.5	10.00	10.00	0.00
8,400.0	57.30	358.27	8,309.2	263.3	-8.0	263.4	10.00	10.00	0.00
8,450.0	62.30	358.27	8,334.3	306.4	-9.3	306.6	10.00	10.00	0.00
8,500.0	67 30	358.27	8,355.6	351.7	-10.6	351.8	10.00	10.00	0.00
8,550.0	72.30	358.27	8,372.9	398.5	-12.1	398.7	10.00	10.00	0.00
8,600.0	77.30	358.27	8,386.0	446.7	-13.5	447.0	10.00	10.00	0.00
8,650.0	82.30	358.27	8,394.8	495.9	-15.0	496.1	10.00	10.00	0.00
8,700.0	87.30	358.27	8,399.4	545.7	-16.5	545.9	10.00	10.00	0.00
8,727.0	90.00	358.27	8,400.0	572.7	-17.3	573.0	10.00	10.00	0.00
8,800.0	90 00	358.27	8,400.0	645.6	-19.5	645.9	0.00	0.00	0.00
8,900.0	90.00	358.27	8,400.0	745.6	-22.6	745.9	0.00	0.00	0.00
9,000.0	90.00	358.27	8,400.0	845.5	-25.6	845.9	0.00	0 00	0.00
9,100.0	90.00	358 27	8,400.0	945.5	-28.6	945.9	0.00	0 00	0.00
9,200.0	90.00	358.27	8,400.0	1,045.4	-31.6	1,045.9	0.00	0.00	0.00
9,300.0	90.00	358.27	8,400.0	1,145.4	-34.7	1,145.9	0.00	0.00	0.00
9,400.0	90.00	358.27	8,400.0	1,245.3	-37.7	1,245.9	0.00	0 00	0.00
9,500.0	90.00	358.27	8,400.0	1,345.3	-40.7	1,345.9	0.00	0.00	0.00
9,600.0	90 00	358.27	8,400.0	1,445.3	-43.7	1,445.9	0.00	0.00	0.00
9,700.0	90 00	358.27	8,400.0	1,545.2	-46.8	1,545.9	0.00	0.00	0.00
9,800.0	90.00	358.27	8,400.0	1,645.2	-49.8	-1,645.9	0.00	0.00	0.00
9,900.0	90 00	358.27	8,400.0	1,745.1	-52.8	1,745.9	0.00	0.00	0.00
10,000.0	90.00	358.27	8,400.0	1,845.1	-55.8	1,845.9	0.00	0.00	0.00
10,100.0	90.00	358.27	8,400.0	1,945.0	-58.9	1,945.9	0.00	0.00	0.00
10,200.0	90.00	358.27	8,400.0	2,045.0	-61.9	2,045.9	0.00	0.00	0.00
10,300.0	90.00	358.27	8,400.0	2,144.9	-64.9	2,145.9	0.00	0.00	0.00
10,400.0	90.00	358.27	8,400.0	2,244.9	-67.9	2,245.9	0.00	0.00	0.00
10,500.0	90.00	358.27	8,400.0	2,344.8	-71.0	2,345.9	0.00	0.00	0.00
10,600.0	90.00	358.27	8,400.0	2,444.8	-74.0	2,445.9	0.00	0.00	0.00
10,700.0	90.00	358.27	8,400.0	2,544.8	-77.0	2,545.9	0.00	0.00	0.00
10,800.0	90 00	358.27	8,400.0	2,644.7	-80.0	2,645.9	0.00	0.00	0.00
10,900.0	90.00	358.27	8,400.0	2,744.7	-83.1	2,745.9	0.00	0.00	0.00
11,000.0	90.00	358.27	8,400.0	2,844.6	-86.1	2,845.9	0.00	0.00	0.00
11,100.0	90.00	358.27	8,400.0	2,944.6	-89.1	2,945.9	0.00	0.00	0.00

Planning Report

Database: Company: Project:

Site:

Well:

Wellbore:

Design:

EDM 5000.1 Single User Db

RKI Exploration & Production

RNI Exploration & RDX 17-6H 17-26S-30E Eddy County, NM

Wellbore #1

Design #1

Local Co-ordinate Reference: TVD Reference: MD Reference: Site 17-26S-30E WELL @ 0.0ft (Original Well Elev) WELL @ 0.0ft (Original Well Elev)

North Reference: Grid

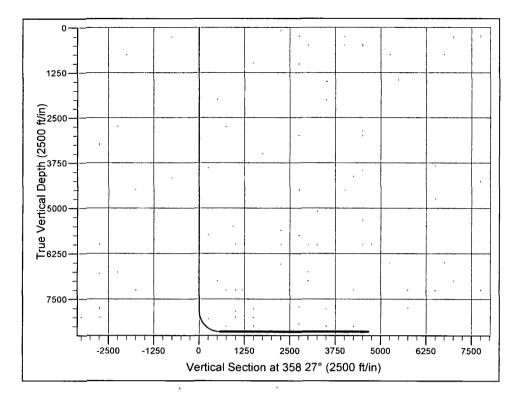
Survey Calculation Method:

Minimum Curvature

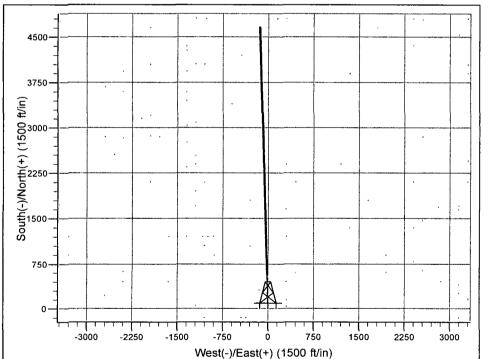
Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination . (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate , (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
11,300.0	90.00	358.27	8,400.0	3,144.5	-95.2	3,145.9	0.00	0 00	0.00
11,400.0	90.00	358.27	8,400.0	3,244.4	-98.2	3,245.9	0.00	0.00	0.00
11,500.0	90.00	358.27	8,400.0	3,344.4	-101.2	3,345.9	0.00	0.00	0.00
11,600.0	90.00	358.27	8,400.0	3,444.3	-104.2	3,445.9	0.00	0.00	0.00
11,700.0	90 00	358.27	8,400.0	3,544.3	-107.3	3,545.9	0 00	0.00	0.00
11,800.0	90.00	358.27	8,400.0	3,644.2	-110.3	3,645.9	0.00	0.00	0.00
11,900.0	90.00	358.27	8,400.0	3,744.2	-113.3	3,745.9	0.00	. 0 00	0.00
12,000.0	90.00	358.27	8,400 0	3,844.2	-116.3	3,845 9	0.00	0.00	0.00
12,100.0	90.00	358.27	8,400 0	3,944.1	-119.3	3,945.9	0.00	0.00	0.00
12,200.0	90.00	358.27	8,400.0	4,044.1	-122.4	4,045.9	0.00	0 00	0.00
12,300.0	90.00	358.27	8,400.0	4,144.0	-125.4	4,145.9	0.00	0.00	0.00
12,400.0	90.00	358.27	8,400.0	4,244.0	-128.4	4,245.9	0.00	0.00	0.00
12,500.0	90.00	358.27	8,400.0	4,343.9	-131.4	4,345.9	0.00	0.00	0.00
12,600.0	90.00	358.27	8,400 0	4,443.9	-134 5	4,445.9	0.00	0.00	0.00
12,700.0	90.00	358.27	8,400.0	4,543.8	-137.5	4,545.9	0.00	0.00	0.00
12,800.0	90.00	358.27	8,400 0	4,643.8	-140.5	4,645.9	0.00	0.00	0.00
12,813.3	90 00	358.27	8,400.0	4,657.1	-140.9	4,659.2	0.00	0.00	0.00

RDX 17-6H

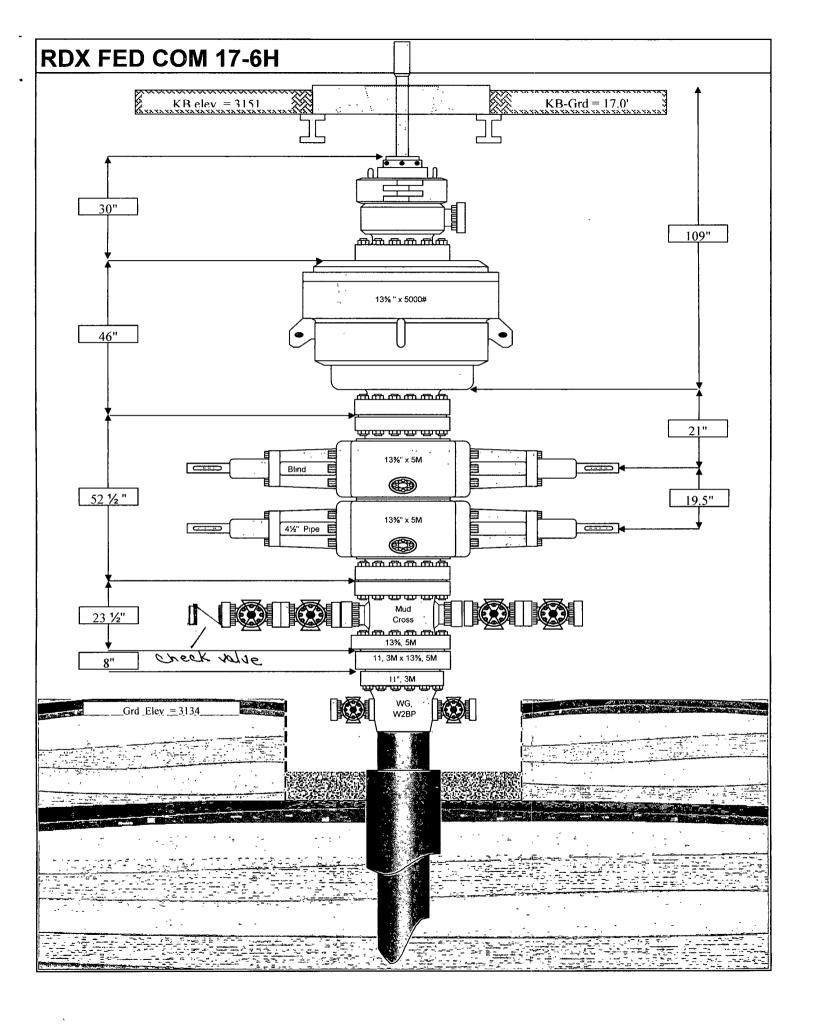


BHL. 330' FNL & 2310' FEL



Surf: 330' FSL & 2260' FEL

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0 0				Ū
2	7827	0.00	0.00	7827.0	0 0	0 0	0.00	0.00	0 0	
3	8727	90.00	358.27	8400.0	572.7	-17 3	10.00	358.27	573.0	
4	12813	90.00	358.27	8400.0	4657.1	-140.9	0.00	0.00	4659.2	1



OPTIONAL AR DRIVEN SECOND PULLEY TO ANNULAR PREVENTER VALVE(S) TO RAM PREVENTER VALVES

FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

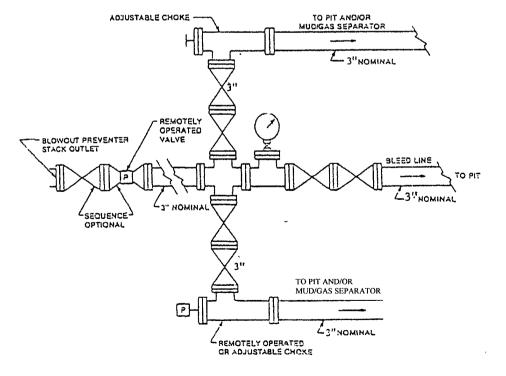


FIGURE K4-2 Typical choke manifold assembly for 5M rated working pressure service – surface installation