

OCD Hobbs

HOBBS OCD

ATS-15-273

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCT 30 2015

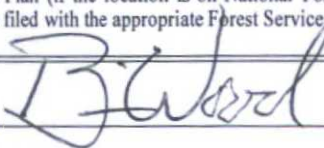
RECEIVED

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-118726
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator ROADRUNNER OIL & GAS LLC (308491)		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 363 N. SAM HOUSTON PKWY EAST, #100 HOUSTON, TX 77060	3b. Phone No. (include area code) 281 674-2584	8. Lease Name and Well No. ROAD RUNNER FEDERAL 25-33-9 2H (315627)
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 220' FSL & 730' FEL 9-25S-33E (A) At proposed prod. zone 250' FNL & 430' FEL 9-25S-33E (A)		9. API Well No. 30-025- 42916
14. Distance in miles and direction from nearest town or post office* 22 AIR MILES WNW OF JAL, NM		10. Field and Pool, or Exploratory DRAPER MILL; AS (96392)
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) SHL: 220' BHL: 250'		11. Sec., T. R. M. or Blk. and Survey or Area SESE 9-25S-33E
16. No. of acres in lease 1,319.75		12. County or Parish LEA
17. Spacing Unit dedicated to this well E2E2		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 45' (RR 1H) BHL: 120' (RR 1H)		20. BLM/BIA Bond No. on file 022046443 NMB001170
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,394' UNGRADED		22. Approximate date work will start* 04/01/2015
		23. Estimated duration 3 MONTHS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) BRIAN WOOD (PHONE: 505 466-8120)	Date 11/25/2014
Title CONSULTANT (FAX: 505 466-9682)		
Approved by (Signature) 	Name (Printed/Typed) STEVE CAFFEY	Date OCT 27 2015
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE

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

KZ
10/30/15

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

EOG Resources, Inc.

3a. Address

P.O. Box 2267
Midland, TX 79702

3b. Phone No. (include area code)

432-686-3689

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

220' FSL & 730' FEL, SESE (P), Sec 9, T25S, R33E

5. Lease Serial No.

NM118726

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.

Road Runner Federal 25-33-9 2H

9. API Well No.

30-025-

10. Field and Pool or Exploratory Area

WC Bone Spring Sand 2

11. County or Parish, State

Lea, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>Change of Operator</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Effective August 1, 2015, EOG Resources, Inc. assumed operatorship of this well from Roadrunner Oil & Gas LLC

EOG Resources, Inc. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described above.

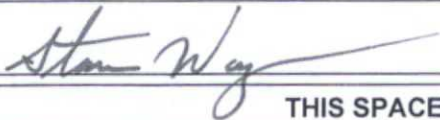
BLM bond number on file is NM 2308.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Stan Wagner

Title Regulatory Specialist

Signature



Date 09/09/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Steve Caffey

FIELD MANAGER

Title

Date

OCT 27 2015

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

CARLSBAD FIELD OFFICE

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.

(Instructions on page 2)

November 25, 2014

To Who it May Concern:

Roadrunner Oil & Gas LLC has a private surface owner agreement with Mark T. McCloy (P. O. Box 1076, Jal NM 88252) to lay a surface water pipeline across Section 31, T. 24 S., R. 34 E., Lea County, NM.

A handwritten signature in dark ink, appearing to read "B. Wood". The signature is stylized with a large, looped "B" and a cursive "Wood".

Brian Wood

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 1

Road Runner Federal 25-33-9 2H

HOBBS OCD

SHL 220' FSL & 730' FEL Sec. 9, T. 25 S., R. 33 E.

OCT 30 2015

BHL 250' FNL & 430' FEL Sec. 9, T. 25 S., R. 33 E.

Lea County, NM

RECEIVED

Drilling Program

1. ESTIMATED TOPS

<u>Name</u>	<u>TVD</u>	<u>Content</u>
Quaternary	0'	fresh water
Santa Rosa	290'	brackish water
Rustler	1,104'	anhydrite
Salado (top of salt)	1,469'	salt, brine
Castile	3,464'	brine
Lamar (base of salt)	5,019'	salt
Bell Canyon	5,054'	brine water
Cherry Canyon	6,129'	oil, gas
Brushy Canyon	7,619'	oil, gas
Bone Spring limestone	9,199'	---
Leonard shale	9,254'	---
Avalon carbonate 1	9,344'	---
Avalon shale 1	9,379'	oil, gas
Avalon shale 1 target	9,428'	oil, gas
Avalon carbonate 2	9,459'	oil, gas
Avalon shale 2	9,589'	oil, gas
Avalon carbonate 3	9,709'	oil, gas
Avalon shale 3	9,869'	oil, gas
Avalon carbonate 4	9,904'	oil, gas
Avalon shale 4	9,979'	oil, gas
Avalon carbonate 5	10,149'	oil, gas
Bone Spring sand 1	10,159'	oil, gas
Bone Spring carbonate 2	10,384'	oil, gas
Bone Spring sand 2	10,749'	oil, gas
Bone Spring sand 2 target	11,121'	oil, gas
TD (MD = 15,912')	11,121'	---

2. NOTABLE ZONES

Closest water well (C 02916) is 12,155' to the northwest. No depths for that well have been reported.

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 2

Road Runner Federal 25-33-9 2H

SHL 220' FSL & 730' FEL Sec. 9, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 9, T. 25 S., R. 33 E.

Lea County, NM

3. PRESSURE CONTROL

see COA
2500 The initial BOP test will occur before drilling out the 13-3/8" casing shoe. A third party testing service will do all tests. Test pressures will be 250/5,000 psi for rams and 250/3,500 ~~psi for annular (70% of working pressure)~~ for 10 minutes. BOPE stack will be tested every 14 to 21 days. Pipe rams and blind rams will be operationally checked on each trip out of the hole. Upper and lower Kelly cocks will be available at all times. A full opening stabbing valve and inside BOP with the appropriate connections will be on the drill floor at all time.

Surface Casing: 1,000 psi test pressure

Intermediate Casing: 1,500 psi test pressure

Casing Head: 13-3/8" SOW x 13-5/8" 5M

Casing Spool: 13-5/8" 5M x 11" 5M

Tubing Head: 11" 5M x 7-1/16" 10M

BOPE: 13-5/8" 10M (double rams and single rams)

Annular: 13-5/8" 5M

13-5/8" 1,500 psi rotating head

10M Choke Manifold

See COA
If Helmerich & Payne 227 is used, then Roadrunner requests a variance to use a co-flex line between the BOP and choke manifold.

Manufacturer: Continental ContiTech Beattie Co. Serial Number: 67085

Length: 35' Size: 3" ID

Ends: 3" coupling with 4-1/16" 10K API

Flange end WP rating: 10,000 psi

Anchors required by manufacturer: No

4. CASING & CEMENT

An S shaped hole will be drilled to KOP at 10,658', then drill the build section to a landing point at 11,411'. Drill 8-3/4" lateral section to 15,912'

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 3

Road Runner Federal 25-33-9 2H

SHL 220' FSL & 730' FEL Sec. 9, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 9, T. 25 S., R. 33 E.

Lea County, NM

MD (= 11,097' TVD). Hole will extend north of the drilling window to allow for pump installation. All perforations will be inside ($\geq 330'$ from the dedication perimeter) the drilling window.

See COA for Depth Changes

Hole O. D.	Interval (MD)	Casing O. D.	Age	Weight (lb/ft)	Grade	Connection	Collapse	Burst	Tension
17.5"	0' - 1150'	13.375"	New	54.5	J-55	Butt	2.70	4.66	13.6
12.25"	0' - 5100'	9.625"	New	40	N-80	LTC	1.49	1.83	3.61
8.75"	0' - 15912'	5.5"	New	23	L-80 HCE	DWC/C	2.99	1.44	1.59

The following cement volumes are approximate and are calculated on the assumption that a gauge hole will be achieved. The surface and intermediate casing strings will have centralizers on the bottom 3 joints of casing (minimum of one centralizer per joint) and then every 3rd joint to surface. The production string will have centralizers on every joint in the lateral, then every other joint through the curve and to surface. The casing shoe will not be drilled out until at least 500 psi compressive strength is achieved.

Casing	Slurry	Sacks	pounds per gallon	cubic feet per sack	gallons per sack	cubic feet	% excess	TOC
13.375" lead	Premium plus C + 0.005 lb/sk static free + 2% CaCl ₂ + 0.005 gps FP-6L + 4% bentonite	668	13.5	1.75	9.16	1169	100	GL
13.375" tail	Premium plus C + 0.005 lb/sk static free + 1% CaCl ₂ + 0.005 gps FP-6L	339	14.8	1.34	6.34	454	100	850'
9.625" lead	35:65 poz Premium plus C + 0.005 lb/sk static free + 5% NaCl + 0.6% CD-	941	12.9	1.92	10.16	1808	50	GL

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 4

Road Runner Federal 25-33-9 2H

SHL 220' FSL & 730' FEL Sec. 9, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 9, T. 25 S., R. 33 E.

Lea County, NM

	32 + 0.005 gps FP-6L + 4% bentonite + 0.5% sodium metasilicate + 0.1% FL-52A + 5% MPA							
9.625" tail	Premium plus C + 0.005 lb/sk static free + 0.005 gps FP-6L	368	14.8	1.33	6.32	489	50	4100'
5.5" lead	50:50 poz Premium plus H + 0.005 lb/sk static free + 5% NaCl + 0.005 gps FP-6L + 10% bentonite + 0.2% sodium metasilicate + 0.45% FL-52A	1367	11.9	2.38	13.53	3253	50 in open hole & zero in casing	GL
5.5" tail	50:50 poz Premium plus H + 0.005 lb/sk static free + 5% NaCl + 0.3% CD- 32 + 0.3% FL-25 + 0.005 gps FP- 6L + 2% bentonite + 0.3% sodium metasilicate + 0.4% FL-52A	1456	14.2	1.30	5.87	1892	35	8460'

5. MUD PROGRAM

An electronic/mechanical mud monitor with a minimum pit volume totalizer, stroke counter, and flow sensor will be used.

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 5

Road Runner Federal 25-33-9 2H

SHL 220' FSL & 730' FEL Sec. 9, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 9, T. 25 S., R. 33 E.

Lea County, NM

Interval	Type	Weight	Viscosity	Fluid Loss
0' - 1,150'	fresh water spud mud	8.6 - 8.9	28 - 36	no control
1,150' - 5,100'	brine	9.8 - 10.0	28 - 30	no control
KOP-EOB: 5,100' - 11,411'	cut brine	8.8 - 9.3	28 - 30	no control
Lateral 11,411' - TD	cut brine	8.8 - 9.3	28 - 30	no control

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or abnormal pressures. If poor hole conditions are encountered, then mud properties may have to be adjusted in order to run casing.

6. CORES, TESTS, & LOGS

*See COA for logging requirement.
GR/N TD (vertical section) to surface.*

No cores, drill stem test, or logs are planned.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈ 5204 psi. Expected bottom hole temperature is 175° F.

No H₂S is expected. Nevertheless, H₂S plan will be activated at least 500' before drilling into the Delaware formation.

Water and/or brine flows are possible in the Salado, Castile, Delaware, and Bone Spring. Lost circulation is possible in the Bone Spring.

8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take 3 months to drill and complete the well.

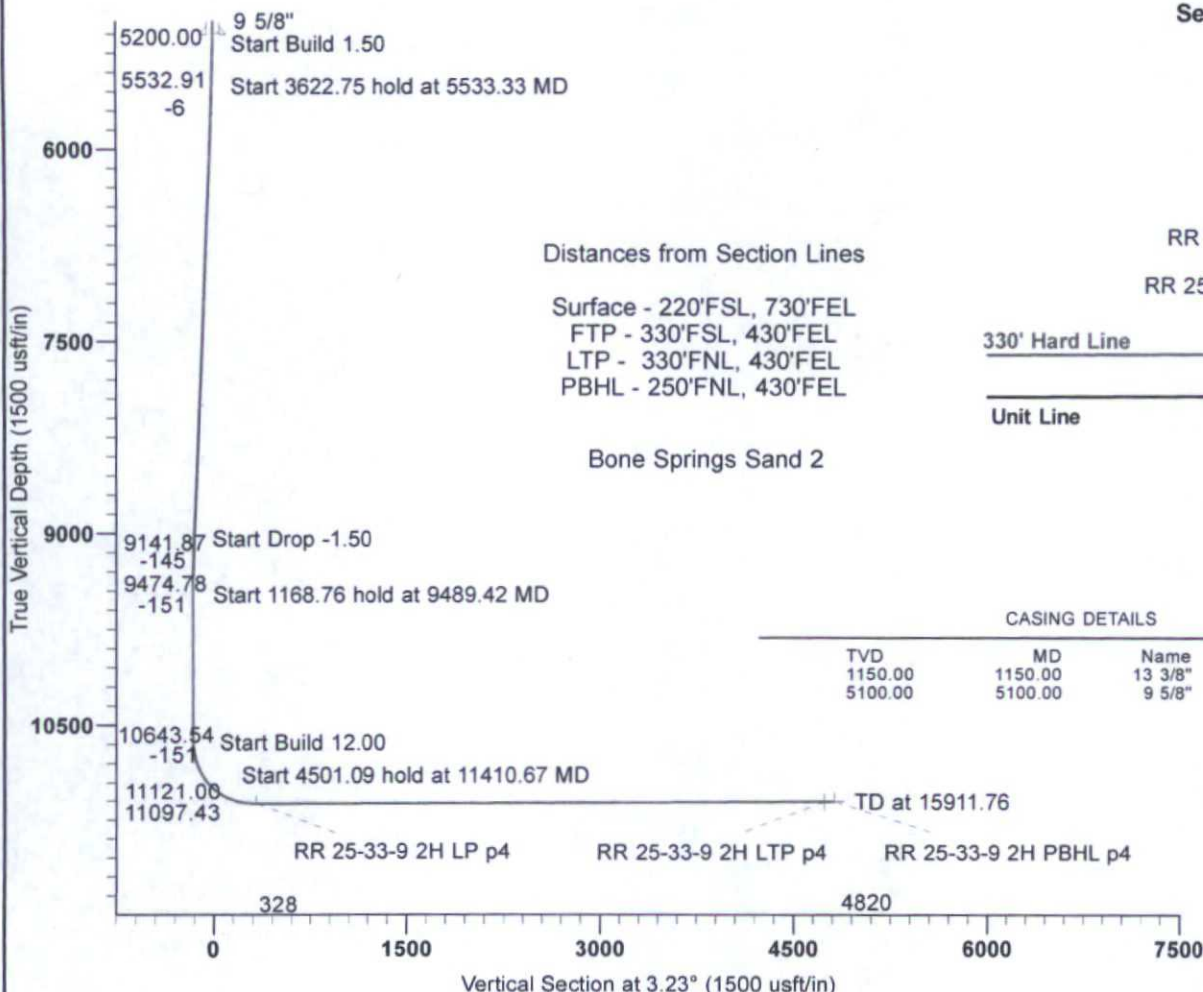
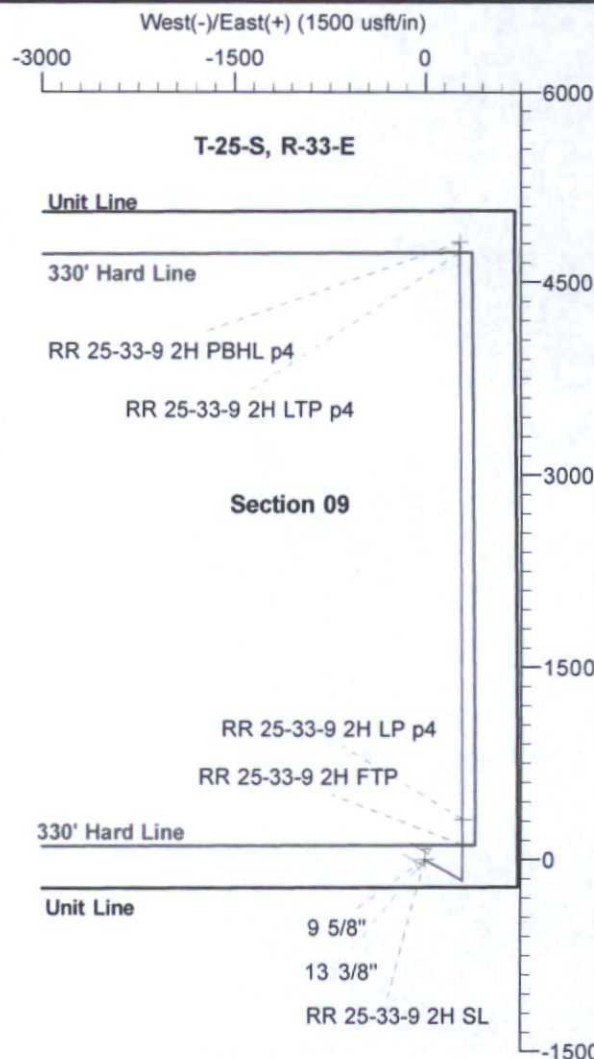
ROADRUNNER OIL & GAS, LLC

Project: Lea County, NM
Site: Road Runner 25-33-9 1H - 2H
Well: 2H
Wellbore: Lateral
Design: Plan #4



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.76°

Magnetic Field
Strength: 48256.7snT
Dip Angle: 60.02°
Date: 10/15/2014
Model: IGRF2010



CASING DETAILS

TVD	MD	Name	Size
1150.00	1150.00	13 3/8"	13.375
5100.00	5100.00	9 5/8"	9.625

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape Point
RR 25-33-9 2H FTP	0.00	111.49	299.18	415042.46	777555.94	Point
RR 25-33-9 2H SL	0.00	0.00	0.00	414930.97	777256.76	Point
RR 25-33-9 2H PBHL p4	11097.43	4812.45	271.31	419743.42	777528.07	Point
RR 25-33-9 2H LTP p4	11099.31	4732.41	271.68	419663.39	777528.44	Point
RR 25-33-9 2H LP p4	11121.00	311.50	298.02	415242.47	777554.78	Point

SECTION DETAILS

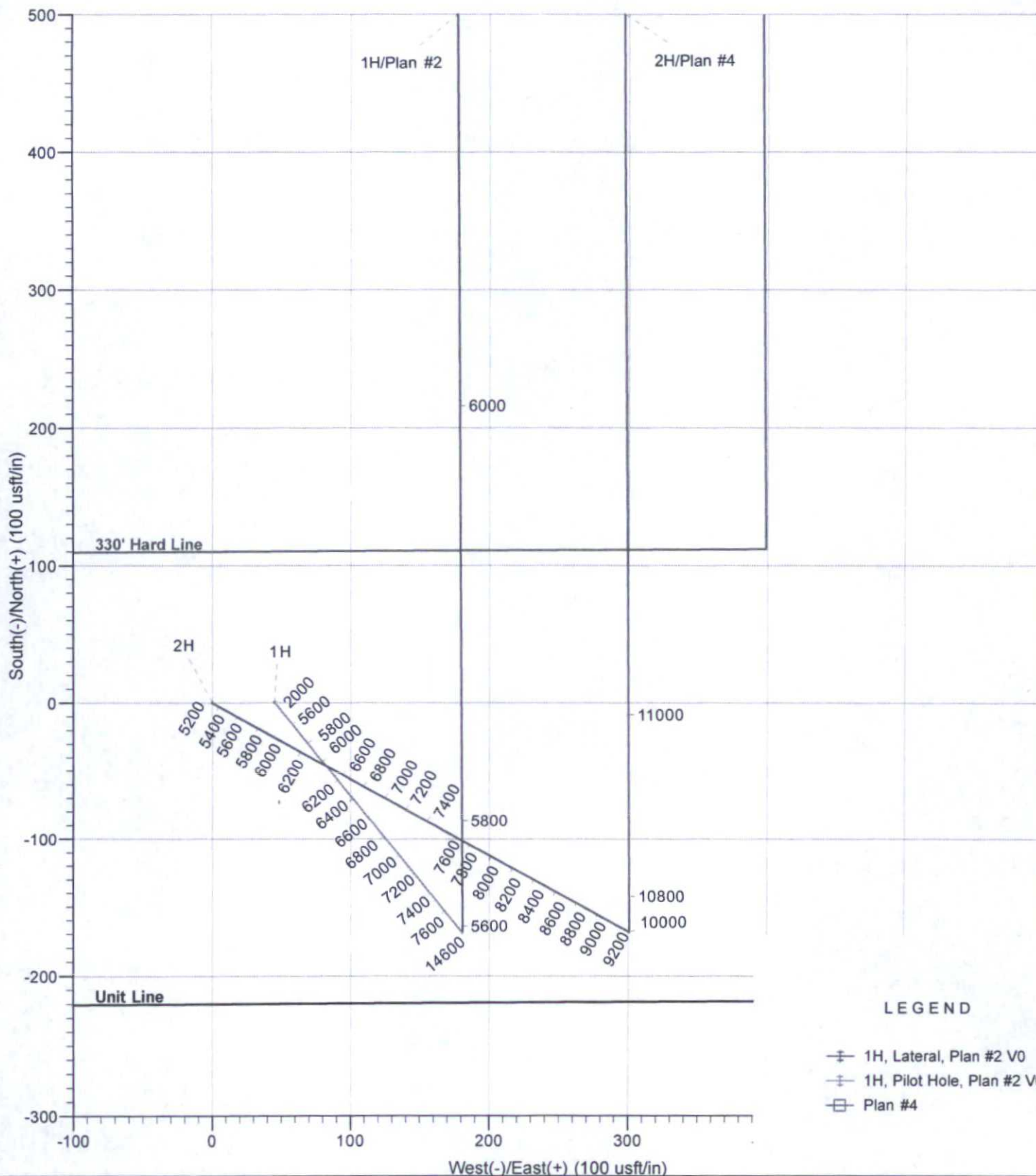
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00	
5533.33	5.00	119.24	5532.91	-7.10	12.68	1.50	119.24	-6.38	
9156.08	5.00	119.24	9141.87	-161.35	288.18	0.00	0.00	-144.86	
9489.42	0.00	119.24	9474.78	-168.45	300.86	1.50	180.00	-151.23	
10658.18	0.00	119.24	10643.54	-168.45	300.86	0.00	119.24	-151.23	
11410.67	90.30	359.66	11121.00	311.50	298.02	12.00	359.66	327.80	
15911.76	90.30	359.66	11097.43	4812.45	271.31	0.00	0.00	4820.09	RR 25-33-9 2H PBHL p4

Project: Lea County, NM
Site: Road Runner 25-33-9 1H - 2H
Well: 2H
Wellbore: Lateral
Design: Plan #4

Slot Name	+N/-S	+E/-W	Northing	Easting
1H	0.27	44.99	414931.24	777301.75
2H	0.00	0.00	414930.97	777256.76



Magnetic Field
Strength: 48256.7snT
Dip Angle: 60.02°
Date: 10/15/2014
Model: IGRF2010



Plan: Plan #4 (2H/Lateral)
Created By: Tari Umy
Date: 13:46, November 03 2014

PREMIER DIRECTIONAL DRILLING
12941 North Freeway Ste 400, Houston, TX 77060
Phone: 281-673-4000



Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Road Runner 25-33-9 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #4		

Project	Lea County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Road Runner 25-33-9 1H - 2H				
Site Position:		Northing:	414,931.24 usft	Latitude:	32° 8' 18.344 N
From:	Map	Easting:	777,301.75 usft	Longitude:	103° 34' 15.569 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	2H - Slot 2H					
Well Position	+N/-S	-0.27 usft	Northing:	414,930.97 usft	Latitude:	32° 8' 18.345 N
	+E/-W	-44.99 usft	Easting:	777,256.76 usft	Longitude:	103° 34' 16.092 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level:		0.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/15/2014	7.17	60.02	48,257

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	3.23

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,533.33	5.00	119.24	5,532.91	-7.10	12.68	1.50	1.50	0.00	119.24	
9,156.08	5.00	119.24	9,141.87	-161.35	288.18	0.00	0.00	0.00	0.00	
9,489.42	0.00	119.24	9,474.78	-168.45	300.86	1.50	-1.50	0.00	180.00	
10,658.18	0.00	119.24	10,643.54	-168.45	300.86	0.00	0.00	0.00	119.24	
11,410.67	90.30	359.66	11,121.00	311.50	298.02	12.00	12.00	0.00	359.66	
15,911.76	90.30	359.66	11,097.43	4,812.45	271.31	0.00	0.00	0.00	0.00	RR 25-33-9 2H PBHL

Premier Directional Drilling Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Road Runner 25-33-9 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,150.00	0.00	0.00	1,150.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Road Runner 25-33-9 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9 5/8"									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	1.50	119.24	5,299.99	-0.64	1.14	-0.57	1.50	1.50	0.00
5,400.00	3.00	119.24	5,399.91	-2.56	4.57	-2.30	1.50	1.50	0.00
5,500.00	4.50	119.24	5,499.69	-5.75	10.27	-5.16	1.50	1.50	0.00
5,533.33	5.00	119.24	5,532.91	-7.10	12.68	-6.38	1.50	1.50	0.00
5,600.00	5.00	119.24	5,599.32	-9.94	17.75	-8.92	0.00	0.00	0.00
5,700.00	5.00	119.24	5,698.94	-14.20	25.36	-12.75	0.00	0.00	0.00
5,800.00	5.00	119.24	5,798.56	-18.46	32.96	-16.57	0.00	0.00	0.00
5,900.00	5.00	119.24	5,898.18	-22.71	40.57	-20.39	0.00	0.00	0.00
6,000.00	5.00	119.24	5,997.80	-26.97	48.17	-24.21	0.00	0.00	0.00
6,100.00	5.00	119.24	6,097.42	-31.23	55.78	-28.04	0.00	0.00	0.00
6,200.00	5.00	119.24	6,197.04	-35.49	63.38	-31.86	0.00	0.00	0.00
6,300.00	5.00	119.24	6,296.66	-39.74	70.99	-35.68	0.00	0.00	0.00
6,400.00	5.00	119.24	6,396.28	-44.00	78.59	-39.50	0.00	0.00	0.00
6,500.00	5.00	119.24	6,495.90	-48.26	86.19	-43.33	0.00	0.00	0.00
6,600.00	5.00	119.24	6,595.52	-52.52	93.80	-47.15	0.00	0.00	0.00
6,700.00	5.00	119.24	6,695.14	-56.78	101.40	-50.97	0.00	0.00	0.00
6,800.00	5.00	119.24	6,794.76	-61.03	109.01	-54.80	0.00	0.00	0.00
6,900.00	5.00	119.24	6,894.38	-65.29	116.61	-58.62	0.00	0.00	0.00
7,000.00	5.00	119.24	6,994.00	-69.55	124.22	-62.44	0.00	0.00	0.00
7,100.00	5.00	119.24	7,093.62	-73.81	131.82	-66.26	0.00	0.00	0.00
7,200.00	5.00	119.24	7,193.24	-78.07	139.43	-70.09	0.00	0.00	0.00
7,300.00	5.00	119.24	7,292.85	-82.32	147.03	-73.91	0.00	0.00	0.00
7,400.00	5.00	119.24	7,392.47	-86.58	154.64	-77.73	0.00	0.00	0.00
7,500.00	5.00	119.24	7,492.09	-90.84	162.24	-81.55	0.00	0.00	0.00
7,600.00	5.00	119.24	7,591.71	-95.10	169.85	-85.38	0.00	0.00	0.00
7,700.00	5.00	119.24	7,691.33	-99.36	177.45	-89.20	0.00	0.00	0.00
7,800.00	5.00	119.24	7,790.95	-103.61	185.06	-93.02	0.00	0.00	0.00
7,900.00	5.00	119.24	7,890.57	-107.87	192.66	-96.84	0.00	0.00	0.00
8,000.00	5.00	119.24	7,990.19	-112.13	200.27	-100.67	0.00	0.00	0.00
8,100.00	5.00	119.24	8,089.81	-116.39	207.87	-104.49	0.00	0.00	0.00
8,200.00	5.00	119.24	8,189.43	-120.64	215.47	-108.31	0.00	0.00	0.00
8,300.00	5.00	119.24	8,289.05	-124.90	223.08	-112.13	0.00	0.00	0.00
8,400.00	5.00	119.24	8,388.67	-129.16	230.68	-115.96	0.00	0.00	0.00
8,500.00	5.00	119.24	8,488.29	-133.42	238.29	-119.78	0.00	0.00	0.00
8,600.00	5.00	119.24	8,587.91	-137.68	245.89	-123.60	0.00	0.00	0.00
8,700.00	5.00	119.24	8,687.53	-141.93	253.50	-127.43	0.00	0.00	0.00
8,800.00	5.00	119.24	8,787.15	-146.19	261.10	-131.25	0.00	0.00	0.00
8,900.00	5.00	119.24	8,886.77	-150.45	268.71	-135.07	0.00	0.00	0.00
9,000.00	5.00	119.24	8,986.39	-154.71	276.31	-138.89	0.00	0.00	0.00
9,100.00	5.00	119.24	9,086.01	-158.97	283.92	-142.72	0.00	0.00	0.00
9,156.08	5.00	119.24	9,141.87	-161.35	288.18	-144.86	0.00	0.00	0.00
9,200.00	4.34	119.24	9,185.65	-163.10	291.30	-146.43	1.50	-1.50	0.00
9,300.00	2.84	119.24	9,285.45	-166.16	296.77	-149.18	1.50	-1.50	0.00
9,400.00	1.34	119.24	9,385.38	-167.94	299.95	-150.78	1.50	-1.50	0.00
9,489.42	0.00	119.24	9,474.78	-168.45	300.86	-151.23	1.50	-1.50	0.00
9,500.00	0.00	119.24	9,485.37	-168.45	300.86	-151.23	0.00	0.00	0.00
9,600.00	0.00	119.24	9,585.37	-168.45	300.86	-151.23	0.00	0.00	0.00
9,700.00	0.00	119.24	9,685.37	-168.45	300.86	-151.23	0.00	0.00	0.00
9,800.00	0.00	119.24	9,785.37	-168.45	300.86	-151.23	0.00	0.00	0.00
9,900.00	0.00	119.24	9,885.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,000.00	0.00	119.24	9,985.37	-168.45	300.86	-151.23	0.00	0.00	0.00

Premier Directional Drilling Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Road Runner 25-33-9 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,100.00	0.00	119.24	10,085.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,200.00	0.00	119.24	10,185.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,300.00	0.00	119.24	10,285.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,400.00	0.00	119.24	10,385.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,500.00	0.00	119.24	10,485.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,600.00	0.00	119.24	10,585.37	-168.45	300.86	-151.23	0.00	0.00	0.00
10,658.18	0.00	119.24	10,643.54	-168.45	300.86	-151.23	0.00	0.00	0.00
10,675.00	2.02	359.66	10,660.37	-168.16	300.86	-150.94	12.00	12.00	-710.77
10,700.00	5.02	359.66	10,685.32	-166.62	300.85	-149.41	12.00	12.00	0.00
10,725.00	8.02	359.66	10,710.15	-163.79	300.84	-146.58	12.00	12.00	0.00
10,750.00	11.02	359.66	10,734.80	-159.65	300.81	-142.45	12.00	12.00	0.00
10,775.00	14.02	359.66	10,759.21	-154.23	300.78	-137.04	12.00	12.00	0.00
10,800.00	17.02	359.66	10,783.29	-147.55	300.74	-130.37	12.00	12.00	0.00
10,825.00	20.02	359.66	10,807.00	-139.61	300.69	-122.44	12.00	12.00	0.00
10,850.00	23.02	359.66	10,830.25	-130.44	300.64	-113.29	12.00	12.00	0.00
10,875.00	26.02	359.66	10,852.99	-120.06	300.58	-102.94	12.00	12.00	0.00
10,900.00	29.02	359.66	10,875.16	-108.51	300.51	-91.41	12.00	12.00	0.00
10,925.00	32.02	359.66	10,896.70	-95.82	300.43	-78.74	12.00	12.00	0.00
10,950.00	35.02	359.66	10,917.54	-82.02	300.35	-64.96	12.00	12.00	0.00
10,975.00	38.02	359.66	10,937.63	-67.14	300.26	-50.12	12.00	12.00	0.00
11,000.00	41.02	359.66	10,956.91	-51.24	300.17	-34.24	12.00	12.00	0.00
11,025.00	44.02	359.66	10,975.33	-34.34	300.07	-17.38	12.00	12.00	0.00
11,050.00	47.02	359.66	10,992.85	-16.51	299.96	0.42	12.00	12.00	0.00
11,075.00	50.02	359.66	11,009.40	2.22	299.85	19.11	12.00	12.00	0.00
11,100.00	53.02	359.66	11,024.96	21.79	299.74	38.64	12.00	12.00	0.00
11,125.00	56.02	359.66	11,039.47	42.14	299.62	58.96	12.00	12.00	0.00
11,150.00	59.02	359.66	11,052.89	63.23	299.49	80.00	12.00	12.00	0.00
11,175.00	62.02	359.66	11,065.19	84.99	299.36	101.72	12.00	12.00	0.00
11,200.00	65.02	359.66	11,076.34	107.36	299.23	124.05	12.00	12.00	0.00
11,225.00	68.02	359.66	11,086.30	130.29	299.09	146.94	12.00	12.00	0.00
11,250.00	71.02	359.66	11,095.05	153.71	298.95	170.31	12.00	12.00	0.00
11,275.00	74.02	359.66	11,102.56	177.55	298.81	194.10	12.00	12.00	0.00
11,300.00	77.02	359.66	11,108.81	201.75	298.67	218.26	12.00	12.00	0.00
11,325.00	80.02	359.66	11,113.78	226.25	298.52	242.71	12.00	12.00	0.00
11,350.00	83.02	359.66	11,117.47	250.97	298.38	267.39	12.00	12.00	0.00
11,375.00	86.02	359.66	11,119.86	275.85	298.23	292.22	12.00	12.00	0.00
11,400.00	89.02	359.66	11,120.94	300.83	298.08	317.14	12.00	12.00	0.00
11,410.67	90.30	359.66	11,121.00	311.50	298.02	327.80	12.00	12.00	0.00
11,500.00	90.30	359.66	11,120.53	400.82	297.49	416.95	0.00	0.00	0.00
11,600.00	90.30	359.66	11,120.01	500.82	296.89	516.75	0.00	0.00	0.00
11,700.00	90.30	359.66	11,119.49	600.82	296.30	616.56	0.00	0.00	0.00
11,800.00	90.30	359.66	11,118.96	700.81	295.71	716.36	0.00	0.00	0.00
11,900.00	90.30	359.66	11,118.44	800.81	295.11	816.17	0.00	0.00	0.00
12,000.00	90.30	359.66	11,117.92	900.81	294.52	915.97	0.00	0.00	0.00
12,100.00	90.30	359.66	11,117.39	1,000.81	293.93	1,015.78	0.00	0.00	0.00
12,200.00	90.30	359.66	11,116.87	1,100.80	293.33	1,115.58	0.00	0.00	0.00
12,300.00	90.30	359.66	11,116.34	1,200.80	292.74	1,215.39	0.00	0.00	0.00
12,400.00	90.30	359.66	11,115.82	1,300.80	292.15	1,315.19	0.00	0.00	0.00
12,500.00	90.30	359.66	11,115.30	1,400.79	291.55	1,415.00	0.00	0.00	0.00
12,600.00	90.30	359.66	11,114.77	1,500.79	290.96	1,514.80	0.00	0.00	0.00
12,700.00	90.30	359.66	11,114.25	1,600.79	290.37	1,614.60	0.00	0.00	0.00
12,800.00	90.30	359.66	11,113.73	1,700.78	289.77	1,714.41	0.00	0.00	0.00
12,900.00	90.30	359.66	11,113.20	1,800.78	289.18	1,814.21	0.00	0.00	0.00
13,000.00	90.30	359.66	11,112.68	1,900.78	288.59	1,914.02	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Road Runner 25-33-9 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,100.00	90.30	359.66	11,112.16	2,000.77	287.99	2,013.82	0.00	0.00	0.00
13,200.00	90.30	359.66	11,111.63	2,100.77	287.40	2,113.63	0.00	0.00	0.00
13,300.00	90.30	359.66	11,111.11	2,200.77	286.81	2,213.43	0.00	0.00	0.00
13,400.00	90.30	359.66	11,110.59	2,300.76	286.21	2,313.24	0.00	0.00	0.00
13,500.00	90.30	359.66	11,110.06	2,400.76	285.62	2,413.04	0.00	0.00	0.00
13,600.00	90.30	359.66	11,109.54	2,500.76	285.03	2,512.85	0.00	0.00	0.00
13,700.00	90.30	359.66	11,109.01	2,600.76	284.43	2,612.65	0.00	0.00	0.00
13,800.00	90.30	359.66	11,108.49	2,700.75	283.84	2,712.45	0.00	0.00	0.00
13,900.00	90.30	359.66	11,107.97	2,800.75	283.25	2,812.26	0.00	0.00	0.00
14,000.00	90.30	359.66	11,107.44	2,900.75	282.65	2,912.06	0.00	0.00	0.00
14,100.00	90.30	359.66	11,106.92	3,000.74	282.06	3,011.87	0.00	0.00	0.00
14,200.00	90.30	359.66	11,106.40	3,100.74	281.46	3,111.67	0.00	0.00	0.00
14,300.00	90.30	359.66	11,105.87	3,200.74	280.87	3,211.48	0.00	0.00	0.00
14,400.00	90.30	359.66	11,105.35	3,300.73	280.28	3,311.28	0.00	0.00	0.00
14,500.00	90.30	359.66	11,104.83	3,400.73	279.68	3,411.09	0.00	0.00	0.00
14,600.00	90.30	359.66	11,104.30	3,500.73	279.09	3,510.89	0.00	0.00	0.00
14,700.00	90.30	359.66	11,103.78	3,600.72	278.50	3,610.70	0.00	0.00	0.00
14,800.00	90.30	359.66	11,103.26	3,700.72	277.90	3,710.50	0.00	0.00	0.00
14,900.00	90.30	359.66	11,102.73	3,800.72	277.31	3,810.31	0.00	0.00	0.00
15,000.00	90.30	359.66	11,102.21	3,900.71	276.72	3,910.11	0.00	0.00	0.00
15,100.00	90.30	359.66	11,101.68	4,000.71	276.12	4,009.91	0.00	0.00	0.00
15,200.00	90.30	359.66	11,101.16	4,100.71	275.53	4,109.72	0.00	0.00	0.00
15,300.00	90.30	359.66	11,100.64	4,200.71	274.94	4,209.52	0.00	0.00	0.00
15,400.00	90.30	359.66	11,100.11	4,300.70	274.34	4,309.33	0.00	0.00	0.00
15,500.00	90.30	359.66	11,099.59	4,400.70	273.75	4,409.13	0.00	0.00	0.00
15,600.00	90.30	359.66	11,099.07	4,500.70	273.16	4,508.94	0.00	0.00	0.00
15,700.00	90.30	359.66	11,098.54	4,600.69	272.56	4,608.74	0.00	0.00	0.00
15,800.00	90.30	359.66	11,098.02	4,700.69	271.97	4,708.55	0.00	0.00	0.00
15,900.00	90.30	359.66	11,097.50	4,800.69	271.38	4,808.35	0.00	0.00	0.00
15,911.76	90.30	359.66	11,097.43	4,812.45	271.31	4,820.09	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RR 25-33-9 2H SL - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	414,930.97	777,256.76	32° 8' 18.345 N	103° 34' 16.092 W
RR 25-33-9 2H FTP - plan misses target center by 0.02usft at 11204.54usft MD (11078.24 TVD, 111.49 N, 299.20 E) - Point	0.00	0.01	11,078.24	111.49	299.18	415,042.46	777,555.94	32° 8' 19.427 N	103° 34' 12.603 W
RR 25-33-9 2H PBHL p4 - plan hits target center - Point	0.00	0.01	11,097.43	4,812.45	271.31	419,743.42	777,528.07	32° 9' 5.947 N	103° 34' 12.540 W
RR 25-33-9 2H LTP p4 - plan misses target center by 1.46usft at 15831.72usft MD (11097.85 TVD, 4732.41 N, 271.78 E) - Point	0.00	0.00	11,099.31	4,732.41	271.68	419,663.39	777,528.43	32° 9' 5.155 N	103° 34' 12.542 W
RR 25-33-9 2H LP p4 - plan hits target center - Point	0.00	0.00	11,121.00	311.50	298.02	415,242.47	777,554.78	32° 8' 21.406 N	103° 34' 12.600 W

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 10/30/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.00	15,911.76	Plan #4 (Lateral)	MWD
			Description
			OWSG MWD - Standard

Summary						
	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design					
Road Runner 25-33-9 1H - 2H						
1H - Lateral - Plan #2	1,773.13	5,192.13	44.99	38.81	7.283 CC	
1H - Lateral - Plan #2	1,800.00	5,218.86	45.02	38.75	7.176 ES	
1H - Lateral - Plan #2	5,900.00	9,359.53	140.49	119.73	6.765 SF	
1H - Pilot Hole - Plan #2	6,226.54	6,223.60	34.49	12.64	1.578 CC	
1H - Pilot Hole - Plan #2	6,350.00	6,347.00	34.74	12.46	1.559 ES	
1H - Pilot Hole - Plan #2	6,400.00	6,396.97	34.97	12.52	1.558 SF	

Offset Design		Road Runner 25-33-9 1H - 2H - 1H - Lateral - Plan #2										Offset Site Error:		0.00 usft
Survey Program:		0- 8960-										Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0 00	0 00	3,419 00	0 00	0 00	0 00	89 66	0 27	44 99	44 99					
50 00	50 00	3,469 00	50 00	0 09	0 00	89 66	0 27	44 99	44 99	44 90	0 09	500 910		
100 00	100 00	3,519 00	100 00	0 18	0 00	89 66	0 27	44 99	44 99	44 81	0 18	250 734		
150 00	150 00	3,569 00	150 00	0 36	0 00	89 66	0 27	44 99	44 99	44 63	0 36	125 437		
200 00	200 00	3,619 00	200 00	0 54	0 00	89 66	0 27	44 99	44 99	44 45	0 54	83 640		
250 00	250 00	3,669 00	250 00	0 72	0 00	89 66	0 27	44 99	44 99	44 27	0 72	62 736		
300 00	300 00	3,719 00	300 00	0 90	0 00	89 66	0 27	44 99	44 99	44 09	0 90	50 192		
350 00	350 00	3,769 00	350 00	1 08	0 00	89 66	0 27	44 99	44 99	43 92	1 08	41 828		
400 00	400 00	3,819 00	400 00	1 25	0 00	89 66	0 27	44 99	44 99	43 74	1 25	35 853		
450 00	450 00	3,869 00	450 00	1 43	0 00	89 66	0 27	44 99	44 99	43 56	1 43	31 372		
500 00	500 00	3,919 00	500 00	1 61	0 00	89 66	0 27	44 99	44 99	43 38	1 61	27 887		
550 00	550 00	3,969 00	550 00	1 79	0 00	89 66	0 27	44 99	44 99	43 20	1 79	25 099		
600 00	600 00	4,019 00	600 00	1 97	0 00	89 66	0 27	44 99	44 99	43 02	1 97	22 817		
650 00	650 00	4,069 00	650 00	2 15	0 00	89 66	0 27	44 99	44 99	42 84	2 15	20 916		
700 00	700 00	4,119 00	700 00	2 33	0 00	89 66	0 27	44 99	44 99	42 66	2 33	19 307		
750 00	750 00	4,169 00	750 00	2 51	0 00	89 66	0 27	44 99	44 99	42 48	2 51	17 928		
800 00	800 00	4,219 00	800 00	2 69	0 00	89 66	0 27	44 99	44 99	42 30	2 69	16 733		
850 00	850 00	4,269 00	850 00	2 87	0 00	89 66	0 27	44 99	44 99	42 12	2 87	15 687		
900 00	900 00	4,319 00	900 00	3 05	0 00	89 66	0 27	44 99	44 99	41 94	3 05	14 785		
950 00	950 00	4,369 00	950 00	3 23	0 00	89 66	0 27	44 99	44 99	41 76	3 23	13 944		
1,000 00	1,000 00	4,419 00	1,000 00	3 41	0 00	89 66	0 27	44 99	44 99	41 58	3 41	13 210		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Lateral - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0 - 8960-													Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,050.00	1,050.00	4,469.00	1,050.00	3.58	0.00	89.66	0.27	44.99	44.99	41.41	3.58	12.550		
1,100.00	1,100.00	4,519.00	1,100.00	3.76	0.00	89.66	0.27	44.99	44.99	41.23	3.76	11.952		
1,150.00	1,150.00	4,569.00	1,150.00	3.94	0.00	89.66	0.27	44.99	44.99	41.05	3.94	11.409		
1,200.00	1,200.00	4,619.00	1,200.00	4.12	0.00	89.66	0.27	44.99	44.99	40.87	4.12	10.913		
1,250.00	1,250.00	4,669.00	1,250.00	4.30	0.00	89.66	0.27	44.99	44.99	40.69	4.30	10.458		
1,300.00	1,300.00	4,719.00	1,300.00	4.48	0.00	89.66	0.27	44.99	44.99	40.51	4.48	10.040		
1,350.00	1,350.00	4,769.00	1,350.00	4.66	0.00	89.66	0.27	44.99	44.99	40.33	4.66	9.654		
1,400.00	1,400.00	4,819.00	1,400.00	4.84	0.00	89.66	0.27	44.99	44.99	40.15	4.84	9.296		
1,450.00	1,450.00	4,869.00	1,450.00	5.02	0.00	89.66	0.27	44.99	44.99	39.97	5.02	8.964		
1,500.00	1,500.00	4,919.00	1,500.00	5.20	0.00	89.66	0.27	44.99	44.99	39.79	5.20	8.655		
1,550.00	1,550.00	4,969.00	1,550.00	5.38	0.00	89.66	0.27	44.99	44.99	39.61	5.38	8.367		
1,600.00	1,600.00	5,019.00	1,600.00	5.56	0.00	89.66	0.27	44.99	44.99	39.43	5.56	8.097		
1,650.00	1,650.00	5,069.00	1,650.00	5.74	0.00	89.66	0.27	44.99	44.99	39.25	5.74	7.844		
1,700.00	1,700.00	5,119.00	1,700.00	5.91	0.00	89.66	0.27	44.99	44.99	39.08	5.91	7.606		
1,750.00	1,750.00	5,169.00	1,750.00	6.09	0.00	89.66	0.27	44.99	44.99	38.90	6.09	7.383		
1,773.13	1,773.13	5,192.13	1,773.13	6.18	0.00	89.66	0.27	44.99	44.99	38.81	6.18	7.283 CC		
1,800.00	1,800.00	5,218.86	1,799.86	6.27	0.00	89.70	0.23	45.02	45.02	38.75	6.27	7.176 ES		
1,850.00	1,850.00	5,268.49	1,849.49	6.45	0.00	90.26	-0.21	45.37	45.38	38.93	6.45	7.032		
1,900.00	1,900.00	5,318.10	1,899.08	6.63	0.00	91.43	-1.15	46.13	46.16	39.52	6.63	6.960		
1,950.00	1,950.00	5,367.66	1,948.61	6.81	0.00	93.14	-2.80	47.29	47.39	40.57	6.81	6.957		
2,000.00	2,000.00	5,417.17	1,998.06	6.99	0.00	95.31	-4.54	48.86	49.10	42.11	6.99	7.025		
2,050.00	2,050.00	5,466.61	2,047.39	7.17	0.00	97.82	-8.98	50.82	51.36	44.19	7.17	7.163		
2,100.00	2,100.00	5,515.96	2,096.60	7.35	0.00	100.56	-9.91	53.17	54.19	46.84	7.35	7.374		
2,150.00	2,150.00	5,565.55	2,146.00	7.53	0.00	103.36	-13.27	55.86	57.56	50.03	7.53	7.646		
2,200.00	2,200.00	5,615.36	2,195.62	7.71	0.00	105.88	-16.88	58.80	61.09	53.38	7.71	7.926		
2,250.00	2,250.00	5,665.17	2,245.23	7.89	0.00	108.13	-20.08	61.34	64.72	56.84	7.89	8.207		
2,300.00	2,300.00	5,714.97	2,294.85	8.07	0.00	110.13	-23.49	64.08	68.45	60.38	8.07	8.486		
2,350.00	2,350.00	5,764.78	2,344.46	8.24	0.00	111.93	-26.90	66.82	72.25	64.00	8.25	8.762		
2,400.00	2,400.00	5,814.59	2,394.08	8.42	0.00	113.55	-30.31	69.56	76.11	67.68	8.42	9.034		
2,450.00	2,450.00	5,864.39	2,443.69	8.60	0.00	115.00	-33.72	72.30	80.03	71.42	8.60	9.302		
2,500.00	2,500.00	5,914.20	2,493.31	8.78	0.00	116.33	-37.13	75.04	83.99	75.21	8.78	9.563		
2,550.00	2,550.00	5,964.01	2,542.92	8.96	0.00	117.53	-40.54	77.78	87.99	79.03	8.96	9.819		
2,600.00	2,600.00	6,013.81	2,592.53	9.14	0.00	118.63	-43.95	80.52	92.03	82.99	9.14	10.068		
2,650.00	2,650.00	6,063.62	2,642.15	9.32	0.00	119.63	-47.36	83.26	96.10	86.78	9.32	10.311		
2,700.00	2,700.00	6,113.43	2,691.76	9.50	0.00	120.56	-50.77	86.00	100.20	90.70	9.50	10.548		
2,750.00	2,750.00	6,163.23	2,741.38	9.68	0.00	121.41	-54.18	88.73	104.32	94.64	9.68	10.778		
2,800.00	2,800.00	6,213.04	2,790.99	9.86	0.00	122.19	-57.59	91.47	108.47	98.61	9.86	11.003		
2,850.00	2,850.00	6,262.85	2,840.61	10.04	0.00	122.92	-61.00	94.21	112.63	102.59	10.04	11.221		
2,900.00	2,900.00	6,312.65	2,890.22	10.22	0.00	123.60	-64.40	96.95	116.80	106.59	10.22	11.433		
2,950.00	2,950.00	6,362.46	2,939.84	10.40	0.00	124.23	-67.81	99.69	121.00	110.60	10.40	11.639		
3,000.00	3,000.00	6,412.27	2,989.45	10.57	0.00	124.81	-71.22	102.43	125.20	114.63	10.58	11.839		
3,050.00	3,050.00	6,462.08	3,039.07	10.75	0.00	125.36	-74.63	105.17	129.42	118.67	10.75	12.034		
3,100.00	3,100.00	6,511.88	3,088.68	10.93	0.00	125.88	-78.04	107.91	133.65	122.72	10.93	12.224		
3,150.00	3,150.00	6,561.69	3,138.29	11.11	0.00	126.36	-81.45	110.65	137.89	126.78	11.11	12.408		
3,200.00	3,200.00	6,611.50	3,187.91	11.29	0.00	126.81	-84.86	113.39	142.14	130.85	11.29	12.588		
3,250.00	3,250.00	6,661.30	3,237.52	11.47	0.00	127.24	-88.27	116.13	146.40	134.93	11.47	12.782		
3,300.00	3,300.00	6,711.11	3,287.14	11.65	0.00	127.64	-91.68	118.86	150.66	139.01	11.65	12.932		
3,350.00	3,350.00	6,760.92	3,336.75	11.83	0.00	128.02	-95.09	121.60	154.93	143.10	11.83	13.097		
3,400.00	3,400.00	6,810.72	3,386.37	12.01	0.00	128.38	-98.50	124.34	159.21	147.20	12.01	13.258		
3,450.00	3,450.00	6,860.53	3,435.98	12.19	0.00	128.73	-101.91	127.08	163.50	151.31	12.19	13.414		
3,500.00	3,500.00	6,910.34	3,485.60	12.37	0.00	129.05	-105.32	129.82	167.79	155.42	12.37	13.567		
3,550.00	3,550.00	6,960.14	3,535.21	12.55	0.00	129.36	-108.72	132.56	172.08	159.53	12.55	13.715		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Lateral - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0- 8950-													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,600.00	3,600.00	7,009.95	3,584.83	12.73	0.00	129.65	-112.13	135.30	176.38	163.65	12.73	13.860		
3,650.00	3,650.00	7,059.76	3,634.44	12.90	0.00	129.93	-115.54	138.04	180.88	167.78	12.91	14.001		
3,700.00	3,700.00	7,109.57	3,684.05	13.08	0.00	130.20	-118.95	140.78	184.99	171.91	13.08	14.138		
3,750.00	3,750.00	7,159.37	3,733.67	13.26	0.00	130.45	-122.36	143.52	189.30	176.04	13.26	14.272		
3,800.00	3,800.00	7,209.18	3,783.28	13.44	0.00	130.69	-125.77	146.26	193.62	180.18	13.44	14.403		
3,850.00	3,850.00	7,258.99	3,832.90	13.62	0.00	130.93	-129.18	148.99	197.94	184.32	13.62	14.531		
3,900.00	3,900.00	7,308.79	3,882.51	13.80	0.00	131.15	-132.59	151.73	202.26	188.46	13.80	14.655		
3,950.00	3,950.00	7,358.60	3,932.13	13.98	0.00	131.36	-136.00	154.47	206.58	192.60	13.98	14.778		
4,000.00	4,000.00	7,408.41	3,981.74	14.16	0.00	131.57	-139.41	157.21	210.91	196.75	14.16	14.895		
4,050.00	4,050.00	7,458.21	4,031.36	14.34	0.00	131.76	-142.82	159.95	215.24	200.90	14.34	15.011		
4,100.00	4,100.00	7,508.02	4,080.97	14.52	0.00	131.95	-146.23	162.69	219.57	205.05	14.52	15.124		
4,150.00	4,150.00	7,557.83	4,130.58	14.70	0.00	132.13	-149.64	165.43	223.91	209.21	14.70	15.234		
4,200.00	4,200.00	7,607.63	4,180.20	14.88	0.00	132.30	-153.04	168.17	228.24	213.37	14.88	15.342		
4,250.00	4,250.00	7,657.44	4,229.81	15.06	0.00	132.47	-156.45	170.91	232.58	217.53	15.06	15.448		
4,300.00	4,300.00	7,707.24	4,279.42	15.24	0.00	132.63	-159.88	173.66	236.76	221.53	15.24	15.541		
4,350.00	4,350.00	7,757.05	4,329.03	15.41	0.00	132.77	-163.29	176.40	240.90	225.58	15.41	15.634		
4,400.00	4,400.00	7,806.86	4,378.64	15.59	0.00	132.88	-166.70	179.14	245.04	229.59	15.59	15.727		
4,450.00	4,450.00	7,856.67	4,428.25	15.77	0.00	133.01	-170.11	181.87	249.18	233.60	15.77	15.819		
4,500.00	4,500.00	7,906.48	4,477.86	15.95	0.00	133.15	-173.52	184.60	253.32	237.61	15.95	15.911		
4,550.00	4,550.00	7,956.29	4,527.47	16.13	0.00	133.28	-176.93	187.33	257.46	241.62	16.13	16.003		
4,600.00	4,600.00	8,006.10	4,577.08	16.31	0.00	133.40	-180.34	190.06	261.60	245.63	16.31	16.095		
4,650.00	4,650.00	8,055.91	4,626.69	16.49	0.00	133.51	-183.75	192.79	265.74	249.64	16.49	16.187		
4,700.00	4,700.00	8,105.72	4,676.30	16.67	0.00	133.61	-187.16	195.52	269.88	253.65	16.67	16.279		
4,750.00	4,750.00	8,155.53	4,725.91	16.85	0.00	133.71	-190.57	198.25	274.02	257.66	16.85	16.371		
4,800.00	4,800.00	8,205.34	4,775.52	17.03	0.00	133.81	-193.98	200.98	278.16	261.67	17.03	16.463		
4,850.00	4,850.00	8,255.15	4,825.13	17.21	0.00	133.91	-197.39	203.71	282.30	265.68	17.21	16.555		
4,900.00	4,900.00	8,304.96	4,874.74	17.39	0.00	134.01	-200.80	206.44	286.44	269.69	17.39	16.647		
4,950.00	4,950.00	8,354.77	4,924.35	17.57	0.00	134.11	-204.21	209.17	290.58	273.70	17.57	16.739		
5,000.00	5,000.00	8,404.58	4,973.96	17.74	0.00	134.21	-207.62	211.90	294.72	277.71	17.74	16.831		
5,050.00	5,050.00	8,454.39	5,023.57	17.92	0.00	134.31	-211.03	214.63	298.86	281.72	17.92	16.923		
5,100.00	5,100.00	8,504.20	5,073.18	18.10	0.00	134.41	-214.44	217.36	303.00	285.73	18.10	17.015		
5,150.00	5,150.00	8,554.01	5,122.79	18.28	0.00	134.51	-217.85	220.09	307.14	289.74	18.28	17.107		
5,200.00	5,200.00	8,603.82	5,172.40	18.46	0.00	134.61	-221.26	222.82	311.28	293.75	18.46	17.199		
5,250.00	5,250.00	8,653.63	5,222.01	18.63	0.00	134.71	-224.67	225.55	315.42	297.76	18.63	17.291		
5,300.00	5,299.99	8,703.44	5,271.62	18.81	0.00	134.81	-228.08	228.28	319.56	301.77	18.80	17.383		
5,350.00	5,349.98	8,753.25	5,321.23	18.97	0.00	134.91	-231.49	231.01	323.70	305.78	18.96	17.475		
5,400.00	5,399.91	8,803.06	5,370.84	19.14	0.00	14.11	-169.04	181.02	242.59	223.48	19.12	12.689		
5,450.00	5,449.82	8,852.87	5,420.45	19.31	0.00	14.29	-169.04	181.02	239.74	220.47	19.27	12.439		
5,500.00	5,499.69	8,902.68	5,470.06	19.47	0.00	14.52	-169.04	181.02	236.26	216.83	19.42	12.163		
5,550.00	5,549.51	8,952.49	5,519.67	19.64	0.00	14.70	-168.27	181.02	231.82	212.24	19.58	11.839		
5,600.00	5,599.32	9,002.30	5,569.28	19.81	0.00	13.28	-158.51	180.96	223.00	203.25	19.75	11.293		
5,650.00	5,649.13	9,052.11	5,618.89	19.98	0.00	9.88	-139.66	180.84	209.50	189.59	19.91	10.521		
5,700.00	5,698.94	9,101.92	5,668.50	20.15	0.00	3.88	-115.12	180.70	192.68	172.60	20.08	9.597		
5,750.00	5,748.75	9,151.73	5,718.11	20.32	0.00	-3.99	-88.10	180.54	174.48	154.24	20.24	8.619		
5,800.00	5,798.56	9,201.54	5,767.72	20.49	0.00	-13.49	-60.94	180.37	157.47	137.06	20.41	7.714		
5,850.00	5,848.37	9,251.35	5,817.33	20.66	0.00	-23.77	-35.06	180.22	144.94	124.35	20.59	7.040		
5,897.13	5,895.32	9,357.76	5,885.09	20.82	0.00	-33.29	-12.47	180.08	140.47	119.72	20.76	6.768		
5,900.00	5,898.18	9,359.53	5,886.28	20.83	0.00	-33.85	-11.15	180.08	140.49	119.73	20.77	6.765 SF		
5,950.00	5,947.99	9,387.99	5,904.68	21.00	0.00	-42.93	10.54	179.95	146.66	125.71	20.95	7.001		
6,000.00	5,997.80	9,412.45	5,919.45	21.17	0.00	-50.65	30.05	179.83	163.48	142.35	21.13	7.737		
6,050.00	6,047.61	9,433.61	5,931.39	21.34	0.00	-57.01	47.50	179.72	188.93	167.62	21.31	8.866		
6,100.00	6,097.42	9,450.00	5,940.12	21.51	0.00	-61.63	61.38	179.64	220.60	199.11	21.49	10.266		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Lateral - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-, 8960-													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,150.00	6,147.23	9,468.12	5,949.20	21.89	0.00	-66.37	77.06	179.55	256.52	234.85	21.67	11.840		
6,200.00	6,197.04	9,482.31	5,955.89	21.86	0.00	-69.79	89.57	179.47	295.42	273.58	21.84	13.525		
6,250.00	6,246.85	9,494.89	5,961.50	22.03	0.00	-72.60	100.83	179.41	336.43	314.41	22.02	15.279		
6,300.00	6,296.86	9,506.09	5,966.26	22.21	0.00	-74.94	110.97	179.34	378.98	356.78	22.20	17.075		
6,350.00	6,346.47	9,516.13	5,970.31	22.38	0.00	-76.90	120.15	179.29	422.69	400.32	22.37	18.895		
6,400.00	6,396.28	9,525.00	5,973.73	22.55	0.00	-78.54	128.34	179.24	467.31	444.76	22.55	20.727		
6,450.00	6,446.09	9,533.33	5,976.81	22.73	0.00	-80.00	136.08	179.19	512.64	489.92	22.72	22.561		
6,500.00	6,495.90	9,540.75	5,979.43	22.90	0.00	-81.24	143.02	179.15	558.54	535.64	22.90	24.393		
6,550.00	6,545.71	9,550.00	5,982.55	23.08	0.00	-82.70	151.73	179.10	604.93	581.85	23.07	26.217		
6,600.00	6,595.52	9,550.00	5,982.55	23.25	0.00	-82.70	151.73	179.10	651.71	628.46	23.25	28.032		
6,650.00	6,645.33	9,559.39	5,985.54	23.43	0.00	-84.10	160.82	179.05	698.78	675.35	23.43	29.830		
6,700.00	6,695.14	9,564.62	5,987.14	23.60	0.00	-84.84	165.61	179.02	746.15	722.55	23.60	31.615		
6,750.00	6,744.95	9,575.00	5,990.13	23.78	0.00	-86.25	175.55	178.96	793.82	770.04	23.78	33.384		
6,800.00	6,794.76	9,575.00	5,990.13	23.96	0.00	-86.25	175.55	178.96	841.60	817.64	23.95	35.133		
6,850.00	6,844.57	9,575.00	5,990.13	24.13	0.00	-86.25	175.55	178.96	889.52	865.48	24.13	36.866		
6,900.00	6,894.38	9,575.00	5,990.13	24.31	0.00	-86.25	175.55	178.96	937.84	913.53	24.31	38.582		
6,950.00	6,944.19	9,585.61	5,992.97	24.49	0.00	-87.59	185.77	178.90	986.07	961.58	24.49	40.271		

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Pilot Hole - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00			89.66	0.27	44.99	44.99				
50.00	50.00	50.00	50.00	0.09			89.66	0.27	44.99	44.99	44.90	0.09	500.910	
100.00	100.00	100.00	100.00	0.18			89.66	0.27	44.99	44.99	44.81	0.18	250.734	
150.00	150.00	150.00	150.00	0.36			89.66	0.27	44.99	44.99	44.63	0.36	125.437	
200.00	200.00	200.00	200.00	0.54			89.66	0.27	44.99	44.99	44.45	0.54	83.640	
250.00	250.00	250.00	250.00	0.72			89.66	0.27	44.99	44.99	44.27	0.72	62.736	
300.00	300.00	300.00	300.00	0.90			89.66	0.27	44.99	44.99	44.09	0.90	50.192	
350.00	350.00	350.00	350.00	1.08			89.66	0.27	44.99	44.99	43.92	1.08	41.828	
400.00	400.00	400.00	400.00	1.25			89.66	0.27	44.99	44.99	43.74	1.25	35.853	
450.00	450.00	450.00	450.00	1.43			89.66	0.27	44.99	44.99	43.56	1.43	31.372	
500.00	500.00	500.00	500.00	1.61			89.66	0.27	44.99	44.99	43.38	1.61	27.887	
550.00	550.00	550.00	550.00	1.79			89.66	0.27	44.99	44.99	43.20	1.79	25.099	
600.00	600.00	600.00	600.00	1.97			89.66	0.27	44.99	44.99	43.02	1.97	22.817	
650.00	650.00	650.00	650.00	2.15			89.66	0.27	44.99	44.99	42.84	2.15	20.916	
700.00	700.00	700.00	700.00	2.33			89.66	0.27	44.99	44.99	42.66	2.33	19.307	
750.00	750.00	750.00	750.00	2.51			89.66	0.27	44.99	44.99	42.48	2.51	17.928	
800.00	800.00	800.00	800.00	2.69			89.66	0.27	44.99	44.99	42.30	2.69	16.733	
850.00	850.00	850.00	850.00	2.87			89.66	0.27	44.99	44.99	42.12	2.87	15.687	
900.00	900.00	900.00	900.00	3.05			89.66	0.27	44.99	44.99	41.94	3.05	14.765	
950.00	950.00	950.00	950.00	3.23			89.66	0.27	44.99	44.99	41.76	3.23	13.944	
1,000.00	1,000.00	1,000.00	1,000.00	3.41			89.66	0.27	44.99	44.99	41.58	3.41	13.210	
1,050.00	1,050.00	1,050.00	1,050.00	3.58			89.66	0.27	44.99	44.99	41.41	3.58	12.550	
1,100.00	1,100.00	1,100.00	1,100.00	3.76			89.66	0.27	44.99	44.99	41.23	3.76	11.952	
1,150.00	1,150.00	1,150.00	1,150.00	3.94			89.66	0.27	44.99	44.99	41.05	3.94	11.409	
1,200.00	1,200.00	1,200.00	1,200.00	4.12			89.66	0.27	44.99	44.99	40.87	4.12	10.913	
1,250.00	1,250.00	1,250.00	1,250.00	4.30			89.66	0.27	44.99	44.99	40.69	4.30	10.458	
1,300.00	1,300.00	1,300.00	1,300.00	4.48			89.66	0.27	44.99	44.99	40.51	4.48	10.040	
1,350.00	1,350.00	1,350.00	1,350.00	4.66			89.66	0.27	44.99	44.99	40.33	4.66	9.654	
1,400.00	1,400.00	1,400.00	1,400.00	4.84			89.66	0.27	44.99	44.99	40.15	4.84	9.296	
1,450.00	1,450.00	1,450.00	1,450.00	5.02			89.66	0.27	44.99	44.99	39.97	5.02	8.964	
1,500.00	1,500.00	1,500.00	1,500.00	5.20			89.66	0.27	44.99	44.99	39.79	5.20	8.655	
1,550.00	1,550.00	1,550.00	1,550.00	5.38			89.66	0.27	44.99	44.99	39.61	5.38	8.367	
1,600.00	1,600.00	1,600.00	1,600.00	5.56			89.66	0.27	44.99	44.99	39.43	5.56	8.097	
1,650.00	1,650.00	1,650.00	1,650.00	5.74			89.66	0.27	44.99	44.99	39.25	5.74	7.844	
1,700.00	1,700.00	1,700.00	1,700.00	5.91			89.66	0.27	44.99	44.99	39.08	5.91	7.606	
1,750.00	1,750.00	1,750.00	1,750.00	6.09			89.66	0.27	44.99	44.99	38.90	6.09	7.383	
1,800.00	1,800.00	1,800.00	1,800.00	6.27			89.66	0.27	44.99	44.99	38.72	6.27	7.172	
1,850.00	1,850.00	1,850.00	1,850.00	6.45			89.66	0.27	44.99	44.99	38.54	6.45	6.972	
1,900.00	1,900.00	1,900.00	1,900.00	6.63			89.66	0.27	44.99	44.99	38.36	6.63	6.784	
1,950.00	1,950.00	1,950.00	1,950.00	6.81			89.66	0.27	44.99	44.99	38.18	6.81	6.605	
2,000.00	2,000.00	2,000.00	2,000.00	6.99			89.66	0.27	44.99	44.99	38.00	6.99	6.436	
2,050.00	2,050.00	2,050.00	2,050.00	7.17			89.66	0.27	44.99	44.99	37.82	7.17	6.275	
2,100.00	2,100.00	2,100.00	2,100.00	7.35			89.66	0.27	44.99	44.99	37.64	7.35	6.122	
2,150.00	2,150.00	2,150.00	2,150.00	7.53			89.66	0.27	44.99	44.99	37.46	7.53	5.976	
2,200.00	2,200.00	2,200.00	2,200.00	7.71			89.66	0.27	44.99	44.99	37.28	7.71	5.837	
2,250.00	2,250.00	2,250.00	2,250.00	7.89			89.66	0.27	44.99	44.99	37.10	7.89	5.705	
2,300.00	2,300.00	2,300.00	2,300.00	8.07			89.66	0.27	44.99	44.99	36.92	8.07	5.578	
2,350.00	2,350.00	2,350.00	2,350.00	8.24			89.66	0.27	44.99	44.99	36.75	8.25	5.457	
2,400.00	2,400.00	2,400.00	2,400.00	8.42			89.66	0.27	44.99	44.99	36.57	8.42	5.341	
2,450.00	2,450.00	2,450.00	2,450.00	8.60			89.66	0.27	44.99	44.99	36.39	8.60	5.229	
2,500.00	2,500.00	2,500.00	2,500.00	8.78			89.66	0.27	44.99	44.99	36.21	8.78	5.123	
2,550.00	2,550.00	2,550.00	2,550.00	8.96			89.66	0.27	44.99	44.99	36.03	8.96	5.020	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Pilot Hole - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-Reference													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,600.00	2,600.00	2,600.00	2,600.00	9.14			89.66	0.27	44.99	44.99	35.85	9.14	4.922	
2,650.00	2,650.00	2,650.00	2,650.00	9.32			89.66	0.27	44.99	44.99	35.67	9.32	4.827	
2,700.00	2,700.00	2,700.00	2,700.00	9.50			89.66	0.27	44.99	44.99	35.49	9.50	4.736	
2,750.00	2,750.00	2,750.00	2,750.00	9.68			89.66	0.27	44.99	44.99	35.31	9.68	4.648	
2,800.00	2,800.00	2,800.00	2,800.00	9.86			89.66	0.27	44.99	44.99	35.13	9.86	4.564	
2,850.00	2,850.00	2,850.00	2,850.00	10.04			89.66	0.27	44.99	44.99	34.95	10.04	4.482	
2,900.00	2,900.00	2,900.00	2,900.00	10.22			89.66	0.27	44.99	44.99	34.77	10.22	4.404	
2,950.00	2,950.00	2,950.00	2,950.00	10.40			89.66	0.27	44.99	44.99	34.59	10.40	4.328	
3,000.00	3,000.00	3,000.00	3,000.00	10.57			89.66	0.27	44.99	44.99	34.42	10.58	4.254	
3,050.00	3,050.00	3,050.00	3,050.00	10.75			89.66	0.27	44.99	44.99	34.24	10.75	4.183	
3,100.00	3,100.00	3,100.00	3,100.00	10.93			89.66	0.27	44.99	44.99	34.06	10.93	4.115	
3,150.00	3,150.00	3,150.00	3,150.00	11.11			89.66	0.27	44.99	44.99	33.88	11.11	4.049	
3,200.00	3,200.00	3,200.00	3,200.00	11.29			89.66	0.27	44.99	44.99	33.70	11.29	3.984	
3,250.00	3,250.00	3,250.00	3,250.00	11.47			89.66	0.27	44.99	44.99	33.52	11.47	3.922	
3,300.00	3,300.00	3,300.00	3,300.00	11.65			89.66	0.27	44.99	44.99	33.34	11.65	3.862	
3,350.00	3,350.00	3,350.00	3,350.00	11.83			89.66	0.27	44.99	44.99	33.16	11.83	3.803	
3,400.00	3,400.00	3,400.00	3,400.00	12.01			89.66	0.27	44.99	44.99	32.98	12.01	3.746	
3,450.00	3,450.00	3,450.00	3,450.00	12.19			89.66	0.27	44.99	44.99	32.80	12.19	3.691	
3,500.00	3,500.00	3,500.00	3,500.00	12.37			89.66	0.27	44.99	44.99	32.62	12.37	3.638	
3,550.00	3,550.00	3,550.00	3,550.00	12.55			89.66	0.27	44.99	44.99	32.44	12.55	3.586	
3,600.00	3,600.00	3,600.00	3,600.00	12.73			89.66	0.27	44.99	44.99	32.26	12.73	3.535	
3,650.00	3,650.00	3,650.00	3,650.00	12.90			89.66	0.27	44.99	44.99	32.09	12.91	3.486	
3,700.00	3,700.00	3,700.00	3,700.00	13.08			89.66	0.27	44.99	44.99	31.91	13.08	3.438	
3,750.00	3,750.00	3,750.00	3,750.00	13.26			89.66	0.27	44.99	44.99	31.73	13.26	3.392	
3,800.00	3,800.00	3,800.00	3,800.00	13.44			89.66	0.27	44.99	44.99	31.55	13.44	3.347	
3,850.00	3,850.00	3,850.00	3,850.00	13.62			89.66	0.27	44.99	44.99	31.37	13.62	3.303	
3,900.00	3,900.00	3,900.00	3,900.00	13.80			89.66	0.27	44.99	44.99	31.19	13.80	3.260	
3,950.00	3,950.00	3,950.00	3,950.00	13.98			89.66	0.27	44.99	44.99	31.01	13.98	3.218	
4,000.00	4,000.00	4,000.00	4,000.00	14.16			89.66	0.27	44.99	44.99	30.83	14.16	3.177	
4,050.00	4,050.00	4,050.00	4,050.00	14.34			89.66	0.27	44.99	44.99	30.65	14.34	3.138	
4,100.00	4,100.00	4,100.00	4,100.00	14.52			89.66	0.27	44.99	44.99	30.47	14.52	3.099	
4,150.00	4,150.00	4,150.00	4,150.00	14.70			89.66	0.27	44.99	44.99	30.29	14.70	3.061	
4,200.00	4,200.00	4,200.00	4,200.00	14.88			89.66	0.27	44.99	44.99	30.11	14.88	3.024	
4,250.00	4,250.00	4,250.00	4,250.00	15.06			89.66	0.27	44.99	44.99	29.93	15.06	2.988	
4,300.00	4,300.00	4,300.00	4,300.00	15.24			89.66	0.27	44.99	44.99	29.76	15.24	2.953	
4,350.00	4,350.00	4,350.00	4,350.00	15.41			89.66	0.27	44.99	44.99	29.58	15.41	2.919	
4,400.00	4,400.00	4,400.00	4,400.00	15.59			89.66	0.27	44.99	44.99	29.40	15.59	2.885	
4,450.00	4,450.00	4,450.00	4,450.00	15.77			89.66	0.27	44.99	44.99	29.22	15.77	2.852	
4,500.00	4,500.00	4,500.00	4,500.00	15.95			89.66	0.27	44.99	44.99	29.04	15.95	2.820	
4,550.00	4,550.00	4,550.00	4,550.00	16.13			89.66	0.27	44.99	44.99	28.86	16.13	2.789	
4,600.00	4,600.00	4,600.00	4,600.00	16.31			89.66	0.27	44.99	44.99	28.68	16.31	2.758	
4,650.00	4,650.00	4,650.00	4,650.00	16.49			89.66	0.27	44.99	44.99	28.50	16.49	2.728	
4,700.00	4,700.00	4,700.00	4,700.00	16.67			89.66	0.27	44.99	44.99	28.32	16.67	2.699	
4,750.00	4,750.00	4,750.00	4,750.00	16.85			89.66	0.27	44.99	44.99	28.14	16.85	2.670	
4,800.00	4,800.00	4,800.00	4,800.00	17.03			89.66	0.27	44.99	44.99	27.96	17.03	2.642	
4,850.00	4,850.00	4,850.00	4,850.00	17.21			89.66	0.27	44.99	44.99	27.78	17.21	2.615	
4,900.00	4,900.00	4,900.00	4,900.00	17.39			89.66	0.27	44.99	44.99	27.60	17.39	2.588	
4,950.00	4,950.00	4,950.00	4,950.00	17.57			89.66	0.27	44.99	44.99	27.43	17.57	2.561	
5,000.00	5,000.00	5,000.00	5,000.00	17.74			89.66	0.27	44.99	44.99	27.25	17.74	2.535	
5,050.00	5,050.00	5,050.00	5,050.00	17.92			89.66	0.27	44.99	44.99	27.07	17.92	2.510	
5,100.00	5,100.00	5,100.00	5,100.00	18.10			89.66	0.27	44.99	44.99	26.89	18.10	2.485	
5,150.00	5,150.00	5,150.00	5,150.00	18.28			89.66	0.27	44.99	44.99	26.71	18.28	2.461	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Pilot Hole - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	18.46		89.66	0.27	44.99	44.99	26.53	18.46	2.437		
5,250.00	5,250.00	5,249.64	5,249.63	18.63		-29.47	0.02	45.19	44.91	26.28	18.63	2.410		
5,300.00	5,299.99	5,299.27	5,299.26	18.81		-29.12	-0.74	45.80	44.66	25.86	18.80	2.375		
5,350.00	5,349.96	5,348.90	5,348.86	18.97		-28.52	-1.99	46.81	44.26	25.29	18.96	2.334		
5,400.00	5,399.91	5,398.53	5,398.44	19.14		-27.66	-3.75	48.22	43.69	24.57	19.12	2.285		
5,450.00	5,449.82	5,448.15	5,447.97	19.31		-26.53	-6.01	50.04	42.99	23.71	19.28	2.230		
5,500.00	5,499.69	5,497.76	5,497.45	19.47		-25.10	-8.77	52.26	42.15	22.72	19.43	2.169		
5,550.00	5,549.51	5,547.44	5,546.97	19.64		-23.32	-12.03	54.87	41.21	21.63	19.58	2.104		
5,600.00	5,599.32	5,597.41	5,596.74	19.81		-21.34	-15.45	57.62	40.33	20.58	19.75	2.042		
5,650.00	5,649.13	5,647.39	5,646.52	19.98		-19.27	-18.87	60.37	39.49	19.57	19.91	1.983		
5,700.00	5,698.94	5,697.36	5,696.30	20.15		-17.11	-22.29	63.11	38.70	18.62	20.08	1.927		
5,750.00	5,748.75	5,747.33	5,746.08	20.32		-14.87	-25.71	65.86	37.98	17.73	20.25	1.876		
5,800.00	5,798.56	5,797.30	5,795.86	20.49		-12.55	-29.13	68.61	37.31	16.90	20.41	1.828		
5,850.00	5,848.37	5,847.28	5,845.64	20.66		-10.14	-32.55	71.36	36.71	16.13	20.58	1.784		
5,900.00	5,898.18	5,897.25	5,895.42	20.83		-7.66	-35.97	74.11	36.17	15.42	20.75	1.743		
5,950.00	5,947.99	5,947.22	5,945.20	21.00		-5.11	-39.39	76.85	35.70	14.79	20.91	1.707		
6,000.00	5,997.80	5,997.19	5,994.98	21.17		-2.49	-42.81	79.60	35.31	14.23	21.08	1.675		
6,050.00	6,047.61	6,047.16	6,044.76	21.34		0.17	-46.23	82.35	34.99	13.74	21.25	1.646		
6,100.00	6,097.42	6,097.14	6,094.54	21.51		2.88	-49.65	85.10	34.75	13.33	21.42	1.622		
6,150.00	6,147.23	6,147.11	6,144.32	21.69		5.62	-53.07	87.85	34.59	12.99	21.59	1.602		
6,200.00	6,197.04	6,197.08	6,194.09	21.86		8.38	-56.49	90.60	34.50	12.74	21.76	1.585		
6,226.54	6,223.48	6,223.60	6,220.51	21.95		9.85	-58.31	92.05	34.49	12.64	21.85	1.578 CC		
6,250.00	6,246.85	6,247.05	6,243.87	22.03		11.15	-59.91	93.34	34.50	12.57	21.93	1.573		
6,300.00	6,296.66	6,297.03	6,293.65	22.21		13.91	-63.33	96.09	34.58	12.47	22.11	1.564		
6,350.00	6,346.47	6,347.00	6,343.43	22.38		16.86	-66.75	98.84	34.74	12.46	22.28	1.559 ES		
6,400.00	6,396.28	6,396.97	6,393.21	22.55		19.37	-70.17	101.59	34.97	12.52	22.45	1.558 SF		
6,450.00	6,446.09	6,446.94	6,442.99	22.73		22.04	-73.59	104.34	35.29	12.66	22.63	1.559		
6,500.00	6,495.90	6,496.91	6,492.77	22.90		24.65	-77.01	107.08	35.68	12.87	22.81	1.564		
6,550.00	6,545.71	6,546.89	6,542.55	23.08		27.21	-80.43	109.83	36.14	13.16	22.98	1.572		
6,600.00	6,595.52	6,596.86	6,592.33	23.25		29.70	-83.85	112.58	36.67	13.51	23.16	1.583		
6,650.00	6,645.33	6,646.83	6,642.11	23.43		32.11	-87.27	115.33	37.27	13.93	23.34	1.597		
6,700.00	6,695.14	6,696.80	6,691.89	23.60		34.44	-90.69	118.08	37.93	14.42	23.51	1.613		
6,750.00	6,744.95	6,746.78	6,741.67	23.78		36.68	-94.11	120.83	38.66	14.96	23.69	1.632		
6,800.00	6,794.76	6,796.75	6,791.45	23.96		38.84	-97.53	123.57	39.44	15.57	23.87	1.652		
6,850.00	6,844.57	6,846.72	6,841.22	24.13		40.92	-100.95	126.32	40.27	16.22	24.05	1.674		
6,900.00	6,894.38	6,896.69	6,891.00	24.31		42.91	-104.38	129.07	41.16	16.93	24.23	1.699		
6,950.00	6,944.19	6,946.66	6,940.78	24.49		44.81	-107.80	131.82	42.09	17.68	24.41	1.724		
7,000.00	6,994.00	6,996.64	6,990.56	24.66		46.63	-111.22	134.57	43.07	18.48	24.59	1.751		
7,050.00	7,043.81	7,046.61	7,040.34	24.84		48.36	-114.64	137.31	44.09	19.32	24.77	1.780		
7,100.00	7,093.62	7,096.58	7,090.12	25.02		50.02	-118.06	140.06	45.15	20.19	24.95	1.809		
7,150.00	7,143.43	7,146.55	7,139.90	25.20		51.60	-121.48	142.81	46.24	21.11	25.13	1.840		
7,200.00	7,193.24	7,196.52	7,189.68	25.38		53.10	-124.90	145.56	47.36	22.05	25.31	1.871		
7,250.00	7,243.04	7,246.50	7,239.46	25.55		54.53	-128.32	148.31	48.52	23.03	25.49	1.903		
7,300.00	7,292.85	7,296.47	7,289.24	25.73		55.90	-131.74	151.06	49.71	24.03	25.68	1.936		
7,350.00	7,342.66	7,346.44	7,339.02	25.91		57.20	-135.16	153.80	50.92	25.07	25.86	1.969		
7,400.00	7,392.47	7,396.41	7,388.80	26.09		58.44	-138.58	156.55	52.16	26.12	26.04	2.003		
7,450.00	7,442.28	7,446.39	7,438.57	26.27		59.62	-142.00	159.30	53.42	27.21	26.22	2.038		
7,500.00	7,492.09	7,496.36	7,488.35	26.45		60.75	-145.42	162.05	54.71	28.31	26.40	2.072		
7,550.00	7,541.90	7,546.33	7,538.13	26.63		61.83	-148.84	164.80	56.01	29.43	26.58	2.107		
7,600.00	7,591.71	7,596.30	7,587.91	26.81		62.85	-152.26	167.54	57.34	30.57	26.76	2.142		
7,650.00	7,641.52	7,646.27	7,637.69	26.99		63.83	-155.68	170.29	58.68	31.73	26.95	2.178		
7,700.00	7,691.33	7,696.51	7,687.74	27.17		64.82	-159.06	173.01	59.98	32.85	27.13	2.211		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Premier Directional Drilling

Anticollision Report

Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Reference Site: Road Runner 25-33-9 1H - 2H
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: Lateral
 Reference Design: Plan #4

Local Co-ordinate Reference: Well 2H - Slot 2H
 TVD Reference: WELL @ 0.00usft (Original Well Elev)
 MD Reference: WELL @ 0.00usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 MultiUser DB
 Offset TVD Reference: Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Pilot Hole - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,750.00	7,741.14	7,747.07	7,738.15	27.35		86.14	-162.03	175.39	60.90	33.59	27.31	2.230		
7,800.00	7,790.95	7,797.60	7,788.59	27.53		67.87	-164.47	177.35	61.38	33.89	27.50	2.232		
7,850.00	7,840.76	7,848.10	7,839.03	27.71		70.02	-166.39	178.89	61.48	33.80	27.68	2.221		
7,900.00	7,890.57	7,898.55	7,889.45	27.89		72.65	-167.78	180.02	61.24	33.37	27.87	2.197		
7,950.00	7,940.38	7,948.93	7,939.82	28.07		75.78	-168.66	180.72	60.74	32.68	28.06	2.165		
8,000.00	7,990.19	7,999.23	7,990.11	28.25		79.49	-169.02	181.01	60.06	31.82	28.24	2.126		
8,050.00	8,040.00	8,049.12	8,040.00	28.43		83.60	-169.03	181.02	59.42	30.99	28.43	2.090		
8,100.00	8,089.81	8,098.93	8,089.81	28.61		87.79	-169.03	181.02	59.10	30.48	28.61	2.065		
8,126.28	8,115.99	8,125.11	8,115.99	28.71		90.00	-169.03	181.02	59.05	30.34	28.71	2.057		
8,150.00	8,139.62	8,148.74	8,139.62	28.80		92.00	-169.03	181.02	59.09	30.29	28.80	2.052		
8,200.00	8,189.43	8,198.55	8,189.43	28.98		96.19	-169.03	181.02	59.40	30.43	28.97	2.050		
8,250.00	8,239.24	8,248.36	8,239.24	29.16		100.31	-169.03	181.02	60.03	30.88	29.15	2.059		
8,300.00	8,289.05	8,298.17	8,289.05	29.34		104.33	-169.03	181.02	60.96	31.64	29.32	2.079		
8,350.00	8,338.86	8,347.98	8,338.86	29.52		108.21	-169.03	181.02	62.19	32.70	29.49	2.109		
8,400.00	8,388.67	8,397.79	8,388.67	29.71		111.92	-169.03	181.02	63.69	34.03	29.65	2.148		
8,450.00	8,438.48	8,447.60	8,438.48	29.89		115.45	-169.03	181.02	65.45	35.63	29.82	2.195		
8,500.00	8,488.29	8,497.41	8,488.29	30.07		118.79	-169.03	181.02	67.44	37.46	29.98	2.249		
8,550.00	8,538.10	8,547.22	8,538.10	30.25		121.92	-169.03	181.02	69.65	39.50	30.15	2.310		
8,600.00	8,587.91	8,597.03	8,587.91	30.44		124.86	-169.03	181.02	72.05	41.74	30.31	2.377		
8,650.00	8,637.72	8,646.84	8,637.72	30.62		127.60	-169.03	181.02	74.64	44.16	30.47	2.449		
8,700.00	8,687.53	8,696.65	8,687.53	30.80		130.15	-169.03	181.02	77.38	46.74	30.64	2.526		
8,750.00	8,737.34	8,746.46	8,737.34	30.98		132.52	-169.03	181.02	80.26	49.46	30.80	2.606		
8,800.00	8,787.15	8,796.27	8,787.15	31.17		134.73	-169.03	181.02	83.28	52.31	30.96	2.689		
8,850.00	8,836.96	8,846.08	8,836.96	31.35		136.78	-169.03	181.02	86.40	55.28	31.13	2.776		
8,900.00	8,886.77	8,895.89	8,886.77	31.53		138.68	-169.03	181.02	89.64	58.34	31.29	2.864		
8,950.00	8,936.58	8,945.70	8,936.58	31.72		140.45	-169.03	181.02	92.96	61.50	31.46	2.955		
9,000.00	8,986.39	8,995.51	8,986.39	31.90		142.10	-169.03	181.02	96.36	64.73	31.63	3.047		
9,050.00	9,036.20	9,045.32	9,036.20	32.09		143.64	-169.03	181.02	99.84	68.05	31.80	3.140		
9,100.00	9,086.01	9,095.12	9,086.01	32.27		145.07	-169.03	181.02	103.39	71.42	31.96	3.234		
9,150.00	9,135.81	9,144.93	9,135.81	32.45		146.40	-169.03	181.02	106.99	74.86	32.13	3.330		
9,200.00	9,185.65	9,194.77	9,185.65	32.64		147.60	-169.03	181.02	110.44	78.13	32.31	3.418		
9,250.00	9,235.53	9,244.65	9,235.53	32.82		148.56	-169.03	181.02	113.38	80.89	32.49	3.490		
9,300.00	9,285.45	9,294.57	9,285.45	33.00		149.30	-169.03	181.02	115.78	83.11	32.67	3.544		
9,350.00	9,335.40	9,344.52	9,335.40	33.18		149.85	-169.03	181.02	117.64	84.80	32.84	3.582		
9,400.00	9,385.38	9,394.50	9,385.38	33.35		150.22	-169.03	181.02	118.94	85.92	33.02	3.602		
9,450.00	9,435.37	9,444.49	9,435.37	33.53		150.43	-169.03	181.02	119.67	86.48	33.19	3.606		
9,500.00	9,485.37	9,494.49	9,485.37	33.70		-90.28	-169.03	181.02	119.85	86.15	33.70	3.556		
9,550.00	9,535.37	9,544.49	9,535.37	33.87		-90.28	-169.03	181.02	119.85	85.97	33.87	3.538		
9,600.00	9,585.37	9,594.49	9,585.37	34.05		-90.28	-169.03	181.02	119.85	85.80	34.05	3.520		
9,650.00	9,635.37	9,644.49	9,635.37	34.22		-90.28	-169.03	181.02	119.85	85.63	34.22	3.502		
9,700.00	9,685.37	9,694.49	9,685.37	34.39		-90.28	-169.03	181.02	119.85	85.45	34.39	3.485		
9,750.00	9,735.37	9,744.49	9,735.37	34.56		-90.28	-169.03	181.02	119.85	85.28	34.56	3.467		
9,800.00	9,785.37	9,794.49	9,785.37	34.74		-90.28	-169.03	181.02	119.85	85.11	34.74	3.450		
9,850.00	9,835.37	9,844.49	9,835.37	34.91		-90.28	-169.03	181.02	119.85	84.94	34.91	3.433		
9,900.00	9,885.37	9,894.49	9,885.37	35.08		-90.28	-169.03	181.02	119.85	84.76	35.08	3.416		
9,950.00	9,935.37	9,944.49	9,935.37	35.26		-90.28	-169.03	181.02	119.85	84.59	35.26	3.399		
10,000.00	9,985.37	9,994.49	9,985.37	35.43		-90.28	-169.03	181.02	119.85	84.42	35.43	3.383		
10,050.00	10,035.37	10,044.49	10,035.37	35.60		-90.28	-169.03	181.02	119.85	84.24	35.60	3.366		
10,100.00	10,085.37	10,094.49	10,085.37	35.78		-90.28	-169.03	181.02	119.85	84.07	35.78	3.350		
10,150.00	10,135.37	10,144.49	10,135.37	35.95		-90.28	-169.03	181.02	119.85	83.90	35.95	3.334		
10,200.00	10,185.37	10,194.49	10,185.37	36.12		-90.28	-169.03	181.02	119.85	83.72	36.12	3.318		
10,250.00	10,235.37	10,244.49	10,235.37	36.30		-90.28	-169.03	181.02	119.85	83.55	36.30	3.302		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

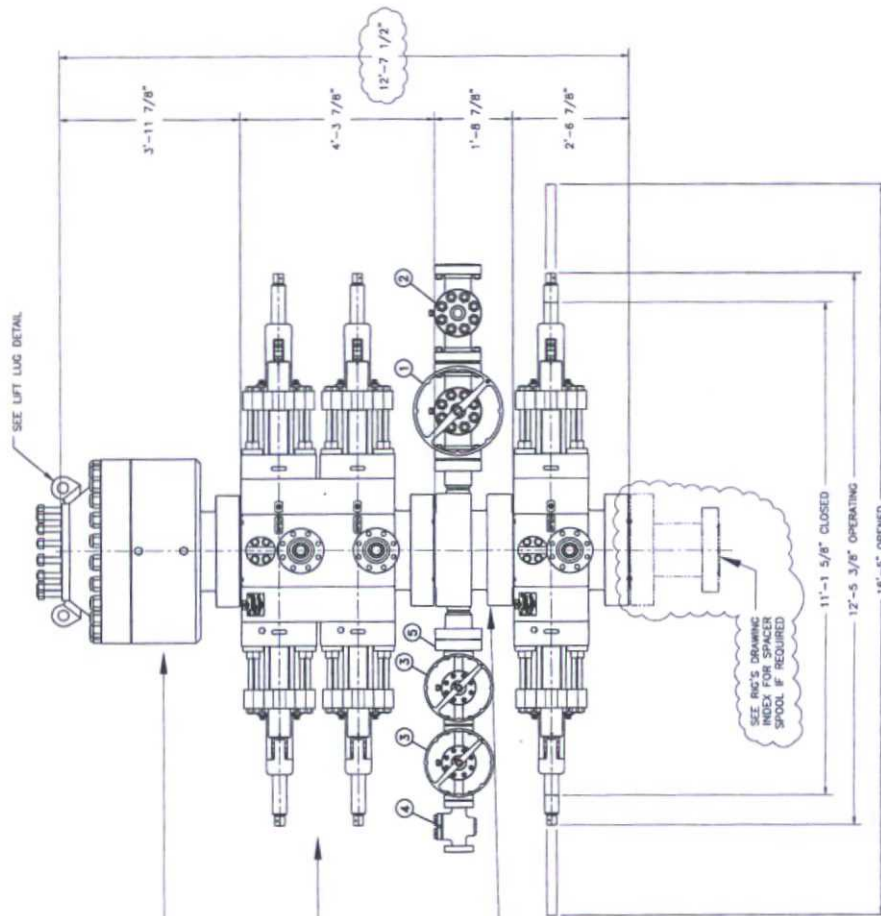
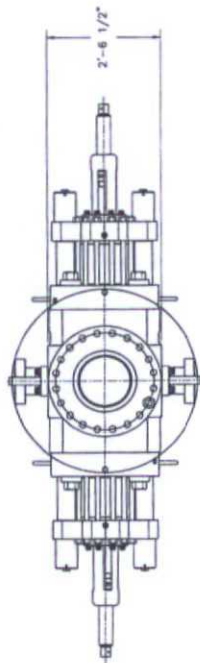
Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Reference Site:	Road Runner 25-33-9 1H - 2H	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design Road Runner 25-33-9 1H - 2H - 1H - Pilot Hole - Plan #2													Offset Site Error:	0.00 usft	
Survey Program: 0-Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
10,300.00	10,285.37	10,294.49	10,285.37	36.47		-90.28	-169.03	181.02	119.85	83.38	36.47	3.286			
10,350.00	10,335.37	10,344.49	10,335.37	36.64		-90.28	-169.03	181.02	119.85	83.20	36.64	3.271			
10,400.00	10,385.37	10,394.49	10,385.37	36.82		-90.28	-169.03	181.02	119.85	83.03	36.82	3.255			
10,450.00	10,435.37	10,444.49	10,435.37	36.99		-90.28	-169.03	181.02	119.85	82.86	36.99	3.240			
10,500.00	10,485.37	10,494.49	10,485.37	37.16		-90.28	-169.03	181.02	119.85	82.68	37.16	3.225			
10,550.00	10,535.37	10,544.49	10,535.37	37.34		-90.28	-169.03	181.02	119.85	82.51	37.34	3.210			
10,600.00	10,585.37	10,594.49	10,585.37	37.51		-90.28	-169.03	181.02	119.85	82.34	37.51	3.195			
10,650.00	10,635.37	10,644.49	10,635.37	37.68		-90.28	-169.03	181.02	119.85	82.16	37.68	3.180			
10,667.34	10,652.71	10,661.83	10,652.71	37.74		-90.06	-169.03	181.02	119.85	82.41	37.43	3.202			
10,700.00	10,685.32	10,694.44	10,685.32	37.86		-90.81	-169.03	181.02	119.86	82.31	37.55	3.192			
10,750.00	10,734.80	10,743.92	10,734.80	38.02		-94.06	-169.03	181.02	120.16	82.42	37.74	3.184			
10,800.00	10,783.29	10,792.41	10,783.29	38.18		-99.41	-169.03	181.02	121.63	83.71	37.93	3.207			
10,850.00	10,830.25	10,839.37	10,830.25	38.33		-106.22	-169.03	181.02	125.69	87.67	38.02	3.306			
10,900.00	10,875.16	10,884.28	10,875.16	38.46		-113.58	-169.03	181.02	133.94	96.04	37.90	3.534			
10,950.00	10,917.54	10,926.66	10,917.54	38.58		-120.53	-169.03	181.02	147.69	110.22	37.47	3.941			
11,000.00	10,956.91	10,966.03	10,956.91	38.68		-126.39	-169.03	181.02	167.55	130.81	36.74	4.560			
11,050.00	10,992.85	11,001.97	10,992.85	38.77		-130.81	-169.03	181.02	193.42	157.60	35.82	5.400			
11,100.00	11,024.96	11,034.08	11,024.96	38.84		-133.66	-169.03	181.02	224.73	189.86	34.87	6.445			
11,150.00	11,052.89	11,062.01	11,052.89	38.89		-134.84	-169.03	181.02	260.73	226.64	34.09	7.648			
11,200.00	11,076.34	11,085.46	11,076.34	38.94		-134.17	-169.03	181.02	300.61	266.90	33.71	8.918			
11,250.00	11,095.05	11,104.17	11,095.05	39.02		-131.15	-169.03	181.02	343.61	309.61	34.00	10.106			
11,300.00	11,108.81	11,117.93	11,108.81	39.14		-124.75	-169.03	181.02	389.00	353.74	35.26	11.032			
11,350.00	11,117.47	11,126.59	11,117.47	39.26		-113.04	-169.03	181.02	436.09	398.57	37.52	11.623			
11,400.00	11,120.94	11,130.06	11,120.94	39.39		-93.83	-169.03	181.02	484.22	444.86	39.36	12.301			
11,450.00	11,120.80	11,129.92	11,120.80	39.52		-88.70	-169.03	181.02	532.81	493.34	39.47	13.499			
11,500.00	11,120.53	11,129.65	11,120.53	39.66		-88.58	-169.03	181.02	581.63	542.04	39.60	14.688			
11,550.00	11,120.27	11,129.39	11,120.27	39.83		-88.45	-169.03	181.02	630.65	590.89	39.76	15.862			
11,600.00	11,120.01	11,129.13	11,120.01	40.01		-88.33	-169.03	181.02	679.80	639.88	39.92	17.030			
11,650.00	11,119.75	11,128.87	11,119.75	40.21		-88.20	-169.03	181.02	729.07	688.96	40.11	18.177			
11,700.00	11,119.49	11,128.61	11,119.49	40.41		-88.08	-169.03	181.02	778.43	738.13	40.30	19.315			
11,750.00	11,119.22	11,128.34	11,119.22	40.64		-87.95	-169.03	181.02	827.87	787.34	40.53	20.428			
11,800.00	11,118.96	11,128.08	11,118.96	40.88		-87.83	-169.03	181.02	877.37	836.62	40.75	21.531			
11,850.00	11,118.70	11,127.82	11,118.70	41.14		-87.70	-169.03	181.02	926.93	885.92	41.00	22.605			
11,900.00	11,118.44	11,127.56	11,118.44	41.40		-87.58	-169.03	181.02	976.53	935.27	41.26	23.668			

- LEGEND
- ① 4 1/16"-10M FLANGED END GATE VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
 - ② 4 1/16"-10M FLANGED END GATE VALVE
 - ③ 2 1/16"-10M FLANGED END GATE VALVE
 - ④ 2 1/16"-10M FLANGED END CHECK VALVE
 - ⑤ DOUBLE STUDDED ADAPTER



SHAFTER BOLTED-COVER SPHERICAL CAMERON PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), 10M BOTTOM FLANGE x 5M, STUDDED TOP (WEIGHT = 14,300 LBS WITH SHAFTER API 16A HOT OIL RESISTANT ACRYLONITRILE ELEMENT)

CAMERON UM DOUBLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMERON FRONT PACKERS AND CAMERON DIS SHEARING BLIND RAMS IN BOTTOM CAVITY, BOTTOM FLANGE x STUDDED TOP (WEIGHT = 21,100 LBS, WITH RAMS)

13 5/8"-10M WP CAMERON DRILLING SPOOL (API 16A MONOGRAMMED), STUDDED TOP x FLANGED BOTTOM, WITH 4 1/16"-10M WP FLANGED OUTLETS (WEIGHT APPROXIMATELY 6,000 LBS)

CAMERON UM SINGLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMERON FRONT PACKERS & TOP STUDDED BOTTOM FLANGE x STUDDED TOP (WEIGHT = 10,900 LBS)

CAMERON LIFT EYES, 2 PER PREVENTER, 50 LBS TOTAL LIFTED CAPACITY EACH



API 6A MONOGRAMMED CAMERON GUSSE AND KILL WING VALVE ASSEMBLIES ARE NOT SHOWN FOR CLARITY

WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS OR QUICK CONNECT FITTINGS

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

ENGINEERING APPROVAL		DATE	BY
DESIGNED	ADDED SHEET 03	12/16/03	JM
CHECKED	REVIEWED SHEET 03	4-15-07	JM
APPROVED	ISSUED FOR FABRICATION	4-04-07	JM
REVISION	ADDED TO SPACER ADAPTER SPOOL	03-03-07	JM
REVISION	ADDED ADAPTER SPOOL	03-03-07	JM
REVISION	REVISED NOTE & ADDED SHEETS 4 & 5	1-4-11	JM
REV	DATE	DESCRIPTION	BY
1	12/16/03	ADDED SHEET 03	JM
2	4-15-07	REVIEWED SHEET 03	JM
3	4-04-07	ISSUED FOR FABRICATION	JM
4	03-03-07	ADDED TO SPACER ADAPTER SPOOL	JM
5	03-03-07	ADDED ADAPTER SPOOL	JM
6	1-4-11	REVISED NOTE & ADDED SHEETS 4 & 5	JM

TITLE: 13 5/8"-10M BOP 3 RAM STACK
FLEXRIG3

CUSTOMER: H&P
PROJECT: FLEXRIG3
DATE: 8-5-02
SHEET: 1 OF 5
SCALE: 3/4"=1'

PROPRIETARY

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**ISSUED FOR
FABRICATION**
MARCH 9, 2006
DRAFTSMAN _____
ENGINEER _____



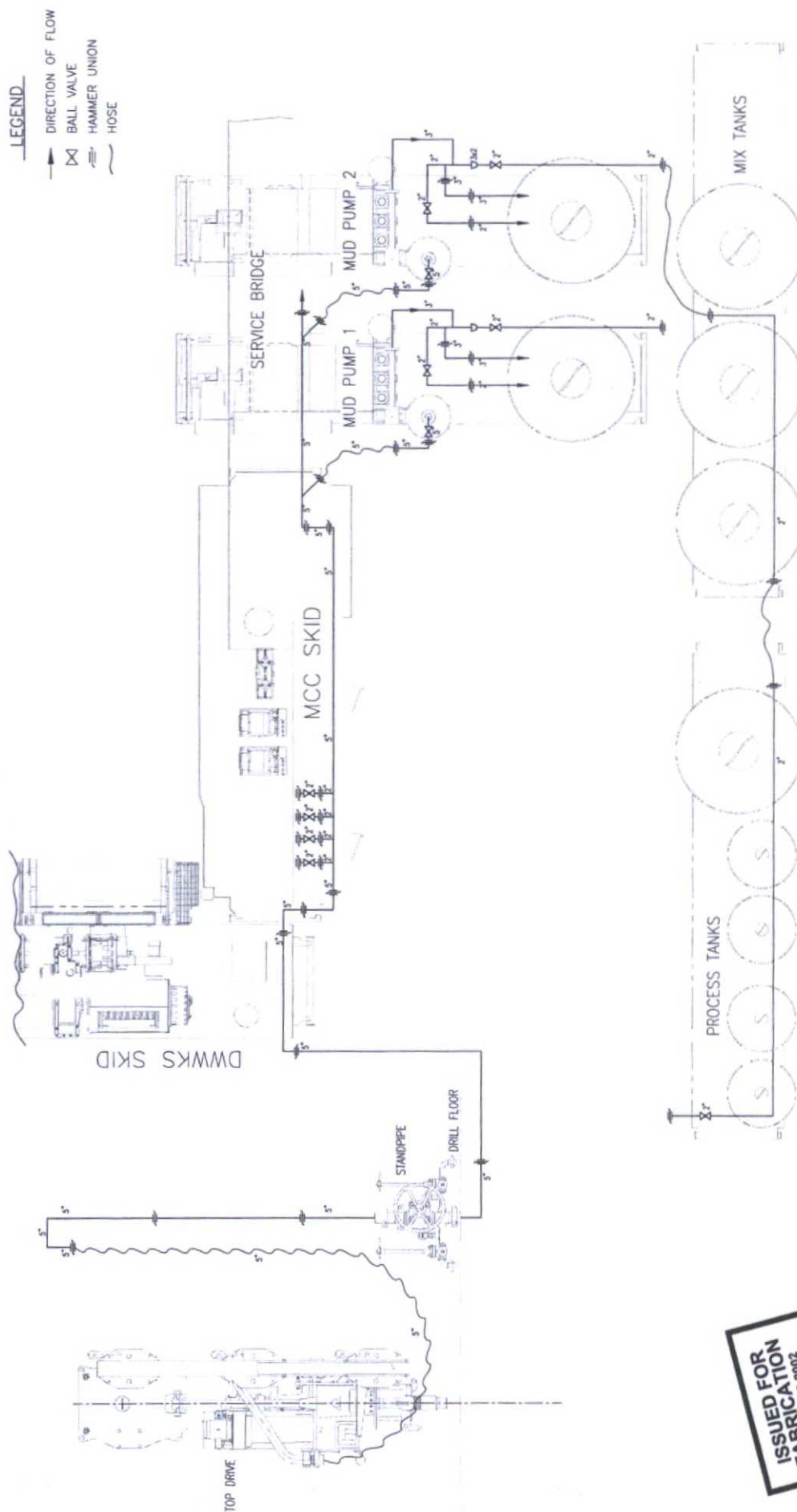
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

CHOKE MANIFOLD

TITLE		DATE	ENGINEERING	APPROVAL	
DESIGN	PROPOSED	CUSTOMER			
SCALE					
BY	DATE	10/18/02	ADJUST DIA TO FIELD	CONFIRMED DIA	BY
REV					

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HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

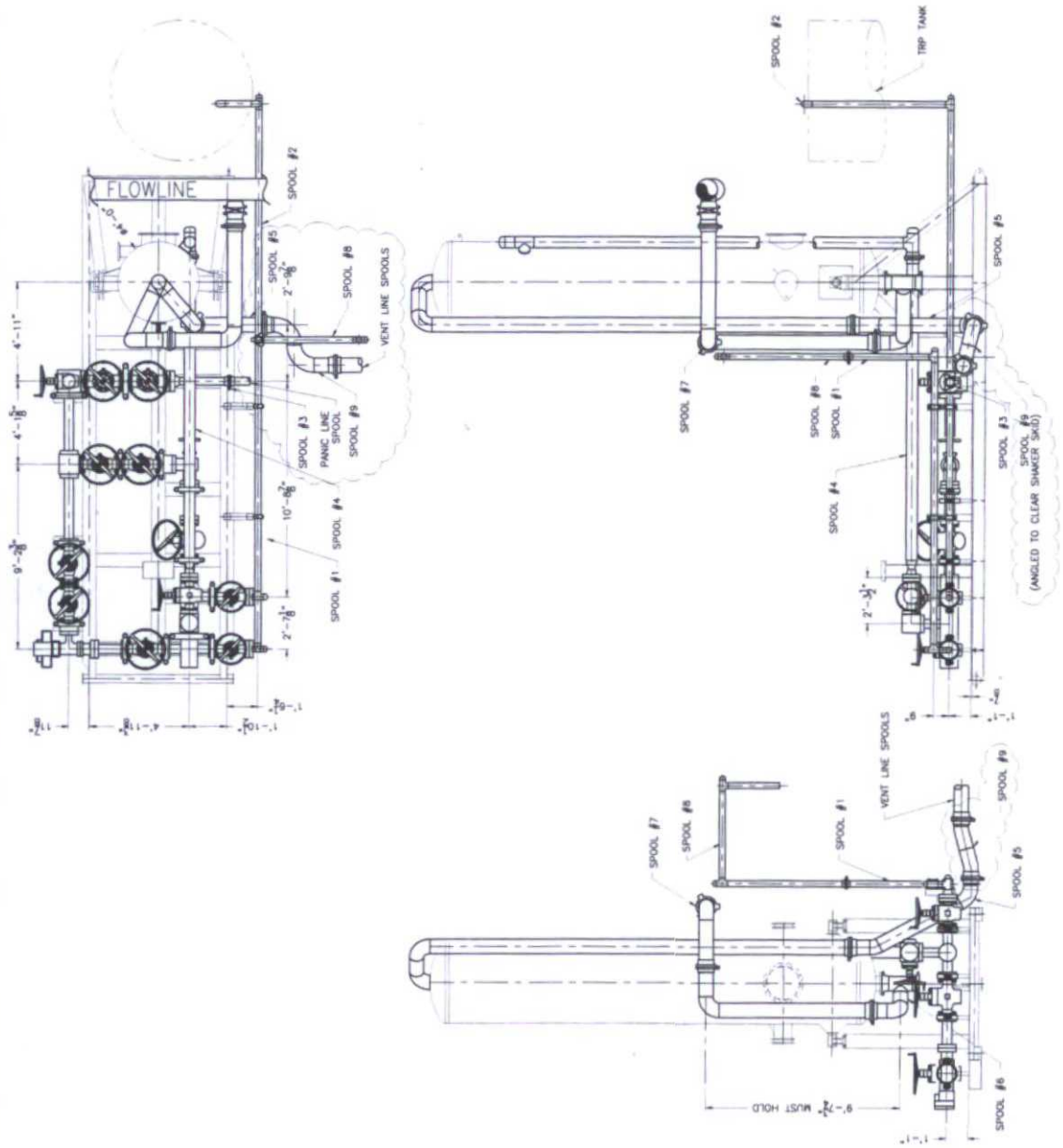
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NOTE:

- 1) SYSTEM WORKING PRESSURE 5000 PSI

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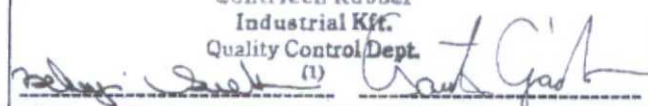
ISSUED FOR
FABRICATION
March 11-2009
DRAFTSMAN
ENGINEER

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE: GAS BUSTER PIPING
FLEXRIG3
CUSTOMER: H&P
PROJECT: FLEXRIG3
DRAWN: MTS
DATE: 01-30-03
SHEET: 1 OF 2
REV: 235-P4-29
F

ENGINEERING APPROVAL	DATE	DESCRIPTION
APPROVED	8/13/08	ADDED SPOOL #8
APPROVED	08/04/08	ADDED NEW LEN SPOOLS CALLOUT
APPROVED	05-28-08	UPDATED SPOOL #2
APPROVED	05-18-08	REVISED SPOOLS 5, 6 & 7
APPROVED	3/11/08	ADDED SPOOL #9
REV	DATE	DESCRIPTION

PROPRIETARY
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HEREIN ARE THE PROPERTY OF HELMERICH & PAYNE
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ANY MEANS, WITHOUT THE PRIOR WRITTEN CONSENT OF A DULY AUTHORIZED
OFFICER OF HELMERICH & PAYNE INTL. DRILLING CO.

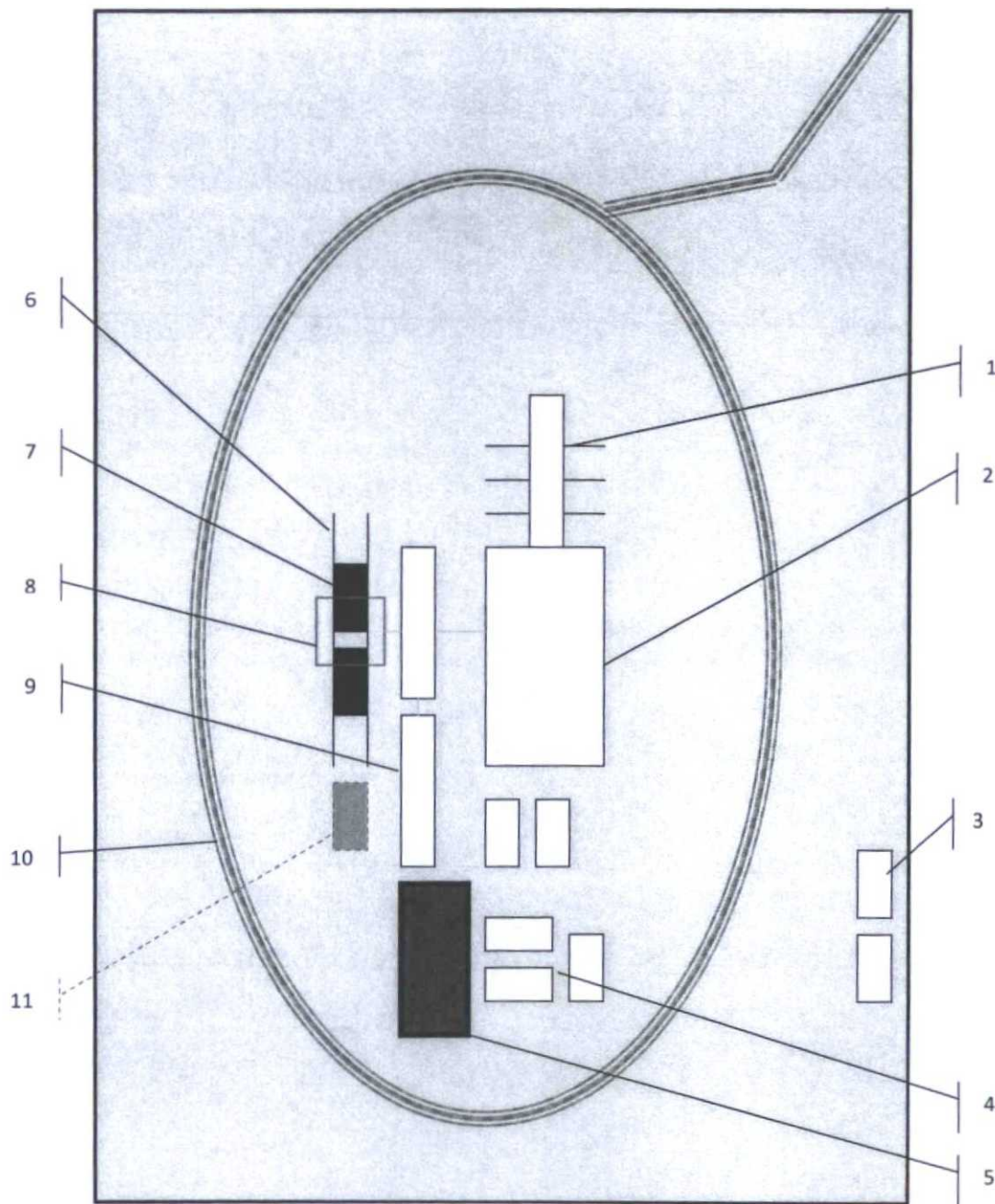
QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 368	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500398355	
CONTITECH RUBBER order N°: 538079		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 67085		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,71 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page) ↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		1253 8903		AISI 4130	
4 1/16" 10K API b.w. Flange end				AISI 4130	
				Heat N°	
				A0709N A1126U	
				035285	
NOT DESIGNED FOR WELL TESTING				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
05. March 2014.				ContiTech Rubber Industrial Kft. Quality Control Dept. 	

[illegible]



Hose Data Sheet

CRI Order No.	538079
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500398355
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15



Schematic Closed Loop Drilling Rig*

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available



Above: Centrifugal Closed Loop System

PERMITS WEST, INC.

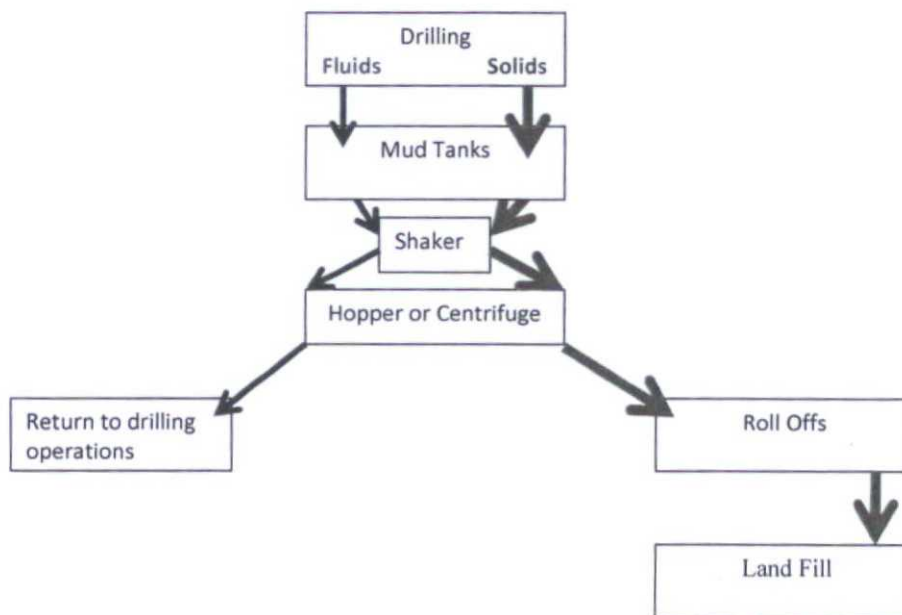
PROVIDING PERMITS for LAND USERS

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Closed Loop Drilling System: Mud tanks to right (1)
 Hopper in air to settle out solids (2)
 Water return pipe (3)
 Shaker between hopper and mud tanks (4)
 Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids



Roadrunner's
Road Runner Federal 25-33-9 2H
rig diagram

