

15-493

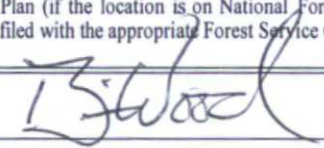
Form 3160-3
(March 2012)**OCD Hobbs****HOBBS OCD****NOV 06 2015**FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-118727	
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 10530 SOUTH COUNTY ROAD 33 MYTON UT 84052		8. Lease Name and Well No. (315645) WILE E COYOTE FED'L 26-33-20 2H	
3b. Phone No. (include area code) 435 646 4835		9. API Well No. 30-025- 42 937	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 220' FNL & 1160' FEL (A) First Take Pt.: 330' FNL & 1943' FEL At proposed prod. zone Last Take Pt.: 330' FSL & 1943' FEL (P) Pilot Hole: 250' FSL & 1943' FEL		10. Field and Pool, or Exploratory (97900) RED HILLS; 4PR BE SHALE	
14. Distance in miles and direction from nearest town or post office* 23 AIR MILES SW OF JAL, NM		11. Sec., T. R. M. or Blk. and Survey or Area NWNE 20-26S-33E	
15. Distance from proposed* location to nearest SHL: 220' PILOT SHL: 220' property or lease line, ft. BHL: 250' PILOT BHL: 50' (Also to nearest drig. unit line, if any)		12. County or Parish LEA	
16. No. of acres in lease 640		13. State NM	
17. Spacing Unit dedicated to this well W2E2		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 45' (Wile 4H) BHL: 1393' (Wile 4H)	
19. Proposed Depth TVD: 9314' MD: 14110' PHTVD: 14850' PHMD: 14904		20. BLM/BIA Bond No. on file 022046443 NMB001170	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,259' UNGRADED		22. Approximate date work will start* 06/01/2015	
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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- 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 02/26/2015
Title CONSULTANT (FAX: 505 466-9682)		
Approved by (Signature) /s/ Chris Walls	Name (Printed/Typed) CHRIS WALLS	Date OCT 30 2015
Title FOR FIELD MANAGER Office BLM-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)

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL****APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED****Witness Surface &
Intermediate Casing****NOV 09 2015****Carlsbad Controlled Water Basin**

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.**

5. Lease Serial No.
NMNM118727

6. If Indian, Allottee or Tribe Name

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' FNL & 1160' FEL, NENE (A), Sec 20, T26S, R33E

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

8. Well Name and No.
Wile E Coyote Federal 26-33-20 2H

9. API Well No.
30-025-

10. Field and Pool or Exploratory Area
WC Avalon Shale 1

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 _____
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change of Operator _____
	☐ 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.

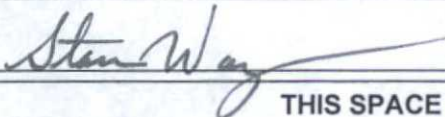
BLM bond number on file is NM 2308.

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

/s/ Chris Walls

FO FIELD MANAGER

Date OCT 30 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 BLM-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)

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 1

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

HOBBS OCD

NOV 06 2015

RECEIVED

Drilling Program

1. ESTIMATED TOPS

<u>Name</u>	<u>TVD</u>	<u>Content</u>
Quaternary	0'	fresh water
Santa Rosa	90'	brackish water
Rustler	824'	anhydrite
Salado (top of salt)	1,179'	salt, brine
Castile	3,164'	brine
Lamar (base of salt)	4,884'	salt
Bell Canyon	4,924'	brine water
Cherry Canyon	5,904'	oil, gas
Brushy Canyon	7,614'	oil, gas
Bone Spring limestone	9,034'	---
Leonard shale	9,099'	---
Avalon carbonate 1	9,204'	---
Avalon shale 1	9,234'	oil, gas
Avalon shale 1 target	9,284'	oil, gas
Avalon shale 2	9,469'	oil, gas
Avalon shale 3	9,684'	oil, gas
Avalon shale 4	9,844'	oil, gas
Bone Spring sand 1	10,004'	oil, gas
Bone Spring sand 2	10,582'	---
Bone Spring sand 3	11,778'	oil, gas
Wolfcamp upper	12,124'	oil, gas
Strawn	14,534'	gas
Atoka	14,679'	gas
Atoka bank	14,769'	gas
TD pilot hole (MD = 14,904')	14,850'	---

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 2

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

2. NOTABLE ZONES

Closest water well (C 02273) is $\approx$ 4,000' east. Depth to water is 120'.

3. PRESSURE CONTROL

See COA 2500
Initial BOP test will occur before drilling out the 13-3/8" casing shoe. A 3rd party testing service will conduct all tests. Test pressures will be 250/5,000 psi for rams and 250/3,500 psi for annular (70% of WP) 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 times.

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

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

Manufacturer: Continental ContiTech Beattie Co. *See COA*

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

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

4. CASING & CEMENT

A pilot hole will be directionally drilled to 14,904' TVD (MD = 14,850') after setting and cementing the surface and intermediate strings. The hole will be logged and then plugged back (see Drill Plan Page 6) to the KOP at 8,806'. Curve will be built to a landing point at 9,606'. Roadrunner will then drill laterally to a MD of 14,110' (TVD = 9,314'). Hole will extend south 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' - 875'	13.375"	New	54.5	J-55	Butt	3.55	6.13	17.8
12.25"	0' - 4968'	9.625"	New	40	N-80	LTC	1.54	1.89	3.71
8.75"	0' - 14110'	5.5"	New	23	L-80 HCE	DWC/C	3.55	1.44	1.78

The following cement volumes are approximate. They are calculated on the assumption that a gauge hole will be achieved. Surface and intermediate casing strings will have centralizers on the bottom 3 joints of casing (at least 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. Casing shoes will not be drilled out until ≥ 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	450	13.5	1.75	9.16	787	100	GL

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 4

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

13.375" tail	Premium plus C + 0.005 lb/sk static free + 1% CaCl ₂ + 0.005 gps FP-6L	340	14.8	1.34	6.34	455	100	575'
9.625" lead	35:65 poz Premium plus C + 0.005 lb/sk static free + 5% NaCl + 0.6% CD- 32 + 0.005 gps FP-6L + 4% bentonite + 0.5% sodium metasilicate + 0.1% FL-52A + 5% MPA	925	12.9	1.92	10.16	1776	50	GL
9.625" tail	Premium plus C + 0.005 lb/sk static free + 0.005 gps FP-6L	370	14.8	1.33	6.32	492	50	3968'
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	1087	11.9	2.38	13.53	2587	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	1455	14.2	1.30	5.87	1891	30	8360'

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

5. MUD PROGRAM

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

Interval	Type	Weight	Viscosity	Fluid Loss
0' - 875' 890'	fresh water spud mud	8.6 - 8.9	28 - 36	no control
875' - 4968' 4890'	brine	9.8 - 10.0	28 - 30	no control
Pilot: 4968' - 14904' and KOP-EOB: 8806' - 9606'	cut brine	8.8 - 9.3	28 - 30	no control
Lateral 9606' - 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

Sixty rotary sidewall cores will be cut in the pilot hole.

No drill stem test is planned.

Quad combo, NMR, ECS, and Dielectric ~~logs~~ will be run in the pilot hole

logs

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈ 4358 psi. Expected bottom hole temperature is 160° F.

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

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 6

Wile E Coyote Federal 26-33-20 2H

SHL 220' FNL & 1160' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 1943' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

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.

The open pilot hole will be plugged back with a 400' plug on the bottom and a 1500' kick off plug. Cement specifications follow.

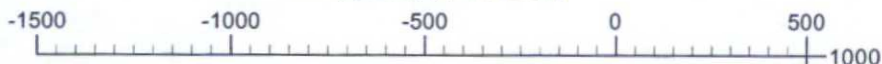
See CoA for Approval + Additional requirements

Plugging Interval	slurry	sacks	pounds per gallon	cubic feet per sack	gallons per sack	cubic feet
14504' - 14904'	Premium Plus H + 0.2% bwoc R-21 + 0.1% bwoc CD-32 + 0.001 gps FP-6L + 38.6% fresh water	189	16.4	1.06	4.35	200
8860' - 10360'	Premium Plus H + 0.1% bwoc R-21 + 0.1% bwoc CD-32 + 0.001 gps FP-6L + 38.6% fresh water	657	16.4	1.06	4.35	696

ROADRUNNER OIL & GAS, LLC

Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 2H
 Well: 2H
 Wellbore: Pilot Hole
 Design: Plan #1

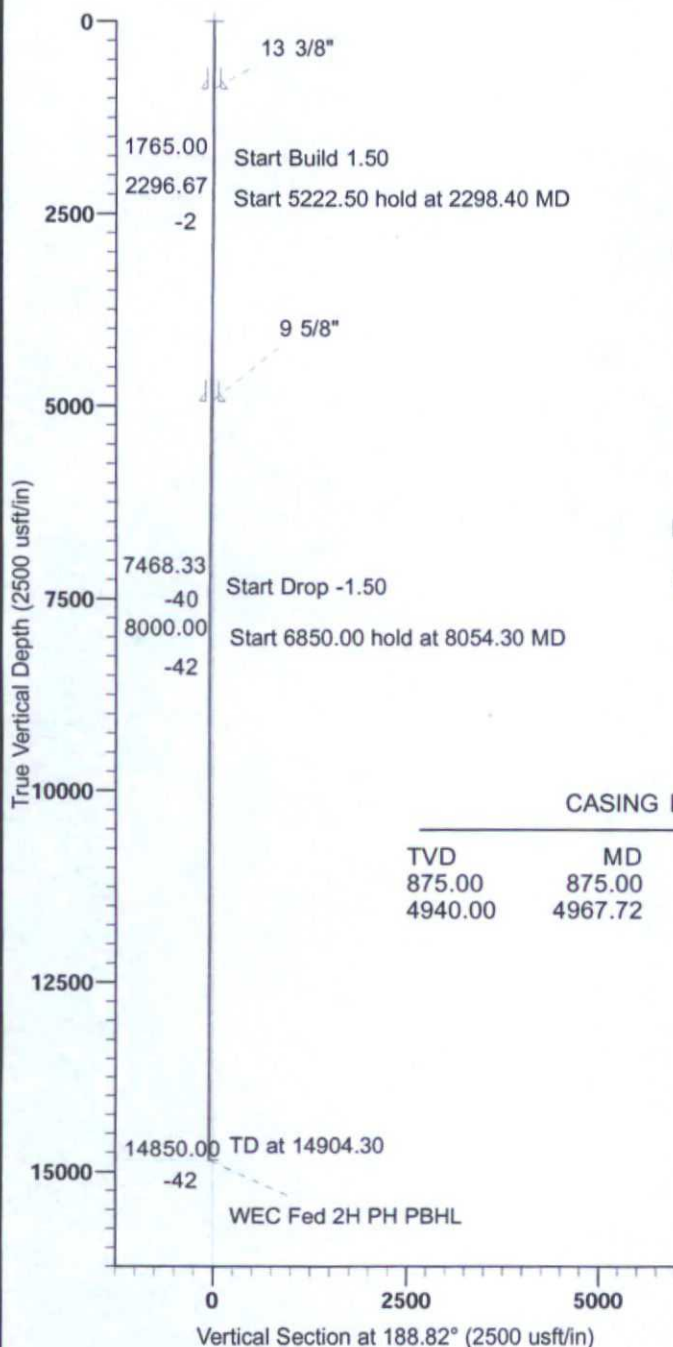
West(-)/East(+) (500 usft/in)



T-26-S, R-33-E

Section 20

South(-)/North(+) (500 usft/in)



Distances From Section Lines

Surface - 220'FNL, 1160'FEL
 PBHL - 50'FNL, 1943'FEL

CASING DETAILS

TVD	MD	Name	Size
875.00	875.00	13 3/8"	13.375
4940.00	4967.72	9 5/8"	9.625



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 6.74°

Magnetic Field
 Strength: 48142.0nT
 Dip Angle: 59.92°
 Date: 1/20/2015
 Model: IGRF2010

Avalon Shale 1 - 9284'KBTVD

Vertical Section at 188.82° (2500 usft/in)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
WEC Fed 2H SL	0.00	0.00	0.00	377507.87	771832.06	Point
WEC Fed 2H PH PBHL	14850.00	164.60	-784.20	377672.47	771047.86	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	
1765.00	0.00	0.00	1765.00	0.00	0.00	0.00	0.00	0.00	
2298.40	8.00	281.85	2296.67	7.64	-36.39	1.50	281.85	-1.97	
7520.90	8.00	281.85	7468.33	156.96	-747.81	0.00	0.00	-40.44	
8054.30	0.00	0.00	8000.00	164.60	-784.20	1.50	180.00	-42.41	
14904.30	0.00	0.00	14850.00	164.60	-784.20	0.00	0.00	-42.41	WEC Fed 2H PH PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

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	Wile E Coyote Federal 26-33-20 2H				
Site Position:		Northing:	377,507.87 usft	Latitude:	32° 2' 8.402 N
From:	Map	Easting:	771,832.06 usft	Longitude:	103° 35' 22.182 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	2H					
Well Position	+N/-S	0.00 usft	Northing:	377,507.87 usft	Latitude:	32° 2' 8.402 N
	+E/-W	0.00 usft	Easting:	771,832.06 usft	Longitude:	103° 35' 22.182 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,259.00 usft

Wellbore	Pilot Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/20/2015	7.14	59.92	48,142

Design	Plan #1			
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	188.82

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	
1,765.00	0.00	0.00	1,765.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,298.40	8.00	281.85	2,296.67	7.64	-36.39	1.50	1.50	0.00	281.85	
7,520.90	8.00	281.85	7,468.33	156.96	-747.81	0.00	0.00	0.00	0.00	
8,054.30	0.00	0.00	8,000.00	164.60	-784.20	1.50	-1.50	0.00	180.00	
14,904.30	0.00	0.00	14,850.00	164.60	-784.20	0.00	0.00	0.00	0.00	WEC Fed 2H PH PBH

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

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
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
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
1,200.00	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
1,765.00	0.00	0.00	1,765.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.53	281.85	1,800.00	0.03	-0.16	-0.01	1.50	1.50	0.00
1,900.00	2.03	281.85	1,899.97	0.49	-2.33	-0.13	1.50	1.50	0.00
2,000.00	3.53	281.85	1,999.85	1.48	-7.07	-0.38	1.50	1.50	0.00
2,100.00	5.03	281.85	2,099.57	3.02	-14.37	-0.78	1.50	1.50	0.00
2,200.00	6.53	281.85	2,199.06	5.08	-24.22	-1.31	1.50	1.50	0.00
2,298.40	8.00	281.85	2,296.67	7.64	-36.39	-1.97	1.50	1.50	0.00
2,300.00	8.00	281.85	2,298.25	7.68	-36.61	-1.98	0.00	0.00	0.00
2,400.00	8.00	281.85	2,397.28	10.54	-50.23	-2.72	0.00	0.00	0.00
2,500.00	8.00	281.85	2,496.31	13.40	-63.85	-3.45	0.00	0.00	0.00
2,600.00	8.00	281.85	2,595.33	16.26	-77.47	-4.19	0.00	0.00	0.00
2,700.00	8.00	281.85	2,694.36	19.12	-91.10	-4.93	0.00	0.00	0.00
2,800.00	8.00	281.85	2,793.39	21.98	-104.72	-5.66	0.00	0.00	0.00
2,900.00	8.00	281.85	2,892.41	24.84	-118.34	-6.40	0.00	0.00	0.00
3,000.00	8.00	281.85	2,991.44	27.70	-131.96	-7.14	0.00	0.00	0.00
3,100.00	8.00	281.85	3,090.47	30.56	-145.59	-7.87	0.00	0.00	0.00
3,200.00	8.00	281.85	3,189.49	33.42	-159.21	-8.61	0.00	0.00	0.00
3,300.00	8.00	281.85	3,288.52	36.28	-172.83	-9.35	0.00	0.00	0.00
3,400.00	8.00	281.85	3,387.54	39.13	-186.45	-10.08	0.00	0.00	0.00
3,500.00	8.00	281.85	3,486.57	41.99	-200.08	-10.82	0.00	0.00	0.00
3,600.00	8.00	281.85	3,585.60	44.85	-213.70	-11.56	0.00	0.00	0.00
3,700.00	8.00	281.85	3,684.62	47.71	-227.32	-12.29	0.00	0.00	0.00
3,800.00	8.00	281.85	3,783.65	50.57	-240.94	-13.03	0.00	0.00	0.00
3,900.00	8.00	281.85	3,882.68	53.43	-254.56	-13.77	0.00	0.00	0.00
4,000.00	8.00	281.85	3,981.70	56.29	-268.19	-14.50	0.00	0.00	0.00
4,100.00	8.00	281.85	4,080.73	59.15	-281.81	-15.24	0.00	0.00	0.00
4,200.00	8.00	281.85	4,179.76	62.01	-295.43	-15.98	0.00	0.00	0.00
4,300.00	8.00	281.85	4,278.78	64.87	-309.05	-16.71	0.00	0.00	0.00
4,400.00	8.00	281.85	4,377.81	67.73	-322.68	-17.45	0.00	0.00	0.00
4,500.00	8.00	281.85	4,476.84	70.59	-336.30	-18.19	0.00	0.00	0.00
4,600.00	8.00	281.85	4,575.86	73.44	-349.92	-18.92	0.00	0.00	0.00
4,700.00	8.00	281.85	4,674.89	76.30	-363.54	-19.66	0.00	0.00	0.00
4,800.00	8.00	281.85	4,773.92	79.16	-377.16	-20.40	0.00	0.00	0.00
4,900.00	8.00	281.85	4,872.94	82.02	-390.79	-21.13	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database: EDM 5000.1 MultiUser DB
 Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 2H
 Well: 2H
 Wellbore: Pilot Hole
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well 2H
 3259+25 @ 3284.00usft (Planning)
 3259+25 @ 3284.00usft (Planning)
 Grid
 Minimum Curvature

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)
4,967.72	8.00	281.85	4,940.00	83.96	-400.01	-21.63	0.00	0.00	0.00
9 5/8"									
5,000.00	8.00	281.85	4,971.97	84.88	-404.41	-21.87	0.00	0.00	0.00
5,100.00	8.00	281.85	5,071.00	87.74	-418.03	-22.61	0.00	0.00	0.00
5,200.00	8.00	281.85	5,170.02	90.60	-431.65	-23.34	0.00	0.00	0.00
5,300.00	8.00	281.85	5,269.05	93.46	-445.28	-24.08	0.00	0.00	0.00
5,400.00	8.00	281.85	5,368.08	96.32	-458.90	-24.82	0.00	0.00	0.00
5,500.00	8.00	281.85	5,467.10	99.18	-472.52	-25.55	0.00	0.00	0.00
5,600.00	8.00	281.85	5,566.13	102.04	-486.14	-26.29	0.00	0.00	0.00
5,700.00	8.00	281.85	5,665.16	104.90	-499.77	-27.03	0.00	0.00	0.00
5,800.00	8.00	281.85	5,764.18	107.75	-513.39	-27.76	0.00	0.00	0.00
5,900.00	8.00	281.85	5,863.21	110.61	-527.01	-28.50	0.00	0.00	0.00
6,000.00	8.00	281.85	5,962.24	113.47	-540.63	-29.24	0.00	0.00	0.00
6,100.00	8.00	281.85	6,061.26	116.33	-554.25	-29.97	0.00	0.00	0.00
6,200.00	8.00	281.85	6,160.29	119.19	-567.88	-30.71	0.00	0.00	0.00
6,300.00	8.00	281.85	6,259.31	122.05	-581.50	-31.45	0.00	0.00	0.00
6,400.00	8.00	281.85	6,358.34	124.91	-595.12	-32.18	0.00	0.00	0.00
6,500.00	8.00	281.85	6,457.37	127.77	-608.74	-32.92	0.00	0.00	0.00
6,600.00	8.00	281.85	6,556.39	130.63	-622.37	-33.66	0.00	0.00	0.00
6,700.00	8.00	281.85	6,655.42	133.49	-635.99	-34.39	0.00	0.00	0.00
6,800.00	8.00	281.85	6,754.45	136.35	-649.61	-35.13	0.00	0.00	0.00
6,900.00	8.00	281.85	6,853.47	139.21	-663.23	-35.87	0.00	0.00	0.00
7,000.00	8.00	281.85	6,952.50	142.06	-676.85	-36.60	0.00	0.00	0.00
7,100.00	8.00	281.85	7,051.53	144.92	-690.48	-37.34	0.00	0.00	0.00
7,200.00	8.00	281.85	7,150.55	147.78	-704.10	-38.08	0.00	0.00	0.00
7,300.00	8.00	281.85	7,249.58	150.64	-717.72	-38.81	0.00	0.00	0.00
7,400.00	8.00	281.85	7,348.61	153.50	-731.34	-39.55	0.00	0.00	0.00
7,500.00	8.00	281.85	7,447.63	156.36	-744.97	-40.29	0.00	0.00	0.00
7,520.90	8.00	281.85	7,468.33	156.96	-747.81	-40.44	0.00	0.00	0.00
7,600.00	6.81	281.85	7,546.77	159.05	-757.79	-40.98	1.50	-1.50	0.00
7,700.00	5.31	281.85	7,646.21	161.22	-768.13	-41.54	1.50	-1.50	0.00
7,800.00	3.81	281.85	7,745.89	162.86	-775.92	-41.96	1.50	-1.50	0.00
7,900.00	2.31	281.85	7,845.74	163.96	-781.15	-42.24	1.50	-1.50	0.00
8,000.00	0.81	281.85	7,945.70	164.52	-783.83	-42.39	1.50	-1.50	0.00
8,054.30	0.00	0.00	8,000.00	164.60	-784.20	-42.41	1.50	-1.50	0.00
8,100.00	0.00	0.00	8,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,300.00	0.00	0.00	8,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,400.00	0.00	0.00	8,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,500.00	0.00	0.00	8,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,600.00	0.00	0.00	8,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,700.00	0.00	0.00	8,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,800.00	0.00	0.00	8,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
8,900.00	0.00	0.00	8,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,000.00	0.00	0.00	8,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,100.00	0.00	0.00	9,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,400.00	0.00	0.00	9,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,700.00	0.00	0.00	9,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
9,800.00	0.00	0.00	9,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database: EDM 5000.1 MultiUser DB
 Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 2H
 Well: 2H
 Wellbore: Pilot Hole
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well 2H
 3259+25 @ 3284.00usft (Planning)
 3259+25 @ 3284.00usft (Planning)
 Grid
 Minimum Curvature

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)
9,900.00	0.00	0.00	9,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,000.00	0.00	0.00	9,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,100.00	0.00	0.00	10,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,200.00	0.00	0.00	10,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,300.00	0.00	0.00	10,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,400.00	0.00	0.00	10,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,500.00	0.00	0.00	10,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,600.00	0.00	0.00	10,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,700.00	0.00	0.00	10,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,800.00	0.00	0.00	10,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
10,900.00	0.00	0.00	10,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,000.00	0.00	0.00	10,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,100.00	0.00	0.00	11,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,200.00	0.00	0.00	11,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,300.00	0.00	0.00	11,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,400.00	0.00	0.00	11,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,500.00	0.00	0.00	11,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,600.00	0.00	0.00	11,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,700.00	0.00	0.00	11,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,800.00	0.00	0.00	11,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
11,900.00	0.00	0.00	11,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,000.00	0.00	0.00	11,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,100.00	0.00	0.00	12,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,200.00	0.00	0.00	12,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,300.00	0.00	0.00	12,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,400.00	0.00	0.00	12,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,500.00	0.00	0.00	12,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,600.00	0.00	0.00	12,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,700.00	0.00	0.00	12,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,800.00	0.00	0.00	12,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
12,900.00	0.00	0.00	12,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,000.00	0.00	0.00	12,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,100.00	0.00	0.00	13,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,200.00	0.00	0.00	13,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,300.00	0.00	0.00	13,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,400.00	0.00	0.00	13,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,500.00	0.00	0.00	13,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,600.00	0.00	0.00	13,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,700.00	0.00	0.00	13,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,800.00	0.00	0.00	13,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
13,900.00	0.00	0.00	13,845.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,000.00	0.00	0.00	13,945.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,100.00	0.00	0.00	14,045.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,200.00	0.00	0.00	14,145.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,300.00	0.00	0.00	14,245.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,400.00	0.00	0.00	14,345.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,500.00	0.00	0.00	14,445.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,600.00	0.00	0.00	14,545.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,700.00	0.00	0.00	14,645.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,800.00	0.00	0.00	14,745.70	164.60	-784.20	-42.41	0.00	0.00	0.00
14,904.30	0.00	0.00	14,850.00	164.60	-784.20	-42.41	0.00	0.00	0.00

Premier Directional Drilling Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
WEC Fed 2H SL	0.00	0.00	0.00	0.00	0.00	377,507.87	771,832.06	32° 2' 8.402 N	103° 35' 22.182 W
- plan hits target center									
- Point									
WEC Fed 2H PH PBHL	0.00	0.00	14,850.00	164.60	-784.20	377,672.47	771,047.85	32° 2' 10.084 N	103° 35' 31.279 W
- plan hits target center									
- Point									

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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	Pilot Hole	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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	1/20/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,903.92	Plan #1 (Pilot Hole)	MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Wile E Coyote Federal 26-33-20 4H						
4H - Lateral - Plan #1	1,750.00	1,749.00	44.94	38.89	7.429	CC
4H - Lateral - Plan #1	1,800.00	1,799.00	45.10	38.87	7.243	ES
4H - Lateral - Plan #1	1,850.00	1,848.99	45.87	39.47	7.170	SF

Offset Design										Offset Site Error:		0.00 usft	
Survey Program: 0-										Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance						
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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.84	0.13	44.94	44.95				
50.00	50.00	49.00	49.00	0.04	0.00	89.84	0.13	44.94	44.94	44.90	0.04	1,000.739	
100.00	100.00	99.00	99.00	0.13	0.00	89.84	0.13	44.94	44.94	44.81	0.13	333.818	
150.00	150.00	149.00	149.00	0.31	0.00	89.84	0.13	44.94	44.94	44.63	0.31	143.184	
200.00	200.00	199.00	199.00	0.49	0.00	89.84	0.13	44.94	44.94	44.45	0.49	91.138	
250.00	250.00	249.00	249.00	0.67	0.00	89.84	0.13	44.94	44.94	44.27	0.67	66.842	
300.00	300.00	299.00	299.00	0.85	0.00	89.84	0.13	44.94	44.94	44.09	0.85	52.773	
350.00	350.00	349.00	349.00	1.03	0.00	89.84	0.13	44.94	44.94	43.91	1.03	43.597	
400.00	400.00	399.00	399.00	1.21	0.00	89.84	0.13	44.94	44.94	43.73	1.21	37.139	
450.00	450.00	449.00	449.00	1.39	0.00	89.84	0.13	44.94	44.94	43.55	1.39	32.348	
500.00	500.00	499.00	499.00	1.57	0.00	89.84	0.13	44.94	44.94	43.37	1.57	28.651	
550.00	550.00	549.00	549.00	1.75	0.00	89.84	0.13	44.94	44.94	43.19	1.75	25.713	
600.00	600.00	599.00	599.00	1.93	0.00	89.84	0.13	44.94	44.94	43.01	1.93	23.322	
650.00	650.00	649.00	649.00	2.11	0.00	89.84	0.13	44.94	44.94	42.83	2.11	21.337	
700.00	700.00	699.00	699.00	2.29	0.00	89.84	0.13	44.94	44.94	42.65	2.29	19.664	
750.00	750.00	749.00	749.00	2.46	0.00	89.84	0.13	44.94	44.94	42.48	2.46	18.234	
800.00	800.00	799.00	799.00	2.64	0.00	89.84	0.13	44.94	44.94	42.30	2.64	16.998	
850.00	850.00	849.00	849.00	2.82	0.00	89.84	0.13	44.94	44.94	42.12	2.82	15.918	
900.00	900.00	899.00	899.00	3.00	0.00	89.84	0.13	44.94	44.94	41.94	3.00	14.968	
950.00	950.00	949.00	949.00	3.18	0.00	89.84	0.13	44.94	44.94	41.76	3.18	14.125	
1,000.00	1,000.00	999.00	999.00	3.36	0.00	89.84	0.13	44.94	44.94	41.58	3.36	13.372	
1,050.00	1,050.00	1,049.00	1,049.00	3.54	0.00	89.84	0.13	44.94	44.94	41.40	3.54	12.695	
1,100.00	1,100.00	1,099.00	1,099.00	3.72	0.00	89.84	0.13	44.94	44.94	41.22	3.72	12.083	
1,150.00	1,150.00	1,149.00	1,149.00	3.90	0.00	89.84	0.13	44.94	44.94	41.04	3.90	11.527	

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
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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	Pilot Hole	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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		
1,200.00	1,200.00	1,199.00	1,199.00	4.08	0.00	89.84	0.13	44.94	44.94	40.86	4.08	11.021		
1,250.00	1,250.00	1,249.00	1,249.00	4.26	0.00	89.84	0.13	44.94	44.94	40.68	4.26	10.557		
1,300.00	1,300.00	1,299.00	1,299.00	4.44	0.00	89.84	0.13	44.94	44.94	40.50	4.44	10.130		
1,350.00	1,350.00	1,349.00	1,349.00	4.62	0.00	89.84	0.13	44.94	44.94	40.32	4.62	9.737		
1,400.00	1,400.00	1,399.00	1,399.00	4.79	0.00	89.84	0.13	44.94	44.94	40.15	4.79	9.373		
1,450.00	1,450.00	1,449.00	1,449.00	4.97	0.00	89.84	0.13	44.94	44.94	39.97	4.97	9.035		
1,500.00	1,500.00	1,499.00	1,499.00	5.15	0.00	89.84	0.13	44.94	44.94	39.79	5.15	8.721		
1,550.00	1,550.00	1,549.00	1,549.00	5.33	0.00	89.84	0.13	44.94	44.94	39.61	5.33	8.428		
1,600.00	1,600.00	1,599.00	1,599.00	5.51	0.00	89.84	0.13	44.94	44.94	39.43	5.51	8.154		
1,650.00	1,650.00	1,649.00	1,649.00	5.69	0.00	89.84	0.13	44.94	44.94	39.25	5.69	7.897		
1,700.00	1,700.00	1,699.00	1,699.00	5.87	0.00	89.84	0.13	44.94	44.94	39.07	5.87	7.656		
1,750.00	1,750.00	1,749.00	1,749.00	6.05	0.00	89.84	0.13	44.94	44.94	38.89	6.05	7.429 CC		
1,800.00	1,800.00	1,799.00	1,799.00	6.23	0.00	168.02	0.13	44.94	45.10	38.87	6.23	7.243 ES		
1,850.00	1,849.99	1,848.99	1,848.99	6.40	0.00	168.23	0.13	44.94	45.87	39.47	6.40	7.170 SF		
1,900.00	1,899.97	1,898.97	1,898.97	6.57	0.00	168.58	0.13	44.94	47.28	40.71	6.57	7.198		
1,950.00	1,949.93	1,948.93	1,948.93	6.75	0.00	169.05	0.13	44.94	49.33	42.59	6.74	7.321		
2,000.00	1,999.85	1,998.85	1,998.85	6.92	0.00	169.62	0.13	44.94	52.03	45.12	6.91	7.533		
2,050.00	2,049.74	2,048.74	2,048.74	7.09	0.00	170.25	0.13	44.94	55.38	48.30	7.08	7.827		
2,100.00	2,099.57	2,098.57	2,098.57	7.27	0.00	170.90	0.13	44.94	59.38	52.14	7.24	8.199		
2,150.00	2,149.35	2,148.35	2,148.35	7.45	0.00	171.55	0.13	44.94	64.03	56.62	7.41	8.641		
2,200.00	2,199.06	2,198.06	2,198.06	7.63	0.00	172.19	0.13	44.94	69.33	61.76	7.58	9.153		
2,250.00	2,248.70	2,247.70	2,247.70	7.81	0.00	172.80	0.13	44.94	75.29	67.55	7.74	9.727		
2,300.00	2,298.25	2,297.25	2,297.25	7.99	0.00	173.38	0.13	44.94	81.90	73.99	7.90	10.361		
2,350.00	2,347.77	2,346.77	2,346.77	8.17	0.00	173.89	0.13	44.94	88.81	80.74	8.08	10.993		
2,400.00	2,397.28	2,396.28	2,396.28	8.36	0.00	174.34	0.13	44.94	95.74	87.48	8.25	11.598		
2,450.00	2,446.79	2,445.79	2,445.79	8.54	0.00	174.72	0.13	44.94	102.67	94.24	8.43	12.177		
2,500.00	2,496.31	2,495.31	2,495.31	8.73	0.00	175.05	0.13	44.94	109.60	100.99	8.61	12.733		
2,550.00	2,545.82	2,543.81	2,543.80	8.92	0.00	175.29	0.20	45.18	116.77	107.98	8.78	13.293		
2,600.00	2,595.33	2,591.62	2,591.61	9.11	0.00	175.38	0.45	45.99	124.50	115.54	8.96	13.893		
2,650.00	2,644.85	2,639.46	2,639.43	9.30	0.00	175.36	0.88	47.37	132.80	123.66	9.14	14.531		
2,700.00	2,694.36	2,687.11	2,687.04	9.49	0.00	175.23	1.48	49.32	141.66	132.34	9.32	15.205		
2,750.00	2,743.87	2,734.56	2,734.41	9.68	0.00	175.03	2.25	51.82	151.08	141.58	9.50	15.911		
2,800.00	2,793.39	2,781.78	2,781.53	9.87	0.00	174.76	3.19	54.87	161.05	151.38	9.67	16.649		
2,850.00	2,842.90	2,828.78	2,828.37	10.07	0.00	174.45	4.30	58.45	171.59	161.73	9.85	17.415		
2,900.00	2,892.41	2,875.53	2,874.92	10.26	0.00	174.09	5.57	62.56	182.67	172.64	10.03	18.210		
2,950.00	2,941.93	2,922.03	2,921.17	10.46	0.00	173.72	7.00	67.19	194.32	184.10	10.21	19.029		
3,000.00	2,991.44	2,968.26	2,967.08	10.65	0.00	173.32	8.59	72.33	206.51	196.12	10.39	19.874		
3,050.00	3,040.95	3,014.21	3,012.66	10.85	0.00	172.91	10.33	77.96	219.26	208.68	10.57	20.741		
3,100.00	3,090.47	3,061.56	3,059.56	11.04	0.00	172.49	12.25	84.19	232.43	221.68	10.75	21.619		
3,150.00	3,139.98	3,109.76	3,107.29	11.24	0.00	172.11	14.21	90.56	245.66	234.72	10.93	22.471		
3,200.00	3,189.49	3,157.95	3,155.02	11.44	0.00	171.77	16.18	96.93	258.89	247.77	11.11	23.296		
3,250.00	3,239.00	3,206.15	3,202.76	11.64	0.00	171.46	18.15	103.30	272.12	260.83	11.29	24.095		
3,300.00	3,288.52	3,254.34	3,250.49	11.84	0.00	171.18	20.11	109.66	285.37	273.89	11.48	24.869		
3,350.00	3,338.03	3,302.54	3,298.22	12.04	0.00	170.92	22.08	116.03	298.62	286.96	11.66	25.618		
3,400.00	3,387.54	3,350.74	3,345.95	12.24	0.00	170.68	24.05	122.40	311.88	300.04	11.84	26.345		
3,450.00	3,437.05	3,398.93	3,393.89	12.44	0.00	170.47	26.02	128.77	325.14	313.12	12.02	27.050		
3,500.00	3,486.57	3,447.13	3,441.42	12.64	0.00	170.27	27.98	135.14	338.40	326.20	12.20	27.734		
3,550.00	3,536.08	3,495.32	3,489.15	12.84	0.00	170.09	29.95	141.51	351.67	339.29	12.38	28.397		
3,600.00	3,585.60	3,543.52	3,536.88	13.04	0.00	169.92	31.92	147.88	364.94	352.37	12.57	29.042		
3,650.00	3,635.11	3,591.71	3,584.62	13.24	0.00	169.76	33.88	154.25	378.21	365.47	12.75	29.667		
3,700.00	3,684.62	3,639.91	3,632.35	13.44	0.00	169.61	35.85	160.62	391.49	378.56	12.93	30.276		
3,750.00	3,734.14	3,688.11	3,680.08	13.64	0.00	169.47	37.82	166.99	404.77	391.66	13.11	30.866		

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
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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	Pilot Hole	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Wile E Coyote Federal 26-33-20 4H - 4H - Lateral - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-													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		
3,800.00	3,783.65	3,736.30	3,727.81	13.84	0.00	169.34	39.78	173.36	418.05	404.75	13.30	31.441		
3,850.00	3,833.16	3,784.50	3,775.55	14.05	0.00	169.22	41.75	179.72	431.33	417.85	13.48	32.000		
3,900.00	3,882.68	3,832.69	3,823.28	14.25	0.00	169.11	43.72	186.09	444.62	430.96	13.66	32.544		
3,950.00	3,932.19	3,880.89	3,871.01	14.45	0.00	169.00	45.68	192.46	457.90	444.06	13.85	33.073		
4,000.00	3,981.70	3,929.08	3,918.74	14.66	0.00	168.90	47.65	198.83	471.19	457.16	14.03	33.588		
4,050.00	4,031.22	3,977.28	3,966.48	14.86	0.00	168.80	49.62	205.20	484.48	470.27	14.21	34.090		
4,100.00	4,080.73	4,025.47	4,014.21	15.06	0.00	168.71	51.58	211.57	497.77	483.37	14.40	34.579		
4,150.00	4,130.24	4,073.67	4,061.94	15.27	0.00	168.62	53.55	217.94	511.06	496.48	14.58	35.055		
4,200.00	4,179.76	4,121.87	4,109.67	15.47	0.00	168.54	55.52	224.31	524.35	509.59	14.76	35.520		
4,250.00	4,229.27	4,170.06	4,157.41	15.68	0.00	168.47	57.48	230.68	537.64	522.70	14.95	35.973		
4,300.00	4,278.78	4,218.26	4,205.14	15.88	0.00	168.39	59.45	237.05	550.94	535.81	15.13	36.414		
4,350.00	4,328.30	4,266.45	4,252.87	16.08	0.00	168.32	61.42	243.42	564.23	548.92	15.31	36.845		
4,400.00	4,377.81	4,314.65	4,300.60	16.29	0.00	168.25	63.38	249.79	577.53	562.03	15.50	37.266		
4,450.00	4,427.32	4,362.84	4,348.34	16.49	0.00	168.19	65.35	256.15	590.82	575.14	15.68	37.677		
4,500.00	4,476.84	4,411.04	4,396.07	16.70	0.00	168.13	67.32	262.52	604.12	588.25	15.87	38.078		
4,550.00	4,526.35	4,459.24	4,443.80	16.90	0.00	168.07	69.28	268.89	617.42	601.37	16.05	38.469		
4,600.00	4,575.86	4,507.43	4,491.53	17.11	0.00	168.01	71.25	275.26	630.72	614.48	16.23	38.852		
4,650.00	4,625.38	4,555.63	4,539.27	17.32	0.00	167.96	73.22	281.63	644.01	627.60	16.42	39.226		
4,700.00	4,674.89	4,603.82	4,587.00	17.52	0.00	167.91	75.18	288.00	657.31	640.71	16.60	39.591		
4,750.00	4,724.40	4,652.02	4,634.73	17.73	0.00	167.86	77.15	294.37	670.61	653.82	16.79	39.949		
4,800.00	4,773.92	4,700.21	4,682.46	17.93	0.00	167.81	79.12	300.74	683.91	666.94	16.97	40.298		
4,850.00	4,823.43	4,748.41	4,730.20	18.14	0.00	167.76	81.08	307.11	697.21	680.06	17.16	40.640		
4,900.00	4,872.94	4,796.61	4,777.93	18.35	0.00	167.72	83.05	313.48	710.51	693.17	17.34	40.974		
4,950.00	4,922.46	4,844.80	4,825.66	18.55	0.00	167.68	85.02	319.85	723.81	706.29	17.52	41.302		
5,000.00	4,971.97	4,893.00	4,873.39	18.76	0.00	167.64	86.98	326.22	737.11	719.41	17.71	41.622		
5,050.00	5,021.48	4,941.19	4,921.12	18.97	0.00	167.60	88.95	332.58	750.42	732.52	17.89	41.936		
5,100.00	5,071.00	4,989.39	4,968.86	19.17	0.00	167.56	90.92	338.95	763.72	745.64	18.08	42.243		
5,150.00	5,120.51	5,037.58	5,016.59	19.38	0.00	167.52	92.88	345.32	777.02	758.76	18.26	42.544		
5,200.00	5,170.02	5,085.78	5,064.32	19.59	0.00	167.49	94.85	351.69	790.32	771.87	18.45	42.839		
5,250.00	5,219.54	5,133.97	5,112.05	19.79	0.00	167.45	96.82	358.06	803.63	784.99	18.63	43.127		
5,300.00	5,269.05	5,182.17	5,159.79	20.00	0.00	167.42	98.78	364.43	816.93	798.11	18.82	43.411		
5,350.00	5,318.56	5,230.37	5,207.52	20.21	0.00	167.39	100.75	370.80	830.23	811.23	19.00	43.688		
5,400.00	5,368.08	5,278.56	5,255.25	20.41	0.00	167.35	102.72	377.17	843.54	824.35	19.19	43.960		
5,450.00	5,417.59	5,326.76	5,302.98	20.62	0.00	167.32	104.68	383.54	856.84	837.47	19.37	44.227		
5,500.00	5,467.10	5,374.95	5,350.72	20.83	0.00	167.30	106.65	389.91	870.14	850.59	19.56	44.488		
5,550.00	5,516.62	5,423.15	5,398.45	21.04	0.00	167.27	108.62	396.28	883.45	863.70	19.74	44.745		
5,600.00	5,566.13	5,471.34	5,446.18	21.24	0.00	167.24	110.58	402.65	896.75	876.82	19.93	44.997		
5,650.00	5,615.64	5,519.54	5,493.91	21.45	0.00	167.21	112.55	409.01	910.06	889.94	20.11	45.244		
5,700.00	5,665.16	5,567.74	5,541.65	21.66	0.00	167.19	114.52	415.38	923.36	903.06	20.30	45.486		
5,750.00	5,714.67	5,615.93	5,589.38	21.87	0.00	167.16	116.48	421.75	936.67	916.18	20.49	45.724		
5,800.00	5,764.18	5,664.13	5,637.11	22.08	0.00	167.14	118.45	428.12	949.97	929.30	20.67	45.958		
5,850.00	5,813.70	5,712.32	5,684.84	22.28	0.00	167.11	120.42	434.49	963.28	942.42	20.86	46.188		
5,900.00	5,863.21	5,760.52	5,732.58	22.49	0.00	167.09	122.38	440.86	976.58	955.54	21.04	46.413		
5,950.00	5,912.72	5,808.71	5,780.31	22.70	0.00	167.07	124.35	447.23	989.89	968.66	21.23	46.635		

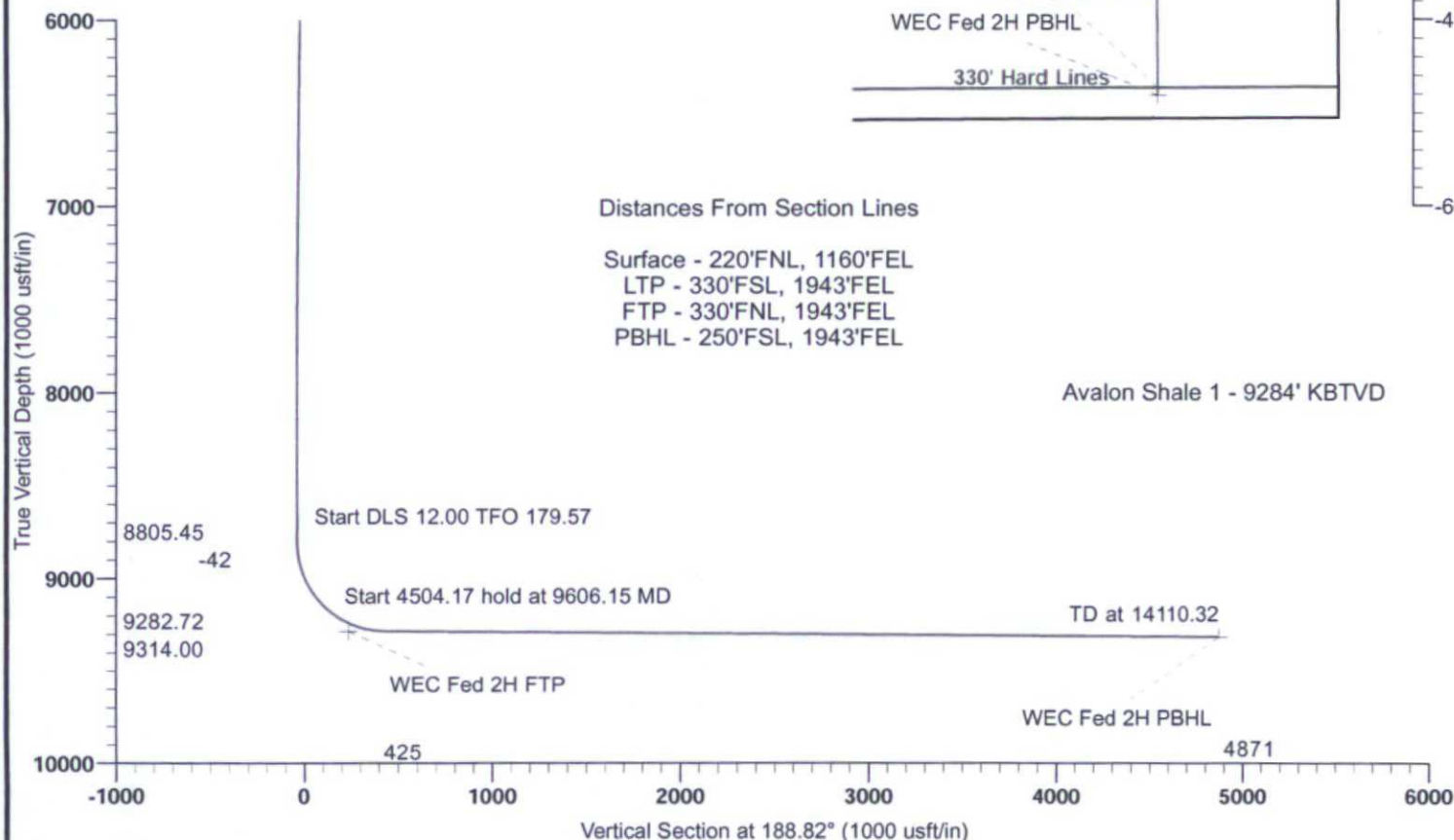
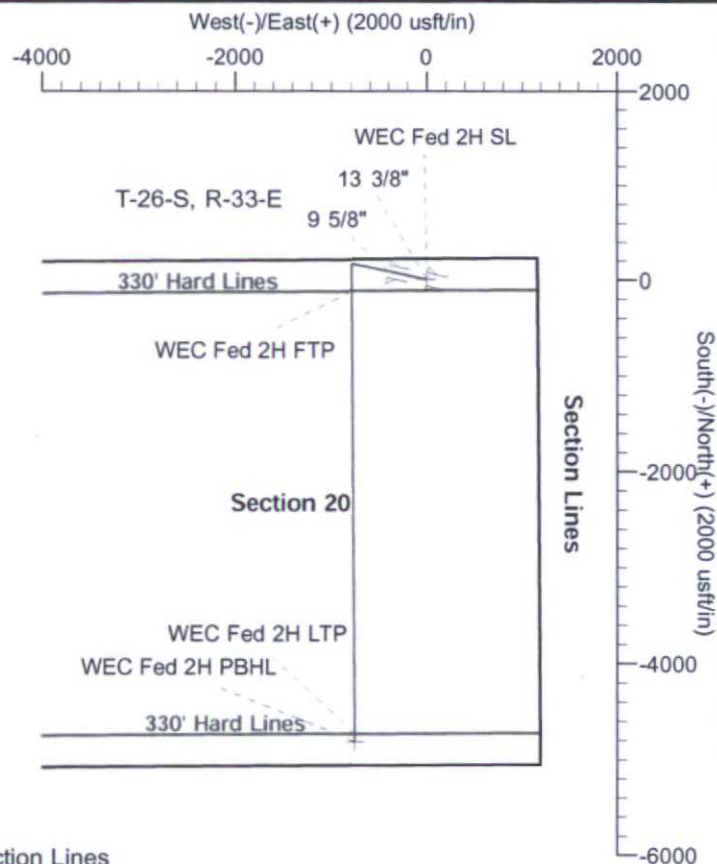
ROADRUNNER OIL & GAS, LLC

Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 2H
 Well: 2H
 Wellbore: Lateral
 Design: Plan #1



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 6.74°

Magnetic Field
 Strength: 48142.0snT
 Dip Angle: 59.92°
 Date: 1/20/2015
 Model: IGRF2010



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
WEC Fed 2H LTP	0.00	-4733.31	-747.77	372774.56	771084.29	Point
WEC Fed 2H SL	0.00	0.00	0.00	377507.87	771832.06	Point
WEC Fed 2H FTP	9284.00	-115.34	-782.12	377392.53	771049.94	Point
WEC Fed 2H PBHL	9314.00	-4813.30	-747.18	372694.57	771084.88	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
8859.75	0.00	0.00	8805.45	164.60	-784.20	0.00	0.00	-42.36	
9606.15	89.60	179.57	9282.72	-309.36	-780.68	12.00	179.57	425.45	
14110.32	89.60	179.57	9314.00	-4813.30	-747.18	0.00	0.00	4870.95	WEC Fed 2H PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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	Wile E Coyote Federal 26-33-20 2H				
Site Position:		Northing:	377,507.87 usft	Latitude:	32° 2' 8.402 N
From:	Map	Easting:	771,832.06 usft	Longitude:	103° 35' 22.182 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	2H					
Well Position	+N/-S	0.00 usft	Northing:	377,507.87 usft	Latitude:	32° 2' 8.402 N
	+E/-W	0.00 usft	Easting:	771,832.06 usft	Longitude:	103° 35' 22.182 W
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level:	3,259.00 usft	

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/20/2015	7.14	59.92	48,142

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	8,859.75	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	188.82	

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
8,859.75	0.00	0.00	8,805.45	164.60	-784.20	0.00	0.00	0.00	0.00	
9,606.15	89.60	179.57	9,282.72	-309.36	-780.68	12.00	12.00	24.06	179.57	
14,110.32	89.60	179.57	9,314.00	-4,813.30	-747.18	0.00	0.00	0.00	0.00	WEC Fed 2H PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
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
1,200.00	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
1,765.00	0.00	0.00	1,765.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.53	281.85	1,800.00	0.03	-0.16	-0.01	1.50	1.50	0.00
1,900.00	2.03	281.85	1,899.97	0.49	-2.33	-0.13	1.50	1.50	0.00
2,000.00	3.53	281.85	1,999.85	1.48	-7.07	-0.38	1.50	1.50	0.00
2,100.00	5.03	281.85	2,099.57	3.02	-14.37	-0.78	1.50	1.50	0.00
2,200.00	6.53	281.85	2,199.06	5.08	-24.22	-1.31	1.50	1.50	0.00
2,298.40	8.00	281.85	2,296.67	7.64	-36.39	-1.97	1.50	1.50	0.00
2,300.00	8.00	281.85	2,298.25	7.68	-36.61	-1.98	0.00	0.00	0.00
2,400.00	8.00	281.85	2,397.28	10.54	-50.23	-2.71	0.00	0.00	0.00
2,500.00	8.00	281.85	2,496.31	13.40	-63.85	-3.45	0.00	0.00	0.00
2,600.00	8.00	281.85	2,595.33	16.26	-77.47	-4.18	0.00	0.00	0.00
2,700.00	8.00	281.85	2,694.36	19.12	-91.10	-4.92	0.00	0.00	0.00
2,800.00	8.00	281.85	2,793.39	21.98	-104.72	-5.66	0.00	0.00	0.00
2,900.00	8.00	281.85	2,892.41	24.84	-118.34	-6.39	0.00	0.00	0.00
3,000.00	8.00	281.85	2,991.44	27.70	-131.96	-7.13	0.00	0.00	0.00
3,100.00	8.00	281.85	3,090.47	30.56	-145.59	-7.86	0.00	0.00	0.00
3,200.00	8.00	281.85	3,189.49	33.42	-159.21	-8.60	0.00	0.00	0.00
3,300.00	8.00	281.85	3,288.52	36.28	-172.83	-9.33	0.00	0.00	0.00
3,400.00	8.00	281.85	3,387.54	39.13	-186.45	-10.07	0.00	0.00	0.00
3,500.00	8.00	281.85	3,486.57	41.99	-200.08	-10.81	0.00	0.00	0.00
3,600.00	8.00	281.85	3,585.60	44.85	-213.70	-11.54	0.00	0.00	0.00
3,700.00	8.00	281.85	3,684.62	47.71	-227.32	-12.28	0.00	0.00	0.00
3,800.00	8.00	281.85	3,783.65	50.57	-240.94	-13.01	0.00	0.00	0.00
3,900.00	8.00	281.85	3,882.68	53.43	-254.56	-13.75	0.00	0.00	0.00
4,000.00	8.00	281.85	3,981.70	56.29	-268.19	-14.48	0.00	0.00	0.00
4,100.00	8.00	281.85	4,080.73	59.15	-281.81	-15.22	0.00	0.00	0.00
4,200.00	8.00	281.85	4,179.76	62.01	-295.43	-15.96	0.00	0.00	0.00
4,300.00	8.00	281.85	4,278.78	64.87	-309.05	-16.69	0.00	0.00	0.00
4,400.00	8.00	281.85	4,377.81	67.73	-322.68	-17.43	0.00	0.00	0.00
4,500.00	8.00	281.85	4,476.84	70.59	-336.30	-18.16	0.00	0.00	0.00
4,600.00	8.00	281.85	4,575.86	73.44	-349.92	-18.90	0.00	0.00	0.00
4,700.00	8.00	281.85	4,674.89	76.30	-363.54	-19.64	0.00	0.00	0.00
4,800.00	8.00	281.85	4,773.92	79.16	-377.16	-20.37	0.00	0.00	0.00
4,900.00	8.00	281.85	4,872.94	82.02	-390.79	-21.11	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)
4,967.72	8.00	281.85	4,940.00	83.96	-400.01	-21.60	0.00	0.00	0.00
9 5/8"									
5,000.00	8.00	281.85	4,971.97	84.88	-404.41	-21.84	0.00	0.00	0.00
5,100.00	8.00	281.85	5,071.00	87.74	-418.03	-22.58	0.00	0.00	0.00
5,200.00	8.00	281.85	5,170.02	90.60	-431.65	-23.31	0.00	0.00	0.00
5,300.00	8.00	281.85	5,269.05	93.46	-445.28	-24.05	0.00	0.00	0.00
5,400.00	8.00	281.85	5,368.08	96.32	-458.90	-24.79	0.00	0.00	0.00
5,500.00	8.00	281.85	5,467.10	99.18	-472.52	-25.52	0.00	0.00	0.00
5,600.00	8.00	281.85	5,566.13	102.04	-486.14	-26.26	0.00	0.00	0.00
5,700.00	8.00	281.85	5,665.16	104.90	-499.77	-26.99	0.00	0.00	0.00
5,800.00	8.00	281.85	5,764.18	107.75	-513.39	-27.73	0.00	0.00	0.00
5,900.00	8.00	281.85	5,863.21	110.61	-527.01	-28.46	0.00	0.00	0.00
6,000.00	8.00	281.85	5,962.24	113.47	-540.63	-29.20	0.00	0.00	0.00
6,100.00	8.00	281.85	6,061.26	116.33	-554.25	-29.94	0.00	0.00	0.00
6,200.00	8.00	281.85	6,160.29	119.19	-567.88	-30.67	0.00	0.00	0.00
6,300.00	8.00	281.85	6,259.31	122.05	-581.50	-31.41	0.00	0.00	0.00
6,400.00	8.00	281.85	6,358.34	124.91	-595.12	-32.14	0.00	0.00	0.00
6,500.00	8.00	281.85	6,457.37	127.77	-608.74	-32.88	0.00	0.00	0.00
6,600.00	8.00	281.85	6,556.39	130.63	-622.37	-33.61	0.00	0.00	0.00
6,700.00	8.00	281.85	6,655.42	133.49	-635.99	-34.35	0.00	0.00	0.00
6,800.00	8.00	281.85	6,754.45	136.35	-649.61	-35.09	0.00	0.00	0.00
6,900.00	8.00	281.85	6,853.47	139.21	-663.23	-35.82	0.00	0.00	0.00
7,000.00	8.00	281.85	6,952.50	142.06	-676.85	-36.56	0.00	0.00	0.00
7,100.00	8.00	281.85	7,051.53	144.92	-690.48	-37.29	0.00	0.00	0.00
7,200.00	8.00	281.85	7,150.55	147.78	-704.10	-38.03	0.00	0.00	0.00
7,300.00	8.00	281.85	7,249.58	150.64	-717.72	-38.76	0.00	0.00	0.00
7,400.00	8.00	281.85	7,348.61	153.50	-731.34	-39.50	0.00	0.00	0.00
7,500.00	8.00	281.85	7,447.63	156.36	-744.97	-40.24	0.00	0.00	0.00
7,520.90	8.00	281.85	7,468.33	156.96	-747.81	-40.39	0.00	0.00	0.00
7,600.00	6.81	281.85	7,546.77	159.05	-757.79	-40.93	1.50	-1.50	0.00
7,700.00	5.31	281.85	7,646.21	161.22	-768.13	-41.49	1.50	-1.50	0.00
7,800.00	3.81	281.85	7,745.89	162.86	-775.92	-41.91	1.50	-1.50	0.00
7,900.00	2.31	281.85	7,845.74	163.96	-781.15	-42.19	1.50	-1.50	0.00
8,000.00	0.81	281.85	7,945.70	164.52	-783.83	-42.33	1.50	-1.50	0.00
8,054.30	0.00	0.00	8,000.00	164.60	-784.20	-42.36	1.50	-1.50	0.00
8,100.00	0.00	0.00	8,045.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,200.00	0.00	0.00	8,145.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,300.00	0.00	0.00	8,245.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,400.00	0.00	0.00	8,345.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,500.00	0.00	0.00	8,445.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,600.00	0.00	0.00	8,545.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,700.00	0.00	0.00	8,645.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,800.00	0.00	0.00	8,745.70	164.60	-784.20	-42.36	0.00	0.00	0.00
8,859.75	0.00	0.00	8,805.45	164.60	-784.20	-42.36	0.00	0.00	0.00
8,875.00	1.83	179.57	8,820.70	164.35	-784.20	-42.11	12.00	12.00	0.00
8,900.00	4.83	179.57	8,845.65	162.90	-784.19	-40.68	12.00	12.00	0.00
8,925.00	7.83	179.57	8,870.50	160.14	-784.17	-37.96	12.00	12.00	0.00
8,950.00	10.83	179.57	8,895.16	156.09	-784.14	-33.96	12.00	12.00	0.00
8,975.00	13.84	179.57	8,919.58	150.75	-784.10	-28.69	12.00	12.00	0.00
9,000.00	16.84	179.57	8,943.69	144.14	-784.05	-22.16	12.00	12.00	0.00
9,025.00	19.84	179.57	8,967.42	136.27	-783.99	-14.40	12.00	12.00	0.00
9,050.00	22.84	179.57	8,990.70	127.18	-783.93	-5.42	12.00	12.00	0.00
9,075.00	25.84	179.57	9,013.48	116.88	-783.85	4.74	12.00	12.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)
9,100.00	28.84	179.57	9,035.68	105.40	-783.76	16.08	12.00	12.00	0.00
9,125.00	31.84	179.57	9,057.25	92.77	-783.67	28.54	12.00	12.00	0.00
9,150.00	34.84	179.57	9,078.14	79.03	-783.57	42.10	12.00	12.00	0.00
9,175.00	37.84	179.57	9,098.27	64.22	-783.46	56.72	12.00	12.00	0.00
9,200.00	40.85	179.57	9,117.60	48.37	-783.34	72.36	12.00	12.00	0.00
9,225.00	43.85	179.57	9,136.08	31.53	-783.21	88.98	12.00	12.00	0.00
9,250.00	46.85	179.57	9,153.65	13.75	-783.08	106.53	12.00	12.00	0.00
9,275.00	49.85	179.57	9,170.26	-4.93	-782.94	124.97	12.00	12.00	0.00
9,300.00	52.85	179.57	9,185.87	-24.45	-782.80	144.24	12.00	12.00	0.00
9,325.00	55.85	179.57	9,200.44	-44.76	-782.65	164.29	12.00	12.00	0.00
9,350.00	58.85	179.57	9,213.93	-65.81	-782.49	185.06	12.00	12.00	0.00
9,375.00	61.85	179.57	9,226.29	-87.53	-782.33	206.50	12.00	12.00	0.00
9,400.00	64.85	179.57	9,237.50	-109.87	-782.16	228.55	12.00	12.00	0.00
9,425.00	67.86	179.57	9,247.53	-132.77	-781.99	251.15	12.00	12.00	0.00
9,450.00	70.86	179.57	9,256.34	-156.16	-781.82	274.24	12.00	12.00	0.00
9,475.00	73.86	179.57	9,263.92	-179.98	-781.64	297.75	12.00	12.00	0.00
9,500.00	76.86	179.57	9,270.23	-204.17	-781.46	321.62	12.00	12.00	0.00
9,525.00	79.86	179.57	9,275.28	-228.65	-781.28	345.79	12.00	12.00	0.00
9,550.00	82.86	179.57	9,279.03	-253.36	-781.09	370.18	12.00	12.00	0.00
9,575.00	85.86	179.57	9,281.49	-278.24	-780.91	394.73	12.00	12.00	0.00
9,600.00	88.86	179.57	9,282.64	-303.21	-780.72	419.38	12.00	12.00	0.00
9,606.15	89.60	179.57	9,282.72	-309.36	-780.68	425.45	12.00	12.00	0.00
9,700.00	89.60	179.57	9,283.37	-403.20	-779.98	518.08	0.00	0.00	0.00
9,800.00	89.60	179.57	9,284.07	-503.20	-779.24	616.77	0.00	0.00	0.00
9,900.00	89.60	179.57	9,284.76	-603.19	-778.49	715.47	0.00	0.00	0.00
10,000.00	89.60	179.57	9,285.46	-703.19	-777.75	814.17	0.00	0.00	0.00
10,100.00	89.60	179.57	9,286.15	-803.18	-777.00	912.87	0.00	0.00	0.00
10,200.00	89.60	179.57	9,286.85	-903.18	-776.26	1,011.56	0.00	0.00	0.00
10,300.00	89.60	179.57	9,287.54	-1,003.17	-775.52	1,110.26	0.00	0.00	0.00
10,400.00	89.60	179.57	9,288.23	-1,103.17	-774.77	1,208.96	0.00	0.00	0.00
10,500.00	89.60	179.57	9,288.93	-1,203.16	-774.03	1,307.65	0.00	0.00	0.00
10,600.00	89.60	179.57	9,289.62	-1,303.16	-773.29	1,406.35	0.00	0.00	0.00
10,700.00	89.60	179.57	9,290.32	-1,403.15	-772.54	1,505.05	0.00	0.00	0.00
10,800.00	89.60	179.57	9,291.01	-1,503.15	-771.80	1,603.75	0.00	0.00	0.00
10,900.00	89.60	179.57	9,291.71	-1,603.14	-771.05	1,702.44	0.00	0.00	0.00
11,000.00	89.60	179.57	9,292.40	-1,703.14	-770.31	1,801.14	0.00	0.00	0.00
11,100.00	89.60	179.57	9,293.10	-1,803.13	-769.57	1,899.84	0.00	0.00	0.00
11,200.00	89.60	179.57	9,293.79	-1,903.13	-768.82	1,998.54	0.00	0.00	0.00
11,300.00	89.60	179.57	9,294.48	-2,003.12	-768.08	2,097.23	0.00	0.00	0.00
11,400.00	89.60	179.57	9,295.18	-2,103.12	-767.34	2,195.93	0.00	0.00	0.00
11,500.00	89.60	179.57	9,295.87	-2,203.11	-766.59	2,294.63	0.00	0.00	0.00
11,600.00	89.60	179.57	9,296.57	-2,303.11	-765.85	2,393.33	0.00	0.00	0.00
11,700.00	89.60	179.57	9,297.26	-2,403.10	-765.10	2,492.02	0.00	0.00	0.00
11,800.00	89.60	179.57	9,297.96	-2,503.10	-764.36	2,590.72	0.00	0.00	0.00
11,900.00	89.60	179.57	9,298.65	-2,603.09	-763.62	2,689.42	0.00	0.00	0.00
12,000.00	89.60	179.57	9,299.35	-2,703.08	-762.87	2,788.11	0.00	0.00	0.00
12,100.00	89.60	179.57	9,300.04	-2,803.08	-762.13	2,886.81	0.00	0.00	0.00
12,200.00	89.60	179.57	9,300.73	-2,903.07	-761.38	2,985.51	0.00	0.00	0.00
12,300.00	89.60	179.57	9,301.43	-3,003.07	-760.64	3,084.21	0.00	0.00	0.00
12,400.00	89.60	179.57	9,302.12	-3,103.06	-759.90	3,182.90	0.00	0.00	0.00
12,500.00	89.60	179.57	9,302.82	-3,203.06	-759.15	3,281.60	0.00	0.00	0.00
12,600.00	89.60	179.57	9,303.51	-3,303.05	-758.41	3,380.30	0.00	0.00	0.00
12,700.00	89.60	179.57	9,304.21	-3,403.05	-757.67	3,479.00	0.00	0.00	0.00
12,800.00	89.60	179.57	9,304.90	-3,503.04	-756.92	3,577.69	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Project:	Lea County, NM	MD Reference:	3259+25 @ 3284.00usft (Planning)
Site:	Wile E Coyote Federal 26-33-20 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)
12,900.00	89.60	179.57	9,305.60	-3,603.04	-756.18	3,676.39	0.00	0.00	0.00
13,000.00	89.60	179.57	9,306.29	-3,703.03	-755.43	3,775.09	0.00	0.00	0.00
13,100.00	89.60	179.57	9,306.98	-3,803.03	-754.69	3,873.78	0.00	0.00	0.00
13,200.00	89.60	179.57	9,307.68	-3,903.02	-753.95	3,972.48	0.00	0.00	0.00
13,300.00	89.60	179.57	9,308.37	-4,003.02	-753.20	4,071.18	0.00	0.00	0.00
13,400.00	89.60	179.57	9,309.07	-4,103.01	-752.46	4,169.88	0.00	0.00	0.00
13,500.00	89.60	179.57	9,309.76	-4,203.01	-751.72	4,268.57	0.00	0.00	0.00
13,600.00	89.60	179.57	9,310.46	-4,303.00	-750.97	4,367.27	0.00	0.00	0.00
13,700.00	89.60	179.57	9,311.15	-4,403.00	-750.23	4,465.97	0.00	0.00	0.00
13,800.00	89.60	179.57	9,311.85	-4,502.99	-749.48	4,564.67	0.00	0.00	0.00
13,900.00	89.60	179.57	9,312.54	-4,602.99	-748.74	4,663.36	0.00	0.00	0.00
14,000.00	89.60	179.57	9,313.23	-4,702.98	-748.00	4,762.06	0.00	0.00	0.00
14,100.00	89.60	179.57	9,313.93	-4,802.98	-747.25	4,860.76	0.00	0.00	0.00
14,110.32	89.60	179.57	9,314.00	-4,813.30	-747.18	4,870.95	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WEC Fed 2H LTP - plan misses target center by 4792.02usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-4,733.31	-747.77	372,774.55	771,084.29	32° 1' 21.614 N	103° 35' 31.246 W
WEC Fed 2H SL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	377,507.87	771,832.06	32° 2' 8.402 N	103° 35' 22.182 W
WEC Fed 2H FTP - plan misses target center by 40.37usft at 9423.66usft MD (9247.02 TVD, -131.53 N, -782.00 E) - Point	0.00	0.00	9,284.00	-115.34	-782.12	377,392.53	771,049.94	32° 2' 7.314 N	103° 35' 31.277 W
WEC Fed 2H PBHL - plan hits target center - Point	0.00	0.00	9,314.00	-4,813.30	-747.18	372,694.57	771,084.88	32° 1' 20.823 N	103° 35' 31.245 W

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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 #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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	1/20/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	8,859.75	Plan #1 (Pilot Hole)	MWD	OWSG MWD - Standard	
8,859.75	14,109.67	Plan #1 (Lateral)	MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Wile E Coyote Federal 26-33-20 4H						
4H - Lateral - Plan #1	1,750.00	1,749.00	44.94	38.89	7.429	CC
4H - Lateral - Plan #1	1,800.00	1,799.00	45.10	38.87	7.243	ES
4H - Lateral - Plan #1	1,850.00	1,848.99	45.87	39.47	7.170	SF

Offset Design		Wile E Coyote Federal 26-33-20 4H - 4H - Lateral - Plan #1										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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor					
							+N/-S (usft)	+E/-W (usft)									
0.00	0.00	0.00	0.00	0.00	0.00	89.84	0.13	44.94	44.95								
50.00	50.00	49.00	49.00	0.04	0.00	89.84	0.13	44.94	44.94	44.90	0.04	1,000.739					
100.00	100.00	99.00	99.00	0.13	0.00	89.84	0.13	44.94	44.94	44.81	0.13	333.818					
150.00	150.00	149.00	149.00	0.31	0.00	89.84	0.13	44.94	44.94	44.63	0.31	143.184					
200.00	200.00	199.00	199.00	0.49	0.00	89.84	0.13	44.94	44.94	44.45	0.49	91.138					
250.00	250.00	249.00	249.00	0.67	0.00	89.84	0.13	44.94	44.94	44.27	0.67	66.842					
300.00	300.00	299.00	299.00	0.85	0.00	89.84	0.13	44.94	44.94	44.09	0.85	52.773					
350.00	350.00	349.00	349.00	1.03	0.00	89.84	0.13	44.94	44.94	43.91	1.03	43.597					
400.00	400.00	399.00	399.00	1.21	0.00	89.84	0.13	44.94	44.94	43.73	1.21	37.139					
450.00	450.00	449.00	449.00	1.39	0.00	89.84	0.13	44.94	44.94	43.55	1.39	32.348					
500.00	500.00	499.00	499.00	1.57	0.00	89.84	0.13	44.94	44.94	43.37	1.57	28.651					
550.00	550.00	549.00	549.00	1.75	0.00	89.84	0.13	44.94	44.94	43.19	1.75	25.713					
600.00	600.00	599.00	599.00	1.93	0.00	89.84	0.13	44.94	44.94	43.01	1.93	23.322					
650.00	650.00	649.00	649.00	2.11	0.00	89.84	0.13	44.94	44.94	42.83	2.11	21.337					
700.00	700.00	699.00	699.00	2.29	0.00	89.84	0.13	44.94	44.94	42.65	2.29	19.664					
750.00	750.00	749.00	749.00	2.46	0.00	89.84	0.13	44.94	44.94	42.48	2.46	18.234					
800.00	800.00	799.00	799.00	2.64	0.00	89.84	0.13	44.94	44.94	42.30	2.64	16.998					
850.00	850.00	849.00	849.00	2.82	0.00	89.84	0.13	44.94	44.94	42.12	2.82	15.918					
900.00	900.00	899.00	899.00	3.00	0.00	89.84	0.13	44.94	44.94	41.94	3.00	14.968					
950.00	950.00	949.00	949.00	3.18	0.00	89.84	0.13	44.94	44.94	41.76	3.18	14.125					
1,000.00	1,000.00	999.00	999.00	3.36	0.00	89.84	0.13	44.94	44.94	41.58	3.36	13.372					
1,050.00	1,050.00	1,049.00	1,049.00	3.54	0.00	89.84	0.13	44.94	44.94	41.40	3.54	12.695					
1,100.00	1,100.00	1,099.00	1,099.00	3.72	0.00	89.84	0.13	44.94	44.94	41.22	3.72	12.083					

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
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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 #1	Offset TVD Reference:	Offset Datum

Offset Design													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		
1,150.00	1,150.00	1,149.00	1,149.00	3.90	0.00	89.84	0.13	44.94	44.94	41.04	3.90	11.527		
1,200.00	1,200.00	1,199.00	1,199.00	4.08	0.00	89.84	0.13	44.94	44.94	40.86	4.08	11.021		
1,250.00	1,250.00	1,249.00	1,249.00	4.26	0.00	89.84	0.13	44.94	44.94	40.68	4.26	10.557		
1,300.00	1,300.00	1,299.00	1,299.00	4.44	0.00	89.84	0.13	44.94	44.94	40.50	4.44	10.130		
1,350.00	1,350.00	1,349.00	1,349.00	4.62	0.00	89.84	0.13	44.94	44.94	40.32	4.62	9.737		
1,400.00	1,400.00	1,399.00	1,399.00	4.79	0.00	89.84	0.13	44.94	44.94	40.15	4.79	9.373		
1,450.00	1,450.00	1,449.00	1,449.00	4.97	0.00	89.84	0.13	44.94	44.94	39.97	4.97	9.035		
1,500.00	1,500.00	1,499.00	1,499.00	5.15	0.00	89.84	0.13	44.94	44.94	39.79	5.15	8.721		
1,550.00	1,550.00	1,549.00	1,549.00	5.33	0.00	89.84	0.13	44.94	44.94	39.61	5.33	8.428		
1,600.00	1,600.00	1,599.00	1,599.00	5.51	0.00	89.84	0.13	44.94	44.94	39.43	5.51	8.154		
1,650.00	1,650.00	1,649.00	1,649.00	5.69	0.00	89.84	0.13	44.94	44.94	39.25	5.69	7.897		
1,700.00	1,700.00	1,699.00	1,699.00	5.87	0.00	89.84	0.13	44.94	44.94	39.07	5.87	7.656		
1,750.00	1,750.00	1,749.00	1,749.00	6.05	0.00	89.84	0.13	44.94	44.94	38.89	6.05	7.429 CC		
1,800.00	1,800.00	1,799.00	1,799.00	6.23	0.00	168.02	0.13	44.94	45.10	38.87	6.23	7.243 ES		
1,850.00	1,849.99	1,848.99	1,848.99	6.40	0.00	168.23	0.13	44.94	45.87	39.47	6.40	7.170 SF		
1,900.00	1,899.97	1,898.97	1,898.97	6.57	0.00	168.58	0.13	44.94	47.28	40.71	6.57	7.198		
1,950.00	1,949.93	1,948.93	1,948.93	6.75	0.00	169.05	0.13	44.94	49.33	42.59	6.74	7.321		
2,000.00	1,999.85	1,998.85	1,998.85	6.92	0.00	169.62	0.13	44.94	52.03	45.12	6.91	7.533		
2,050.00	2,049.74	2,048.74	2,048.74	7.09	0.00	170.25	0.13	44.94	55.38	48.30	7.08	7.827		
2,100.00	2,099.57	2,098.57	2,098.57	7.27	0.00	170.90	0.13	44.94	59.38	52.14	7.24	8.199		
2,150.00	2,149.35	2,148.35	2,148.35	7.45	0.00	171.55	0.13	44.94	64.03	56.62	7.41	8.641		
2,200.00	2,199.06	2,198.06	2,198.06	7.63	0.00	172.19	0.13	44.94	69.33	61.76	7.58	9.153		
2,250.00	2,248.70	2,247.70	2,247.70	7.81	0.00	172.80	0.13	44.94	75.29	67.55	7.74	9.727		
2,300.00	2,298.25	2,297.25	2,297.25	7.99	0.00	173.38	0.13	44.94	81.90	73.99	7.90	10.361		
2,350.00	2,347.77	2,346.77	2,346.77	8.17	0.00	173.89	0.13	44.94	88.81	80.74	8.08	10.993		
2,400.00	2,397.28	2,396.28	2,396.28	8.36	0.00	174.34	0.13	44.94	95.74	87.48	8.25	11.598		
2,450.00	2,446.79	2,445.79	2,445.79	8.54	0.00	174.72	0.13	44.94	102.67	94.24	8.43	12.177		
2,500.00	2,496.31	2,495.31	2,495.31	8.73	0.00	175.05	0.13	44.94	109.60	100.99	8.61	12.733		
2,550.00	2,545.82	2,543.61	2,543.60	8.92	0.00	175.29	0.20	45.18	116.77	107.98	8.78	13.293		
2,600.00	2,595.33	2,591.62	2,591.61	9.11	0.00	175.38	0.45	45.99	124.50	115.54	8.96	13.893		
2,650.00	2,644.85	2,639.46	2,639.43	9.30	0.00	175.36	0.88	47.37	132.80	123.66	9.14	14.531		
2,700.00	2,694.36	2,687.11	2,687.04	9.49	0.00	175.23	1.48	49.32	141.66	132.34	9.32	15.205		
2,750.00	2,743.87	2,734.56	2,734.41	9.68	0.00	175.03	2.25	51.82	151.08	141.58	9.50	15.911		
2,800.00	2,793.39	2,781.78	2,781.53	9.87	0.00	174.76	3.19	54.87	161.05	151.38	9.67	16.649		
2,850.00	2,842.90	2,828.78	2,828.37	10.07	0.00	174.45	4.30	58.45	171.59	161.73	9.85	17.415		
2,900.00	2,892.41	2,875.53	2,874.92	10.26	0.00	174.09	5.57	62.56	182.67	172.64	10.03	18.210		
2,950.00	2,941.93	2,922.03	2,921.17	10.46	0.00	173.72	7.00	67.19	194.32	184.10	10.21	19.029		
3,000.00	2,991.44	2,968.26	2,967.08	10.65	0.00	173.32	8.59	72.33	206.51	196.12	10.39	19.874		
3,050.00	3,040.95	3,014.21	3,012.66	10.85	0.00	172.91	10.33	77.96	219.26	208.68	10.57	20.741		
3,100.00	3,090.47	3,061.56	3,059.56	11.04	0.00	172.49	12.25	84.19	232.43	221.68	10.75	21.619		
3,150.00	3,139.98	3,109.76	3,107.29	11.24	0.00	172.11	14.21	90.56	245.66	234.72	10.93	22.471		
3,200.00	3,189.49	3,157.95	3,155.02	11.44	0.00	171.77	16.18	96.93	258.89	247.77	11.11	23.296		
3,250.00	3,239.00	3,206.15	3,202.76	11.64	0.00	171.46	18.15	103.30	272.12	260.83	11.29	24.095		
3,300.00	3,288.52	3,254.34	3,250.49	11.84	0.00	171.18	20.11	109.66	285.37	273.89	11.48	24.869		
3,350.00	3,338.03	3,302.54	3,298.22	12.04	0.00	170.92	22.08	116.03	298.62	286.96	11.66	25.618		
3,400.00	3,387.54	3,350.74	3,345.95	12.24	0.00	170.68	24.05	122.40	311.88	300.04	11.84	26.345		
3,450.00	3,437.06	3,398.93	3,393.69	12.44	0.00	170.47	26.02	128.77	325.14	313.12	12.02	27.050		
3,500.00	3,486.57	3,447.13	3,441.42	12.64	0.00	170.27	27.98	135.14	338.40	326.20	12.20	27.734		
3,550.00	3,536.08	3,495.32	3,489.15	12.84	0.00	170.09	29.95	141.51	351.67	339.29	12.38	28.397		
3,600.00	3,585.60	3,543.52	3,536.88	13.04	0.00	169.92	31.92	147.88	364.94	352.37	12.57	29.042		
3,650.00	3,635.11	3,591.71	3,584.62	13.24	0.00	169.76	33.88	154.25	378.21	365.47	12.75	29.667		
3,700.00	3,684.62	3,639.91	3,632.35	13.44	0.00	169.61	35.85	160.62	391.49	378.56	12.93	30.276		

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

Premier Directional Drilling

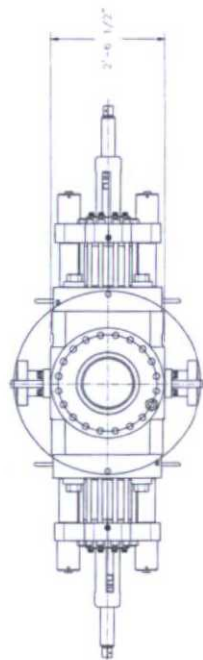
Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM	TVD Reference:	3259+25 @ 3284.00usft (Planning)
Reference Site:	Wile E Coyote Federal 26-33-20 2H	MD Reference:	3259+25 @ 3284.00usft (Planning)
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 #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0- Reference												Offset Well Error:	0.00 usft
Wile E Coyote Federal 26-33-20 4H - 4H - Lateral - Plan #1													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	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
3,750.00	3,734.14	3,688.11	3,680.08	13.64	0.00	169.47	37.82	166.99	404.77	391.66	13.11	30.866	
3,800.00	3,783.65	3,736.30	3,727.81	13.84	0.00	169.34	39.78	173.36	418.05	404.75	13.30	31.441	
3,850.00	3,833.16	3,784.50	3,775.55	14.05	0.00	169.22	41.75	179.72	431.33	417.85	13.48	32.000	
3,900.00	3,882.68	3,832.69	3,823.28	14.25	0.00	169.11	43.72	186.09	444.62	430.96	13.66	32.544	
3,950.00	3,932.19	3,880.89	3,871.01	14.45	0.00	169.00	45.68	192.46	457.90	444.06	13.85	33.073	
4,000.00	3,981.70	3,929.08	3,918.74	14.66	0.00	168.90	47.65	198.83	471.19	457.16	14.03	33.588	
4,050.00	4,031.22	3,977.28	3,966.48	14.86	0.00	168.80	49.62	205.20	484.48	470.27	14.21	34.090	
4,100.00	4,080.73	4,025.47	4,014.21	15.06	0.00	168.71	51.58	211.57	497.77	483.37	14.40	34.579	
4,150.00	4,130.24	4,073.67	4,061.94	15.27	0.00	168.62	53.55	217.94	511.06	496.48	14.58	35.055	
4,200.00	4,179.76	4,121.87	4,109.67	15.47	0.00	168.54	55.52	224.31	524.35	509.59	14.76	35.520	
4,250.00	4,229.27	4,170.06	4,157.41	15.68	0.00	168.47	57.48	230.68	537.64	522.70	14.95	35.973	
4,300.00	4,278.78	4,218.26	4,205.14	15.88	0.00	168.39	59.45	237.05	550.94	535.81	15.13	36.414	
4,350.00	4,328.30	4,266.45	4,252.87	16.08	0.00	168.32	61.42	243.42	564.23	548.92	15.31	36.845	
4,400.00	4,377.81	4,314.65	4,300.80	16.29	0.00	168.25	63.38	249.79	577.53	562.03	15.50	37.266	
4,450.00	4,427.32	4,362.84	4,348.34	16.49	0.00	168.19	65.35	256.15	590.82	575.14	15.68	37.677	
4,500.00	4,476.84	4,411.04	4,396.07	16.70	0.00	168.13	67.32	262.52	604.12	588.25	15.87	38.078	
4,550.00	4,526.35	4,459.24	4,443.80	16.90	0.00	168.07	69.28	268.89	617.42	601.37	16.05	38.469	
4,600.00	4,575.86	4,507.43	4,491.53	17.11	0.00	168.01	71.25	275.26	630.72	614.48	16.23	38.852	
4,650.00	4,625.38	4,555.63	4,539.27	17.32	0.00	167.96	73.22	281.63	644.01	627.60	16.42	39.226	
4,700.00	4,674.89	4,603.82	4,587.00	17.52	0.00	167.91	75.18	288.00	657.31	640.71	16.60	39.591	
4,750.00	4,724.40	4,652.02	4,634.73	17.73	0.00	167.86	77.15	294.37	670.61	653.82	16.79	39.949	
4,800.00	4,773.92	4,700.21	4,682.46	17.93	0.00	167.81	79.12	300.74	683.91	666.94	16.97	40.298	
4,850.00	4,823.43	4,748.41	4,730.20	18.14	0.00	167.76	81.08	307.11	697.21	680.06	17.16	40.640	
4,900.00	4,872.94	4,796.61	4,777.93	18.35	0.00	167.72	83.05	313.48	710.51	693.17	17.34	40.974	
4,950.00	4,922.46	4,844.80	4,825.66	18.55	0.00	167.68	85.02	319.85	723.81	706.29	17.52	41.302	
5,000.00	4,971.97	4,893.00	4,873.39	18.76	0.00	167.64	86.98	326.22	737.11	719.41	17.71	41.622	
5,050.00	5,021.48	4,941.19	4,921.12	18.97	0.00	167.60	88.95	332.58	750.42	732.52	17.89	41.936	
5,100.00	5,071.00	4,989.39	4,968.86	19.17	0.00	167.56	90.92	338.95	763.72	745.64	18.08	42.243	
5,150.00	5,120.51	5,037.58	5,016.59	19.38	0.00	167.52	92.88	345.32	777.02	758.76	18.26	42.544	
5,200.00	5,170.02	5,085.78	5,064.32	19.59	0.00	167.49	94.85	351.69	790.32	771.87	18.45	42.839	
5,250.00	5,219.54	5,133.97	5,112.05	19.79	0.00	167.45	96.82	358.06	803.63	784.99	18.63	43.127	
5,300.00	5,269.05	5,182.17	5,159.79	20.00	0.00	167.42	98.78	364.43	816.93	798.11	18.82	43.411	
5,350.00	5,318.56	5,230.37	5,207.52	20.21	0.00	167.39	100.75	370.80	830.23	811.23	19.00	43.688	
5,400.00	5,368.08	5,278.56	5,255.25	20.41	0.00	167.35	102.72	377.17	843.54	824.35	19.19	43.960	
5,450.00	5,417.59	5,326.76	5,302.98	20.62	0.00	167.32	104.68	383.54	856.84	837.47	19.37	44.227	
5,500.00	5,467.10	5,374.95	5,350.72	20.83	0.00	167.30	106.65	389.91	870.14	850.59	19.56	44.488	
5,550.00	5,516.62	5,423.15	5,398.45	21.04	0.00	167.27	108.62	396.28	883.45	863.70	19.74	44.745	
5,600.00	5,566.13	5,471.34	5,446.18	21.24	0.00	167.24	110.58	402.65	896.75	876.82	19.93	44.997	
5,650.00	5,615.64	5,519.54	5,493.91	21.45	0.00	167.21	112.55	409.01	910.06	889.94	20.11	45.244	
5,700.00	5,665.16	5,567.74	5,541.65	21.66	0.00	167.19	114.52	415.38	923.36	903.06	20.30	45.486	
5,750.00	5,714.67	5,615.93	5,589.38	21.87	0.00	167.16	116.48	421.75	936.67	916.18	20.49	45.724	
5,800.00	5,764.18	5,664.13	5,637.11	22.08	0.00	167.14	118.45	428.12	949.97	929.30	20.67	45.958	
5,850.00	5,813.70	5,712.32	5,684.84	22.28	0.00	167.11	120.42	434.49	963.28	942.42	20.86	46.188	
5,900.00	5,863.21	5,760.52	5,732.58	22.49	0.00	167.09	122.38	440.86	976.58	955.54	21.04	46.413	
5,950.00	5,912.72	5,808.71	5,780.31	22.70	0.00	167.07	124.35	447.23	989.89	968.66	21.23	46.635	

LEGEND

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



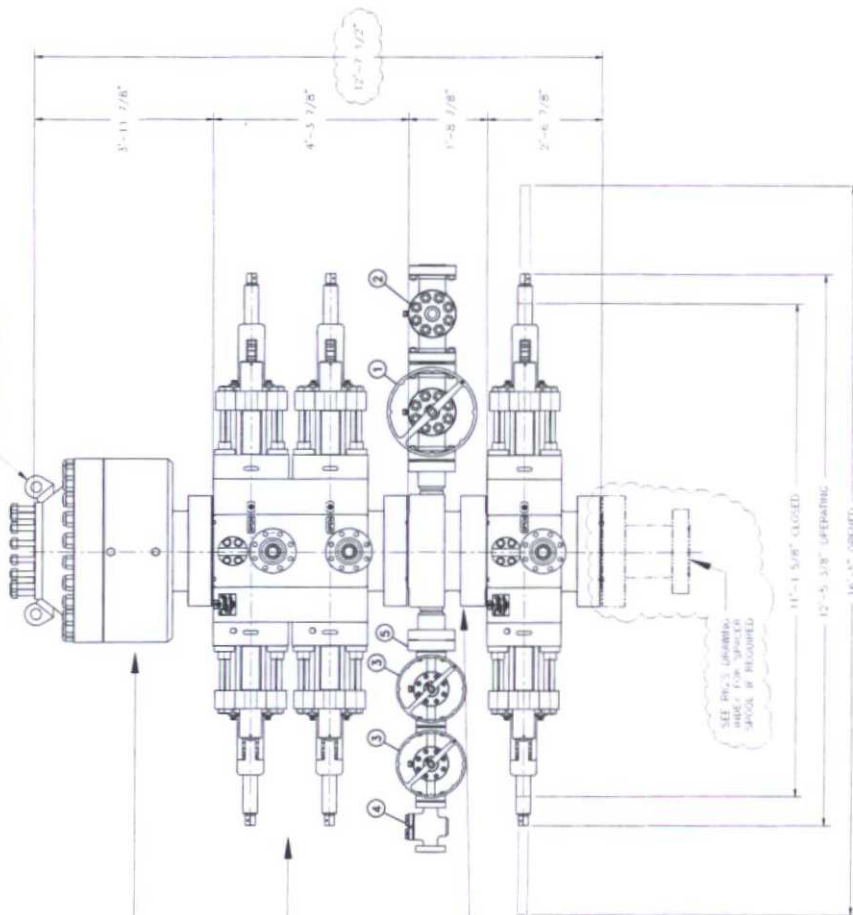
SEE LEFT VIEW DETAIL

ADAPTER END VIEW: COVER SPHERICAL
ADAPTER END VIEW: 1/2" DIA.
MONOGRAMMED, 13 5/8"-10M WP,
10M BOTTOM FLANGE = 5M
STUBBED TOP BRIGHT = 14,200
LBS. WITH SHAPER 1/2" DIA. 1/2"
ELEMENT

CAMERON 10M DOUBLE
RAM-TYPE PRINTER (API 10A
MONOGRAMMED, 13 5/8"-10M
WP), WITH 5" CAMERON PPE
WITH 10M TOP FLANGES
& TOP SEALS IN TOP CAVITY
AND CAMERON 10M SHEARING
BLIND RAMS IN BOTTOM CAVITY
BOTTOM FLANGE = STUBBED
TOP BRIGHT = 21,100 LBS.
WITH RAMS

13 5/8"-10M WP
CAMERON 10M 1/2" DIA.
MONOGRAMMED, 13 5/8"-10M WP,
STUBBED TOP = FLANGED BOTTOM
WITH 4 1/16" DIA. APPROXIMATELY 6000 LBS.

CAMERON 10M DOUBLE
PRINTER 1/2" DIA.
MONOGRAMMED, 13 5/8"-10M WP,
STUBBED TOP = FLANGED BOTTOM
WITH 4 1/16" DIA. APPROXIMATELY 6000 LBS.



13 5/8"-10M STACK

PROPRIETARY

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ISSUED FOR
FABRICATION
January-04-2012
DRAFTSMAN
ENGINEER

API 10A MONOGRAMMED CAMERON CHOKER AND FILL
VALVE ASSEMBLY ARE NOT SHOWN FOR
CLARITY
WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS,
& CORRECT FITTINGS

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

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

CUSTOMER: H&P
PROJECT: FLEXRIG3
DRAWN: MTS
DATE: 6-5-02
SHEET 1 OF 5
SCALE: 3/4"=1'

REV	DATE	DESCRIPTION	BY
1	12/18/07	ADDED SHEET 03	JAV
2	4-10-07	UNIFORM WEIGHT, DRAFT, STUBBED ADAPTER, SPOOL, 1/2" DIA. APPROXIMATELY 6000 LBS.	JAV
3	4-04-07	ADDED TO SPOOL ADAPTER SPOOL	JAV
4	02-07-07	ADDED ADAPTER SPOOL	MW
5	1-4-11	REVISED NOTE & ADDED SHEETS 4 & 5	MW



HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

**GAS BUSTER PIPING
FLEXRIG3**

CUSTOMER: M&D

SUBJECT: AGENCY

WORKSHEET: FLEXRIGS	DATE: 10/1/2010	TIME: 10:00	BY: J. J. J.
1. FLEXRIGS	2. FLEXRIGS	3. FLEXRIGS	4. FLEXRIGS
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93. FLEXRIGS	94. FLEXRIGS	95. FLEXRIGS	96. FLEXRIGS
97. FLEXRIGS	98. FLEXRIGS	99. FLEXRIGS	100. FLEXRIGS

DATE: 01-30-03	MTS	07E
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SCALE: 3/8"=1'	SHEET: 1 OF 2	CC7
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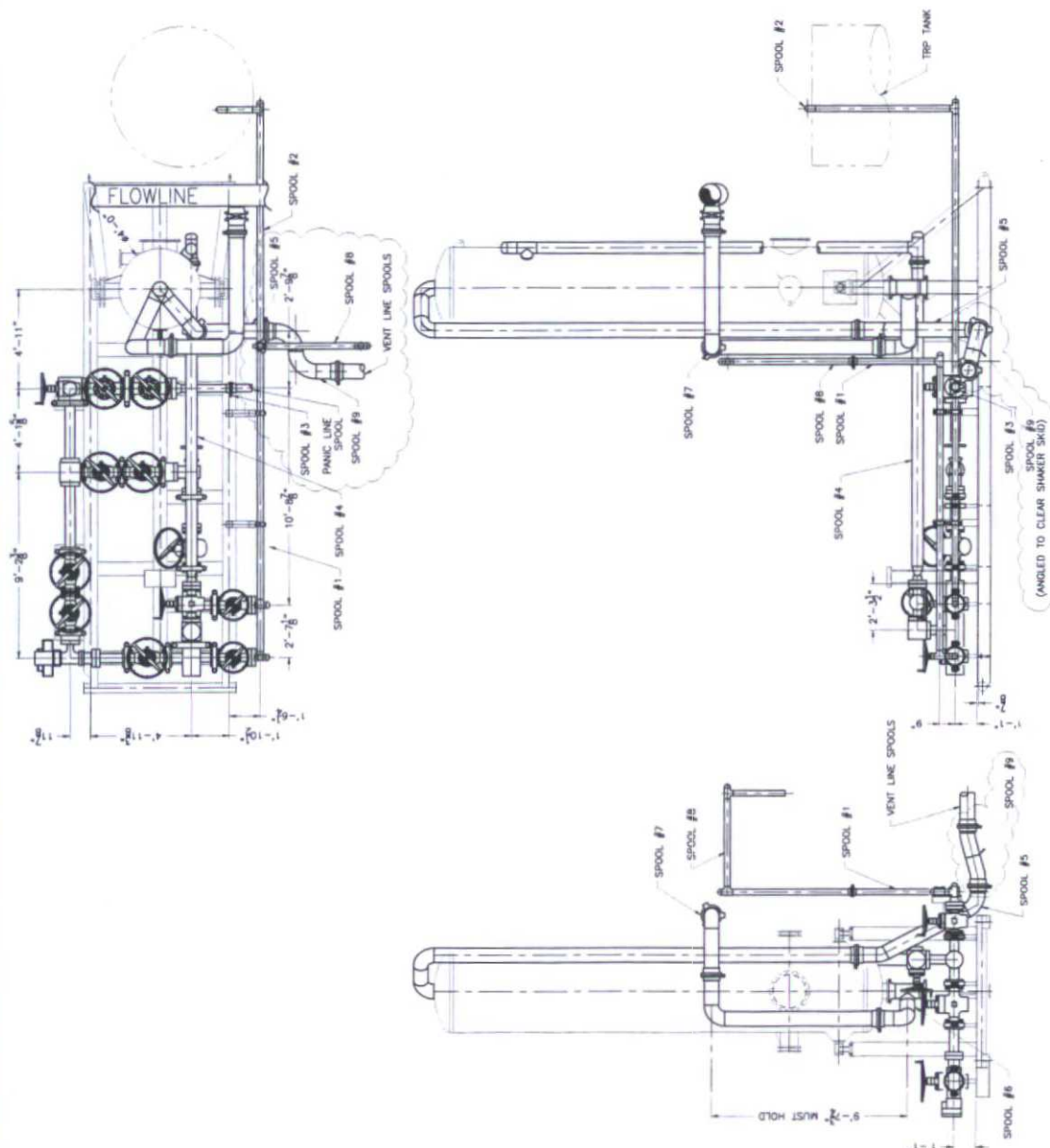
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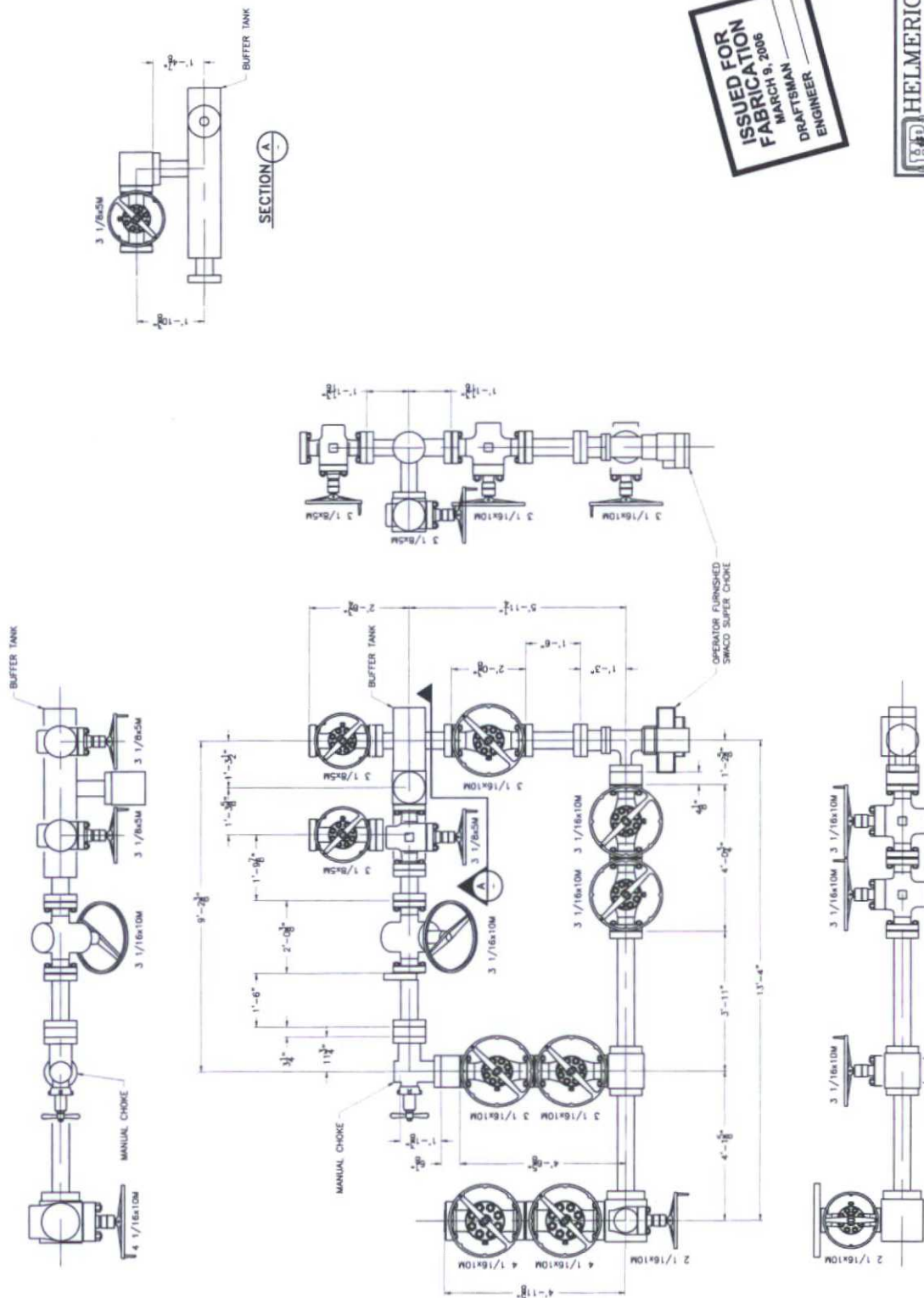
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SCALE: 3/8"=1'	SHEET: 1
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PROPRIETARY

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



HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

CHOKE MANIFOLD

[illegible]

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TITLE	HIGH PRESSURE MUD SYSTEM SCHEMATIC			
CUSTOMER	H&P			
PROJECT	Flexlog3			
DRAWING	DATE	DESIGN	DWG. NO.	REV
SCALE	DATE: 05-08-02	SCALE: 1 OF 1	210-P4-35	A

1) SYSTEM WORKING PRESSURE 5000 PSI

**ISSUED FOR
FABRICATION**
August-22-2002
DRAFTSMAN
ENGINEER

PROPRIETARY

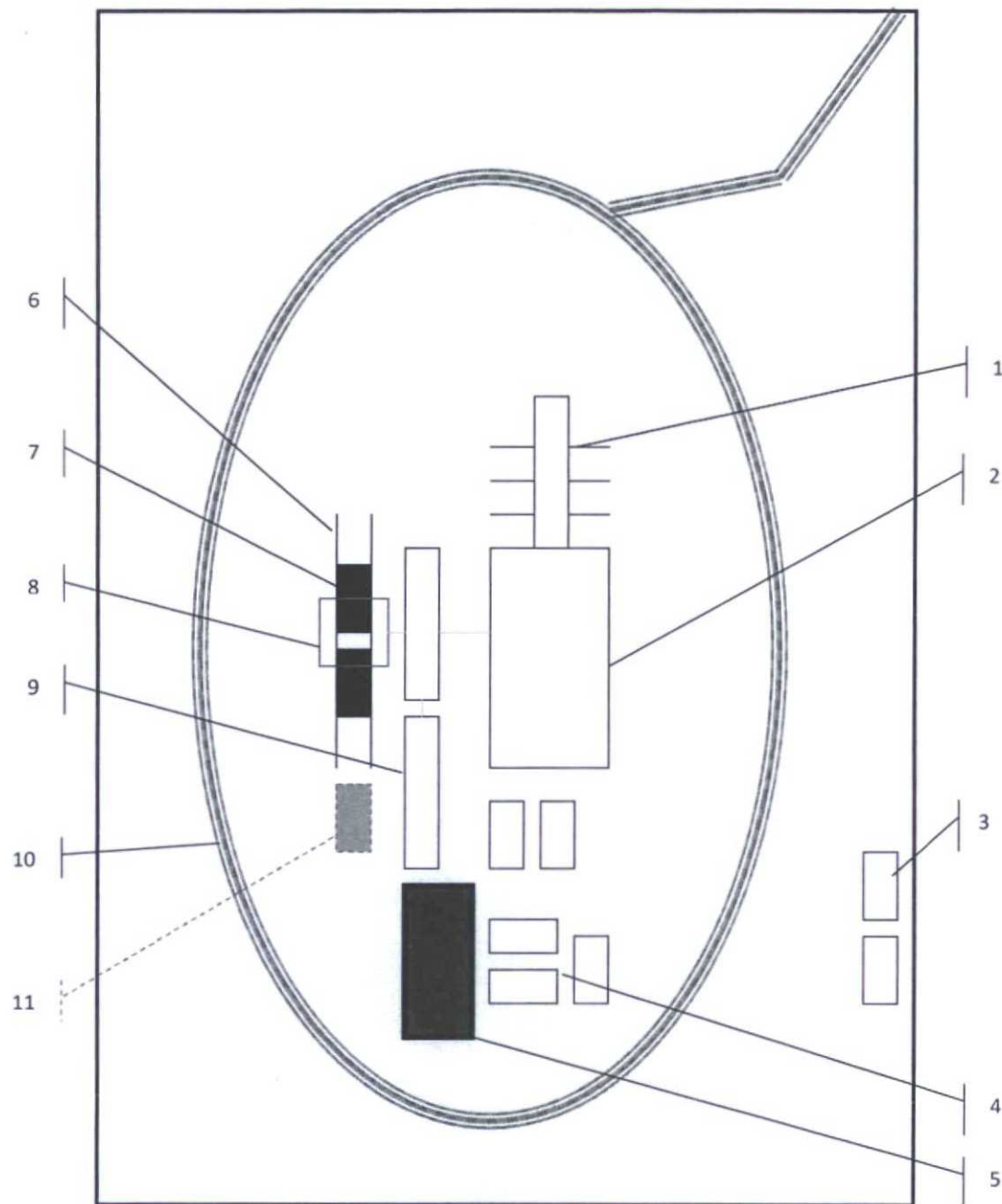
THIS COMPANY AND THE IDEAS AND INFORMATION RELAYED BY IT, THEY (COMPANY AND EMPLOYEES) ARE NOT TO BE REPRODUCED OR TRANSMITTED OR UTILIZED IN ANY MANNER WITHOUT THE PRIOR, WRITTEN CONSENT OF A LIAISON OFFICER OF THE UNITED STATES MARINE CORPS, UNITED STATES OF AMERICA.

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. (1)	



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

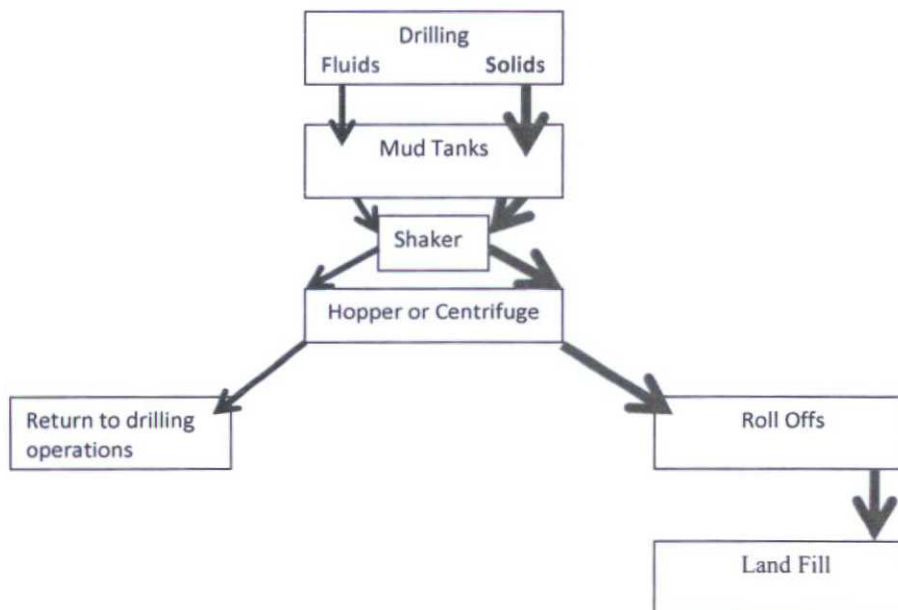


Above: Centrifugal Closed Loop System



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
Wile E Coyote Federal 26-33-20 2H
rig diagram

NORTH 
1" = 75'

