

RECEIVED

MAY 16 2011

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Albuquerque Field Office
Bureau of Land Management
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 121498
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Robert L. Bayless, Producer LLC		7. If Unit or CA Agreement, Name and No.
3a. Address P.O.BOX 168 Farmington, NM 87499	3b. Phone No. (include area code) 505 326 2659	8. Lease Name and Well No. HORSESHOE GALLUP 18-16H
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface 220' FSL & 140' FEL P At proposed prod. zone 1253' FSL & 1273' FWL W		9. API Well No. NOT ASSIGNED 30-045-35300
14. Distance in miles and direction from nearest town or post office* 3.5 MILES NE OF WATERFLOW, NM		10. Field and Pool, or Exploratory HORSESHOE GALLUP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 350 ft - Lease Line	16. No. of acres in lease 160	11. Sec., T. R. M. or Blk. and Survey or Area Sec 18, T30N, R15W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 420 ft-BLACK DIAMOND COM FED 1	19. Proposed Depth 7684 ft (MD), 4100 (TVD) **HORIZONTAL WELL**	12. County or Parish SAN JUAN
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5377 ft G.L.	22. Approximate date work will start* 09/01/2011	13. State NM
23. Estimated duration 30 Days		

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3

24. Attachments

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

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

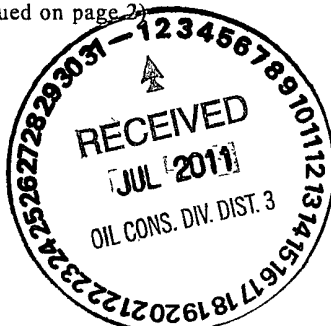
- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).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

25. Signature 	Name (Printed/Typed) JOHN D THOMAS	Date 5/16/11
Title OPERATIONS ENGINEER		
Approved by (Signature) 	Name (Printed/Typed) AEM	Date 6/30/11
Title FFO		

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.

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)



JUL 25 2011

Hold C104

for Directional Survey
and "As Drilled" plat

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

BLM'S APPROVAL OR ACCEPTANCE OF THIS
ACTION DOES NOT RELIEVE THE LESSEE AND
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

RECEIVED

District I
1625 N French Dr, Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
MAY 16 2011
Revised October 12, 2005
Submit to Appropriate District Office
Farmington Field Office
State Lease - 4 Copies
Free Lease - 3 Copies
Bureau of Land Management
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-045-35300		2 Pool Code 32870		3 Pool Name Horseshoe Gallup	
4 Property Code 381043		5 Property Name HORSESHOE GALLUP 18			6 Well Number 16H
7 UGRID No 150182		8 Operator Name ROBERT L. BAYLESS, PRODUCER LLC			9 Elevation 5377

10 Surface Location

UL or Lot No	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
P	18	30 N	15 W		220	South	140	East	San Juan

11 Bottom Hole Location If Different From Surface

UL or Lot No	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
M	18	30 N	15 W		1253	South	1273	West	San Juan

12 Dedicated Acres 320.77	13 Joint or Infill	14 Consolidation Code	15 Order No
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16 (19.78) N 89° 47' W (19.65) 78.72 Ch. (39.29) Lot 1		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: John D Thomas Date: 5/16/11 Printed Name: John D Thomas	
N 0° 10' E Lot 2			
39.91 Ch. N 0° 10' E Lot 2			
39.89 Ch. Lot 3		18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: July 20, 2011 Signature and Seal of Professional Surveyor: William E. Mahorell Certificate Number: 8466	
Bottom Hole 1253' FSL & 1273' FWL N 74° 44' 35" W, 3988.7' Lot 4 (20.07) N 89° 40' W (19.87) 39.94 Ch. N 89° 48' W 39.70 Ch.		Lat. 36 80744° N Long. 108.44983° W 140' 220'	

Called John Thomas on 7/11/11 who indicated point of penetration into the Horseshoe Gallup Pool will be at 350' FSL and 665' FEL.



Robert L Bayless, Producer LLC
Drilling Plan
Hoseshoe Gallup
220' FSL & 140' FEL Sec 18 T30N R15W
San Juan County, NM

Rig Telephone #:
Rig FAX #:

GL =

5377 ft

Horseshoe Gallup 18-16H - DRILLING PROGRAM

1 Location :

Surface location: 220' FSL & 140' FEL Sec 18 T30N R15W
Bottom Hole Location: 1253' FSL & 1273' FWL Sec 18 T30N R15W

2 Estimate Formation Tops

	Depth (ft)
Surface - Pictured Cliffs	0
Cliff House	1520
Menefee	1590
Point Lookout	2520
Mancos	3740
Gallup	4057

3 Notable Anticipated Fresh Water, Oil and Gas Formations

The Gallup is a potential oil and gas zones. Water zones will be protected by setting 9 5/8" casing to 300' and circulating cement back to the surface. All zones containing commercial quantities of oil or gas will have cement circulated across them by cementing the 7" Intermediate casings; The 7" casing cement volumes will be pumped to provide cement back to the 9 5/8".

4 Casing Program (New Casing)

Hole Size	Interval	OD Casing	Weight	Grade	Connection	Section
12 1/4"	0-300	9 5/8"	36 #	J-55	LTC	Surface
8 3/4"	300-4390	7"	23 #	N-80	LTC	Intermediate
6 1/8"	4390-7890	NA	NA	NA	NA	Open Hole

5 Cement Program

Surface CSG:

Surface casing will be cemented to surface w/ 75% excess.
157 sacks Premium Cement + 2% Calcium Chloride + 0.125 lbm/sk Poly-E-Flake.
Mixed at 15.8 ppg, 1.17 cu ft/sx, 5.0 Gal/sk of water.
Two centralizers will be installed on the float joint and one every second joint thereafter.

7" Intermediate CSG:

Cement will be from 4390' to Surface with 75% excess.
Lead cement: 515 sacks Premium Plus Type III + 3% Econolite + .125 lb/sx Gilsonite
Mixed at 12.3 ppg, 1.93 cu ft/sx, 9.25 Gal/sk of water.
Tail cement: 150 sx 50/50 poz standard + 5 lb/sx Gilsonite



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5377 ft

Mixed at 13.5 ppg, 1.30 cu ft/sx, 5.15 Gal/sk of water.

Two centralizers will be installed on the float joint and one every second joint through all prospective pays.

6 1/8" Open Hole: Will not be cemented.

6 Pressure Control & Wellhead Equipment

The maximum expected bottom hole pressure will be +/- 500 psi.

The drilling contractor has not yet been found, thus the exact BOP model to be used is not yet known. A typical 5,000 psi model will be expected with double ram-type (3,000 psi WP) preventer and a rotating head as seen on Appendix A. This unit will be hydraulically operated and tested by a third party.

The BOPs will be equipped with the rotating head on top. The double rams will be below the rotating head with the 4-1/2" drill pipe rams on top and blind rams on the bottom.

The BOPE will be nipples up on the 9 5/8" surface casing and tested to 2,000 psi by a third party.

BOPs will be operationally checked each 24 hour period. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented, anytime a seal is broken.

Additional safety equipment will include a safety valve and sub with a full opening valve to fit the drill pipe and collars. The choke lines and a choke manifold will have at least a 3,000 psi WP rating.

7 Types and Characteristics of the Proposed Mud System

The surface hole will be drilled with a fresh water mud.

The intermediate hole will be drilled on KCL/Air and possibly gel/polymer mud.

The production hole will be drilled with KCI/Air and possibly gel/polymer mud.

DEPTH	TYPE	WEIGHT	VISCOSITY	WATER LOSS
0-300'	Gel	8.4-8.6	60-75	NC
300'-4390'	Clean Faze Polymer	8.6-8.8	30-40	10-12
4390'-TD	KCI/Air/Mist	0.25-0.5	30-34	NC

Sufficient mud materials will be kept at the well site to maintain mud properties and meet minimum lost circulation and weight increase requirements at all times.

8 Auxillary Well Control and Monitoring Equipment

A. Upper Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe-stabbing valve with proper drill pipe



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5377 ft

connections will be on the rig floor at all times.

9 Logging, Testing and Coring Program

- A. The electric logging program will consist of a Cased Hole Gamma Ray & Induction log from Intermediate shoe (4390') to the surface casing shoe.
- B. Gamma ray only will be run from KOP (3623') to TD.
- C. Mud logger will be present from 3500' to TD.
- D. No conventional coring is anticipated.

10 Abnormal conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures or hydrogen sulfide are anticipated.
Lost returns have been experienced in offset wells.
Maximum bottom hole pressure will be +/- 500 psi.

11 Anticipated Starting Date and Duration of Operations

Anticipated start date is September 1, 2011.
Road and location work will not begin until approval has been received from the Surface Owner (BLM).
Once commenced, drilling operations should be finished in approximately 30 days and about 1 weeks to complete the well.

12 Safety

Conduct Tour Safety Meetings with all crews and record topics of these meetings on the IADC and morning reports. Document all personnel in attendance and topics of these Safety Meetings. Keep these documents on file in company representative's office for inspection.

Pathfinder
Pathfinder X & Y Planning Report



Company: Robert L. Bayless, Producer LLC
Project: San Juan County
Site: Horseshoe Gallup 18
Well: 18H
Wellbore: OH
Design: Plan#1

Local Co-ordinate Reference: Site Horseshoe Gallup 18
TVD Reference: LW #1 @ 5395.00usft (Original Well Elev)
MD Reference: LW #1 @ 5395.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	San Juan County	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Horseshoe Gallup 18				
Site Position:		Northing:	2,113,810.657 usft	Latitude:	36° 48' 26.784 N
From:	Lat/Long	Easting:	2,542,615.697 usft	Longitude:	108° 26' 59.388 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.37 °

Well	18H					
Well Position	+N/-S	0.00 usft	Northing:	2,113,810.657 usft	Latitude:	36° 48' 26.784 N
	+E/-W	0.00 usft	Easting:	2,542,615.697 usft	Longitude:	108° 26' 59.388 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,377.00 usft

Wellbore	OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength	
	IGRF200510	01/24/11	(°)	(°)	(nT)	
			10 22	63 41	50,761	

Design	Plan#1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0 00	0.00	0 00	285 00	

Survey Tool Program	Date	01/25/11			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
0.00	7,684 10	Plan#1 (OH)	MWD	MWD - Standard	

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Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	5,395.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
100.00	0.00	0.00	100.00	5,295.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
200.00	0.00	0.00	200.00	5,195.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
300.00	0.00	0.00	300.00	5,095.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
400.00	0.00	0.00	400.00	4,995.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
500.00	0.00	0.00	500.00	4,895.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
600.00	0.00	0.00	600.00	4,795.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
700.00	0.00	0.00	700.00	4,695.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
800.00	0.00	0.00	800.00	4,595.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
900.00	0.00	0.00	900.00	4,495.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,000.00	0.00	0.00	1,000.00	4,395.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,100.00	0.00	0.00	1,100.00	4,295.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,200.00	0.00	0.00	1,200.00	4,195.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,300.00	0.00	0.00	1,300.00	4,095.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,400.00	0.00	0.00	1,400.00	3,995.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,500.00	0.00	0.00	1,500.00	3,895.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,600.00	0.00	0.00	1,600.00	3,795.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,700.00	0.00	0.00	1,700.00	3,695.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,800.00	0.00	0.00	1,800.00	3,595.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
1,900.00	0.00	0.00	1,900.00	3,495.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,000.00	0.00	0.00	2,000.00	3,395.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,100.00	0.00	0.00	2,100.00	3,295.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,200.00	0.00	0.00	2,200.00	3,195.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,300.00	0.00	0.00	2,300.00	3,095.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,400.00	0.00	0.00	2,400.00	2,995.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,500.00	0.00	0.00	2,500.00	2,895.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
2,600.00	0.00	0.00	2,600.00	2,795.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70

Pathfinder
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Wellbore: OH
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MD Reference: LW #1 @ 5395 00usft (Original Well Elev)
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,700.00	0 00	0 00	2,700.00	2,695.00	0 00	0.00	0.00	0 00	2,113,810.66	2,542,615.70
2,800.00	0.00	0 00	2,800.00	2,595.00	0.00	0.00	0 00	0.00	2,113,810.66	2,542,615.70
2,900.00	0 00	0.00	2,900.00	2,495.00	0.00	0.00	0.00	0 00	2,113,810.66	2,542,615.70
3,000.00	0 00	0.00	3,000.00	2,395.00	0.00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
3,100.00	0.00	0.00	3,100.00	2,295.00	0 00	0.00	0.00	0.00	2,113,810.66	2,542,615.70
3,146.00	0.00	0 00	3,146.00	2,249.00	0.00	0.00	0 00	0.00	2,113,810.66	2,542,615.70
KOP-3146.00'MD,0.00°INC,0.00°AZI,3146.00'TVD										
3,150.00	0.24	285.00	3,150.00	2,245.00	0.00	-0.01	0.01	6.00	2,113,810.66	2,542,615.69
3,200.00	3.24	285.00	3,199.97	2,195.03	0.39	-1.47	1.53	6.00	2,113,811.05	2,542,614.22
3,250.00	6.24	285.00	3,249.79	2,145.21	1.46	-5.46	5.66	6.00	2,113,812.12	2,542,610.23
3,300.00	9.24	285.00	3,299.33	2,095.67	3.21	-11.96	12.39	6.00	2,113,813.86	2,542,603.73
3,350.00	12.24	285.00	3,348.45	2,046.55	5.62	-20.96	21.70	6.00	2,113,816.27	2,542,594.74
3,400.00	15.23	285.00	3,397.02	1,997.98	8.69	-32.42	33.57	6.00	2,113,819.35	2,542,583.27
3,450.00	18.23	285.00	3,444.90	1,950.10	12.41	-46.33	47.96	6.00	2,113,823.07	2,542,569.37
3,500.00	21.23	285.00	3,491.95	1,903.05	16.78	-62.63	64.84	6.00	2,113,827.44	2,542,553.06
3,550.00	24.23	285.00	3,538.07	1,856.93	21.78	-81.29	84.16	6.00	2,113,832.44	2,542,534.40
3,600.00	27.23	285.00	3,583.10	1,811.90	27.40	-102.26	105.86	6.00	2,113,838.06	2,542,513.44
3,650.00	30.23	285.00	3,626.94	1,768.06	33.62	-125.47	129.89	6.00	2,113,844.28	2,542,490.23
3,700.00	33.23	285.00	3,669.47	1,725.53	40.42	-150.86	156.19	6.00	2,113,851.08	2,542,464.83
3,750.00	36.23	285.00	3,710.56	1,684.44	47.79	-178.37	184.66	6.00	2,113,858.45	2,542,437.32
3,800.00	39.22	285.00	3,750.10	1,644.90	55.71	-207.92	215.25	6.00	2,113,866.37	2,542,407.78
3,850.00	42.22	285.00	3,787.99	1,607.01	64.15	-239.43	247.87	6.00	2,113,874.81	2,542,376.27
3,900.00	45.22	285.00	3,824.12	1,570.88	73.10	-272.80	282.43	6.00	2,113,883.75	2,542,342.89
3,950.00	48.22	285.00	3,858.39	1,536.61	82.52	-307.96	318.82	6.00	2,113,893.17	2,542,307.74
4,000.00	51.22	285.00	3,890.71	1,504.29	92.39	-344.80	356.96	6.00	2,113,903.05	2,542,270.90
4,050.00	54.22	285.00	3,921.00	1,474.00	102.68	-383.22	396.74	6.00	2,113,913.34	2,542,232.47
4,100.00	57.22	285.00	3,949.16	1,445.84	113.38	-423.13	438.05	6.00	2,113,924.03	2,542,192.57

Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company: Robert L. Bayless, Producer LLC
Project: San Juan County
Site: Horseshoe Gallup 18
Well: 18H
Wellbore: OH
Design: Plan#1

Local Co-ordinate Reference: Site Horseshoe Gallup 18
TVD Reference: LW #1 @ 5395.00usft (Original Well Elev)
MD Reference: LW #1 @ 5395.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,150.00	60.22	285.00	3,975.12	1,419.88	124.43	-464.40	480.78	6.00	2,113,935.09	2,542,151.30
4,200.00	63.21	285.00	3,998.81	1,396.19	135.83	-506.92	524.80	6.00	2,113,946.49	2,542,108.78
4,250.00	66.21	285.00	4,020.16	1,374.84	147.53	-550.58	570.01	6.00	2,113,958.19	2,542,065.11
4,300.00	69.21	285.00	4,039.12	1,355.88	159.50	-595.27	616.27	6.00	2,113,970.16	2,542,020.43
4,350.00	72.21	285.00	4,055.64	1,339.36	171.71	-640.85	663.46	6.00	2,113,982.37	2,541,974.85
4,400.00	75.21	285.00	4,069.66	1,325.34	184.13	-687.20	711.44	6.00	2,113,994.79	2,541,928.50
4,450.00	78.21	285.00	4,081.15	1,313.85	196.73	-734.20	760.10	6.00	2,114,007.38	2,541,881.50
4,500.00	81.21	285.00	4,090.08	1,304.92	209.46	-781.71	809.29	6.00	2,114,020.12	2,541,833.99
4,550.00	84.21	285.00	4,096.43	1,298.57	222.29	-829.61	858.88	6.00	2,114,032.95	2,541,786.09
4,600.00	87.21	285.00	4,100.17	1,294.83	235.20	-877.77	908.73	6.00	2,114,045.85	2,541,737.93
4,650.00	90.20	285.00	4,101.30	1,293.70	248.13	-926.05	958.71	6.00	2,114,058.79	2,541,689.65
4,696.62	93.00	285.00	4,100.00	1,295.00	260.19	-971.05	1,005.31	6.00	2,114,070.85	2,541,644.65
EOC/7" Casing PT-4696.62°MD,93.00°INC,285.00°AZI,4100.00°TVD										
4,700.00	93.00	285.00	4,099.82	1,295.18	261.07	-974.32	1,008.69	0.00	2,114,071.72	2,541,641.38
4,800.00	93.00	285.00	4,094.59	1,300.41	286.91	-1,070.78	1,108.55	0.00	2,114,097.57	2,541,544.92
4,900.00	93.00	285.00	4,089.36	1,305.64	312.76	-1,167.24	1,208.41	0.00	2,114,123.42	2,541,448.46
5,000.00	93.00	285.00	4,084.12	1,310.88	338.61	-1,263.70	1,308.27	0.00	2,114,149.26	2,541,352.00
5,100.00	93.00	285.00	4,078.89	1,316.11	364.45	-1,360.16	1,408.14	0.00	2,114,175.11	2,541,255.54
5,200.00	93.00	285.00	4,073.65	1,321.35	390.30	-1,456.62	1,508.00	0.00	2,114,200.96	2,541,159.08
5,300.00	93.00	285.00	4,068.42	1,326.58	416.15	-1,553.08	1,607.86	0.00	2,114,226.80	2,541,062.62
5,400.00	93.00	285.00	4,063.19	1,331.81	441.99	-1,649.54	1,707.73	0.00	2,114,252.65	2,540,966.16
5,500.00	93.00	285.00	4,057.95	1,337.05	467.84	-1,746.00	1,807.59	0.00	2,114,278.50	2,540,869.70
5,600.00	93.00	285.00	4,052.72	1,342.28	493.68	-1,842.46	1,907.45	0.00	2,114,304.34	2,540,773.24
5,700.00	93.00	285.00	4,047.49	1,347.51	519.53	-1,938.92	2,007.32	0.00	2,114,330.19	2,540,676.78
5,800.00	93.00	285.00	4,042.25	1,352.75	545.38	-2,035.38	2,107.18	0.00	2,114,356.03	2,540,580.32
5,900.00	93.00	285.00	4,037.02	1,357.98	571.22	-2,131.84	2,207.04	0.00	2,114,381.88	2,540,483.86
6,000.00	93.00	285.00	4,031.79	1,363.21	597.07	-2,228.30	2,306.90	0.00	2,114,407.73	2,540,387.40

Pathfinder
Pathfinder X & Y Planning Report



Company: Robert L. Bayless, Producer LLC
Project: San Juan County
Site: Horseshoe Gallup 18
Well: 18H
Wellbore: OH
Design: Plan#1

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

Site Horseshoe Gallup 18
LW #1 @ 5395.00usft (Original Well Elev)
LW #1 @ 5395.00usft (Original Well Elev)
Gnd
Minimum Curvature
EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,100.00	93.00	285.00	4,026.55	1,368.45	622.92	-2,324.76	2,406.77	0.00	2,114,433.57	2,540,290.94
6,200.00	93.00	285.00	4,021.32	1,373.68	648.76	-2,421.22	2,506.63	0.00	2,114,459.42	2,540,194.48
6,300.00	93.00	285.00	4,016.09	1,378.91	674.61	-2,517.68	2,606.49	0.00	2,114,485.27	2,540,098.02
6,400.00	93.00	285.00	4,010.85	1,384.15	700.46	-2,614.14	2,706.36	0.00	2,114,511.11	2,540,001.56
6,500.00	93.00	285.00	4,005.62	1,389.38	726.30	-2,710.60	2,806.22	0.00	2,114,536.96	2,539,905.10
6,600.00	93.00	285.00	4,000.38	1,394.62	752.15	-2,807.06	2,906.08	0.00	2,114,562.81	2,539,808.64
6,700.00	93.00	285.00	3,995.15	1,399.85	778.00	-2,903.52	3,005.94	0.00	2,114,588.65	2,539,712.18
6,800.00	93.00	285.00	3,989.92	1,405.08	803.84	-2,999.98	3,105.81	0.00	2,114,614.50	2,539,615.72
6,900.00	93.00	285.00	3,984.68	1,410.32	829.69	-3,096.44	3,205.67	0.00	2,114,640.35	2,539,519.26
7,000.00	93.00	285.00	3,979.45	1,415.55	855.54	-3,192.90	3,305.53	0.00	2,114,666.19	2,539,422.80
7,100.00	93.00	285.00	3,974.22	1,420.78	881.38	-3,289.36	3,405.40	0.00	2,114,692.04	2,539,326.34
7,200.00	93.00	285.00	3,968.98	1,426.02	907.23	-3,385.82	3,505.26	0.00	2,114,717.89	2,539,229.88
7,300.00	93.00	285.00	3,963.75	1,431.25	933.07	-3,482.28	3,605.12	0.00	2,114,743.73	2,539,133.42
7,400.00	93.00	285.00	3,958.52	1,436.48	958.92	-3,578.74	3,704.99	0.00	2,114,769.58	2,539,036.96
7,500.00	93.00	285.00	3,953.28	1,441.72	984.77	-3,675.20	3,804.85	0.00	2,114,795.42	2,538,940.50
7,600.00	93.00	285.00	3,948.05	1,446.95	1,010.61	-3,771.66	3,904.71	0.00	2,114,821.27	2,538,844.04
7,684.10	93.00	285.00	3,943.65	1,451.35	1,032.35	-3,852.79	3,988.70	0.00	2,114,843.01	2,538,762.91

TD at 7684.10

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,146.00	3,146.00	0.00	0.00	KOP-3146.00'MD,0.00°INC,0.00°AZI,3146.00'TVD
4,696.62	4,100.00	260.19	-971.05	EOC/7" Casing PT-4696.62'MD,93.00°INC,285.00°AZI,4100.00'TVD
7,684.10	3,943.65	1,032.35	-3,852.79	TD at 7684.10

Pathfinder
Pathfinder X & Y Planning Report

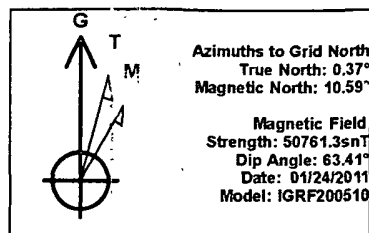


Company: Robert L. Bayless, Producer LLC
Project: San Juan County
Site: Horseshoe Gallup 18
Well: 18H
Wellbore: OH
Design: Plan#1

Local Co-ordinate Reference: Site Horseshoe Gallup 18
TVD Reference: LW #1 @ 5395.00usft (Original Well Elev)
MD Reference: LW #1 @ 5395.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

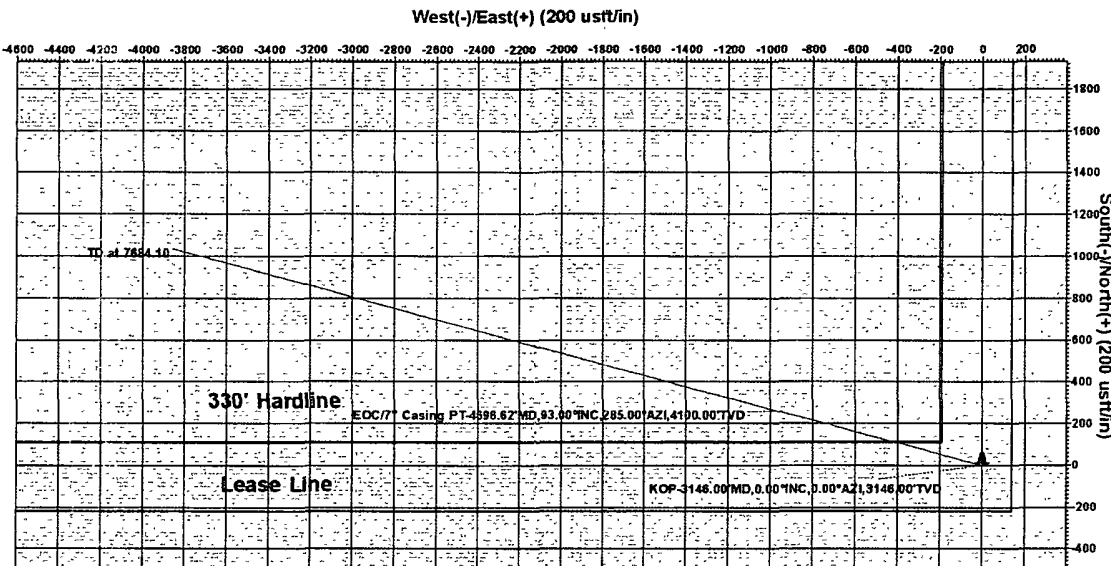
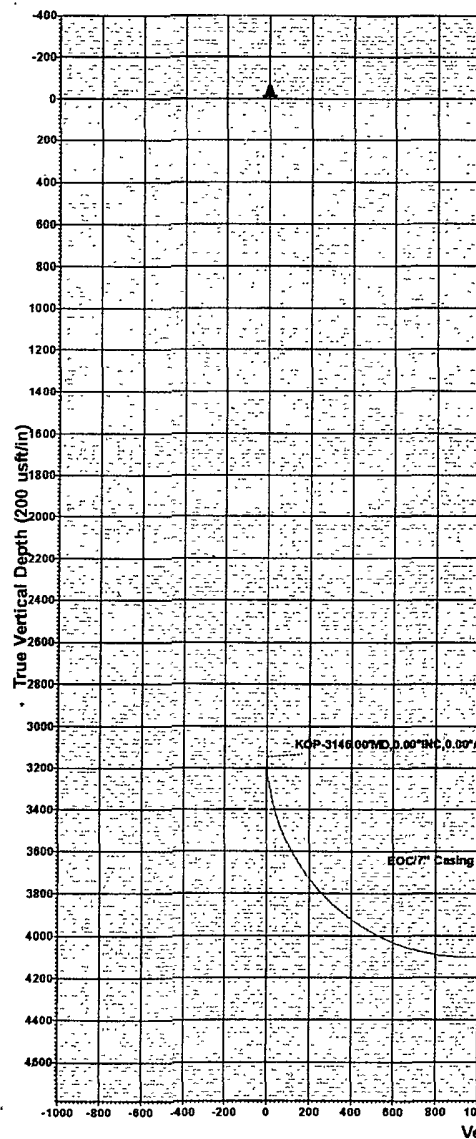
Checked By: _____	Approved By: _____	Date: _____
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Robert L. Bayless, Producer LLC



PATHFINDER
A Schlumberger Company

Project: San Juan County
Site: Horseshoe Gallup 18
Well: 18H
Wellbore: OH
Plan: Plan#1 (18H/OH)



WELL DETAILS- 18H						
Ground Elevation: 5377.00						
RKB Elevation: LW #1 @ 5396.00usft (Original Well Elev)						
Rig Name: Original Well Elev						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	2113910.657	2542615.697	36° 48' 26.784 N	106° 26' 59.389 W	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VFace	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3146.00	0.00	0.00	3146.00	0.00	0.00	0.00	0.00	0.00	
4596.62	93.00	285.00	4100.00	280.19	-871.06	8.00	285.00	1006.31	
7684.10	93.00	285.00	3943.65	1032.35	-3852.79	0.00	0.00	3968.70	PBHL(C-Horseshoe 18-16H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(C-Horseshoe 18-16H)3943.65	1032.35	-3852.79	2114843.009	2538762.909		Point

PROJECT DETAILS: San Juan County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: Grid

Plan: Plan#1 (18H/OH)	
Created By	Nate Bingham
Date	19 13, January 26 2011

Checked: _____ Date: _____



BOP DIAGRAM
Horseshoe Gallup 18-16H
San Juan, New Mexico

