

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

DEC 16 2011

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number Farmington Field Office SF-078097 Bureau of Land Management Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator ConocoPhillips Company	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name Heaton LS 9. Well Number 4M	
4. Location of Well Surface: Unit B(NWNE), 579' FNL & 1397' FEL BHL : Unit P(SES), 710' FSL & 710' FEL Surface: Latitude: 36.86119° N (NAD83) Longitude: 108.00991° W BHL : Latitude: 36.86473° N (NAD83) Longitude: 108.00756° W	10. Field, Pool, Wildcat Blanco MV/Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) Surf: Sec. 32, T31N, R11W BHL : Sec. 29, T31N, R11W API # 30-045-35338	
14. Distance in Miles from Nearest Town 5 miles from Aztec	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 579'	17. Acres Assigned to Well 320.00 Acres - E/2	
16. Acres in Lease 2475.610	 H ₂ S POTENTIAL EXIST	
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease 422' from Heaton LS 9 - MV/PC	20. Rotary or Cable Tools Rotary	
19. Proposed Depth 7054'	22. Approx. Date Work will Start DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".	
21. Elevations (DF, FT, GR, Etc.) 5894' GL This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4	23. Proposed Casing and Cementing Program See Operations Plan attached	
24. Authorized by: <u>Arleen Kellywood</u> Arleen Kellywood (Staff Regulatory Tech)	Date <u>12/16/11</u>	

Hold 0104
for Directional Survey
and "As Drilled" plat

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY [Signature] TITLE AFM DATE 2/2/12

Archaeological Report attached A gas recovery unit may or may not be used on this location.
Threatened and Endangered Species Report attached
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3
Title 18 U.S.C. Section 1001, makes 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 presentations as to any matter within its jurisdiction.

Example Master Plan Type 3 Bond Numbers ES-0048 and ES-0085

FEB 09 2012 ca

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 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

RECEIVED

Form C-102
Revised July 10, 2010

DEC 16 2011

Submit one copy to appropriate
District Office

Farmington Field Office
Bureau of Land Management

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35338	² Pool Code 72319/71599	³ Pool Name BLANCO MESAVERDE / BASIN DAKOTA
⁴ Property Code 31748	⁵ Property Name HEATON LS	⁶ Well Number 4M
⁷ GRID No. 21787	⁸ Operator Name CONOCOPHILLIPS COMPANY	⁹ Elevation 5894'

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
B	32	31N	11W		579'	NORTH	1397'	EAST	SAN JUAN

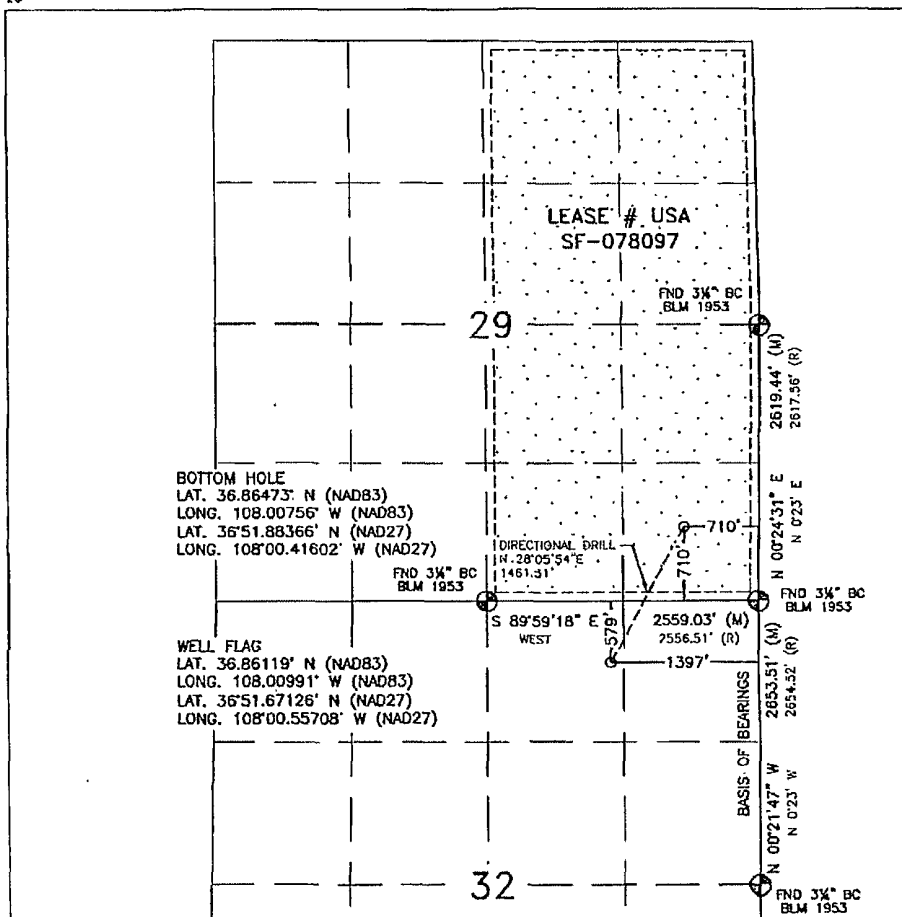
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	29	31N	11W		710'	SOUTH	710'	EAST	SAN JUAN

¹² Dedicated Acres 320.00 ACRES - E/2	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

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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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Arleen Kellywood 8/24/11
Signature Date

Arleen Kellywood

Printed Name

arleen.r.kellywood@conocophillips.com

E-mail Address

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.

AUGUST 15, 2011

Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
10201
DAVID RUSSELL

Certificate Number

10201

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

HEATON LS 4M

DEVELOPMENT

Lease:		AFE #: WAN.CDR.1088				AFE \$:	
Field Name: SAN JUAN		Rig: Aztec Rig 730		State: NM	County: SAN JUAN		API #:
Geologist:		Phone:		Geophysicist:		Phone:	
Geoscientist:		Phone:		Prod. Engineer:		Phone:	
Res. Engineer:		Phone:		Proj. Field Lead:		Phone:	
Primary Objective (Zones):							
Zone	Zone Name						
FRR	BASIN DAKOTA (PRORATED GAS)						
RON	BLANCO MESAVERDE (PRORATED GAS)						
Location: Surface Datum Code: NAD 27 Directional:							
Latitude: 36.861187		Longitude: -108.009286		X:	Y:	Section: 32	Range: 011W
Footage X: 1397 FEL		Footage Y: 579 FNL		Elevation: 5894	(FT)	Township: 031N	
Tolerance:							
Location: Bottom Hole Datum Code: NAD 27 Directional:							
Latitude: 36.864727		Longitude: -108.006936		X:	Y:	Section: 29	Range: 011W
Footage X: 710 FEL		Footage Y: 710 FSL		Elevation:	(FT)	Township: 031N	
Tolerance:							
Location Type: Year Round		Start Date (Est.): 1/1/2012		Completion Date:		Date In Operation:	
Formation Data: Assume KB = 5909 Units = FT							
Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	MD (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
Surface Casing	200	5709	200	☐			12-1/4 hole. 200' 9 5/8" 32.3 ppf, H-40, STC casing. Cement with 121 cuft. Circulate cement to surface.
OJO ALAMO	888	5021		☐			
KIRTLAND	967	4942		☐			
FRUITLAND	1894	4015		☐			Possible Gas
PICTURED CLIFFS	2423	3486		☐			
LEWIS	2577	3332		☐			
HUERFANITO BENTONITE	3160	2749		☐			
CHACRA	3511	2398		☐			
UPPER CLIFF HOUSE	3979	1930		☐			Gas; Cliffhouse is wet
MASSIVE CLIFF HOUSE	4077	1832		☐	529		Gas;
MENELEE	4219	1690		☐			Est. Top Perf - 4419 (1490)
Intermediate Casing	4369	1540	4682	☐		146	8 3/4" Hole. 7", 23 ppf, J-55, LTC Casing. Cement with 1055 cuft. Circulate cement to surface.
POINT LOOKOUT	4717	1192		☐			
MANCOS	5062	847		☐			
UPPER GALLUP	6007	-98		☐			
GREENHORN	6742	-833		☐			
GRANEROS	6798	-889		☐			
TWO WELLS	6854	-945		☐	2449		Gas
PAGUATE	6928	-1019		☐			
LOWER CUBERO	6965	-1056		☐			Est. Btm Perf - 7034 (- 1125) based on offset wells
UPPER CUBERO	6965	-1056		☐			

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

HEATON LS 4M

DEVELOPMENT

ENCINAL	7014	-1105	☐	TD - 40' Below T/ENCN
Total Depth	7054	-1145	7367 ☐	199 6-1/4" hole, 4-1/2" 11.6 ppf, L-80, LTC casing. Cement w/ 356 cuft. Circulate cement a minimum of 100' inside the previous casing string.

Reference Wells:		
Reference Type	Well Name	Comments
Production	HEATON-16	31N 11W 28 NW SW
Production	HEATON-7B	31N 11W 29 SW NE S
Production	HEATON-17	31N 11W 32 SW NE

Logging Program:	
Intermediate Logs:	☐ Log only if show ☐ GR/ILD ☐ Triple Combo

TD Logs:	☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☐ TDT ☒ Other
Cased Hole GR / CBL Mudlog from 100' above top of GLLP to TD - mudlogger will call TD.	

Additional Information:					
Log Type	Stage	From (Ft)	To (Ft)	Tool Type/Name	Remarks

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Heaton LS #4M
Company:	ConocoPhillips SJBU	TVD Reference:	WELL @ 5909.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5909.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Heaton LS #4M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Heaton LS #4M		
Design:	Plan #1		

Project:	San Juan Basin - New Mexico West Wells, New Mexico, Directional "S"		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		Using geodetic scale factor

Site:	Other Named Wells
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Site Position:		Northing:	2,108,178.26ft	Latitude:	36° 47' 33.793 N
From:	Lat/Long	Easting:	643,887.63ft	Longitude:	107° 20' 30.932 W
Position Uncertainty:	15.0 ft	Slot Radius:	6-1/8"	Grid Convergence:	0.29 °

Well:	Heaton LS #4M				
Well Position	+N/-S	0.0 ft	Northing:	2,132,781.62 ft	Latitude: 36° 51' 40.276 N
	+E/-W	0.0 ft	Easting:	448,526.26 ft	Longitude: 108° 0' 33.425 W
Position Uncertainty		3.5 ft	Wellhead Elevation:	ft	Ground Level: 5,894.0 ft

Wellbore	Heaton LS #4M
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	12/7/2011	9.95	63.51	50,700

Design	Plan #1
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Audit Notes:	
Version:	Phase: PLAN Tie On Depth: 0.0

Vertical Section	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	28.09

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,778.8	27.58	28.09	1,726.2	287.1	153.2	2.00	2.00	0.00	28.09	
3,762.9	27.58	28.09	3,484.9	1,097.4	585.7	0.00	0.00	0.00	0.00	
4,682.1	0.00	0.00	4,369.0	1,288.9	687.8	3.00	-3.00	0.00	180.00	Heaton LS #4M ICF
7,367.1	0.00	0.00	7,054.0	1,288.9	687.8	0.00	0.00	0.00	0.00	Heaton LS #4M PC

ConocoPhillips or its affiliates
Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Heaton LS #4M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5909.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5909.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Heaton LS #4M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Heaton LS #4M		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
Surface									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	2.00	28.09	500.0	1.5	0.8	1.7	2.00	2.00	0.00
600.0	4.00	28.09	599.8	6.2	3.3	7.0	2.00	2.00	0.00
700.0	6.00	28.09	699.5	13.8	7.4	15.7	2.00	2.00	0.00
800.0	8.00	28.09	798.7	24.6	13.1	27.9	2.00	2.00	0.00
890.4	9.81	28.09	888.0	36.9	19.7	41.9	2.00	2.00	0.00
Ojo Alamo									
900.0	10.00	28.09	897.5	38.4	20.5	43.5	2.00	2.00	0.00
970.8	11.42	28.09	967.0	50.0	26.7	56.7	2.00	2.00	0.00
Kirtland									
1,000.0	12.00	28.09	995.6	55.2	29.5	62.6	2.00	2.00	0.00
1,100.0	14.00	28.09	1,093.1	75.1	40.1	85.1	2.00	2.00	0.00
1,200.0	16.00	28.09	1,189.6	97.9	52.2	111.0	2.00	2.00	0.00
1,300.0	18.00	28.09	1,285.3	123.7	66.0	140.2	2.00	2.00	0.00
1,400.0	20.00	28.09	1,379.8	152.4	81.3	172.8	2.00	2.00	0.00
1,500.0	22.00	28.09	1,473.2	184.0	98.2	208.6	2.00	2.00	0.00
1,600.0	24.00	28.09	1,565.2	218.5	116.6	247.7	2.00	2.00	0.00
1,700.0	26.00	28.09	1,655.8	255.8	136.5	289.9	2.00	2.00	0.00
1,778.8	27.58	28.09	1,726.2	287.1	153.2	325.4	2.00	2.00	0.00
1,800.0	27.58	28.09	1,745.0	295.8	157.8	335.3	0.00	0.00	0.00
1,900.0	27.58	28.09	1,833.6	336.6	179.6	381.6	0.00	0.00	0.00
1,968.1	27.58	28.09	1,894.0	364.4	194.5	413.1	0.00	0.00	0.00
Fruitland									
2,000.0	27.58	28.09	1,922.3	377.5	201.4	427.8	0.00	0.00	0.00
2,100.0	27.58	28.09	2,010.9	418.3	223.2	474.1	0.00	0.00	0.00
2,200.0	27.58	28.09	2,099.5	459.1	245.0	520.4	0.00	0.00	0.00
2,300.0	27.58	28.09	2,188.2	500.0	266.8	566.7	0.00	0.00	0.00
2,400.0	27.58	28.09	2,276.8	540.8	288.6	613.0	0.00	0.00	0.00
2,500.0	27.58	28.09	2,365.5	581.7	310.4	659.3	0.00	0.00	0.00
2,564.9	27.58	28.09	2,423.0	608.2	324.6	689.4	0.00	0.00	0.00
Pictured Cliffs									
2,600.0	27.58	28.09	2,454.1	622.5	332.2	705.6	0.00	0.00	0.00
2,700.0	27.58	28.09	2,542.7	663.3	354.0	751.9	0.00	0.00	0.00
2,738.7	27.58	28.09	2,577.0	679.1	362.4	769.8	0.00	0.00	0.00
Lewis									
2,800.0	27.58	28.09	2,631.4	704.2	375.8	798.2	0.00	0.00	0.00
2,900.0	27.58	28.09	2,720.0	745.0	397.6	844.5	0.00	0.00	0.00
3,000.0	27.58	28.09	2,808.7	785.9	419.4	890.8	0.00	0.00	0.00
3,100.0	27.58	28.09	2,897.3	826.7	441.2	937.1	0.00	0.00	0.00
3,200.0	27.58	28.09	2,985.9	867.6	463.0	983.4	0.00	0.00	0.00
3,300.0	27.58	28.09	3,074.6	908.4	484.8	1,029.6	0.00	0.00	0.00
3,396.4	27.58	28.09	3,160.0	947.8	505.8	1,074.3	0.00	0.00	0.00
Huerfano Bentonite									
3,400.0	27.58	28.09	3,163.2	949.2	506.6	1,075.9	0.00	0.00	0.00
3,500.0	27.58	28.09	3,251.8	990.1	528.4	1,122.2	0.00	0.00	0.00
3,600.0	27.58	28.09	3,340.5	1,030.9	550.1	1,168.5	0.00	0.00	0.00
3,700.0	27.58	28.09	3,429.1	1,071.8	571.9	1,214.8	0.00	0.00	0.00
3,762.9	27.58	28.09	3,484.9	1,097.4	585.7	1,243.9	0.00	0.00	0.00

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Heaton LS #4M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5909.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5909.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Heaton LS #4M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Heaton LS #4M		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,792.2	26.70	28.09	3,511.0	1,109.3	592.0	1,257.3	3.00	-3.00	0.00
Chacra									
3,800.0	26.46	28.09	3,517.9	1,112.3	593.6	1,260.8	3.00	-3.00	0.00
3,900.0	23.46	28.09	3,608.6	1,149.5	613.5	1,303.0	3.00	-3.00	0.00
4,000.0	20.46	28.09	3,701.3	1,182.5	631.1	1,340.4	3.00	-3.00	0.00
4,100.0	17.46	28.09	3,795.9	1,211.2	646.4	1,372.9	3.00	-3.00	0.00
4,129.5	16.58	28.09	3,824.1	1,218.8	650.4	1,381.5	3.00	-3.00	0.00
Heaton LS #4M Vertical Point									
4,200.0	14.46	28.09	3,892.0	1,235.5	659.3	1,400.4	3.00	-3.00	0.00
4,289.3	11.78	28.09	3,979.0	1,253.4	668.9	1,420.7	3.00	-3.00	0.00
Upper Cliff House									
4,300.0	11.46	28.09	3,989.4	1,255.3	669.9	1,422.8	3.00	-3.00	0.00
4,388.9	8.79	28.09	4,077.0	1,269.0	677.2	1,438.4	3.00	-3.00	0.00
Massive Cliff House									
4,400.0	8.46	28.09	4,087.9	1,270.5	678.0	1,440.1	3.00	-3.00	0.00
4,500.0	5.46	28.09	4,187.2	1,281.2	683.7	1,452.2	3.00	-3.00	0.00
4,531.9	4.50	28.09	4,219.0	1,283.7	685.0	1,455.0	3.00	-3.00	0.00
Menefee									
4,600.0	2.46	28.09	4,286.9	1,287.3	687.0	1,459.1	3.00	-3.00	0.00
4,682.1	0.00	0.00	4,369.0	1,288.9	687.8	1,460.9	3.00	-3.00	0.00
Intermedate - Heaton LS #4M ICP									
4,700.0	0.00	0.00	4,386.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,486.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,586.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,686.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,030.1	0.00	0.00	4,717.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00
Pt. Lookout									
5,100.0	0.00	0.00	4,786.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,200.0	0.00	0.00	4,886.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,300.0	0.00	0.00	4,986.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,375.1	0.00	0.00	5,062.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00
Mancos Shale									
5,400.0	0.00	0.00	5,086.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,186.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,286.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,386.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,486.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,586.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,686.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,100.0	0.00	0.00	5,786.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,200.0	0.00	0.00	5,886.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,300.0	0.00	0.00	5,986.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,320.1	0.00	0.00	6,007.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00
Gallup									
6,400.0	0.00	0.00	6,086.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,186.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,286.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,386.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,486.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,586.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,686.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00
7,055.1	0.00	0.00	6,742.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00

ConocoPhillips or its affiliates
Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Heaton LS #4M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5909.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5909.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Heaton LS #4M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Heaton LS #4M		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
Greenhorn										
7,100.0	0.00	0.00	6,786.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
7,111.1	0.00	0.00	6,798.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Graneros										
7,167.1	0.00	0.00	6,854.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Two Wells										
7,200.0	0.00	0.00	6,886.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
7,241.1	0.00	0.00	6,928.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Pauguate										
7,278.1	0.00	0.00	6,965.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Cubero										
7,300.0	0.00	0.00	6,986.9	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
7,327.1	0.00	0.00	7,014.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Encinal										
7,367.1	0.00	0.00	7,054.0	1,288.9	687.8	1,460.9	0.00	0.00	0.00	
Production - Heaton LS #4M PCP										

Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Heaton LS #4M PCP	- plan hits target center	0.00	0.00	7,054.0	1,288.9	687.8	2,134,069.15	449,216.38	36° 51' 53.020 N	108° 0' 24.961 W
- Point										
Heaton LS #4M Vertic	- plan misses target center by 88.0ft at 4129.5ft MD (3824.1 TVD, 1218.8 N, 650.4 E)	0.00	0.00	3,800.0	1,288.9	697.8	2,134,069.13	449,226.38	36° 51' 53.020 N	108° 0' 24.838 W
- Point										
Heaton LS #4M ICP	- plan hits target center	0.00	0.00	4,369.0	1,288.9	687.8	2,134,069.11	449,216.38	36° 51' 53.020 N	108° 0' 24.961 W
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
200.0	200.0	Surface	9-5/8	12-1/4		
4,682.1	4,369.0	Intermediate	7	8-3/4		
7,367.1	7,054.0	Production	4-1/2	6-1/4		

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Heaton LS #4M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 5909.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 5909.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Heaton LS #4M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Heaton LS #4M		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
890.4	888.0	Ojo Alamo				
2,564.9	2,423.0	Pictured Cliffs				
7,111.1	6,798.0	Graneros				
970.8	967.0	Kirtland				
6,320.1	6,007.0	Gallup				
7,055.1	6,742.0	Greenhorn				
5,375.1	5,062.0	Mancos Shale				
4,289.3	3,979.0	Upper Cliff House				
7,327.1	7,014.0	Encinal				
7,167.1	6,854.0	Two Wells				
4,531.9	4,219.0	Menefee				
1,968.1	1,894.0	Fruitland				
3,792.2	3,511.0	Chacra				
5,030.1	4,717.0	Pt. Lookout				
3,396.4	3,160.0	Huerfanito Bentonite				
4,388.9	4,077.0	Massive Cliff House				
7,278.1	6,965.0	Cubero				
2,738.7	2,577.0	Lewis				
7,241.1	6,928.0	Paugate				

REFERENCE INFORMATION

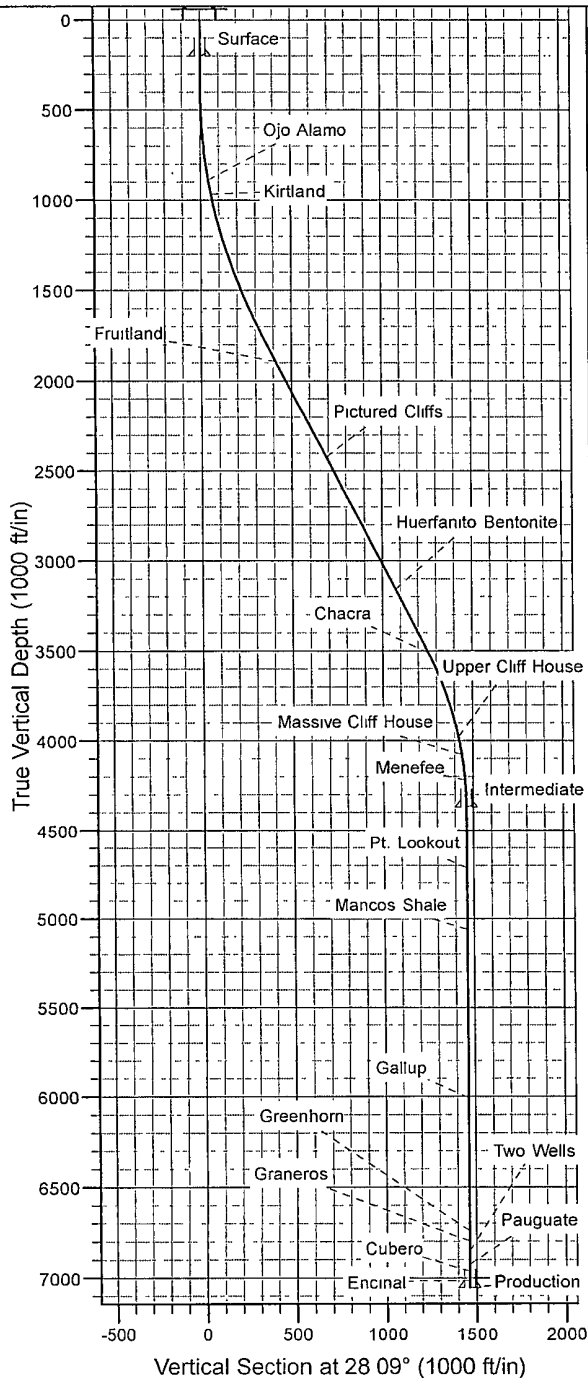
WELL @ 5909.0ft (Original Well Elev)
Ground Elevation 5894.0
Reference Lat: 36° 51' 40.276 N
Reference Long: 108° 0' 33.425 W

Project: San Juan Basin - New Mexico West W
Site: Other Named Wells
Well: Heaton LS #4M
Wellbore: Heaton LS #4M
Design: Plan #1



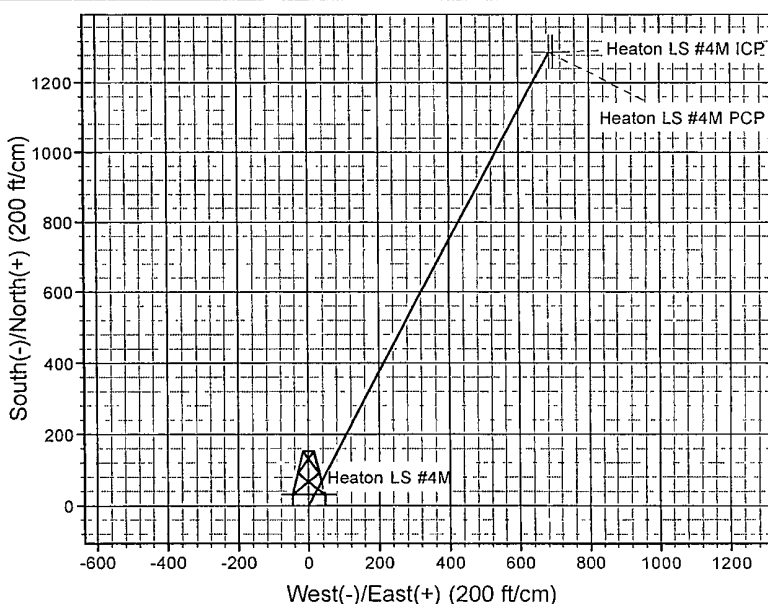
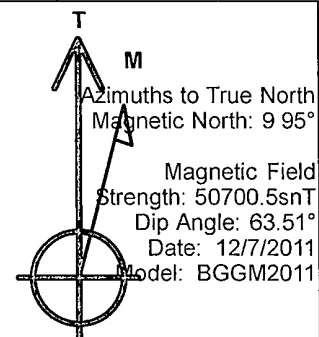
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1778.8	27.58	28.09	1726.2	287.1	153.2	2.00	28.09	325.4	
4	3762.9	27.58	28.09	3484.9	1097.4	585.7	0.00	0.00	1243.9	
5	4682.1	0.00	0.00	4369.0	1288.9	687.8	3.00	180.00	1460.9	Heaton LS #4M ICP
6	7367.1	0.00	0.00	7054.0	1288.9	687.8	0.00	0.00	1460.9	Heaton LS #4M PCP



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
888.0	890.4	Ojo Alamo
967.0	970.8	Kirtland
1894.0	1968.1	Fruitland
2423.0	2564.9	Pictured Cliffs
2577.0	2738.7	Lewis
3160.0	3396.4	Huerfano Bentonite
3511.0	3792.2	Chacra
3979.0	4289.3	Upper Cliff House
4077.0	4388.9	Massive Cliff House
4219.0	4531.9	Menefee
4717.0	5030.1	Pt. Lookout
5062.0	5375.1	Mancos Shale
6007.0	6320.1	Gallup
6742.0	7055.1	Greenhorn
6798.0	7111.1	Graneros
6854.0	7167.1	Two Wells
6928.0	7241.1	Panguate
6965.0	7278.1	Cubero
7014.0	7327.1	Encinal



CONOCOPHILLIPS COMPANY
HEATON LS #4M
579' FNL & 1397' FEL
LOCATED IN THE NW/4 NE/4 OF SECTION 32,
T31N, R11W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM POST OFFICE IN AZTEC, TRAVEL NORTH ON HIGHWAY 550 T HIGHWAY 516.
- 2) TURN LEFT ONTO HIGHWAY 516 AND TRAVEL 0.8 MILES TO HIGHWAY 574 (LIGHT PLANT ROAD).
- 3) TURN RIGHT ONTO HIGHWAY 574 AND TRAVEL 1.9 MILES.
- 4) TURN RIGHT AND TRAVEL 0.7 MILES.
- 5) TURN LEFT AND TRAVEL 0.1 MILES TO THE EXISTING WELL LOCATION WERE THE NEW ACCESS IS STAKED ON THE NORTH SIDE OF THE WELL LOCATION.

WELL FLAG LOCATED AT LAT. 36.86119° N, LONG. 108.00991° W (NAD 83).

JOB No.: COPC445
DATE: 08/16/11



Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637