

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NOV 04 2011

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

Farmington Field Office
Bureau of Land Management

1a. Type of Work DRILL	5. Lease Number SF 078096 Unit Reporting Number
1b. Type of Well GAS	6. If Indian, All. or Tribe
2. Operator ConocoPhillips Company	7. Unit Agreement Name RCVD FEB 16 '12 OIL CONS. DIV.
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name Mudge B 9. Well Number 20M
4. Location of Well Surface: Unit G (SWNE), 2282' FNL & 1471' FEL BHL : Unit J (NWSE), 1785' FNL & 1900' FEL Surface: Latitude: 36.91377° N (NAD83) Longitude: 108.00972° W Surface: Latitude: 36.91069° N (NAD83) Longitude: 108.01115° W	10. Field, Pool, Wildcat Blanco MV/Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 8, T31N, R11W API # 30-045-35318
14. Distance in Miles from Nearest Town 9 miles to Aztec	12. County San Juan
15. Distance from Proposed Location to Nearest Property or Lease Line 1471'	13. State NM
16. Acres in Lease 2512.000	17. Acres Assigned to Well 320.00 Acres - E/2
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease 853' Mudge B 20/MV	
19. Proposed Depth 7401 This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4	20. Rotary or Cable Tools Rotary
21. Elevations (DF, FT, GR, Etc.) 6095' GL	22. Approx. Date Work will Start DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".
23. Proposed Casing and Cementing Program See Operations Plan attached	
24. Authorized by: <u>Arleen Kellywood</u> Arleen Kellywood (Staff Regulatory Tech)	<u>11-4-11</u> Date

Hold C104
for Directional Survey
and "As Drilled" plat

PERMIT NO.

APPROVAL DATE

APPROVED BY [Signature]

TITLE AFM

DATE 2/13/12

Archaeological Report attached

A gas recovery unit may or may not be used on this location.

Threatened and Endangered Species Report attached

Hold C104

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 24 2012 ca

NMOCD

W

for Directional Survey
and "As Drilled" plat
I HEREBY BELIEVE THE LESSEE AND
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

RECEIVED

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised July 10, 2010

DISTRICT II
1801 W. Grand Avenue, Artesia, N.M. 88210

NOV 08 2011

Submit one copy to appropriate
District Office

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

OIL CONSERVATION DIVISION - Farmington Field Office
1220 South St. Francis Dr.
Santa Fe, NM 87505 Bureau of Land Management

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35318		² Pool Code 72319/71599	³ Pool Name BLANCO MESAVERDE / BASIN DAKOTA
⁴ Property Code 37514	⁵ Property Name MUDGE B		⁶ Well Number 20 M
⁷ GRID No. 217817	⁸ Operator Name CONOCOPHILLIPS COMPANY		⁹ Elevation 6095'

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
G	8	31N	11W		2282'	NORTH	1471'	EAST	SAN JUAN

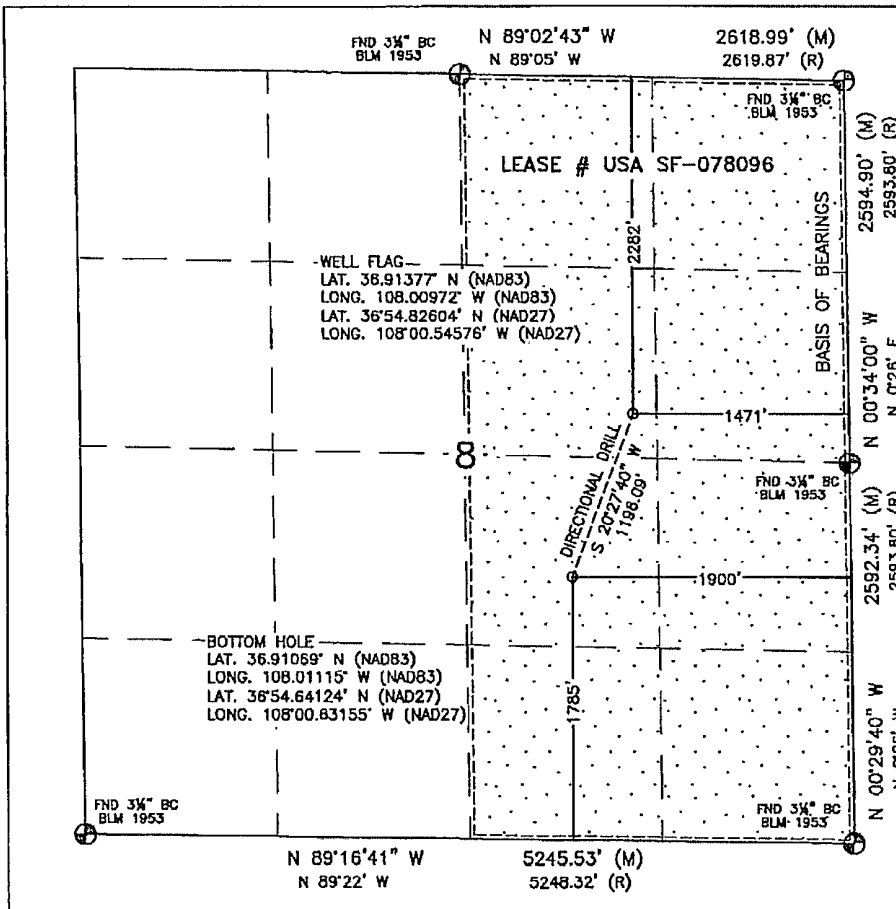
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	8	31N	11W		1785'	SOUTH	1900'	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

18



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 unless 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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Arleen Kellywood 8/23/11
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 2, 2011

Date of Survey

Signature and Seal of Professional Surveyor:



DAVID RUSSELL

Certificate Number

10201

PC

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

MUDGE B 20M

DEVELOPMENT

Lease:		AFE #: WAN.CDR.1082				AFE \$:	
Field Name: SAN JUAN		Rig: Aztec Rig 920		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: 36.913767	Longitude: -108.009096	X:	Y:	Section: 08	Range: 011W		
Footage X: 1471 FEL	Footage Y: 2282 FNL	Elevation: 6095	(FT)	Township: 031N			
Tolerance:							
Location: Bottom Hole		Datum Code: NAD 27				Directional	
Latitude: 36.910687	Longitude: -108.010526	X:	Y:	Section: 08	Range: 011W		
Footage X: 1900 FEL	Footage Y: 1785 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 = 6110 Units = FT							
Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	MD (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
Surface Casing	200	5910	200	☐			12-1/4 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Cement with 144 cuft. Circulate cement to surface.
OJO ALAMO	1163	4947		☐			
KIRTLAND	1201	4909		☐			
FRUITLAND	2074	4036		☐			Possible Gas
PICTURED CLIFFS	2721	3389		☐			
LEWIS	2872	3238		☐			
HUERFANITO BENTONITE	3405	2705		☐			
CHACRA	3801	2309		☐			
MASSIVE CLIFF HOUSE	4325	1785		☐	323		Gas
MENEFEE	4536	1574		☐			
Intermediate Casing	4683	1427	4866	☐	121		8 3/4" Hole. 7", 23 ppf, J-55, LTC Casing. Cement with 1085 cuft. Circulate cement to surface.
POINT LOOKOUT	4934	1176		☐			
MANCOS	5342	768		☐			
UPPER GALLUP	6313	-203		☐			
GREENHORN	7014	-904		☐			
GRANEROS	7068	-958		☐			
TWO WELLS	7126	-1016		☐	2134		Gas
PAGUATE	7206	-1096		☐			
CUBERO	7232	-1122		☐			
ENCINAL	7282	-1172		☐			
BURRO CANYON	7379	-1269		☐			

PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

MUDGE B 20M

DEVELOPMENT

Total Depth 7401 -1291 7584 ☐ 200 6-1/4" hole, 4-1/2" 11.6 ppf, J-55/L-80, LTC casing. Cement w/ 346 cuft. Circulate cement a minimum of 100' inside the previous casing string.

Reference Wells:

Reference Type	Well Name	Comments
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Logging Program:

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

TD Logs: ☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☐ TDT ☒ Other

In RAM's Burro Canyon prospect

Additional Information:

Log Type	Stage	From (Ft)	To (Ft)	Tool Type/Name	Remarks
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ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Mudge B #20M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 6110.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 6110.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Mudge B #20M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Mudge B #20M		
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		
Site Position:		Northing:	2,108,178.26ft
From:	Lat/Long	Easting:	643,887.63ft
Position Uncertainty:	15.0 ft	Slot Radius:	6-1/8"
		Latitude:	36° 47' 33.793 N
		Longitude:	107° 20' 30.932 W
		Grid Convergence:	0.29 °

Well:	Mudge B #20M, S-Shaped, MV/DK, Short Reach		
Well Position	+N/-S	0.0 ft	Northing: 2,151,923.35 ft
	+E/-W	0.0 ft	Easting: 448,616.70 ft
Position Uncertainty	3.0 ft	Wellhead Elevation:	ft
		Latitude:	36° 54' 49.562 N
		Longitude:	108° 0' 32.746 W
		Ground Level:	6,095.0 ft

Wellbore:	Mudge B #20M		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	10/12/2011	9.98	63.56	50,747

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	200.45

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	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,281.5	18.63	200.45	1,265.2	-140.7	-52.4	2.00	2.00	0.00	200.45	
4,244.5	18.63	200.45	4,072.9	-1,027.6	-383.1	0.00	0.00	0.00	0.00	
4,865.5	0.00	0.00	4,683.0	-1,121.4	-418.1	3.00	-3.00	0.00	180.00	Mudge B #20M - IC
7,583.5	0.00	0.00	7,401.0	-1,121.4	-418.1	0.00	0.00	0.00	0.00	Mudge B #20M

ConocoPhillips or its affiliates

Planning Report

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Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 6110.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 6110.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Mudge B #20M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Mudge B #20M		
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
230.0	0.00	0.00	230.0	0.0	0.0	0.0	0.00	0.00	0.00
Surface Csg									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	1.00	200.45	400.0	-0.4	-0.2	0.4	2.00	2.00	0.00
500.0	3.00	200.45	499.9	-3.7	-1.4	3.9	2.00	2.00	0.00
600.0	5.00	200.45	599.7	-10.2	-3.8	10.9	2.00	2.00	0.00
700.0	7.00	200.45	699.1	-20.0	-7.5	21.4	2.00	2.00	0.00
800.0	9.00	200.45	798.2	-33.0	-12.3	35.3	2.00	2.00	0.00
900.0	11.00	200.45	896.6	-49.3	-18.4	52.6	2.00	2.00	0.00
1,000.0	13.00	200.45	994.4	-68.8	-25.6	73.4	2.00	2.00	0.00
1,100.0	15.00	200.45	1,091.5	-91.5	-34.1	97.6	2.00	2.00	0.00
1,174.3	16.49	200.45	1,163.0	-110.4	-41.1	117.8	2.00	2.00	0.00
OJO ALAMO									
1,200.0	17.00	200.45	1,187.6	-117.3	-43.7	125.2	2.00	2.00	0.00
1,214.0	17.28	200.45	1,201.0	-121.2	-45.2	129.3	2.00	2.00	0.00
KIRTLAND									
1,281.5	18.63	200.45	1,265.2	-140.7	-52.4	150.1	2.00	2.00	0.00
1,300.0	18.63	200.45	1,282.7	-146.2	-54.5	156.0	0.00	0.00	0.00
1,400.0	18.63	200.45	1,377.5	-176.1	-65.7	188.0	0.00	0.00	0.00
1,500.0	18.63	200.45	1,472.2	-206.1	-76.8	219.9	0.00	0.00	0.00
1,600.0	18.63	200.45	1,567.0	-236.0	-88.0	251.9	0.00	0.00	0.00
1,700.0	18.63	200.45	1,661.7	-265.9	-99.1	283.8	0.00	0.00	0.00
1,800.0	18.63	200.45	1,756.5	-295.9	-110.3	315.8	0.00	0.00	0.00
1,900.0	18.63	200.45	1,851.3	-325.8	-121.5	347.7	0.00	0.00	0.00
2,000.0	18.63	200.45	1,946.0	-355.7	-132.6	379.7	0.00	0.00	0.00
2,100.0	18.63	200.45	2,040.8	-385.7	-143.8	411.6	0.00	0.00	0.00
2,135.1	18.63	200.45	2,074.0	-396.2	-147.7	422.8	0.00	0.00	0.00
FRUITLAND									
2,200.0	18.63	200.45	2,135.5	-415.6	-154.9	443.5	0.00	0.00	0.00
2,300.0	18.63	200.45	2,230.3	-445.5	-166.1	475.5	0.00	0.00	0.00
2,400.0	18.63	200.45	2,325.1	-475.5	-177.3	507.4	0.00	0.00	0.00
2,500.0	18.63	200.45	2,419.8	-505.4	-188.4	539.4	0.00	0.00	0.00
2,600.0	18.63	200.45	2,514.6	-535.3	-199.6	571.3	0.00	0.00	0.00
2,700.0	18.63	200.45	2,609.3	-565.3	-210.7	603.3	0.00	0.00	0.00
2,800.0	18.63	200.45	2,704.1	-595.2	-221.9	635.2	0.00	0.00	0.00
2,817.8	18.63	200.45	2,721.0	-600.5	-223.9	640.9	0.00	0.00	0.00
PICTURED CLIFFS									
2,900.0	18.63	200.45	2,798.9	-625.1	-233.1	667.2	0.00	0.00	0.00
2,977.2	18.63	200.45	2,872.0	-648.3	-241.7	691.8	0.00	0.00	0.00
LEWIS									
3,000.0	18.63	200.45	2,893.6	-655.1	-244.2	699.1	0.00	0.00	0.00
3,100.0	18.63	200.45	2,988.4	-685.0	-255.4	731.1	0.00	0.00	0.00
3,200.0	18.63	200.45	3,083.1	-714.9	-266.5	763.0	0.00	0.00	0.00
3,300.0	18.63	200.45	3,177.9	-744.9	-277.7	795.0	0.00	0.00	0.00
3,400.0	18.63	200.45	3,272.7	-774.8	-288.9	826.9	0.00	0.00	0.00
3,500.0	18.63	200.45	3,367.4	-804.8	-300.0	858.9	0.00	0.00	0.00
3,539.7	18.63	200.45	3,405.0	-816.6	-304.4	871.5	0.00	0.00	0.00
HUERFANITO BENTONITE									
3,600.0	18.63	200.45	3,462.2	-834.7	-311.2	890.8	0.00	0.00	0.00

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Mudge B #20M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 6110.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 6110.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Mudge B #20M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Mudge B #20M		
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)
3,700.0	18.63	200.45	3,556.9	-864.6	-322.3	922.8	0.00	0.00	0.00
3,800.0	18.63	200.45	3,651.7	-894.6	-333.5	954.7	0.00	0.00	0.00
3,900.0	18.63	200.45	3,746.5	-924.5	-344.7	986.6	0.00	0.00	0.00
3,957.6	18.63	200.45	3,801.0	-941.7	-351.1	1,005.0	0.00	0.00	0.00
CHACRA									
4,000.0	18.63	200.45	3,841.2	-954.4	-355.8	1,018.6	0.00	0.00	0.00
4,100.0	18.63	200.45	3,936.0	-984.4	-367.0	1,050.5	0.00	0.00	0.00
4,200.0	18.63	200.45	4,030.7	-1,014.3	-378.1	1,082.5	0.00	0.00	0.00
4,244.5	18.63	200.45	4,072.9	-1,027.6	-383.1	1,096.7	0.00	0.00	0.00
4,300.0	16.96	200.45	4,125.7	-1,043.5	-389.0	1,113.7	3.00	-3.00	0.00
4,400.0	13.96	200.45	4,222.1	-1,068.5	-398.3	1,140.3	3.00	-3.00	0.00
4,500.0	10.96	200.45	4,319.7	-1,088.7	-405.9	1,161.9	3.00	-3.00	0.00
4,505.4	10.80	200.45	4,325.0	-1,089.7	-406.2	1,162.9	3.00	-3.00	0.00
MASSIVE CLIFF HOUSE									
4,600.0	7.96	200.45	4,418.4	-1,104.1	-411.6	1,178.3	3.00	-3.00	0.00
4,700.0	4.96	200.45	4,517.7	-1,114.7	-415.6	1,189.6	3.00	-3.00	0.00
4,718.3	4.41	200.45	4,536.0	-1,116.1	-416.1	1,191.1	3.00	-3.00	0.00
MENEFEE									
4,800.0	1.96	200.45	4,617.5	-1,120.3	-417.7	1,195.6	3.00	-3.00	0.00
4,865.5	0.00	0.00	4,683.0	-1,121.4	-418.1	1,196.8	3.00	-3.00	0.00
Int Csg - Mudge B #20M - ICP									
4,900.0	0.00	0.00	4,717.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,817.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,100.0	0.00	0.00	4,917.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,116.5	0.00	0.00	4,934.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
POINT LOOKOUT									
5,200.0	0.00	0.00	5,017.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,117.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,217.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,317.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,524.5	0.00	0.00	5,342.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
MANCOS									
5,600.0	0.00	0.00	5,417.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,517.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,617.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,717.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,817.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,100.0	0.00	0.00	5,917.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,017.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,117.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,217.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,495.5	0.00	0.00	6,313.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
UPPER GALLUP									
6,500.0	0.00	0.00	6,317.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,417.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,700.0	0.00	0.00	6,517.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,617.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
6,900.0	0.00	0.00	6,717.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,817.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
7,100.0	0.00	0.00	6,917.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
7,196.5	0.00	0.00	7,014.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00
GREENHORN									

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Mudge B #20M
Company:	ConocoPhillips SJB	TVD Reference:	WELL @ 6110.0ft (Original Well Elev)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	WELL @ 6110.0ft (Original Well Elev)
Site:	Other Named Wells	North Reference:	True
Well:	Mudge B #20M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Mudge B #20M		
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)	
7,200.0	0.00	0.00	7,017.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
7,250.5	0.00	0.00	7,068.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
GRANEROS										
7,300.0	0.00	0.00	7,117.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
7,308.5	0.00	0.00	7,126.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
TWO WELLS										
7,388.5	0.00	0.00	7,206.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
PAGUATE										
7,400.0	0.00	0.00	7,217.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
7,414.5	0.00	0.00	7,232.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
CUBERO										
7,464.5	0.00	0.00	7,282.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
ENCINAL										
7,500.0	0.00	0.00	7,317.5	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
7,561.5	0.00	0.00	7,379.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
BURRO CANYON										
7,583.5	0.00	0.00	7,401.0	-1,121.4	-418.1	1,196.8	0.00	0.00	0.00	
Total Depth - Prod Csg - Mudge B #20M										

Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Mudge B #20M - ICP		0.00	0.00	4,683.0	-1,121.4	-418.1	2,150,802.83	448,196.62	36° 54' 38.474 N	108° 0' 37.893 W
- plan hits target center										
- Point										
Mudge B #20M		0.00	0.00	7,401.0	-1,121.4	-418.1	2,150,802.83	448,196.62	36° 54' 38.474 N	108° 0' 37.893 W
- plan hits target center										
- Point										

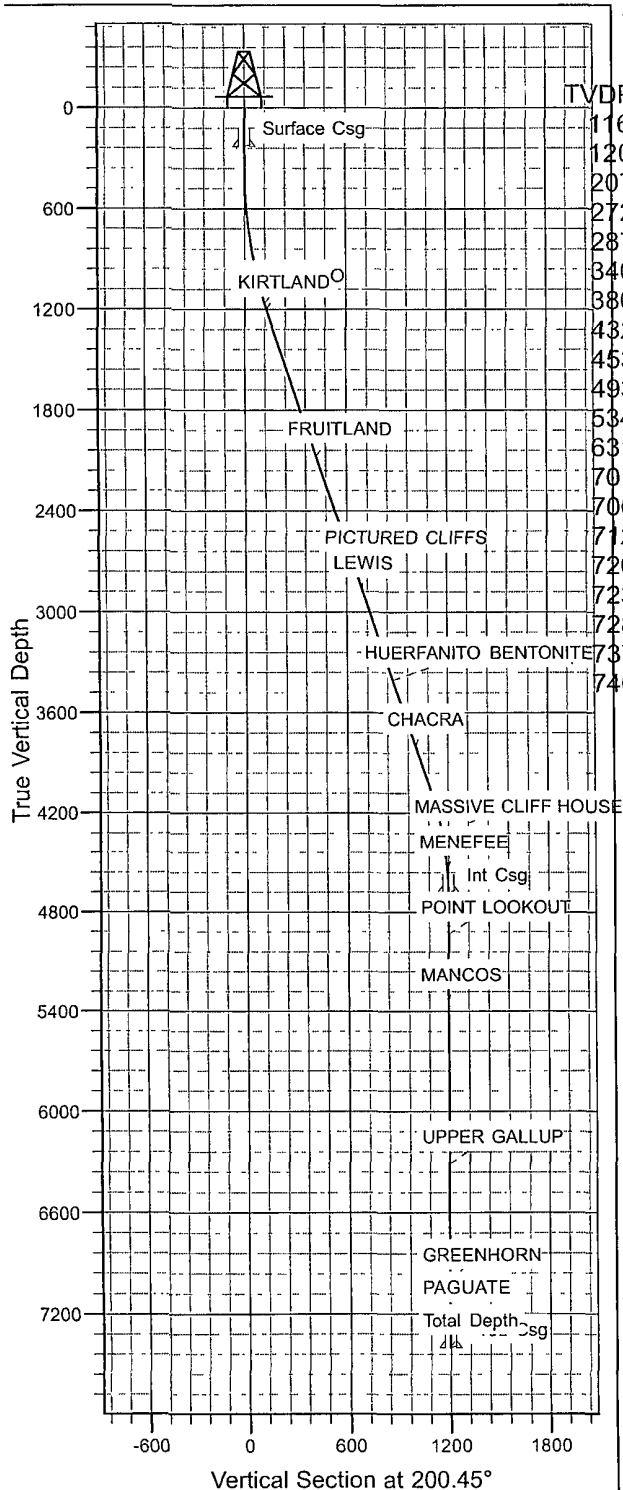
WELL @ 6110.0ft (Original Well Elev)
 Ground Elevation 6095.0
 Reference Lat: 36° 54' 49.562 N
 Reference Long: 108° 0' 32.746 W

Project: San Juan Basin - New Mexico West v
 Site: Other Named Wells
 Well: Mudge B #20M
 Wellbore: Mudge B #20M
 Design: Plan #1



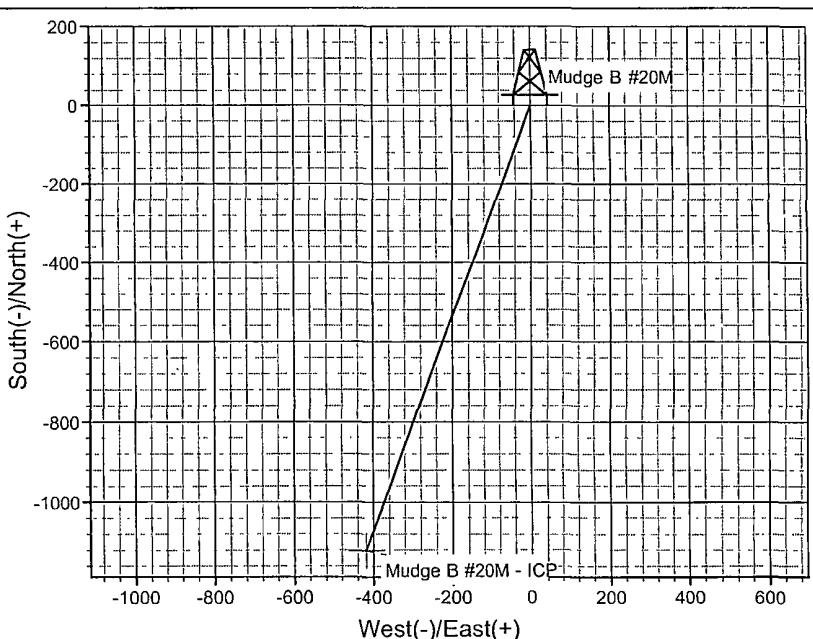
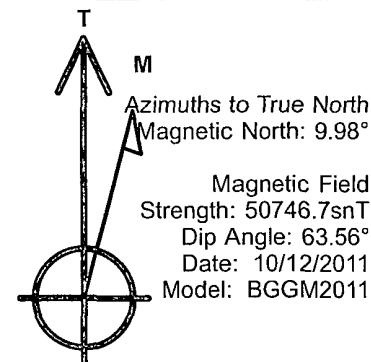
SECTION DETAILS

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	350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.0	
3	1281.5	18.63	200.45	1265.2	-140.7	-52.4	2.00	200.45	150.1	
4	4244.5	18.63	200.45	4072.9	-1027.6	-383.1	0.00	0.00	1096.7	
5	4865.5	0.00	0.00	4683.0	-1121.4	-418.1	3.00	180.00	1196.8	Mudge B #20M - ICP
6	7583.5	0.00	0.00	7401.0	-1121.4	-418.1	0.00	0.00	1196.8	Mudge B #20M



FORMATION TOP DETAILS

TVD	Path	MD	Path	Formation
1163.0	1174.3			OJO ALAMO
1201.0	1214.0			KIRTLAND
2074.0	2135.1			FRUITLAND
2721.0	2817.8			PICTURED CLIFFS
2872.0	2977.2			LEWIS
3405.0	3539.7			HUERFANITO BENTONITE
3801.0	3957.6			CHACRA
4325.0	4505.4			MASSIVE CLIFF HOUSE
4536.0	4718.3			MENEFEE
4934.0	5116.5			POINT LOOKOUT
5342.0	5524.5			MANCOS
6313.0	6495.5			UPPER GALLUP
7014.0	7196.5			GREENHORN
7068.0	7250.5			GRANEROS
7126.0	7308.5			TWO WELLS
7206.0	7388.5			PAGUATE
7232.0	7414.5			CUBERO
7282.0	7464.5			ENCINAL
7379.0	7561.5			BURRO CANYON
7401.0	7583.5			Total Depth



CONOCOPHILLIPS COMPANY
MUDGE B #20 M
2282' FNL & 1471' FEL
LOCATED IN THE SW/4 NE/4 OF SECTION 8,
T31N, R11W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM POST OFFICE IN AZTEC, HEAD NORTH ON HWY 550 TO THE INTERSECTION OF HWY AND HWY 516.
- 2) TURN LEFT ONTO HWY 516 AND GO 0.5 MILES TO RUINS ROAD.
- 3) TURN RIGHT ONTO RUINS ROAD AND GO 4.1 MILES.
- 4) TURN LEFT AND TRAVEL 0.6 MILES TO "Y" INTERSECTION.
- 5) STAY LEFT AND GO 0.1 MILES.
- 6) TURN RIGHT AND GO 1.2 MILES.
- 7) TURN RIGHT AND GO 1.0 MILES TO "Y" INTERSECTION.
- 8) STAY LEFT AND GO 1.4 MILES.
- 9) TURN RIGHT AND GO 0.2 MILES TO "Y" INTERSECTION.
- 10) STAY TO THE LEFT AND GO 0.1 MILES TO FLAGGED ACCESS ON LEFT SIDE OF ROAD EAST OF WELL PAD.

WELL FLAG LOCATED AT LAT. 36.91377° N, LONG. 108.00972° W (NAD 83).

JOB No.: COPC441
DATE: 08/09/11



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