

Submit 1 Copy To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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 and Natural Resources

Form C-103
October 13, 2009

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-045-34484
5. Indicate Type of Lease STATE ☒ FED ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Rosa Unit
8. Well Number Rosa Unit #185C
9. OGRID Number 120782
10. Pool name or Wildcat Blanco MV / Basin DK

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)	
1. Type of Well: Oil Well ☐ Gas Well ☒ Other	
2. Name of Operator Williams Production Company	
3. Address of Operator PO Box 640, Aztec, NM 87410 Phone: 505-634-4208	
4. Well Location Unit Letter F 1740' feet from the NORTH line and 2190' feet from the WEST line Section 16 Township 31N Range 6W NMPM County Rio Arriba	
11. Elevation (Show whether DR, RKB, RT, GR, etc.)	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☒	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Williams Production plans to drill this well to the Dakota and produce both Mesaverde and Dakota formations as per attached plat, operation plan and directional plan.

* If cement does not circulate, CBL required.

Spud Date:

Rig Release Date:



I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Larry Higgins TITLE Permit Supv DATE 6/2/2011

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com PHONE: 505-634-4208

For State Use Only

APPROVED BY: [Signature] TITLE AV DATE 6-17-11

Conditions of Approval (if any):

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

Form C-102
Revised October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code	*Pool Name
		72319 / 71599	BLANCO MESAVERDE / BASIN DAKOTA
*Property Code	*Property Name		*Well Number
17033	ROSA UNIT		185C
*OGRID No.	*Operator Name		*Elevation
120782	WILLIAMS PRODUCTION COMPANY		6429'

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
F	16	31N	6W		1740	NORTH	2190	WEST	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	16	31N	6W		1550	SOUTH	2550	EAST	SAN JUAN

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
320.0 Acres - (S/2)			

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 5277.36' 1740' 2190' 5280.00' 5280.00' 5280.00' 5280.00' 185C BmV 1858 BmV 185 BmV 1550' 2550' TRACT 40 LEASE STATE E-346 TRACT 39 LEASE FEE LEASE STATE E-289 LEASE SF-078766 2055.7' 515°06.7'E BOTTOM-HOLE LAT: 36.89659°N LONG: 107.46728°W DATUM: NAD1927 LAT: 36.89660°N LONG: 107.46788°W DATUM: NAD1983 SURFACE LOCATION LAT: 36.90204°N LONG: 107.46909°W DATUM: NAD1927 LAT: 36.90205°N LONG: 107.46969°W DATUM: NAD1983 LOT 1 LOT 2 LOT 3	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. <i>Larry Higgins</i> 6-2-11 Signature Date LARRY HIGGINS Printed Name 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 Revised: MAY 11, 2011 Survey Date: SEPTEMBER 27, 2006 Signature and Seal of Professional Surveyor JASON C. EDWARDS NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 15269 JASON C. EDWARDS Certificate Number 15269
--	---

DKOK



WILLIAMS PRODUCTION COMPANY
Operation Plan

(Note: This procedure will be adjusted on site based upon actual conditions)

DATE: 6/02/2011 **FIELD:** Blanco MV/DK

WELL NAME: Rosa Unit #185-C (rev) **SURFACE:** BLM

S. LOCATION: SE/4 NW/4 Sec 16-31N-6W **MINERALS:** FEE
San Juan Co, NM

ELEVATION: 6,429 ft. GL **LEASE #** FEE

MEASURED DEPTH: 8,851 ft. (MD) **API#:** 30-045-34484

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

	<u>TVD</u>	<u>MD</u>		<u>TVD</u>	<u>MD</u>
Ojo Alamo	2,428'	3,041'	Menefee	5,488'	6,231'
Kirtland	2,543'	3,192'	Point Lookout	5,718'	6,461'
Fruitland Fmtn	3,003'	3,727'	Mancos sh	6,018'	6,761'
Pictured Cliffs	3,253'	3,991'	Gallup	7,008'	7,751'
Lewis Sh	3,553'	4,295'	Greenhorn	7,768'	8,511'
Int. Casing	3,730'	4,470'	Graneros	7,823'	8,566'
Cliff House Trans	5,118'	5,861'	Dakota	7,958'	8,701'
Cliff House	5,438'	6,081'	Morrison	8,208'	8,950'
Total Depth				8,108'	8,851'

B. LOGGING PROGRAM: Mud Logger on from Int. Csg. to TD. Mud Logger will pick TD. (See attached Geological Prognosis for OH Logging Program).

C. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM: Use a LSND mud (+/-40 Vis.) to drill 8-3/4 in. Intermediate Hole. Increase vis to +/-60 to run Casing. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use air w/Air Hammer w/ 6-1/4 in. bit to drill-out 7 in. csg. to TD +/- 8,851 ft.

B. BOP TESTING: While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The surface and Intermediate casing will be pressure tested to **1500 psi for 30 minutes** after the BOPE test before drilling out cement. The drum brakes will be inspected and tested each tour. **All tests, inspections and SPR's will be recorded in the tour book as to time and results.**

III. MATERIALS

A. CASING PROGRAM:

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH (MD)</u>	<u>CASING SIZE</u>	<u>WT. & GRADE</u>
Surface	12-1/4"	+310'	9-5/8"	36# K-55 STC
Intermediate	8-3/4"	4,470'	7"	23# K-55 LTC
Prod. Casing	6-1/4"	+/-8,851'-Surf.	4-1/2"	11.6# P-110 LTC

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. INTERMEDIATE CASING: 7" cement nose guide shoe with a self-fill float Collar. Place Float Collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft. 2,000ft., 1,500 ft., and 1,000 ft. (NTL-FRA 90-1). (Call this in to BLM for approval. If denied, follow what is in the Operations Plan in the Permit package.)
3. PRODUCTION CASING: 4-1/2" whirler type cement nose guide shoe with a float collar on top of bottom joint. Place marker joint above 6,000'. Place one turbolizer every third joint thru Dakota and Mesa Verde intervals.). (Call this in to BLM for approval. If denied, follow what is in the Operations Plan in the Permit package.)

C. CEMENTING: *Note: Volumes may be adjusted onsite due to actual conditions)*

1. SURFACE: Slurry: Slurry: 165sx (297 cu.ft.) of "Type III" + 2% Cal-Seal 60 + ¼ # of poly-e-flake/sk + 0.3% Versaset + 2% Econolite + 6% Salt (Yield = 1.8 cu.ft./sk, Weight = 13.5 #/gal.). **NO EXCESS PUMP AS WRITTEN SHOULD CIRCULATE TO SURFACE** WOC 12 hours. Test csg to 1500psi.
2. INTERMEDIATE: 20 bbl Water Spacer + Lead - 395 sx (1078 cu.ft.) of "EXTENDACEM" + 5 #/sk pheno-seal + 5% Cal-Seal 60 + 0.5% D-Air-3000 (Yield = 2.73 cu.ft./sk, Weight = 11.5 #/gal.). Tail - 100 sx (118cu.ft.) of Premium cement + 0.125 #/sk Poly-E-Flake, (Yield = 1.18 cu.ft./sk, Weight = 15.6#/gal.). **NO EXCESS IN EITHER SLURRY PUMP AS WRITTEN** Total volume = 1196 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. PRODUCTION CASING: 20 bbl Gelled Water spacer. Cement: 445 sx (623 ft³) of "FRACCEM" + 0.8% Halad-9 + 0.1% CFR-3 + 5 #/sk Gilsonite + 0.125 #/sk Poly-E-Flake + 0.3% D-Air-3000. (Yield = 1.4 ft³/sk, Weight = 13.1 #/gal.). Displace cement at a minimum of 8 BPM. **NO EXCESS IN EITHER SLURRY PUMP AS WRITTEN**. Should cover 100 ft into intermediate casing. Total volume 623 ft³. WOC 12 hours.

**** NOTE: Well must TD in Tract 39 (See Staking Plat) ****

IV COMPLETION

A. CBL

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

B. PRESSURE TEST

1. Pressure test 4-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

C. STIMULATION

1. Stimulate Dakota with approximately 5000# 100 mesh sand and 120,000# Ottawa Sand in slick water.
2. Isolate Dakota with a RBP.
3. Stimulate Point Lookout with approximately 40,000# 20/40 Ottawa sand in slick water.
4. Isolate Point Lookout with a RBP.
5. Perforate the Menefee/Cliff House as determined from the open hole logs.
6. Stimulate with approximately 40,000# 20/40 Ottawa sand in slick water.
7. Test each zone before removing bridge plugs.

D. RUNNING TUBING

1. Production Tubing: Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Dakota perforation

100 
Gary Sizemore
Sr. Staff Drilling Engineer

Error! Objects cannot be created from editing field codes.
Error! Objects cannot be created from editing field codes.

Error! Objects cannot be created from editing field codes.



Weatherford[®]

Drilling Services

Proposal



ROSA UNIT 185C

SAN JUAN COUNTY, NM

WELL FILE: **PLAN 1**

MAY 10, 2011

Weatherford International, Ltd.

P.O. Box 61028
Midland, TX 79711 USA
+1.432.561.8892 Main
+1.432.561.8895 Fax
www.weatherford.com

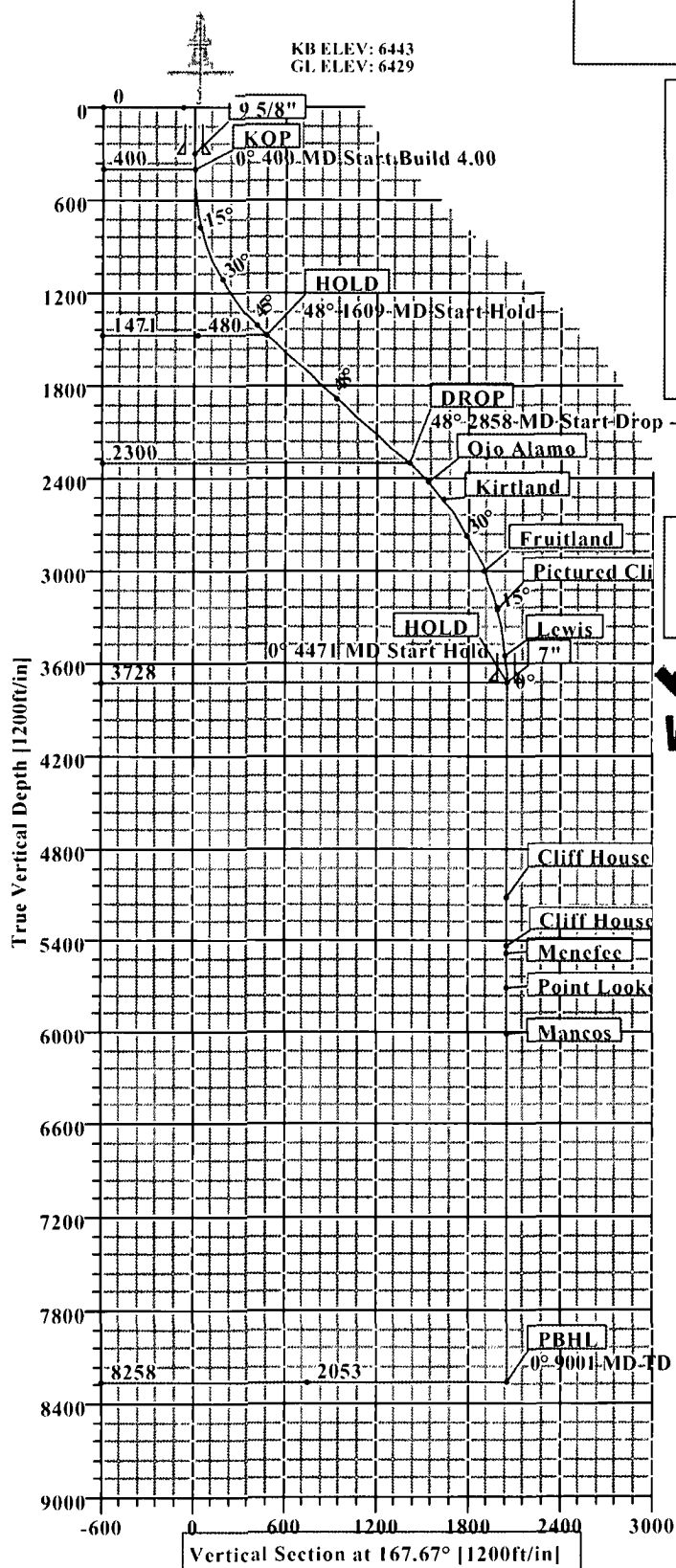


Rosa Unit #185-C
SAN JUAN CO. NM

SECTION DETAILS									
Sec	MD	Inc	Azi	IVD	+N/-S	+E/-W	DIeg	IFace	VSec Target
1	0.00	0.00	164.90	0.00	0.00	0.00	0.00	0.00	0.00
2	400.00	0.00	164.90	400.00	0.00	0.00	0.00	0.00	0.00
3	1609.31	48.37	164.90	1470.69	-464.27	125.28	4.00	164.90	480.32
4	2858.38	48.37	164.90	2300.42	-1365.68	368.51	0.00	0.00	1412.87
5	4470.79	0.00	164.90	3728.00	-1984.71	535.55	3.00	180.00	2053.29
6	9000.79	0.00	164.90	8258.00	-1984.71	535.55	0.00	164.90	2053.29

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 185C	0.00	0.00	2147879.52	2829420.39	36°54'07.380N	107°28'10.884W	N/A

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	
Cs. Pt.	3728.00	-1984.71	535.55	36°53'47.755N	107°28'04.291W	Point	



FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	2428.00	3040.91	Ojo Alamo
2	2543.00	3192.46	Kirtland
3	3003.00	3727.15	Fruitland
4	3253.00	3990.76	Pictured Cliffs
5	3553.00	4295.55	Lewis
6	5118.00	5860.79	Cliff House Trans
7	5438.00	6180.79	Cliff House
8	5488.00	6230.79	Menefee
9	5718.00	6460.79	Point Lookout
10	6018.00	6760.79	Mancos

CASING DETAILS				
No.	TVD	MD	Name	Size
1	300.00	300.00	9 5/8"	9.625
2	3728.00	4470.79	7"	7.000

SITE DETAILS

Rosa Unit 185C
Sect. 16 T31N R6W
San Juan County, NM

Site Centre Latitude: 36°54'07.380N
Longitude: 107°28'10.884W

Ground Level: 6429.00
Positional Uncertainty: 0.00
Convergence: 0.22

LEGEND

#185B (1)
1
Plan #2

Weatherford

West(-)/East(+) [700ft/in]

South(-)/North(+) [700ft/in]

00 -350 0 350 700 1050

350 0 -350 -700 -1050 -1400 -1750 -2100 -2450

9 5/8"

SHL See Well Details

#185B (1)

Cs. Pt.

PBHL 1984.71 S 535.55 E

Plan: Plan #2 (Rosa Unit 185C/1)
Created By: Russell W. Joyner
Date: 5/31/2011



Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Williams Production Date: 5/10/2011 Time: 13:16:28 Page: 1
 Field: SAN JUAN CO. NM (NAD83) Co-ordinate(NE) Reference: Well: #185-C, True North
 Site: Rosa Unit #185-C Vertical (TVD) Reference: SITE 6443.0
 Well: #185-C Section (VS) Reference: Well (0.00N,0.00E,164.90Azi)
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #2 Date Composed: 5/10/2011
 Principal: Yes Version: 1
 Tied-to: From Surface

Field: SAN JUAN CO. NM (NAD83)

Map System: US State Plane Coordinate System 1983 Map Zone: New Mexico, Western Zone
 Geo Datum: GRS 1980 Coordinate System: Well Centre
 Sys Datum: Mean Sea Level Geomagnetic Model: IGRF2010

Site: Rosa Unit #185-C

1740' FNL 2190' FWL of SEC 16 T-31- N R-6-W

Site Position: Northing: 2147879.52 ft Latitude: 36 54 7.380 N
 From: Geographic Easting: 2829420.39 ft Longitude: 107 28 10.884 W
 Position Uncertainty: 0.00 ft North Reference: True
 Ground Level: 6429.00 ft Grid Convergence: 0.22 deg

Well: #185-C

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2147879.52 ft Latitude: 36 54 7.380 N
 +E/-W 0.00 ft Easting: 2829420.39 ft Longitude: 107 28 10.884 W
 Position Uncertainty: 0.00 ft

Wellpath: 1

Drilled From: Surface
 Tie-on Depth: 0.00 ft
 Above System Datum: Mean Sea Level
 Declination: 9.78 deg
 Mag Dip Angle: 63.65 deg
 +E/-W Direction
 ft deg

Current Datum: SITE Height 6443.00 ft
 Magnetic Data: 7/15/2011
 Field Strength: 50908 nT
 Vertical Section: Depth From (TVD) +N/-S
 ft ft

0.00 0.00 0.00 164.90

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	164.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	164.90	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1609.32	48.37	164.90	1470.69	-464.27	125.28	4.00	4.00	0.00	164.90	
2858.37	48.37	164.90	2300.42	-1365.68	368.51	0.00	0.00	0.00	0.00	
4470.80	0.00	164.90	3728.00	-1984.71	535.55	3.00	-3.00	0.00	180.00	INT. CSG. PT.
9000.80	0.00	164.90	8258.00	-1984.71	535.55	0.00	0.00	0.00	164.90	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
400.00	0.00	164.90	400.00	0.00	0.00	0.00	0.00	2147879.52	2829420.39	KOP
500.00	4.00	164.90	499.92	-3.37	0.91	3.49	4.00	2147876.15	2829421.31	
600.00	8.00	164.90	599.35	-13.46	3.63	13.94	4.00	2147866.07	2829424.07	
700.00	12.00	164.90	697.81	-30.22	8.15	31.30	4.00	2147849.33	2829428.66	
800.00	16.00	164.90	794.82	-53.57	14.46	55.49	4.00	2147826.00	2829435.05	
900.00	20.00	164.90	889.91	-83.40	22.50	86.38	4.00	2147796.20	2829443.21	
1000.00	24.00	164.90	982.61	-119.56	32.26	123.84	4.00	2147760.08	2829453.10	
1100.00	28.00	164.90	1072.47	-161.88	43.68	167.67	4.00	2147717.81	2829464.68	
1200.00	32.00	164.90	1159.05	-210.14	56.70	217.66	4.00	2147669.60	2829477.89	
1300.00	36.00	164.90	1241.94	-264.12	71.27	273.56	4.00	2147615.67	2829492.66	
1400.00	40.00	164.90	1320.73	-323.54	87.31	335.12	4.00	2147556.31	2829508.92	
1500.00	44.00	164.90	1395.02	-388.13	104.73	402.02	4.00	2147491.79	2829526.60	
1600.00	48.00	164.90	1464.48	-457.57	123.47	473.94	4.00	2147422.42	2829545.60	
1609.32	48.37	164.90	1470.69	-464.27	125.28	480.88	4.00	2147415.72	2829547.43	HOLD
1700.00	48.37	164.90	1530.93	-529.72	142.94	548.66	0.00	2147350.35	2829565.34	



Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Williams Production	Date: 5/10/2011	Time: 13.16:28	Page: 2
Field: SAN JUAN CO. NM (NAD83)	Co-ordinate(NE) Reference: Well. #185-C, True North		
Site: Rosa Unit #185-C	Vertical (TVD) Reference: SITE 6443.0		
Well: #185-C	Section (VS) Reference: Well (0.00N,0.00E,164.90Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl. deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
1800.00	48.37	164.90	1597.36	-601.88	162.41	623.41	0.00	2147278.26	2829585.09	
1900.00	48.37	164.90	1663.78	-674.05	181.89	698.16	0.00	2147206.16	2829604.84	
2000.00	48.37	164.90	1730.21	-746.22	201.36	772.91	0.00	2147134.07	2829624.59	
2100.00	48.37	164.90	1796.64	-818.38	220.83	847.66	0.00	2147061.98	2829644.34	
2200.00	48.37	164.90	1863.07	-890.55	240.31	922.40	0.00	2146989.89	2829664.09	
2300.00	48.37	164.90	1929.50	-962.72	259.78	997.15	0.00	2146917.80	2829683.83	
2400.00	48.37	164.90	1995.93	-1034.89	279.25	1071.90	0.00	2146845.70	2829703.58	
2500.00	48.37	164.90	2062.35	-1107.05	298.73	1146.65	0.00	2146773.61	2829723.33	
2600.00	48.37	164.90	2128.78	-1179.22	318.20	1221.40	0.00	2146701.52	2829743.08	
2700.00	48.37	164.90	2195.21	-1251.39	337.67	1296.14	0.00	2146629.43	2829762.83	
2800.00	48.37	164.90	2261.64	-1323.55	357.15	1370.89	0.00	2146557.33	2829782.58	
2858.37	48.37	164.90	2300.42	-1365.68	368.51	1414.53	0.00	2146515.25	2829794.10	DROP
2900.00	47.12	164.90	2328.40	-1395.43	376.54	1445.34	3.00	2146485.54	2829802.24	
3000.00	44.12	164.90	2398.33	-1464.43	395.16	1516.81	3.00	2146416.61	2829821.13	
3040.91	42.90	164.90	2428.00	-1491.62	402.50	1544.97	3.00	2146389.44	2829828.57	Ojo Alamo Ss.
3100.00	41.12	164.90	2471.90	-1529.80	412.80	1584.52	3.00	2146351.30	2829839.01	
3192.46	38.35	164.90	2543.00	-1586.86	428.20	1643.62	3.00	2146294.30	2829854.63	Kirtland Shale
3200.00	38.12	164.90	2548.92	-1591.37	429.41	1648.28	3.00	2146289.80	2829855.86	
3300.00	35.12	164.90	2629.17	-1648.95	444.95	1707.93	3.00	2146232.27	2829871.62	
3400.00	32.12	164.90	2712.43	-1702.41	459.38	1763.30	3.00	2146178.87	2829886.25	
3500.00	29.12	164.90	2798.47	-1751.59	472.65	1814.23	3.00	2146129.75	2829899.71	
3600.00	26.12	164.90	2887.06	-1796.35	484.73	1860.60	3.00	2146085.03	2829911.95	
3700.00	23.12	164.90	2977.96	-1836.57	495.58	1902.26	3.00	2146044.85	2829922.96	
3727.15	22.31	164.90	3003.00	-1846.69	498.31	1912.74	3.00	2146034.74	2829925.73	Fruitland Fm.
3800.00	20.12	164.90	3070.91	-1872.14	505.18	1939.10	3.00	2146009.31	2829932.70	
3900.00	17.12	164.90	3165.66	-1902.97	513.50	1971.04	3.00	2145978.52	2829941.13	
3990.76	14.40	164.90	3253.00	-1926.77	519.92	1995.69	3.00	2145954.74	2829947.65	Pictured Cliffs Ss
4000.00	14.12	164.90	3261.96	-1928.97	520.51	1997.97	3.00	2145952.54	2829948.25	
4100.00	11.12	164.90	3359.53	-1950.07	526.21	2019.82	3.00	2145931.47	2829954.02	
4200.00	8.12	164.90	3458.11	-1966.21	530.56	2036.53	3.00	2145915.34	2829958.44	
4295.55	5.26	164.90	3553.00	-1976.96	533.46	2047.67	3.00	2145904.61	2829961.38	Lewis Sh.
4300.00	5.12	164.90	3557.43	-1977.34	533.57	2048.07	3.00	2145904.22	2829961.48	
4400.00	2.12	164.90	3657.22	-1983.45	535.21	2054.39	3.00	2145898.13	2829963.15	
4470.80	0.00	164.90	3728.00	-1984.71	535.55	2055.70	3.00	2145896.86	2829963.50	INT. CSG PT.
4500.00	0.00	164.90	3757.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
4600.00	0.00	164.90	3857.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
4700.00	0.00	164.90	3957.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
4800.00	0.00	164.90	4057.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
4900.00	0.00	164.90	4157.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5000.00	0.00	164.90	4257.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5100.00	0.00	164.90	4357.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5200.00	0.00	164.90	4457.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5300.00	0.00	164.90	4557.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5400.00	0.00	164.90	4657.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5500.00	0.00	164.90	4757.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5600.00	0.00	164.90	4857.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5700.00	0.00	164.90	4957.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5800.00	0.00	164.90	5057.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
5860.80	0.00	164.90	5118.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Cliff House Ss. Tr
5900.00	0.00	164.90	5157.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6000.00	0.00	164.90	5257.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6100.00	0.00	164.90	5357.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6180.80	0.00	164.90	5438.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Cliff House Ss



Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Williams Production Date: 5/10/2011 Time: 13:16:28 Page: 3
 Field: SAN JUAN CO. NM (NAD83) Co-ordinate(NE) Reference: Well. #185-C, True North
 Site: Rosa Unit #185-C Vertical (TVD) Reference: SITE 6443.0
 Well: #185-C Section (VS) Reference: Well (0.00N,0.00E,164.90Azi)
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
6200.00	0.00	164.90	5457.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Menefee Fm.
6230.80	0.00	164.90	5488.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6300.00	0.00	164.90	5557.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Point Lookout Ss.
6400.00	0.00	164.90	5657.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6460.80	0.00	164.90	5718.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6500.00	0.00	164.90	5757.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6600.00	0.00	164.90	5857.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6700.00	0.00	164.90	5957.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Mancos Sh.
6760.80	0.00	164.90	6018.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6800.00	0.00	164.90	6057.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
6900.00	0.00	164.90	6157.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7000.00	0.00	164.90	6257.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7100.00	0.00	164.90	6357.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Gallup Ss.
7200.00	0.00	164.90	6457.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7300.00	0.00	164.90	6557.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7400.00	0.00	164.90	6657.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7500.00	0.00	164.90	6757.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7600.00	0.00	164.90	6857.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Greenhorn Ls. Graneros Sh.
7700.00	0.00	164.90	6957.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7750.80	0.00	164.90	7008.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7800.00	0.00	164.90	7057.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
7900.00	0.00	164.90	7157.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8000.00	0.00	164.90	7257.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Dakota Ss.
8100.00	0.00	164.90	7357.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8200.00	0.00	164.90	7457.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8300.00	0.00	164.90	7557.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8400.00	0.00	164.90	7657.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8500.00	0.00	164.90	7757.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Morrison Fm.
8510.80	0.00	164.90	7768.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8565.80	0.00	164.90	7823.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8600.00	0.00	164.90	7857.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8700.00	0.00	164.90	7957.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8700.80	0.00	164.90	7958.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	Morrison Fm.
8800.00	0.00	164.90	8057.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8900.00	0.00	164.90	8157.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
8950.80	0.00	164.90	8208.00	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	
9000.00	0.00	164.90	8257.20	-1984.71	535.55	2055.70	0.00	2145896.86	2829963.50	

Targets

Name	Description Dip.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
INT. CSG. PT.		3728.00	-1984.71	535.55	2145896.86	2829963.50	36 53 47.755 N	107 28 4.290 W
-Plan hit target								
PBHL		8258.00	-1984.71	535.55	2145896.86	2829963.50	36 53 47.755 N	107 28 4.290 W
-Plan hit target								

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	9.625	12.250	9 5/8"
4470.80	3728.00	7.000	8.500	7"



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Williams Production Date: 5/10/2011 Time: 13:16:28 Page: 4
Field: SAN JUAN CO. NM (NAD83) Co-ordinate(NE) Reference: Well: #185-C, True North
Site: Rosa Unit #185-C Vertical (TVD) Reference: SITE 6443.0
Well: #185-C Section (VS) Reference: Well (0.00N,0.00E,164.90Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Annotation

MD ft	TVD ft	
400.00	400.00	KOP
1609.32	1470.69	HOLD
2858.37	2300.41	DROP
4470.80	3728.00	Int. Csg.
9000.79	8257.99	PBHL

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
3040.91	2428.00	Ojo Alamo Ss.		0.00	0.00
3192.46	2543.00	Kirtland Shale		0.00	0.00
3727.15	3003.00	Fruitland Fm.		0.00	0.00
3990.76	3253.00	Pictured Cliffs Ss.		0.00	0.00
4295.55	3553.00	Lewis Sh.		0.00	0.00
5860.80	5118.00	Cliff House Ss. Trans.		0.00	0.00
6180.80	5438.00	Cliff House Ss		0.00	0.00
6230.80	5488.00	Menefee Fm		0.00	0.00
6460.80	5718.00	Point Lookout Ss.		0.00	0.00
6760.80	6018.00	Mancos Sh.		0.00	0.00
7750.80	7008.00	Gallup Ss		0.00	0.00
8510.80	7768.00	Greenhorn Ls		0.00	0.00
8565.80	7823.00	Graneros Sh		0.00	0.00
8700.80	7958.00	Dakota Ss.		0.00	0.00
8950.80	8208.00	Morrison Fm.		0.00	0.00



Weatherford International Ltd.

Anticollision Report



Weatherford

Company: Williams Production Date: 5/31/2011 Time: 15:02:22 Page: 1
 Field: SAN JUAN CO. NM (NAD83)
 Reference Site: Rosa Unit 185C Co-ordinate(NE) Reference: Well: Rosa Unit 185C, True North
 Reference Well: Rosa Unit 185C Vertical (TVD) Reference: SITE 6443 0
 Reference Wellpath: 1 Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria
 Interpolation Method: MD Interval: 100 00 ft
 Depth Range: 0.00 to 9000.79 ft
 Maximum Radius: 10000.00 ft

Reference: Plan: Plan #2
 Error Model: ISCWSA Ellipse
 Scan Method: Closest Approach 3D
 Error Surface: Ellipse

Plan: Plan #2 Date Composed: 8/2/2007
 Version: 1
 Principal: Yes Tied-to: From Surface

Summary

Site	Offset Wellpath	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
Rosa Unit #185B	#185B	1 V0	0.00	51414.61	66.48	5.17	1.08	Level 2

Site: Rosa Unit #185B
 Well: #185B
 Wellpath: 1 V0

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset North ft	Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
0.00	0.00	51414.61	-1.01	0.00	65.57	333.70	59.60	-29.45	66.48	5.17	1.08	Level 2
100.00	100.00	99.78	99.78	0.00	0.13	333.58	59.01	-29.32	65.89	65.78	582.66	
200.00	200.00	200.54	200.52	0.00	0.26	333.19	57.20	-28.91	64.11	63.88	282.11	
300.00	300.00	301.25	301.18	0.00	0.38	332.49	54.19	-28.22	61.14	60.80	178.95	
400.00	400.00	401.85	401.69	0.00	0.51	331.39	49.98	-27.26	57.00	56.54	124.85	
500.00	499.92	502.48	502.16	0.00	0.64	165.80	44.56	-26.02	55.08	54.50	96.37	
600.00	599.35	602.91	602.37	0.00	0.81	166.43	38.03	-24.53	58.82	58.10	81.60	
700.00	697.81	704.53	703.57	0.00	1.08	166.85	28.93	-23.62	67.48	66.53	70.60	
800.00	794.82	808.11	805.97	0.00	1.43	165.29	13.50	-24.11	78.31	77.08	63.55	
900.00	889.91	909.42	905.09	0.00	1.84	162.98	-7.39	-25.34	91.27	89.72	59.08	
1000.00	982.61	1010.28	1002.83	0.00	2.31	159.90	-31.85	-29.57	109.39	107.47	56.96	
1100.00	1072.47	1114.56	1101.88	0.00	2.90	156.22	-63.77	-35.82	129.88	127.46	53.60	
1200.00	1159.05	1213.84	1194.32	0.00	3.55	153.21	-99.41	-42.05	152.73	149.75	51.20	
1300.00	1241.94	1319.59	1290.90	0.00	4.33	150.56	-141.75	-49.68	179.16	175.50	49.00	
1400.00	1320.73	1422.75	1381.87	0.00	5.20	148.04	-189.79	-57.14	206.44	202.02	46.74	
1500.00	1395.02	1522.36	1468.14	0.00	6.07	146.38	-239.11	-63.97	236.99	231.82	45.83	
1600.00	1464.48	1614.00	1547.67	0.00	6.78	145.79	-284.22	-69.94	273.03	267.28	47.47	
1700.00	1530.93	1710.04	1631.01	0.00	7.61	146.54	-331.69	-74.94	311.30	304.91	48.72	
1800.00	1597.36	1798.21	1708.19	0.00	8.28	147.38	-374.13	-78.99	350.22	343.32	50.76	
1900.00	1663.78	1889.21	1787.57	0.00	9.08	147.95	-418.36	-83.75	389.24	381.73	51.85	
2000.00	1730.21	1984.03	1869.99	0.00	9.92	148.26	-464.83	-89.89	428.74	420.57	52.50	
2100.00	1796.64	2067.64	1941.99	0.00	10.62	148.27	-506.80	-96.48	468.18	459.42	53.49	
2200.00	1863.07	2158.18	2021.02	0.00	11.34	148.48	-550.46	-103.27	508.89	499.56	54.53	
2300.00	1929.50	2259.33	2109.25	0.00	12.21	148.79	-599.58	-109.16	548.32	538.32	54.81	
2400.00	1995.93	2351.86	2189.99	0.00	12.99	149.09	-644.52	-113.93	587.38	576.78	55.37	
2500.00	2062.35	2450.21	2275.39	0.00	13.86	149.31	-693.04	-118.98	625.85	614.57	55.50	
2600.00	2128.78	2542.26	2355.90	0.00	14.61	149.66	-737.53	-122.25	664.17	652.33	56.12	
2700.00	2195.21	2655.59	2454.37	0.00	15.62	150.07	-793.58	-124.62	700.70	688.15	55.82	
2800.00	2261.64	2741.79	2529.04	0.00	16.35	150.37	-836.62	-125.67	736.38	723.30	56.31	
2900.00	2328.41	2816.31	2594.42	0.00	16.96	150.90	-872.36	-126.93	773.54	760.03	57.25	
3000.00	2398.33	2892.40	2661.68	0.00	17.57	151.61	-907.90	-128.89	808.85	794.88	57.92	
3100.00	2471.91	2974.93	2735.14	0.00	18.24	152.06	-945.30	-132.79	842.10	827.60	58.09	
3200.00	2548.92	3057.93	2809.23	0.00	18.88	152.28	-982.37	-137.72	872.23	857.18	57.94	
3300.00	2629.17	3161.64	2901.63	0.00	19.72	152.20	-1029.03	-144.10	897.81	882.02	56.84	
3400.00	2712.43	3260.73	2990.26	0.00	20.50	152.00	-1073.01	-149.50	919.03	902.53	55.69	
3500.00	2798.47	3350.14	3070.05	0.00	21.21	151.63	-1112.94	-155.13	936.09	918.89	54.42	



Weatherford International Ltd.

Anticollision Report



Weatherford®

Company: Williams Production Date: 5/31/2011 Time: 15:02:22 Page: 2
 Field: SAN JUAN CO. NM (NAD83)
 Reference Site: Rosa Unit 185C Co-ordinate(NE) Reference: Well Rosa Unit 185C, True North
 Reference Well: Rosa Unit 185C Vertical (TVD) Reference: SITE 6443.0
 Reference Wellpath: 1 Db: Sybase

Site: Rosa Unit #185B
 Well: #185B
 Wellpath: 1 V0

Inter-Site Error: 0.00 ft

Reference MD	TVD	Offset MD	TVD	Semi-Major Axis Ref	Offset	TFO-HS	North	East	Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
3600.00	2887.06	3440.59	3150.45	0.00	21.94	150.99	-1153.75	-162.49	949.58	931.61	52.84	
3700.00	2977.96	3535.20	3235.36	0.00	22.68	150.27	-1194.95	-168.79	959.07	940.33	51.18	
3800.00	3070.91	3637.34	3328.31	0.00	23.43	149.46	-1237.00	-173.88	965.04	945.51	49.43	
3900.00	3165.66	3731.88	3413.51	0.00	24.16	148.42	-1277.63	-179.10	965.75	945.40	47.47	
4000.00	3261.96	3827.16	3500.10	0.00	24.86	147.24	-1317.09	-183.90	963.21	942.05	45.52	
4100.00	3359.53	3895.89	3563.65	0.00	25.32	146.38	-1343.17	-186.09	957.99	936.24	44.03	
4200.00	3458.11	3959.81	3623.91	0.00	25.71	145.58	-1364.31	-188.44	952.40	930.12	42.75	
4300.00	3557.43	4053.53	3712.96	0.00	26.24	144.31	-1393.22	-192.55	944.95	921.98	41.12	
4400.00	3657.22	4132.45	3788.24	0.00	26.68	143.05	-1416.70	-195.84	934.37	910.77	39.59	
4500.00	3757.21	4192.28	3846.04	0.00	26.95	306.98	-1431.83	-198.63	923.46	899.40	38.39	
4600.00	3857.21	4249.77	3902.12	0.00	27.16	306.24	-1443.88	-202.36	916.04	891.61	37.50	
4700.00	3957.21	4321.47	3972.36	0.00	27.38	305.34	-1456.75	-208.92	912.82	887.96	36.72	
4800.00	4057.21	4411.36	4060.46	0.00	27.70	304.23	-1471.96	-218.22	911.65	886.27	35.92	
4900.00	4157.21	4522.67	4170.35	0.00	28.09	303.12	-1486.93	-227.47	911.14	885.20	35.12	
5000.00	4257.21	4636.47	4283.53	0.00	28.35	302.40	-1498.05	-231.17	908.54	882.24	34.54	
5100.00	4357.21	4734.56	4381.27	0.00	28.50	301.91	-1506.17	-232.94	905.65	879.12	34.14	
5200.00	4457.21	4832.73	4479.13	0.00	28.66	301.44	-1513.83	-234.61	903.00	876.24	33.75	
5300.00	4557.21	4930.98	4577.10	0.00	28.81	301.00	-1521.00	-236.18	900.57	873.60	33.38	
5400.00	4657.21	5029.30	4675.19	0.00	28.97	300.59	-1527.71	-237.65	898.36	871.16	33.04	
5500.00	4757.21	5127.69	4773.37	0.00	29.12	300.20	-1533.93	-239.01	896.34	868.94	32.71	
5600.00	4857.21	5226.14	4871.64	0.00	29.28	299.84	-1539.68	-240.26	894.52	866.91	32.40	
5700.00	4957.21	5324.65	4970.00	0.00	29.43	299.51	-1544.94	-241.41	892.89	865.08	32.11	
5800.00	5057.21	5423.21	5068.43	0.00	29.58	299.21	-1549.73	-242.46	891.43	863.42	31.83	
5900.00	5157.21	5521.81	5166.94	0.00	29.74	298.94	-1554.03	-243.40	890.14	861.94	31.57	
6000.00	5257.21	5620.46	5265.51	0.00	29.89	298.70	-1557.85	-244.23	889.02	860.63	31.32	
6100.00	5357.21	5719.14	5364.14	0.00	30.05	298.49	-1561.18	-244.96	888.05	859.48	31.08	
6200.00	5457.21	5817.86	5462.81	0.00	30.20	298.30	-1564.03	-245.58	887.23	858.48	30.86	
6300.00	5557.21	5916.60	5561.52	0.00	30.36	298.15	-1566.39	-246.10	886.56	857.63	30.65	
6400.00	5657.21	6015.49	5660.39	0.00	30.51	298.03	-1568.28	-246.51	886.03	856.94	30.46	
6500.00	5757.21	6115.43	5760.31	0.00	30.63	297.93	-1569.97	-246.88	885.56	856.33	30.30	
6600.00	5857.21	6215.37	5860.24	0.00	30.75	297.82	-1571.64	-247.24	885.10	855.74	30.14	
6700.00	5957.21	6315.31	5960.17	0.00	30.86	297.71	-1573.30	-247.60	884.65	855.15	29.99	
6800.00	6057.21	6415.25	6060.09	0.00	30.98	297.61	-1574.94	-247.96	884.21	854.57	29.84	
6900.00	6157.21	6515.19	6160.02	0.00	31.10	297.51	-1576.55	-248.31	883.77	854.00	29.69	
7000.00	6257.21	6615.13	6259.95	0.00	31.22	297.40	-1578.15	-248.66	883.34	853.44	29.54	
7100.00	6357.21	6715.08	6359.88	0.00	31.34	297.30	-1579.74	-249.01	882.92	852.89	29.40	
7200.00	6457.21	6815.02	6459.81	0.00	31.46	297.20	-1581.30	-249.35	882.51	852.34	29.25	
7300.00	6557.21	6914.97	6559.74	0.00	31.57	297.10	-1582.84	-249.69	882.10	851.80	29.11	
7400.00	6657.21	7014.91	6659.68	0.00	31.69	297.00	-1584.37	-250.02	881.71	851.27	28.97	
7500.00	6757.21	7114.86	6759.61	0.00	31.81	296.91	-1585.88	-250.35	881.32	850.75	28.83	
7600.00	6857.21	7214.80	6859.55	0.00	31.93	296.81	-1587.37	-250.68	880.93	850.23	28.69	
7700.00	6957.21	7314.75	6959.48	0.00	32.05	296.72	-1588.84	-251.00	880.56	849.72	28.56	
7800.00	7057.21	7414.70	7059.42	0.00	32.17	296.62	-1590.29	-251.31	880.19	849.22	28.42	
7900.00	7157.21	7514.65	7159.36	0.00	32.28	296.53	-1591.72	-251.63	879.83	848.73	28.29	
8000.00	7257.21	7614.59	7259.29	0.00	32.40	296.44	-1593.14	-251.94	879.47	848.24	28.16	
8100.00	7357.21	7714.54	7359.23	0.00	32.52	296.35	-1594.53	-252.24	879.13	847.76	28.03	
8200.00	7457.21	7814.49	7459.17	0.00	32.64	296.26	-1595.91	-252.54	878.79	847.29	27.90	
8300.00	7557.21	7914.44	7559.11	0.00	32.76	296.17	-1597.27	-252.84	878.45	846.82	27.78	
8400.00	7657.21	8014.39	7659.05	0.00	32.88	296.08	-1598.61	-253.13	878.12	846.37	27.65	
8500.00	7757.21	8114.35	7759.00	0.00	32.99	296.00	-1599.93	-253.42	877.80	845.91	27.53	
8600.00	7857.21	8214.30	7858.94	0.00	33.11	295.91	-1601.23	-253.70	877.49	845.47	27.40	



Weatherford International Ltd.

Anticollision Report



Weatherford

Company: Williams Production Date: 5/31/2011 Time: 15:02:22 Page: 3
Field: SAN JUAN CO. NM (NAD83)
Reference Site: Rosa Unit 185C Co-ordinate(NE) Reference: Well: Rosa Unit 185C, True North
Reference Well: Rosa Unit 185C Vertical (TVD) Reference: SITE 6443.0
Reference Wellpath: 1 Db: Sybase

Site: Rosa Unit #185B
Well: #185B
Wellpath: 1 V0

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East				
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
8700.00	7957.21	8300.00	7944.63	0.00	33.21	295.84	-1602.34	-253.95	877.30	845.16	27.30	
8800.00	8057.21	8300.00	7944.63	0.00	33.21	295.84	-1602.34	-253.95	884.29	852.14	27.51	
8900.00	8157.21	8300.00	7944.63	0.00	33.21	295.84	-1602.34	-253.95	902.37	870.22	28.07	
9000.00	8257.21	8300.00	7944.63	0.00	33.21	295.84	-1602.34	-253.95	930.91	898.75	28.94	
9000.79	8258.00	8300.00	7944.63	0.00	33.21	295.84	-1602.34	-253.95	931.17	899.01	28.95	



Weatherford®

Weatherford Drilling Services

GeoDec v5.03

Report Date: May 10, 2011
Job Number: _____
Customer: Williams
Well Name: Rosa Unit 185C
API Number: _____
Rig Name: _____
Location: San Juan Co, NM (Nad 83)
Block: _____
Engineer: RWJ

Geodetic Latitude / Longitude	Geodetic Latitude / Longitude
System: Latitude / Longitude	System: Latitude / Longitude
Projection: Geodetic Latitude and Longitude	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
Latitude 36.9020500 DEG	Latitude 36.9020500 DEG
Longitude -107.4696900 DEG	Longitude -107.4696900 DEG

Geodetic Location WGS84 Elevation = 0.0 Meters
Latitude = 36.90205° N 36° 54 min 7.380 sec
Longitude = 107.46969° W 107° 28 min 10.884 sec

Magnetic Declination =	9.79°	[True North Offset]	
Local Gravity =	.9992 g	Checksum =	6761
Local Field Strength =	50904 nT	Magnetic Vector X =	22263 nT
Magnetic Dip =	63.65°	Magnetic Vector Y =	3839 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z =	45617 nT
Spud Date =	Jul 15, 2011	Magnetic Vector H =	22591 nT

Signed: _____

Date: _____