

State of Colorado  
Oil and Gas Conservation Commission

02541222



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109

## SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

RECEIVED

NOV 07 2011

COGCC

Complete the Attachment  
Checklist

OP OGCC

1. OGCC Operator Number: 96850	4. Contact Name: Howard Harris	Survey Plat	
2. Name of Operator: Williams Production RMT Co.	Phone: (303) 606-4086		Directional Survey
3. Address: 1001 17th St., Suite 1200	Fax: (303) 629-8268	Surface Eqmpt Diagram	
City: Denver State: CO Zip 80202		Technical Info Page	X
5. API Number 05-103-11438-00	OGCC Facility ID Number	Other	X
6. Well/Facility Name: Federal	7. Well/Facility Number: RGU 411-6-297		
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE 1-T2S-98W Lot 21 6PM			
9. County: Rio Blanco	10. Field Name: Sulphur Creek		
11. Federal, Indian or State Lease Number: COC62046 Unit COC068239X			

## General Notice

☒ CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)

Change of Surface Footage from Exterior Section Lines:	FNL/FSL	FSL	FEL/FWL	FWL
Change of Surface Footage to Exterior Section Lines:				
Change of Bottomhole Footage from Exterior Section Lines:	870	FNL	605	FWL
Change of Bottomhole Footage to Exterior Section Lines:	970	FNL	642	FWL

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer NWNW Lot 11 Sec 6 T2S R97W 6PM

Latitude Distance to nearest property line Distance to nearest bldg, public rd, utility or RR

Longitude Distance to nearest lease line Approx 642' Is location in a High Density Area (rule 603b)? Yes/No NO

Ground Elevation Distance to nearest well same formation 700' Surface owner consultation date:

## GPS DATA:

Date of Measurement PDOP Reading Instrument Operator's Name

☐ CHANGE SPACING UNIT

Formation Formation Code Spacing order number Unit Acreage Unit configuration

☐ Remove from surface bond

Signed surface use agreement attached

☐ CHANGE OF OPERATOR (prior to drilling):Effective Date: Plugging Bond: ☐ Blanket ☐ Individual☐ CHANGE WELL NAME

From: To: Effective Date: NUMBER

☐ ABANDONED LOCATION:Was location ever built? ☐ Yes ☐ No  
Is site ready for inspection? ☐ Yes ☐ No  
Date Ready for Inspection:☐ NOTICE OF CONTINUED SHUT IN STATUSDate well shut in or temporarily abandoned:  
Has Production Equipment been removed from site? ☐ Yes ☐ No  
MIT required if shut in longer than two years. Date of last MIT☐ SPUD DATE:☐ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)☐ SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK

\*submit cbl and cement job summaries

Method used Cementing tool setting/perf depth Cement volume Cement top Cement bottom Date

☐ RECLAMATION:

Attach technical page describing final reclamation procedures per Rule 1004.

Final reclamation will commence on approximately Final reclamation is completed and site is ready for inspection.

## Technical Engineering/Environmental Notice

☒ Notice of Intent

Approximate Start Date: 10/1/11

☐ Report of Work Done

Date Work Completed:

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input checked="" type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input checked="" type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other:	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Howard Harris

Date: 10/1/11 Email: Howard.Harris@Williams.Com

Print Name: Howard Harris

Title: Sr. Regulatory Specialist

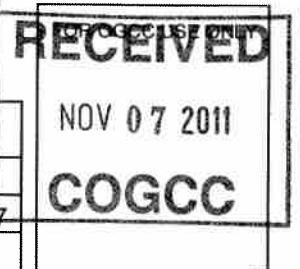
COGCC Approved:

Title: NWA E

Date: 2/2/12

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



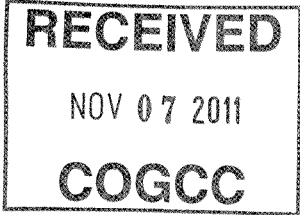
1. OGCC Operator Number:	96850	API Number:	05-103-11438-00
2. Name of Operator:	Williams Production RMT Co	OGCC Facility ID #	RGU
3. Well/Facility Name:	Federal	Well/Facility Number:	RG 411-6-297
4. Location (QtrQtr, Sec, Twp, Rng, Meridian):	NENE Sec 1 T2S-R98W		

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. DESCRIBE PROPOSED OR COMPLETED OPERATIONS

Williams request permission to change the BHL as indicated on page 1  
36# 9 5/8" Sfc Csg depth will be changed from: 3552' to 3548' Cement to surface  
11.6# 4 1/2" Prod Csg depth will be changed from:12473' to 12501. (See attached cement and casing design)

See attached New Plat 1., Directional Plan and prog



GEOLOGIC & DRILLING PROGNOSIS

WELL NAME: Federal RGU 411-6-297  
A11 Slot

LOCATION: Sec. 6-T2S-R97W  
Ryan Gulch Unit  
State Plane NAD83 Central

Surface:	2204821.6	1768869.6	X:Y
	-108.3349240	39.9102992	Long/Lat
Bottom hole:	2205961.2	1768667.0	X:Y
	-108.3308414	39.9098409	Long/Lat

Note: See plat for footages  
Hardline Notes: None

Rig: Cyclone 29 KB: 21

COUNTY: RIO BLANCO STATE: COLORADO

ELEVATION: PAD: 6573 GROUND: n/a KELLY BUSHING: 6594

ESTIMATE TOPS:

Formation	MD	TVD (Surface)	TVD (Subsea)	Formation Notes
Uinta	surface			
Green River Fm	1034	1024	5570	
A Groove	1206	1194	5400	aquifer. Cement Basket @ 1450'
B Groove	1399	1384	5210	aquifer. Tapered Surface from 14.75 to 13.5 @ 1500'
Dissolution Surface	1683	1664	4930	possible lost circulation zone. Cmt Stage Tool @ 1550
Garden Gulch	2642	2609	3985	Cement Basket @ 1700' and 1850'
Orange Marker	2820	2784	3810	
Wasatch	3048	3009	3585	surface casing at 3548'
G' Sand	5479	5404	1190	possible lost circulation zone
Ft. Union	5834	5754	840	
Ohio Creek	7181	7084	-490	possible lost circulation zone
Mesaverde	7511	7414	-820	
Top Gas	8091	7994	-1400	
Cameo Coals	10791	10694	-4100	
Rollins SS	11261	11164	-4570	
Cozzette	11411	11314	-4720	
Corcoran	11636	11539	-4945	
Upper Sego	12006	11909	-5315	
Lower Sego	12251	12154	-5560	
TD	12501	12404		

vertical hole from top of  
Mesaverde to TD. Interval  
is 4990' long

MUD LOGGING: Type: Remote Gas Unit  
Interval: If one of first three wells drilled on pad, surface to TD. Otherwise base surf csg to TD.

OPEN HOLE LOGS: Specifics: None  
Interval:  
Training well:

CASED HOLE LOGS: Specifics: Baker RPM-3D Pulsed Neutron from plugged back depth to 7000', GR to surface  
Processing: Emulation Triple Combo Using OH logs and training well  
Cement Evaluation: Baker Hughes Radial Bond Log c/w CCL/GR from plugged back depth to surface shoe

CSG & CEMENT PROGRAM:	csg size (in)	depth set at	hole size (in)	cmt sxs	WQC (hrs)
Conductor	18	80	30	To Surface-Ready Mix	
Surface	9.625	3548	14.75/13.5	1424	8
Intermediate					
Liner or Production	4.5	12501	8.75/7.875	As determined at TD	

MUD PROGRAM:	FROM	TO	TYPE MUD	#/GAL	VIS	WL	CHEMICALS
	0	3548	Spud/RCA	Water	45-50		
	3548	12501	Water Based	8.0-9.5	40-50	8-10	

(Write mud added to system on tour sheets and report all mud mixed and daily cost in morning report)

LOST CIRCULATION: Report depth and bbls of mud lost on morning report and tour sheet - Any severe lost circulation problems should be reported immediately to well supervisor.

SURVEYS: Run every 100' on surface hole and trips unless otherwise instructed.

WILLIAMS GEOLOGISTS:	Office	Home	Cell
Eric Stenberg	303- 606-4057	303-471-0091 <a href="mailto:eric.stenberg@williams.com">eric.stenberg@williams.com</a>	303-517-9636
Art Rowley	303- 606-4397	303-447-9695 <a href="mailto:art.rowley@williams.com">art.rowley@williams.com</a>	303-408-4536
Simon Cole	303- 606-4359	720-273-8281 <a href="mailto:simon.cole@williams.com">simon.cole@williams.com</a>	720-273-8281

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COGCC



SCALE 1" = 1000'

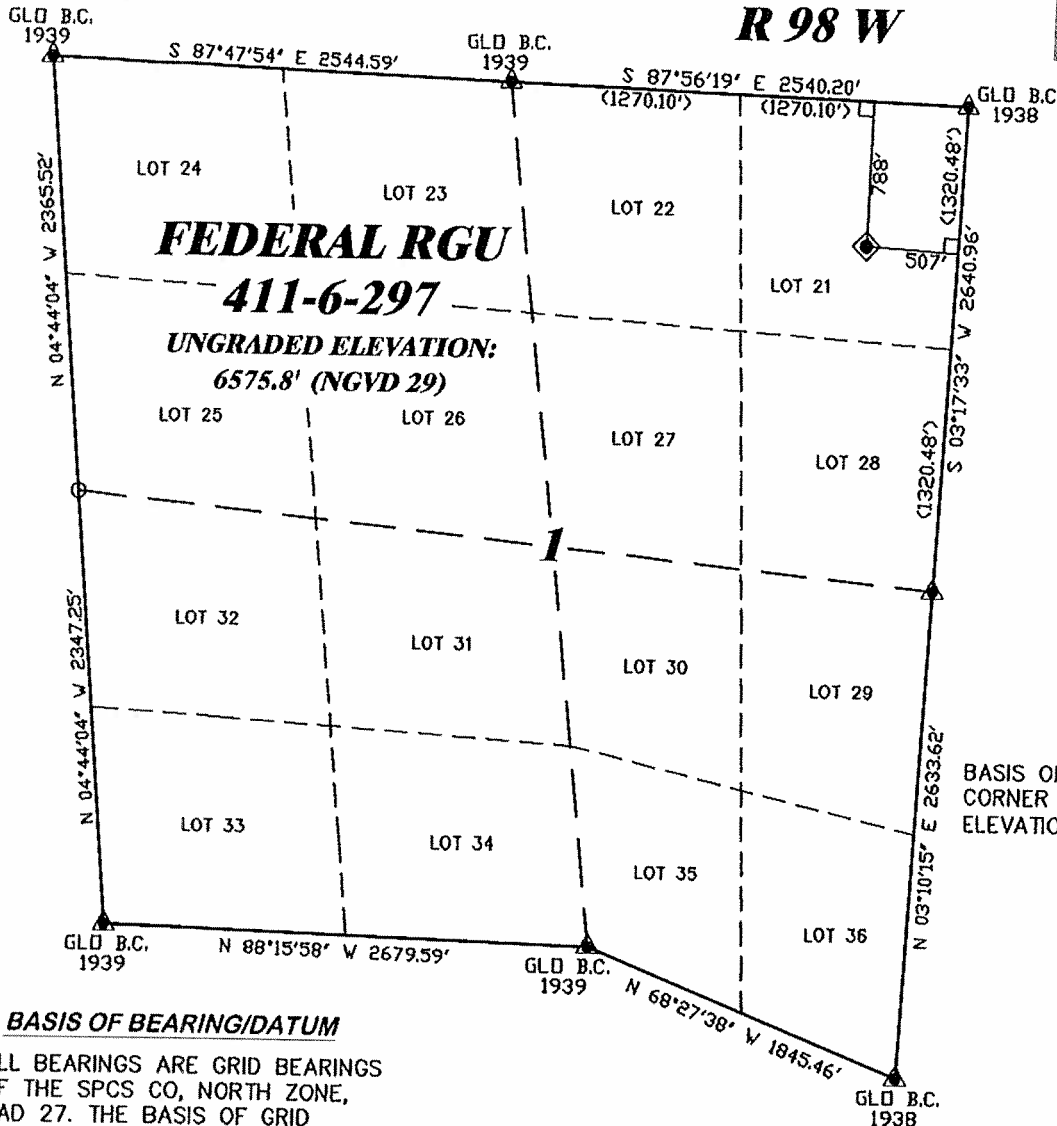
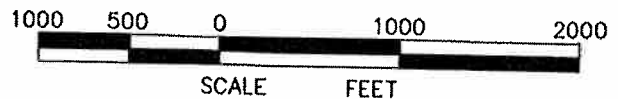
T 2 S

**LATITUDE (NAD 83)**  
NORTH 39.910299 DEG.  
**LONGITUDE (NAD 83)**  
WEST 108.334924 DEG.  
**NORTHING (NAD 83)**  
1768869.58  
**EASTING (NAD 83)**  
2204821.59

BASIS OF ELEVATION: NORTH 1/4  
CORNER SECTION 1, T 2 S, R 98 W.  
ELEVATION = 6616.23'

**LEGEND**

- ◆ WELL LOCATION
- ▲ PREVIOUSLY FOUND MONUMENT
- L DENOTES 90° TIE
- CALCULATED CORNER
- APPROXIMATE BHL



**BASIS OF BEARING/DATUM**

ALL BEARINGS ARE GRID BEARINGS OF THE SPCS CO, NORTH ZONE, NAD 27. THE BASIS OF GRID BEARING IS THE NORTH LINE OF THE NE 1/4 OF SEC. 1, BEING MONUMENTED WITH GLO BC'S. THAT BEARING BEING S 87°56'19" E

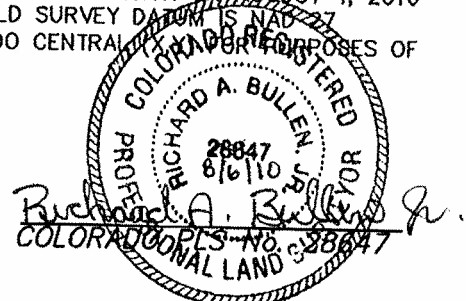
**SURVEYOR'S STATEMENT**

I, RICHARD A. BULLEN JR., AN EMPLOYEE AND AGENT ON BEHALF OF D.R. GRIFFIN & ASSOCIATES, INC. STATE THE PLAT HEREON IS A CORRECT REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION ON AUGUST 4, 2010 OF THE SHOWN FEDERAL RGU 411-6-297 AS STAKED ON THE GROUND. FIELD SURVEY DATUM IS NAD 27 COLORADO CENTRAL. VALUES HAVE BEEN CONVERTED TO NAD 83 COLORADO CENTRAL FOR PURPOSES OF THIS PLAT.

**NOTES**

GPS OPERATOR JOHN RICHARDSON OBSERVED A PDOP OF 3.3. ALL GPS OBSERVATIONS ARE IN ALL GPS OBSERVATIONS ARE IN COMPLIANCE WITH COGCC RULE NO. 215. LAND USE: HIGH PLATEAU DESERT NO IMPROVEMENTS WITHIN 400' RADIUS OF WELL SITE.

FEDERAL RGU 41-1-298 PAD



**GRIFFIN & ASSOCIATES, INC.**  
(307) 362-5028 1414 ELK ST., ROCK SPRINGS, WY 82901

DRAWN: 9/14/06	SCALE: 1" = 1000'
REVISED: 8/3/10 - SJC	DRG JOB No. 14550
NEW COORDINATES	EXHIBIT 1

**PLAT OF DRILLING LOCATION  
FOR**

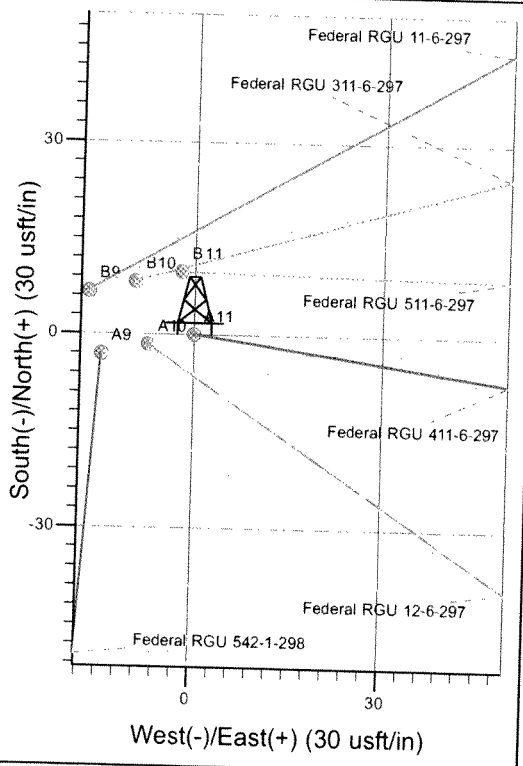
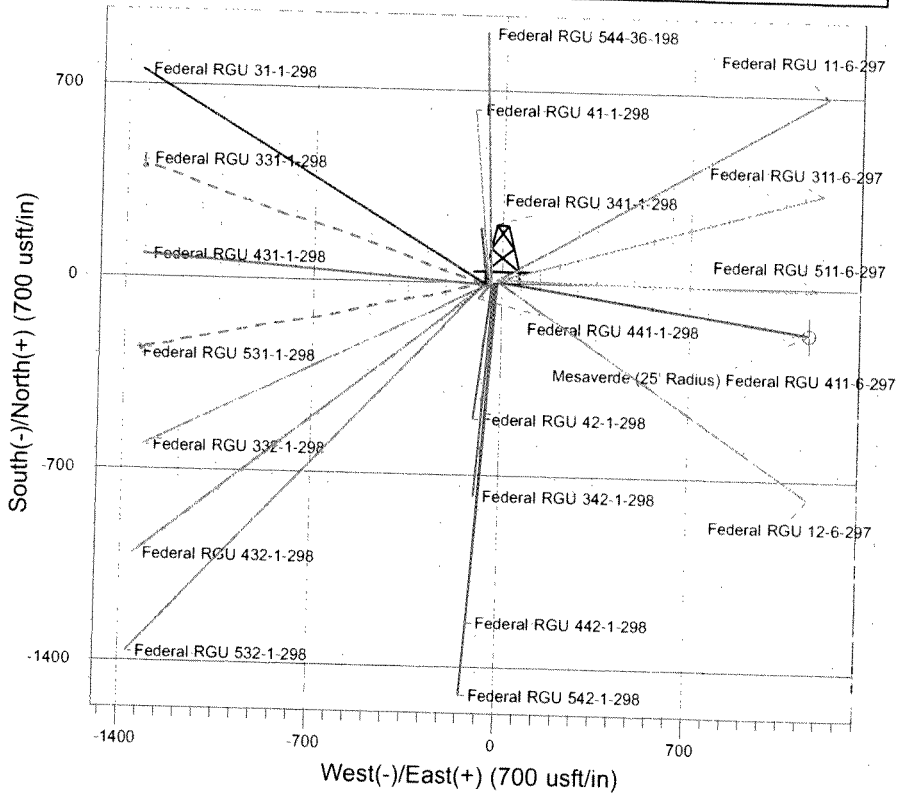
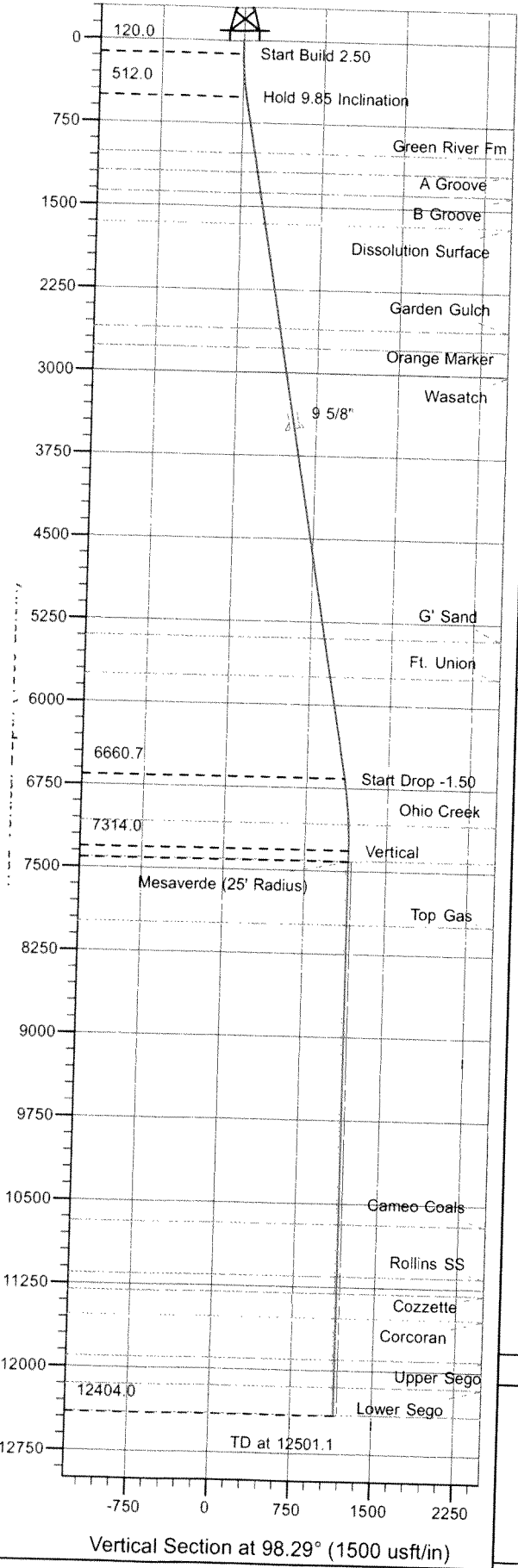
**WILLIAMS PRODUCTION RMT COMPANY**

788' F/NL & 507' F/EL, NENE, SECTION 1,  
T 2 S, R 98 W, 6th P.M.  
RIO BLANCO COUNTY, COLORADO





Surface Location: RGU 41-1-298 Pad  
North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
Ground Elevation: 6573.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1768869.60 2204821.60 39° 54' 37.077 N 108° 20' 5.726 W A11  
KELLY BUSHING @ 6594.0usft

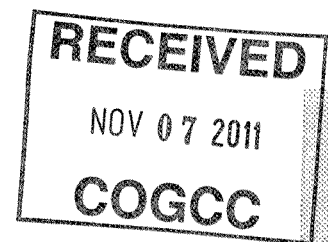


Project: RG 01-02S-098W  
Site: RGU 41-1-298 Pad  
Well: Federal RGU 411-6-297  
Plan #3 24Oct11 kjs

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ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.0	Start Build 2.50	
513.9	9.85	98.29	512.0	-4.9	33.4	33.8	33.8	Hold 9.85 Inclination	
6754.6	9.85	98.29	6660.7	-158.8	1089.6	1101.1	1101.1	Start Drop -1.50	
7411.1	0.00	0.00	7314.0	-166.9	1145.3	1157.4	1157.4	Vertical	
7511.1	0.00	0.00	7414.0	-166.9	1145.3	1157.4	1157.4	Mesaverde	
12501.1	0.00	0.00	12404.0	-166.9	1145.3	1157.4	1157.4	TD at 12501.1	



## **PICEANCE HL NAD 83**

**RG 01-02S-098W**

**RGU 41-1-298 Pad**

**Federal RGU 411-6-297 - Slot A11**

**Federal RGU 411-6-297**

**Plan: Plan #3 24Oct11 kjs**

## **Standard Planning Report - Geographic**

**26 October, 2011**



Database: COMPASS-PICEANCE  
Company: PICEANCE HL NAD 83  
Project: RG 01-02S-098W  
Site: RGU 41-1-298 Pad  
Well: Federal RGU 411-6-297  
Wellbore: Federal RGU 411-6-297  
Design: Plan #3 24Oct11 kjs

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

Well Federal RGU 411-6-297 - Slot A11  
KELLY BUSHING @ 6594.0usft  
KELLY BUSHING @ 6594.0usft  
True  
Minimum Curvature

Project	RG 01-02S-098W, Rio Blanco County, CO, RG 01-02S-098W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site RGU 41-1-298 Pad

Site Position:		Northing:	1,768,871.26 usft	Latitude:	39° 54' 37.079 N
From:	Map	Easting:	2,204,775.51 usft	Longitude:	108° 20' 6.318 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.788 °

Well Federal RGU 411-6-297 - Slot A11

Well Position	+N/-S	0.0 usft	Northing:	1,768,869.60 usft	Latitude:	39° 54' 37.077 N
	+E/-W	0.0 usft	Easting:	2,204,821.60 usft	Longitude:	108° 20' 5.726 W
Position Uncertainty	0.0 usft		Wellhead Elevation:		Ground Level:	6,573.0 usft

Wellbore Federal RGU 411-6-297

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/10/2011	10.528	66.010	52,402

Design Plan #3 24Oct11 kjs

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	98.29

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
513.9	9.85	98.29	512.0	-4.9	33.4	2.50	2.50	0.00	98.293	
6,754.6	9.85	98.29	6,660.7	-158.8	1,089.6	0.00	0.00	0.00	0.000	
7,411.1	0.00	0.00	7,314.0	-166.9	1,145.3	1.50	-1.50	0.00	180.000	
7,511.1	0.00	0.00	7,414.0	-166.9	1,145.3	0.00	0.00	0.00	0.000	
12,501.1	0.00	0.00	12,404.0	-166.9	1,145.3	0.00	0.00	0.00	0.000	Mesaverde (25' Radiu





Williams  
Planning Report - Geographic

Database: COMPASS-PICEANCE  
Company: PICEANCE HL NAD 83  
Project: RG 01-02S-098W  
Site: RGU 41-1-298 Pad  
Well: Federal RGU 411-6-297  
Wellbore: Federal RGU 411-6-297  
Design: Plan #3 24Oct11 kjs

Local Co-ordinate Reference: Well Federal RGU 411-6-297 - Slot A11  
TVD Reference: KELLY BUSHING @ 6594.0usft  
MD Reference: KELLY BUSHING @ 6594.0usft  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,768,869.60	2,204,821.60	39° 54' 37.077 N	108° 20' 5.726 W
120.0	0.00	0.00	120.0	0.0	0.0	1,768,869.60	2,204,821.60	39° 54' 37.077 N	108° 20' 5.726 W
Start Build 2.50									
200.0	2.00	98.29	200.0	-0.2	1.4	1,768,869.36	2,204,822.97	39° 54' 37.075 N	108° 20' 5.709 W
400.0	7.00	98.29	399.3	-2.5	16.9	1,768,866.61	2,204,838.42	39° 54' 37.053 N	108° 20' 5.509 W
513.9	9.85	98.29	512.0	-4.9	33.4	1,768,863.69	2,204,854.85	39° 54' 37.029 N	108° 20' 5.297 W
Hold 9.85 Inclination									
600.0	9.85	98.29	596.8	-7.0	48.0	1,768,861.11	2,204,869.35	39° 54' 37.008 N	108° 20' 5.110 W
800.0	9.85	98.29	793.8	-11.9	81.8	1,768,855.12	2,204,903.03	39° 54' 36.959 N	108° 20' 4.676 W
1,000.0	9.85	98.29	990.9	-16.9	115.7	1,768,849.14	2,204,936.71	39° 54' 36.910 N	108° 20' 4.242 W
1,033.6	9.85	98.29	1,024.0	-17.7	121.4	1,768,848.13	2,204,942.36	39° 54' 36.902 N	108° 20' 4.169 W
Green River Fm									
1,200.0	9.85	98.29	1,188.0	-21.8	149.5	1,768,843.15	2,204,970.39	39° 54' 36.862 N	108° 20' 3.807 W
1,206.1	9.85	98.29	1,194.0	-21.9	150.6	1,768,842.96	2,204,971.42	39° 54' 36.860 N	108° 20' 3.794 W
A Groove									
1,399.0	9.85	98.29	1,384.0	-26.7	183.2	1,768,837.19	2,205,003.89	39° 54' 36.813 N	108° 20' 3.375 W
B Groove									
1,400.0	9.85	98.29	1,385.0	-26.7	183.4	1,768,837.16	2,205,004.07	39° 54' 36.813 N	108° 20' 3.373 W
1,600.0	9.85	98.29	1,582.1	-31.7	217.2	1,768,831.17	2,205,037.75	39° 54' 36.764 N	108° 20' 2.939 W
1,683.2	9.85	98.29	1,664.0	-33.7	231.3	1,768,828.68	2,205,051.75	39° 54' 36.744 N	108° 20' 2.758 W
Dissolution Surface									
1,800.0	9.85	98.29	1,779.1	-36.6	251.1	1,768,825.18	2,205,071.43	39° 54' 36.715 N	108° 20' 2.504 W
2,000.0	9.85	98.29	1,976.2	-41.5	284.9	1,768,819.20	2,205,105.11	39° 54' 36.667 N	108° 20' 2.070 W
2,200.0	9.85	98.29	2,173.2	-46.5	318.8	1,768,813.21	2,205,138.79	39° 54' 36.618 N	108° 20' 1.635 W
2,400.0	9.85	98.29	2,370.3	-51.4	352.6	1,768,807.22	2,205,172.47	39° 54' 36.569 N	108° 20' 1.201 W
2,600.0	9.85	98.29	2,567.3	-56.3	386.5	1,768,801.23	2,205,206.15	39° 54' 36.520 N	108° 20' 0.767 W
2,642.3	9.85	98.29	2,609.0	-57.4	393.6	1,768,799.97	2,205,213.27	39° 54' 36.510 N	108° 20' 0.675 W
Garden Gulch									
2,800.0	9.85	98.29	2,764.4	-61.3	420.3	1,768,795.25	2,205,239.83	39° 54' 36.472 N	108° 20' 0.332 W
2,819.9	9.85	98.29	2,784.0	-61.8	423.7	1,768,794.65	2,205,243.18	39° 54' 36.467 N	108° 20' 0.289 W
Orange Marker									
3,000.0	9.85	98.29	2,961.4	-66.2	454.2	1,768,789.26	2,205,273.51	39° 54' 36.423 N	108° 19' 59.898 W
3,048.3	9.85	98.29	3,009.0	-67.4	462.3	1,768,787.81	2,205,281.64	39° 54' 36.411 N	108° 19' 59.793 W
Wasatch									
3,200.0	9.85	98.29	3,158.5	-71.1	488.0	1,768,783.27	2,205,307.19	39° 54' 36.374 N	108° 19' 59.463 W
3,400.0	9.85	98.29	3,355.5	-76.1	521.9	1,768,777.28	2,205,340.87	39° 54' 36.325 N	108° 19' 59.029 W
3,555.8	9.85	98.29	3,509.0	-79.9	548.2	1,768,772.62	2,205,367.10	39° 54' 36.287 N	108° 19' 58.691 W
9 5/8"									
3,600.0	9.85	98.29	3,552.6	-81.0	555.7	1,768,771.30	2,205,374.55	39° 54' 36.277 N	108° 19' 58.595 W
3,800.0	9.85	98.29	3,749.6	-85.9	589.6	1,768,765.31	2,205,408.23	39° 54' 36.228 N	108° 19' 58.160 W
4,000.0	9.85	98.29	3,946.7	-90.9	623.4	1,768,759.32	2,205,441.91	39° 54' 36.179 N	108° 19' 57.726 W
4,200.0	9.85	98.29	4,143.7	-95.8	657.3	1,768,753.33	2,205,475.59	39° 54' 36.130 N	108° 19' 57.292 W
4,400.0	9.85	98.29	4,340.8	-100.7	691.1	1,768,747.34	2,205,509.27	39° 54' 36.082 N	108° 19' 56.857 W
4,600.0	9.85	98.29	4,537.9	-105.7	725.0	1,768,741.36	2,205,542.95	39° 54' 36.033 N	108° 19' 56.423 W
4,800.0	9.85	98.29	4,734.9	-110.6	758.8	1,768,735.37	2,205,576.63	39° 54' 35.984 N	108° 19' 55.988 W
5,000.0	9.85	98.29	4,932.0	-115.5	792.7	1,768,729.38	2,205,610.31	39° 54' 35.935 N	108° 19' 55.554 W
5,200.0	9.85	98.29	5,129.0	-120.5	826.5	1,768,723.39	2,205,643.99	39° 54' 35.886 N	108° 19' 55.120 W
5,400.0	9.85	98.29	5,326.1	-125.4	860.4	1,768,717.41	2,205,677.67	39° 54' 35.838 N	108° 19' 54.685 W
5,479.1	9.85	98.29	5,404.0	-127.4	873.8	1,768,715.04	2,205,690.99	39° 54' 35.818 N	108° 19' 54.513 W
G' Sand									
5,600.0	9.85	98.29	5,523.1	-130.3	894.2	1,768,711.42	2,205,711.35	39° 54' 35.789 N	108° 19' 54.251 W
5,800.0	9.85	98.29	5,720.2	-135.3	928.1	1,768,705.43	2,205,745.03	39° 54' 35.740 N	108° 19' 53.816 W



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Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal RGU 411-6-297 - Slot A11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	MD Reference:	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	North Reference:	True
Well:	Federal RGU 411-6-297	Survey Calculation Method:	Minimum Curvature
Wellbore:	Federal RGU 411-6-297		
Design:	Plan #3 24Oct11 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,834.3	9.85	98.29	5,754.0	-136.1	933.9	1,768,704.40	2,205,750.81	39° 54' 35.732 N	108° 19' 53.742 W
<b>Ft. Union</b>									
6,000.0	9.85	98.29	5,917.2	-140.2	961.9	1,768,699.44	2,205,778.71	39° 54' 35.691 N	108° 19' 53.382 W
6,200.0	9.85	98.29	6,114.3	-145.1	995.8	1,768,693.46	2,205,812.39	39° 54' 35.643 N	108° 19' 52.948 W
6,400.0	9.85	98.29	6,311.3	-150.1	1,029.6	1,768,687.47	2,205,846.07	39° 54' 35.594 N	108° 19' 52.513 W
6,600.0	9.85	98.29	6,508.4	-155.0	1,063.5	1,768,681.48	2,205,879.75	39° 54' 35.545 N	108° 19' 52.079 W
6,754.6	9.85	98.29	6,660.7	-158.8	1,089.6	1,768,676.85	2,205,905.78	39° 54' 35.507 N	108° 19' 51.743 W
<b>Start Drop -1.50</b>									
6,800.0	9.17	98.29	6,705.5	-159.9	1,097.1	1,768,675.54	2,205,913.17	39° 54' 35.497 N	108° 19' 51.648 W
7,000.0	6.17	98.29	6,903.7	-163.8	1,123.5	1,768,670.87	2,205,939.44	39° 54' 35.459 N	108° 19' 51.309 W
7,181.0	3.45	98.29	7,084.0	-165.9	1,138.5	1,768,668.21	2,205,954.38	39° 54' 35.437 N	108° 19' 51.117 W
<b>Ohio Creek</b>									
7,200.0	3.17	98.29	7,103.0	-166.1	1,139.6	1,768,668.02	2,205,955.46	39° 54' 35.435 N	108° 19' 51.103 W
7,400.0	0.17	98.29	7,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.18	39° 54' 35.427 N	108° 19' 51.029 W
7,411.1	0.00	0.00	7,314.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Vertical</b>									
7,511.1	0.00	0.00	7,414.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Mesaverde - Mesaverde - Mesaverde (25' Radius) Federal RGU 411-6-297</b>									
7,600.0	0.00	0.00	7,502.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
7,800.0	0.00	0.00	7,702.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
8,000.0	0.00	0.00	7,902.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
8,091.1	0.00	0.00	7,994.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Top Gas</b>									
8,200.0	0.00	0.00	8,102.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
8,400.0	0.00	0.00	8,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
8,600.0	0.00	0.00	8,502.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
8,800.0	0.00	0.00	8,702.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
9,000.0	0.00	0.00	8,902.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
9,200.0	0.00	0.00	9,102.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
9,400.0	0.00	0.00	9,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
9,600.0	0.00	0.00	9,502.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
9,800.0	0.00	0.00	9,702.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
10,000.0	0.00	0.00	9,902.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
10,200.0	0.00	0.00	10,102.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
10,400.0	0.00	0.00	10,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
10,600.0	0.00	0.00	10,502.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
10,791.1	0.00	0.00	10,694.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Cameo Coals</b>									
10,800.0	0.00	0.00	10,702.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
11,000.0	0.00	0.00	10,902.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
11,200.0	0.00	0.00	11,102.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
11,261.1	0.00	0.00	11,164.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Rollins SS</b>									
11,400.0	0.00	0.00	11,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
11,411.1	0.00	0.00	11,314.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Cozzette</b>									
11,600.0	0.00	0.00	11,502.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
11,636.1	0.00	0.00	11,539.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Corcoran</b>									
11,800.0	0.00	0.00	11,702.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
12,000.0	0.00	0.00	11,902.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
12,006.1	0.00	0.00	11,909.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
<b>Upper Sego</b>									



Williams  
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal RGU 411-6-297 - Slot A11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	MD Reference:	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	North Reference:	True
Well:	Federal RGU 411-6-297	Survey Calculation Method:	Minimum Curvature
Wellbore:	Federal RGU 411-6-297		
Design:	Plan #3 24Oct11 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,200.0	0.00	0.00	12,102.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
12,251.1	0.00	0.00	12,154.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
Lower Sego									
12,400.0	0.00	0.00	12,302.9	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
12,501.1	0.00	0.00	12,404.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Mesaverde (25' Radius)	0.00	0.00	7,414.0	-166.9	1,145.3	1,768,667.00	2,205,961.20	39° 54' 35.427 N	108° 19' 51.029 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points						Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name					
3,555.8	3,509.0	9 5/8"				9.625	13.500

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,033.6	1,024.0	Green River Fm				
1,206.1	1,194.0	A Groove				
1,399.0	1,384.0	B Groove				
1,683.2	1,664.0	Dissolution Surface				
2,642.3	2,609.0	Garden Gulch				
2,819.9	2,784.0	Orange Marker				
3,048.3	3,009.0	Wasatch				
5,479.1	5,404.0	G' Sand				
5,834.3	5,754.0	Ft. Union				
7,181.0	7,084.0	Ohio Creek				
7,511.1	7,414.0	Mesaverde				
8,091.1	7,994.0	Top Gas				
10,791.1	10,694.0	Cameo Coals				
11,261.1	11,164.0	Rollins SS				
11,411.1	11,314.0	Cozzette				
11,636.1	11,539.0	Corcoran				
12,006.1	11,909.0	Upper Sego				
12,251.1	12,154.0	Lower Sego				
12,501.1	12,404.0	TD				



Williams  
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Federal RGU 411-6-297 - Slot A11
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	MD Reference:	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	North Reference:	True
Well:	Federal RGU 411-6-297	Survey Calculation Method:	Minimum Curvature
Wellbore:	Federal RGU 411-6-297		
Design:	Plan #3 24Oct11 kjs		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 2.50
513.9	512.0	-4.9	33.4	Hold 9.85 Inclination
6,754.6	6,660.7	-158.8	1,089.6	Start Drop -1.50
7,411.1	7,314.0	-166.9	1,145.3	Vertical
7,511.1	7,414.0	-166.9	1,145.3	Mesaverde
12,501.1	12,404.0	-166.9	1,145.3	TD at 12501.1