

State of Colorado
Oil and Gas Conservation

02541221

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2101



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NOV 07 2011

COGCC

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.)

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	X	X
3. Address: 1001 17th St., Suite 1200	Fax: (303) 629-8268		Surface Eqpm Diagram		
City: Denver State: CO Zip: 80202			Technical Info Page	X	X
5. API Number 05-103-11434-00	OGCC Facility ID Number	Other	X	X	
6. Well/Facility Name: Federal*	7. Well/Facility Number: RGU 441-1-298*				
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE 1-T2S-98W	10. Field Name: Sulphur Creek*				
9. County: Rio Blanco*	11. Federal, Indian or State Lease Number: COC62053* 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:	FSL	FSL	FEL/FWL	FWL
Change of Bottomhole Footage from Exterior Section Lines:	FNL	FNL	FEL	FEL
Change of Bottomhole Footage to Exterior Section Lines:	FNL	FNL	FEL	FEL

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer: NENE (Lot 21) Sec 1 T2S R98W

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

Longitude: Distance to nearest lease line: Approx 551' Is location in a High Density Area (rule 603b)? Yes/No: NO

Ground Elevation: Distance to nearest well same formation: 675' 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 STATUS**Date 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: 11/1/11

☐ **Report of Work Done**

Date Work Completed:

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

☐ **Intent to Recomplete (submit form 2)**☒ **Change Drilling Plans**☐ **Gross Interval Changed?**☒ **Casing/Cementing Program Change**☐ **Request to Vent or Flare**☐ **Repair Well**☐ **Rule 502 variance requested**☐ **Other:**☐ **E&P Waste Disposal**☐ **Beneficial Reuse of E&P Waste**☐ **Status Update/Change of Remediation Plans**

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:

Date: 11/1/11

Email: Howard.Harris@Williams.Com

Print Name:

Howard Harris

Title:

Sr. Regulatory Specialist

COGCC Approved:

Title: JWA/E

Date: 2/2/2012

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

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COGCC

1. OGCC Operator Number: 96850 API Number: 05-103-11434-00
2. Name of Operator: Williams Production RMT Co OGCC Facility ID # 441
3. Well/Facility Name: Federal Well/Facility Number: RGU 411-1-298
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE (Lot 21) 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

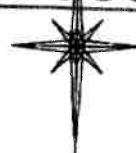
Williams request permission to change the BHL as indicated on page 1
36# 9 5/8" Sfc Csg wil remain at 3510', Cement to surface
11.6# 4 1/2" Prod Csg depth will be changed from:12315' to 12318. (See attached cement and casing design)

See attached New Plat 1., Directional Plan and prog

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SCALE 1" = 1000'

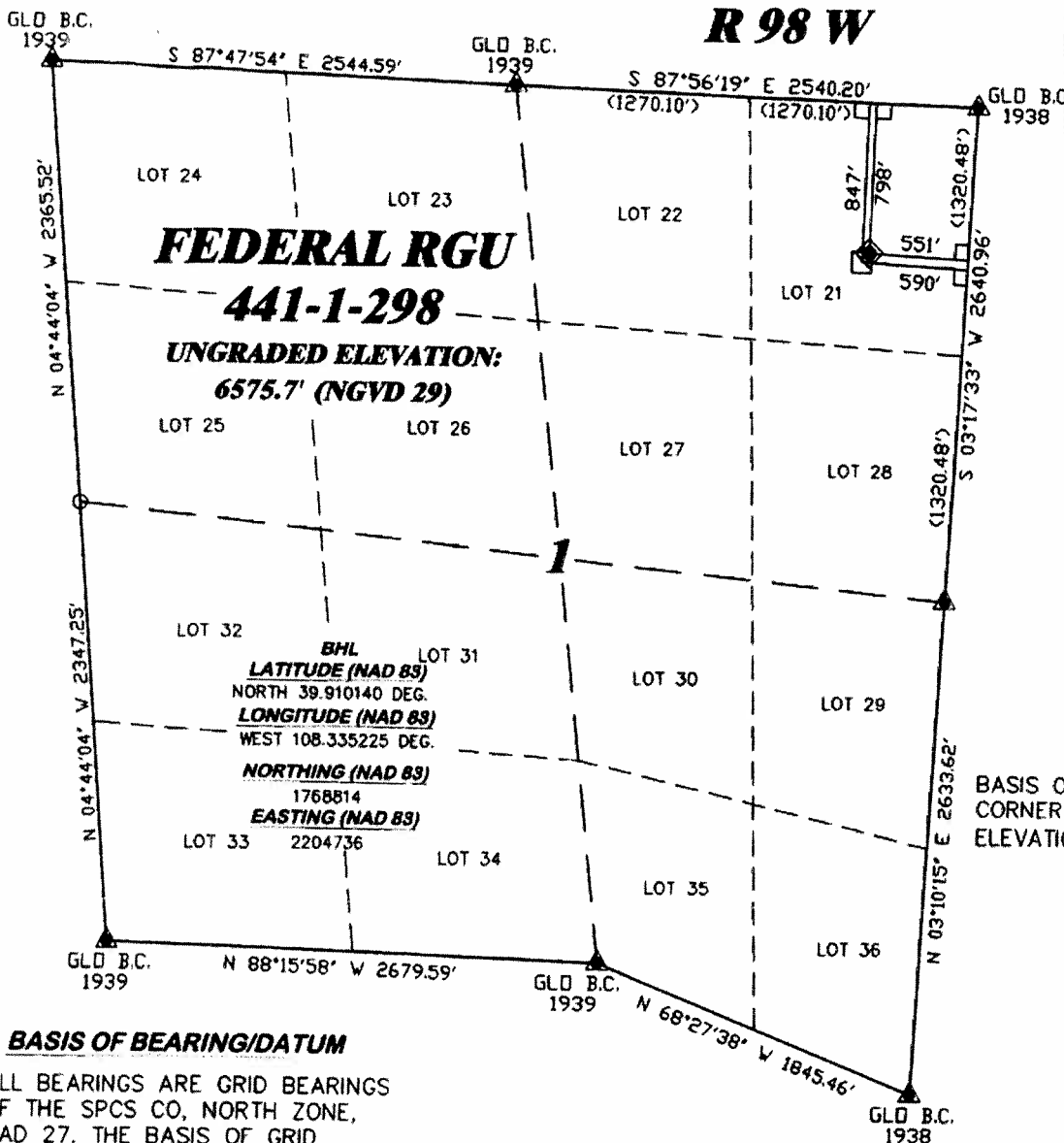
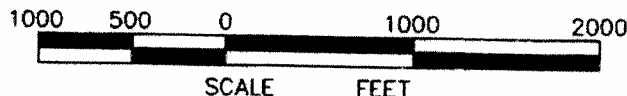
T 2 S

LATITUDE (NAD 83)
NORTH 39.910273 DEG.
LONGITUDE (NAD 83)
WEST 108.335081 DEG.
NORTHING (NAD 83)
1768861.42
EASTING (NAD 83)
2204777.33

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, DAVID E. HENDERHAN, 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 441-1-298 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 2.5.
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.
1414 ELK ST., ROCK SPRINGS, WY 82901

**PLAT OF DRILLING LOCATION
FOR
WILLIAMS PRODUCTION RMT COMPANY**
798' F/ NL & 551' F/ EL, LOT 21, SECTION 1,
T 2 S, R 98 W, 6th P.M.
RIO BLANCO COUNTY, COLORADO

DRAWN: 9/14/06

SCALE: 1" = 1000'

REVISED: 10/25/11 - RAS

DRG JOB No. 14550

REVISED BHL LOCATION

EXHIBIT 1

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COGCC

CASING & CEMENTING PLAN

Operator: Williams Production RMT Company
Well Name & Number: Ryan Gulch Unit 441-1-298
Location: Ryan Gulch

Casing Design Calculations											
Type of Casing	Size of Hole (inches)	Size of Casing (inches)	Weight per Foot (lbs/ft)	Grade	Thread	Interval (ft - ft)	Length (feet)	Setting Depth (TVD)	Collapse (psi)	Burst (psi)	Tension (psi)
Surface	14.750	9.625	36.0	J-55	ST&C	0-3510	3,510	3,509	2,020	3,520	394,000
Production	8.750	4.500	11.6	P-110	LT&C	0-12318	12,318	12,317	7,580	10,690	279,000

Surface Casing Shoe		Production Casing Shoe	
Max MW =	9.0 ppg	Max MW =	9.5 ppg
HP =	1,642 psi	HP =	6,085 psi

True Vertical Depth = 12,317 ft
Bottom Hole Pressure = 5,543 psi
Gradient = 0.45 psi/ft
Max. Sur. Pressure = 2,833 psi
BOP Required = 3M System

Casing Safety Factors			
Surface Casing	Pb = 1.24	Min = 1.000	OK > MIN
	Pc = 1.23	Min = 1.100	OK > MIN
	Sj = 3.12	Min = 1.600	OK > MIN
Production Casing	Pb = 3.77	Min = 1.000	OK > MIN
	Pc = 1.25	Min = 1.125	OK > MIN
	Sj = 1.95	Min = 1.600	OK > MIN

Cement Design Calculations

Estimating Cement for Ryan Gulch Wells (Permitting purpose only)

Critical Depths - Permitting Purposes Only	
Casing/Formation	Measured Depth
Cement DV Tool	1,550 ft
Surface Casing	3,510
Top of Mesaverde	7,385 ft
Top of Gas	7,995 ft
Total Depth	12,318 ft

Production Cement Tops (Permitting Purposes Only)	
Cement Slurry	Depth
1st Lead	3,310 ft
2nd Lead	7,185 ft
Tail	7,795 ft

Surface Cement	1st Stage		2nd Stage
	Lead	Tail	Tail
Volume, bbls	116	121	188
Volume, ft ³	654	681	1056
Volume, sacks	385	401	621
Slurry Weight, ppg	12.8	12.8	12.8
Slurry Yield, ft ³ /sk	1.700	1.700	1.700
Mixwater, gal/sk	13.440	13.440	13.440
Annular Capacity	0.1214	0.1214	0.1214
Total Sacks =			1,407

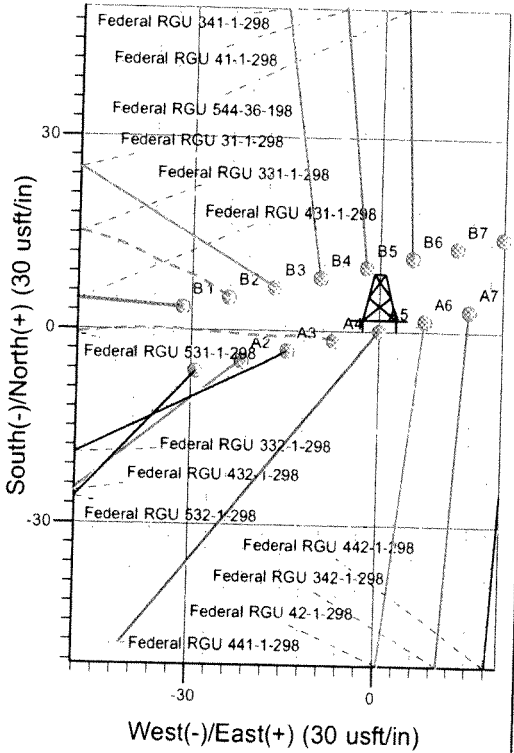
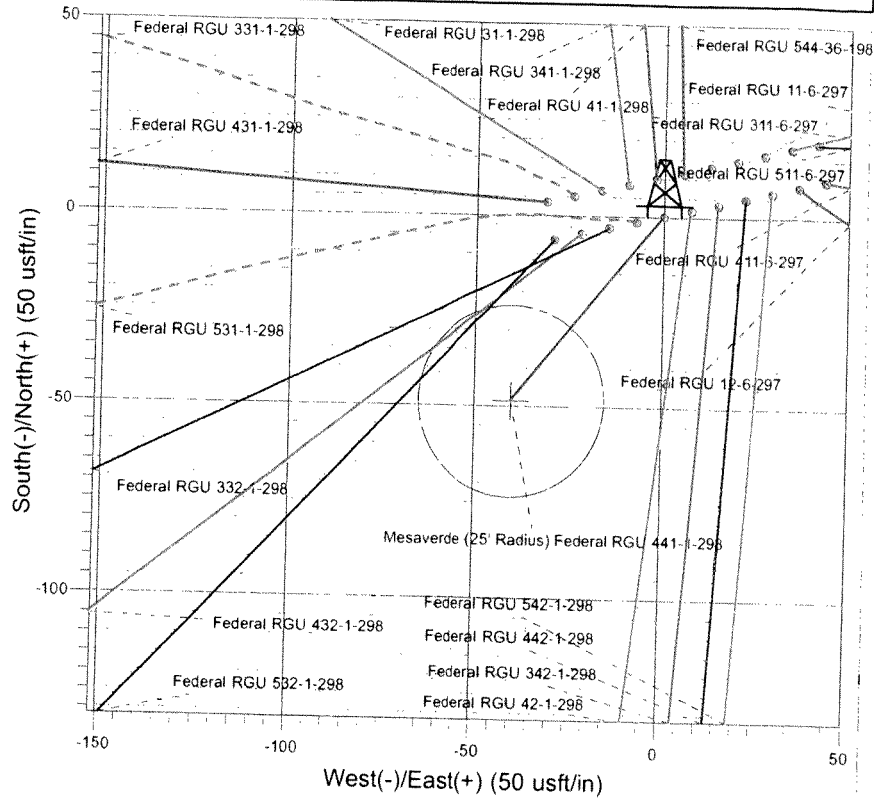
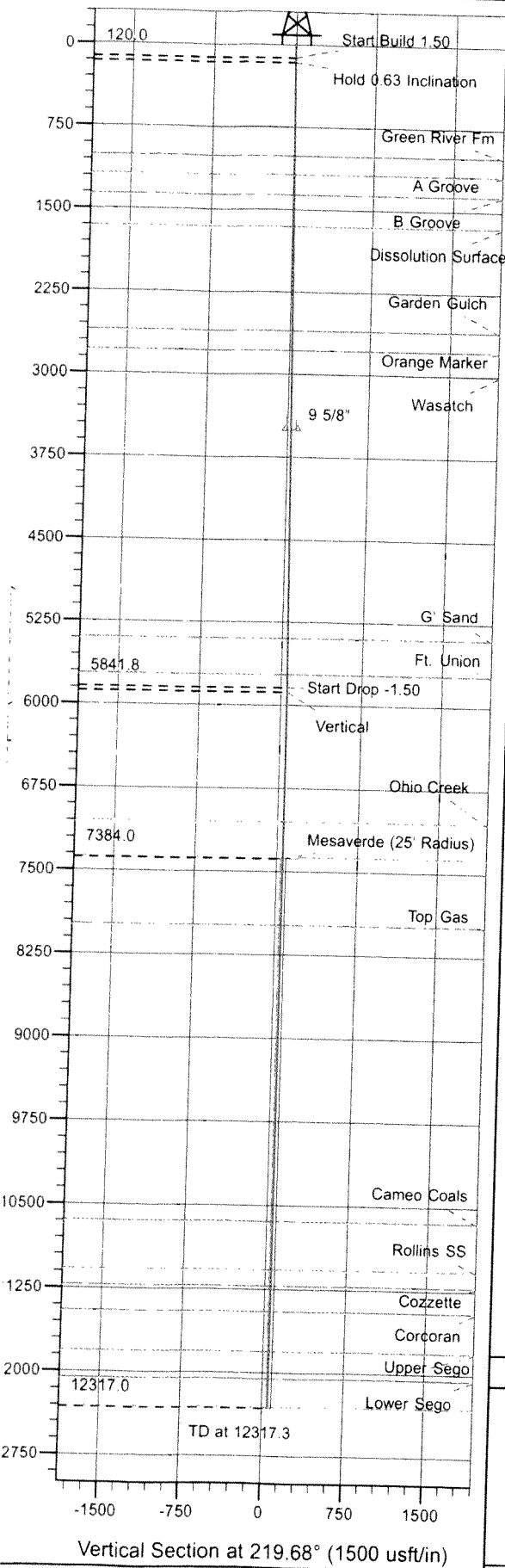
Production Cement	1st Lead	2nd Lead	Tail
Volume, bbls	212	33	184
Volume, cu ft	1190	187	1031
Volume, sacks	413	103	475
Slurry Weight, ppg	11.0	12.7	13.5
Slurry Yield, cu ft/sk	2.880	1.820	2.170
Annular Capacity	0.0547	0.0547	0.0406
Total Sacks =			991

NOTES:

Surface Casing 14-3/4" hole - Cement to surface. Assumed 14-3/4" hole is actually tapered to 13-1/2".
Production Casing 8-3/4" hole - Cement 100' to last casing string. Assumed 8-3/4" hole is actually tapered to 7-7/8".
No excess is included in calculations.
Normal Surface excess is 40% over gauge hole for 1st Stage and 70% over gauge hole for 2nd Stage.
Normal Production excess is 45% over gauge hole.



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 1768861.43 2204777.32 39° 54' 36.983 N 108° 20' 6.291 W A5
KELLY BUSHING @ 6594.0usft

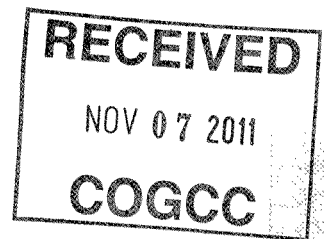


Project: RG 01-02S-098W
Site: RGU 41-1-298 Pad
Well: Federal RGU 441-1-298
Plan #2 24Oct11 kjs

Azimuths to True North
Magnetic North: 10.56°
Magnetic Field
Strength: 52423.6snT
Dip Angle: 66.02°
Date: 6/22/2011
Model: IGRF2010

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ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation	
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	Start Build 1.50
162.2	162.2	0.63	219.68	-0.2	-0.1	0.2	0.2	0.2	Hold 0.63 Inclination
5841.8	5842.2	0.63	219.68	-48.4	-40.2	62.9	62.9	62.9	Start Drop -1.50
5884.0	5884.3	0.00	0.00	-48.6	-40.3	63.2	63.2	63.2	Vertical
7384.0	7384.3	0.00	0.00	-48.6	-40.3	63.2	63.2	63.2	Mesaverde
12317.0	12317.3	0.00	0.00	-48.6	-40.3	63.2	63.2	63.2	TD at 12317.3



PICEANCE HL NAD 83

RG 01-02S-098W

RGU 41-1-298 Pad

Federal RGU 441-1-298 - Slot A5

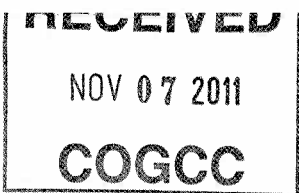
Federal RGU 441-1-298

Plan: Plan #2 24Oct11 kjs

Standard Planning Report - Geographic

25 October, 2011

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 441-1-298
Wellbore: Federal RGU 441-1-298
Design: Plan #2 24Oct11 kjs

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

Well Federal RGU 441-1-298 - Slot A5
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
From:	Map	Easting:	2,204,775.51 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	39° 54' 37.079 N
		Longitude:	108° 20' 6.318 W
		Grid Convergence:	-1.788 °

Well	Federal RGU 441-1-298 - Slot A5		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Federal RGU 441-1-298		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	6/22/2011	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)

Design	Plan #2 24Oct11 kjs		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)

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	
162.2	0.63	219.68	162.2	-0.2	-0.1	1.50	1.50	0.00	219.680	
5,842.2	0.63	219.68	5,841.8	-48.4	-40.2	0.00	0.00	0.00	0.000	
5,884.3	0.00	0.00	5,884.0	-48.6	-40.3	1.50	-1.50	0.00	180.000	
7,384.3	0.00	0.00	7,384.0	-48.6	-40.3	0.00	0.00	0.00	0.000	Mesaverde (25' Radiu
12,317.3	0.00	0.00	12,317.0	-48.6	-40.3	0.00	0.00	0.00	0.000	

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 441-1-298
Wellbore: Federal RGU 441-1-298
Design: Plan #2 24Oct11 kjs

Local Co-ordinate Reference: Well Federal RGU 441-1-298 - Slot A5
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	1,768,861.42	2,204,777.32	39° 54' 36.983 N	108° 20' 6.291 W
120.0	0.00	0.00	120.0	0.0	0.0	1,768,861.42	2,204,777.32	39° 54' 36.983 N	108° 20' 6.291 W
Start Build 1.50									
162.2	0.63	219.68	162.2	-0.2	-0.1	1,768,861.25	2,204,777.17	39° 54' 36.981 N	108° 20' 6.293 W
Hold 0.63 Inclination									
1,019.1	0.63	219.68	1,019.0	-7.5	-6.2	1,768,854.16	2,204,770.90	39° 54' 36.909 N	108° 20' 6.370 W
Green River Fm									
1,189.1	0.63	219.68	1,189.0	-8.9	-7.4	1,768,852.76	2,204,769.66	39° 54' 36.895 N	108° 20' 6.386 W
A Groove									
1,374.1	0.63	219.68	1,374.0	-10.5	-8.7	1,768,851.23	2,204,768.31	39° 54' 36.879 N	108° 20' 6.402 W
B Groove									
1,664.1	0.63	219.68	1,664.0	-12.9	-10.7	1,768,848.83	2,204,766.19	39° 54' 36.855 N	108° 20' 6.429 W
Dissolution Surface									
2,614.2	0.63	219.68	2,614.0	-21.0	-17.4	1,768,840.97	2,204,759.25	39° 54' 36.775 N	108° 20' 6.515 W
Garden Gulch									
2,794.2	0.63	219.68	2,794.0	-22.5	-18.7	1,768,839.48	2,204,757.93	39° 54' 36.760 N	108° 20' 6.531 W
Orange Marker									
3,009.2	0.63	219.68	3,009.0	-24.4	-20.2	1,768,837.70	2,204,756.36	39° 54' 36.742 N	108° 20' 6.550 W
Wasatch									
3,509.2	0.63	219.68	3,509.0	-28.6	-23.7	1,768,833.57	2,204,752.70	39° 54' 36.700 N	108° 20' 6.595 W
9 5/8"									
5,404.3	0.63	219.68	5,404.0	-44.7	-37.1	1,768,817.90	2,204,738.85	39° 54' 36.541 N	108° 20' 6.767 W
G' Sand									
5,734.3	0.63	219.68	5,734.0	-47.5	-39.4	1,768,815.17	2,204,736.44	39° 54' 36.513 N	108° 20' 6.797 W
Ft. Union									
5,842.2	0.63	219.68	5,841.8	-48.4	-40.2	1,768,814.27	2,204,735.65	39° 54' 36.504 N	108° 20' 6.806 W
Start Drop -1.50									
5,884.3	0.00	0.00	5,884.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Vertical									
7,064.3	0.00	0.00	7,064.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Ohio Creek									
7,384.3	0.00	0.00	7,384.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Mesaverde - Mesaverde - Mesaverde (50' Radius) Federal RGU 441-2-298 - Mesaverde (25' Radius) Federal RGU 441-1-298									
7,994.3	0.00	0.00	7,994.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Top Gas									
10,654.3	0.00	0.00	10,654.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Cameo Coals									
11,084.3	0.00	0.00	11,084.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Rollins SS									
11,229.3	0.00	0.00	11,229.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Cozzette									
11,459.3	0.00	0.00	11,459.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Corcoran									
11,819.3	0.00	0.00	11,819.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Upper Sego									
12,064.3	0.00	0.00	12,064.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
Lower Sego									
12,314.3	0.00	0.00	12,314.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
TD									
12,317.3	0.00	0.00	12,317.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
TD at 12317.3									

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 441-1-298
Wellbore: Federal RGU 441-1-298
Design: Plan #2 24Oct11 kjs

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

Well Federal RGU 441-1-298 - Slot A5
KELLY BUSHING @ 6594.0usft
KELLY BUSHING @ 6594.0usft
True
Minimum Curvature

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 (50' Radius)	0.00	0.00	7,384.0	-121.7	-43.2	1,768,741.10	2,204,730.30	39° 54' 35.780 N	108° 20' 6.846 W
- plan misses target center by 73.2usft at 7384.3usft MD (7384.0 TVD, -48.6 N, -40.3 E)									
- Circle (radius 50.0)									
Mesaverde (25' Radius)	0.00	0.00	7,384.0	-48.6	-40.3	1,768,814.10	2,204,735.50	39° 54' 36.502 N	108° 20' 6.808 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points

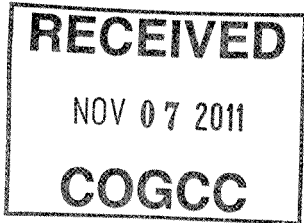
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
3,509.2	3,509.0	9 5/8"	9.625	13.500

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,019.1	1,019.0	Green River Fm			
1,189.1	1,189.0	A Groove			
1,374.1	1,374.0	B Groove			
1,664.1	1,664.0	Dissolution Surface			
2,614.2	2,614.0	Garden Gulch			
2,794.2	2,794.0	Orange Marker			
3,009.2	3,009.0	Wasatch			
5,404.3	5,404.0	G' Sand			
5,734.3	5,734.0	Ft. Union			
7,064.3	7,064.0	Ohio Creek			
7,384.3	7,384.0	Mesaverde			
7,994.3	7,994.0	Top Gas			
10,654.3	10,654.0	Cameo Coals			
11,084.3	11,084.0	Rollins SS			
11,229.3	11,229.0	Cozzette			
11,459.3	11,459.0	Corcoran			
11,819.3	11,819.0	Upper Sego			
12,064.3	12,064.0	Lower Sego			
12,314.3	12,314.0	TD			
				0.000	

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 1.50
162.2	162.2	-0.2	-0.1	Hold 0.63 Inclination
5,842.2	5,841.8	-48.4	-40.2	Start Drop -1.50
5,884.3	5,884.0	-48.6	-40.3	Vertical
7,384.3	7,384.0	-48.6	-40.3	Mesaverde
12,317.3	12,317.0	-48.6	-40.3	TD at 12317.3



Prepared: 10/25/11 ECS

GEOLOGIC & DRILLING PROGNOSIS

WELL NAME: Federal RGU 441-1-298
A5 Slot

LOCATION: Sec. 1-T2S-R98W
Ryan Gulch Unit
State Plane NAD83 Central

Surface:	2204777.3	1768861.4	X:Y
	-108.3350809	39.9102730	Long/Lat
Bottom hole:	2204735.5	1768814.1	X:Y
	-108.3352246	39.9101395	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	1019	1019	5575	
A Groove	1189	1189	5405	aquifer. Cement Basket @ 1450'
B Groove	1374	1374	5220	aquifer. Tapered Surface from 14.75 to 13.5 @ 1500'
Dissolution Surface	1664	1664	4930	possible lost circulation zone. Cmt Stage Tool @ 1550'
Garden Gulch	2614	2614	3980	Cement Basket @ 1700' and 1850'
Orange Marker	2794	2794	3800	
Wasatch	3009	3009	3585	surface casing at 3509'
G' Sand	5404	5404	1190	possible lost circulation zone
Ft. Union	5734	5734	860	
Ohio Creek	7064	7064	-470	possible lost circulation zone
Mesaverde	7384	7384	-790	
Top Gas	7994	7994	-1400	
Cameo Coals	10654	10654	-4060	
Rollins SS	11084	11084	-4490	
Cozzette	11229	11229	-4635	
Corcoran	11459	11459	-4865	
Upper Sego	11819	11819	-5225	
Lower Sego	12064	12064	-5470	
TD	12314	12314		

vertical hole from top of Mesaverde to TD. Interval is 4930' 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: Baker Triple Combo
Interval: From TD to surface shoe, GR to surface.
Training well: No

CASED HOLE LOGS: Specifics:
Processing:
Cement Evaluation: Baker Hughes Radial Bond Log c/w CCL/GR from plugged back depth to surface shoe

	csg size (in)	depth set at	hole size (in)	cmt sxs	WOC (hrs)
Conductor	18	80	30	To Surface-Ready Mix	
Surface	9.625	3509	14.75/13.5	1407	8
Intermediate					
Liner or Production	4.5	12314	8.75/7.875	As determined at TD	

FROM	TO	TYPE MUD	#/GAL	VIS	WL	CHEMICALS
0	3509	Spud/RCA	Water	45-50		
3509	12314	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 eric.stenberg@williams.com	303-517-9636
Art Rowley	303- 606-4397	303-447-9695 art.rowley@williams.com	303-408-4536
Simon Cole	303- 606-4359	720-273-8281 simon.cole@williams.com	720-273-8281