

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>						<b>1. WELL NAME and NUMBER</b> NBU 1022-9G4CS				
<b>2. TYPE OF WORK</b> DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						<b>3. FIELD OR WILDCAT</b> NATURAL BUTTES				
<b>4. TYPE OF WELL</b> Gas Well      Coalbed Methane Well: NO						<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b> NATURAL BUTTES				
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.						<b>7. OPERATOR PHONE</b> 720 929-6100				
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> Andy.Lytle@anadarko.com				
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> UTU 01196-D			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>				
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>				
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>				
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b>			<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
<b>20. LOCATION OF WELL</b>		<b>FOOTAGES</b>		<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>		
LOCATION AT SURFACE		1917 FSL 1784 FEL		NWSE	9	10.0 S	22.0 E	S		
Top of Uppermost Producing Zone		2359 FNL 1825 FEL		SWNE	9	10.0 S	22.0 E	S		
At Total Depth		2359 FNL 1825 FEL		SWNE	9	10.0 S	22.0 E	S		
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 819			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 320				
<b>27. ELEVATION - GROUND LEVEL</b> 5208			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 790			<b>26. PROPOSED DEPTH</b> MD: 9022 TVD: 8865				
<b>28. BOND NUMBER</b> WYB000291			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 43-8496							
<b>Hole, Casing, and Cement Information</b>										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2390	28.0	J-55 LT&C	0.2	Type V	180	1.15	15.8
							Class G	270	1.15	15.8
Prod	7.875	4.5	0 - 9022	11.6	I-80 LT&C	12.0	Premium Lite High Strength	300	3.38	12.0
							50/50 Poz	1240	1.31	14.3
<b>ATTACHMENTS</b>										
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>										
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
<b>NAME</b> Joel Malefyt			<b>TITLE</b> Regulatory Analyst			<b>PHONE</b> 720 929-6828				
<b>SIGNATURE</b>			<b>DATE</b> 07/02/2014			<b>EMAIL</b> joel.malefyt@anadarko.com				
<b>API NUMBER ASSIGNED</b> 43047545620000			<b>APPROVAL</b>			 Permit Manager				

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-9G4CS**

Surface: 1917 FSL / 1784 FEL NWSE  
 BHL: 2359 FNL / 1825 FEL SWNE

Section 9 T10S R22E

Unitah County, Utah  
 Mineral Lease: USA UTU 01196-D

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

1. & 2.a **Estimated Tops of Important Geologic Markers:**  
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,166'	
Birds Nest	1,485'	Water
Mahogany	1,936'	Water
Wasatch	4,300'	Gas
Mesaverde	6,730'	Gas
Sego	8,865'	Gas
TVD =	8,865'	
TD =	9,022'	

- 2.b Kerr McGee Oil & Gas Onshore LP (Kerr McGee) may elect to drill to (i) the Blackhawk formation (part of the Mesaverde Group), (ii) to a shallower depth within the Mesaverde Group, or (iii) to the Wasatch Formation. If Kerr McGee drills to the Blackhawk formation, please refer to Blackhawk as the bottom formation. The attached Blackhawk Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the deeper formation.

If Kerr-McGee drills to a shallower depth in the Mesaverde Group or to the Wasatch Formation, please refer to the attached Wasatch/Mesaverde Drilling Program which includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the shallower formations.

3. **Pressure Control Equipment**

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

**4. Proposed Casing & Cementing Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**5. Drilling Fluids Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**6. Evaluation Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**7. Abnormal Conditions:****Wasach Formation/Mesaverde Group**

Maximum anticipated bottom hole pressure calculated at 8865' TVD, approximately equals  
5,408 psi (0.61 psi/ft = actual bottomhole gradient)

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Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 3,481 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-  
(0.22 psi/ft-partial evac gradient x TVD of next csg point))

**8. Anticipated Starting Dates:**

Drilling is planned to commence immediately upon approval of this application.

**9. Variances:**

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

**10. Other Information:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program





**KERR-McGEE OIL & GAS ONSHORE LP**  
**Wasatch/Mesaverde Drilling Program**

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	DQX
								TENSION	
CONDUCTOR	14"	0-40'				3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,390	28.00	IJ-55	LTC	2.25	1.68	5.94	N/A
						7,780	6,350		267,035
PRODUCTION	4-1/2"	0 to 5,000	11.60	I-80	DQX	1.11	1.15		3.12
						7,780	6,350	223,000	
	4-1/2"	5,000 to 9,022'	11.60	I-80	LTC	1.11	1.15	5.85	

**Surface Casing:**

(Burst Assumptions: TD = 12.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe  
Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.61 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

**CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
	TOP OUT CMT (6 jobs) 1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>						
SURFACE Option 2	LEAD 1,890'	Premium cmt + 16% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOC + GR 3 pps	230	35%	12.00	2.86
	TAIL 500'	Premium cmt + 2% CaCl + 0.25 pps Flocele + 3% salt BWOC + GR 3 pps	150	35%	15.80	1.15
	TOP OUT CMT as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD 3,792'	Premium Lite II +0.25 pps celloflake + .4% FL-52 + .3% R-3 + .5 lbs/sk Kol-Seal + 6%Bentonite II + 1.2% Sodium Metasilicate + .05 lbs/sk Static Free	300	35%	12.00	3.38
	TAIL 5,230'	50/50 Poz/G + 10% salt + .05 lbs/sk Static Free + 1.2% Sodium Metasilicate + .5 % EC-1 +.002 gps FP-6L + 2% Bentonite II	1,240	35%	14.30	1.31

\*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

\*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

**FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well. 1 centralizer on the first 3 joints and one every third joint thereafter.

**ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

IF extreme mud losses are observed OR cement doesn't reach surface on a well on the pad, a DV Tool may be used. With Cement Baskets above and Below it.

DRILLING ENGINEER:

Eric Giles / Tyler Elliot / Frank Fernandez

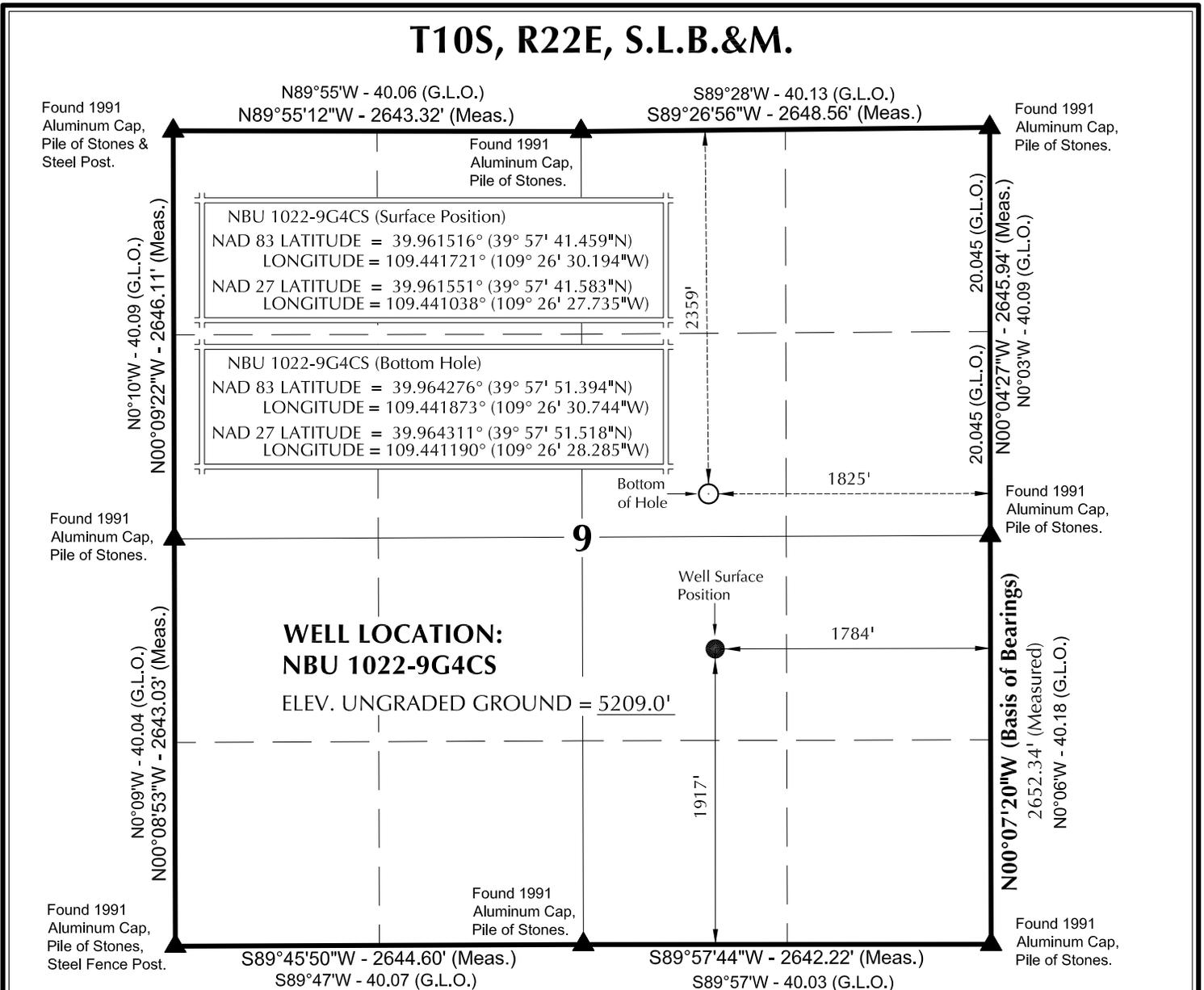
DATE:

DRILLING SUPERINTENDENT:

Kenny Gathings / Lovel Young

DATE:

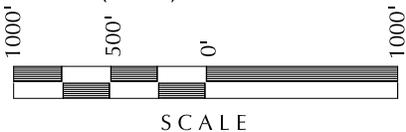
# T10S, R22E, S.L.B.&M.



**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines. G.L.O. distances are shown in feet or chains.
- 2. 1 chain = 66 feet.
- 3. The Bottom of hole bears N02°27'09"W 1006.49' from the Surface Position.
- 4. NAD 83 Latitude & Longitude are (CORS 96)(EPOCH:2002).
- 5. Bearings and Distances are based upon a Local Cartesian Grid, oriented to Geodetic North at the North 1/4 Corner of Section 8, T10S, R22E, S.L.B.&M. The Grid having a mean project height of 5300'. Lineal units used are U.S. Survey Foot.
- 6. Basis of elevation is Tri-Sta "Two Water" located in Lot 4 of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street - Denver, Colorado 80202



**SURVEYOR'S CERTIFICATE**

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PROF. SEAL  
No. 6028691  
JOHN R. LAUGH  
2013  
PROFESSIONAL LAND SURVEYOR  
REGISTRATION No. 6028691  
STATE OF UTAH



**609 CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**TIMBERLINE** (435) 789-1365  
ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 06-17-13	SURVEYED BY: J.W.	SHEET NO: <b>5</b> 5 OF 17
DATE DRAWN: 07-16-13	DRAWN BY: J.G.C.	
SCALE: 1" = 1000'		
Date Last Revised:		

**WELL PAD - NBU 1022-9J**

**NBU 1022-9G4CS  
WELL PLAT**  
2359' FNL, 1825' FEL (Bottom Hole)  
SW 1/4 NE 1/4 OF SECTION 9, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH.

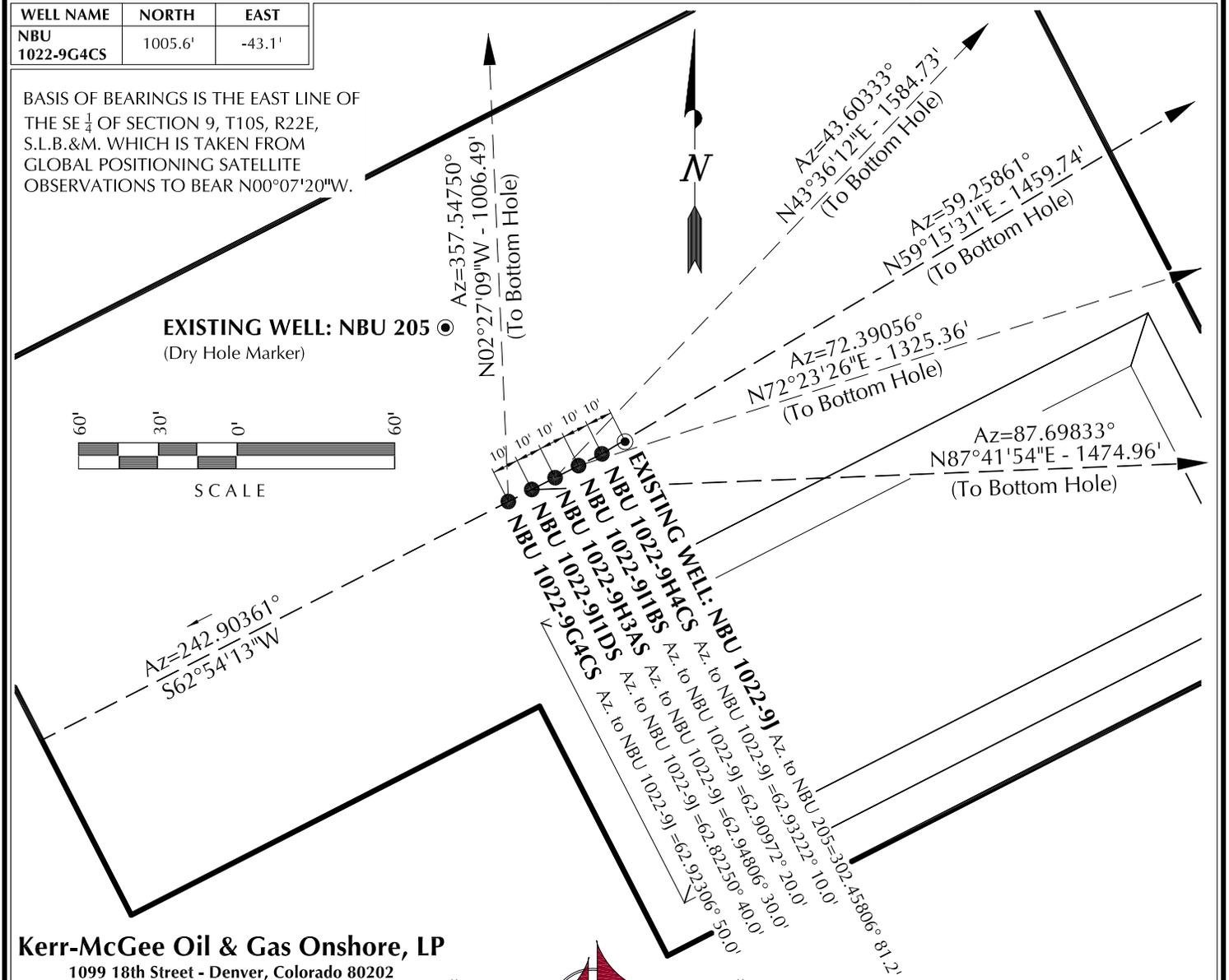
WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1022-9H4CS	39°57'41.639"N 39.961566°N	109°26'29.736"W 109.441593°W	39°57'41.763"N 39.961601°N	109°26'27.278"W 109.440911°W	1935' FSL 1748' FEL	39°57'49.007"N 39.963613°N	109°26'13.625"W 109.437118°W	39°57'49.131"N 39.963648°N	109°26'11.167"W 109.436435°W	2613' FNL 492' FEL
NBU 1022-9I1BS	39°57'41.594"N 39.961554°N	109°26'29.851"W 109.441625°W	39°57'41.718"N 39.961588°N	109°26'27.392"W 109.440942°W	1931' FSL 1757' FEL	39°57'45.552"N 39.962653°N	109°26'13.630"W 109.437119°W	39°57'45.676"N 39.962688°N	109°26'11.172"W 109.436437°W	2331' FSL 493' FEL
NBU 1022-9H3AS	39°57'41.549"N 39.961541°N	109°26'29.965"W 109.441657°W	39°57'41.673"N 39.961576°N	109°26'27.507"W 109.440974°W	1926' FSL 1766' FEL	39°57'52.884"N 39.964690°N	109°26'15.929"W 109.437758°W	39°57'53.008"N 39.964724°N	109°26'13.470"W 109.437075°W	2219' FNL 671' FEL
NBU 1022-9I1DS	39°57'41.503"N 39.961529°N	109°26'30.079"W 109.441689°W	39°57'41.627"N 39.961563°N	109°26'27.620"W 109.441006°W	1922' FSL 1775' FEL	39°57'42.084"N 39.961690°N	109°26'11.157"W 109.436432°W	39°57'42.208"N 39.961725°N	109°26'08.699"W 109.435750°W	1980' FSL 301' FEL
NBU 1022-9G4CS	39°57'41.459"N 39.961516°N	109°26'30.194"W 109.441721°W	39°57'41.583"N 39.961551°N	109°26'27.735"W 109.441038°W	1917' FSL 1784' FEL	39°57'51.394"N 39.964276°N	109°26'30.744"W 109.441873°W	39°57'51.518"N 39.964311°N	109°26'28.285"W 109.441190°W	2359' FNL 1825' FEL
NBU 1022-9J	39°57'41.683"N 39.961579°N	109°26'29.622"W 109.441562°W	39°57'41.808"N 39.961613°N	109°26'27.164"W 109.440879°W	1940' FSL 1739' FEL					
NBU 205	39°57'42.114"N 39.961698°N	109°26'30.502"W 109.441806°W	39°57'42.238"N 39.961733°N	109°26'28.043"W 109.441123°W	1984' FSL 1808' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-9H4CS	746.2'	1254.6'	NBU 1022-9I1BS	401.0'	1263.3'	NBU 1022-9H3AS	1147.6'	1092.9'	NBU 1022-9I1DS	59.2'	1473.8'

WELL NAME	NORTH	EAST
NBU 1022-9G4CS	1005.6'	-43.1'

BASIS OF BEARINGS IS THE EAST LINE OF THE SE ¼ OF SECTION 9, T10S, R22E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°07'20"W.



**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-9J**

**WELL PAD INTERFERENCE PLAT  
WELLS - NBU 1022-9H4CS,  
NBU 1022-9I1BS, NBU 1022-9H3AS,  
NBU 1022-9I1DS & NBU 1022-9G4CS  
LOCATED IN SECTION 9, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH.**



**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

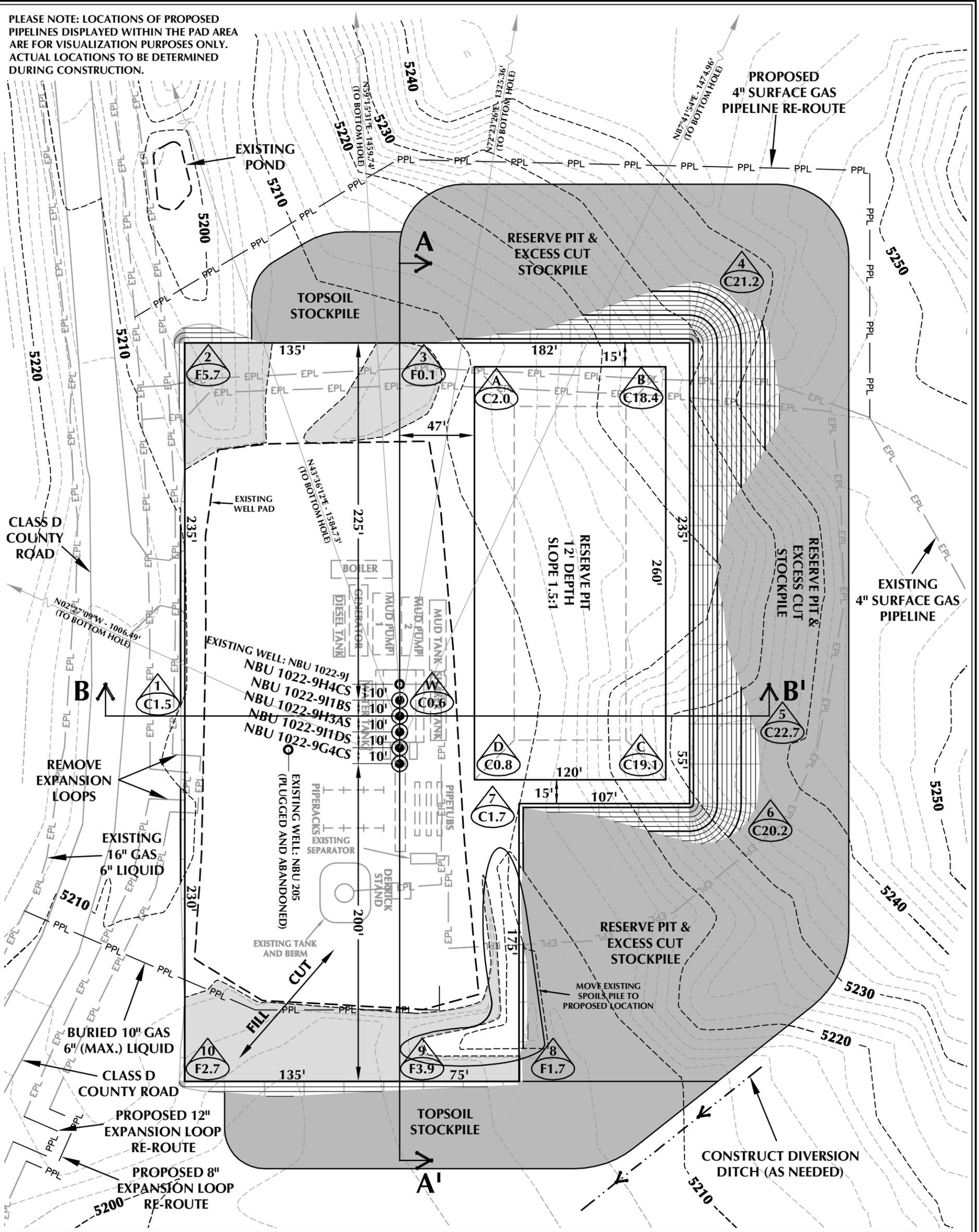
**TIMBERLINE**

(435) 789-1365

ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 06-17-13	SURVEYED BY: J.W.	SHEET NO: <b>6</b>
DATE DRAWN: 07-16-13	DRAWN BY: J.G.C.	
SCALE: 1" = 60'	Date Last Revised:	6 OF 17

PLEASE NOTE: LOCATIONS OF PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.



**WELL PAD - NBU 1022-9J DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5208.9'  
 FINISHED GRADE ELEVATION = 5208.3'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.42 ACRES  
 TOTAL DISTURBANCE AREA = 5.53 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-9J

WELL PAD - LOCATION LAYOUT  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 17,027 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,261 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,732 C.Y.  
 EXCESS MATERIAL = 14,766 C.Y.

**RESERVE PIT QUANTITIES**

TOTAL CUT FOR RESERVE PIT  
 +/- 11,020 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 42,290 BARRELS

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE

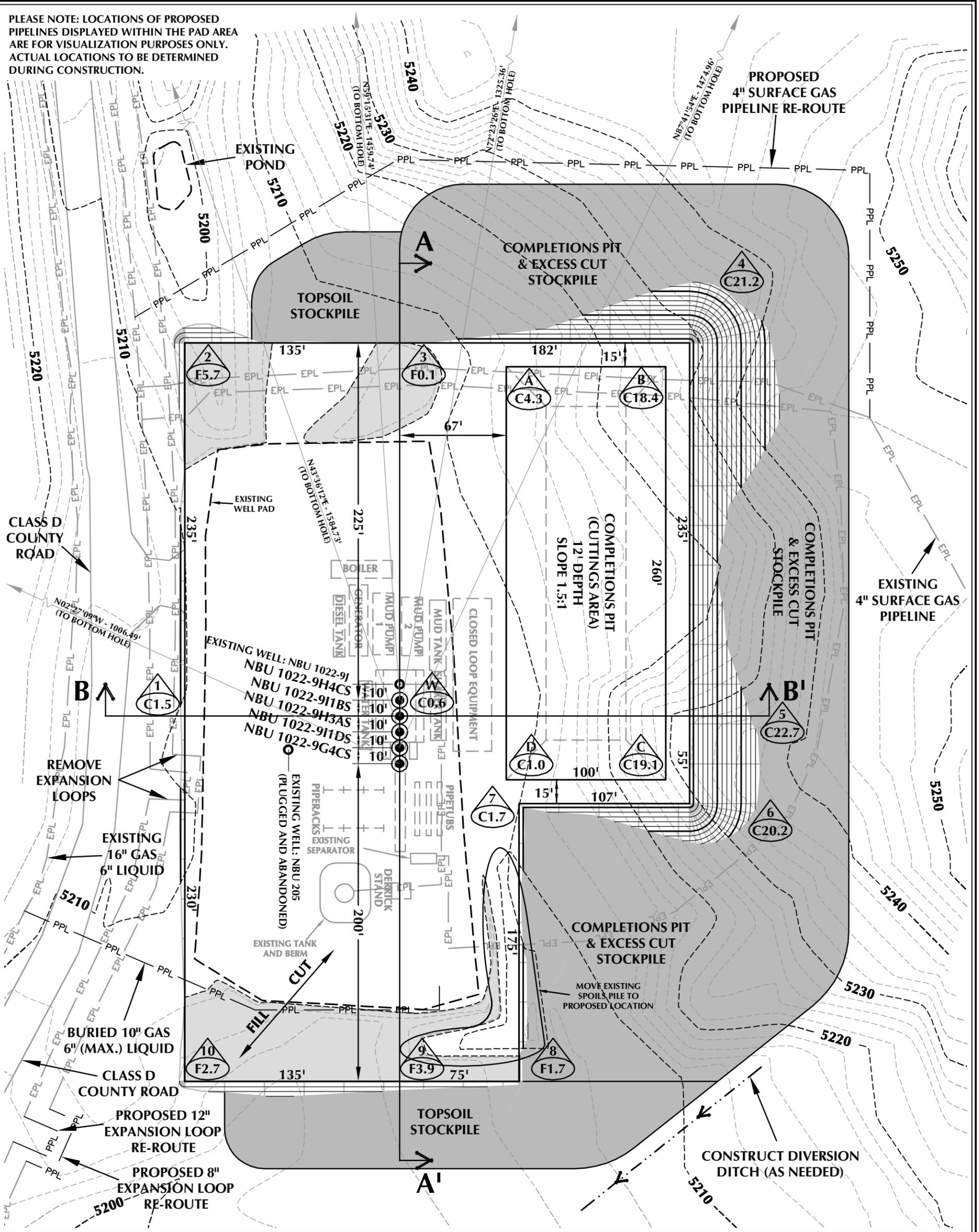


HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

SCALE: 1"=60' DATE: 7/25/13 SHEET NO:  
 REVISED: 11/18/13 **7** 7 OF 17

**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

PLEASE NOTE: LOCATIONS OF PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.



**WELL PAD - NBU 1022-9J (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5208.9'  
 FINISHED GRADE ELEVATION = 5208.3'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.42 ACRES  
 TOTAL DISTURBANCE AREA = 5.53 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-9J

WELL PAD - LOCATION LAYOUT  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 17,027 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,261 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,732 C.Y.  
 EXCESS MATERIAL = 14,766 C.Y.

**COMPLETIONS PIT QUANTITIES**

TOTAL CUT FOR COMPLETIONS PIT  
 +/- 8,870 C.Y.  
 COMPLETIONS PIT CAPACITY  
 (2' OF FREEBOARD)  
 +/- 33,770 BARRELS

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE



HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

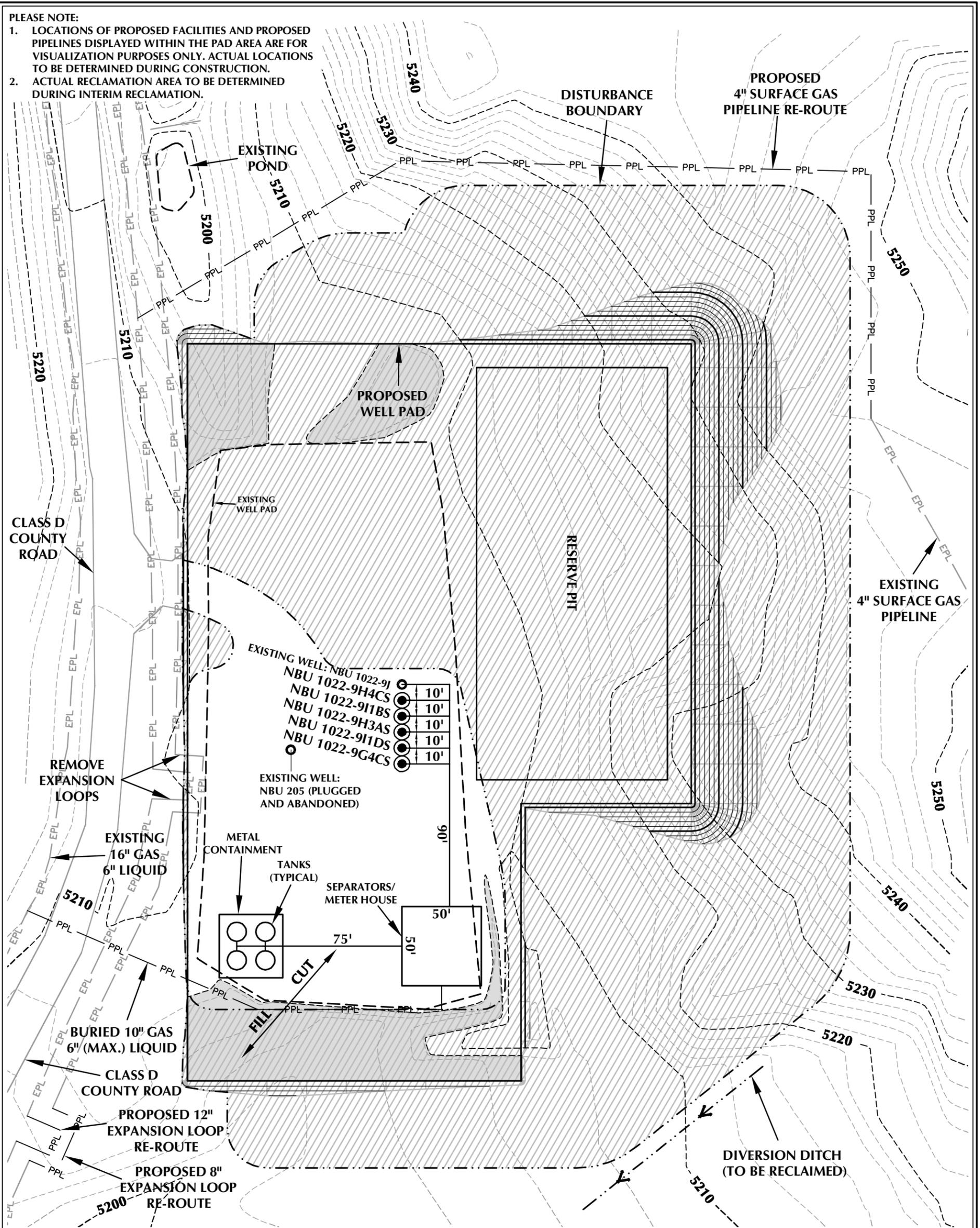
SCALE: 1"=60' DATE: 11/18/13 SHEET NO:  
 REVISD: **7B** 7B OF 17

**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078



**PLEASE NOTE:**

1. LOCATIONS OF PROPOSED FACILITIES AND PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.
2. ACTUAL RECLAMATION AREA TO BE DETERMINED DURING INTERIM RECLAMATION.



**WELL PAD - NBU 1022-9J RECLAMATION DESIGN SUMMARY**

TOTAL DISTURBANCE AREA = 5.53 ACRES (INCLUDING EXISTING)  
 RECLAMATION AREA = 4.52 ACRES  
 TOTAL WELL PAD AREA AFTER RECLAMATION = 1.01 ACRES

**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-9J

WELL PAD - RECLAMATION LAYOUT  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



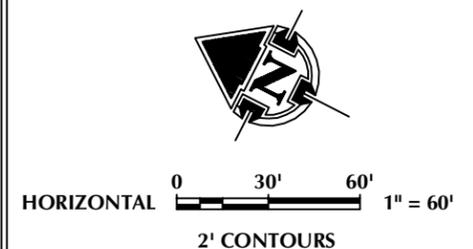
CONSULTING, LLC  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**TIMBERLINE**  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

**WELL PAD LEGEND**

	EXISTING WELL LOCATION
	PROPOSED WELL LOCATION
	EXISTING CONTOURS (2' INTERVAL)
	PROPOSED CONTOURS (2' INTERVAL)
	PROPOSED PIPELINE
	EXISTING PIPELINE
	RECLAMATION AREA



SCALE: 1"=60'	DATE: 7/25/13	SHEET NO:
REVISED:	JID 11/18/13	<b>9</b> 9 OF 17

RECEIVED: July 02, 2014

K:\ANADARKO\2013\_10\_13\_55\_NBU\_1022-9J\FOCUS\DWG\NBU 1022-9J\NBU 1022-9J.dwg, 11/17/2013 10:24:30 PM, jacob

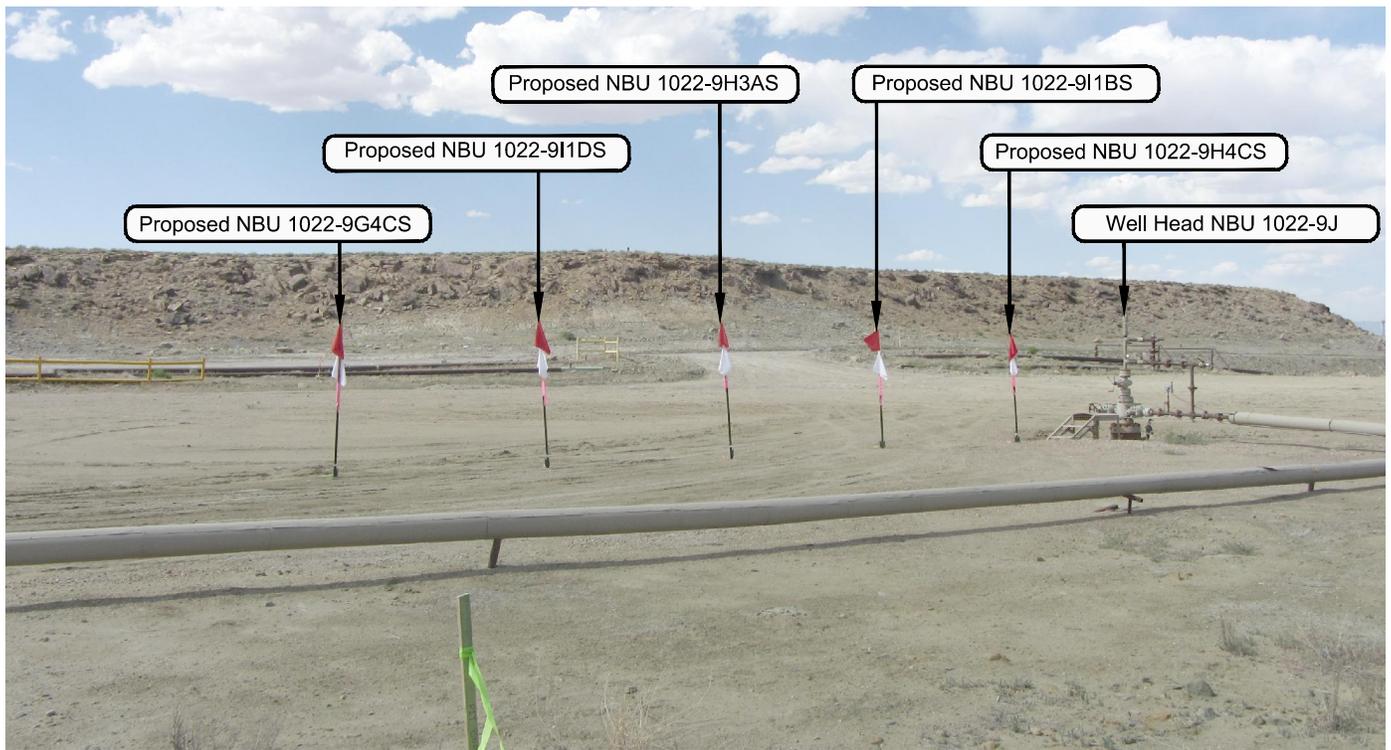


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: SOUTHWESTERLY

**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-9J**

LOCATION PHOTOS  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., Uintah County, Utah.



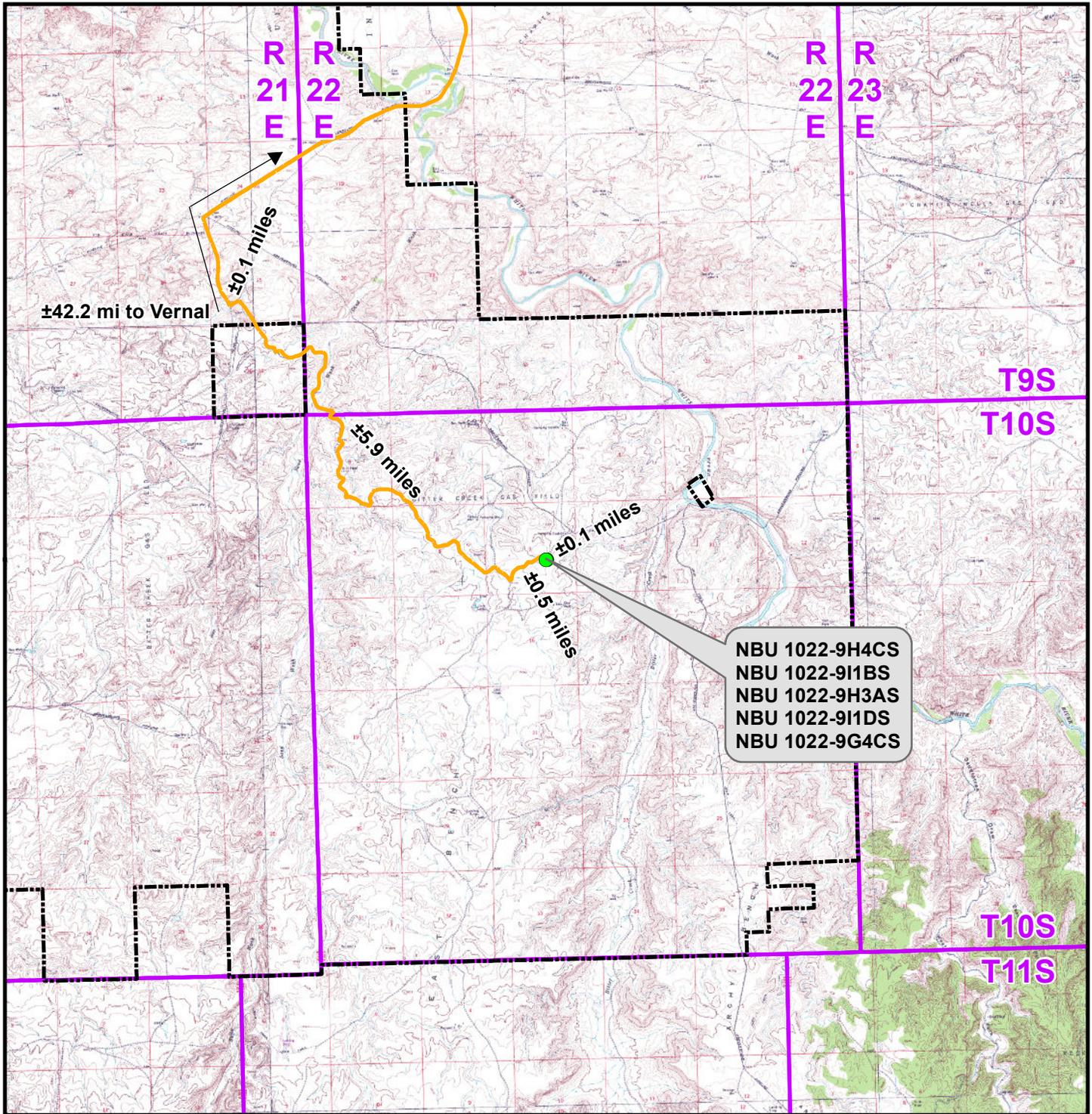
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**TIMBERLINE**

(435) 789-1365

ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE PHOTOS TAKEN: 06-17-13	PHOTOS TAKEN BY: J.W.	SHEET NO: <b>10</b>
DATE DRAWN: 07-16-13	DRAWN BY: J.G.C.	
Date Last Revised:		10 OF 17



K:\ANADARKO\2013\2013\_55\_NBU\_1022-9\_FOCUS\GIS\Maps\_ABCDENBU 1022-9J\_A.mxd11/22/2013 2:25:55 PM

**Legend**

- Proposed Well Location
- Natural Buttes Unit Boundary
- Access Route - Proposed

Distance From Well Pad - NBU 1022-9J To Unit Boundary: ±9,179ft

**WELL PAD - NBU 1022-9J**

TOPO A  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil &  
 Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202



**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182



SCALE: 1:100,000

NAD83 USP Central

SHEET NO:

DRAWN: TL

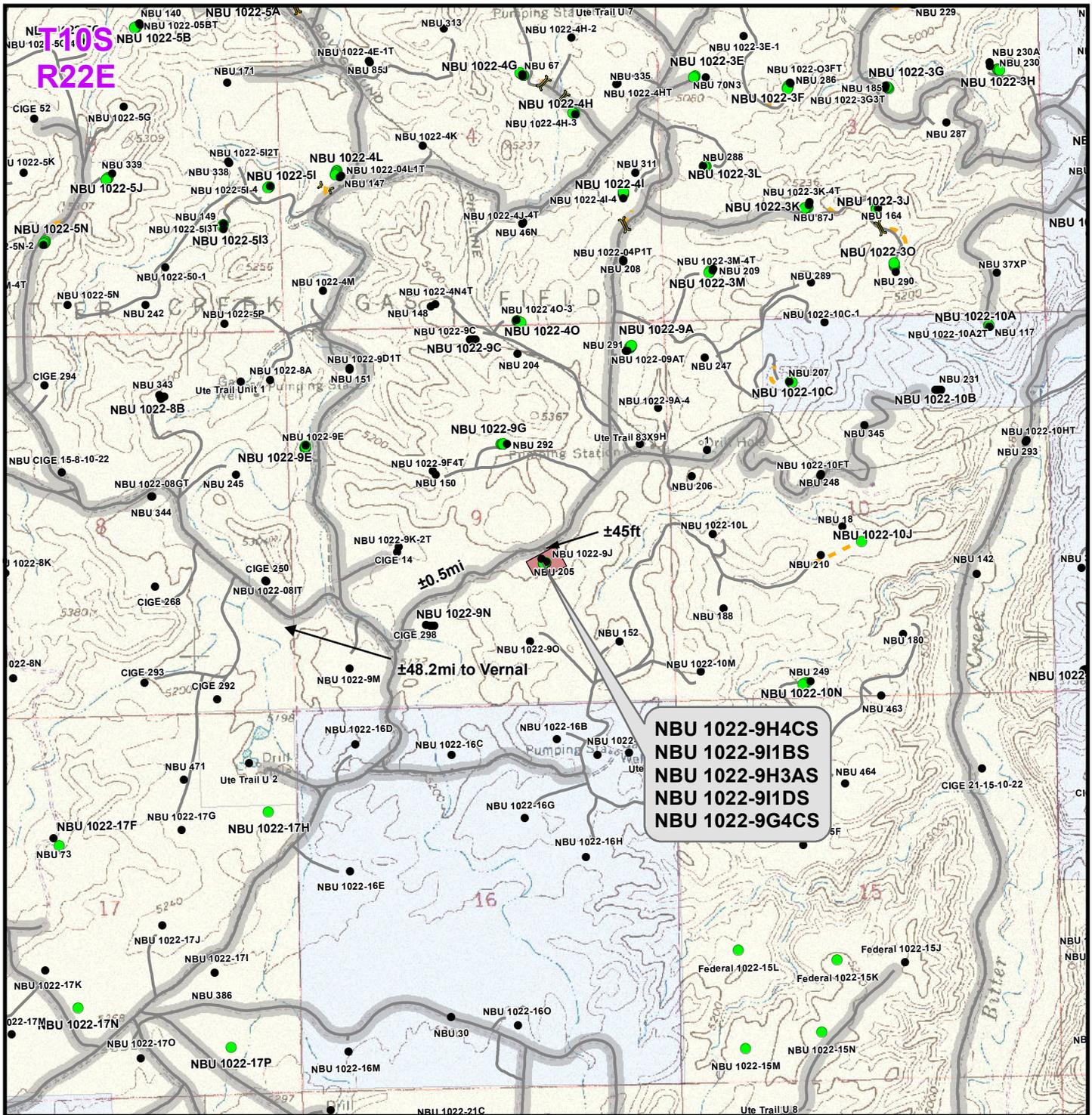
DATE: 26 July 2013

**11**

REVISED:

DATE:

11 OF 17



K:\ANADARKO\2013\2013\_55\_NBU\_1022-9\_FOCUS\GIS\Maps\_ABCDENBU 1022-9J\_NBU 1022-9J\_B.mxd\11/22/2013 2:26:18 PM

**Legend**

- Well - Proposed
- Well Pad
- - - Road - Proposed
- ▬ County Road
- Bureau of Land Management
- State
- Well - Existing
- ▬ Road - Existing
- ▬ Culvert/LWC - Proposed
- Indian Reservation
- ▬ Private

Total Proposed Road Length: ±0ft

**WELL PAD - NBU 1022-9J**

**TOPO B**  
**NBU 1022-9H4CS,**  
**NBU 1022-9I1BS, NBU 1022-9H3AS,**  
**NBU 1022-9I1DS & NBU 1022-9G4CS**  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil &  
 Gas Onshore L.P.**

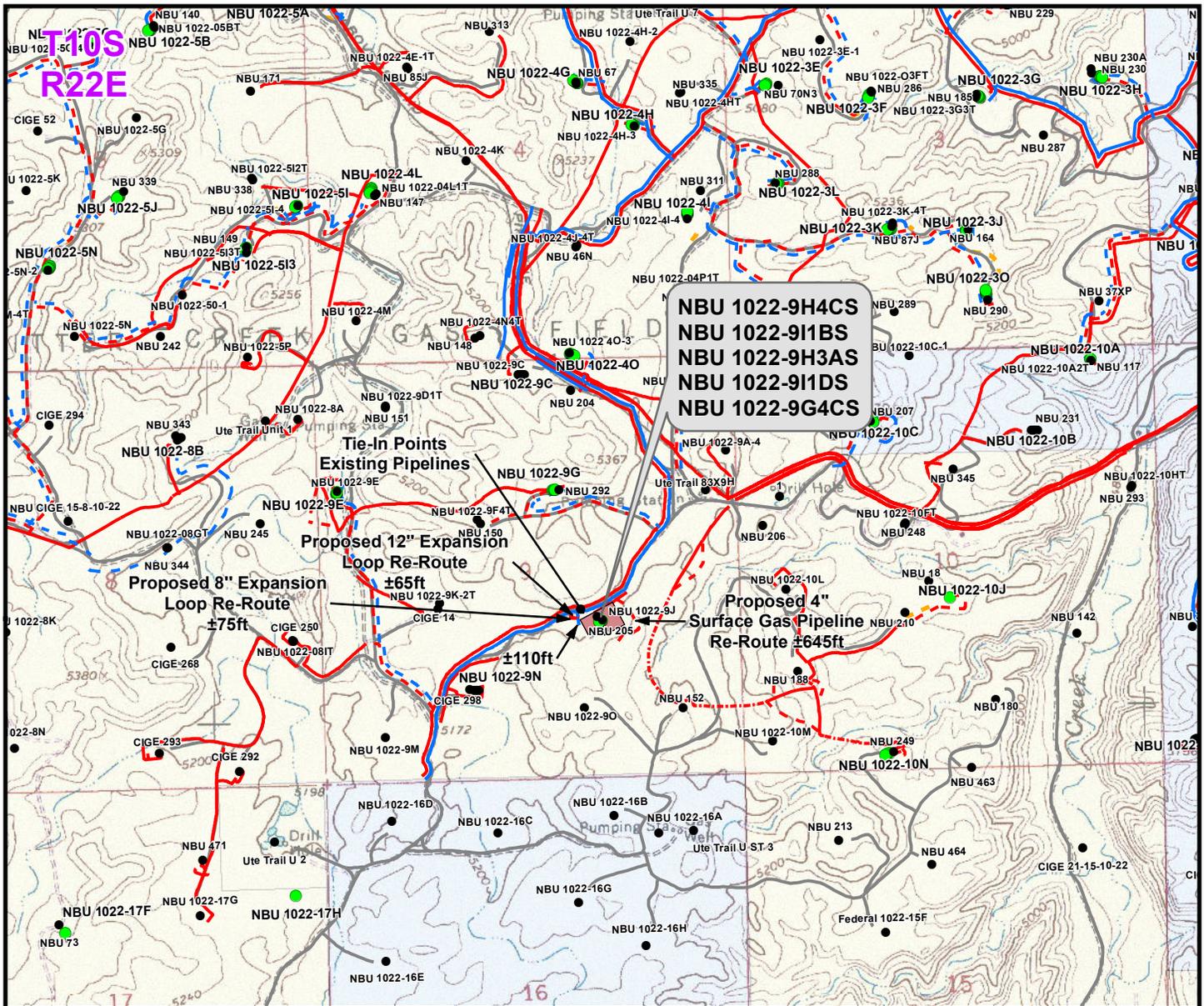
**1099 18th Street  
 Denver, Colorado 80202**



**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO:	<b>12</b>
DRAWN: TL	DATE: 22 July 2013	<b>12</b> 12 OF 17	
REVISED:	DATE:		





Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Separator to Edge of Pad)	±180ft
Buried 6" (Max.) (Edge of Pad to Existing 6" Liquid Pipeline)	±110ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±290ft</b>

Proposed Gas Pipeline	Length
Buried 10" (Meter House to Edge of Pad)	±180ft
Buried 10" (Edge of Pad to Existing 16" Gas Pipeline)	±110ft
Surface 4" (Proposed Pipeline Re-Route)	±645ft
Surface 8" (Expansion Loop Re-Route)	±75ft
Surface 12" (Expansion Loop Re-Route)	±65ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±290ft</b>
<b>TOTAL PROPOSED SURFACE GAS PIPELINE =</b>	<b>±785ft</b>

**Legend**

- Well - Proposed
- - - Gas Pipeline - Proposed
- - - Liquid Pipeline - Proposed
- - - Road - Proposed
- Bureau of Land Management
- State
- Well - Existing
- - - Gas Pipeline - To Be Upgraded
- - - Liquid Pipeline - Existing
- - - Road - Existing
- Indian Reservation
- Private
- Well Pad
- - - Gas Pipeline - Existing

**WELL PAD - NBU 1022-9J**

**TOPO D**  
**NBU 1022-9H4CS,**  
**NBU 1022-9I1BS, NBU 1022-9H3AS,**  
**NBU 1022-9I1DS & NBU 1022-9G4CS**  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202

**609 CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

SCALE: 1" = 2,000ft

DRAWN: TL

REVISED:

NAD83 USP Central

DATE: 18 Nov 2013

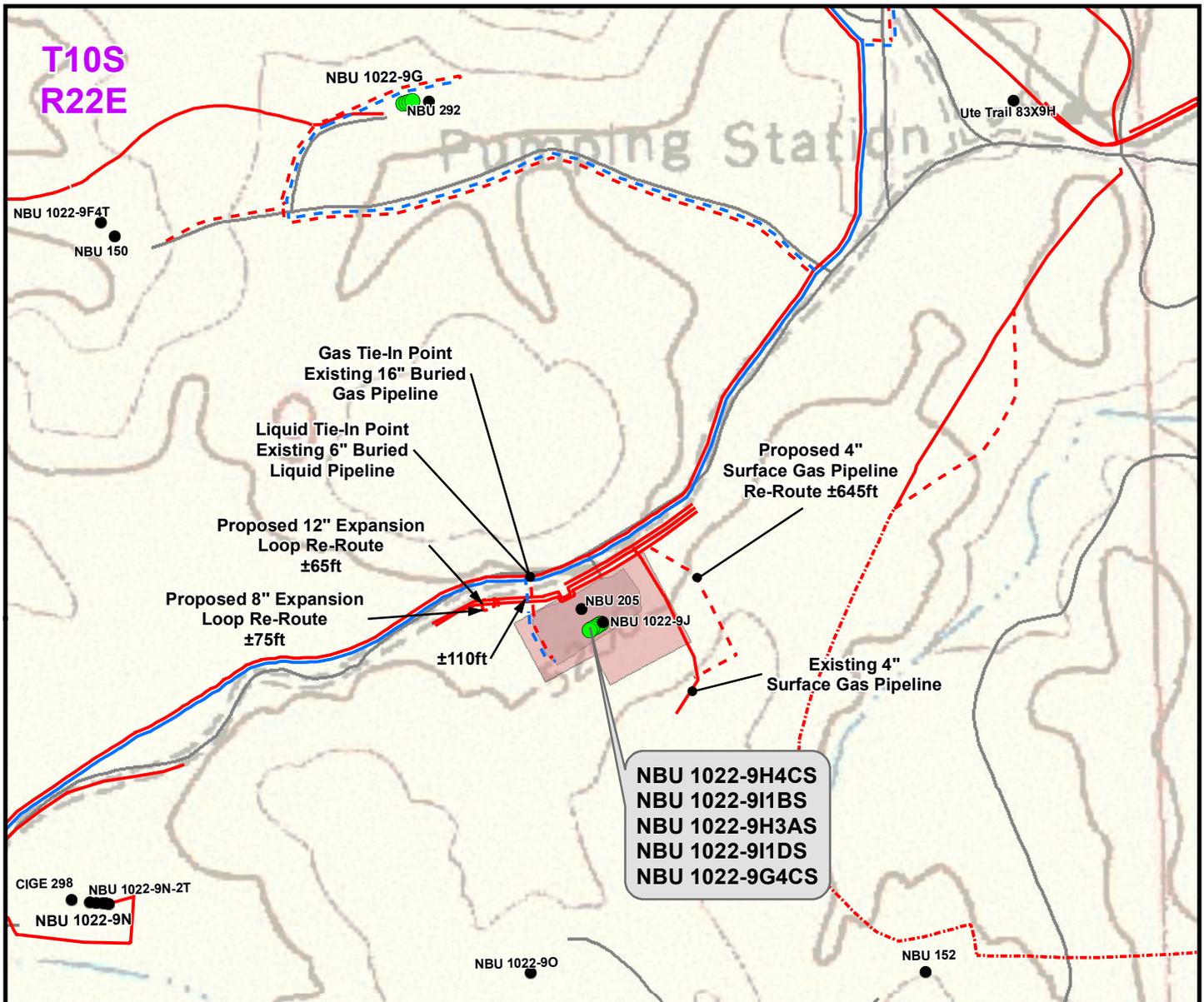
DATE:

SHEET NO:

**14**

14 OF 17

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Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Separator to Edge of Pad)	±180ft
Buried 6" (Max.) (Edge of Pad to Existing 6" Liquid Pipeline)	±110ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±290ft</b>

Proposed Gas Pipeline	Length
Buried 10" (Meter House to Edge of Pad)	±180ft
Buried 10" (Edge of Pad to Existing 16" Gas Pipeline)	±110ft
Surface 4" (Proposed Pipeline Re-Route)	±645ft
Surface 8" (Expansion Loop Re-Route)	±75ft
Surface 12" (Expansion Loop Re-Route)	±65ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±290ft</b>
<b>TOTAL PROPOSED SURFACE GAS PIPELINE =</b>	<b>±785ft</b>

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad - Proposed
- Well Pad - Existing
- - - Gas Pipeline - Proposed
- - - Gas Pipeline - To Be Upgraded
- - - Gas Pipeline - Existing
- - - Liquid Pipeline - Proposed
- - - Liquid Pipeline - Existing
- - - Road - Proposed
- - - Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**WELL PAD - NBU 1022-9J**

**TOPO D2 (PAD & PIPELINE DETAIL)**

**NBU 1022-9H4CS, NBU 1022-9I1BS, NBU 1022-9H3AS, NBU 1022-9I1DS & NBU 1022-9G4CS**

**LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH**

**Kerr-McGee Oil & Gas Onshore L.P.**

**1099 18th Street**

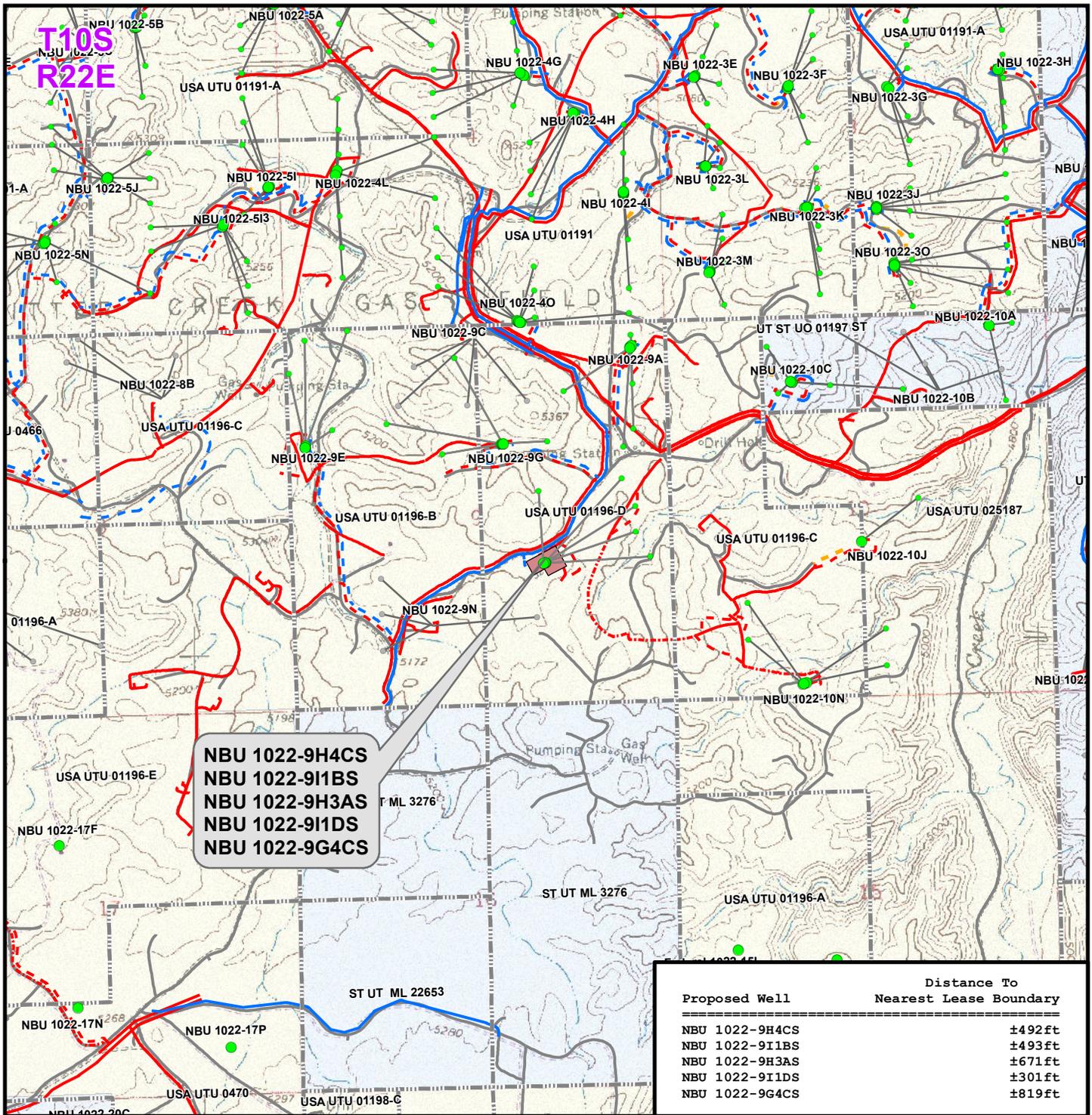
**Denver, Colorado 80202**

**CONSULTING, LLC**

2155 North Main Street  
Sheridan, Wyoming 82801  
Phone 307-674-0609  
Fax 307-674-0182

N

SCALE: 1" = 500ft	NAD83 USP Central	<b>15</b> 15 OF 17
DRAWN: TL	DATE: 26 June 2013	
REVISED: TL	DATE: 18 Nov 2013	



**NBU 1022-9H4CS  
 NBU 1022-9I1BS  
 NBU 1022-9H3AS  
 NBU 1022-9I1DS  
 NBU 1022-9G4CS**

Proposed Well	Distance To Nearest Lease Boundary
NBU 1022-9H4CS	±492ft
NBU 1022-9I1BS	±493ft
NBU 1022-9H3AS	±671ft
NBU 1022-9I1DS	±301ft
NBU 1022-9G4CS	±819ft

**Legend**

- Well - Proposed (Green dot)
- Bottom Hole - Proposed (Green dot)
- Bottom Hole - Existing (Grey dot)
- Well Path (Grey line)
- Well Pad (Red shaded area)
- Lease Boundary (Dashed grey line)
- Gas Pipeline - Proposed (Red dashed line)
- Gas Pipeline - To Be Upgraded (Red dotted line)
- Gas Pipeline - Existing (Red solid line)
- Liquid Pipeline - Proposed (Blue dashed line)
- Liquid Pipeline - Existing (Blue solid line)
- Road - Proposed (Yellow dashed line)
- Road - Existing (Grey solid line)
- Bureau of Land Management (Yellow shaded area)
- Indian Reservation (Red shaded area)
- State (Blue shaded area)
- Private (White shaded area)

**WELL PAD - NBU 1022-9J**

TOPO E  
 NBU 1022-9H4CS,  
 NBU 1022-9I1BS, NBU 1022-9H3AS,  
 NBU 1022-9I1DS & NBU 1022-9G4CS  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil &  
 Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202



**609 CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

N



SCALE: 1" = 2,000ft	NAD83 USP Central	<b>16</b>
DRAWN: TL	DATE: 18 Nov 2013	
REVISED:	DATE:	

SHEET NO:  
16 OF 17

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**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD – NBU 1022-9J  
WELLS - NBU 1022-9H4CS,  
NBU 1022-9I1BS, NBU 1022-9H3AS,  
NBU 1022-9I1DS & NBU 1022-9G4CS  
SECTION 9, T10S, R22E, S.L.B.&M.  
UINTAH COUNTY, UTAH**

From the intersection of U.S. Highway 40 and 500 East street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45; exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 18.7 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.1 miles to a second Class D County Road to the southeast. Exit right and proceed in a southeasterly direction along the second Class D County Road approximately 5.9 miles to a third Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the third Class D County Road approximately 0.5 miles to a service road to the southeast. Exit right and proceed in a southeasterly direction along the service road approximately 45 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 48.7 miles in a southerly direction.

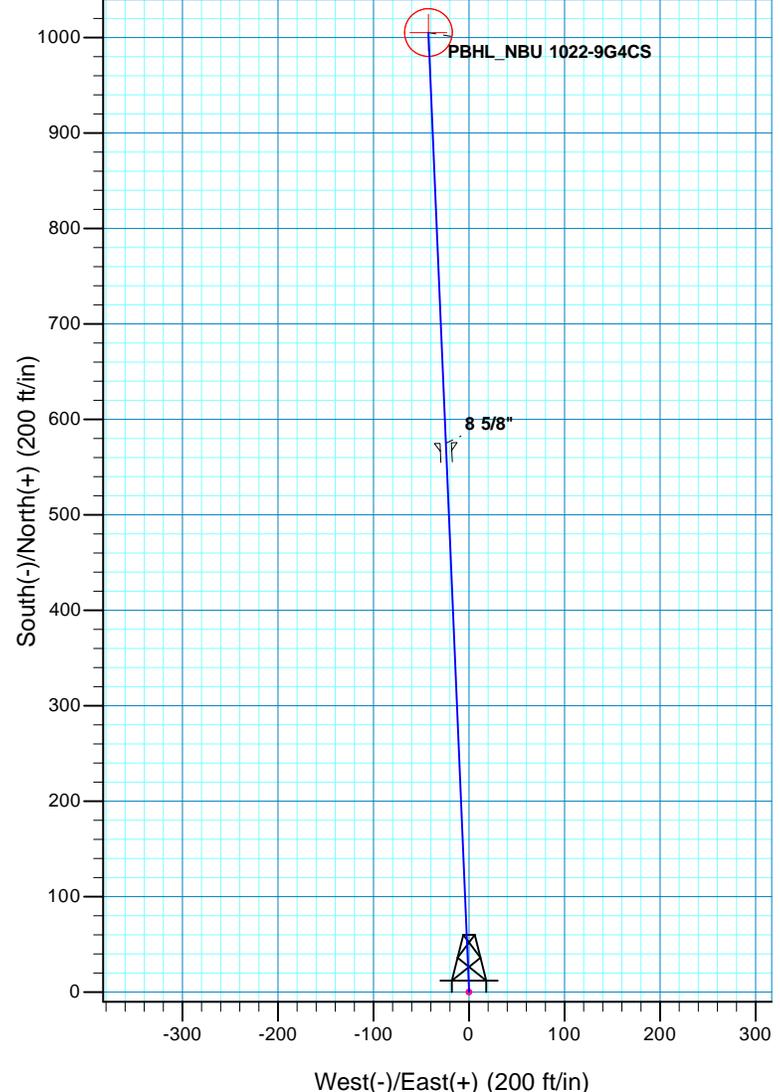
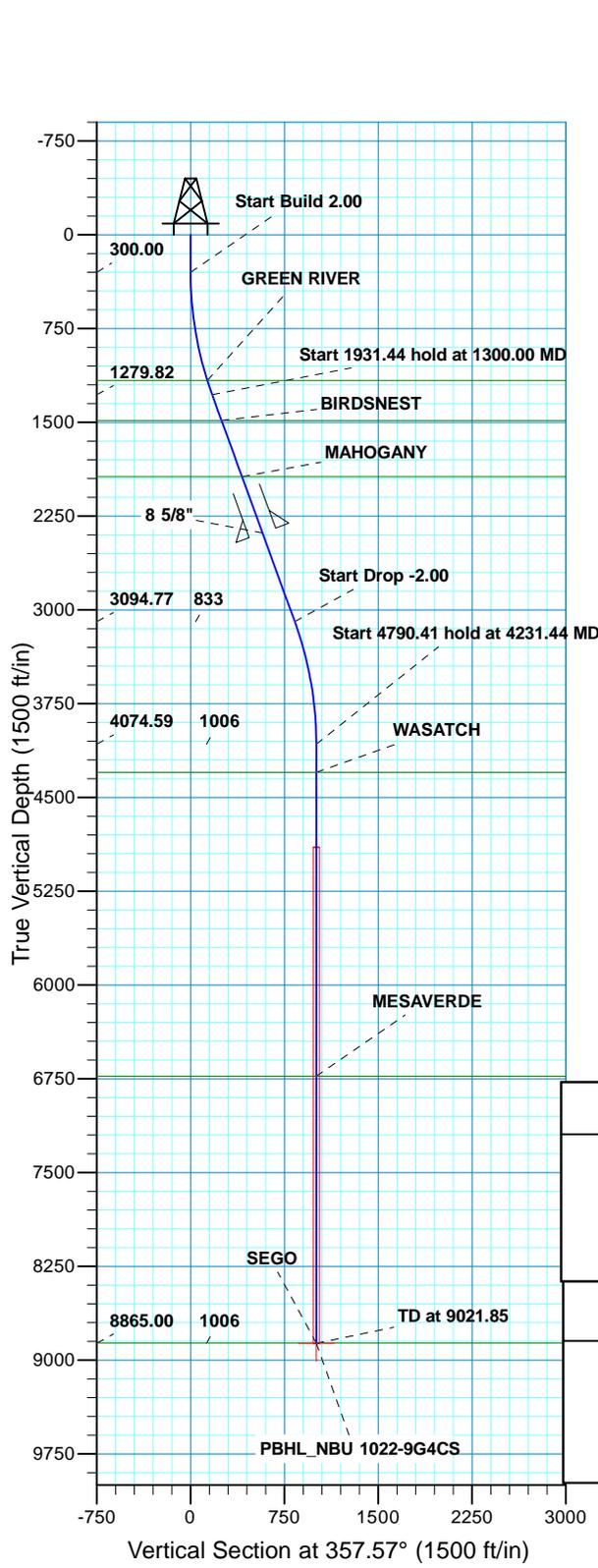


T  
M

Azimuths to True North  
Magnetic North: 10.80°

Magnetic Field  
Strength: 51975.1snT  
Dip Angle: 65.77°  
Date: 1/6/2014  
Model: BGGM2013

WELL DETAILS: NBU 1022-9G4CS								
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)								
+N-S	+E-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14515861.51	2077271.24	39.9615510	-109.4410380			
DESIGN TARGET DETAILS								
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8865.00	1005.22	-42.60	14516865.83	2077211.08	39.9643110	-109.4411900	Circle (Radius: 25.00)
- plan hits target center								



SECTION DETAILS								
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1300.00	20.00	357.57	1279.82	172.61	-7.32	2.00	357.57	172.77
3231.44	20.00	357.57	3094.77	832.61	-35.28	0.00	0.00	833.36
4231.44	0.00	0.00	4074.59	1005.22	-42.60	2.00	180.00	1006.13
9021.85	0.00	0.00	8865.00	1005.22	-42.60	0.00	0.00	1006.13

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N

Geodetic System: Universal Transverse Mercator (US Survey Feet)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Zone 12N (114 W to 108 W)  
Location: SECTION 9 T10S R22E  
System Datum: Mean Sea Level

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
1166.00	1179.76	GREEN RIVER	
1485.00	1518.35	BIRDSNEST	
1936.00	1998.30	MAHOGANY	
4300.00	4456.85	WASATCH	
6730.00	6886.85	MESAVERDE	
8864.99	9021.84	SEGO	0.00

RECEIVED



**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N**

**NBU 1022-9J PAD**

**NBU 1022-9G4CS**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**06 January, 2014**





<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-9J PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-9G4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 1022-9J PAD, SECTION 9 T10S R22E				
<b>Site Position:</b>	<b>Northing:</b>	14,515,880.34 usft	<b>Latitude:</b>	39.9616010	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,077,306.51 usft	<b>Longitude:</b>	-109.4409110	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.00 °

<b>Well</b>	NBU 1022-9G4CS, 1917 FSL 1784 FEL					
<b>Well Position</b>	<b>+N/-S</b>	-18.21 ft	<b>Northing:</b>	14,515,861.51 usft	<b>Latitude:</b>	39.9615510
	<b>+E/-W</b>	-35.60 ft	<b>Easting:</b>	2,077,271.24 usft	<b>Longitude:</b>	-109.4410380
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	5,208.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	1/6/2014	10.80	65.77	51,975

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	357.57

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	357.57	1,279.82	172.61	-7.32	2.00	2.00	0.00	357.57	
3,231.44	20.00	357.57	3,094.77	832.61	-35.28	0.00	0.00	0.00	0.00	
4,231.44	0.00	0.00	4,074.59	1,005.22	-42.60	2.00	-2.00	0.00	180.00	
9,021.85	0.00	0.00	8,865.00	1,005.22	-42.60	0.00	0.00	0.00	0.00	PBHL_NBU 1022-9G



<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-9J PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-9G4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>										
400.00	2.00	357.57	399.98	1.74	-0.07	1.75	2.00	2.00	2.00	0.00
500.00	4.00	357.57	499.84	6.97	-0.30	6.98	2.00	2.00	2.00	0.00
600.00	6.00	357.57	599.45	15.68	-0.66	15.69	2.00	2.00	2.00	0.00
700.00	8.00	357.57	698.70	27.85	-1.18	27.88	2.00	2.00	2.00	0.00
800.00	10.00	357.57	797.47	43.48	-1.84	43.52	2.00	2.00	2.00	0.00
900.00	12.00	357.57	895.62	62.55	-2.65	62.60	2.00	2.00	2.00	0.00
1,000.00	14.00	357.57	993.06	85.02	-3.60	85.10	2.00	2.00	2.00	0.00
1,100.00	16.00	357.57	1,089.64	110.88	-4.70	110.98	2.00	2.00	2.00	0.00
1,179.76	17.60	357.57	1,166.00	133.91	-5.67	134.03	2.00	2.00	2.00	0.00
<b>GREEN RIVER</b>										
1,200.00	18.00	357.57	1,185.27	140.09	-5.94	140.21	2.00	2.00	2.00	0.00
1,300.00	20.00	357.57	1,279.82	172.61	-7.32	172.77	2.00	2.00	2.00	0.00
<b>Start 1931.44 hold at 1300.00 MD</b>										
1,400.00	20.00	357.57	1,373.78	206.78	-8.76	206.97	0.00	0.00	0.00	0.00
1,500.00	20.00	357.57	1,467.75	240.96	-10.21	241.17	0.00	0.00	0.00	0.00
1,518.35	20.00	357.57	1,485.00	247.23	-10.48	247.45	0.00	0.00	0.00	0.00
<b>BIRDSNEST</b>										
1,600.00	20.00	357.57	1,561.72	275.13	-11.66	275.37	0.00	0.00	0.00	0.00
1,700.00	20.00	357.57	1,655.69	309.30	-13.11	309.58	0.00	0.00	0.00	0.00
1,800.00	20.00	357.57	1,749.66	343.47	-14.56	343.78	0.00	0.00	0.00	0.00
1,900.00	20.00	357.57	1,843.63	377.64	-16.00	377.98	0.00	0.00	0.00	0.00
1,998.30	20.00	357.57	1,936.00	411.23	-17.43	411.60	0.00	0.00	0.00	0.00
<b>MAHOGANY</b>										
2,000.00	20.00	357.57	1,937.60	411.81	-17.45	412.18	0.00	0.00	0.00	0.00
2,100.00	20.00	357.57	2,031.57	445.98	-18.90	446.38	0.00	0.00	0.00	0.00
2,200.00	20.00	357.57	2,125.54	480.15	-20.35	480.59	0.00	0.00	0.00	0.00
2,300.00	20.00	357.57	2,219.51	514.33	-21.80	514.79	0.00	0.00	0.00	0.00
2,400.00	20.00	357.57	2,313.48	548.50	-23.24	548.99	0.00	0.00	0.00	0.00
2,477.18	20.00	357.57	2,386.00	574.87	-24.36	575.39	0.00	0.00	0.00	0.00
<b>8 5/8"</b>										
2,500.00	20.00	357.57	2,407.45	582.67	-24.69	583.19	0.00	0.00	0.00	0.00
2,600.00	20.00	357.57	2,501.42	616.84	-26.14	617.39	0.00	0.00	0.00	0.00
2,700.00	20.00	357.57	2,595.39	651.01	-27.59	651.60	0.00	0.00	0.00	0.00
2,800.00	20.00	357.57	2,689.35	685.18	-29.04	685.80	0.00	0.00	0.00	0.00
2,900.00	20.00	357.57	2,783.32	719.35	-30.49	720.00	0.00	0.00	0.00	0.00
3,000.00	20.00	357.57	2,877.29	753.53	-31.93	754.20	0.00	0.00	0.00	0.00
3,100.00	20.00	357.57	2,971.26	787.70	-33.38	788.40	0.00	0.00	0.00	0.00
3,200.00	20.00	357.57	3,065.23	821.87	-34.83	822.61	0.00	0.00	0.00	0.00
3,231.44	20.00	357.57	3,094.77	832.61	-35.28	833.36	0.00	0.00	0.00	0.00
<b>Start Drop -2.00</b>										
3,300.00	18.63	357.57	3,159.48	855.27	-36.24	856.03	2.00	-2.00	2.00	0.00
3,400.00	16.63	357.57	3,254.77	885.52	-37.53	886.32	2.00	-2.00	2.00	0.00
3,500.00	14.63	357.57	3,351.07	912.44	-38.67	913.26	2.00	-2.00	2.00	0.00
3,600.00	12.63	357.57	3,448.25	935.98	-39.67	936.82	2.00	-2.00	2.00	0.00
3,700.00	10.63	357.57	3,546.19	956.12	-40.52	956.97	2.00	-2.00	2.00	0.00
3,800.00	8.63	357.57	3,644.78	972.83	-41.23	973.70	2.00	-2.00	2.00	0.00
3,900.00	6.63	357.57	3,743.89	986.09	-41.79	986.98	2.00	-2.00	2.00	0.00
4,000.00	4.63	357.57	3,843.40	995.89	-42.20	996.78	2.00	-2.00	2.00	0.00



<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-9J PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-9G4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,100.00	2.63	357.57	3,943.20	1,002.21	-42.47	1,003.11	2.00	-2.00	0.00	
4,200.00	0.63	357.57	4,043.15	1,005.05	-42.59	1,005.95	2.00	-2.00	0.00	
4,231.44	0.00	0.00	4,074.59	1,005.22	-42.60	1,006.13	2.00	-2.00	7.72	
<b>Start 4790.41 hold at 4231.44 MD</b>										
4,300.00	0.00	0.00	4,143.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,243.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,456.85	0.00	0.00	4,300.00	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
<b>WASATCH</b>										
4,500.00	0.00	0.00	4,343.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,443.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,543.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,643.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,743.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,843.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,943.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,043.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,143.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,243.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,343.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,443.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,543.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,643.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,743.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,843.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,943.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,043.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,143.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,243.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,343.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,443.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,543.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,643.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
6,886.85	0.00	0.00	6,730.00	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
<b>MESAVERDE</b>										
6,900.00	0.00	0.00	6,743.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,843.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,943.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,043.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,143.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,243.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,343.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,443.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,543.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,643.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,743.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,843.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,943.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,043.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,143.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,243.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,343.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,443.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,543.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	



<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5208 & KB 4 @ 5212.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-9J PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-9G4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,800.00	0.00	0.00	8,643.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,743.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,843.15	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
9,021.84	0.00	0.00	8,864.99	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
<b>SEGO</b>										
9,021.85	0.00	0.00	8,865.00	1,005.22	-42.60	1,006.13	0.00	0.00	0.00	
<b>TD at 9021.85 - PBHL_NBU 1022-9G4CS</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NBU 1022-9G4C	0.00	0.00	8,865.00	1,005.22	-42.60	14,516,865.83	2,077,211.07	39.9643110	-109.4411900	
- hit/miss target										
- Shape										
- plan hits target center										
- Circle (radius 25.00)										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,477.18	2,386.00	8 5/8"	8.625	11.000		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,179.76	1,186.00	GREEN RIVER				
1,518.35	1,505.00	BIRDSNEST				
1,998.30	1,956.00	MAHOGANY				
4,456.85	4,320.00	WASATCH				
6,886.85	6,750.00	MESAVERDE				
9,021.84	8,884.99	SEGO		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,300.00	1,279.82	172.61	-7.32	Start 1931.44 hold at 1300.00 MD	
3,231.44	3,094.77	832.61	-35.28	Start Drop -2.00	
4,231.44	4,074.59	1,005.22	-42.60	Start 4790.41 hold at 4231.44 MD	
9,021.85	8,865.00	1,005.22	-42.60	TD at 9021.85	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-9J PAD**

<b><u>API #</u></b>	<b><u>NBU 1022-9G4CS</u></b>		
	Surface: 1917 FSL / 1784 FEL	NWSE	Lot
	BHL: 2359 FNL / 1825 FEL	SWNE	Lot
<b><u>API #</u></b>	<b><u>NBU 1022-9H3AS</u></b>		
	Surface: 1926 FSL / 1766 FEL	NWSE	Lot
	BHL: 2219 FNL / 671 FEL	SENE	Lot
<b><u>API #</u></b>	<b><u>NBU 1022-9H4CS</u></b>		
	Surface: 1935 FSL / 1748 FEL	NWSE	Lot
	BHL: 2613 FNL / 492 FEL	SENE	Lot
<b><u>API #</u></b>	<b><u>NBU 1022-9I1BS</u></b>		
	Surface: 1931 FSL / 1757 FEL	NWSE	Lot
	BHL: 2331 FSL / 493 FEL	NESE	Lot
<b><u>API #</u></b>	<b><u>NBU 1022-9I1DS</u></b>		
	Surface: 1922 FSL / 1775 FEL	NWSE	Lot
	BHL: 1980 FSL / 301 FEL	NESE	Lot

This Surface Use Plan of Operations (SUPO) or 13-point plan provides site-specific information for the above-referenced wells.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

An on-site meeting was held on October 23, 2013. Present were:

- Tyler Cox and Jessi Brunson - BLM;
- Mitch Batty - Timberline Engineering & Land Surveying, Inc.; and
- Cara Mahler, Kenny Warren, Casey McKee, Chantill Recker, Doreen Green, and Howdy Brown - Kerr-McGee

**A. Existing Roads:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Topo B for existing roads.

**B. New or Reconstructed Access Roads:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**No new access road is proposed**

**C. Location of Existing Wells:**

Please refer to Topo C for existing wells.

**D. Location of Existing and/or Proposed Facilities:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

This pad will expand the existing pad for the NBU 1022-9J, which is a producing gas well according to Utah Division of Oil, Gas and Mining (UDOGM) records on January 9, 2014. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

**GAS GATHERING**

*Please refer to Exhibit A and Topo D2- Pad and Pipeline Detail.*

The total gas gathering pipeline distance from the meter to the tie in point is  $\pm 290'$  and  $\pm 785'$  of proposed pipeline re-route the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

- $\pm 180'$  (0.03 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 10" buried gas gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 110'$  (0.02 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 10" buried gas gathering pipeline from the edge of the pad traversing northerly to an existing 16" gas pipeline. Please refer to Topo D2 - Pad and Pipeline Detail and Exhibit A - Line No. 2.
- $\pm 645'$  (0.12 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 4" surface pipeline re-route around easterly edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 75'$  (0.01 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 8" surface expansion loop re-route on existing pipeline west of the pad. Please refer to Topo D2 - Pad and Pipeline Detail and Exhibit A - Line No. 12.
- $\pm 65'$  (0.01 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 12" surface expansion loop re-route on existing pipeline west of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.

**LIQUID GATHERING**

*Please refer to Exhibit B and Topo D2- Pad and Pipeline Detail.*

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 290'$  and the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

- ±180' (0.03 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 6" buried liquid gathering pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- ±110' (0.02 miles) – Section 9 T10S R22E (NW/4 SE/4) – On-lease UTU01196-D, BLM surface, New 6" buried liquid gathering pipeline from the edge of the pad traversing northerly to an existing 6" liquid pipeline. Please refer to Topo D2 - Pad and Pipeline Detail and Exhibit B - Line No. 2.

**Pipeline Gathering Construction**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**The Anadarko Completions Transportation System (ACTS) information:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Exhibit C for ACTS Lines

**E. Location and Types of Water Supply:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Water will be hauled to location over the roads marked on Maps A and B.

**F. Construction Materials:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**G. Methods for Handling Waste:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Materials Management**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**H. Ancillary Facilities:**

No additional ancillary facilities are planned for this location.

**I. Well Site Layout:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**J. Plans for Surface Reclamation:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Interim Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Final Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Measures Common to Interim and Final Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Weed Control**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Monitoring**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**K. Surface/Mineral Ownership:**

United States of America  
Bureau of Land Management  
170 South 500 East  
Vernal, UT 84078  
(435)781-4400

**L. Other Information:**

**Cultural and Paleontological Resources**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Resource Reports:**

A Class I literature survey was completed on August 7, 2013 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 13-208.

A paleontological reconnaissance survey was completed on July 23, 2013 by SWCA Environmental Consultants. For additional details please refer to report UT13-14314-136.

Biological field survey was completed on July 27, 2013 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-909.

**Proposed Action Annual Emissions Tables:**

Please refer to the Appendix in the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**M. Lessee's or Operators' Representative & Certification:**

Joel Malefyt  
Regulatory Analyst II  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6828

Tommy Thompson  
General Manager, Drilling  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.



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Joel Malefyt

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January 15, 2014  
Date

**Kerr-McGee Oil & Gas Onshore L.P., wholly owned subsidiary of Anadarko Petroleum Corporation, Standard Operating Practice Agreement for the Greater Natural Buttes Field**

## **Drilling Program**

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations, Onshore Oil and Gas Orders, and the approved plan of operation. As Operator, KMG is fully responsible for actions of subcontractors. A copy of these Standard Operating Practices will be furnished to the field representatives to insure compliance.

### **Bureau of Land Management Notification Requirements:**

**Location Constructions:** At least 48 hours prior to construction of location and access roads including notification, if applicable, to other surface management agencies, such as Ute Tribe Energy and Mineral Department, State of Utah, or private surface owner(s).

**Location Completion:** Prior to moving on the drilling rig

**Spud Notice:** At least 24 hours prior to spudding the well.

**Casing String and Cementing:** At least 24 hours prior to running casing and cementing all casing.

**Blow Out Preventer & Related Equipment Tests:** At least 24 hours prior to initiating pressure tests.

**First Production Notice:** Within 5 days after a new well begins production; or, within 5 days of when production resumes after a well has been off production for more than 90 days.

Details of the on-site inspection, including date, time, weather conditions, and individuals present, will be submitted with the site-specific Application for Permit to Drill (APD).

### **1. Estimated Tops of Important Geologic Markers:**

Formation and depths will be submitted with site-specific APDs.

### **2. Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

Formation and depths will be submitted with site-specific APDs.

### **3. Pressure Control Equipment:**

Pressure Control Equipment Schematic is attached as appendix F. Any variance will be included in the site-specific APDs.

**4. Proposed Casing & Cementing Program:**

Proposed casing and cementing will be submitted with site-specific APDs.

**5. Drilling Fluids Program:**

Proposed drilling fluids will be submitted with site-specific APDs.

**6. Evaluation Program:**

Evaluation program will be submitted with site-specific APDs.

**7. Abnormal Conditions:**

Any abnormal condition will be submitted with site specific APDs.

**8. Anticipated Starting Dates:**

Drilling is planned to commence within the administrative period of an approved application.

**9. Variances:**

KMG respectfully requests a variance to several requirements associated with air drilling outlined in OSO 2:

**Variance for air drilling**

Air rig is only used by KMG to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig and is used to drill and construct the majority of the wellbore.

KMG typically utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 3,200 MD. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig

also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill an 11 inch hole to just above the Bird's Nest Interval. with an air hammer. The hammer is then tripped and replaced with an 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

### **Variance for BOPE Requirements**

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

### **Variance for Mud Material Requirements**

OSO 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump, which is located near the reserve pit, will supply the water to the well bore.

### **Variance for Special Drilling Operation (surface equipment placement)**

OSO 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and

boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, OSO 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

### **Variance for FIT Requirements**

KMG also respectfully requests a variance to OSO 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). These wells are not exploratory wells and are being drilled in an area where the formation integrity is well known.

### **10. Other Information:**

Drilling Program will be submitted with site-specific APDs.

## **SURFACE USE PROGRAM**

### **A. Existing Roads:**

Existing roads consist of county and improved/unimproved access roads (two-tracks). In accordance with OSO 1, KMG will improve or maintain existing roads in a condition that is the same as or better than before operations began. New or reconstructed proposed access roads are discussed in Section B.

The existing roads will be maintained in a safe and usable condition. Maintenance for existing roads will continue until final abandonment and reclamation of well pads and/or other facilities, as applicable. Road maintenance will include, but is not limited to, blading, ditching, and/or culvert installation and cleanout. To ensure safe operating conditions, gravel surfacing may be performed where excessive rutting or erosion may occur. Dust control may be performed as necessary to ensure safe operating conditions.

Roads, gathering lines and electrical distribution lines may occupy common disturbance corridors where possible. Where available, roadways may be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor may overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Within individual APDs, please refer to Topo B, for existing roads.

### **B. New or Reconstructed Access Roads:**

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007). The BLM Manual Section 9113 (1985) will be considered in consultation with the BLM in the design, construction, improvement and maintenance of all new or reconstructed roads. If a new road would cross a water of the United States, KMG will adhere to all applicable US Army Corps of Engineers requirements in cooperation with the Utah Division of Water Rights.

New well pads or pad expansions may require construction of a new access road and/or de-commissioning of an older road. Plans, routes, and distances for new roads and road improvements are provided in design packages, exhibits and maps for a project. Project-specific maps are submitted to depict the locations of existing, proposed, and/or decommissioned and include the locations for supporting structures, including, but not limited to, culverts, bridges, low water crossings, range infrastructure, and haul routes, per OSO 1. Designs for cuts and fills, including spoils source and storage areas, are provided with the road designs, as necessary.

Where safety objectives can be met KMG may use unimproved and/or two-track roads for lease operations and to lessen total disturbance. Road designs will be based on the road safety requirements, traffic characteristics, environmental conditions, and the vehicles the road is intended to carry. Generally, newly constructed unpaved lease roads will be crowned and ditched with the running surfaces of the roads approximately 12-18 feet wide and a total road corridor width not to exceed 45 feet, except where noted in the road design for a specific project. Maximum grade will generally not exceed 8%. Borrow ditches will be back sloped 3:1 or less. Construction BMPs will be employed to control onsite and offsite erosion.

Where topography would direct storm water runoff to an access road or well pad, drainage ditches or other common drainage control facilities may be constructed to divert surface water runoff. Drainage features, including culverts, may be constructed or installed prior to commencing other operations, including drilling for facilities placement. Riprap will be placed at the inlet and outlet at the culvert(s). Drainage features will meet the standards of the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007).

Prior to construction, new access road(s) will be staked according to the requirements of OSO 1. Construction activities will not be conducted using frozen or saturated materials or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur. Vegetative debris will not be placed in or under fill embankments.

New road maintenance will include, but is not limited to, blading, ditching, culvert installation and cleanout, gravel surfacing where excessive rutting or erosion may occur and dust control, as necessary to ensure safe operating conditions. All vehicular traffic, personnel movement and construction/restoration operations will be confined to the approved area and to existing roadways and/or access routes.

Snow removal will be conducted on an as-needed basis to accommodate safe travel. Snow removal will occur as necessary throughout the year, as will necessary drainage ditch construction. Removed snow may be stored on permitted well pads to reduce hauling distances and/or at the aerial extent of approved disturbance boundaries to facilitate snow removal for the remainder of the season.

If a county road crossing or encroachment permit is needed, it will be obtained prior to construction.

For individual APDs, refer to Topo B.

**C. Location of Existing Wells:**

For individual APDs, refer to Topo C

**D. Location of Existing and/or Proposed Facilities:**

The following will apply if the well is productive: Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (KMG). Should the well(s) prove productive, production facilities will be installed on the disturbed portion of each well pad.

A berm may be constructed completely around production components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed to hold the capacity of the largest tank and have sufficient freeboard to accommodate a 25 year rainfall event. This includes pumping units. Aboveground structures constructed or installed onsite for 6 months or longer, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with the BLM (typically Shadow Gray). A production facility layout is provided as part of a project- specific APD, ROW or NOS submission.

**Gas Gathering**

The gas gathering pipeline is made of steel line pipe, surface is bare pipe and buried is of coated with fusion bonded epoxy coating (or equivalent). The individual segments will be denoted in site-specific APDs.

**Liquid Gathering**

The individual segments will be denoted in site-specific APDs.

**Pipeline Gathering Construction**

Gas gathering pipeline(s), gas lift, or liquids pipelines may be constructed to lie on the surface or be buried. The road and/or well pad may be utilized for construction activities and staging when the pipeline is adjacent to the road or well pad. The area of disturbance during construction from

the edge of road or well pad and for surface and buried pipelines including cross country will typically be 45' temporary disturbance. In addition, KMG requests a permanent 30' disturbance width that will be maintained for the portion adjacent to the road as well as cross country lines. The need for the 30' of permanent disturbance width is for maintenance and repairs.

Above-ground installation will generally not require clearing of vegetation or blading of the surface, except where safety considerations necessitate earthwork. If installation cannot occur on the exact location, pipe may be constructed parallel and adjacent to a road and lifted from the road to the pipeline route. In other cases where a pipeline route is not parallel and adjacent to a road (cross-country between sites), it will be welded/fused in place at a well pad, access road, or designated work area and pulled between connection locations with a suitable piece of equipment. Buried pipelines will generally be installed parallel and adjacent to existing and/or newly constructed roads and within the permitted disturbance corridor. Buried pipelines may vary from 2" (typically fuel gas lines) to 24" (typically transportation lines) in diameter, but 6" to 16 "is typical for a buried gas line. The diameter of liquids pipelines may vary from 2" to 12", but 6" is the typical diameter. Gas lift lines may vary from 2" to 12" diameter, but 6" diameter pipes are generally used for gas lift. If two or more pipelines are present (gas gathering, gas lift, and fluids), they will share a common trench where possible.

When installing a buried pipeline, typically topsoil will be removed, windrowed and placed on the non-working side of the route for later reclamation. Because working room is limited, the spoil may be spread out across the working side and construction will take place on the spoil. The working side of the corridor will be used for pipe stringing, bending, welding and equipment travel. Small areas on the working side displaying ruts or uneven ground will be groomed to facilitate the safe passage of equipment. After the pipelines are installed, spoil will be placed back into the trench, and the topsoil will be redistributed over the disturbed corridor prior to final reclamation. Typical depth of the trench will be 6', but depths may vary according to site-specific conditions (presence of bedrock, etc.). The proposed trench width for the pipeline would range from 18"-48".

The pipeline will be welded along the proposed route and lowered into place. Trenching equipment will cut through the soil or into the bedrock and create good backfill, eliminating the need to remove large rocks. The proposed buried pipeline will be visually and radio-graphically inspected and the entire pipeline will be pneumatically or hydrostatically tested before being placed into service. Routine vehicle traffic will be prevented from using pipeline routes as travel ways by posting signs at the route's intersection with an access road.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, KMG will apply all applicable Army Corps mandates as

well as the BLM's Hydraulic Considerations for pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface.

Pipeline signs will be installed along the route to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves and lateral T's will be installed at various locations for production integrity and safety purposes.

Upon completion of the proposed buried pipeline, the entire area of disturbance will be reclaimed to the standards proposed in the Green River District Reclamation Guidelines. Please refer to section J for more details regarding final reclamation.

When no longer deemed necessary by the operator, KMG or its successor will consult with the BLM, Vernal Field Office before terminating of the use of the pipeline(s).

#### **The Anadarko Completions Transportation System (ACTS) information:**

For individual APDs, refer to Exhibit C for the proposed placement of the ACTS temporary lines.

KMG will use either a closed loop drilling system that will require one pit and one storage area to be constructed on the drilling pad or a traditional drilling operation with one pit. The storage area will be used to contain only the de-watered drill cuttings and will be lined and reclaimed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion pit is lined and will be used for the wells drilled on the pad or used as part of our ACTS system which is discussed in more detail below. Using the closed loop drilling system will allow KMG to decrease the amount of disturbance/footprint on location compared to a single large drilling/completion pit.

If KMG does not use a closed loop system, it will construct a drilling reserve pit to contain drill cuttings and for use in completion operations. Depending on the location of the pit, its relation to future drilling locations, the reserve/completion pit may be utilized for the completion of the wells on that pad and/or be used as part of our ACTS system. KMG will use ACTS to optimize the completion processes for multiple pads across the project area which may include up to a section of development. ACTS will facilitate management of completion fluids by utilizing existing reserve pits, or newly constructed completion pits, as well as temporary, surface-laid aluminum liquids transfer lines between pad locations. The pit will be refurbished as follows when a traditional drill pit is used, including mix and pile up drill cuttings with dry dirt, bury the original liner in the pit, walk bottom of pit with cat. KMG will reline the pit with a 30 mil liner and double felt padding. The refurbished or newly constructed pit will be the same size or

smaller as specified in the originally approved ROW/APD. The pit refurbish will be done in a normal procedure and there will be no modification to the pit. All four sides of the completions pit will be fenced in according to standard pit fencing procedures. Netting will be installed over all pits.

Any hydrocarbons collected will be treated and sold at approved sales facilities. A loading/unloading rack with drip containment will also be installed where water trucks would unload and load to prevent damage caused from pulling hoses in and out of the pit.

ACTS will require temporarily laying multiple 6 inch aluminum water transfer lines on the surface between either existing or refurbished reserve pits. The temporary aluminum transfer lines will be utilized to transport completion fluid being injected and/or recovered during the completion process and will be laid adjacent to existing access roads or pipeline corridors. Upon conclusion of the completion operation, the liquids transfer lines will be flushed with fresh water and purged with compressed air. The contents of the transfer lines will be flushed into a water truck for delivery to another ACTS location or a reserve pit.

The volume of frac fluid transported through a water transfer line will vary, but volume is projected to be approximately 1.75 bbls per 50-foot joint. Although the maximum working pressure is 125 psig, the liquids transfer lines will be operated at a pressure of approximately 30 to 40 psig. KMG will keep the netted pit open for one year from first production of the first produced well on the pad. During this time the surrounding well location completion fluids may be recycled in this pit and utilized for other completion jobs in the area. After one year KMG will backfill the pit and reclaim. If the pit is not needed for an entire year it will be backfilled and reclaimed earlier. KMG understands that due to the temporary nature of this system, BLM considers this a casual use situation; therefore, no permanent ROW or temporary use plan will need to be issued by the BLM.

#### **E. Location and Types of Water Supply:**

Water for drilling and completion operations will be obtained from the following sources:  
JD Field Services:

Green River: 1087' FSL & 1020' FEL, Sec. 15 – T2N – R22E

RN Industries:

High Pressure: 705' FNL & 675' FWL, Sec. 1 – T6S – R22E  
1057' FNL & 390' FWL, Sec. 1 – T6S – R22E  
1239' FNL & 52' FEL, Sec. 6 – T6S – R23E

White River: 501' FNL & 1676' FEL, Sec. 9 – T8S – R20E  
471' FNL & 1676' FEL, Sec. 9 – T8S – R20E  
900' FNL & 550' FEL, Sec. 35 – T9S – R22E  
200' FNL & 950' FEL, Sec. 2 – T10S – R22E  
275' FSL & 2275' FEL, Sec. 2 – T10S – R22E  
122' FSL & 1350' FEL, Sec. 11 – T10S – R22E  
1670' FSL & 500' FEL, Sec. 12 – T10S – R22E

Water Plant: 959' FNL & 705' FEL, Sec. 13 – T10S – R22E  
600' FSL & 900' FEL, Sec. 13 – T10S – R22E  
481' FNL & 2176' FEL, Sec. 9 – T8S – R20E  
471' FNL & 2176' FEL, Sec. 9 – T8S – R20E

Frog Pond: 4820' FNL & 1200' FWL, Sec. 33 – T8S – R20E  
4850' FNL & 700' FWL, Sec. 33 – T8S – R20E

Blue Tanks: 200' FNL & 405' FEL, Sec. 32 – T4S – R3E

Bugsy's Water Source:  
Green River: N 2090' & W 30' from E1/4 corner of Sec. 33 – T8S – R20E

Underground Water Well: N 1850' & W 425' from E1/4 corner of Sec. 33 – T8S – R20E

Water will be hauled to location over the roads marked in the individual APD's Maps A and B.

**F. Construction Materials:**

Construction operations will typically be completed with native materials found on location. Construction materials imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source (described in site-specific documents). No construction materials will be removed from Federal lands without notifying the BLM. A proposed source location other than an on-location construction site will be designated either via a map or narrative within the project specific materials provided to the BLM.

**G. Methods for Handling Waste:**

All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. KMG maintains a Spill Control and Countermeasure Plan for each applicable location, which includes notification requirements, to the BLM and other appropriate agencies, for all reportable spills of oil, produced liquids, and hazardous materials.

Any accidental release, such as a leak or spill in excess of the reportable quantity, as established by 40 CFR Part 117.3, will be reported as per the requirements of Comprehensive Environmental Response, Compensation, and Liability Act, Section 102 B. If a release involves petroleum hydrocarbons or produced liquids, KMG will comply with the notification requirements of NTL-3A.

Drill cuttings and/or drilling fluids may be contained in a reserve/completion pit whether a closed loop system is or isn't utilized and cuttings may be buried in the pit(s) upon closure. Unless specifically approved by the BLM, no oil or other oil-based drilling additives,

chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

If utilizing a closed loop system, drill cuttings and/or drilling fluids may be stored in above ground containers while on the location. All used drilling fluids may be hauled to Anadarko Petroleum Corporation's Mud Plant where it may be recycled for use at future well locations, hauled to a permitted disposal facility, or solidified for incorporation into the pad during interim reclamation practices. Drill cuttings from a closed loop system may be either hauled to an approved Utah Department of Oil, Gas and Mining Commercial Landfarm Disposal Facility or incorporated into the pad location during interim reclamation.

Pits will be constructed to eliminate the accumulation of surface precipitation runoff into the pit (via appropriate placement of subsoil storage areas and/or construction of berms, ditches, etc). Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling, completions or well testing, liquid petroleum hydrocarbons will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Netting will be placed over pits before any liquids are discharged into pit. Should hydrocarbons be released into a reserve/completion pit, they will be removed as soon as practical and before the netting is removed from the pit. Similarly, hydrocarbon removal will take place prior to the closure of the pit, unless authorization is provided for disposal via alternate pit closure methods (e.g. solidification).

The reserve and/or completion pit will be lined with a synthetic material 30 mil or thicker liner. The bottom and side walls of the pit will be void of any sharp rocks that could puncture the liner. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. After evaporation and when dry, the reserve pit liners will be cut off, ripped and/or folded back (as safety considerations allow) as near to the mud surface as possible and buried on location or hauled to a landfill prior to backfilling the pit with a minimum of five feet of soil material.

Where necessary and if conditions allow, produced liquids from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per OSO 7. Subsequently, permanent approved produced water disposal methods will be employed in accordance with OSO 7 and/or as described in a Water Management Plan (WMP). Revisions to the water source or method of transportation will be subject to written approval from the BLM.

Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after one year from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and

the pit reclaimed. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility. Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash receptacles will be collected and removed from the well location.

For the protection of livestock and wildlife, all open pits (excluding flare pits) will be fenced or netted to prevent wildlife or livestock entry.

Maximum distance between fence posts shall be no greater than 16 feet. Siphons, catchments, and absorbent pads will be installed to keep hydrocarbons produced by the drilling rig or other equipment on location from entering the reserve pit. Hydrocarbons, contaminated pads, and/or soils will be disposed of in accordance with state and federal requirements.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the CERCLA of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Hazardous materials may be contained in some grease or lubricants, solvents, acids, paint, and herbicides, among others as defined above. KMG maintains a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used during the course of construction, drilling, completion, and production operations for this project. The transport, use, storage and handling of hazardous materials will follow procedures specified by federal and state regulations. Transportation of hazardous materials to the well location is regulated by the Department of Transportation (DOT) under 49 CFR, Parts 171-180. DOT regulations pertain to the packing, container handling, labeling, vehicle placarding, and other safety aspects.

Potentially hazardous materials used in the development or operation of wells will be kept in limited quantities on well sites and at the production facilities for short periods of time.

Chemicals meeting the criteria for being an acutely hazardous material/substance or meet the quantities criteria per BLM Instruction Memorandum No. 93-344 will not be used. Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities (crude oil/condensate, produced water). They may also be kept in limited quantities on drilling sites (barite, diesel fuel, cement, cottonseed hulls etc.) for short periods of time during drilling or completion activities.

Any produced water separated from recoverable condensate during well operations will be contained in a water tank and will then be transported by pipeline and/or truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E  
NBU #159 in Sec. 35 T9S R21E  
Ace Oilfield in Sec. 2 T6S R20E  
MC&MC in Sec. 12 T6S R19E  
Pipeline Facility in Sec. 36 T9S R20E  
Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E  
Bonanza Evaporation Pond in Sec. 2 T10S R23E

Or to one of the following KMG active Salt Water Disposal (SWD) wells:

NBU 159 SWD in Sec. 35 T9S R21E  
CIGE 112D SWD in Sec. 19 T9S R21E  
CIGE 114 SWD in Sec. 34 T9S R21E  
NBU 921-34K SWD in Sec. 34 T9S R21E  
NBU 921-33F SWD in Sec. 34 T9S R21E

#### **H. Ancillary Facilities:**

If additional ancillary facilities are planned they will be depicted on site specific APDs.

#### **I. Well Site Layout:**

The location, orientation and aerial extent of each drill pad, reserve/completion/flare pit (for closed loop or non-closed loop operations), access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure, proposed cuts and fills, and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable.

Site-specific conditions may require slight deviation in actual equipment depending on whether a closed loop system is used. Surface distance may be less if using closed loop. But in either case, the area of disturbance will not exceed the maximum disturbance outlined in the attached exhibits of the APDs.

Each well will utilize either a centralized tank battery, centralized fluids management system, or have tanks installed on its pad. Production/Produced Liquid tanks will be constructed,

maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons. The tanks are not to be used for disposal of liquids from additional sources without prior approval of BLM.

## **J. Plans for Surface Reclamation:**

The surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. Interim reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils material, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

### **Interim Reclamation**

Interim reclamation may include pit evaporation, fluid removal, pit solidification, re-contouring, incorporation of cuttings, ripping, spreading top soil, seeding, and/or weed control. Interim reclamation will be performed in accordance with OSO 1, or written notification will be provided to the BLM for approval. Where feasible, drilling locations, reserve pits, or access routes not utilized for production operations will be re-contoured to a natural appearance.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. Stockpiled drill cuttings may also be incorporated into the spoils, recontoured, and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit. Disposal of pit fluids and linings is discussed in Section G.

### **Final Reclamation**

Final reclamation will be performed for unproductive wells and after the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. The BLM will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as close as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring the site and prior to replacing topsoil, final grading and site preparation will be conducted over the entire surface of the well site and access road. The area will be ripped to a depth no greater than 6 inches on 18 to 24-inch centers and the surface soil material will be uniformly pitted with longitudinal depressions perpendicular to the natural flow of water where practical. Following site preparation, topsoil will be spread on the location and prepared for seeding.

Reclamation of roads will be performed at the discretion of the BLM. All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 6 to 24 inches where practical, re-contoured to approximate the original contour of the ground and seeded in accordance with the seeding specifications of the BLM.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to the BLM.

### **Measures Common to Interim and Final Reclamation**

Soil tillage will be conducted using a disk in areas needing additional seedbed preparation following site preparation. This will provide primary soil tillage to a depth no greater than 6 inches. Prior to reseeding, compacted areas will be scarified by ripping or chiseling to loosen compacted soils, promote water infiltration, and improve soil aeration and root penetration.

Seeding will occur during optimal soil conditions and will typically be accomplished through the use of a no-till rangeland style seed drill with a "picker box." Additionally an imprinter seeder may be used. An imprinter seeder creates divots to roughen the surface and collect moisture to aid in seed germination. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The seed mixes will be selected from a list provided by or approved by the BLM, or a specific seed mix will be proposed by KMG to the BLM and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be

maintained by KMG. Every effort will be made to obtain “cheat grass free seed” and noxious weed free seed.

Seed Mix to be used for Well Site, Access Road, and Pipeline (as applicable):

**Bonanza Area Mix**                      **Pure Live Seed lbs/acre**

Crested Wheat (Hycrest)	1.5
Bottlebrush Squirreltail	1
Western Wheatgrass (Arriba)	1
Thick Spike Wheatgrass	1.5
Indian Ricegrass	1
Fourwing Saltbush	2
Shadscale	2
Forage Kochia	0.25
Rocky Mountain Bee Plant	0.5
<b>Total</b>	<b>10.75</b>

**Natural Buttes Area Mix Option 1:**                      **Pure Live Seed lbs/acre**

Indian Ricegrass (Nezpar)	3
Thick Spike Wheatgrass	2
Sandberg bluegrass	0.5
Bottlebrush squirreltail	1
Crested wheatgrass (Hycrest)	1
Winterfat	0.25
Shadscale	1.5
Four-wing saltbush	0.75
Forage Kochia	0.25
<b>Total</b>	<b>10.25</b>

**Natural Buttes Area Mix Option 2:**                      **Pure Live Seed lbs/acre**

Galleta Grass	0.5
Great Basin Wildrye	0.5
Thickspike Wheatgrass	2.5
Indian Ricegrass (Nezpar)	1
Crested Wheatgrass	1
Siberian Wheatgrass	1
Bottlebrush Squirreltail	1
Munro Globemallow	0.1
Palmer Penstemon	0.1
Rocky Mtn beeplant	0.5
Western yarrow	0.1
Shadscale	0.5
Forage Kochia	0.5
<b>Total</b>	<b>9.3</b>

**Natural Buttes Area Mix Option 3:**      **Pure Live Seed lbs/acre**

Galleta Grass	2
Sandberg bluegrass	0.5
Shadscale	0.5
Bluebunch (secar)	2
Indian Ricegrass (Nezpar)	2
Western Wheatgrass (Arriba)	2
Palmer penstemon	0.25
Munro Globemallow	0.15
Black Sage	0.25
Winterfat	0.25
Forage Kochia	0.25
<b>Total</b>	<b>10.15</b>

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage. Soil amendments such as "Sustain" (an organic fertilizer that will be applied at the rate 1,800 – 2,100 lbs/acre with seed) may also be dry broadcast or applied with hydro-seeding equipment.

## **Weed Control**

All weed management will be done in accordance with the Vernal BLM Surface Disturbance Weed Policy. Noxious weeds will be controlled, as applicable, on project areas. Monitoring and management of noxious and/or invasive weeds of concern will be completed annually until the project is deemed successfully reclaimed by the surface management agency and/or owner according to the Anadarko Integrated Weed Management Plan. Noxious weed infestations will be mapped using a GPS unit and submitted to the BLM with information required in the Vernal BLM Surface Disturbance Weed Policy. If herbicide is to be applied it will be done according to an approved Pesticide Use Proposal (PUP), inclusive of applicable locations. All pesticide applications will be recorded using a Pesticide Application Record (PAR) and will be submitted along with a Pesticide Use Report (PUR) annually prior to Dec. 31.

## **Monitoring**

Monitoring of reclaimed project areas will be completed annually during the growing season and actions to ensure reclamation success will be taken as needed. During the first two growing seasons an ocular methodology will be used to determine the success of the reclamation activities. During the 3rd growing season a 100 point line intercept (quantitative) methodology will be used to obtain basal cover. The goal is to have the reclaimed area reach 30% basal cover when compared to the reference site. If after three growing seasons the area has not reached 30% basal cover, additional reclamation activities may be necessary. Monitoring will continue until the reclaimed area reaches 75% basal cover of desirable vegetation when compared to the reference site. (Green River District Reclamation Guidelines).

All monitoring reports will be submitted electronically to the Vernal BLM in the form of a geo-database no later than March 1st of the calendar year following the data collection.

## **K. Surface/Mineral Ownership:**

Depicted on site specific APDs.

## **L. Other Information:**

### **Cultural and Paleontological Resources**

All personnel are strictly prohibited from collecting artifacts, any paleontological specimens or fossils, and from disturbing any significant cultural resources in the area. If artifacts, fossils, or any culturally sensitive materials are exposed or identified in the area of construction, all construction operations that would affect the newly discovered resource will cease, and KMG will provide immediate notification to the BLM or appropriate SMA.

## **Resource Reports**

Appropriate archaeological and paleontological reconnaissance surveys and biological field surveys will be completed and provide to the BLM for individual APDs.

**Proposed Action Annual Emissions Tables:**

Appendix A through G contains the emission table per pad based on well count.

**M. Lessee's or Operators' Representative & Certification:**

Depicted on site specific APDs.

**Appendix A:**

**Proposed Action Annual Emissions Tables: 4 Well Pad**

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>			
<b>Pollutant</b>	<b>Development</b>	<b>Production</b>	<b>Total</b>
NO <sub>x</sub>	3.8	1.2	5
CO	2.2	1.08	3.28
VOC	0.1	6.8	6.9
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

**Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison**

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NO <sub>x</sub>	5	16,547	0.03%
VOC	6.9	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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## Appendix B:

### Proposed Action Annual Emissions Tables: 5 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) <sup>1</sup>			
Pollutant	Development	Production	Total
NO <sub>x</sub>	3.8	1.5	5.3
CO	2.2	1.08	3.28
VOC	0.1	8.5	8.6
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

**Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison**

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5.3	16,547	0.03%
VOC	8.6	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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## Appendix C:

### Proposed Action Annual Emissions Tables: 6 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) <sup>1</sup>			
Pollutant	Development	Production	Total
NOx	3.8	1.8	5.6
CO	2.2	1.08	3.28
VOC	0.1	10.2	10.3
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison			
Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5.6	16,547	0.03%
VOC	10.3	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)Uintah Basin  
Data**Appendix D:****Proposed Action Annual Emissions Tables: 7 Well Pad**

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>			
<b>Pollutant</b>	<b>Development</b>	<b>Production</b>	<b>Total</b>
NOx	3.8	2.1	5.9
CO	2.2	1.08	3.28
VOC	0.1	11.9	12
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

<b>Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison</b>			
<b>Species</b>	<b>Proposed Action Production Emissions (ton/yr)</b>	<b>WRAP Phase III 2012 Uintah Basin Emission Inventory<sup>a</sup> (ton/yr)</b>	<b>Percentage of Proposed Action to WRAP Phase III</b>
NOx	5.9	16,547	0.03%
VOC	12	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)Uintah Basin  
Data**Appendix E:****Proposed Action Annual Emissions Tables: 8 Well Pad**

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>
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Pollutant	Development	Production	Total
NOx	3.8	2.4	6.2
CO	2.2	1.08	3.28
VOC	0.1	13.6	13.7
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

<b>Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison</b>			
Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	6.2	16,547	0.03%
VOC	13.7	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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## Appendix F:

### Proposed Action Annual Emissions Tables: 10 Well Pad

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>			
Pollutant	Development	Production	Total
NOx	3.8	3	6.8
CO	2.2	1.08	3.28
VOC	0.1	17	17.1
SO <sub>2</sub>	0.005	0.01	0.02

PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NO <sub>x</sub>	6.8	16,547	0.03%
VOC	17.1	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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## Appendix G:

### Proposed Action Annual Emissions Tables: 12 Well Pad

Pollutant	Development	Production	Total
NO <sub>x</sub>	3.8	3.6	7.4
CO	2.2	1.08	3.28
VOC	0.1	20.4	20.5
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45

Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory <sup>a</sup> (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	7.4	16,547	0.03%
VOC	20.5	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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## Appendix G:

### Proposed Action Annual Emissions Tables: 15 Well Pad

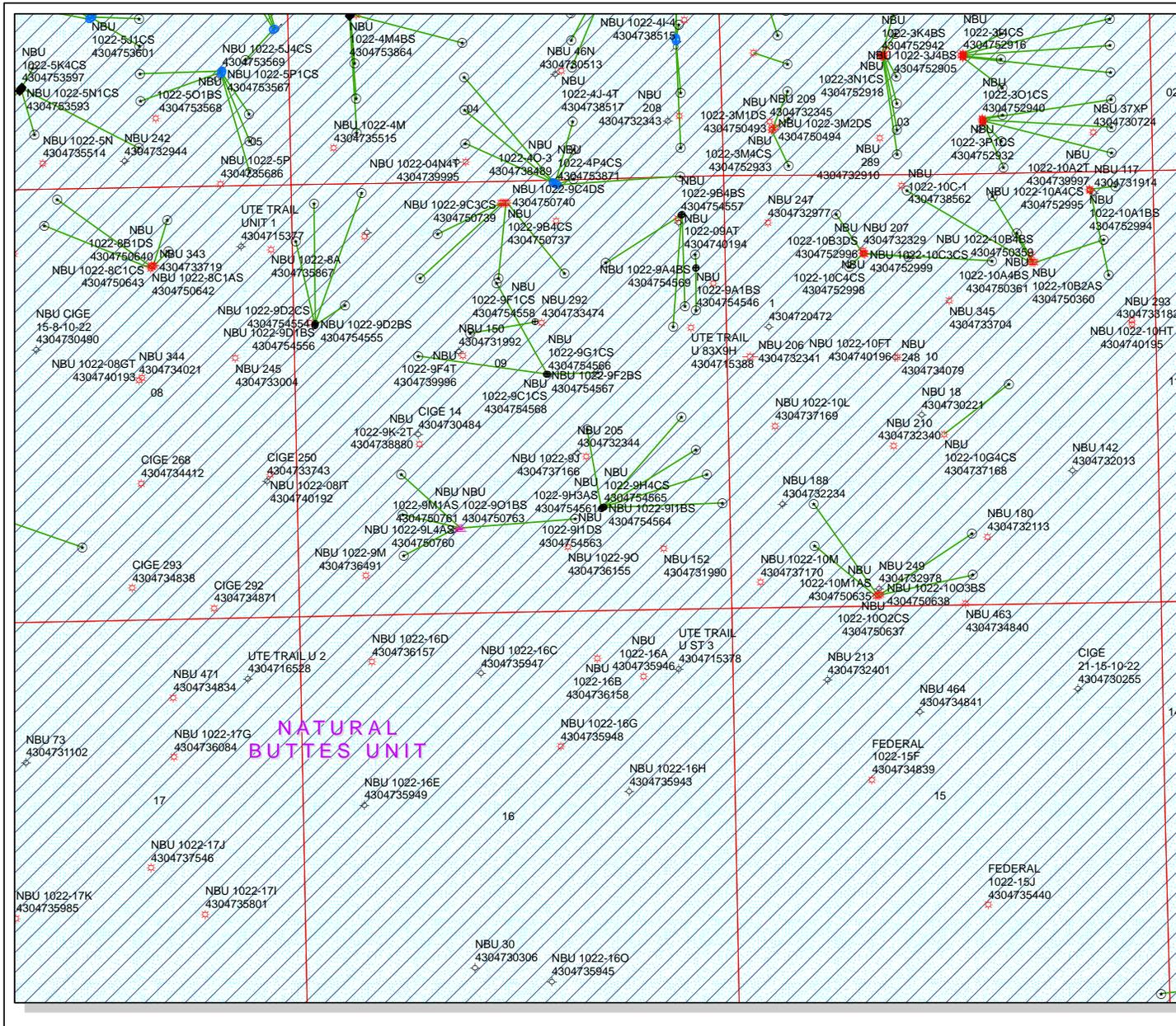
Pollutant	Development	Production	Total
NOx	3.8	4.5	8.3
CO	2.2	1.08	3.28
VOC	0.1	25.5	25.6
SO <sub>2</sub>	0.005	0.01	0.02
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

<b>Species</b>	<b>Proposed Action Production Emissions (ton/yr)</b>	<b>WRAP Phase III 2012 Uintah Basin Emission Inventory<sup>a</sup> (ton/yr)</b>	<b>Percentage of Proposed Action to WRAP Phase III</b>
NOx	8.3	16,547	0.03%
VOC	25.6	127,495	0.01%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

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API Number: 4304754562

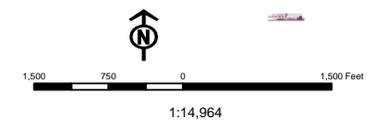
Well Name: NBU 1022-9G4CS

Township: T10.0S Range: R22.0E Section: 09 Meridian: S

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared: 7/9/2014  
Map Produced by Diana Mason

Wells Query		Units	
◆	APD - Approved Permit	□	ACTIVE
○	DRL - Spudded (Drilling Commenced)	□	EXPLORATORY
+	GIW - Gas Injection	□	GAS STORAGE
★	GS - Gas Storage	□	NF PP OIL
⊙	LOC - New Location	□	NF SECONDARY
⊠	OPS - Operation Suspended	□	PI OIL
⊞	PA - Plugged Abandoned	□	PP GAS
⊟	PGW - Producing Gas Well	□	PP GEOTHERMAL
⊠	POW - Producing Oil Well	□	PP OIL
⊞	SGW - Shut-in Gas Well	□	SECONDARY
⊟	SGW - Shut-in Oil Well	□	TERMINATED
⊠	TA - Temp. Abandoned	□	Fields
○	TW - Test Well	□	STATUS
⊞	WDW - Water Disposal	□	Unknown
⊟	WW - Water Injection Well	□	ABANDONED
●	WSW - Water Supply Well	□	ACTIVE
		□	COMBINED
		□	INACTIVE
		□	STORAGE
		□	TERMINATED



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
440 West 200 South, Suite 500  
Salt Lake City, UT 84101

**IN REPLY REFER TO:**

3160  
(UT-922)

July 14, 2014

Memorandum

To: Assistant Field Office Manager Minerals,  
Vernal Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2014 Plan of Development Natural Buttes Unit  
Uintah County, Utah.

Pursuant to email between Diana Mason, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2014 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
<b>NBU 921-19A PAD</b>		
43-047-54560	NBU 921-19A1BS	Sec 19 T09S R21E 0785 FNL 0751 FEL BHL Sec 19 T09S R21E 0086 FNL 0532 FEL
43-047-54583	NBU 921-19A1CS	Sec 19 T09S R21E 0784 FNL 0741 FEL BHL Sec 19 T09S R21E 0414 FNL 0534 FEL
43-047-54584	NBU 921-29A4CS	Sec 19 T09S R21E 0787 FNL 0761 FEL BHL Sec 19 T09S R21E 1077 FNL 0533 FEL
43-047-54585	NBU 921-19A4BS	Sec 19 T09S R21E 0782 FNL 0731 FEL BHL Sec 19 T09S R21E 0746 FNL 0533 FEL
43-047-54586	NBU 921-19H1BS	Sec 19 T09S R21E 0789 FNL 0771 FEL BHL Sec 19 T09S R21E 1408 FNL 0533 FEL
<b>NBU 1022-9J PAD</b>		
43-047-54561	NBU 1022-9H3AS	Sec 09 T10S R22E 1926 FSL 1766 FEL BHL Sec 09 T10S R22E 2219 FNL 0671 FEL
43-047-54562	NBU 1022-9G4CS	Sec 09 T10S R22E 1917 FSL 1784 FEL BHL Sec 09 T10S R22E 2359 FNL 1825 FEL
43-047-54563	NBU 1022-9I1DS	Sec 09 T10S R22E 1922 FSL 1775 FEL BHL Sec 09 T10S R22E 1980 FSL 0301 FEL
43-047-54564	NBU 1022-9I1BS	Sec 09 T10S R22E 1931 FSL 1757 FEL BHL Sec 09 T10S R22E 2331 FSL 0493 FEL
43-047-54565	NBU 1022-9H4CS	Sec 09 T10S R22E 1935 FSL 1748 FEL BHL Sec 09 T10S R22E 2613 FNL 0492 FEL

RECEIVED: July 16, 2014

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
<b>NBU 1022-9G PAD</b>		
43-047-54566	NBU 1022-9G1CS	Sec 09 T10S R22E 1685 FNL 2300 FEL
		BHL Sec 09 T10S R22E 1670 FNL 1691 FEL
43-047-54567	NBU 1022-9F2BS	Sec 09 T10S R22E 1688 FNL 2319 FEL
		BHL Sec 09 T10S R22E 1369 FNL 1379 FWL
43-047-54568	NBU 1022-9C1CS	Sec 09 T10S R22E 1687 FNL 2309 FEL
		BHL Sec 09 T10S R22E 0482 FNL 2341 FWL
<b>NBU 1022-9A PAD</b>		
43-047-54569	NBU 1022-9A4BS	Sec 09 T10S R22E 0390 FNL 0496 FEL
		BHL Sec 09 T10S R22E 0912 FNL 0491 FEL
<b>NBU 921-19B PAD</b>		
43-047-54587	NBU 921-19B4CS	Sec 19 T09S R21E 0546 FNL 2076 FEL
		BHL Sec 19 T09S R21E 1103 FNL 1961 FEL
43-047-54588	NBU 921-19G1BS	Sec 19 T09S R21E 0547 FNL 2086 FEL
		BHL Sec 19 T09S R21E 1470 FNL 1962 FEL
43-047-54589	NBU 921-19B1CS	Sec 19 T09S R21E 0545 FNL 2056 FEL
		BHL Sec 19 T09S R21E 0416 FNL 1976 FEL
43-047-54590	NBU 921-19B1BS	Sec 19 T09S R21E 0545 FNL 2066 FEL
		BHL Sec 19 T09S R21E 0078 FNL 1958 FEL
<b>NBU 921-19C PAD</b>		
43-047-54591	NBU 921-19C1BS	Sec 19 T09S R21E 0522 FNL 2164 FWL
		BHL Sec 19 T09S R21E 0088 FNL 2323 FWL

This office has no objection to permitting the wells at this time.

Michael Coulthard

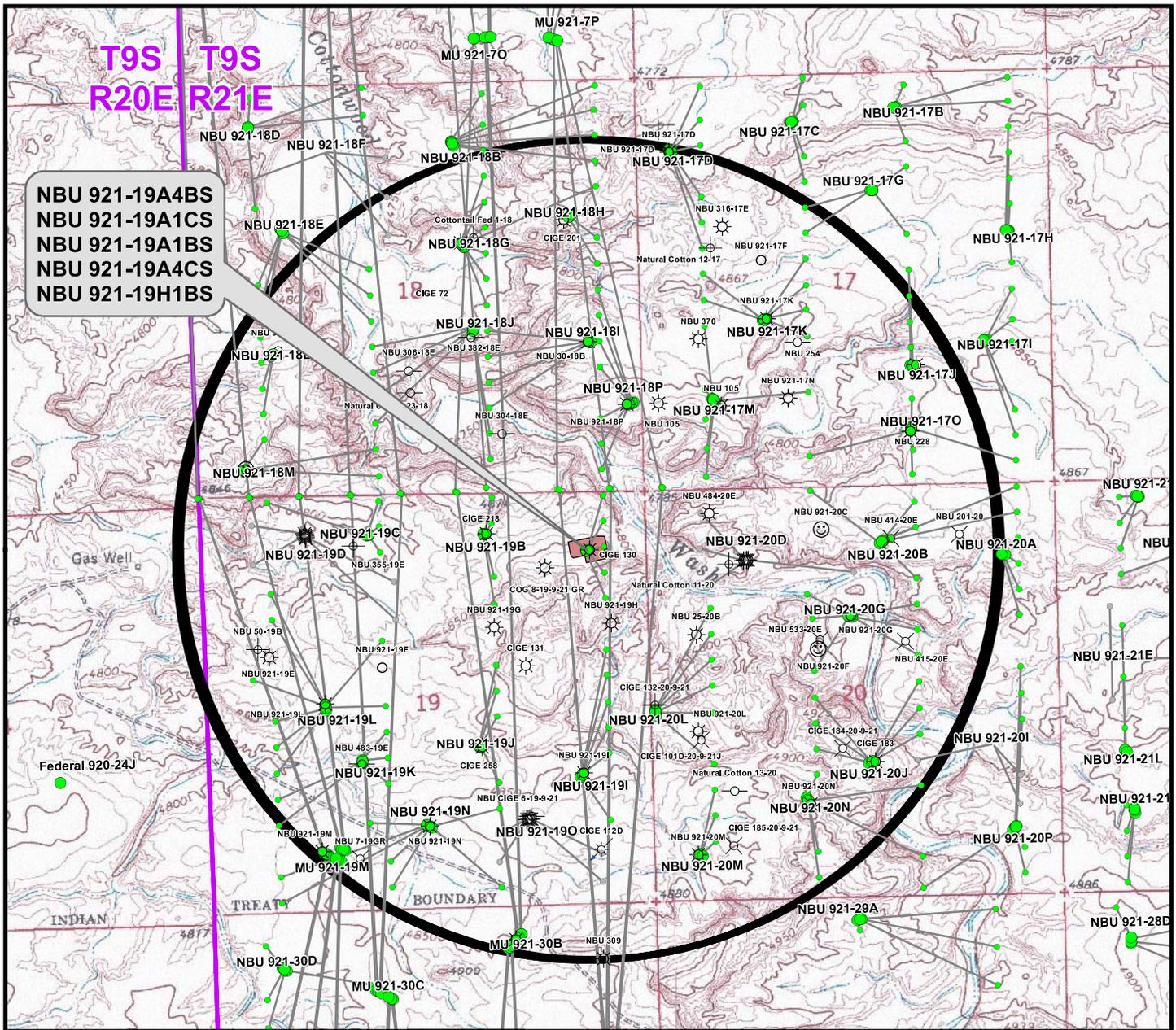
Digitally signed by Michael Coulthard  
 DN: cn=Michael Coulthard, o=Bureau of Land Management,  
 ou=Division of Minerals, email=mcoutha@blm.gov, c=US  
 Date: 2014.07.14 12:38:09 -06'00'

bcc: File - Natural Buttes Unit  
 Division of Oil Gas and Mining  
 Central Files  
 Agr. Sec. Chron  
 Fluid Chron

MCoulthard:mc:7-14-14

RECEIVED: July 16, 2014

API Number	Well Name	Surface Location
43-047-54560	NBU 921-19A1BS	Sec 19 T09S R21E 0785 FNL 0751 FEL
43-047-54561	NBU 1022-9H3AS	Sec 09 T10S R22E 1926 FSL 1766 FEL
43-047-54562	NBU 1022-9G4CS	Sec 09 T10S R22E 1917 FSL 1784 FEL
43-047-54563	NBU 1022-9I1DS	Sec 09 T10S R22E 1922 FSL 1775 FEL
43-047-54564	NBU 1022-9I1BS	Sec 09 T10S R22E 1931 FSL 1757 FEL
43-047-54565	NBU 1022-9H4CS	Sec 09 T10S R22E 1935 FSL 1748 FEL
43-047-54566	NBU 1022-9G1CS	Sec 09 T10S R22E 1685 FNL 2300 FEL
43-047-54567	NBU 1022-9F2BS	Sec 09 T10S R22E 1688 FNL 2319 FEL
43-047-54568	NBU 1022-9C1CS	Sec 09 T10S R22E 1687 FNL 2309 FEL
43-047-54569	NBU 1022-9A4BS	Sec 09 T10S R22E 0390 FNL 0496 FEL
43-047-54583	NBU 921-19A1CS	Sec 19 T09S R21E 0784 FNL 0741 FEL
43-047-54584	NBU 921-29A4CS	Sec 19 T09S R21E 0787 FNL 0761 FEL
43-047-54585	NBU 921-19A4BS	Sec 19 T09S R21E 0782 FNL 0731 FEL
43-047-54586	NBU 921-19H1BS	Sec 19 T09S R21E 0789 FNL 0771 FEL
43-047-54587	NBU 921-19B4CS	Sec 19 T09S R21E 0546 FNL 2076 FEL
43-047-54588	NBU 921-19G1BS	Sec 19 T09S R21E 0547 FNL 2086 FEL
43-047-54589	NBU 921-19B1CS	Sec 19 T09S R21E 0545 FNL 2056 FEL
43-047-54590	NBU 921-19B1BS	Sec 19 T09S R21E 0545 FNL 2066 FEL
43-047-54591	NBU 921-19C1BS	Sec 19 T09S R21E 0522 FNL 2164 FWL



NBU 921-19A4BS  
 NBU 921-19A1CS  
 NBU 921-19A1BS  
 NBU 921-19A4CS  
 NBU 921-19H1BS

Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 921-19A4BS	CIGE 130	191ft
NBU 921-19A1CS	CIGE 130	411ft
NBU 921-19A1BS	CIGE 130	719ft
NBU 921-19A4CS	CIGE 130	352ft
NBU 921-19H1BS	NBU 921-19H	333ft

**Legend**

- Well - Proposed
- Well Path
- ☀ Producing
- ⊕ Deferred
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- Bottom Hole - Proposed
- Well Pad
- ☺ Spudded
- ⊗ Cancelled
- ☀ Location Abandoned
- ⊕ Shut-In
- Bottom Hole - Existing
- ◻ Well - 1 Mile Radius
- APD Approved
- ⊗ Temporarily Abandoned
- ⊕ Preliminary Location

**WELL PAD - NBU 921-19A**

TOPO C  
 NBU 921-19A4BS,  
 NBU 921-19A1CS, NBU 921-19A1BS,  
 NBU 921-19A4CS & NBU 921-19H1BS  
 LOCATED IN SECTION 19, T9S, R21E  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202

**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

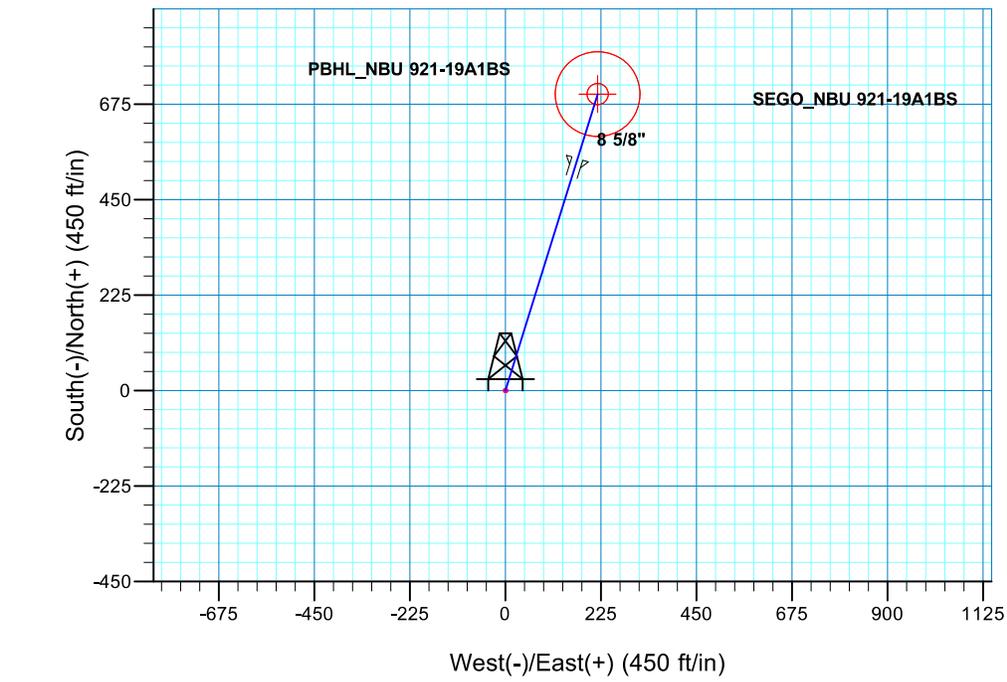
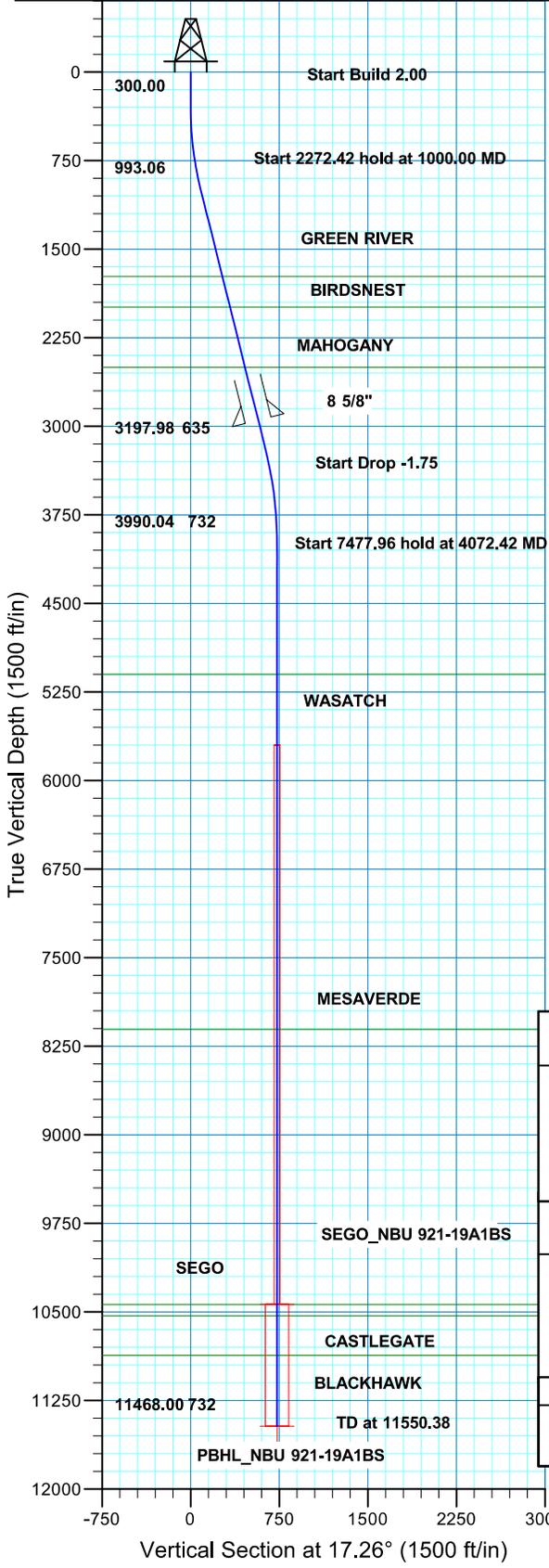
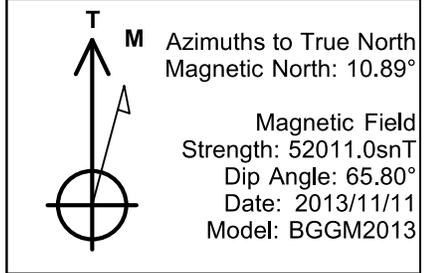
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SCALE: 1" = 2,000ft	NAD83 USP Central	<b>13</b>
DRAWN: TL	DATE: 28 Sep 2012	
REVISED: TL	DATE: 17 Dec 2013	

SHEET NO:  
13 OF 17

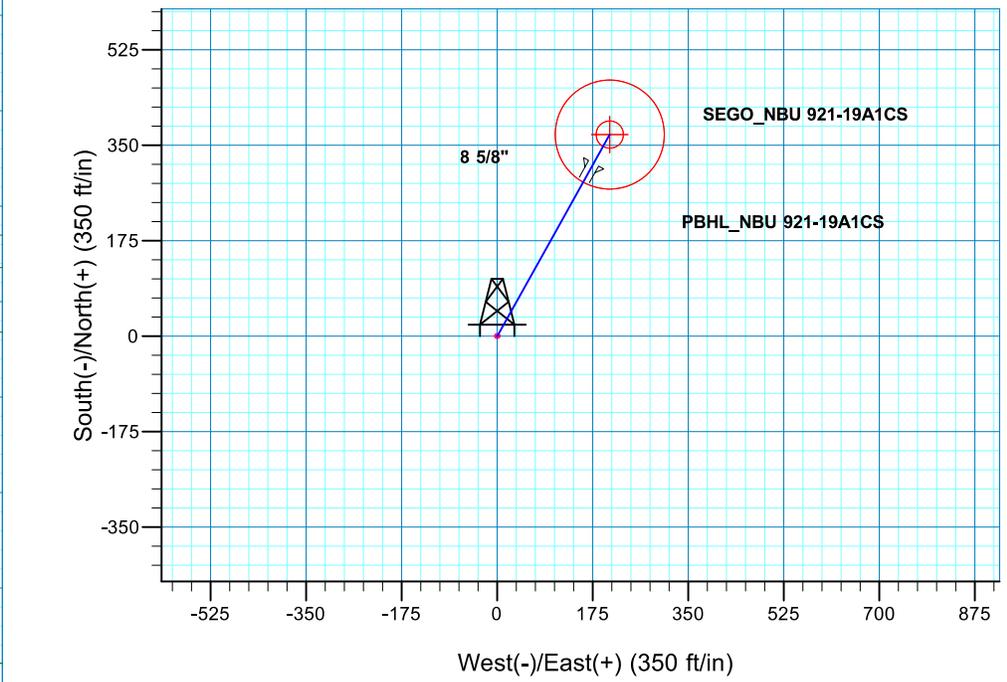
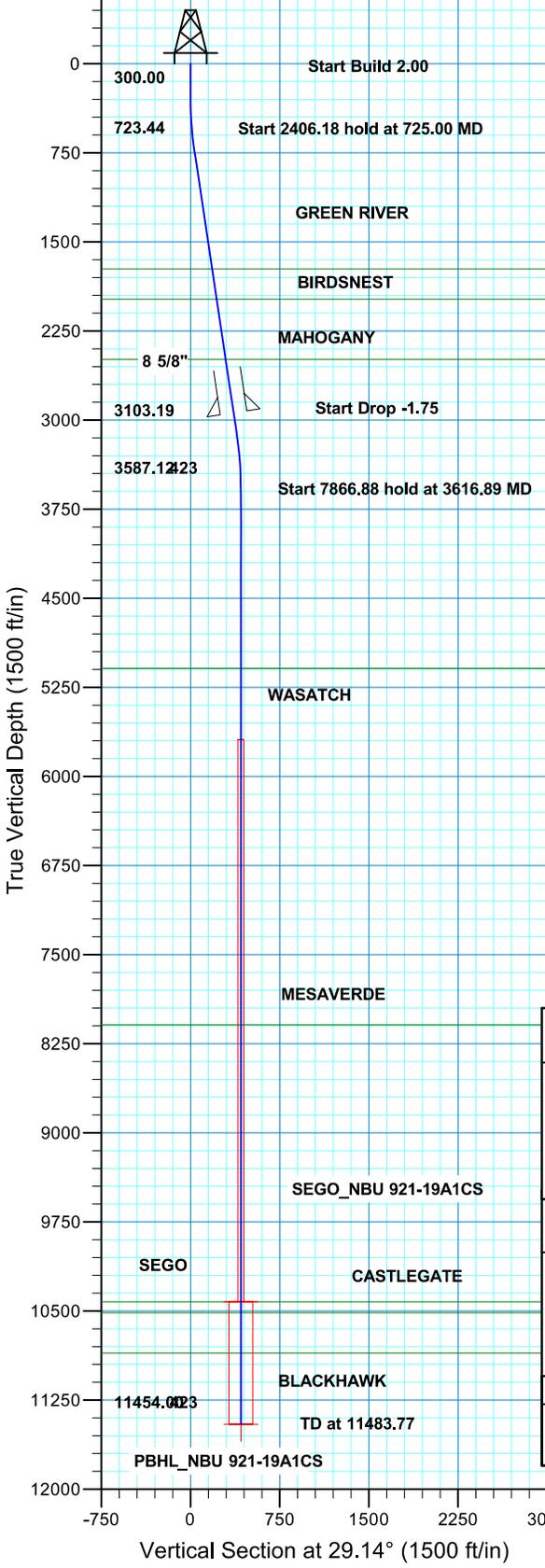
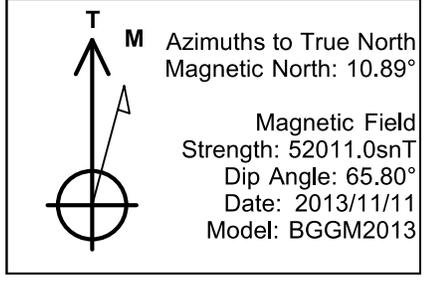
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WELL DETAILS: NBU 921-19A1BS									
GL 4856 & KB 4 @ 4860.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14538910.11	2035986.80	40.0267164	-109.5870179				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
SEGO	10436.00	699.12	217.25	14539612.58	2036192.93	40.0286360	-109.5862420	Circle (Radius: 25.00)	
- plan hits target center									
PBHL	11468.00	699.12	217.25	14539612.58	2036192.93	40.0286360	-109.5862420	Circle (Radius: 100.00)	
- plan hits target center									



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1000.00	14.00	17.26	993.06	81.26	25.25	2.00	17.26	85.10	
3272.42	14.00	17.26	3197.98	606.25	188.39	0.00	0.00	634.85	
4072.42	0.00	0.00	3990.04	699.12	217.25	1.75	180.00	732.10	
11550.38	0.00	0.00	11468.00	699.12	217.25	0.00	0.00	732.10	PBHL_NBU 921-19A1BS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N							FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 19 T9S R21E System Datum: Mean Sea Level							TVDPath	MDPath	Formation
							1731.00	1760.54	GREEN RIVER
							1990.00	2027.46	BIRDSNEST
							2499.00	2552.05	MAHOGANY
							5101.00	5183.38	WASATCH
							8108.00	8190.38	MESAVERDE
							10436.00	10518.38	SEGO
							10533.00	10615.38	CASTLEGATE
							10868.00	10950.38	BLACKHAWK
CASING DETAILS									
	TVD	MD	Name	Size					
	2949.00	3015.82	8 5/8"	8.625					

WELL DETAILS: NBU 921-19A1CS									
GL 4856 @ KB 4 @ 4860.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14538912.08	2035996.57	40.0267214	-109.5869829				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
SEGO	10423.00	369.52	206.05	14539284.82	2036196.73	40.0277360	-109.5862470	Circle (Radius: 25.00)	
- plan hits target center									
PBHL	11454.00	369.52	206.05	14539284.82	2036196.73	40.0277360	-109.5862470	Circle (Radius: 100.00)	
- plan hits target center									

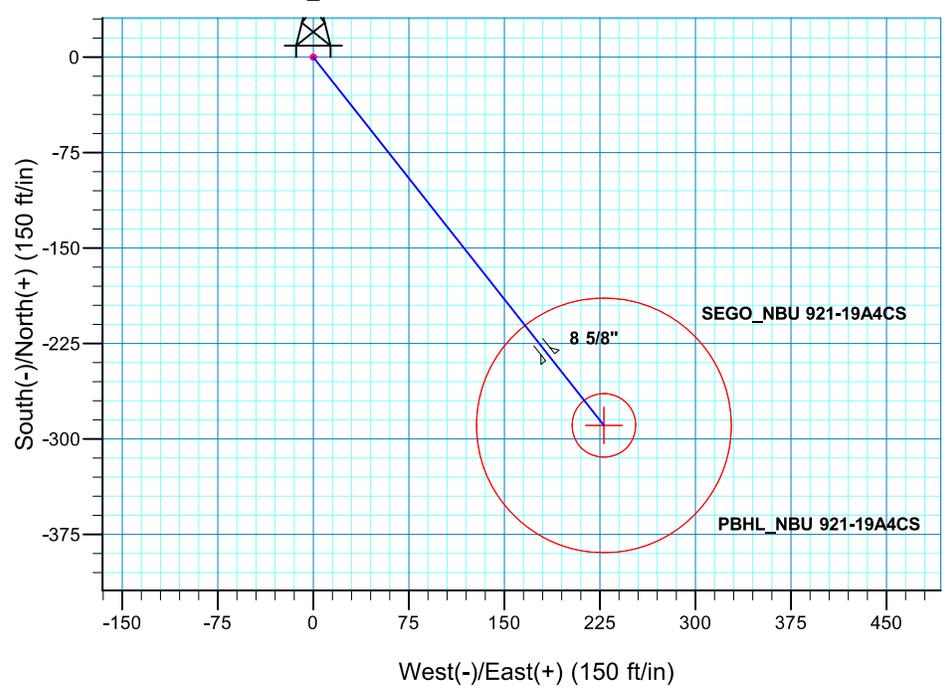
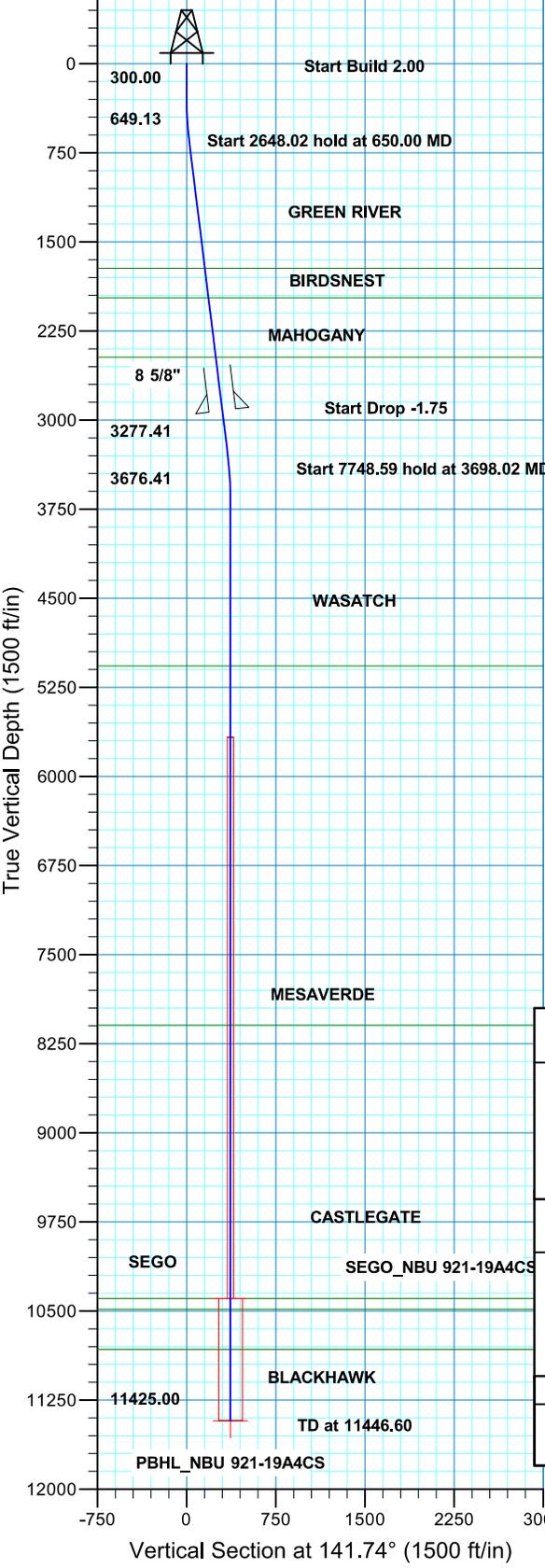
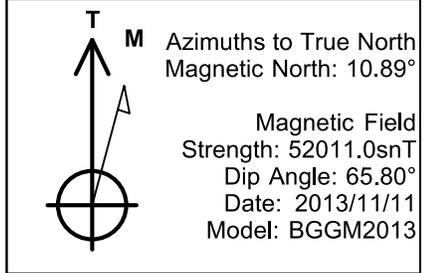


SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
725.00	8.50	29.14	723.44	27.48	15.33	2.00	29.14	31.47	
3131.18	8.50	29.14	3103.19	338.11	188.53	0.00	0.00	387.12	
3616.89	0.00	0.00	3587.12	369.52	206.05	1.75	180.00	423.09	
11483.77	0.00	0.00	11454.00	369.52	206.05	0.00	0.00	423.09	PBHL_NBU 921-19A1CS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)			TVDPath	MDPath	Formation
Datum: NAD 1927 (NADCON CONUS)			1728.00	1740.71	GREEN RIVER
Ellipsoid: Clarke 1866			1984.00	1999.56	BIRDSNEST
Zone: Zone 12N (114 W to 108 W)			2490.00	2511.18	MAHOGANY
Location: SECTION 19 T9S R21E			5090.00	5119.77	WASATCH
System Datum: Mean Sea Level			8092.00	8121.77	MESAVERDE
			10423.00	10452.77	SEGO
			10515.00	10544.77	CASTLEGATE
			10854.00	10883.77	BLACKHAWK

CASING DETAILS			
TVD	MD	Name	Size
2940.00	2966.17	8 5/8"	8.625

WELL DETAILS: NBU 921-19A4CS								
GL 4856 & KB 4 @ 4860.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14538908.13	2035977.03	40.0267114	-109.5870529			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10396.00	-289.32	228.17	14538622.47	2036209.76	40.0259170	-109.5862380	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11425.00	-289.32	228.17	14538622.47	2036209.76	40.0259170	-109.5862380	Circle (Radius: 100.00)
- plan hits target center								



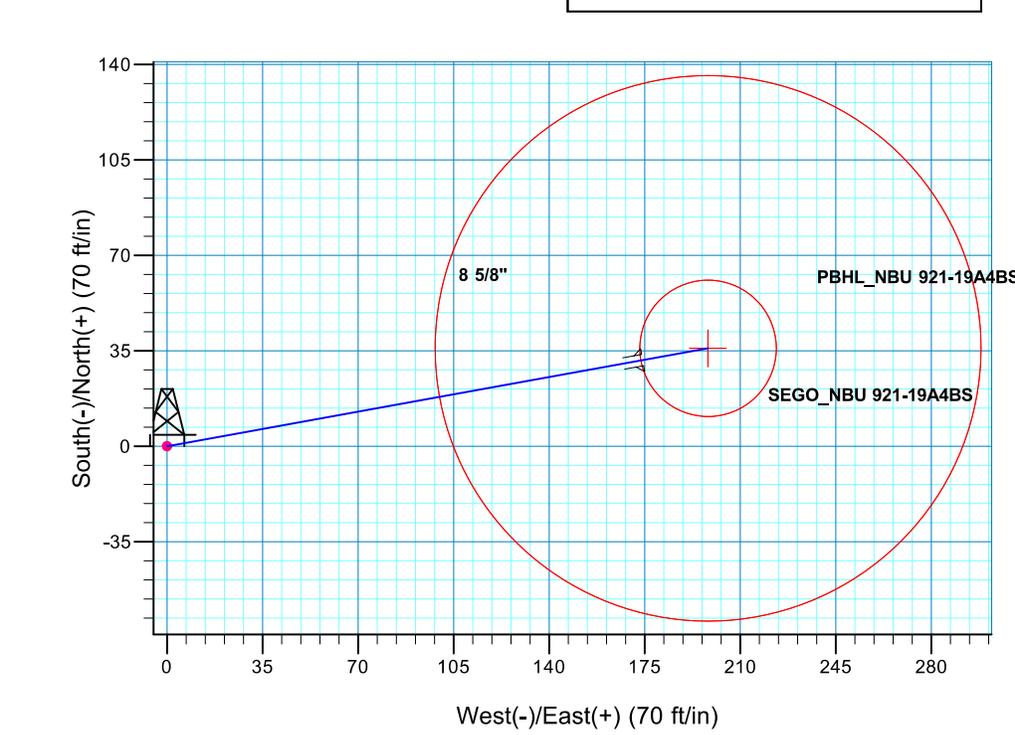
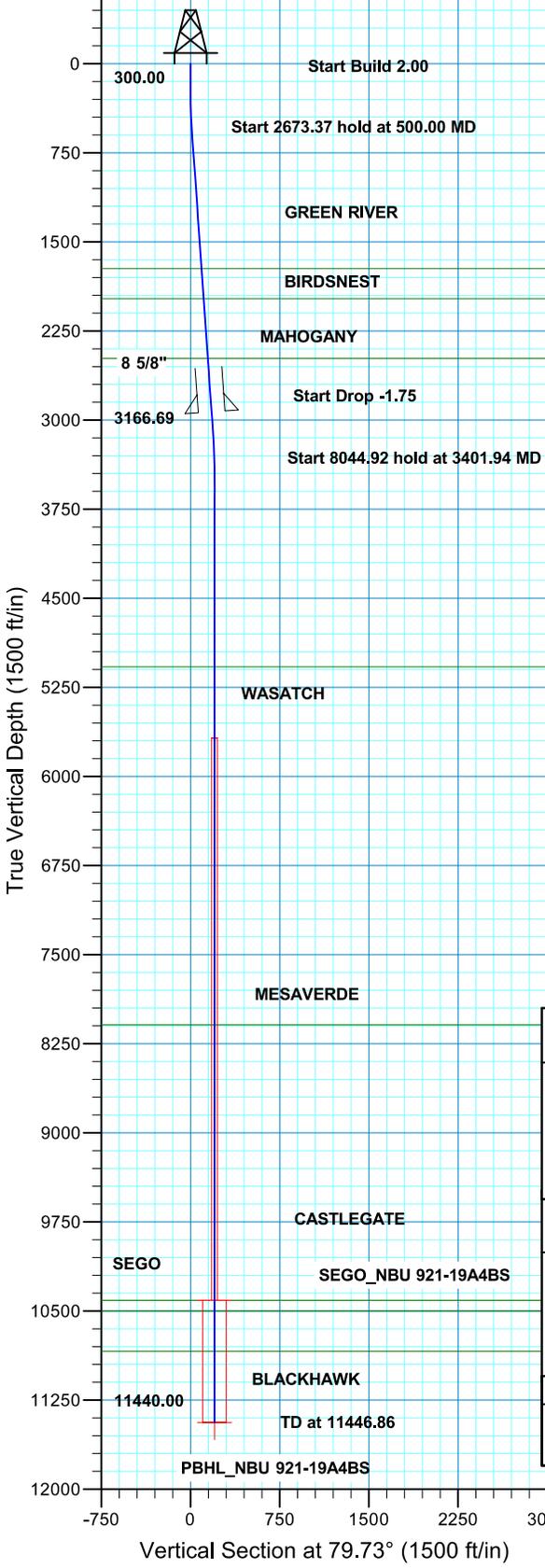
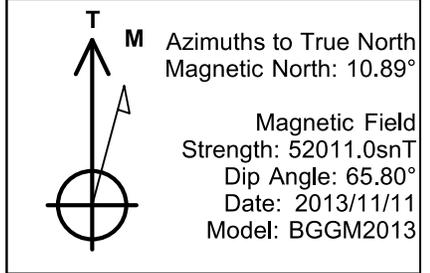
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
650.00	7.00	141.74	649.13	+16.77	13.22	2.00	141.74	21.35	
3298.02	7.00	141.74	3277.41	-270.16	213.06	0.00	0.00	344.07	
3698.02	0.00	0.00	3676.41	-289.32	228.17	1.75	180.00	368.47	
11446.60	0.00	0.00	11425.00	-289.32	228.17	0.00	0.00	368.47	PBHL_NBU 921-19A4CS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		
Geodetic System: Universal Transverse Mercator (US Survey Feet)		
Datum: NAD 1927 (NADCON CONUS)		
Ellipsoid: Clarke 1866		
Zone: Zone 12N (114 W to 108 W)		
Location: SECTION 19 T9S R21E		
System Datum: Mean Sea Level		

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1723.00	1731.93	GREEN RIVER
1970.00	1980.79	BIRDSNEST
2471.00	2485.55	MAHOGANY
5070.00	5091.60	WASATCH
8095.00	8116.60	MESAVERDE
10396.00	10417.60	SEGO
10485.00	10506.60	CASTLEGATE
10825.00	10846.60	BLACKHAWK

CASING DETAILS			
TVD	MD	Name	Size
2921.00	2938.93	8 5/8"	8.625

WELL DETAILS: NBU 921-19A4BS									
GL 4856 & KB 4 @ 4860.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14538914.06	2036006.34	40.0267264	-109.5869479				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
SEGO	10410.00	35.91	198.21	14538953.11	2036203.95	40.0268250	-109.5862400	Circle (Radius: 25.00)	
- plan hits target center									
PBHL	11440.00	35.91	198.21	14538953.11	2036203.95	40.0268250	-109.5862400	Circle (Radius: 100.00)	
- plan hits target center									



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
500.00	4.00	79.73	499.84	1.24	6.87	2.00	79.73	6.98	
3173.37	4.00	79.73	3166.69	34.49	190.36	0.00	0.00	193.46	
3401.94	0.00	0.00	3395.08	35.91	198.21	1.75	180.00	201.44	
11446.86	0.00	0.00	11440.00	35.91	198.21	0.00	0.00	201.44	PBHL_NBU 921-19A4BS

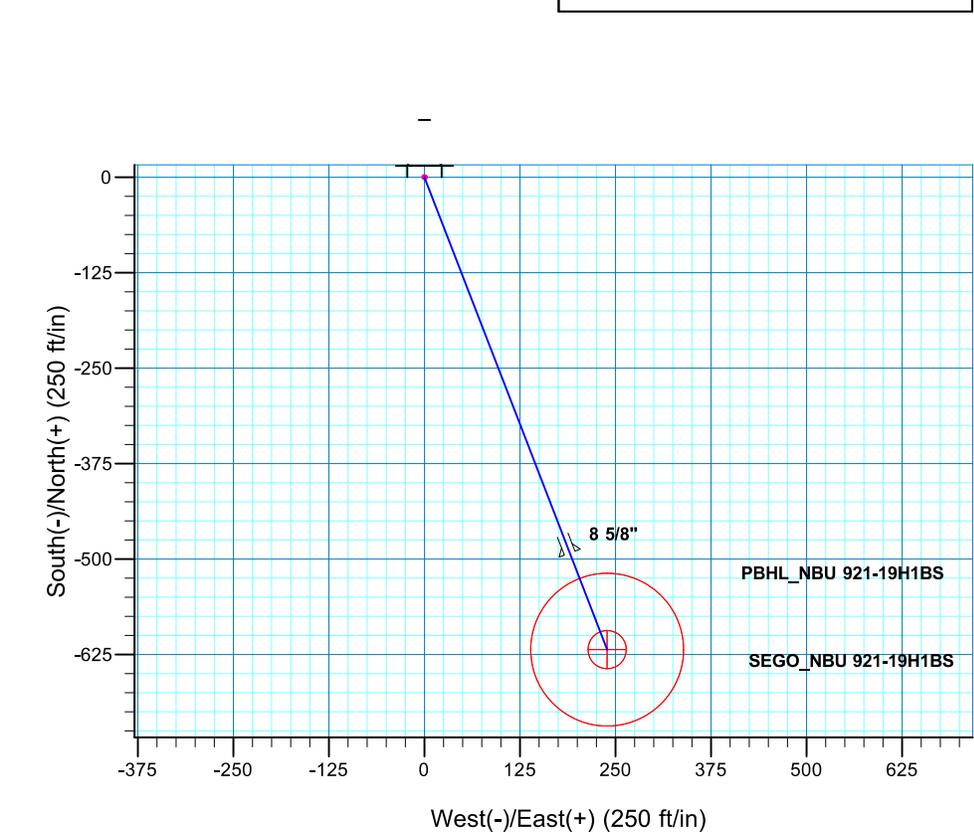
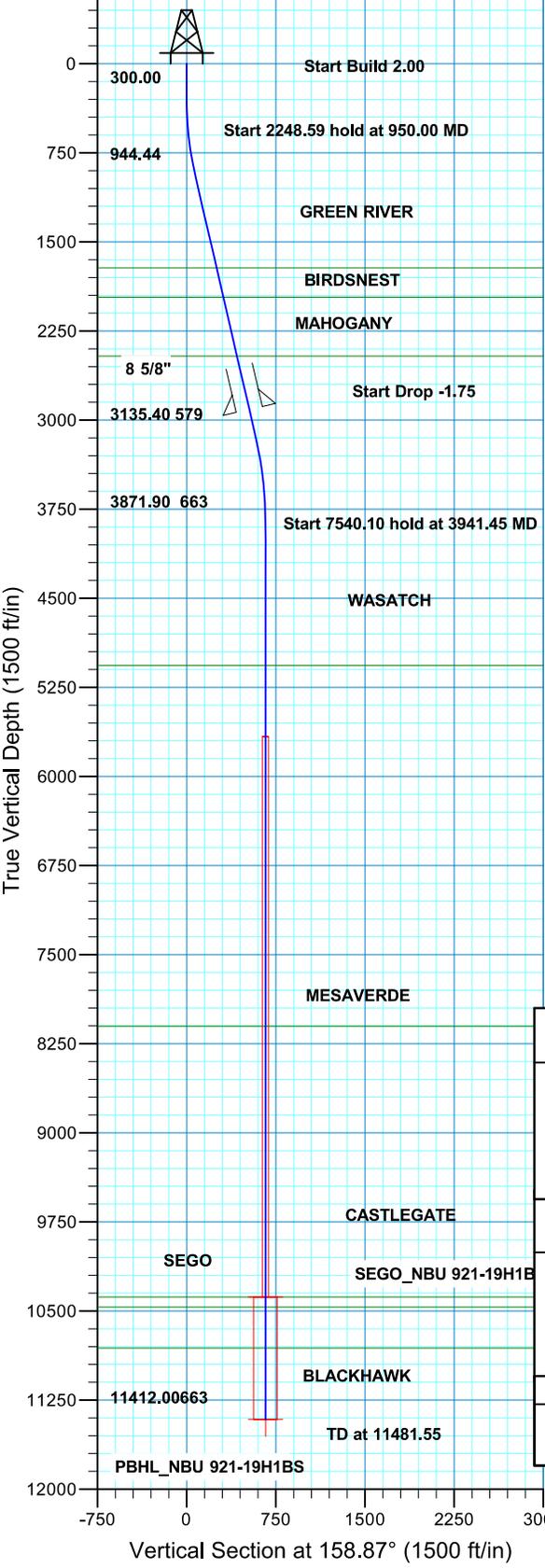
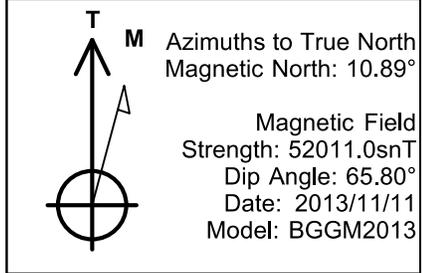
  

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)	TVDPath	MDPath	Formation		
Datum: NAD 1927 (NADCON CONUS)	1725.00	1728.15	GREEN RIVER		
Ellipsoid: Clarke 1866	1977.00	1980.77	BIRDSNEST		
Zone: Zone 12N (114 W to 108 W)	2482.00	2487.00	MAHOGANY		
Location: SECTION 19 T9S R21E	5078.00	5084.86	WASATCH		
System Datum: Mean Sea Level	8091.00	8097.86	MESAVERDE		
	10410.00	10416.86	SEGO		
	10501.00	10507.86	CASTLEGATE		
	10840.00	10846.86	BLACKHAWK		

CASING DETAILS			
TVD	MD	Name	Size
2932.00	2938.10	8 5/8"	8.625

WELL DETAILS: NBU 921-19H1BS								
G 4856 & KB 4 @ 4860,00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14538906.15	2035966.98	40.0267064	-109.5870889			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10383.00	-618.56	239.10	14538291.46	2036215.86	40.0250080	-109.5862350	Circle (Radius: 25.00)
- plan hits target center								
PBH	11412.00	-618.56	239.10	14538291.46	2036215.86	40.0250080	-109.5862350	Circle (Radius: 100.00)
- plan hits target center								

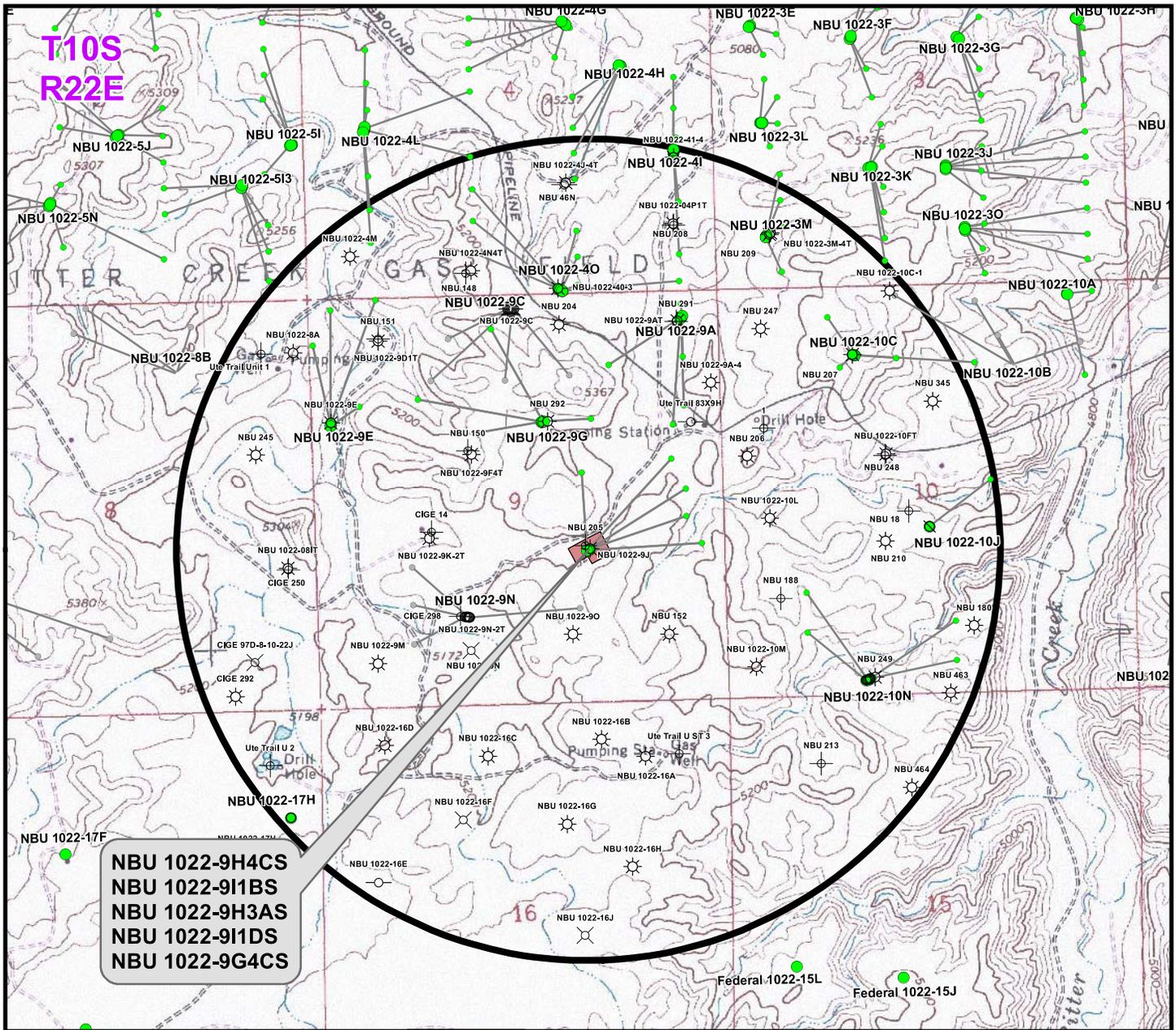


SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
950.00	13.00	158.87	944.44	-68.49	26.47	2.00	158.87	73.42	
3199.59	13.00	158.87	3135.40	-540.29	208.84	0.00	0.00	579.25	
3941.45	0.00	0.00	3871.90	-618.56	239.10	1.75	180.00	663.16	
11481.55	0.00	0.00	11412.00	-618.56	239.10	0.00	0.00	663.16	PBHL_NBU 921-19H1BS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		
Geodetic System: Universal Transverse Mercator (US Survey Feet)		
Datum: NAD 1927 (NADCON CONUS)		
Ellipsoid: Clarke 1866		
Zone: Zone 12N (114 W to 108 W)		
Location: SECTON 19 T9S R21E		
System Datum: Mean Sea Level		

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1719.00	1744.94	GREEN RIVER
1966.00	1998.43	BIRDSNEST
2462.00	2507.48	MAHOGANY
5066.00	5135.55	WASATCH
8104.00	8173.55	MESAVERDE
10383.00	10452.55	SEGO
10468.00	10537.55	CASTLEGATE
10812.00	10881.55	BLACKHAWK

CASING DETAILS			
TVD	MD	Name	Size
2912.00	2969.32	8 5/8"	8.625



**NBU 1022-9H4CS**  
**NBU 1022-9I1BS**  
**NBU 1022-9H3AS**  
**NBU 1022-9I1DS**  
**NBU 1022-9G4CS**

Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9H4CS	Ute Trail 83X9H	±873ft
NBU 1022-9I1BS	NBU 1022-10L	±1,069ft
NBU 1022-9H3AS	Ute Trail 83X9H	±543ft
NBU 1022-9I1DS	NBU 1022-10L	±924ft
NBU 1022-9G4CS	NBU 292	±790ft

**Legend**

- Well - Proposed
- Well Path
- ☀ Producing
- ⊕ Deferred
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- Bottom Hole - Proposed
- Well Pad
- ☺ Spudded
- ⊗ Cancelled
- ☀ Location Abandoned
- APD Approved
- ⊖ Temporarily Abandoned
- ⊖ Shut-In
- Bottom Hole - Existing
- ◻ Well - 1 Mile Radius
- ⊗ Preliminary Location

**WELL PAD - NBU 1022-9J**

TOPO C  
**NBU 1022-9H4CS,**  
**NBU 1022-9I1BS, NBU 1022-9H3AS,**  
**NBU 1022-9I1DS & NBU 1022-9G4CS**  
 LOCATED IN SECTION 9, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202

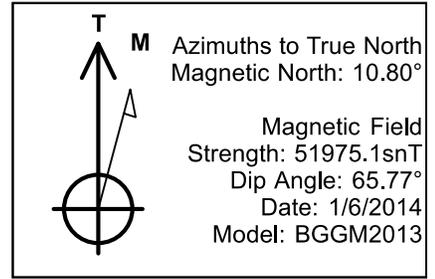


**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

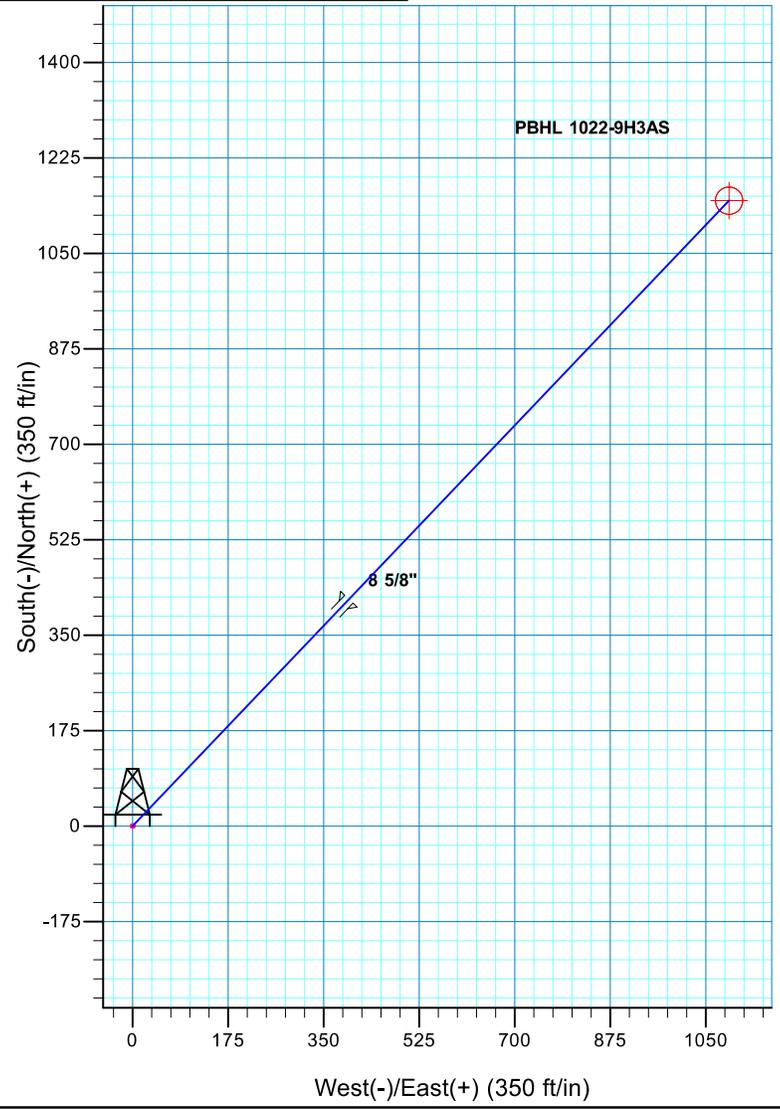
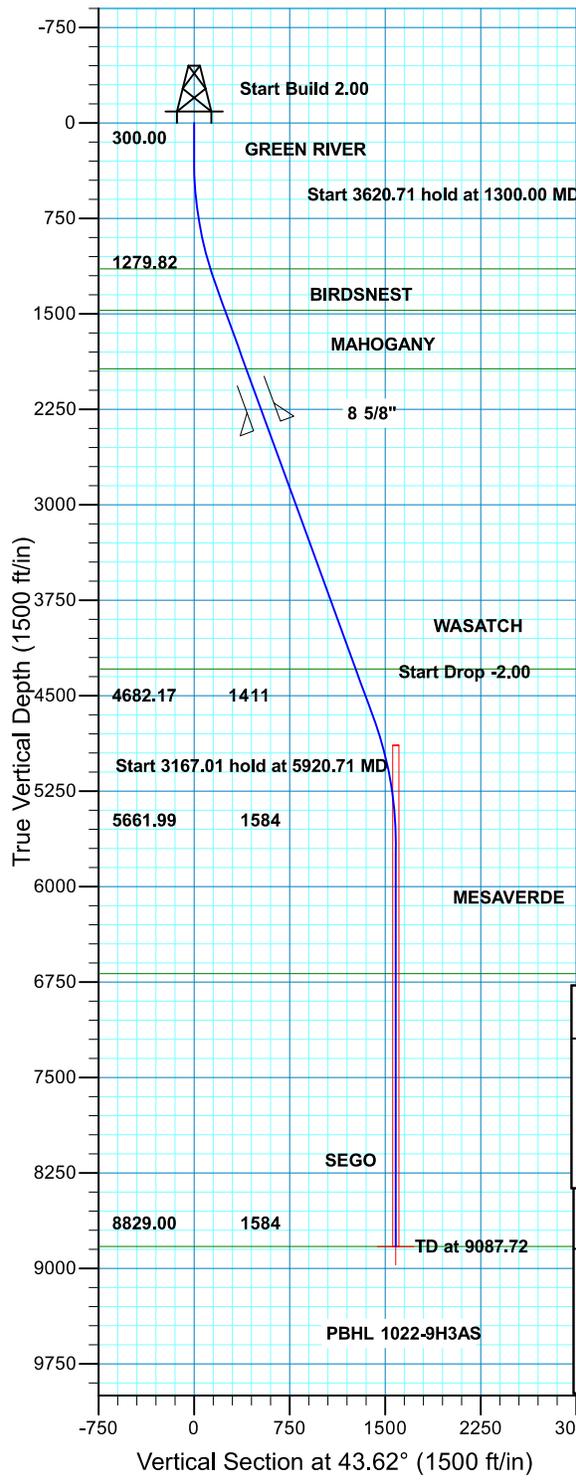
SCALE: 1" = 2,000ft	NAD83 USP Central	<b>13</b>
DRAWN: TL	DATE: 18 Nov 2013	
REVISED:	DATE:	

SHEET NO:  
13 OF 17

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WELL DETAILS: NBU 1022-9H3AS									
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14515870.92	2077289.01	39.9615760	-109.4409740				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8829.00	1146.56	1092.75	14517036.41	2078361.56	39.9647240	-109.4370750	Circle (Radius: 25.00)	
- plan hits target center									

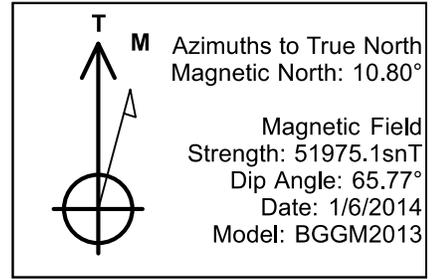


SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1300.00	20.00	43.62	1279.82	125.07	119.20	2.00	43.62	172.77	
4920.71	20.00	43.62	4682.17	1021.50	973.56	0.00	0.00	1411.12	
5920.71	0.00	0.00	5661.99	1146.56	1092.75	2.00	180.00	1583.89	
9087.72	0.00	0.00	8829.00	1146.56	1092.75	0.00	0.00	1583.89	PBHL 1022-9H3AS

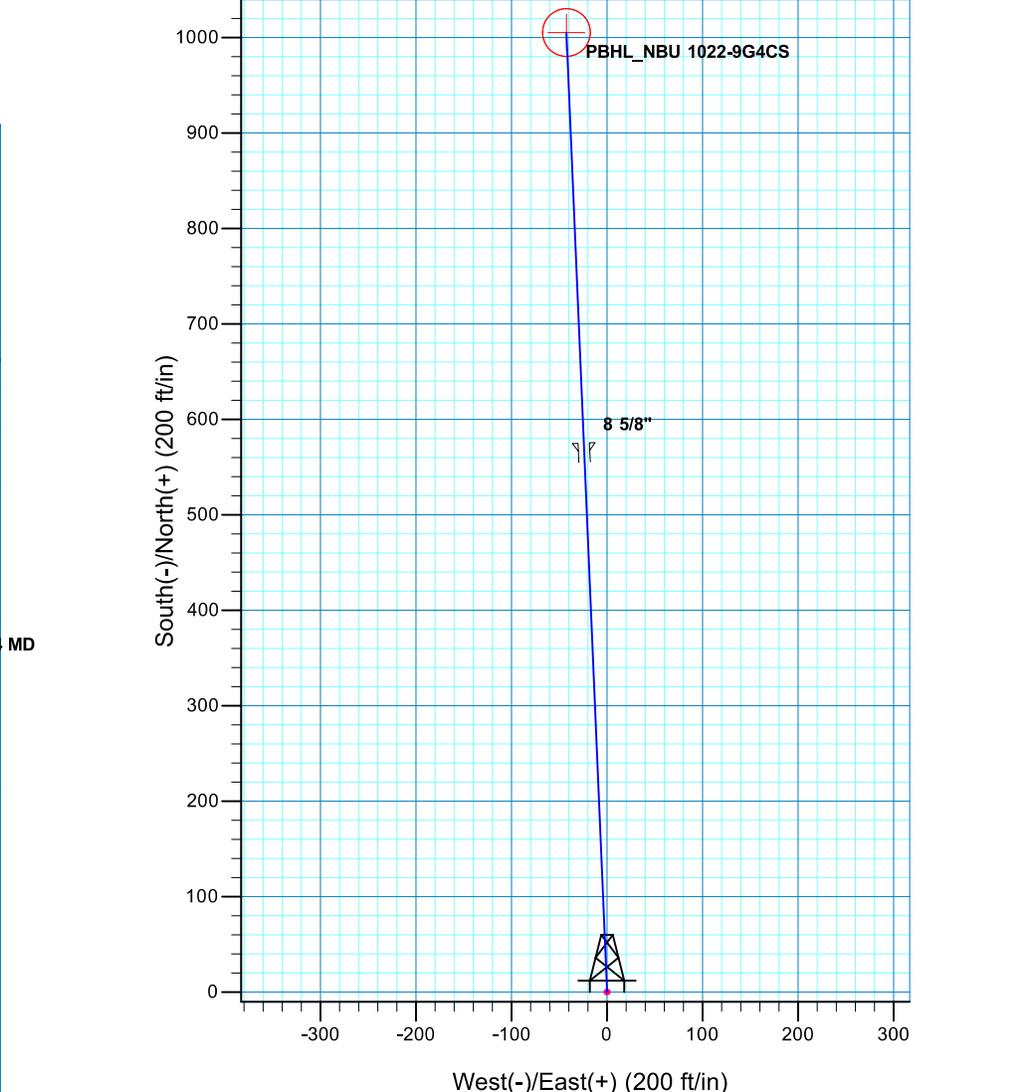
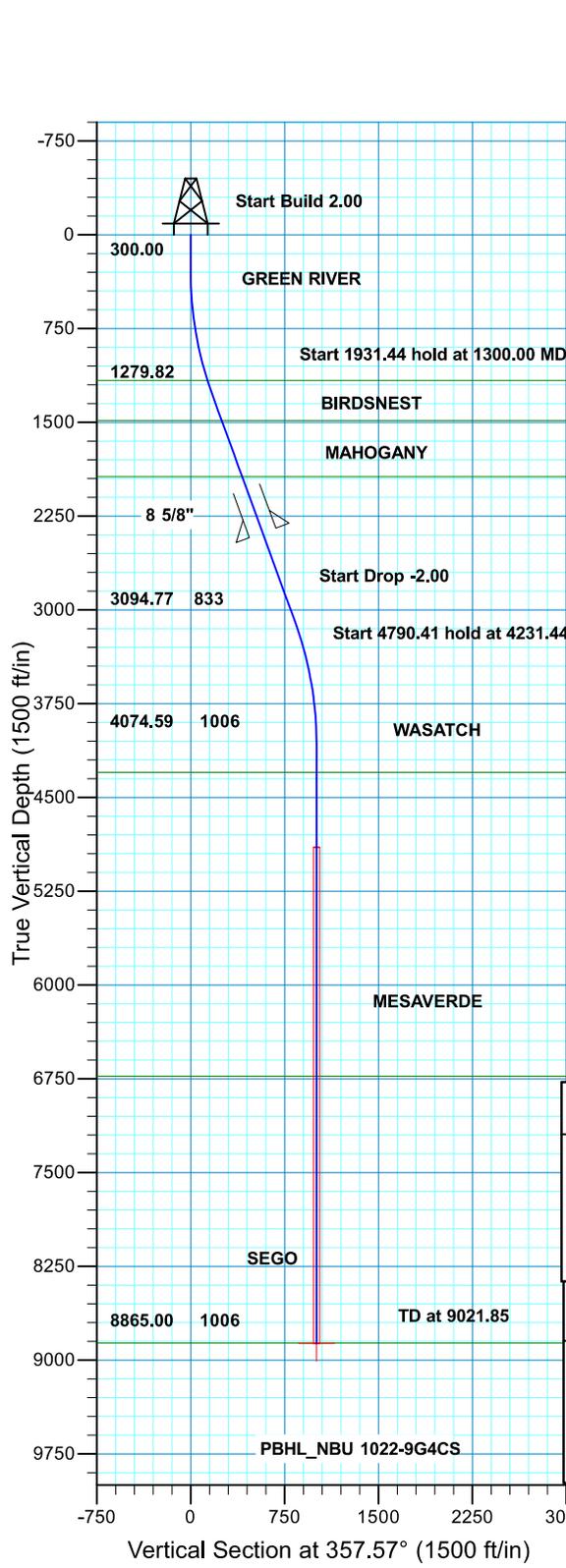
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)		TVDPATH	MDPATH	Formation
Datum: NAD 1927 (NADCON CONUS)		1147.00	1159.85	GREEN RIVER
Ellipsoid: Clarke 1866		1473.00	1505.58	BIRDSNEST
Zone: Zone 12N (114 W to 108 W)		1933.00	1995.10	MAHOGANY
Location: SECTION 9 T10S R22E		4290.00	4503.37	WASATCH
System Datum: Mean Sea Level		6684.00	6942.72	MESAVERDE
		8828.99	9087.71	SEGO
				0.00

Plan: PLAN #1 PRELIMINARY (NBU 1022-9H3AS/OH)

RECEIVED: July 02, 2014



WELL DETAILS: NBU 1022-9G4CS									
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14515861.51	2077271.24	39.9643110	-109.4410380				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8865.00	1005.22	-42.60	14516865.83	2077211.08	39.9643110	-109.4411900	Circle (Radius: 25.00)	
- plan hits target center									



SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1300.00	20.00	357.57	1279.82	172.61	-7.32	2.00	357.57	172.77
3231.44	20.00	357.57	3094.77	832.61	-35.28	0.00	0.00	833.36
4231.44	0.00	0.00	4074.59	1005.22	-42.60	2.00	180.00	1006.13
9021.85	0.00	0.00	8865.00	1005.22	-42.60	0.00	0.00	1006.13

PBHL\_NBU 1022-9G4CS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		
Geodetic System:	Universal Transverse Mercator (US Survey Feet)	
Datum:	NAD 1927 (NADCON CONUS)	
Ellipsoid:	Clarke 1866	
Zone:	Zone 12N (114 W to 108 W)	
Location:	SECTION 9 T10S R22E	
System Datum:	Mean Sea Level	

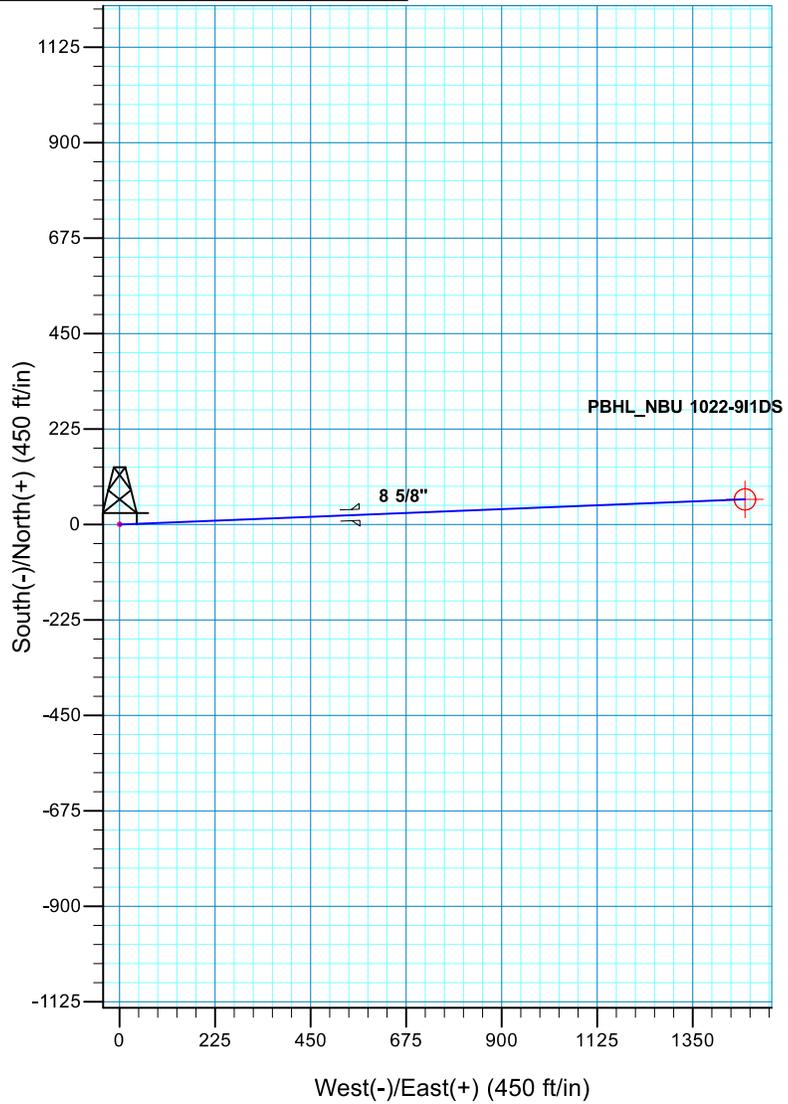
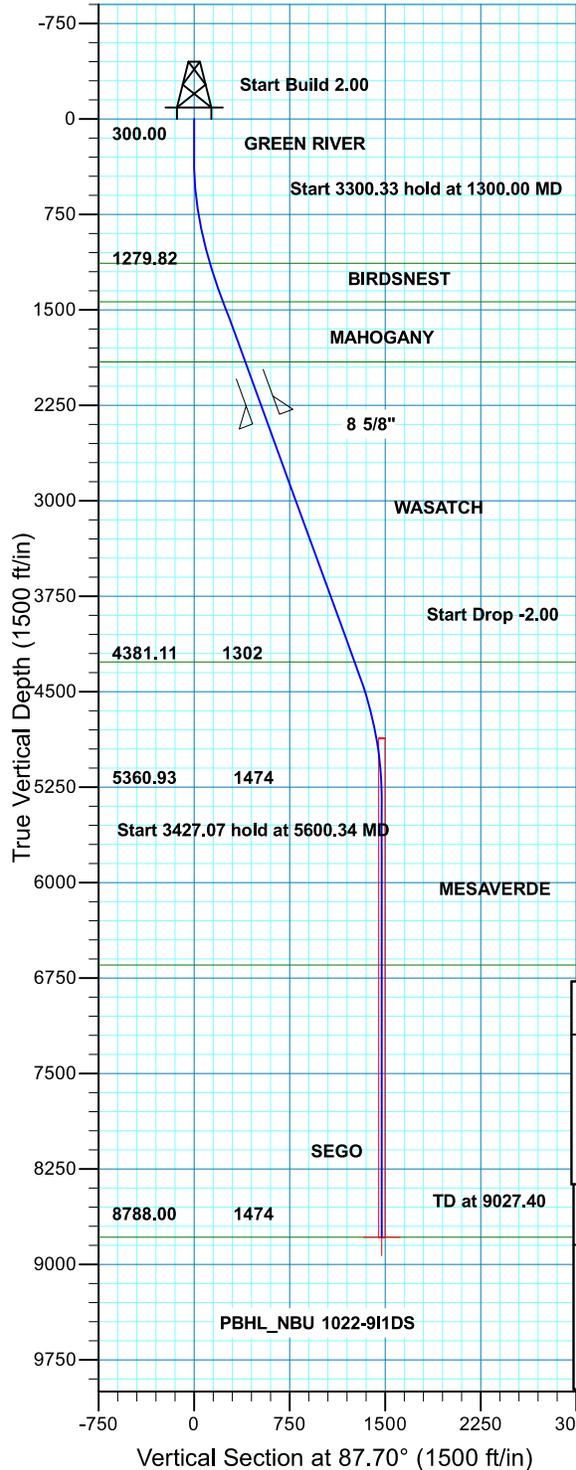
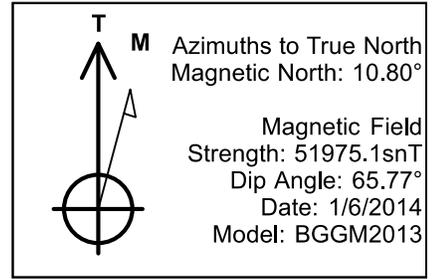
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1166.00	1179.76	GREEN RIVER
1485.00	1518.35	BIRDSNEST
1936.00	1998.30	MAHOGANY
4300.00	4456.85	WASATCH
6730.00	6886.85	MESAVERDE
8864.99	9021.84	SEGO

Plan: PLAN #1 PRELIMINARY (NBU 1022-9G4CS/OH)

Received: July 02, 2014



WELL DETAILS: NBU 1022-911DS								
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14515866.03	2077280.13	39.9615630	-109.4410060			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8788.00	59.04	1473.13	14515950.82	2078752.00	39.9617250	-109.4357500	Circle (Radius: 25.00)
- plan hits target center								



SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1300.00	20.00	87.70	1279.82	6.92	172.63	2.00	87.70	172.77
4600.33	20.00	87.70	4381.11	52.13	1300.50	0.00	0.00	1301.55
5600.34	0.00	0.00	5360.93	59.04	1473.13	2.00	180.00	1474.32
9027.40	0.00	0.00	8788.00	59.04	1473.13	0.00	0.00	1474.32

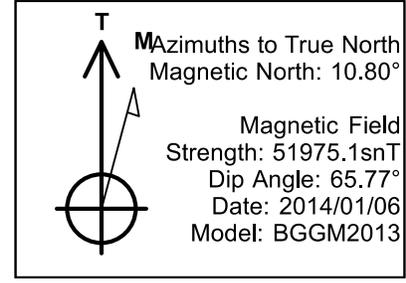
PBHL\_NBU 1022-911DS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		
Geodetic System:	Universal Transverse Mercator (US Survey Feet)	
Datum:	NAD 1927 (NADCON CONUS)	
Ellipsoid:	Clarke 1866	
Zone:	Zone 12N (114 W to 108 W)	
Location:	SECTION 9 T10S R22E	
System Datum:	Mean Sea Level	

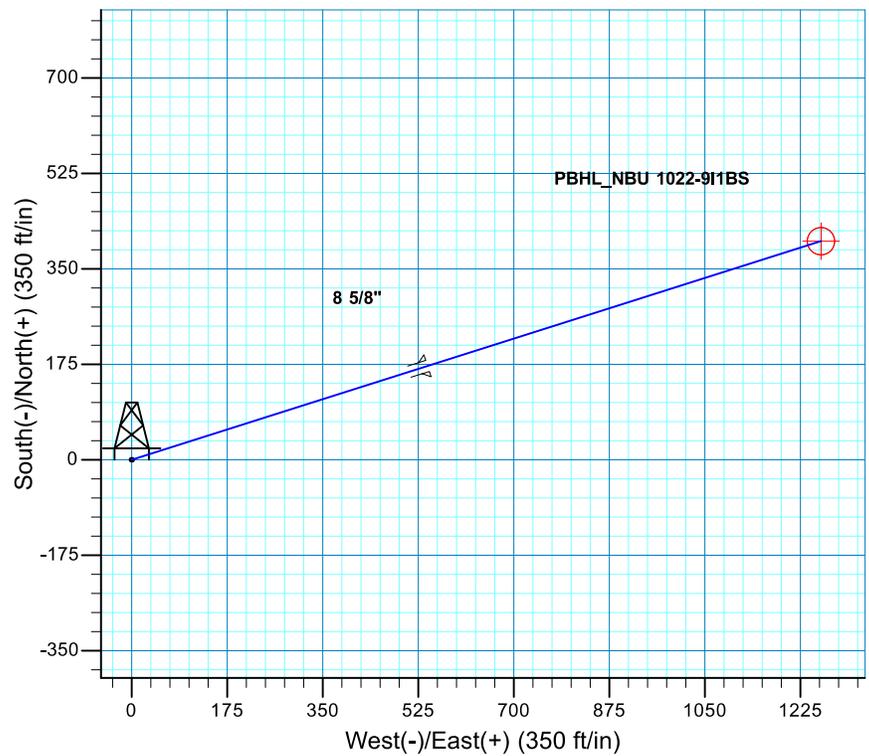
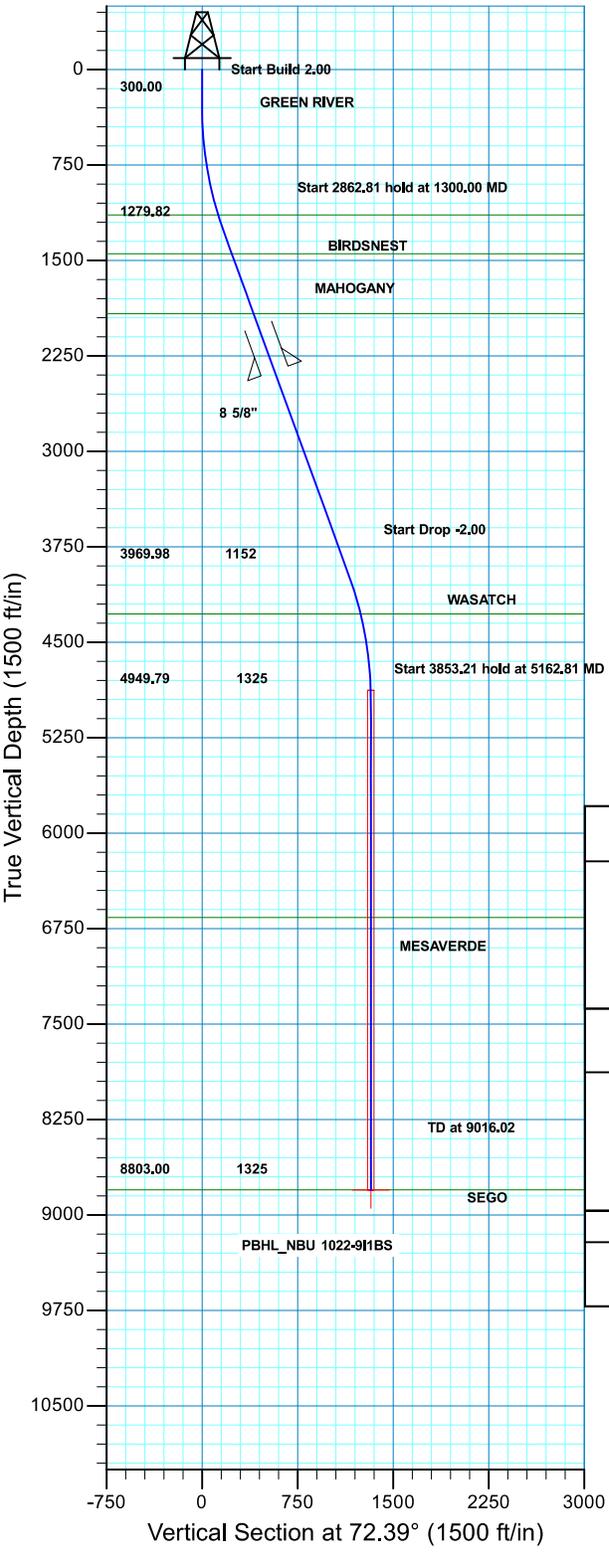
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1134.00	1146.25	GREEN RIVER
1437.00	1467.27	BIRDSNEST
1910.00	1970.63	MAHOGANY
4267.00	4478.90	WASATCH
6648.00	6887.40	MESAVERDE
8787.99	9027.39	SEGO

Plan: PLAN #1 PRELIMINARY (NBU 1022-911DS/OH)

Received: July 02, 2014



WELL DETAILS: NBU 1022-9I1BS						
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0,00	0,00	14515875,45	2077297,91	39,9615880	-109,4409420	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
PBHL	8803,00	400,66	1262,63	14516298,12	2078553,34	39,9626880
- plan hits target center						
Longitude	Shape					
-109,4364370	Circle (Radius: 25,00)					



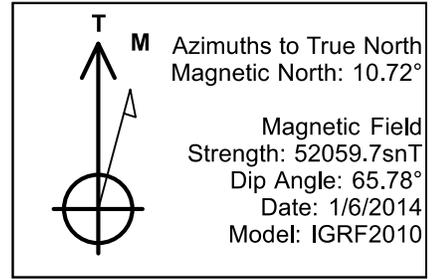
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		
300,00	0,00	0,00	300,00	0,00	0,00	0,00	0,00	0,00		
1300,00	20,00	72,39	1279,82	52,26	164,68	2,00	72,39	172,77		
4162,81	20,00	72,39	3969,98	348,41	1097,95	0,00	0,00	1151,91		
5162,81	0,00	0,00	4949,79	400,66	1262,63	2,00	180,00	1324,67		
9016,02	0,00	0,00	8803,00	400,66	1262,63	0,00	0,00	1324,67	PBHL_NBU 1022-9I1BS	

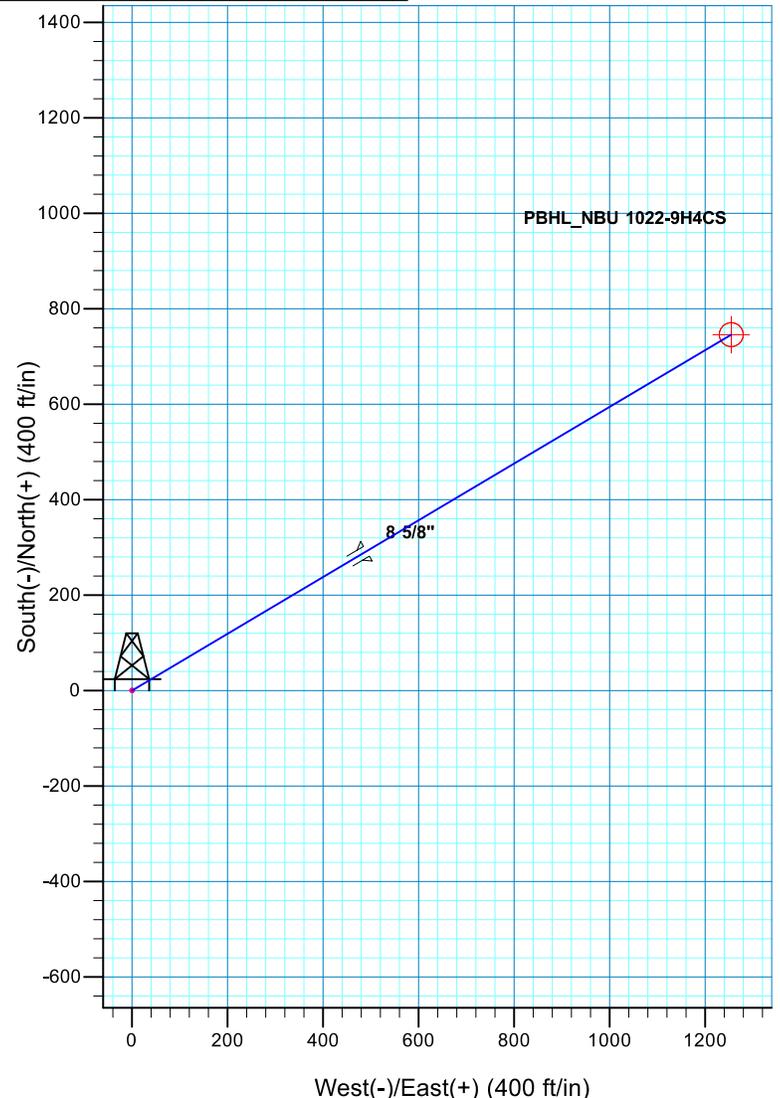
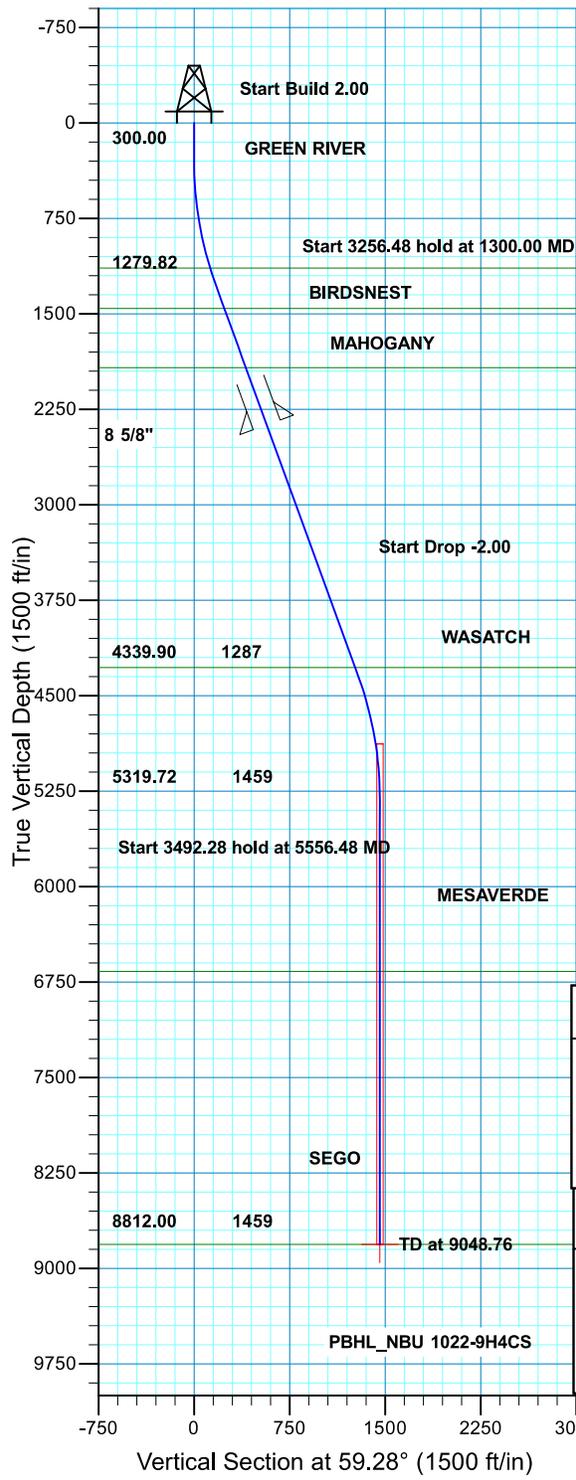
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)			TVDPath	MDPath	Formation
Datum: NAD 1927 (NADCON CONUS)			1141,00	1153,57	GREEN RIVER
Ellipsoid: Clarke 1866			1448,00	1478,98	BIRDSNEST
Zone: Zone 12N (114 W to 108 W)			1918,00	1979,14	MAHOGANY
Location: SECTION 9 T10S R22E			4276,00	4482,65	WASATCH
System Datum: Mean Sea Level			6661,00	6874,02	MESAVERDE
			8802,99	9016,01	SEGO

CASING DETAILS			
TVD	MD	Name	Size
2368,00	2458,02	8 5/8"	8.625



WELL DETAILS: NBU 1022-9H4CS						
GL 5208 & KB 4 @ 5212.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	14515880.34	2077306.51	39.9616010	-109.4409110	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
PBHL	8812.00	745.57	1254.48	14516647.72	2078547.77	39.9636480
- plan hits target center						
						Longitude
						Shape
						Circle (Radius: 25.00)



SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1300.00	20.00	59.28	1279.82	88.27	148.52	2.00	59.28	172.77
4556.48	20.00	59.28	4339.90	657.30	1105.97	0.00	0.00	1286.55
5556.48	0.00	0.00	5319.72	745.57	1254.48	2.00	180.00	1459.32
9048.76	0.00	0.00	8812.00	745.57	1254.48	0.00	0.00	1459.32

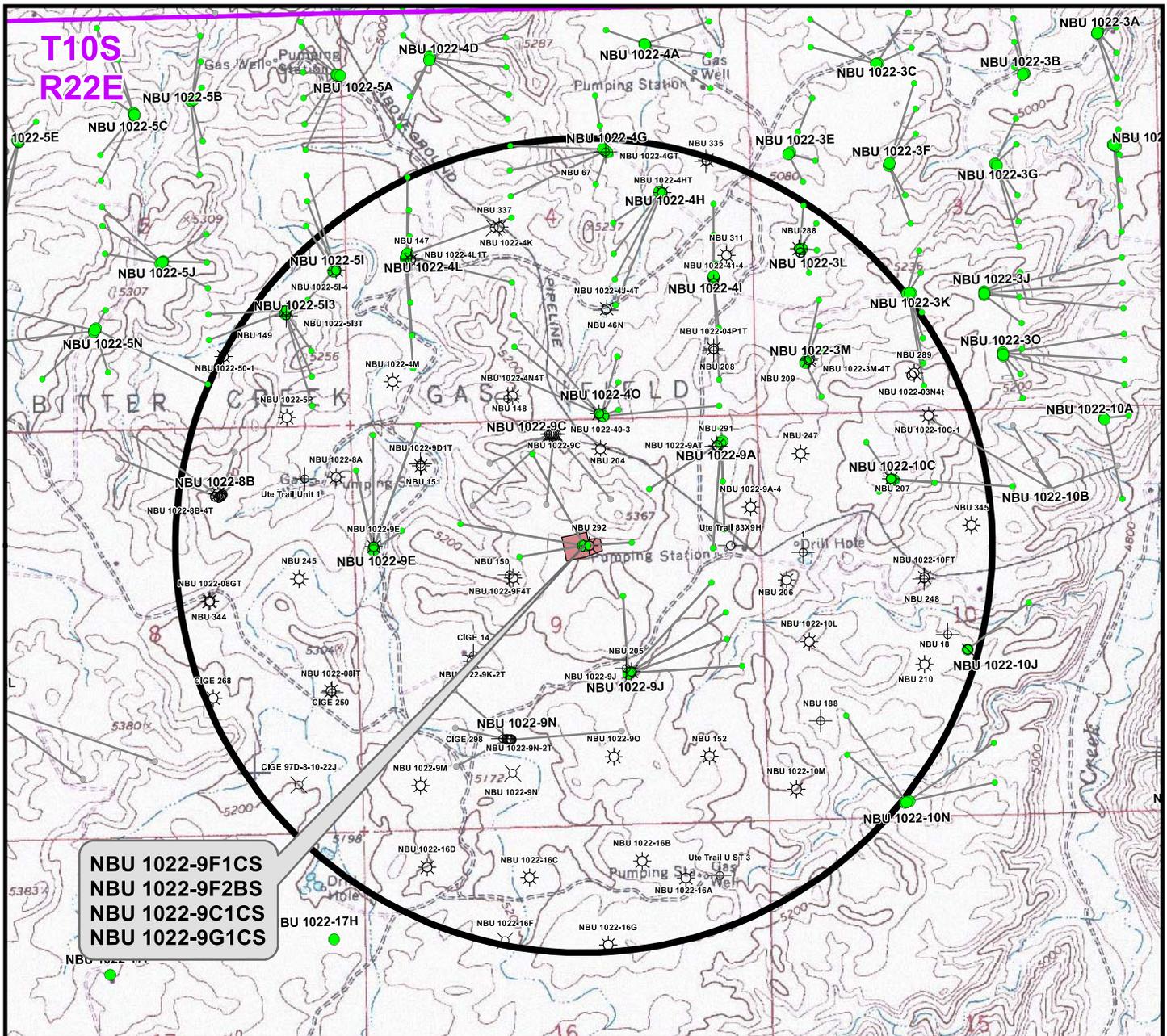
PBHL\_NBU 1022-9H4CS

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1141.00	1153.57	GREEN RIVER
1458.00	1489.62	BIRDSNEST
1924.00	1985.53	MAHOGANY
4280.00	4492.73	WASATCH
6666.00	6902.76	MESAVERDE
8811.99	9048.75	SEGO

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 9 T10S R22E  
 System Datum: Mean Sea Level

TVDPath 1141.00  
 MDPath 1153.57  
 Formation GREEN RIVER  
 TVDPath 1458.00  
 MDPath 1489.62  
 Formation BIRDSNEST  
 TVDPath 1924.00  
 MDPath 1985.53  
 Formation MAHOGANY  
 TVDPath 4280.00  
 MDPath 4492.73  
 Formation WASATCH  
 TVDPath 6666.00  
 MDPath 6902.76  
 Formation MESAVERDE  
 TVDPath 8811.99  
 MDPath 9048.75  
 Formation SEGO 0.00

Plan: PLAN #1 PRELIMINARY (NBU 1022-9H4CS/OH)  
 Received: July 02, 2014



**NBU 1022-9F1CS**  
**NBU 1022-9F2BS**  
**NBU 1022-9C1CS**  
**NBU 1022-9G1CS**

Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9F1CS	NBU 150	±268ft
NBU 1022-9F2BS	NBU 1022-9C3CS BH	±291ft
NBU 1022-9C1CS	NBU 1022-9C	±365ft
NBU 1022-9G1CS	NBU 292	±558ft

**Legend**

- Well - Proposed
- Well Path
- ☀ Producing
- ⊕ Deferred
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- Bottom Hole - Proposed
- Well Pad
- ☺ Spudded
- ⊗ Cancelled
- ☀ Location Abandoned
- ⊕ Shut-In
- Bottom Hole - Existing
- ◻ Well - 1 Mile Radius
- APD Approved
- ⊖ Temporarily Abandoned
- ⊖ Preliminary Location

**WELL PAD - NBU 1022-9G**

**TOPO C**  
**NBU 1022-9F1CS, NBU 1022-9F2BS,**  
**NBU 1022-9C1CS & NBU 1022-9G1CS**  
**LOCATED IN SECTION 9, T10S, R22E,**  
**S.L.B.&M., Uintah County, Utah**

**Kerr-McGee Oil & Gas Onshore L.P.**  
 1099 18th Street  
 Denver, Colorado 80202



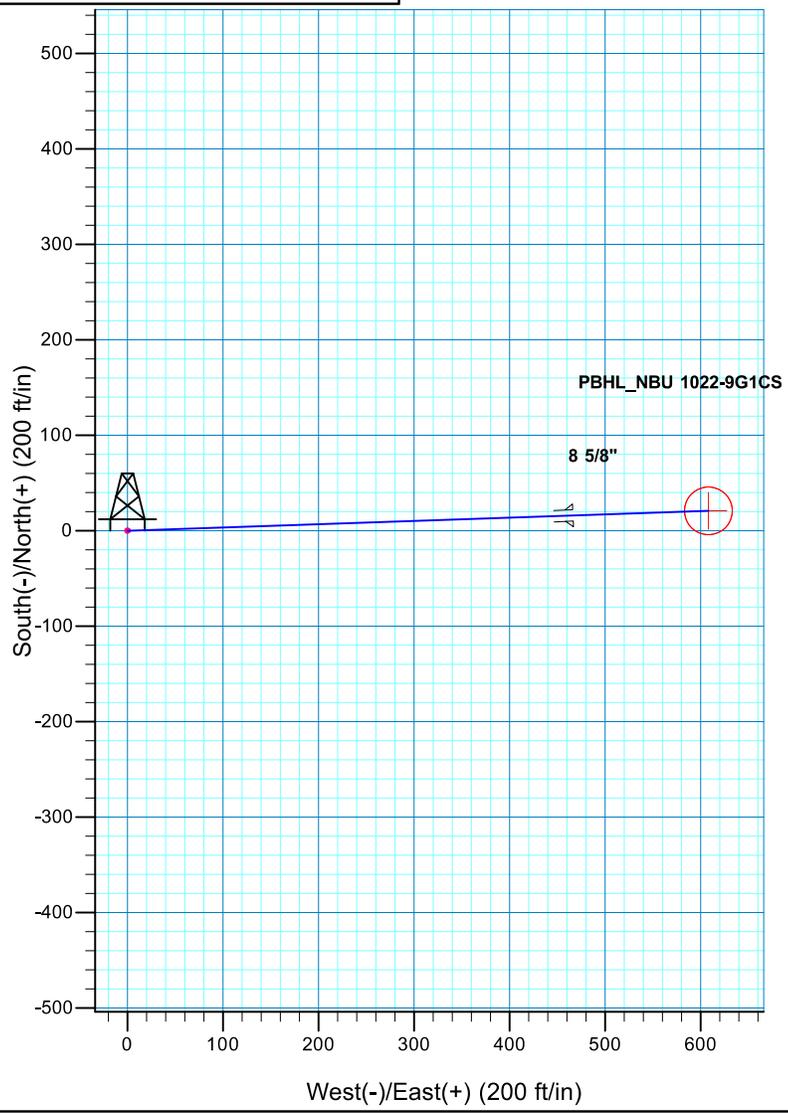
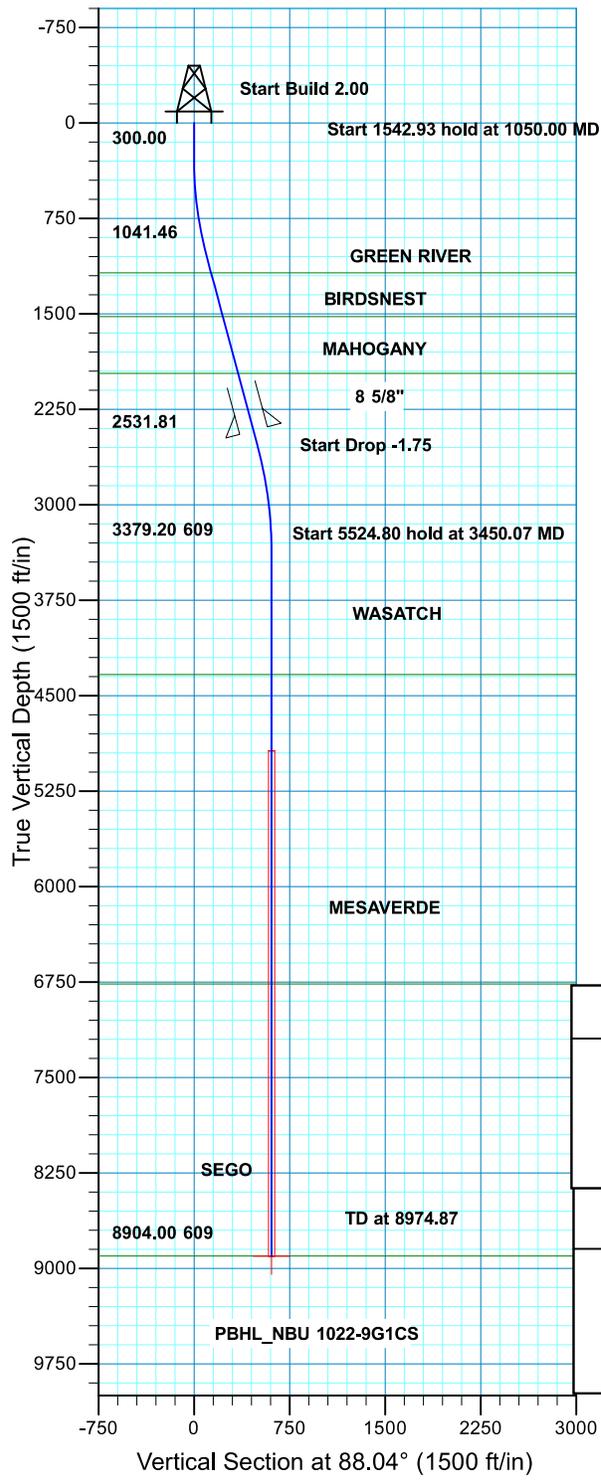
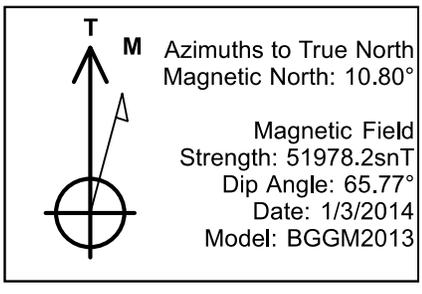
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>12</b>
DRAWN: TL	DATE: 18 Nov 2013	
REVISED:	DATE:	

SHEET NO:  
12 OF 16



WELL DETAILS: NBU 1022-9G1CS									
GL 5228 & KB 4 @ 5232,00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0,00	0,00	14517526.49	2076724.42	39,9661480	-109,4428850				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8904,00	20,77	608,16	14517557,87	2077332,12	39,9662050	-109,4407150	Circle (Radius: 25,00)	
- plan hits target center									



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
300,00	0,00	0,00	300,00	0,00	0,00	0,00	0,00	0,00	
1050,00	15,00	88,04	1041,46	3,33	97,56	2,00	88,04	97,62	
2592,93	15,00	88,04	2531,81	16,96	496,66	0,00	0,00	496,95	
3450,07	0,00	0,00	3379,20	20,77	608,16	1,75	180,00	608,51	
8974,87	0,00	0,00	8904,00	20,77	608,16	0,00	0,00	608,51	PBHL_NBU 1022-9G1CS

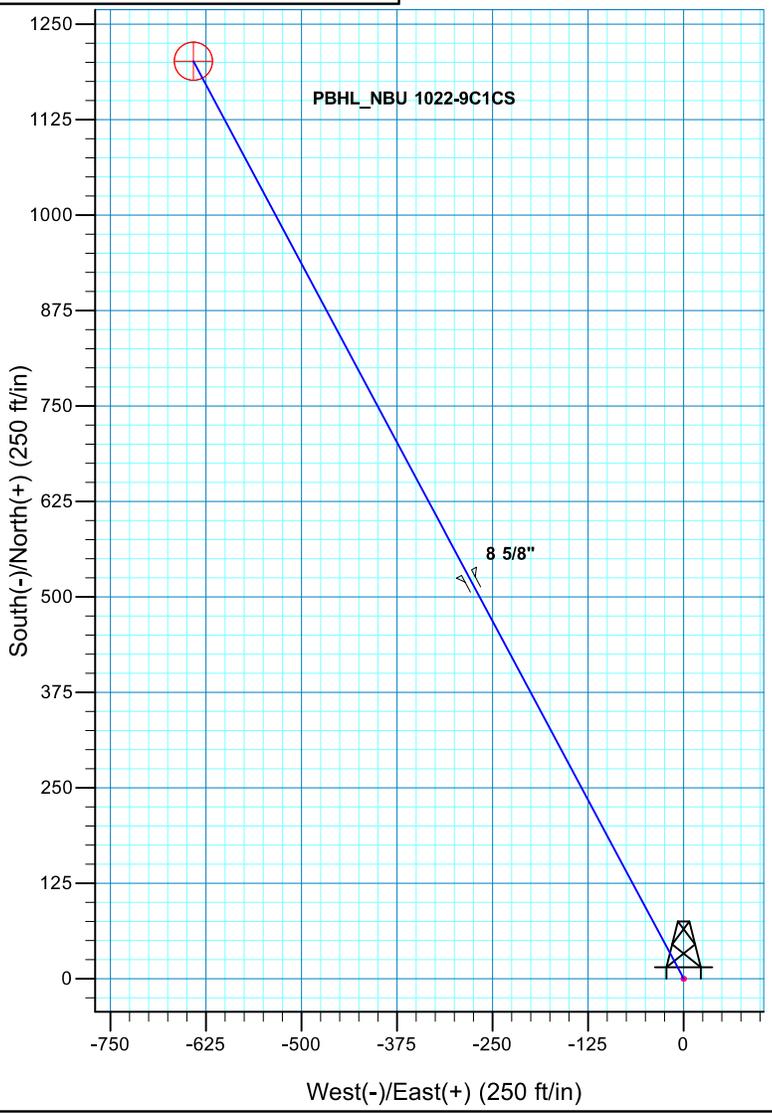
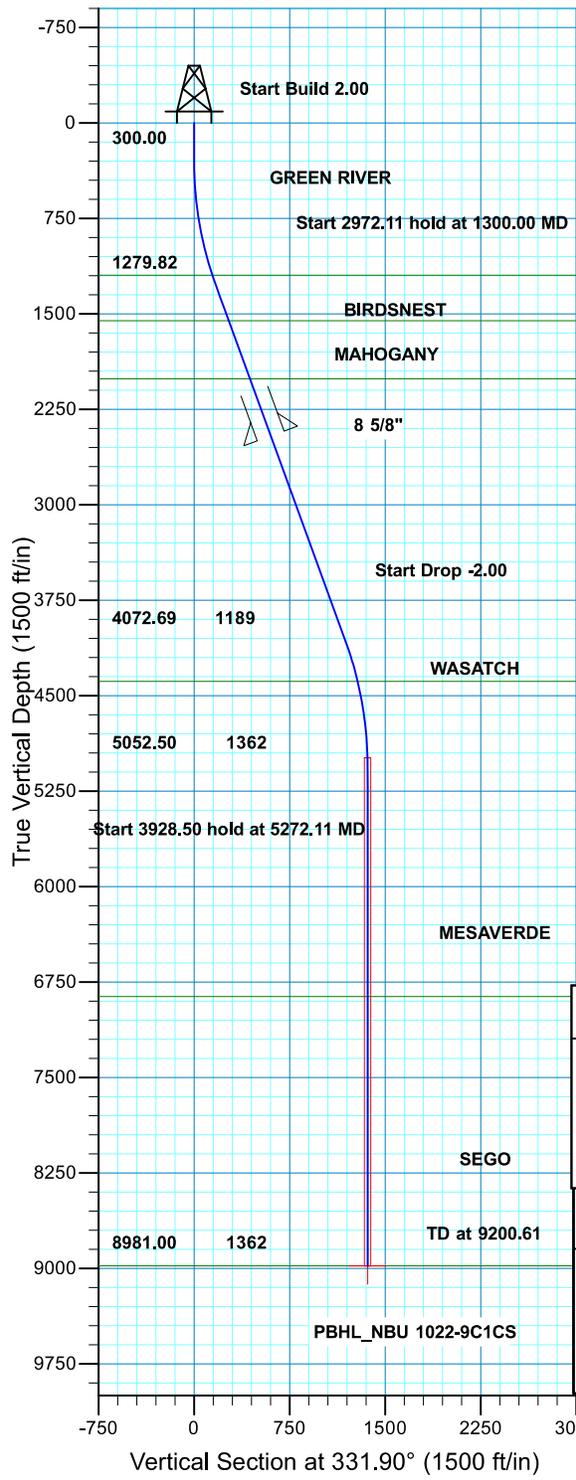
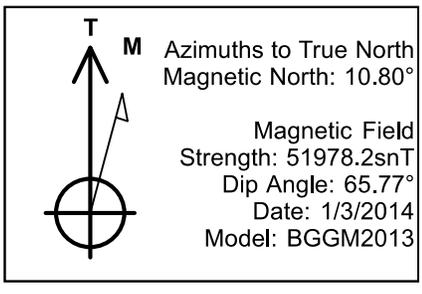
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System:	Universal Transverse Mercator (US Survey Feet)		TVDPath	MDPath	Formation
Datum:	NAD 1927 (NADCON CONUS)		1178,00	1191,35	GREEN RIVER
Ellipsoid:	Clarke 1866		1521,00	1546,45	BIRDSNEST
Zone:	Zone 12N (114 W to 108 W)		1969,00	2010,26	MAHOGANY
Location:	SECTION 9 T10S R22E		4334,00	4404,87	WASATCH
System Datum:	Mean Sea Level		6766,00	6836,87	MESAVERDE
			8903,99	8974,86	SEGO
					0.00

Plan: PLAN #1 PRELIMINARY (NBU 1022-9G1CS/OH)

Received: July 02, 2014



WELL DETAILS: NBU 1022-9C1CS									
GL 5228 & KB 4 @ 5232.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14517524.49	2076714.36	39.9661430	-109.4429210				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8981.00	1201.54	-641.48	14518714.65	2076052.01	39.9694420	-109.4452100	Circle (Radius: 25.00)	
- plan hits target center									



SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1300.00	20.00	331.90	1279.82	152.41	-81.37	2.00	331.90	172.77
4272.11	20.00	331.90	4072.69	1049.14	-560.11	0.00	0.00	1189.29
5272.11	0.00	0.00	5052.50	1201.54	-641.48	2.00	180.00	1362.06
9200.61	0.00	0.00	8981.00	1201.54	-641.48	0.00	0.00	1362.06

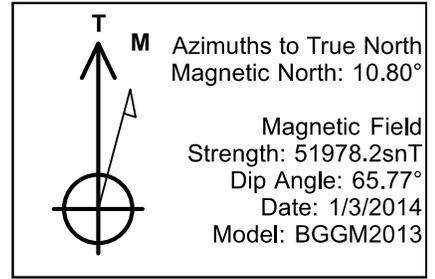
PBHL\_NBU 1022-9C1CS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 9 T10S R22E  
 System Datum: Mean Sea Level

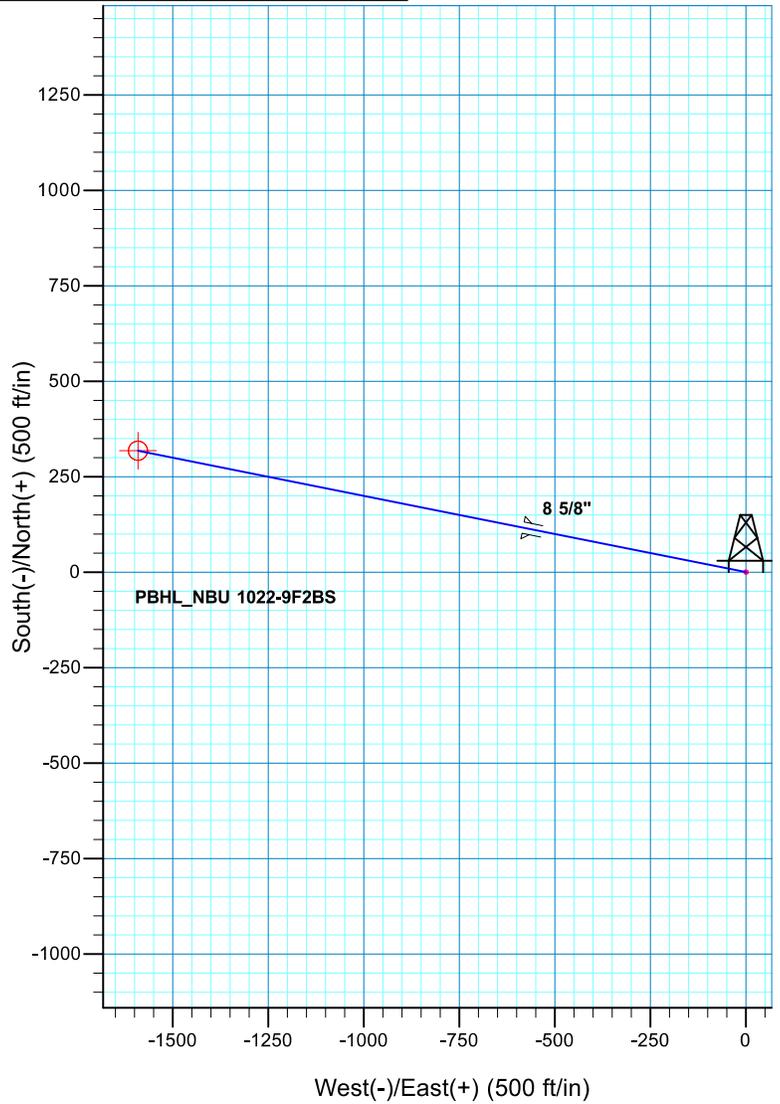
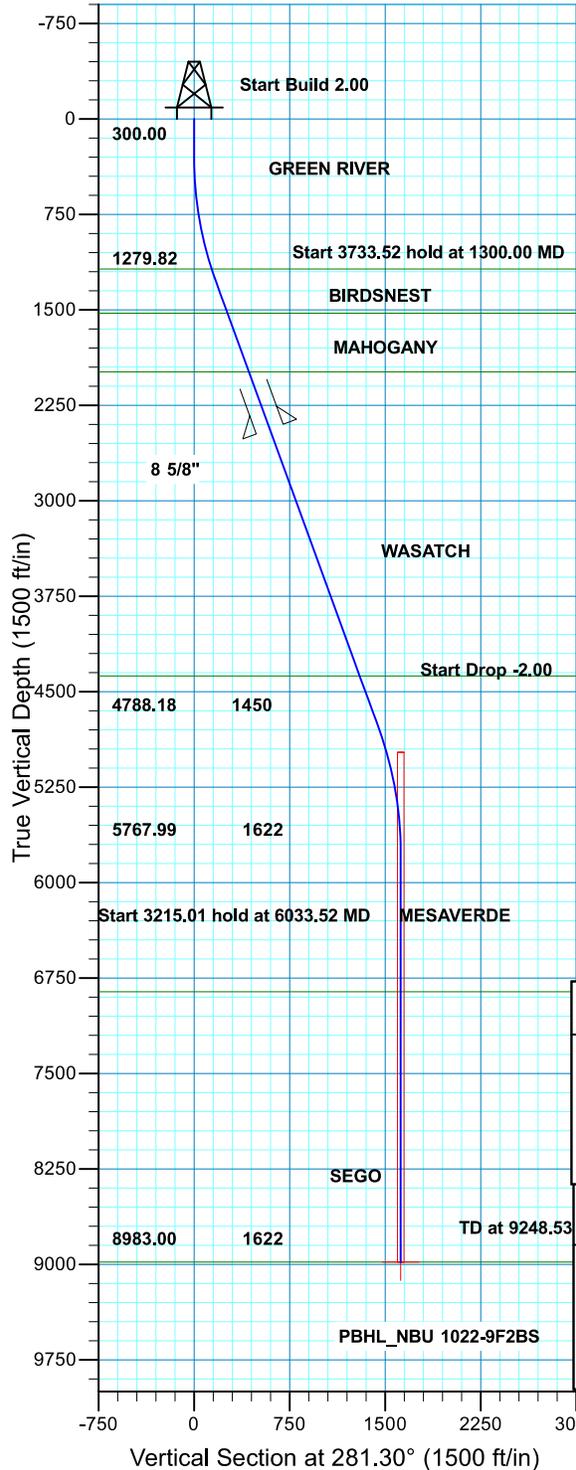
FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
1197.00	1212.34	GREEN RIVER
1554.00	1591.78	BIRDSNEST
2011.00	2078.11	MAHOGANY
4388.00	4601.50	WASATCH
6864.00	7083.61	MESAVERDE
8981.00	9200.61	SEGO

Plan: PLAN #1 PRELIMINARY (NBU 1022-9C1CS/OH)

Received: July 02, 2014



WELL DETAILS: NBU 1022-9F2BS									
GL 5228 & KB 4 @ 5232,00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0,00	0,00	14517522,86	2076704,58	39,9661390	-109,4429560				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8983,00	318,01	-1591,00	14517813,04	2075108,27	39,9670120	-109,4486330	Circle (Radius: 25,00)	
- plan hits target center									

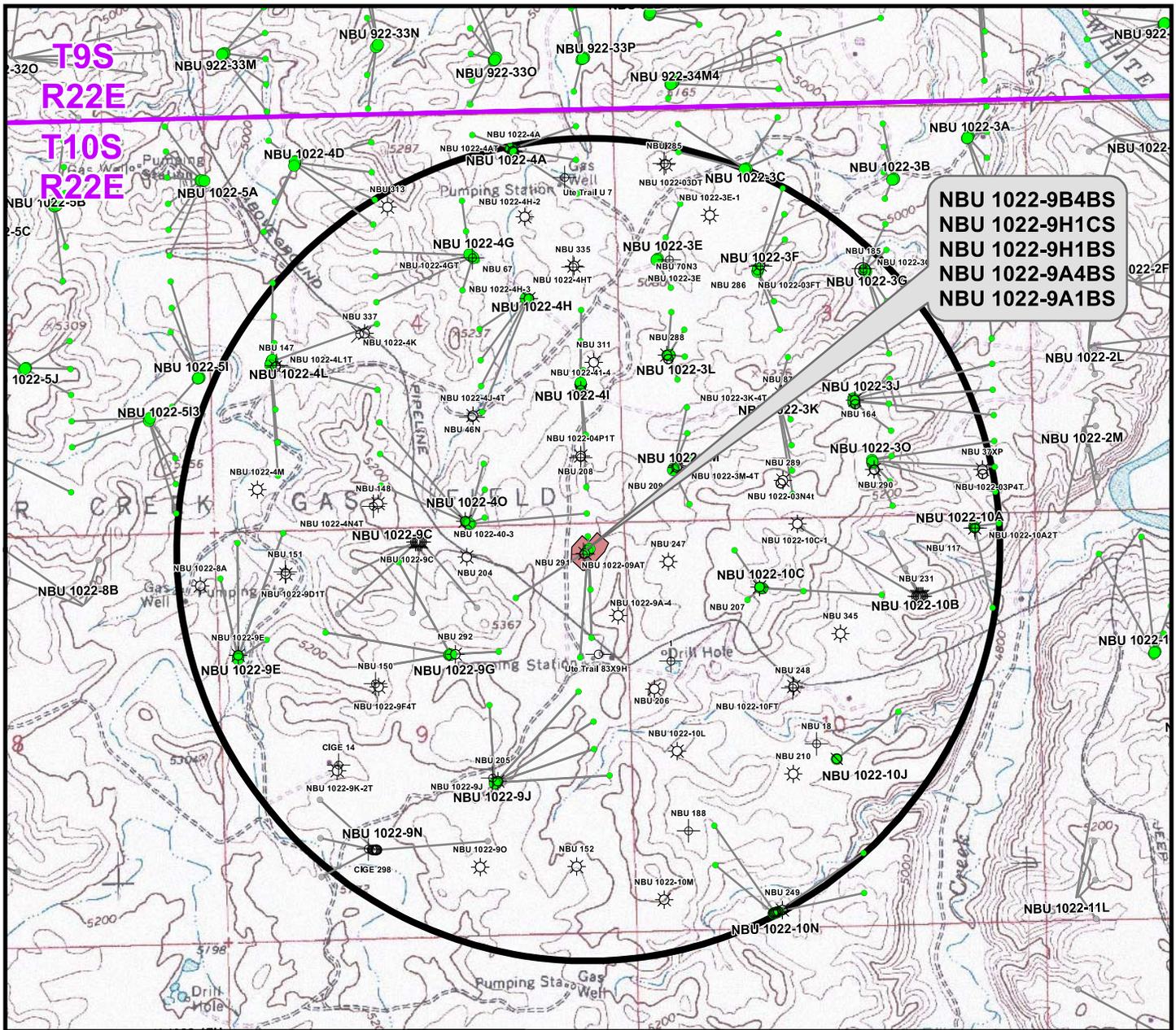


SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
300,00	0,00	0,00	300,00	0,00	0,00	0,00	0,00	0,00
1300,00	20,00	281,30	1279,82	33,86	-169,42	2,00	281,30	172,77
5033,52	20,00	281,30	4788,18	284,15	-1421,59	0,00	0,00	1449,71
6033,52	0,00	0,00	5767,99	318,01	-1591,00	2,00	180,00	1622,47
9248,53	0,00	0,00	8983,00	318,01	-1591,00	0,00	0,00	1622,47

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)	Datum: NAD 1927 (NADCON CONUS)	TVDPath	MDPath	Formation
Ellipsoid: Clarke 1866	Zone: Zone 12N (114 W to 108 W)	1179,00	1193,41	GREEN RIVER
Location: SECTION 9 T10S R22E	System Datum: Mean Sea Level	1528,00	1564,11	BIRDSNEST
		1988,00	2053,63	MAHOGANY
		4377,00	4595,95	WASATCH
		6859,00	7124,53	MESAVERDE
		8982,99	9248,52	SEGO
				0,00

Plan: PLAN #1 PRELIMINARY (NBU 1022-9F2BS/OH)

RECEIVED: July 02, 2014



**NBU 1022-9B4BS  
NBU 1022-9H1CS  
NBU 1022-9H1BS  
NBU 1022-9A4BS  
NBU 1022-9A1BS**

Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9B4BS	NBU 1022-9B4CS BH	±522ft
NBU 1022-9H1CS	Ute Trail 83X9H	±231ft
NBU 1022-9H1BS	Ute Trail 83X9H	±224ft
NBU 1022-9A4BS	NBU 291	±462ft
NBU 1022-9A1BS	NBU 1022-09AT	±227ft

**Legend**

- Well - Proposed
- Well Path
- ☀ Producing
- ⊕ Deferred
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- Bottom Hole - Proposed
- Well Pad
- ☺ Spudded
- ⊗ Cancelled
- ☀ Location Abandoned
- APD Approved
- ⊖ Temporarily Abandoned
- ⊖ Shut-In
- Bottom Hole - Existing
- ◻ Well - 1 Mile Radius
- ⊖ Preliminary Location

**WELL PAD - NBU 1022-9A**

**TOPO C**  
**NBU 1022-9B4BS,**  
**NBU 1022-9H1CS, NBU 1022-9H1BS**  
**NBU 1022-9A4BS & NBU 1022-9A1BS**  
**LOCATED IN SECTION 9, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH**

**Kerr-McGee Oil & Gas Onshore L.P.**

**1099 18th Street**  
**Denver, Colorado 80202**

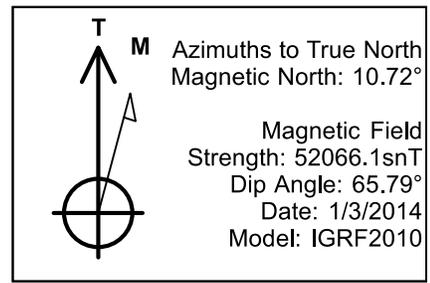


**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

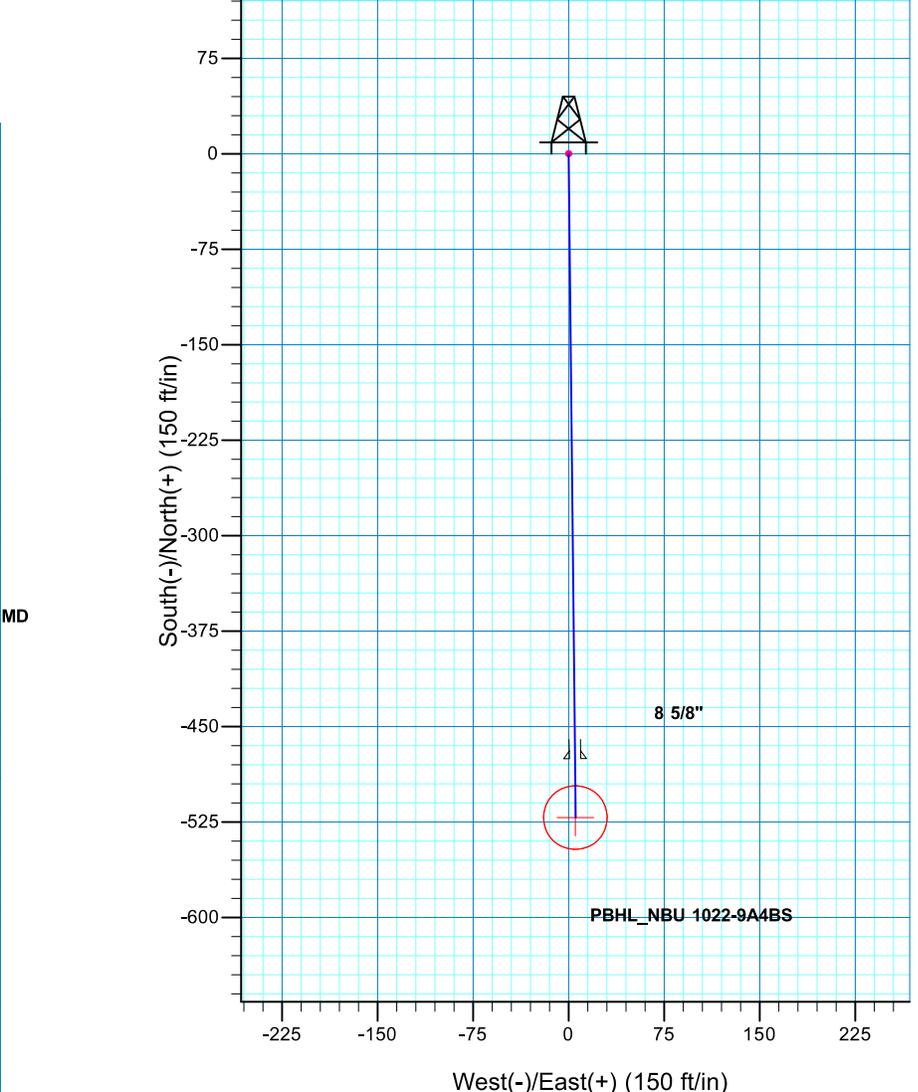
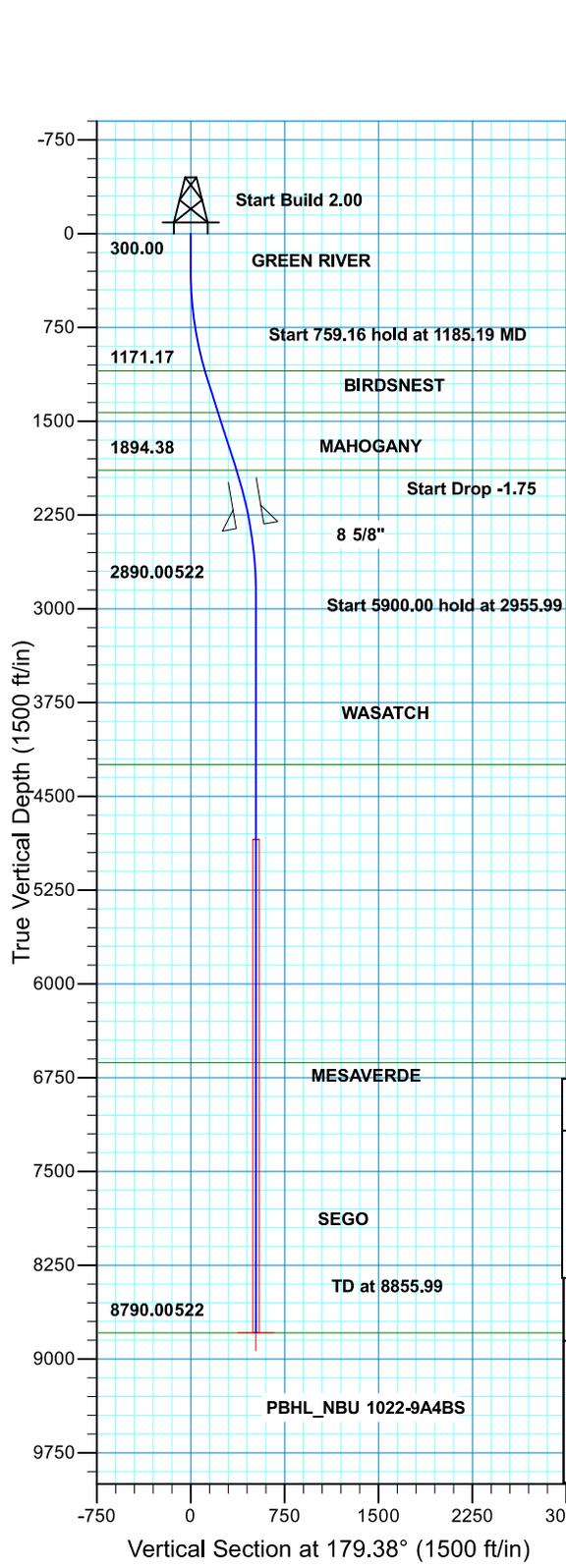
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DRAWN: TL	DATE: 18 Nov 2013	
REVISED:	DATE:	

SHEET NO:  
13 OF 17

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WELL DETAILS: NBU 1022-9A4BS								
GL 5137 & KB 4 @ 5141.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14518868.96	2078502.65	39.9687480	-109.4364570			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8790.00	-521.55	5.32	14518347.59	2078517.12	39.9683160	-109.4364380	Circle (Radius: 25.00)
- plan misses target center by 0.28ft at 8855.99ft MD (8790.00 TVD, -521.55 N, 5.60 E)								



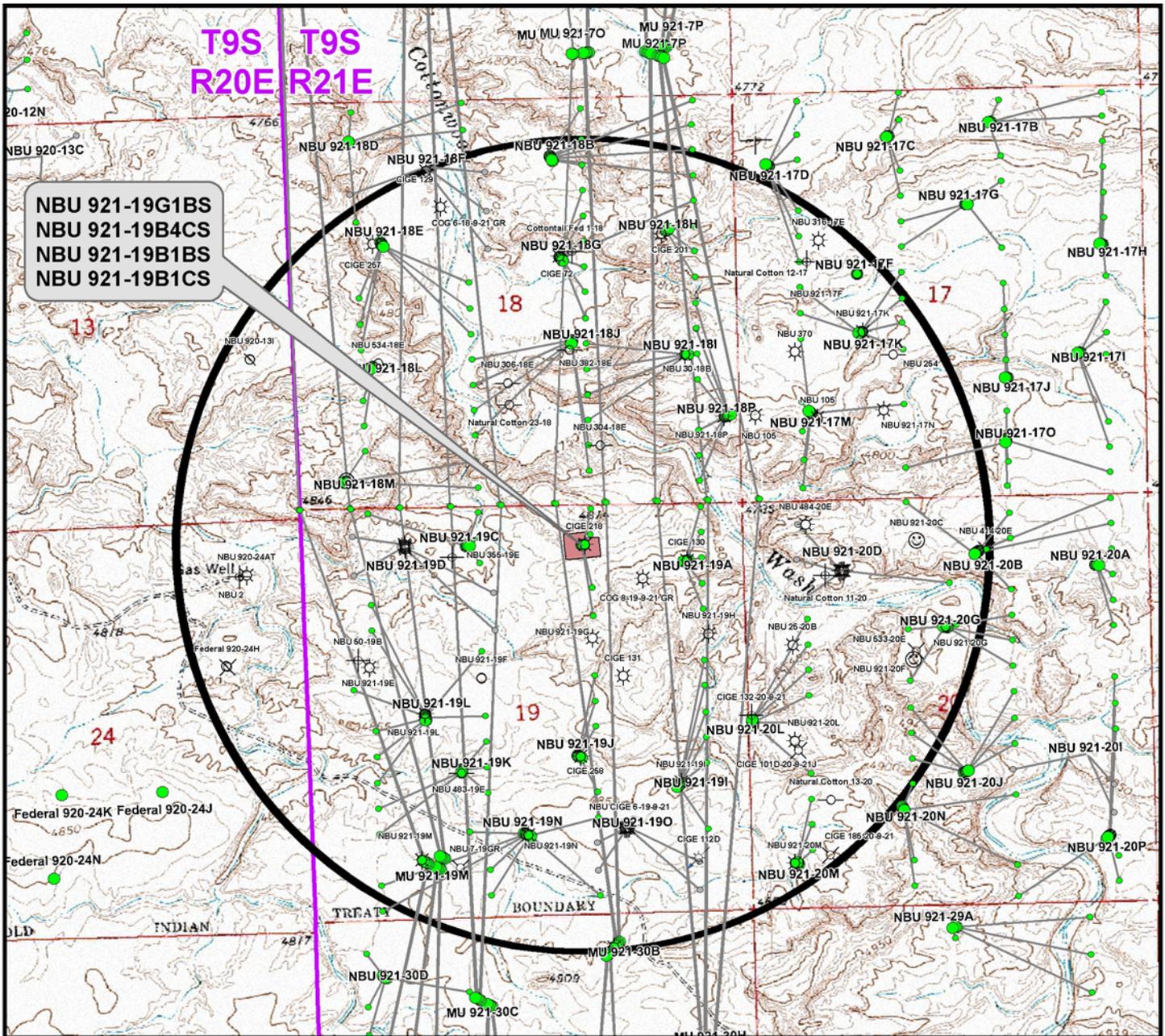
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1185.19	17.70	179.38	1171.17	-135.66	1.46	2.00	179.38	135.67	
1944.35	17.70	179.38	1894.38	-366.51	3.94	0.00	0.00	366.53	
2955.99	0.00	0.00	2890.00	-521.55	5.60	1.75	180.00	521.58	
8855.99	0.00	0.00	8790.00	-521.55	5.60	0.00	0.00	521.58	

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N

Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 9 T10S R22E  
 System Datum: Mean Sea Level

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1098.00	1108.70	GREEN RIVER
1432.00	1458.98	BIRDSNEST
1892.00	1941.85	MAHOGANY
4246.00	4311.99	WASATCH
6631.00	6696.99	MESAVERDE
8790.00	8855.99	SEGO

Plan: PLAN #1 PRELIMINARY (NBU 1022-9A4BS/OH)



Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 921-19G1BS	NBU 921-18G	286ft
NBU 921-19B4CS	CIGE 218	565ft
NBU 921-19B1BS	CIGE 218	474ft
NBU 921-19B1CS	CIGE 218	146ft

**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- Well - 1 Mile Radius
- ☀ Producing
- ☺ Spudded
- APD Approved
- ⊗ Preliminary Location
- ⊕ Deferred
- ⊗ Cancelled
- ⊖ Temporarily Abandoned
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- ⊗ Location Abandoned
- Shut-In

**WELL PAD - NBU 921-19B**

TOPO C  
 NBU 921-19G1BS, NBU 921-19B4CS,  
 NBU 921-19B1BS & NBU 921-19B1CS  
 LOCATED IN SECTION 19, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil &  
 Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202



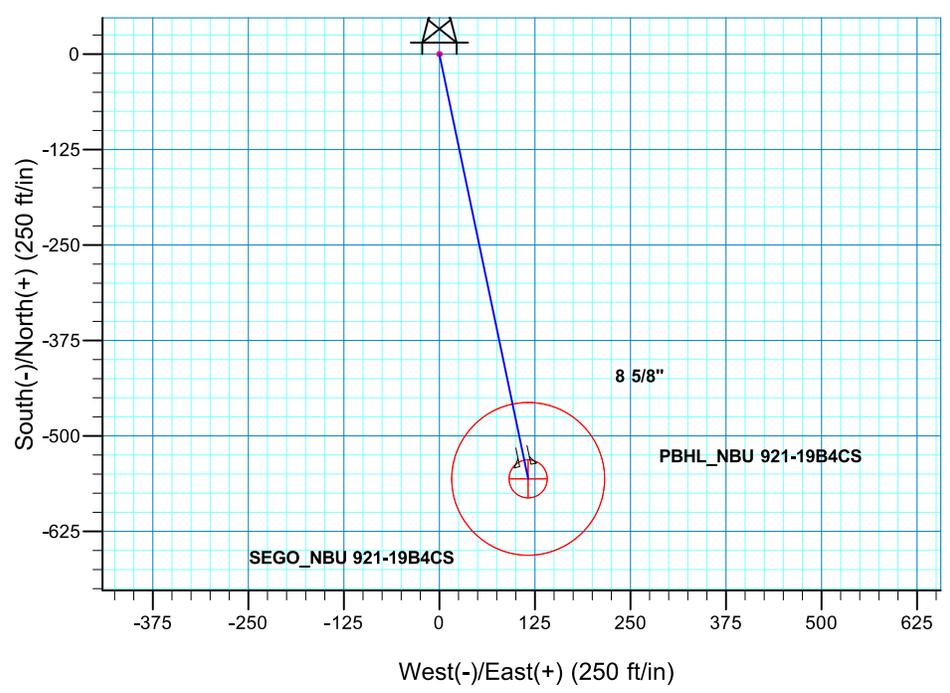
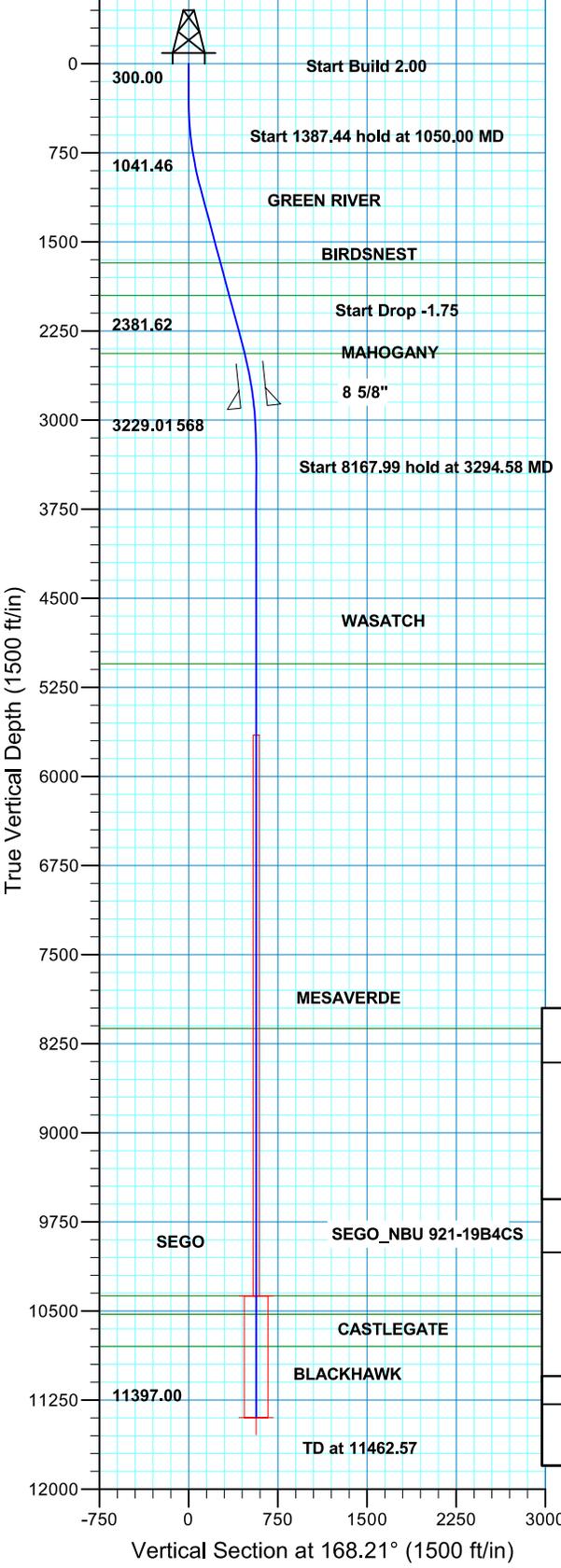
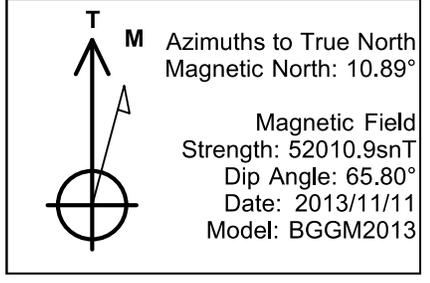
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182



SCALE: 1" = 2,000ft	NAD83 USP Central	<b>12</b>
DRAWN: TL	DATE: 28 Sep 2012	
REVISED:	DATE:	

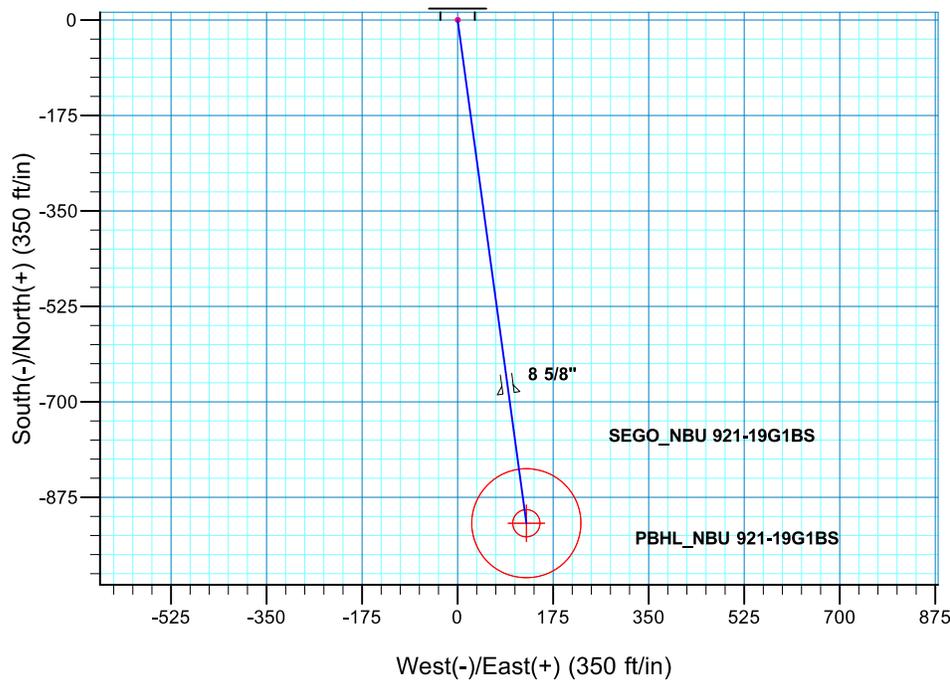
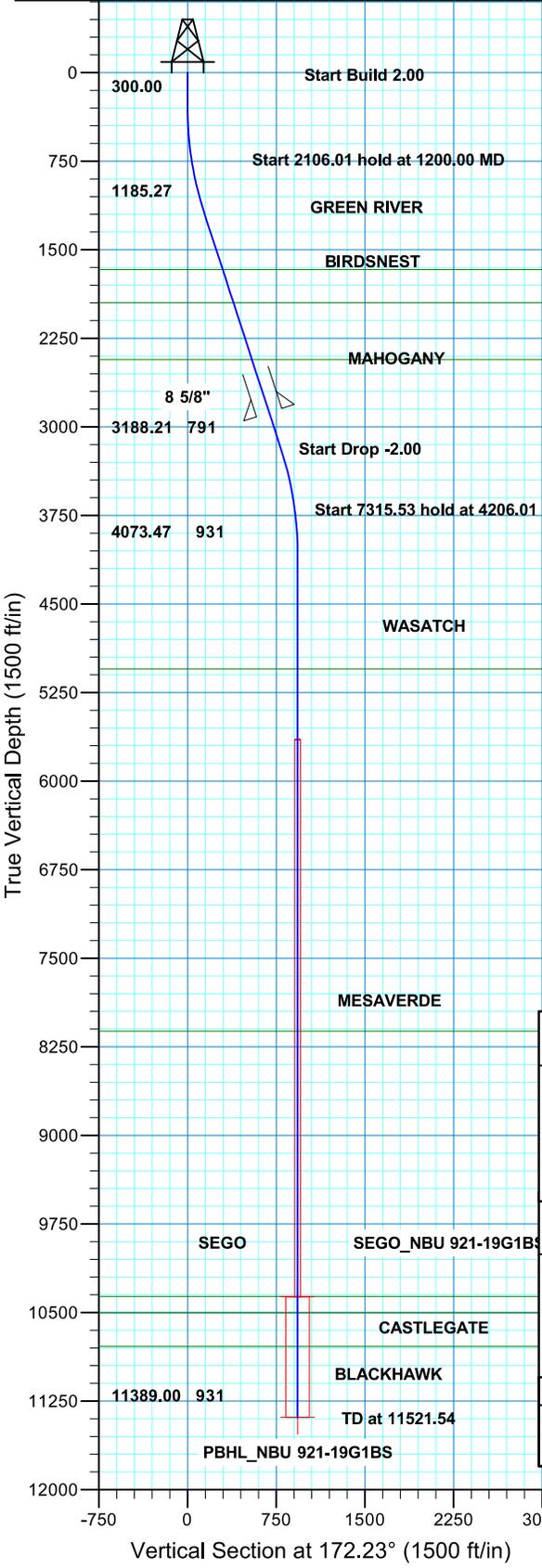
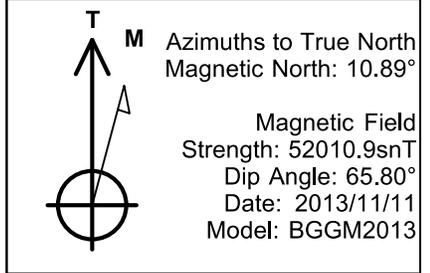
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WELL DETAILS: NBU 921-19B4CS								
GL 4826 & KB 4 @ 4830.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14539126.55	2034658.31	40.0273684	-109.5917497			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10373.00	-556.28	116.12	14538572.18	2034783.21	40.0258410	-109.5913350	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11397.00	-556.28	116.12	14538572.18	2034783.21	40.0258410	-109.5913350	Circle (Radius: 100.00)
- plan hits target center								



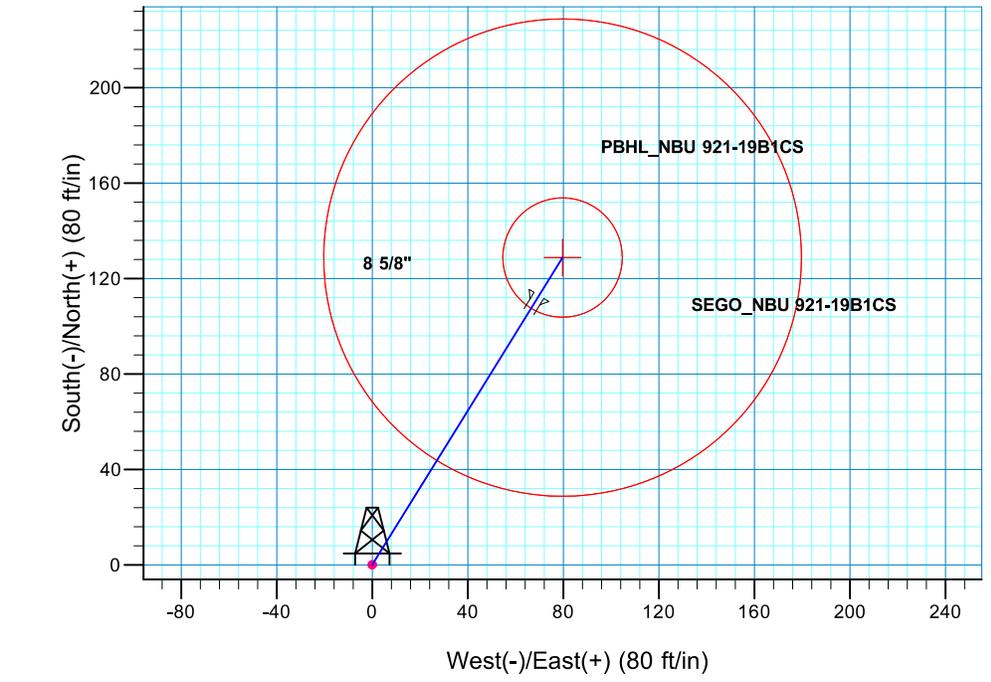
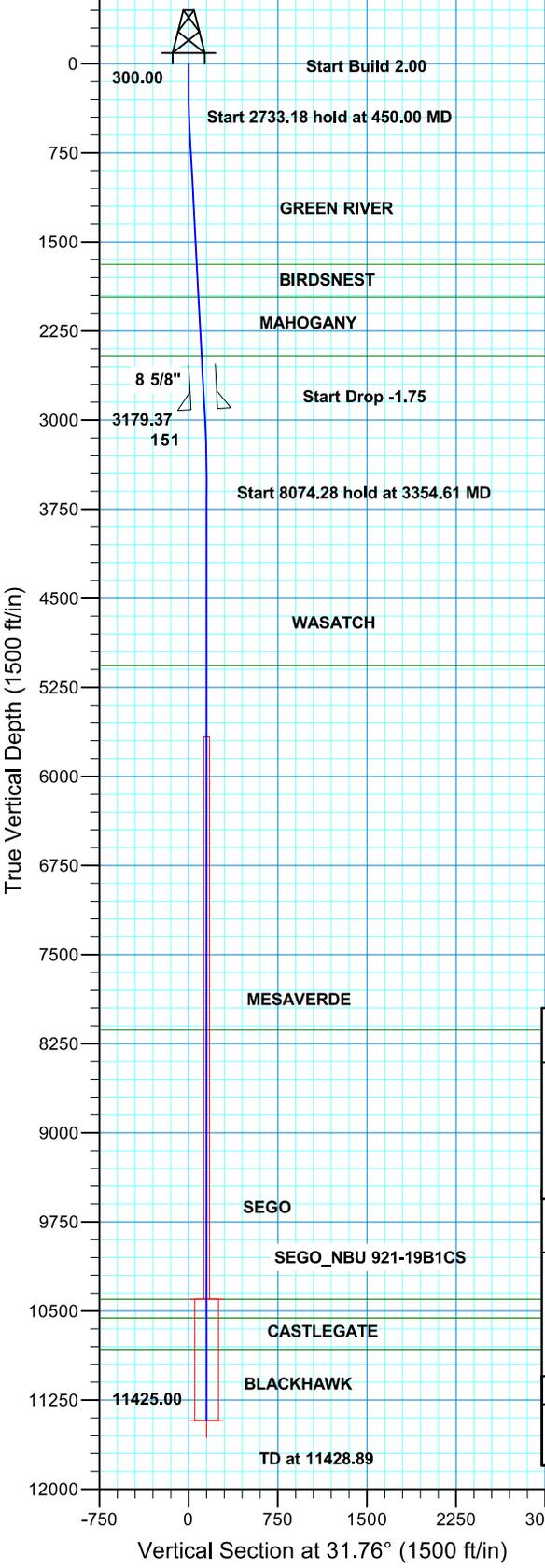
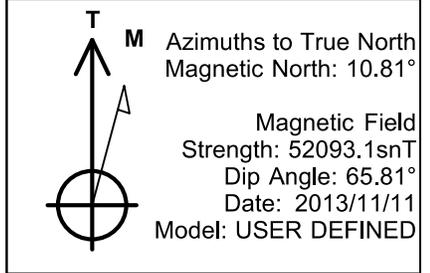
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	168.21	1041.46	-95.56	19.95	2.00	168.21	97.62	
2437.44	15.00	168.21	2381.62	-47.07	93.32	0.00	0.00	456.71	
3294.58	0.00	0.00	3229.01	-556.28	116.12	1.75	180.00	568.27	
11462.57	0.00	0.00	11397.00	-556.28	116.12	0.00	0.00	568.27	PBHL_NBU 921-19B4CS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N							FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 19 T9S R21E System Datum: Mean Sea Level							TVDPath	MDPath	Formation
							1677.00	1707.96	GREEN RIVER
							1952.00	1992.66	BIRDSNEST
							2439.00	2496.70	MAHOGANY
							5053.00	5118.57	WASATCH
							8123.00	8188.57	MESAVERDE
10373.00	10438.57	SEGO							
10527.00	10592.57	CASTLEGATE							
10797.00	10862.57	BLACKHAWK							
CASING DETAILS									
TVD	MD	Name	Size						
2889.00	2953.96	8 5/8"	8.625						

WELL DETAILS: NBU 921-19G1BS								
GL 4826 & KB 4 @ 4830.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14539125.67	2034648.52	40.0273664	-109.5917847			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10365.00	-922.67	125.92	14538205.11	2034789.01	40.0248330	-109.5913350	Circle (Radius: 25.00)
PBHL	11389.00	-922.67	125.92	14538205.11	2034789.01	40.0248330	-109.5913350	Circle (Radius: 100.00)



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1200.00	18.00	172.23	1185.27	-138.93	18.96	2.00	172.23	140.21	
3306.01	18.00	172.23	3188.21	-783.74	106.96	0.00	0.00	791.01	
4206.01	0.00	0.00	4073.47	-922.67	125.92	2.00	180.00	931.22	
11521.54	0.00	0.00	11389.00	-922.67	125.92	0.00	0.00	931.22	PBHL_NBU 921-19G1BS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N							FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 19 T9S R21E System Datum: Mean Sea Level							TVDPath	MDPath	Formation
							1669.00	1708.63	GREEN RIVER
							1948.00	2001.98	BIRDSNEST
							2430.00	2508.79	MAHOAGANY
							5050.00	5182.54	WASATCH
							8119.00	8251.54	MESAVERDE
							10365.00	10497.54	SEGO
							10503.00	10635.54	CASTLEGATE
							10789.00	10921.54	BLACKHAWK
CASING DETAILS									
TVD	MD	Name	Size						
2880.00	2981.95	8 5/8"	8.625						

WELL DETAILS: NBU 921-19B1CS								
GL 4826 & KB 4 @ 4830.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14539128.33	2034678.16	40.0273724	-109.5916787			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10401.00	128.78	79.71	14539258.35	2034755.83	40.0277260	-109.5913940	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11425.00	128.78	79.71	14539258.35	2034755.83	40.0277260	-109.5913940	Circle (Radius: 100.00)
- plan hits target center								



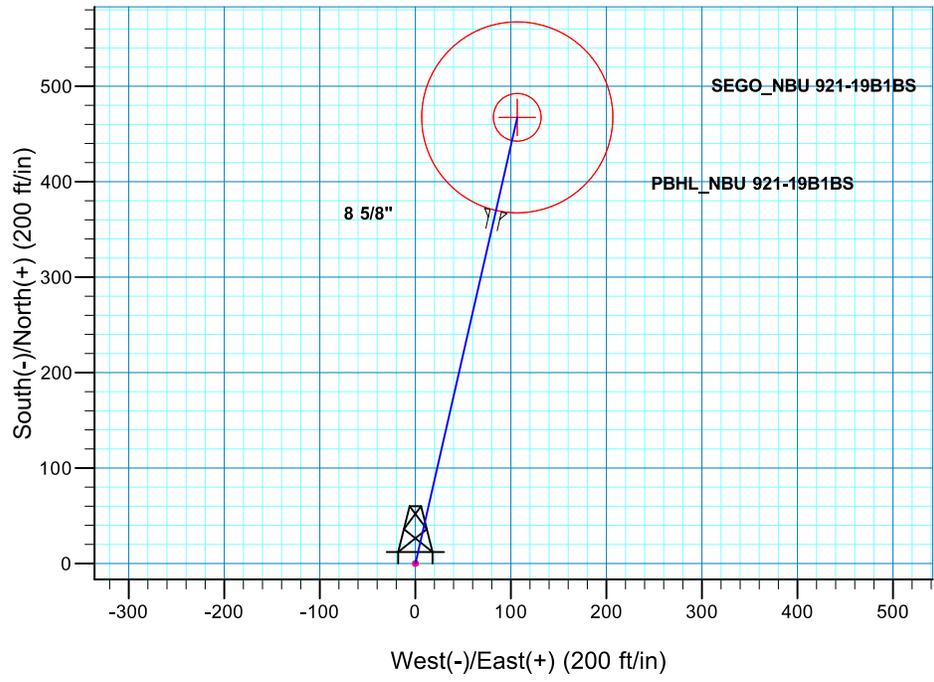
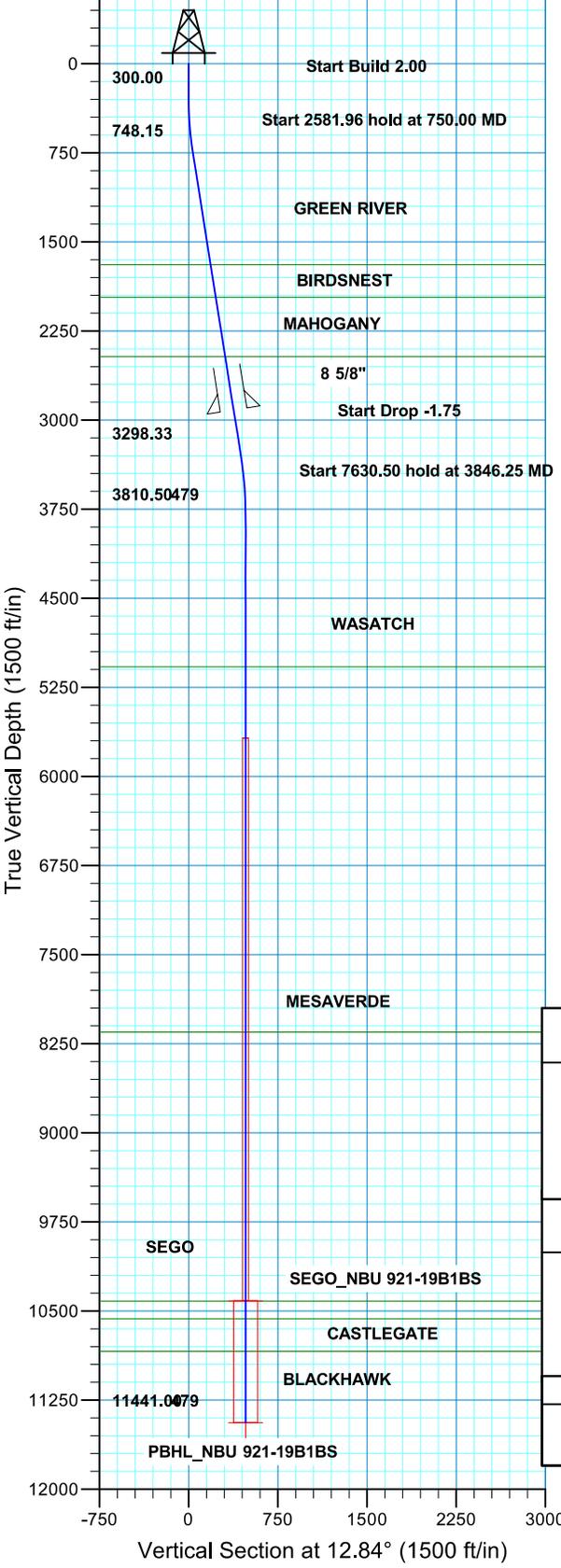
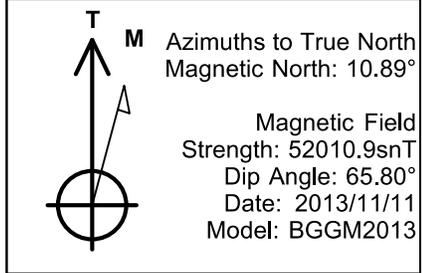
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
450.00	3.00	31.76	449.93	3.34	2.07	2.00	31.76	3.93	
3183.18	3.00	31.76	3179.37	124.97	77.35	0.00	0.00	146.97	
3354.61	0.00	0.00	3350.72	128.78	79.71	1.75	180.00	151.46	
11428.89	0.00	0.00	11425.00	128.78	79.71	0.00	0.00	151.46	PBHL_NBU 921-19B1CS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N		
Geodetic System: Universal Transverse Mercator (US Survey Feet)		
Datum: NAD 1927 (NADCON CONUS)		
Ellipsoid: Clarke 1866		
Zone: Zone 12N (114 W to 108 W)		
Location: SECTION 19 T9S R21E		
System Datum: Mean Sea Level		

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1689.00	1690.77	GREEN RIVER
1962.00	1964.14	BIRDSNEST
2459.00	2461.83	MAHOGANY
5067.00	5070.89	WASATCH
8135.00	8138.89	MESAVERDE
10401.00	10404.89	SEGO
10559.00	10562.89	CASTLEGATE
10825.00	10828.89	BLACKHAWK

CASING DETAILS			
TVD	MD	Name	Size
2909.00	2912.44	8 5/8"	8.625

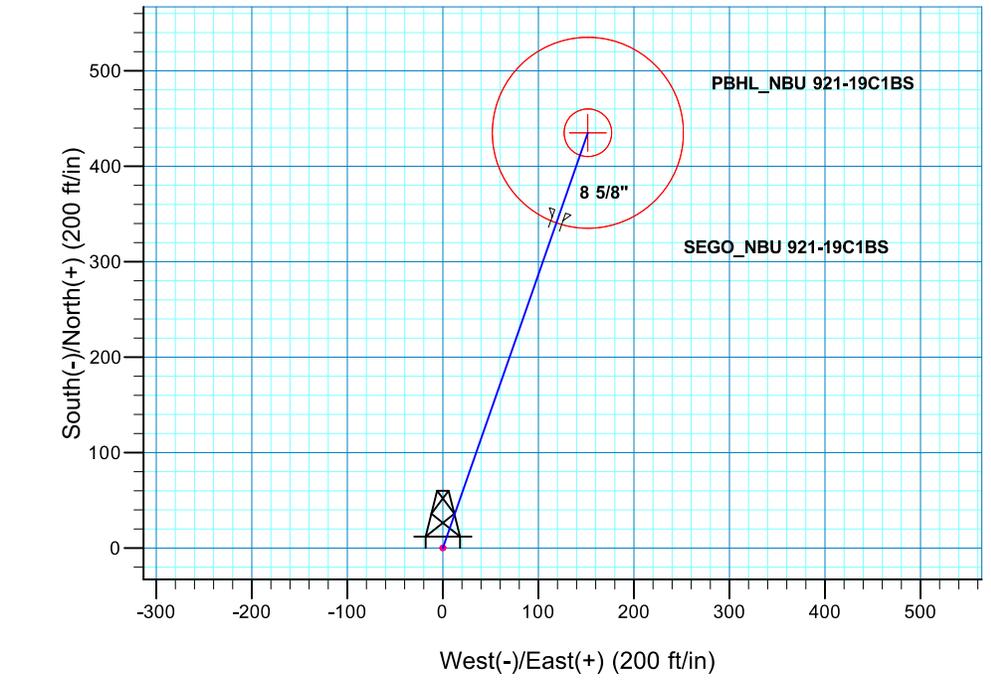
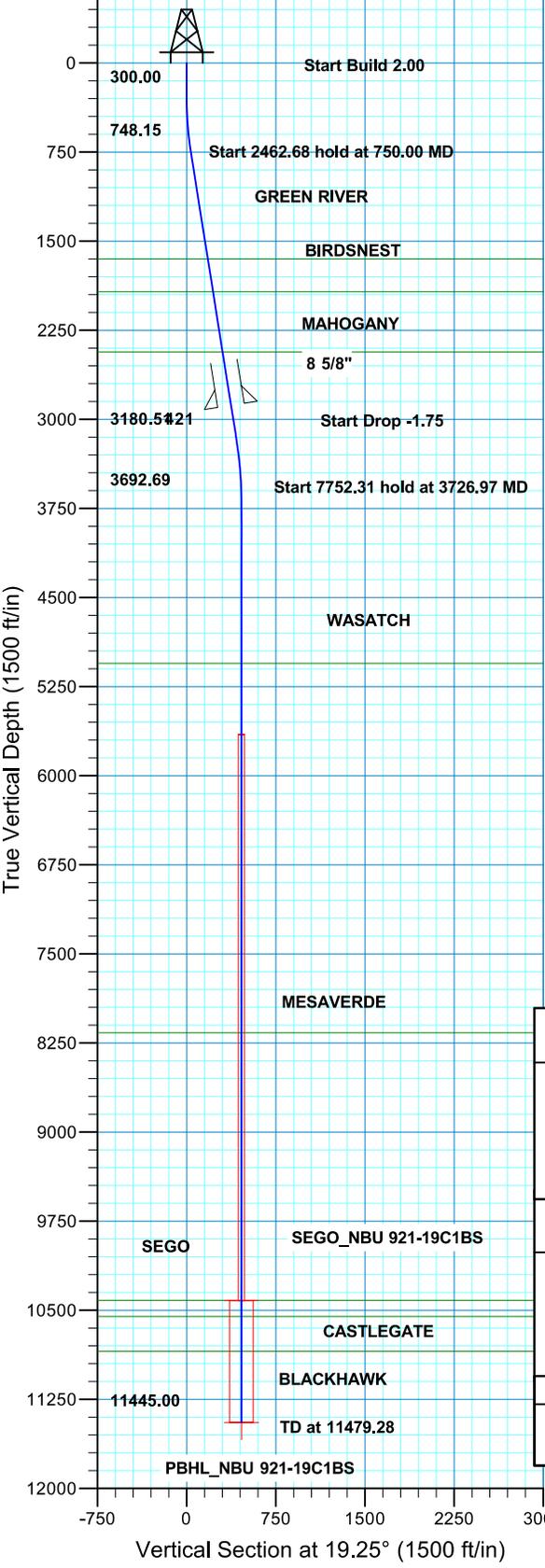
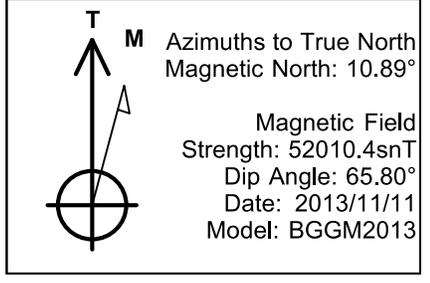
WELL DETAILS: NBU 921-19B1S								
GL 4826 & KB 4 @ 4830.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14539127.44	2034668.38	40.0273704	-109.5917137			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10416.00	467.49	106.59	14539596.56	2034767.57	40.0286540	-109.5913330	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11441.00	467.49	106.59	14539596.56	2034767.57	40.0286540	-109.5913330	Circle (Radius: 100.00)
- plan hits target center								



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
750.00	9.00	12.84	748.15	34.39	7.84	2.00	12.84	35.27	
3331.96	9.00	12.84	3298.33	428.19	97.63	0.00	0.00	439.18	
3846.25	0.00	0.00	3810.50	467.49	106.59	1.75	180.00	479.49	
11476.75	0.00	0.00	11441.00	467.49	106.59	0.00	0.00	479.49	PBHL_NBU 921-19B1S
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N					FORMATION TOP DETAILS				
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 19 T9S R21E System Datum: Mean Sea Level					TVDPath	MDPath	Formation		
					1693.00	1706.63	GREEN RIVER		
					1967.00	1984.04	BIRDSNEST		
					2467.00	2490.27	MAHOGANY		
					5078.00	5113.75	WASATCH		
					8153.00	8188.75	MESAVERDE		
					10416.00	10451.75	SEGO		
10565.00	10600.75	CASTLEGATE							
10841.00	10876.75	BLACKHAWK							
CASING DETAILS									
TVD	MD	Name	Size						
2917.00	2945.88	8 5/8"	8.625						



WELL DETAILS: NBU 921-19C1BS								
GL 4795 & KB 4 @ 4799.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14539119.65	20333158.91	40.0274144	-109.5971045			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	10418.00	435.07	151.90	14539557.06	2033303.93	40.0286090	-109.5965620	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11445.00	435.07	151.90	14539557.06	2033303.93	40.0286090	-109.5965620	Circle (Radius: 100.00)
- plan hits target center								



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
750.00	9.00	19.25	748.15	33.30	11.63	2.00	19.25	35.27	
3212.68	9.00	19.25	3180.51	397.02	138.61	0.00	0.00	420.52	
3726.97	0.00	0.00	3692.69	435.07	151.90	1.75	180.00	460.83	
11479.28	0.00	0.00	11445.00	435.07	151.90	0.00	0.00	460.83	PBHL_NBU 921-19C1BS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N					FORMATION TOP DETAILS				
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 19 T9S R21E System Datum: Mean Sea Level					TVDPath	MDPath	Formation		
					1851.00	1664.10	GREEN RIVER		
					1926.00	1942.53	BIRDSNEST		
					2433.00	2455.85	MAHOGANY		
					5054.00	5088.28	WASATCH		
					8163.00	8197.28	MESAVERDE		
					10418.00	10452.28	SEGO		
10553.00	10587.28	CASTLEGATE							
10845.00	10879.28	BLACKHAWK							
CASING DETAILS									
TVD	MD	Name	Size						
2883.00	2911.46	8 5/8"	8.625						

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 7/2/2014

API NO. ASSIGNED: 43047545620000

WELL NAME: NBU 1022-9G4CS

OPERATOR: KERR-MCGEE OIL &amp; GAS ONSHORE, L.P. (N2995)

PHONE NUMBER: 720 929-6828

CONTACT: Joel Malefyt

PROPOSED LOCATION: NWSE 09 100S 220E

Permit Tech Review: 

SURFACE: 1917 FSL 1784 FEL

Engineering Review: 

BOTTOM: 2359 FNL 1825 FEL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 39.96158

LONGITUDE: -109.44096

UTM SURF EASTINGS: 633160.00

NORTHINGS: 4424447.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU 01196-D

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

SURFACE OWNER: 1 - Federal

COALBED METHANE: NO

## RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: FEDERAL - WYB000291
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: 43-8496
- RDCC Review:
- Fee Surface Agreement
- Intent to Commingle

Commingle Approved

## LOCATION AND SITING:

- R649-2-3.
- Unit: NATURAL BUTTES
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: Cause 173-14
- Effective Date: 12/2/1999
- Siting: Suspends General Siting
- R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations: 3 - Commingle - dducet  
 4 - Federal Approval - dmason  
 15 - Directional - dmason  
 17 - Oil Shale 190-5(b) - dmason



GARY R. HERBERT  
*Governor*

SPENCER J. COX  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. HAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-9G4CS

**API Well Number:** 43047545620000

**Lease Number:** UTU 01196-D

**Surface Owner:** FEDERAL

**Approval Date:** 7/17/2014

**Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

**Authority:**

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

**Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

**Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

**General:**

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

**Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil

shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

**Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels at 801-538-5284

(please leave a voicemail message if not available)

OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website

at <http://oilgas.ogm.utah.gov>

**Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or plugging

**Approved By:**



For John Rogers  
Associate Director, Oil & Gas

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED  
OMB No. 1004-0136  
Expires July 31, 2010

JAN 28 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

Vernal UT

5. Lease Serial No. UTU01196D	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No. UTU63047A	
8. Lease Name and Well No. NBU 1022-9G4CS	
9. API Well No. <b>54562</b> <b>430475480a</b>	
10. Field and Pool, or Exploratory NATURAL BUTTES	
11. Sec., T., R., M., or Blk. and Survey or Area Sec 9 T10S R22E Mer SLB	
12. County or Parish UINTAH	13. State UT
17. Spacing Unit dedicated to this well	
18. BLM/BIA Bond No. on file WYB000291	
23. Estimated duration 60-90 DAYS	

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone	
2. Name of Operator KERR MCGEE OIL & GAS LP Contact: JOEL MALEFYT E-Mail: joel.malefyt@anadarko.com	
3a. Address 1099 18TH STREET SUITE 1800 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6828 Fx: 720-929-7828
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWSE 1917FSL 1784FEL 39.961516 N Lat, 109.441721 W Lon At proposed prod. zone SWNE 2359FNL 1825FEL 39.964276 N Lat, 109.441873 W Lon	
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 48.7 MILES SOUTH OF VERNAL, UT	
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 819'	16. No. of Acres in Lease 320.00
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 790'	19. Proposed Depth 9022 MD 8865 TVD
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5209 GL	22. Approximate date work will start 07/01/2014

RECEIVED  
JUL 21 2014

DIV. OF OIL, GAS & MINES

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature (Electronic Submission)	Name (Printed/Typed) JOEL MALEFYT Ph: 720-929-6828	Date 01/24/2014
Title REGULATORY ANALYST		
Approved by (Signature)	Name (Printed/Typed) Jerry Kenczka	Date JUL 17 2014
Title Assistant Field Manager Lands & Mineral Resources	Office VERNAL FIELD OFFICE	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

CONDITIONS OF APPROVAL ATTACHED

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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 representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Electronic Submission #233168 verified by the BLM Well Information System  
For KERR MCGEE OIL & GAS LP, sent to the Vernal  
Committed to AFMSS for processing by LESLIE BUHLER on 01/30/2014 ()

NOTICE OF APPROVAL

UDOGM

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*



UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
VERNAL FIELD OFFICE

170 South 500 East

VERNAL, UT 84078

(435) 781-4400



**CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL**

Company: KERR MCGEE OIL & GAS LP  
Well No: NBU 1022-9G4CS  
API No: 43-047-54562

Location: NWSE, Sec. 9, T10S, R22E  
Lease No: UTU-01196D  
Agreement:

**OFFICE NUMBER: (435) 781-4400**

**OFFICE FAX NUMBER: (435) 781-3420**

**A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR  
FIELD REPRESENTATIVE TO INSURE COMPLIANCE**

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. **This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.**

**NOTIFICATION REQUIREMENTS**

Location Construction (Notify Environmental Scientist)	- Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify Environmental Scientist)	- Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	- Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to running casing and cementing all casing strings to: <a href="mailto:blm_ut_vn_opreport@blm.gov">blm_ut_vn_opreport@blm.gov</a>
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	- Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

**SURFACE USE PROGRAM  
CONDITIONS OF APPROVAL (COAs)**

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO<sub>x</sub> per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO<sub>x</sub> per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontologic material before construction can continue.

**NBU 1022-9J:**

**NBU 1022-9G4CS, NBU 1022-9H3AS, NBU 1022-9H4CS, NBU 1022-9I1BS, NBU 1022-9I1DS**

- KMG will install bird exclusion netting over reserve pits containing water that are left open for more than 30 days to reduce possibility of exposure to hazardous chemicals (BLM 2012b).
- KMG will install bird-excluding devices that prevent the perching and entry of migratory birds on or into its new fired vessel exhaust stacks (BLM 2012b). An infiltration gallery will be constructed in a U.S. Fish and Wildlife Service (USFWS)-approved location. An infiltration gallery is basically a pit or trench dug within a floodplain to a depth below the water table. Water is drawn from the pit rather than from the river directly. If this is not possible, KMG will limit pumping within the river to off-channel locations that do not connect to the river during high spring flows.
- If water cannot be drawn using the measures below, and the pump head will be located in the river channel where larval fish are known to occur, the following measures will apply (BLM 2012b):
  - KMG will avoid pumping from low-flow or no-flow areas as these habitats tend to concentrate larval fishes;
  - KMG will avoid pumping to the greatest extent possible, during that period of the year when larval fish may be present (approximately April 1 to August 31);
    - KMG will avoid pumping, to the greatest extent possible, during the midnight hours (10:00 pm to 2:00 am) as larval drift studies indicate that is a period of greatest daily activity. Dusk is the preferred pumping time as larval drift abundance is lowest.
    - KMG will screen all pump intakes with 3/32-inch mesh material.
  - Silt fencing will be used to protect cacti that are within 300 feet and downslope or downwind of surface disturbance. Fencing is intended to prevent sedimentation or dust deposition and will be evaluated for effectiveness by a qualified botanist.
  - A qualified botanist will be on site to monitor surface-disturbing activities when cacti are within 300 feet of any surface disturbance.
  - Dust abatement (consisting of water only) will occur during construction where plants are closer than 300 feet from surface-disturbing activities.
  - Cacti within 300 feet of proposed surface disturbance will be flagged

immediately prior to surface-disturbing activities and flags will be removed immediately after surface-disturbing activities are completed. Leaving cacti flagged for as short a time as possible will minimize drawing attention to the cacti location and reduce potential for theft.

- Pipelines will be sited to maximize distance from adjacent cacti locations.
- Project personnel associated with construction activities will be instructed to drive at a speed limit of 15 miles per hour on unpaved roads and remain in existing roadway ROWs at all times.
- For permanent surface pipelines, KMG will adhere to existing cacti survey/buffer guidelines of 300 feet, or amended guidelines if developed by the BLM and USFWS. In areas where avoidance by 300 feet is not feasible and populations or individuals of *Sclerocactus wetlandicus* are within 50 feet of proposed project components, the following actions will be taken to minimize impacts:
  - Prior to construction, flag individual cactus. Once pipe installation is complete, remove the flagging.
  - Prior to construction, install protective fencing around the cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.
  - A qualified botanist will be present during construction to monitor surface line installation.
  - As per discussions and email with the BLM on October 18, 2012, KMG will contribute to the Utah *Sclerocactus* mitigation fund to further study the effects of development on *Sclerocactus wetlandicus* in the Uinta Basin and the effectiveness of current mitigation measures. This contribution will be provided over the first 5 years of project development and in lieu of the required 3-year monitoring described in the Vernal BLM RMP for cacti found within 300 feet of planned surface disturbance that cannot be rerouted. This is consistent with the intent of the RMP for the effects of development to be effectively monitored within the Project Area and to better assess conservation measures to avoid or minimize these impacts in the future.
  - The following considerations are required for those wells where KMG deems completion fluid recycling is appropriate based on new well density and topography:
    - Temporary lines associated with recycling of completion water will be sited in existing ROWs. The pressure in the lines is less than 50 pounds per square inch and the lines are constructed of rigid aluminum; therefore, virtually no movement will occur during operation.
    - If surface water completion lines are placed within the footprint of a road disturbance where vegetation does not grow, *Sclerocactus wetlandicus* surveys will not be necessary.
    - A qualified botanist will survey a 50-foot-wide corridor along roads where temporary lines are planned to ensure *Sclerocactus wetlandicus* is not present.
    - If cacti are present within the 50-foot-wide survey corridor and avoidance is necessary (to ensure the line is more than 50 feet away from identified cactus), the new alignment will, if possible, be such that the cacti are topographically higher than the re-aligned line so a potential spill from the line will not impact the identified cacti.
    - If it is not possible to re-align the surface lines to avoid individuals or populations of the *Sclerocactus wetlandicus* that are within 50 feet of surface disturbance, the following actions will be taken to minimize impacts:
      - Prior to construction, KMG will flag individual cacti. Once pipe installation is complete, remove the flagging.
      - Prior to construction, KMG will install protective fencing around the

cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.

- A qualified botanist will be present during construction to monitor surface line installation.

In addition, through several discussions and meetings in December 2011 and January 2012, KMG/Anadarko committed to the following conservation measures in core conservation areas for *Sclerocactus wetlandicus*:

- KMG will continue to abide by mitigation measures outlined in the 2010 Programmatic Biological Opinion (BO) if any development is proposed in cactus core conservation areas.

- Avoidance of cactus by 300 feet will take priority in the expansion of pads within the cactus core conservation areas. When the 300-foot buffer cannot be avoided in pad expansion, KMG will notify the USFWS and work with the BLM to determine pad expansion that places a priority on avoiding cactus impacts.

- KMG will follow existing ROWs and/or roads in constructing new buried pipelines within the cactus core conservation areas. For instance, where a new buried pipeline is unable to follow an existing ROW and/or road and exceeds 600 feet in length, KMG will work with the USFWS and the BLM to determine a route that places a priority on avoiding cactus impacts.

- KMG retains the right to perform necessary maintenance activities on all existing pipelines within the cactus core conservation areas. Maintenance activities on pipelines within cactus core conservation areas will avoid impacts to cactus, to the extent possible.

- KMG will not create new pads in the cactus core conservation areas without formal Service consultation, with the exception of 15 quarter-quarter sections within the cactus core conservation areas where new pad construction will be allowed as a condition of this consultation, with the following conditions:

- When topographically feasible, expansion of existing well pads will take priority in Level 1 cactus core conservation areas.

- Where feasible, new pads will be placed on or adjacent to existing disturbance (e.g. roads) in the cactus core conservation areas.

- Where topographically feasible, drill mats or similar devices will be used for new well pad development in the cactus core conservation areas.

- Due to the high value of Level 1 cactus core conservation areas, KMG will notify the Service and work with the BLM (and the BIA if on tribal surface) to determine new pad placement that places a priority on avoiding cactus impacts when in these areas.

- If feasible, new well pad development will not occur in cactus core conservation areas located in the northeast corner of the Project Area (e.g. the population located in T8S R23E and the northern portion of T9S R23E)

- KMG will fund a study in the amount of \$100,000 in addition to typical expenditures for pad reclamation, to evaluate the technical feasibility of re-planting the Uinta Basin hookless cactus during pad reclamation activities. KMG will be allowed to review and provide input to the study work plan prior to study implementation and will be given an opportunity to review study results prior to submittal of results for publication. KMG will exercise no control over final study design or study results submitted for publication.

**DOWNHOLE PROGRAM  
CONDITIONS OF APPROVAL (COAs)**

**SITE SPECIFIC DOWNHOLE COAs:**

typWI Gas

apd\_coa Downhole \_Anad(\_Kerr)

- Surface casing cement shall be brought to surface.
- Production casing cement shall be brought 400' up and into the surface casing.

.....\_padWIs 1022-9J 205

applicable wells:

\_Anad(\_Kerr)

UTU63047A NBU

gFm 3 Mv

UTU01196D

1022-9J

NBU

1022-9H4CS 1022-9I1BS 1022-9H3AS 1022-9I1DS 1022-9G4CS

1022-9J ( Existing\_Well: NBU 9J NBU 205 )

NBU 1022-9H4CS

NBU 1022-9I1BS

NBU 1022-9H3AS

NBU 1022-9I1DS

NBU 1022-9G4CS

**All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:**

**DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS**

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily

drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- **Cement baskets shall not be run on surface casing.**
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- **Please submit an electronic copy of all other logs run on this well by CD (compact disc). This submission will supersede the requirement for submittal of paper logs to the BLM.**
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

## **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at [www.ONRR.gov](http://www.ONRR.gov).
- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:
  - Operator name, address, and telephone number.
  - Well name and number.
  - Well location (¼¼, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - Unit agreement and/or participating area name and number, if applicable.
  - Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid,

and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: UTU 01196-D
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:  7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1022-9G4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047545620000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6100
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1917 FSL 1784 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWSE Section: 09 Township: 10.0S Range: 22.0E Meridian: S	9. FIELD and POOL or WILDCAT: NATURAL BUTTES  COUNTY: UINTAH  STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

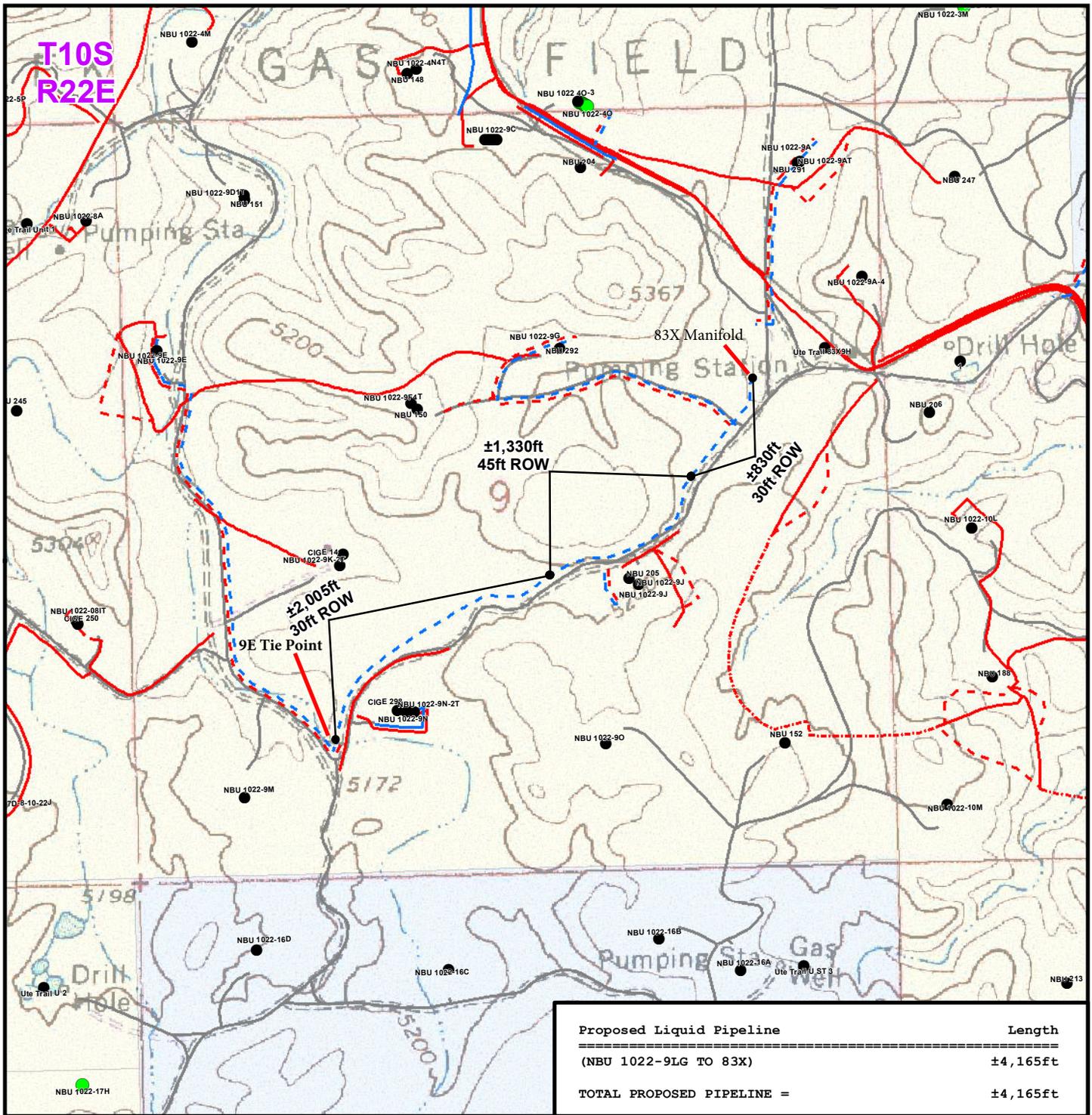
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 5/5/2015  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE  <input type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input checked="" type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION  OTHER: <input type="text" value="PIPELINE INSTALL"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Kerr-McGee Oil & Gas Onshore, LP respectfully requests to install a 6 inch buried liquid pipeline as depicted in the attached pipeline exhibit. The total length of the proposed pipeline is 4,165 ft. Per the pipeline exhibit, Kerr-McGee is requesting a 30 ft ROW for a portion consisting of 2,835 ft and a 45 ft ROW for a 1,330 ft portion of the pipeline. The lengths and areas of differing ROW footages are depicted in the exhibit. The proposed tie-in point for the 6 inch liquid line extends from the NBU 1022-9E tie-in point and ends at the 83X water manifold. Please the pipeline exhibit for the tie-in locations. Thank you.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 May 12, 2015**

<b>NAME (PLEASE PRINT)</b> Kristina Geno	<b>PHONE NUMBER</b> 720 929-6824	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/4/2015	



K:\ANADARKO\2013\2013\_55\_NBU\_1022-9\_FOCUS\GIS\ERibbils\NBU\_1022-9LG\_TO\_83X.mxd 4/22/2015 4:45:08 PM

**Legend**

- Well - Proposed      ■ Well Pad - Proposed      - - - Gas Pipeline - Proposed      - - - Liquid Pipeline - Proposed      - - - Road - Proposed      ■ Bureau of Land Management
- Well - Existing      ■ Well Pad - Existing      - - - Gas Pipeline - To Be Upgraded      - - - Liquid Pipeline - Existing      - - - Road - Existing      ■ Indian Reservation
- - - Gas Pipeline - Existing      - - - Gas Pipeline - As-Built/Surveyed      ■ State
- Private

**PIPELINE EXHIBIT  
LOCATED IN SECTION 9, T10S, R22E  
S.L.B.&M., UTAH COUNTY, UTAH**

**Kerr-McGee Oil &  
Gas Onshore L.P.**  
  
1099 18th Street  
Denver, Colorado 80202



**CONSULTING, LLC**  
1095 Saberton Avenue  
Sheridan, Wyoming 82801  
Phone 307-674-0609  
Fax 307-674-0182



SCALE: 1" = 1,000ft	NAD83 USP Central	<b>SHEET NO: 1 1 OF 1</b>
DRAWN: CPS	DATE: 1 Apr 2015	
REVISED: JW	DATE: 22 Apr 2015	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196-D	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-9G4CS	
<b>9. API NUMBER:</b> 43047545620000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
 Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

<b>1. TYPE OF WELL</b> Gas Well	<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>PHONE NUMBER:</b> 720 929-6100
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1917 FSL 1784 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 09 Township: 10.0S Range: 22.0E Meridian: S	

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 6/10/2015	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width:100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Spud well 06/10/2015 @ 12:30. Drill 24" conductor hole to 40', run 14" X .250 wall conductor pipe, cement with 90 sacks ready mix. Anticipated surface spud date and surface casing cement 06/29/2015.

**Accepted by the Utah Division of Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 June 15, 2015

<b>NAME (PLEASE PRINT)</b> Doreen Green	<b>PHONE NUMBER</b> 435 781-9758	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/15/2015	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: UTU 01196-D
1. TYPE OF WELL Gas Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	8. WELL NAME and NUMBER: NBU 1022-9G4CS
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1917 FSL 1784 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWSE Section: 09 Township: 10.0S Range: 22.0E Meridian: S	9. API NUMBER: 43047545620000
10. PHONE NUMBER: 720 929-6111	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
COUNTY: UINTAH	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 9/29/2015	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
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	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Drilled production to 9,040 ft in Quarter 3 of 2015. Waiting on completion. Thank you.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 September 29, 2015**

<b>NAME (PLEASE PRINT)</b> Jennifer Thomas	<b>PHONE NUMBER</b> 720 929-6808	<b>TITLE</b> Regulatory Specialist
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/29/2015	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196-D	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-9G4CS	
<b>9. API NUMBER:</b> 43047545620000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
 Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

<b>1. TYPE OF WELL</b> Gas Well	<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6507
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1917 FSL 1784 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 09 Township: 10.0S Range: 22.0E Meridian: S	

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 12/7/2015	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input checked="" type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**  
 The NBU 1022-9G4CS well was placed on production on 12/7/2015 after a new well completion. Producing from the Mesaverde. Thank you.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 December 10, 2015

<b>NAME (PLEASE PRINT)</b> Jennifer Thomas	<b>PHONE NUMBER</b> 720 929-6808	<b>TITLE</b> Regulatory Specialist
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/9/2015	

Form 3160-4  
(August 2007)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

5. Lease Serial No.  
UTU01196D

1a. Type of Well  Oil Well  Gas Well  Dry  Other  
 b. Type of Completion  New Well  Work Over  Deepen  Plug Back  Diff. Resvr.  
 Other \_\_\_\_\_

6. If Indian, Allottee or Tribe Name \_\_\_\_\_

7. Unit or CA Agreement Name and No.  
UTU63047A

2. Name of Operator  
KERR-MCGEE OIL AND GAS ONSHORE  
Contact: JENNIFER THOMAS  
Email: Jennifer.Thomas@anadarko.com

8. Lease Name and Well No.  
NBU 1022-9G4CS

3. Address P.O. BOX 173779  
DENVER, CO 80217

3a. Phone No. (include area code)  
Ph: 720-929-6808

9. API Well No.  
43-047-54562

4. Location of Well (Report location clearly and in accordance with Federal requirements)\*  
 At surface NWSE 1917FSL 1784FEL 39.961516 N Lat, 109.441721 W Lon  
 At top prod interval reported below SWNE 2368FNL 1837FEL  
 At total depth SWNE 2381FNL 1813FEL 39.964276 N Lat, 109.441873 W Lon

10. Field and Pool, or Exploratory  
NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey or Area  
Sec 9 T10S R22E Mer SLB

12. County or Parish  
UINTAH

13. State  
UT

14. Date Spudded  
06/10/2015

15. Date T.D. Reached  
09/20/2015

16. Date Completed  
 D & A  Ready to Prod.  
12/07/2015

17. Elevations (DF, KB, RT, GL)\*  
5221 KB

18. Total Depth: MD 9040  
TVD 8883

19. Plug Back T.D.: MD 8981  
TVD 8824

20. Depth Bridge Plug Set: MD  
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)  
TRIPLE COMBO, RADIAL CEMENT BOND GAMMA RAY CCL

22. Was well cored?  No  Yes (Submit analysis)  
 Was DST run?  No  Yes (Submit analysis)  
 Directional Survey?  No  Yes (Submit analysis)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
24.000	14.000 STL	36.7	0	40		90			
11.000	8.625 J-55	28.0	13	2481		725		0	
7.875	4.500 I-80	11.6	13	9027		1834		2100	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.375	8397							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) MESAVERDE	6959	9040	8101 TO 8895	0.410	72	OPEN
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
8101 TO 8895	PUMP 46860 BBLS SLICKWATER, 18 BBLS 15% HCL ACID, 96977 LBS 30/50 MESH SAND

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
12/07/2015	12/26/2015	24	→	0.0	799.0	313.0			FLOWS FROM WELL
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
20/64	SI 915	1353.0	→	0	799	313		PGW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
	SI		→						

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #327617 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

29. Disposition of Gas(Sold, used for fuel, vented, etc.)  
**CAPTURED**

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				GREEN RIVER	1153
				BIRD'S NEST	1535
				MAHOGANY	1997
				WASATCH	4476
				MESAVERDE	6959

32. Additional remarks (include plugging procedure):

33. Circle enclosed attachments:

- 1. Electrical/Mechanical Logs (1 full set req'd)
- 2. Geologic Report
- 3. DST Report
- 4. Directional Survey
- 5. Sundry Notice for plugging and cement verification
- 6. Core Analysis
- 7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

**Electronic Submission #327617 Verified by the BLM Well Information System.  
For KERR-MCGEE OIL AND GAS ONSHORE, sent to the Vernal**

Name (please print) JENNIFER THOMAS Title REGULATORY SPECIALIST III

Signature (Electronic Submission) Date 01/04/2016

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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 representations as to any matter within its jurisdiction.

**\*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\***

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
6/10/2015	12:30 - 13:30	1.00	DCSGCON	12	E	P		SET 14" CONDUCTOR CASING AND CEMENT WITH 90 SX CEMENT
	13:30 - 14:30	1.00	DRLCON	2	A	P		DRILL 24" CONDUCTOR HOLE TO 40'
7/4/2015	21:00 - 0:00	3.00	MIRU	08	B	Z	49	REPAIR PACKING AND GOOSE NECK ON POWER HEAD
7/5/2015	0:00 - 1:30	1.50	MIRU	08	B	Z	49	POWER HEAD REPAIR
	1:30 - 2:30	1.00	MIRU	01	C	P	49	RIG DOWN, SKID RIG 20 FT AND RIG UP, SET MATTING BOARD. SET RIG IN PLACE ON NBU 1022-9G4CS WELL 5 OF 7, JSA, RIG UP FLOW AND MUD LINES, REVIEW DIRECTIONAL PLANS AND PLATS AND VERIFY LAT/LONGS, VERIFY DIRECTIONAL DRILLERS PLAN IS THE MOST RECENT AND APPROVED VERSION REFERENCE WELLBORE DIAGRAMS FOR EXACT CASING DESIGN AND GENERAL OVERVIEW OF WELLBORE PRIOR TO SPUD.
	2:30 - 3:00	0.50	MIRU	06	A	P	49	PICK UP NOV 1.83 DEGREE BENT MOTOR (RUN # 2) .17 REV/GAL PICK UP 12.25" DRILL BIT. PICK UP ROTATING HEAD
	3:00 - 5:00	2.00	DRLSUR	02	D	P	49	DRILL 12.25" HOLE F/ 44' T/ 210@ 85'PH) WEIGHT ON BIT 25 K STROKES PER MINUTE = 120 GALLONS PER MINUTE = 491 PRESSURE ON/OFF (BOTTOM) 550/450 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROTATE 25/25/25 K. DRAG 0 K. CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES
	5:00 - 7:00	2.00	DRLSUR	06	A	P	219	PRE JOB SAFETY MEETING, CIRC 15 MINUTES TRIP OUT OF HOLE LAY DOWN BHA # (12 1/4" BIT) P/U BHA #2 TRIP IN HOLE, MAKE UP REED-NOV 11", 8" DIRECTIONAL ASSEMBLY, SCIBE MOTOR, INSTALL EM TOOL AND TRIP IN HOLE.

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	7:00 - 12:00	5.00	DRLSUR	02	D	P	219	DRILL 11" SURFACE HOLE F/210' T/ 670' (460'@ 92'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 800 / 550 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 53/47/50 K. DRAG 3K DIRECTIONAL PLAN CURRENTLY 1.44' ft HIGH, 1.22' ft RIGHT SLIDE 69 ft @ .75Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES
	12:00 - 15:00	3.00	DRLSUR	02	D	P	679	DRILL 11" SURFACE HOLE F/670' T/ 880' (210'@ 70'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 800 / 550 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 55/48/51 K. DRAG 4K CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES
	15:00 - 15:30	0.50	DRLSUR	07	A	P	889	RIG SERVICE
	15:30 - 17:30	2.00	DRLSUR	02	D	P	889	DRILL 11" SURFACE HOLE F/880' T/ 1,030' (150'@ 75'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 1,500 / 1,300 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 60/50/55 K. DRAG 5K DIRECTIONAL PLAN CURRENTLY 6.8' ft HIGH, 1.9' ft RIGHT SLIDE 133 ft @ 1.5Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES BOTH PUMPS ON HOLE @ 880'

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	17:30 - 0:00	6.50	DRLSUR	02	D	P	1039	PJSM, DRILL 11" SURFACE HOLE F/1,030' T/ 1,510' (480'@ 74'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 960 / 780 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 69/48/60 K. DRAG 9K DIRECTIONAL PLAN CURRENTLY 4.18' ft HIGH, .47' ft RIGHT SLIDE 265 ft @ .47Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES BOTH PUMPS ON HOLE @ 880'
7/6/2015	0:00 - 5:00	5.00	DRLSUR	02	D	P	1519	DRILL 11" SURFACE HOLE F/1,510' T/ 1,810' (300'@ 60'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 980 / 780 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 81/50/68 K. DRAG 13K DIRECTIONAL PLAN CURRENTLY 6.75' ft HIGH, .27' ft RIGHT SLIDE 53 ft @ 1.08Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 1 PUMP ON HOLE @ 1,510' AIR ON HOLE @ 1,650'

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 12:00	7.00	DRLSUR	02	D	P	1819	PJSM, DRILL 11" SURFACE HOLE F/1,810' T/ 2,140' (330'@ 47'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 1,380 / 1,180 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 90/52/70 K. DRAG 20K DIRECTIONAL PLAN CURRENTLY 12.6' ft HIGH, 2.13' ft LEFT SLIDE 65 ft @ 1.75Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 1 PUMP ON HOLE @ 1,510' AIR ON HOLE @ 1,650'
	12:00 - 17:30	5.50	DRLSUR	02	D	P	2149	DRILL 11" SURFACE HOLE F/2,140' T/ 2,380' (240'@ 43.6'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 1,500 / 1,300 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 93/57/74 K. DRAG 19K DIRECTIONAL PLAN CURRENTLY 14.0' ft HIGH, 3.3' ft LEFT SLIDE 45 ft @ 1.67Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 1 PUMP ON HOLE @ 1,510' AIR ON HOLE @ 1,650'

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	17:30 - 20:00	2.50	DRLSUR	02	D	P	2389	PJSM, DRILL 11" SURFACE HOLE F/2,380' T/ 2,507' (127'@ 50.8'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 1,600 / 1,450 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 96/58/76 K. DRAG 20K DIRECTIONAL PLAN CURRENTLY 15.12' ft HIGH, 4.23' ft LEFT SLIDE 20 ft @ .33 Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 1 PUMP ON HOLE @ 1,510' AIR ON HOLE @ 1,650'
	20:00 - 22:00	2.00	CSGSUR	05	C	P	2516	CIRCULATE AND CONDITION HOLE , VOLUME IS CLEAN COMING OVER SHAKERS, 1,100 BBLS H2O ON LOCATION FOR DRILLING 800 BBLS H2O ON LOCATION FOR CEMENT
	22:00 - 0:00	2.00	CSGSUR	06	A	P	2516	TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BHA, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT.
7/7/2015	0:00 - 1:30	1.50	CSGSUR	06	A	P	2516	TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BHA, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT.
	1:30 - 2:30	1.00	CSGSUR	12	A	P	2516	MOVE CAT WALK & PIPE RACKS, PJSM , R/U TO RUN 8 5/8" CSG
	2:30 - 5:00	2.50	CSGSUR	12	C	P	2516	RUN 56 JOINTS OF 8-5/8" 28# J-55 LT&C CASING. RAN 1 CENTRALIZER ON FIRST THREE JOINTS, AND EVERY TWO JOINT FOR 2 JOINTS FOR A TOTAL OF 5 CENTRALIZERS. RUN CASING TO BOTTOM WITH NO PROBLEMS. LANDED FLOAT SHOE @ 2,472.07' SET TOP OF BAFFLE PLATE @ 2,426.12'

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 7:00	2.00	CSGSUR	12	E	P	2516	PRE JOB SAFETY MEETING WITH PRO PETRO CEMENTERS. RIG UP AND INSTALL CEMENT HEAD, START CEMENT OPERATIONS. PRESSURE TEST LINES TO 2500 PSI. PUMP 156 BBLS H2O AND PUMP 20 BBLS OF 8.4# GEL WATER AHEAD. MIX AND PUMP (300 SX) 61.4 BBLS OF 15.8# 1.15 YP, 5 GAL/SK PREMIUM CEMENT W/ 2% CALC. DROP PLUG ON FLY. DISPLACE W/ 151 BBLS OF H2O. NO CIRC THROUGH OUT. FINAL LIFT OF 200 PSI AT 4 BBL/MIN. BUMP PLUG WITH 600 PSI FOR 5 MIN. FLOAT HELD. RIGGED DOWN CEMENT HEAD, PICKED UP RUNNING TOOL, PULLED BUSHINGS, PULLED DIVERTER RUBBER , SET ELEVATORS, CASING LANDED ON CONDUCTOR, RUN 200' OF 1" PIPE DOWN BACK SIDE OF 8.5/8" CASING ANNULUS, R/D PROPETRO RIG. RELEASED RIG @ 07:00
								TOP JOB # 1: PUMP CEMENT DOWN ONE INCH PIPE WITH 100 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 20.4 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE.
								TOP JOB # 2: PUMP CEMENT DOWN ONE INCH PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 20.4 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE.
								TOP JOB # 3: PUMP CEMENT DOWN ONE INCH PIPE WITH 175 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 40.9 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE. RELEASE CEMENTERS 07/07/2015 13:00
9/17/2015	12:30 - 13:30	1.00	MIRU3	01	C	P	2516	SKID RIG TO NBU 1022-9G4CS
	13:30 - 15:00	1.50	PRPSPD	14	A	P	2516	NIPPLE UP B.O.P'S & RIG UP ROTARY TOOLS
	15:00 - 18:30	3.50	CSGSUR	15	A	P	2516	SAFETY MEETING WITH CREW, TEST BOP WITH B&C TESTERS TEST ANNULAR TO 250 PSI LOW/ 5 MIN 2500 PSI HIGH 10 MIN, PIPE & BLIND RAMS, FLOOR VALVES, IBOP, HCR VALVE, KILL LINE VALVES, TEST BOPS, CHOKE MANIFOLD TO 250 PSI LOW / 5 MIN - 5000 PSI HIGH / 10 MIN, HOLD ACCUMULATOR FUNCTION TEST, & TEST SURFACE CASING 1500 PSI FOR 30 MINS.
	18:30 - 19:00	0.50	CSGSUR	14	B	P	2516	SET WEAR BUSHING & CHANGE,OUT SAVER SUB
	19:00 - 20:00	1.00	CSGSUR	09	A	P	2516	SLIP CUT DRILL LINE
	20:00 - 20:30	0.50	CSGSUR	07	A	P	2516	RIG SERVICE
	20:30 - 22:00	1.50	CSGSUR	06	A	P	2516	PICKED UP THE MM55M BIT, HUNTING MUD MOTOR AND DIRECTIONAL BHA SCRIBED THE ASSEMBLY.( SURFACE TEST MUD MOTOR GOOD )
	22:00 - 0:00	2.00	CSGSUR	06	A	P	2516	TRIP IN 9 STANDS OF HWDP SET THE HYDRAULIC SLIPS IN PLACE

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
9/18/2015	0:00 - 1:00	1.00	DRLPRC	02	F	P	2516	TAGGED CEMENT @ 2,369' DRILLED THE SHOE TRACK SPM - 80 GPM-305 WOB-5/8K ROTARY- 30
	1:00 - 6:00	5.00	DRLPRC	02	D	P	2516	DIRECTIONAL DRILL F/ 2,516' - 2867' ( 351'/ 5.0 HR @ 70.2'/FPH ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.5 - 10.6K STPP = 2050 OFF BOTTOM = 1717 STRING WEIGHT UP/DOWN/ROTATING = 119 / 92 / 106 Well Positions: 5' Low / 12' Left Slide 18' @ 28.57% Depth/36.36% Time = .2 Hrs - Rot 45' @ 71.43% Depth/ 63.64% Time = .35Hrs/ Bit Hrs =4.25 / D&C Hrs = 5.5 MUD WEIGHT = 8.4 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	6:00 - 9:00	3.00	DRLPRC	08	A	Z	2867	WTL AND FOUND THAT THE UJB PROGRAMMING LOOKS AS THOUGH IT GLITCHED AND REMOVED HOOKLOAD AND TORQUE FROM THE CHANNEL LIST ( HOOKLOAD SHOULD BE ON CHANNEL A3 AND TORQUE ON CHANNEL A1). UPON FURTHER INSPECTION I FOUND THE ALARM HORN HAD BEEN TAMPERED WITH AND THE WEATHER SEAL JUST HANGING ON THE OUTSIDE OF THE CASING, I THINK SOMEONE TRIED TO ADJUST THE HORN VOLUME BY DISMANTLING IT AND WAS UNSUCCESSFUL AND IT POSSIBLY SHORTED OUT CAUSING THE UJB TO GLITCH THUS RESETTING THE PROGRAMMING FOR TORQUE AND HOOKLOAD . WE REPLACED BOTH THE UJB AND ALARM HORN SO THAT THERE IS NO FURTHER PROBLEMS WITH THESE UNITS, RE-PROGRAMMED AND OBSERVED OPERATION. WITH NO ISSUES. WE THINK THAT THE HORN HAD BEEN TAMPERED WITH BEFORE THIS TIME BECAUSE THE LAST WELL IT DONE THE SAME THING BUT WENT AWAY WITH NO OTHER ISSUES AND ONLY LASTED A MINUTE.

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	9:00 - 15:30	6.50	DRLPRC	02	D	P	2867	DIRECTIONAL DRILL F/ 2867' TO 3778 ( 911'/ 6.5 HR @ 140.1'/FPH ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.5 - 10.6K STPP = 2438 OFF BOTTOM = 1960 STRING WEIGHT UP/DOWN/ROTATING = 134/98/105 Well Positions: 8' Low / 14' Left Slide 96' @ 10.54% Depth/28.9% Time = 1.45 Hrs – Rot 815' @ 89.46% Depth/ 71.1% Time = 3.57 Hrs/ Bit Hrs =8.55 / D&C Hrs = 9.8 MUD WEIGHT = 8.5 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	15:30 - 16:00	0.50	DRLPRC	07	A	P	3778	SERVICE RIG
	16:00 - 20:00	4.00	DRLPRC	02	D	P	3778	DIRECTIONAL DRILL F/ 3,778' TO 4,631' ( 853'/ 4 HR @ 213'/FPH ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.6 - 10.9K STPP = 2441 OFF BOTTOM = 1963 STRING WEIGHT UP/DOWN/ROTATING = 121 / 91 / 107 Well Positions:13' North / 6.7' West Slide 50' @ 5.88% Depth/24.89% Time = .97 Hrs – Rot 801' @ 94.12% Depth/ 75.11% Time = 2.92 Hrs/ Bit Hrs =12.43 / D&C Hrs = 13.68 MUD WEIGHT = 8.6 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE		Spud date: 7/5/2015	
Project: UTAH-UINTAH		Site: NBU 1022-9J PAD	Rig name no.: PROPETRO 12/12, ENSIGN 145/145
Event: DRILLING		Start date: 6/1/2015	End date: 9/22/2015
Active datum: RKB @5,221.00usft (above Mean Sea Level)		UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	20:00 - 0:00	4.00	DRLPRO	02	D	P	4631	DIRECTIONAL DRILL F/ 4,631' TO 5,477' ( 846' / 4 HR @ 211'/FPH ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.6 - 10.9K STPP = 2600 OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 141 / 104 / 125 Well Positions: 12.8' North / 7.46' West Slide 4' @ .47% Depth/2.30% Time = .07 Hrs - Rot 841' @ 99.53% Depth/ 97.70% Time = 2.83 Hrs/ Bit Hrs =15.33 / D&C Hrs = 16.58 MUD WEIGHT = 8.6 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
9/19/2015	0:00 - 14:30	14.50	DRLPRO	02	D	P	5477	DIRECTIONAL DRILL F/ 5,477' TO 7655' (2178 ' / 14.5 HR @ 150.2'/FPH ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.6 - 10.9K STPP = 2850 OFF BOTTOM = 2570 STRING WEIGHT UP/DOWN/ROTATING = 208/118/155 Well Positions:11' North / 13' West Slide 74' @ 3.39% Depth/19.29% Time = 2.37 Hrs - Rot 2107' @ 96.61% Depth/ 80.71% Time = 9.9 Hrs/ Bit Hrs =27.6 / D&C Hrs = 28.85 MUD WEIGHT = 8.6 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	14:30 - 15:00	0.50	DRLPRO	07	A	P	7655	HPJSM SERVICE THE TOP DRIVE, DRAW TOOL, CAT WALK, CROWN, TRAVAILING BLOCKS

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	15:00 - 19:30	4.50	DRLPRO	02	D	P	7655	DIRECTIONAL DRILL F/ 7,655' TO 8,319' ( 664'/ 4.5 HR @ 147'/FPH AVG ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =96 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.6 - 10.9K STPP = 2538 OFF BOTTOM = 3002 STRING WEIGHT UP/DOWN/ROTATING = 220/139/154 Well Positions: 6.46' North / 6.33' West Slide 0' @ 0.0% Depth/0.0% Time = 0 Hrs - Rot 664' @ 100.00% Depth/ 100.00% Time = 3.88 Hrs/ Bit Hrs =31.48 / D&C Hrs = 32.73 MUD WEIGHT = 8.7 PPG VISCOSITY = 27 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	19:30 - 21:00	1.50	DRLPRO	05	G	P	8319	CIRCULATE IN 12.0 PPG MUD. AND TRANSFER OUT LIGHT MUD @ 40-105 STK / MIN 6500 TOTAL STKS ADDING LCM FOR LOSSES LOST APROX 54 BBLS MUD DURING DISP ON MUD UP, 5 TO 8 % LCM AFTER MUD UP LOSSES WENT TO MINER TO NO LOSSES.ONCE MUD WAS TRANSFERED WE FILLED PITS AND CONTINUE DRILLING.
	21:00 - 0:00	3.00	DRLPRO	02	D	P	8319	DIRECTIONAL DRILL F/ 8,319' TO 8550' ( 231'/ 3 HR @ 77.4'/FPH AVG ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 105 GALLONS PER MINUTE = 402 MUD MOTOR RPM =64.32 TOP DRIVE RPM = 50 TOTAL RPM = 146 FT/LBS TORQUE = 8.6 - 13.9K STPP = 2160 OFF BOTTOM = 2030 STRING WEIGHT UP/DOWN/ROTATING = 215/130/157 Well Positions: 3.46' North / 1.94' West Slide 0' @ 0.0% Depth/0.0% Time = 0 Hrs - Rot 231' @ 100.00% Depth/ 100.00% Time = 2.87 Hrs/ Bit Hrs =34.35 / D&C Hrs = 37.18 MUD WEIGHT = 11.6 PPG VISCOSITY = 40 SECONDS HOLE IN GOOD CONDITION ZECO -NOT DEWATERING CENTRIFUGE - NOT RUNNING DE-SANDER -NOT RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE		Spud date: 7/5/2015	
Project: UTAH-UINTAH		Site: NBU 1022-9J PAD	Rig name no.: PROPETRO 12/12, ENSIGN 145/145
Event: DRILLING		Start date: 6/1/2015	End date: 9/22/2015
Active datum: RKB @5,221.00usft (above Mean Sea Level)		UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
9/20/2015	0:00 - 8:00	8.00	DRLPRO	02	D	P	8550	DIRECTIONAL DRILL F/ 8550' TO 9040' ( 490'/ 8.0 HR @ 61.25'/FPH AVG ) WEIGHT ON BIT = 18/25 K STROKES PER MINUTE - 105 GALLONS PER MINUTE = 402 MUD MOTOR RPM =64.32 TOP DRIVE RPM = 50 TOTAL RPM = 114 FT/LBS TORQUE = 12 - 18.4K STPP = 2160 OFF BOTTOM = 2030 STRING WEIGHT UP/DOWN/ROTATING = 215/130/157 Well Positions: 5' South / 13' East (Final) Slide 0' @ 0.0% Depth/0.0% Time = 0 Hrs – Rot 490' @ 100.00% Depth/ 100.00% Time = 7.45 Hrs/ Bit Hrs =41.8 / D&C Hrs = 44.72 (Total) Slide 302' @ 4.63% Depth/13.36% Time = 5.58 Hrs – Rot 6222' @ 95.37% Depth/ 86.64% Time = 36.22 Hrs/ Bit Hrs =41.8 / D&C Hrs = 44.72 MUD WEIGHT = 11.9 PPG VISCOSITY = 38 SECONDS HOLE IN GOOD CONDITION ZECO -NOT DEWATERING CENTRIFUGE - NOT RUNNING DE-SANDER -NOT RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	8:00 - 9:30	1.50	EVALPR	05	A	P	9040	CIRC & COND CIRC TWO BOTTOM UP
	9:30 - 14:00	4.50	EVALPR	06	B	P	9040	T.O.H FOR WEATHERFORD SHUTTLE LOGS
	14:00 - 14:30	0.50	EVALPR	03	B	P	9040	BACK REAM TIGHT SPOTS @ 4430'/4398'/4357'/4080'
	14:30 - 15:00	0.50	EVALPR	07	A	P	9040	RIG SERVICE
	15:00 - 16:30	1.50	EVALPR	06	B	P	9040	PUMP DRY JOB & CONT. T.O.H FOR WEATHERFORD SHUTTLE LOGGS
	16:30 - 18:00	1.50	EVALPR	06	B	P	9040	HPJSM LAY DOWN ALL DIR TOOLS DRAIN/LD MUD MOTOR-BIT.
	18:00 - 0:00	6.00	EVALPR	11	E	P	9040	PJSM WITH WEATHERFORD LOGGING CREW & AND RIG CREW R/U LAY OUT LOGGING TOOLS,MAKE UP LOGGING BIT -XO- AND BHA,LOAD TOOLS,TRIP IN THE HOLE @ 120' / MIN TO 5,420' @00:00
9/21/2015	0:00 - 2:30	2.50	EVALPR	11	E	P	9040	PJSM,WITH WEATHERFORD LOGGING CREW,TRIP IN THE HOLE @ 120' / MIN FROM 5,420' TO 9,040' BREAK CIRC EVERY 1,500' ON TRIP IN & TAG BTM @ 9,040' ONE TIGHT SPOT @ 6,911'
	2:30 - 6:00	3.50	EVALPR	05	A	P	9040	FILL PIPE & CIRC WITH 44 SPM @ 950 PSI & SPACED OUT D.P & DROP DART TO DEPLOY TOOLS CIRC WHILE PUMPING DART @ 60 SPM 138 PSI FOR 850 STKS AND SLOWED DOWN PUMPS TO 16 SPM @ 157 PSI AT 1330 STKS,DEPLOY TOOLS & CONT TO CIRC BTM UP & PUMP DRY JOB.
	6:00 - 15:00	9.00	EVALPR	11	E	P	9040	T.O.H WHILE LOGGING WITH WEATHERFORD SHUTTLE LOGS F/ @ 9,024' TO 8 5/8 SURFACE CASING SHOE @ 2,479 & THEN CONT T.O.H & L/D WEATHERFORD LOGGING TOOLS,PREP RIG FLOOR FOR CASING RUN.
	15:00 - 15:30	0.50	CSGPRO	14	B	P	9040	PULL THE WEAR BUSHING,PREP RIG FLOOR FOR CASING RUN.

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.: PROPETRO 12/12, ENSIGN 145/145

Event: DRILLING

Start date: 6/1/2015

End date: 9/22/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

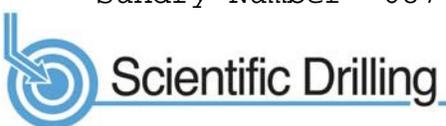
UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	15:30 - 16:30	1.00	CSGPRO	12	A	P	9040	SAFETY MEETING WITH FRANKS WESTATE AND RIG UP THE CASING CREW.
	16:30 - 0:00	7.50	CSGPRO	12	C	P	9040	SAFETY MEETING WITH FRANKS FINISH RUNNING 4.5 PRODUCTION CASING. @ 6,769' AT 00:00 RAN A TOTAL OF 90 JTS OF LTC 11.6 PPF CASING.AND 114 JTS 11.6 PPF DQX CASING 2 MARKER JT@6,950.16' & 5030.78 AND 1 -X-O @ 5009.08' SHOE@ 9,027.05' FC@ 8,981.54' (13' KB) CASING LEFT OUT 6 JT - LTC 11.6 PPF 3 JT - DQX 11.6 PPF 1 - DQX X/O 2 - LTC MARKER JTS
9/22/2015	0:00 - 2:30	2.50	CSGPRO	12	C	P	9040	FINISH RUNNING 4.5 CASING WITH FRANKS RAN A TOTAL OF 90 JTS OF LTC 11.6 PPF CASING.AND 114 JTS 11.6 PPF DQX CASING 2 MARKER JT@6,950.16' & 5030.78 AND 1 -X-O @ 5009.08' SHOE@ 9,027.05' FC@ 8,981.54' (13' KB) CASING LEFT OUT 6 JT - LTC 11.6 PPF 3 JT - DQX 11.6 PPF 1 - DQX X/O 2 - LTC MARKER JTS
	2:30 - 3:00	0.50	CSGPRO	12	A	P	9040	PJSM, RIG DOWN FRANK'S CASING CREW
	3:00 - 4:30	1.50	CSGPRO	05	A	P	9040	CIRC BTM UP
	4:30 - 11:00	6.50	CSGPRO	21	E	Z	9040	WAIT ON SCLUMBERGER IRON & CREW FOR PRIMARY CEMENT JOB.
	11:00 - 13:00	2.00	CSGPRO	12	B	P	9040	PJSM, RIG UP SCLUMBERGER IRON FOR PRIMARY CEMENT JOB.
	13:00 - 16:00	3.00	CSGPRO	12	E	P	9040	PRESSURE TEST TO 5000 PSI. PUMP 30 BBL. CHEMICAL WASH, . DROPPED THE BOTTOM PLUG AND PUMPED 191 BBLS (752 SX) OF CLASS G LEAD CEMENT, 12.8 PPG 1.36 YLD, 53.01 #/SK D035 + 0.10% BWOC D208 + 0.2% BWOC D065 +.20 % BWOC D046 + .25 #/SK D029 + 0.50% BWOC D079 + 0.43 % BWOC D800 , 6.3 GL./SK FRESH WATER . FOLLOWED BY 261 BBLS (1082 SX) OF 14.5#, 1.34 YLD. CLASS G POZ TAIL CEMENT + 35.01#/SK D035 + 20.10% BWOC D066 +0.05% BWOC D208 + 0.17 % BWOC D800 + 0.20 % BWOC D046 + 0.30 % BWOC B477 + 5.585 GL/SK FRESH WATER . SHUT DOWN AND DROP PLUG AND DISPLACE W/ 139.5 BBLS OF FRESH WATER. FULL RETURNS WITH 69.5 BBLS OF CEMENT RETURNED TO SURFACE. LIFT PSI OF 2802 / 3520 BUMP PLUG PSI. . PRESSURE HELD 3 MINS. FLOAT HELD. FLOW BACK 1.5 BBLS. EST. TOC FOR LEAD SURFACE', EST TOC OF TAIL CEMENT 2662'
	16:00 - 16:30	0.50	CSGPRO	12	B	P	9040	PJSM, RIG DOWN CEMENTERS

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1022-9G4CS ORANGE		Spud date: 7/5/2015	
Project: UTAH-UINTAH		Site: NBU 1022-9J PAD	
Event: DRILLING		Rig name no.: PROPETRO 12/12, ENSIGN 145/145	
Start date: 6/1/2015		End date: 9/22/2015	
Active datum: RKB @5,221.00usft (above Mean Sea Level)		UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	16:30 - 18:00	1.50	MIRU3	14	A	P	9040	PJSM, INSTALL PACK OFF AS PER CAMERON, RIG DOWN CASING ELEVATORS, BAILS & L/D LANDING JT & NIPPLE DOWN BOP, RELEASE RIG 9-22-2015 @ 18:00



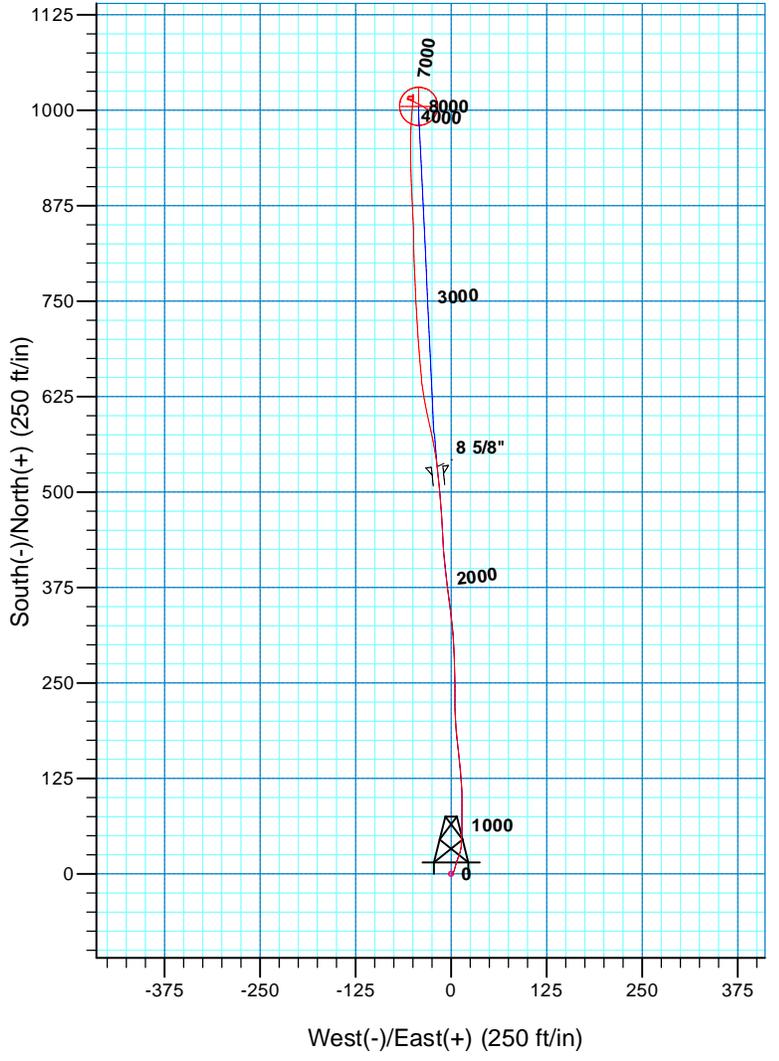
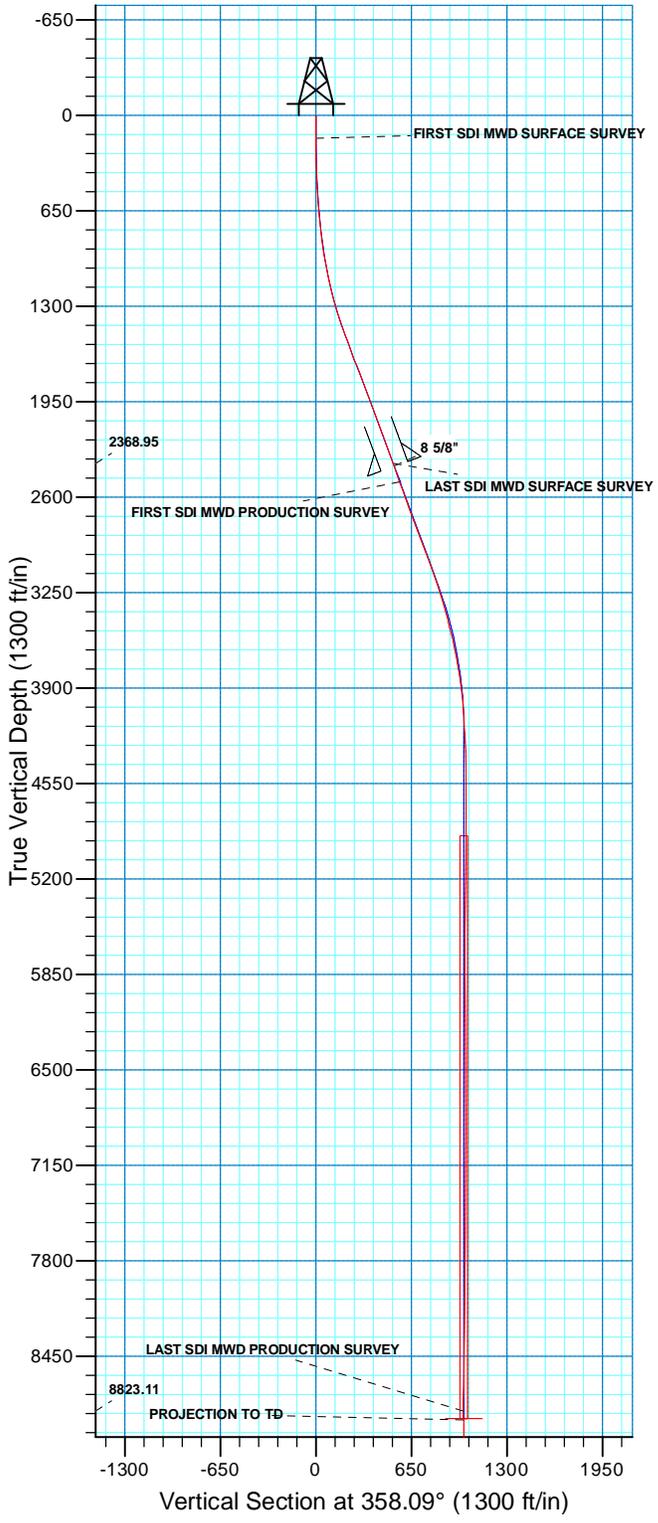
Site: NBU 1022-9J PAD  
Well: NBU 1022-9G4CS  
Wellbore: OH  
Design: OH



WELL DETAILS: NBU 1022-9G4CS					
GL 5208 & KB 13 @ 5221.00ft (ENSGN 145)					
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515861.51	2077271.24	39.9615510	-109.4410380

Azimuths to True North  
Magnetic North: 10.56°

Magnetic Field  
Strength: 51854.0snT  
Dip Angle: 65.80°  
Date: 8/12/2015  
Model: BGGM2015



PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N	
Geodetic System:	Universal Transverse Mercator (US Survey Feet)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	Zone 12N (114 W to 108 W)
Location:	SECTION 9 T10S R22E
System Datum:	Mean Sea Level

REC



**SDI**  
Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Site:</b>	NBU 1022-9J PAD	<b>MD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Well:</b>	NBU 1022-9G4CS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 1022-9J PAD, SECTION 9 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,515,880.34 usft	<b>Latitude:</b>	39.9616010
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,077,306.51 usft	<b>Longitude:</b>	-109.4409110
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.00 °

<b>Well</b>	NBU 1022-9G4CS, 1917 FSL 1784 FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,515,861.51 usft	<b>Latitude:</b>	39.9615510
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,077,271.24 usft	<b>Longitude:</b>	-109.4410380
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	5,208.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	8/12/2015	10.56	65.80	51,854

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	358.09	

<b>Survey Program</b>	<b>Date</b>	9/22/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
9.00	2,451.00	Survey #1 SDI MWD SURFACE (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
2,586.00	9,040.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
154.00	0.37	133.02	154.00	-0.32	0.34	-0.33	0.26	0.26	0.00	
<b>FIRST SDI MWD SURFACE SURVEY</b>										
181.00	0.59	122.80	181.00	-0.45	0.52	-0.47	0.87	0.81	-37.85	
209.00	0.81	98.20	209.00	-0.56	0.84	-0.59	1.31	0.79	-87.86	
235.00	0.97	79.50	234.99	-0.55	1.24	-0.59	1.27	0.62	-71.92	
320.00	2.19	27.46	319.96	1.03	2.69	0.94	2.08	1.44	-61.22	
400.00	3.66	19.58	399.86	4.79	4.26	4.64	1.90	1.84	-9.85	
490.00	4.02	15.19	489.65	10.54	6.04	10.33	0.52	0.40	-4.88	



**SDI**  
Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Site:</b>	NBU 1022-9J PAD	<b>MD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Well:</b>	NBU 1022-9G4CS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
580.00	4.44	16.56	579.41	16.92	7.86	16.65	0.48	0.47	1.52	
670.00	4.90	22.29	669.11	23.82	10.32	23.46	0.73	0.51	6.37	
760.00	5.56	11.14	758.74	31.65	12.62	31.21	1.34	0.73	-12.39	
850.00	7.82	2.66	848.12	42.05	13.74	41.57	2.73	2.51	-9.42	
940.00	8.60	1.37	937.20	54.89	14.19	54.39	0.89	0.87	-1.43	
1,030.00	10.11	0.58	1,026.00	69.52	14.43	69.00	1.68	1.68	-0.88	
1,120.00	11.79	0.78	1,114.36	86.61	14.63	86.08	1.87	1.87	0.22	
1,210.00	13.55	357.99	1,202.16	106.35	14.39	105.81	2.07	1.96	-3.10	
1,300.00	16.05	354.65	1,289.17	129.27	12.86	128.77	2.93	2.78	-3.71	
1,390.00	18.78	353.51	1,375.04	156.06	10.06	155.64	3.06	3.03	-1.27	
1,480.00	20.28	354.35	1,459.86	185.98	6.89	185.64	1.70	1.67	0.93	
1,570.00	20.23	358.93	1,544.30	217.06	5.06	216.77	1.76	-0.06	5.09	
1,660.00	20.62	0.97	1,628.64	248.46	5.04	248.16	0.90	0.43	2.27	
1,750.00	22.63	357.66	1,712.30	281.61	4.60	281.30	2.61	2.23	-3.68	
1,840.00	20.53	355.00	1,795.99	314.64	2.52	314.38	2.57	-2.33	-2.96	
1,930.00	20.36	351.75	1,880.33	345.86	-1.11	345.70	1.28	-0.19	-3.61	
2,020.00	20.26	353.18	1,964.73	376.82	-5.20	376.79	0.56	-0.11	1.59	
2,110.00	20.81	354.88	2,049.01	408.22	-8.48	408.27	0.90	0.61	1.89	
2,200.00	19.95	356.59	2,133.38	439.47	-10.82	439.59	1.16	-0.96	1.90	
2,290.00	20.10	356.14	2,217.94	470.23	-12.77	470.39	0.24	0.17	-0.50	
2,380.00	20.40	354.63	2,302.38	501.27	-15.28	501.50	0.67	0.33	-1.68	
2,451.00	20.29	354.69	2,368.95	525.85	-17.58	526.14	0.16	-0.15	0.08	
<b>LAST SDI MWD SURFACE SURVEY</b>										
2,586.00	18.41	348.03	2,496.33	570.02	-24.17	570.51	2.15	-1.39	-4.93	
<b>FIRST SDI MWD PRODUCTION SURVEY</b>										
2,681.00	19.52	346.32	2,586.17	600.12	-31.03	600.82	1.31	1.17	-1.80	
2,775.00	19.96	352.00	2,674.66	631.27	-36.98	632.15	2.09	0.47	6.04	
2,870.00	21.37	356.13	2,763.55	664.60	-40.41	665.58	2.13	1.48	4.35	
2,964.00	21.17	355.63	2,851.15	698.61	-42.86	699.65	0.29	-0.21	-0.53	
3,059.00	21.24	357.41	2,939.71	732.90	-44.94	734.00	0.68	0.07	1.87	
3,153.00	20.40	356.75	3,027.58	766.27	-46.64	767.40	0.93	-0.89	-0.70	
3,248.00	18.73	358.11	3,117.09	798.05	-48.08	799.21	1.82	-1.76	1.43	
3,342.00	18.50	359.36	3,206.17	828.04	-48.75	829.21	0.49	-0.24	1.33	
3,437.00	16.85	356.25	3,296.68	856.86	-49.81	858.04	2.00	-1.74	-3.27	
3,531.00	15.52	357.03	3,386.96	883.01	-51.36	884.24	1.43	-1.41	0.83	
3,626.00	14.41	358.63	3,478.73	907.52	-52.30	908.76	1.25	-1.17	1.68	
3,720.00	12.66	358.68	3,570.12	929.52	-52.81	930.76	1.86	-1.86	0.05	
3,815.00	11.26	358.96	3,663.06	949.20	-53.22	950.45	1.47	-1.47	0.29	
3,909.00	9.83	359.68	3,755.47	966.40	-53.43	967.64	1.53	-1.52	0.77	
4,004.00	8.28	5.14	3,849.28	981.32	-52.87	982.54	1.86	-1.63	5.75	
4,098.00	6.16	4.40	3,942.53	993.09	-51.87	994.27	2.26	-2.26	-0.79	
4,193.00	4.84	5.36	4,037.09	1,002.17	-51.11	1,003.31	1.39	-1.39	1.01	
4,287.00	3.53	5.64	4,130.84	1,008.99	-50.45	1,010.12	1.39	-1.39	0.30	



**SDI**  
Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Site:</b>	NBU 1022-9J PAD	<b>MD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Well:</b>	NBU 1022-9G4CS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,382.00	1.65	6.07	4,225.74	1,013.27	-50.02	1,014.37	1.98	-1.98	0.45	
4,476.00	1.41	7.11	4,319.70	1,015.76	-49.73	1,016.85	0.26	-0.26	1.11	
4,571.00	0.99	11.29	4,414.68	1,017.72	-49.43	1,018.81	0.45	-0.44	4.40	
4,666.00	0.67	8.98	4,509.67	1,019.08	-49.18	1,020.15	0.34	-0.34	-2.43	
4,760.00	0.70	344.80	4,603.67	1,020.17	-49.25	1,021.25	0.31	0.03	-25.72	
4,854.00	0.51	236.33	4,697.66	1,020.50	-49.75	1,021.59	1.05	-0.20	-115.39	
4,949.00	0.26	249.43	4,792.66	1,020.19	-50.30	1,021.30	0.28	-0.26	13.79	
5,043.00	0.17	191.70	4,886.66	1,019.97	-50.53	1,021.09	0.24	-0.10	-61.42	
5,138.00	0.33	167.64	4,981.66	1,019.57	-50.50	1,020.69	0.20	0.17	-25.33	
5,233.00	0.62	171.30	5,076.66	1,018.79	-50.36	1,019.91	0.31	0.31	3.85	
5,327.00	0.61	181.44	5,170.65	1,017.79	-50.30	1,018.90	0.12	-0.01	10.79	
5,422.00	0.60	178.23	5,265.64	1,016.79	-50.29	1,017.90	0.04	-0.01	-3.38	
5,516.00	1.05	175.75	5,359.63	1,015.44	-50.21	1,016.55	0.48	0.48	-2.64	
5,611.00	0.90	254.30	5,454.62	1,014.37	-50.87	1,015.50	1.31	-0.16	82.68	
5,706.00	0.97	275.54	5,549.61	1,014.24	-52.39	1,015.43	0.37	0.07	22.36	
5,800.00	0.97	247.76	5,643.60	1,014.02	-53.92	1,015.25	0.50	0.00	-29.55	
5,895.00	0.91	288.47	5,738.59	1,013.95	-55.38	1,015.24	0.69	-0.06	42.85	
5,989.00	0.88	271.85	5,832.58	1,014.21	-56.81	1,015.55	0.28	-0.03	-17.68	
6,084.00	0.93	16.18	5,927.57	1,014.98	-57.32	1,016.33	1.51	0.05	109.82	
6,179.00	0.97	27.42	6,022.56	1,016.43	-56.73	1,017.76	0.20	0.04	11.83	
6,273.00	0.53	24.17	6,116.55	1,017.53	-56.19	1,018.84	0.47	-0.47	-3.46	
6,368.00	0.44	31.20	6,211.54	1,018.25	-55.82	1,019.54	0.11	-0.09	7.40	
6,462.00	0.58	73.38	6,305.54	1,018.69	-55.18	1,019.97	0.41	0.15	44.87	
6,557.00	0.20	68.43	6,400.54	1,018.89	-54.56	1,020.14	0.40	-0.40	-5.21	
6,651.00	0.68	95.74	6,494.54	1,018.90	-53.86	1,020.13	0.54	0.51	29.05	
6,746.00	0.31	124.31	6,589.53	1,018.69	-53.08	1,019.90	0.46	-0.39	30.07	
6,841.00	0.48	147.82	6,684.53	1,018.21	-52.66	1,019.40	0.24	0.18	24.75	
6,935.00	1.02	141.72	6,778.52	1,017.22	-51.93	1,018.39	0.58	0.57	-6.49	
7,030.00	0.62	330.34	6,873.52	1,017.01	-51.66	1,018.16	1.72	-0.42	-180.40	
7,124.00	0.62	279.23	6,967.51	1,017.53	-52.41	1,018.71	0.57	0.00	-54.37	
7,219.00	0.63	277.03	7,062.51	1,017.67	-53.44	1,018.89	0.03	0.01	-2.32	
7,313.00	0.53	218.85	7,156.50	1,017.40	-54.23	1,018.64	0.61	-0.11	-61.89	
7,408.00	0.88	220.96	7,251.50	1,016.51	-54.98	1,017.78	0.37	0.37	2.22	
7,503.00	0.17	243.86	7,346.49	1,015.89	-55.58	1,017.18	0.76	-0.75	24.11	
7,597.00	0.41	195.95	7,440.49	1,015.51	-55.80	1,016.81	0.34	0.26	-50.97	
7,691.00	0.51	182.07	7,534.49	1,014.77	-55.91	1,016.07	0.16	0.11	-14.77	
7,786.00	0.35	185.71	7,629.48	1,014.06	-55.95	1,015.36	0.17	-0.17	3.83	
7,880.00	0.69	102.05	7,723.48	1,013.65	-55.43	1,014.94	0.79	0.36	-89.00	
7,975.00	0.75	118.50	7,818.47	1,013.24	-54.32	1,014.49	0.23	0.06	17.32	
8,070.00	1.14	100.02	7,913.46	1,012.77	-52.85	1,013.98	0.52	0.41	-19.45	
8,164.00	1.41	112.85	8,007.44	1,012.16	-50.86	1,013.30	0.42	0.29	13.65	
8,259.00	1.32	128.94	8,102.41	1,011.02	-48.93	1,012.09	0.41	-0.09	16.94	
8,353.00	1.49	114.43	8,196.38	1,009.84	-46.98	1,010.84	0.42	0.18	-15.44	
8,448.00	1.67	105.29	8,291.35	1,008.96	-44.52	1,009.88	0.33	0.19	-9.62	



**SDI**  
Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-9G4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Site:</b>	NBU 1022-9J PAD	<b>MD Reference:</b>	GL 5208 & KB 13 @ 5221.00ft (ENSIGN 145)
<b>Well:</b>	NBU 1022-9G4CS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,542.00	1.61	113.05	8,385.31	1,008.08	-41.98	1,008.92	0.24	-0.06	8.26
8,637.00	1.41	123.93	8,480.28	1,006.91	-39.78	1,007.67	0.37	-0.21	11.45
8,726.00	1.64	119.69	8,569.24	1,005.66	-37.77	1,006.36	0.29	0.26	-4.76
8,816.00	1.76	121.11	8,659.20	1,004.31	-35.47	1,004.94	0.14	0.13	1.58
8,905.00	1.85	125.16	8,748.16	1,002.78	-33.12	1,003.33	0.18	0.10	4.55
8,980.00	2.20	127.26	8,823.11	1,001.21	-30.98	1,001.69	0.48	0.47	2.80
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
9,040.00	2.20	127.26	8,883.07	999.82	-29.15	1,000.23	0.00	0.00	0.00
<b>PROJECTION TO TD</b>									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
154.00	154.00	-0.32	0.34	FIRST SDI MWD SURFACE SURVEY
2,451.00	2,368.95	525.85	-17.58	LAST SDI MWD SURFACE SURVEY
2,586.00	2,496.33	570.02	-24.17	FIRST SDI MWD PRODUCTION SURVEY
8,980.00	8,823.11	1,001.21	-30.98	LAST SDI MWD PRODUCTION SURVEY
9,040.00	8,883.07	999.82	-29.15	PROJECTION TO TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-9G4CS ORANGE

Spud date: 7/5/2015

Project: UTAH-UINTAH

Site: NBU 1022-9J PAD

Rig name no.:

Event: COMPLETION

Start date: 10/27/2015

End date: 12/7/2015

Active datum: RKB @5,221.00usft (above Mean Sea Level)

UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
10/3/2015	-							
10/27/2015	0:00 -		SUBSPR	52	A	P		HSM, 0 PSI ON SURFACE CSG, BLEED OFF, FILL SURFACE & 4 1/2" CSG W/ BRINE  MIRU CAMERON TEST TRUCK  PRESSURE TEST CSG & FRAC VALVES TO 7036 PSI, LOST 49 PSI IN 15 MIN, NO COMMUNICATION OR MIGRATION WITH SURFACE CSG, BLEED OFF PSI.  TEST SURFACE CSG TO 520 PSI, LOST 317 PSI IN 5 MIN.  RDMO CAMERON
10/29/2015	0:00 -		SUBSPR	42	A	P		HSM, MIRU DELSCO SWAB RIG, SWAB FLUID LEVEL DOWN TO 1,000' FOR MICROSEISMIC TEST, RDMO
11/13/2015	13:00 - 15:00	2.00	FRAC	37	E	P		PERFED 1ST STG AS DETAILED
11/14/2015	18:50 - 20:15	1.42	FRAC	46	E	Z		PACK PUMPS
	20:15 - 0:00	3.75	FRAC	36	H	P		FRAC STAGE # 1) START PUMPING
11/15/2015	0:00 - 0:00	24.00	FRAC	36	H	P		FRAC STAGE # 1) WHP 225 PSI, BRK 3343 PSI @ 4.9 BPM. ISIP 2571 PSI, FG. 0.73 ISIP 2687 PSI, FG. 0.74, NPI 116 PSI.  SET HAL 8K CBP & PERF STG # 2 AS PER DESIGN
11/16/2015	0:00 - 2:30	2.50	FRAC	36	H	P		FRAC GREEN WELL
	2:30 - 7:30	5.00	FRAC	46	E	Z		REPLACE GROUND VALVES ON RED WELL AND VALVE ON BLENDER
	7:30 - 0:00	16.50	FRAC	36	H	P		FRAC STAGE # 2) WHP 1991 PSI, BRK 4004 PSI @ 3.9 BPM. ISIP 2622 PSI, FG. 0.74 ISIP 2845 PSI, FG. 0.77, NPI 223 PSI.  SET HAL 8K CBP & PERF STG # 3 AS PER DESIGN
11/17/2015	0:00 - 18:30	18.50	FRAC	36	H	P		FRAC STG # 3) WHP 1510 PSI, BRK 2311 PSI @ 4 BPM. ISIP 2028 PSI, FG. 0.68 ISIP 2842 PSI, FG. 0.78, NPI 814 PSI.
	18:30 - 20:00	1.50	FRAC	46	E	Z		REPACK PUMPS
11/18/2015	0:00 - 0:00	24.00	FRAC	36	H	P		SET KILL PLUG, RD FRAC & WL SERVICES  FLUID 46,878 BBLs SAND 96977#
12/4/2015	7:00 - 7:30	0.50	DRLOUT	48		P		HSM, PICKING UP TBG W/ PIPE WRANGLER.
	7:30 - 15:30	8.00	DRLOUT	31	I	P		TALLY & PU 37/8 BIT,POBS, 254 JTS 23/8 P-110 TAG @ 8036 ', RU DRLG EQUIP, PREP TO D/O 12/7/15, SWI SDFWE
12/7/2015	7:00 - 7:30	0.50	DRLOUT	48		P		HSM, MAKING SURE ALL LINE ARE CLEAR BEFORE DRILL OUT.

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1022-9G4CS ORANGE		Spud date: 7/5/2015	
Project: UTAH-UINTAH		Site: NBU 1022-9J PAD	Rig name no.:
Event: COMPLETION		Start date: 10/27/2015	End date: 12/7/2015
Active datum: RKB @5,221.00usft (above Mean Sea Level)		UWI: NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	7:30 - 15:00	7.50	DRLOUT	44	D	P		5 OF 7, BROKE CIRC CONV, TEST BOPS TO 3,000 PSI, RIH.  C/O 4' SAND TAG 1ST PLUG @ 8051' DRL PLG IN 8 MIN, 900 PSI INCREASE RIH.  C/O 15' SAND TAG 2ND PLUG @ 8357' DRL PLG IN 10 MIN, 700 PSI INCREASE RIH.  C/O 30' SAND TAG 3RD PLUG @ 8648' DRL PLG IN 8 MIN, 200 PSI INCREASE RIH.  C/O TO 8968', CIRC CLN, RD SWIVEL, L/D 19 JTS, LAND TBG, ND BOPS NU WH, TEST FL, PUMPED OFF BIT, TURN WELL TO FB CREW.RIGGED DWN MOVED OVER ON 6 OF 7, RIGGED UP, ND WH NU BOPS SWI SDFN.  KB = 13' 41/16 HANGER = .83' 265 JTS 23/8 P-110 = 8380.88' POBS W/ 1.875 X/N = 2.20' EOT @ 8396.91'  TWTR = 46,878 BBLS TWR = 1150 BBLS TWLTR = 45,728 BBLS  316 JT HAULED OUT, P-110. 265 LANDED 51 TO RETURN

**1 General****1.1 Customer Information**

Company	US ROCKIES REGION
Representative	
Address	

**1.2 Well/Wellbore Information**

Well	NBU 1022-9G4CS ORANGE	Wellbore No.	OH
Well Name	NBU 1022-9G4CS	Wellbore Name	NBU 1022-9G4CS
Report no.	1	Report date	11/9/2015
Project	UTAH-UINTAH	Site	NBU 1022-9J PAD
Rig Name/No.		Event	COMPLETION
Start date	10/27/2015	End date	12/7/2015
Spud date	7/5/2015	Active datum	RKB @5,221.00usft (above Mean Sea Level)
UWI	NW/SE/0/10/S/22/E/9/0/0/26/PM/S/1917/E/0/1784/0/0		

**1.3 General**

Contractor		Job method		Supervisor	
Perforated Assembly		Conveyed method			

**1.4 Initial Conditions**

Fluid type		Fluid density	
Surface press.		Estimate res press	
TVD fluid top		Fluid head	
Hydrostatic press.		Press. difference	
Balance Cond	NEUTRAL		

**1.5 Summary**

Gross Interval	8,101.0 (usft)-8,895.0 (usft)	Start Date/Time	11/9/2015 12:00AM
No. of intervals	20	End Date/Time	11/9/2015 12:00AM
Total shots	72	Net perforation interval	24.00 (usft)
Avg. shot density	3.00 (shot/ft)	Final surface pressure	
		Final press. date	

**2 Intervals****2.1 Perforated Interval**

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)	MD base (usft)	Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
11/9/2015 12:00AM	M E S A V E RDE/			8,101.0	8,102.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)	MD base (usft)	Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
11/9/2015 12:00AM	M E S A V E RDE/			8,125.0	8,126.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,165.0	8,166.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,208.0	8,209.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,244.0	8,245.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,303.0	8,304.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,319.0	8,320.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,341.0	8,342.0	3.00		0.410	EXP/3	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,418.0	8,419.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,495.0	8,496.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,520.0	8,521.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,553.0	8,554.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,591.0	8,593.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,616.0	8,618.0	3.00		0.410	EXP/2	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,748.0	8,749.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,778.0	8,779.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,788.0	8,789.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,813.0	8,815.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,873.0	8,875.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		
11/9/2015 12:00AM	M E S A V E RDE/			8,894.0	8,895.0	3.00		0.410	EXP/1	3.125	120.00		19.00	PRODUCTION		

## 3 Plots

3.1 Wellbore Schematic

