

**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> Morgan State 921-36H1BS							
<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 <input type="checkbox"/> Coalbed Methane Well: NO <input type="checkbox"/>						<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b>							
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.						<b>7. OPERATOR PHONE</b> 720 929-6515							
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> julie.jacobson@anadarko.com							
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> ML 22265			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" 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		679 FNL 706 FEL		NENE		36		9.0 S		21.0 E		S	
Top of Uppermost Producing Zone		1408 FNL 493 FEL		SENE		36		9.0 S		21.0 E		S	
At Total Depth		1408 FNL 493 FEL		SENE		36		9.0 S		21.0 E		S	
<b>21. COUNTY</b> UINTAH				<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 493				<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 639					
				<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 417				<b>26. PROPOSED DEPTH</b> MD: 10565 TVD: 10452					
<b>27. ELEVATION - GROUND LEVEL</b> 4924				<b>28. BOND NUMBER</b> 22013542				<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 43-8496					
<b>Hole, Casing, and Cement Information</b>													
<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Length</b>	<b>Weight</b>	<b>Grade &amp; Thread</b>	<b>Max Mud Wt.</b>	<b>Cement</b>		<b>Sacks</b>	<b>Yield</b>	<b>Weight</b>		
Surf	12.25	8.625	0 - 2480	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 - 10565	11.6	HCP-110 LT&C	13.0	Premium Lite High Strength		320	3.38	12.0		
							50/50 Poz		1550	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> Danielle Piernot				<b>TITLE</b> Regulatory Analyst				<b>PHONE</b> 720 929-6156					
<b>SIGNATURE</b>				<b>DATE</b> 12/19/2011				<b>EMAIL</b> danielle.piernot@anadarko.com					
<b>API NUMBER ASSIGNED</b> 43047522700000				<b>APPROVAL</b>   Permit Manager									

**Kerr-McGee Oil & Gas Onshore. L.P.****MORGAN STATE 921-36H1BS**

Surface: 679 FNL / 706 FEL NENE  
 BHL: 1408 FNL / 493 FEL SENE

Section 36 T9S R21E

Unitah County, Utah  
 Mineral Lease: ML-22265

**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	1,225'	
Birds Nest	1,567'	Water
Mahogany	2,026'	Water
Wasatch	4,511'	Gas
Mesaverde	7,186'	Gas
Sego	9,344'	Gas
Castlegate	9,415'	Gas
MN5	9,852'	Gas
TVD =	10,452'	
TD =	10,565'	

- 2.C Kerr McGee Oil & Gas Onshore LP (Kerr McGee) will either drill to the the Blackhawk formation, which is part of the Mesaverde formation, or the Wasatch/Mesaverde formation. If Kerr McGee drills to the Blackhawk formation (part of the Mesaverde formation), please refer to MN5 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 the Wasatch/Mesaverde formation please refer to Sego as the bottom formation. The attached Wasatch/Mesaverde Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the depths the Wasatch/Mesaverde formations are found.

3. **Pressure Control Equipment** (Schematic Attached)

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

**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:****7.a Blackhawk (Part of Mesaverde Formation) Target Formation**

Maximum anticipated bottom hole pressure calculated at 10452' TVD, approximately equals  
6,898 psi (0.66 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 4,647 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))

**7.b Wasach/Mesaverde Target Formation**

Maximum anticipated bottom hole pressure calculated at 9344' TVD, approximately equals  
5,980 psi (0.64 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 3,911 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 attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program  
Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements  
associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated  
with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only 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.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG 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 2,800 feet. 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 a 11 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 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.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### **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**

Onshore Order 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 (see attachment) will supply the water to the well bore.

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

Onshore Order 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. The typical air rig layout for drilling surface hole in the field is attached.

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 (see attachment) 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, Onshore Order 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 Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

**Conclusion**

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

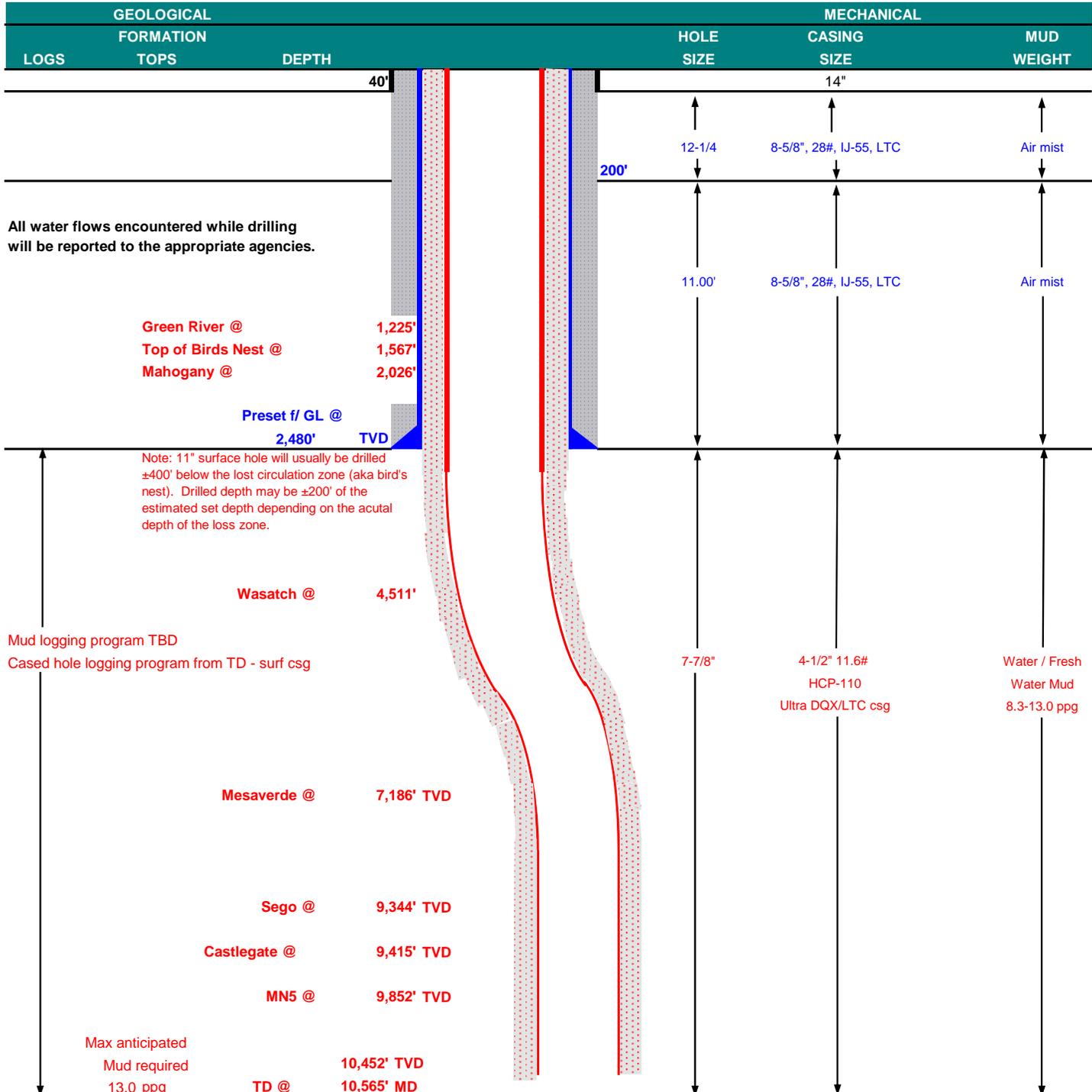
10. **Other Information:**

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



## KERR-McGEE OIL & GAS ONSHORE LP BLACKHAWK DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP			DATE	December 19, 2011		
WELL NAME	<b>MORGAN STATE 921-36H1BS</b>			TD	10,452' TVD	10,565' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	4,923'
SURFACE LOCATION	NENE	679 FNL	706 FEL	Sec 36	T 9S	R 21E	
	Latitude:	39.997907	Longitude:	-109.492481			NAD 27
BTM HOLE LOCATION	SENE	1408 FNL	493 FEL	Sec 36	T 9S	R 21E	
	Latitude:	39.995905	Longitude:	-109.491727			NAD 27
OBJECTIVE ZONE(S)	BLACKHAWK						
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.						





**KERR-McGEE OIL & GAS ONSHORE LP**  
**BLACKHAWK DRILLING PROGRAM**

**CASING PROGRAM**

							DESIGN FACTORS			
							LTC		DQX	
	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION	
CONDUCTOR	14"	0-40'					3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to 2,480	28.00	IJ-55	LTC	2.17	1.62	5.72	N/A
PRODUCTION	4-1/2"	0	to 5,000	11.60	HCP-110	DQX	1.19	1.22	279,000	367,174
	4-1/2"	5,000	to 10,565'	11.60	HCP-110	LTC	1.19	1.22	5.39	

**Surface Casing:**

(Burst Assumptions: TD = 13.0 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 @ 9000 psi) 0.66 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	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	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	LEAD	1,980'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	180	35%	11.00	3.82
Option 2	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,005'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	320	35%	12.00	3.38
	TAIL	6,560'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,550	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.

**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.

**DRILLING ENGINEER:**

Nick Spence / Danny Showers / Chad Loesel

DATE: \_\_\_\_\_

**DRILLING SUPERINTENDENT:**

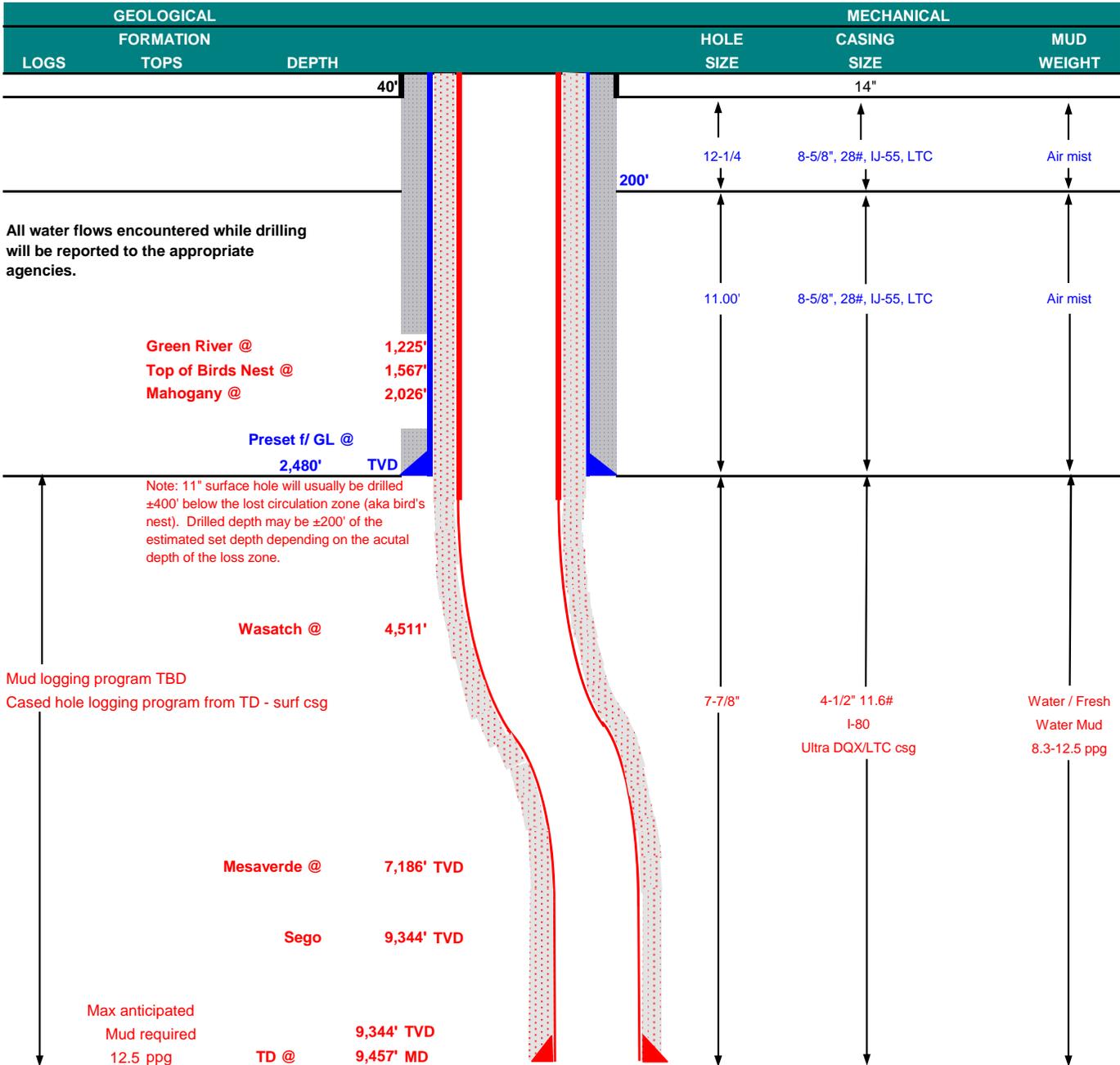
Kenny Gathings / Lovel Young

DATE: \_\_\_\_\_



## KERR-McGEE OIL & GAS ONSHORE LP WASATCH/MESAVERDE DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	December 19, 2011	
WELL NAME	<b>MORGAN STATE 921-36H1BS</b>		TD	9,344'	9,457' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	NENE	679 FNL	706 FEL	Sec 36 T 9S R 21E	FINISHED ELEVATION 4,923'
	Latitude:	39.997907	Longitude:	-109.492481	NAD 27
BTM HOLE LOCATION	SENE	1408 FNL	493 FEL	Sec 36 T 9S R 21E	
	Latitude:	39.995905	Longitude:	-109.491727	NAD 27
OBJECTIVE ZONE(S)	Wasatch/Mesaverde				
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.				





**KERR-McGEE OIL & GAS ONSHORE LP**

**WASATCH/MESAVERDE DRILLING PROGRAM**

**CASING PROGRAM**

							DESIGN FACTORS			
							LTC		DQX	
	SIZE	INTERVAL	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION		
CONDUCTOR	14"	0-40'								
						3,390	1,880	348,000	N/A	
SURFACE	8-5/8"	0 to 2,480	28.00	IJ-55	LTC	2.17	1.62	5.72	N/A	
						7,780	6,350		267,035	
PRODUCTION	4-1/2"	0 to 5,000	11.60	I-80	DQX	1.11	1.05		3.01	
						7,780	6,350	223,000		
	4-1/2"	5,000 to 9,457'	11.60	I-80	LTC	1.11	1.05	5.33		

**Surface Casing:**

(Burst Assumptions: TD = 12.5 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) 0.64 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	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	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
SURFACE		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>					
Option 2	LEAD	1,980'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	180	35%	11.00	3.82
	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,007'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	320	35%	12.00	3.38
	TAIL	5,450'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,290	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**

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**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.

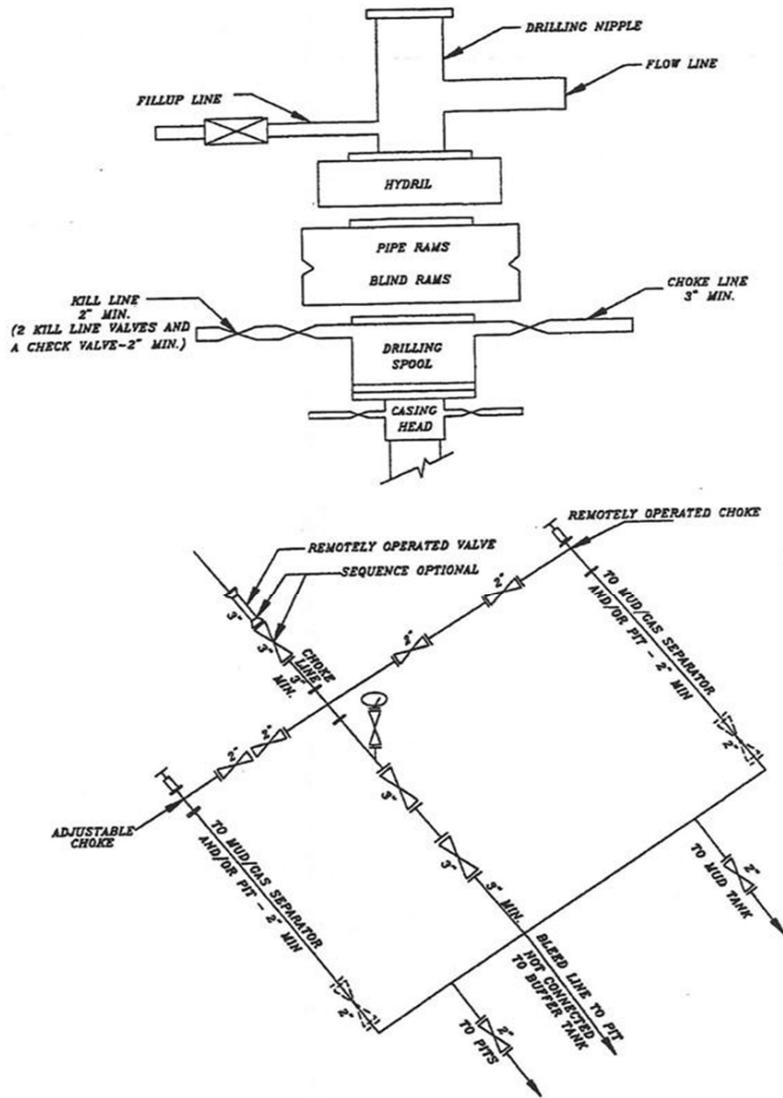
DRILLING ENGINEER: \_\_\_\_\_  
Nick Spence / Danny Showers / Chad Loesel

DATE: \_\_\_\_\_

DRILLING SUPERINTENDENT: \_\_\_\_\_  
Kenny Gathings / Lovel Young

DATE: \_\_\_\_\_

**EXHIBIT A**  
**MORGAN STATE 921-36H1BS**



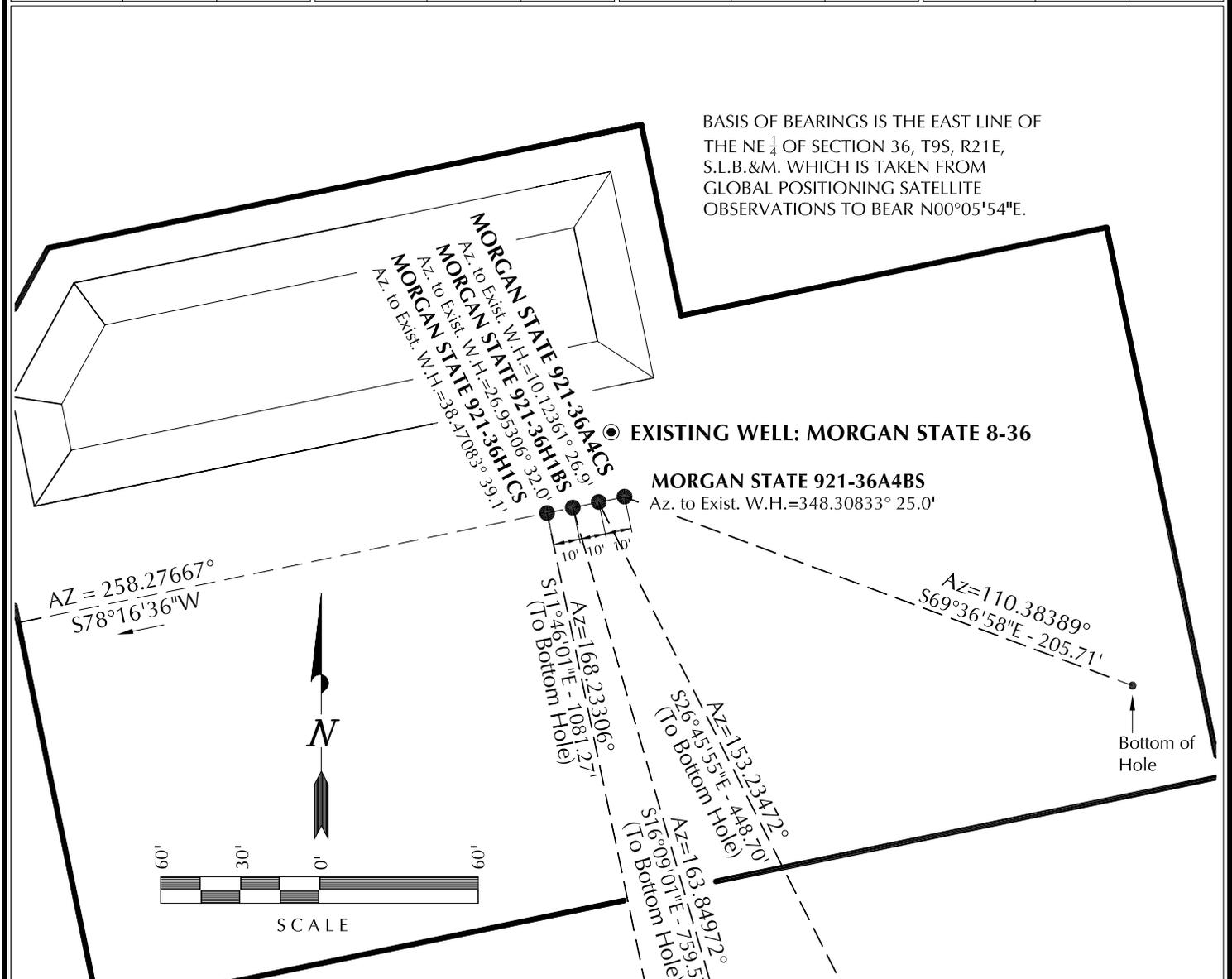
**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**



WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
MORGAN STATE 921-36H1CS	39°59'52.321" 39.997867°	109°29'35.529" 109.493202°	39°59'52.447" 39.997902°	109°29'33.059" 109.492516°	681' FNL 715' FEL	39°59'41.863" 39.994962°	109°29'32.692" 109.492414°	39°59'41.989" 39.994997°	109°29'30.222" 109.491728°	1739' FNL 493' FEL
MORGAN STATE 921-36H1BS	39°59'52.341" 39.997872°	109°29'35.403" 109.493167°	39°59'52.467" 39.997907°	109°29'32.933" 109.492481°	679' FNL 706' FEL	39°59'45.133" 39.995870°	109°29'32.686" 109.492413°	39°59'45.259" 39.995905°	109°29'30.216" 109.491727°	1408' FNL 493' FEL
MORGAN STATE 921-36A4CS	39°59'52.361" 39.997878°	109°29'35.277" 109.493133°	39°59'52.487" 39.997913°	109°29'32.807" 109.492446°	677' FNL 696' FEL	39°59'48.403" 39.996779°	109°29'32.680" 109.492411°	39°59'48.529" 39.996814°	109°29'30.210" 109.491725°	1077' FNL 493' FEL
MORGAN STATE 921-36A4BS	39°59'52.381" 39.997884°	109°29'35.151" 109.493098°	39°59'52.507" 39.997919°	109°29'32.681" 109.492411°	675' FNL 686' FEL	39°59'51.674" 39.997687°	109°29'32.674" 109.492409°	39°59'51.800" 39.997722°	109°29'30.204" 109.491723°	746' FNL 493' FEL
MORGAN STATE 8-36	39°59'52.623" 39.997951°	109°29'35.217" 109.493116°	39°59'52.749" 39.997986°	109°29'32.747" 109.492430°	650' FNL 691' 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
MORGAN STATE 921-36H1CS	-1058.5'	220.5'	MORGAN STATE 921-36H1BS	-729.6'	211.3'	MORGAN STATE 921-36A4CS	-400.6'	202.1'	MORGAN STATE 921-36A4BS	-71.7'	192.8'



**Kerr-McGee Oil & Gas Onshore, LP**  
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**WELL PAD - MORGAN STATE 921-36A**

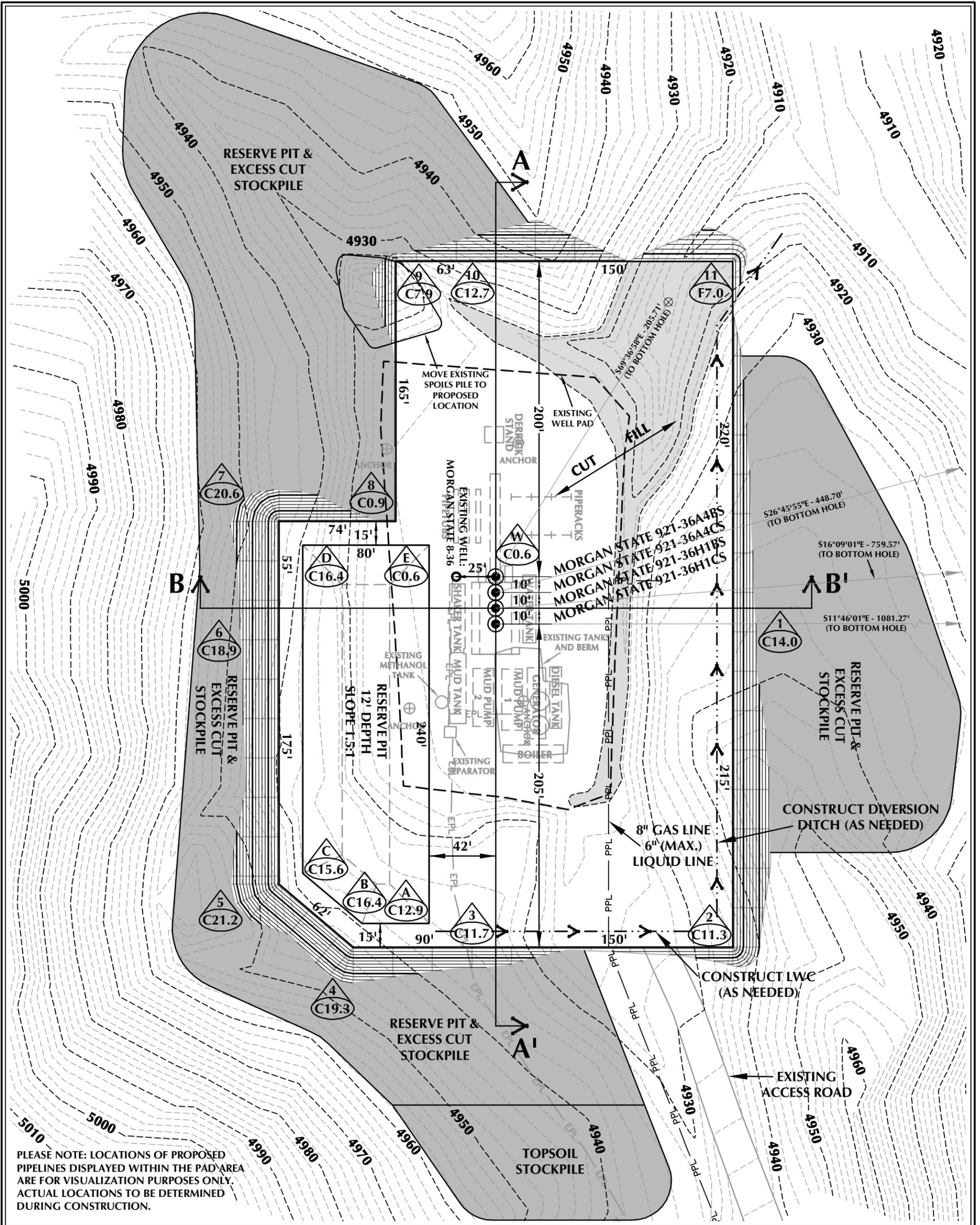
**WELL PAD INTERFERENCE PLAT**  
WELLS - MORGAN STATE 921-36H1CS,  
MORGAN STATE 921-36H1BS,  
MORGAN STATE 921-36A4CS &  
MORGAN STATE 921-36A4BS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH.



**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: 10-18-11	SURVEYED BY: J.W.	SHEET NO: <b>5</b>
DATE DRAWN: 10-28-11	DRAWN BY: T.J.R.	
SCALE: 1" = 60'		5 OF 16



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 - MORGAN STATE 921-36A DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4923.8'  
 FINISHED GRADE ELEVATION = 4923.2'  
 CUT SLOPES = 1:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.06 ACRES  
 TOTAL DISTURBANCE AREA = 5.73 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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**WELL PAD - MORGAN STATE 921-36A**

WELL PAD - LOCATION LAYOUT  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH



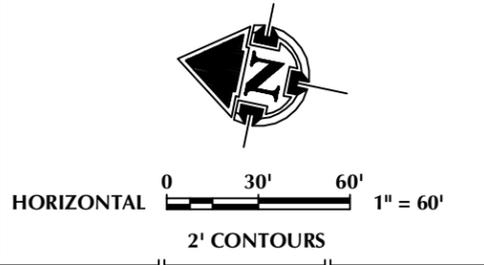
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**  
 TOTAL CUT FOR WELL PAD = 24,148 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,849 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,765 C.Y.  
 EXCESS MATERIAL = 21,299 C.Y.

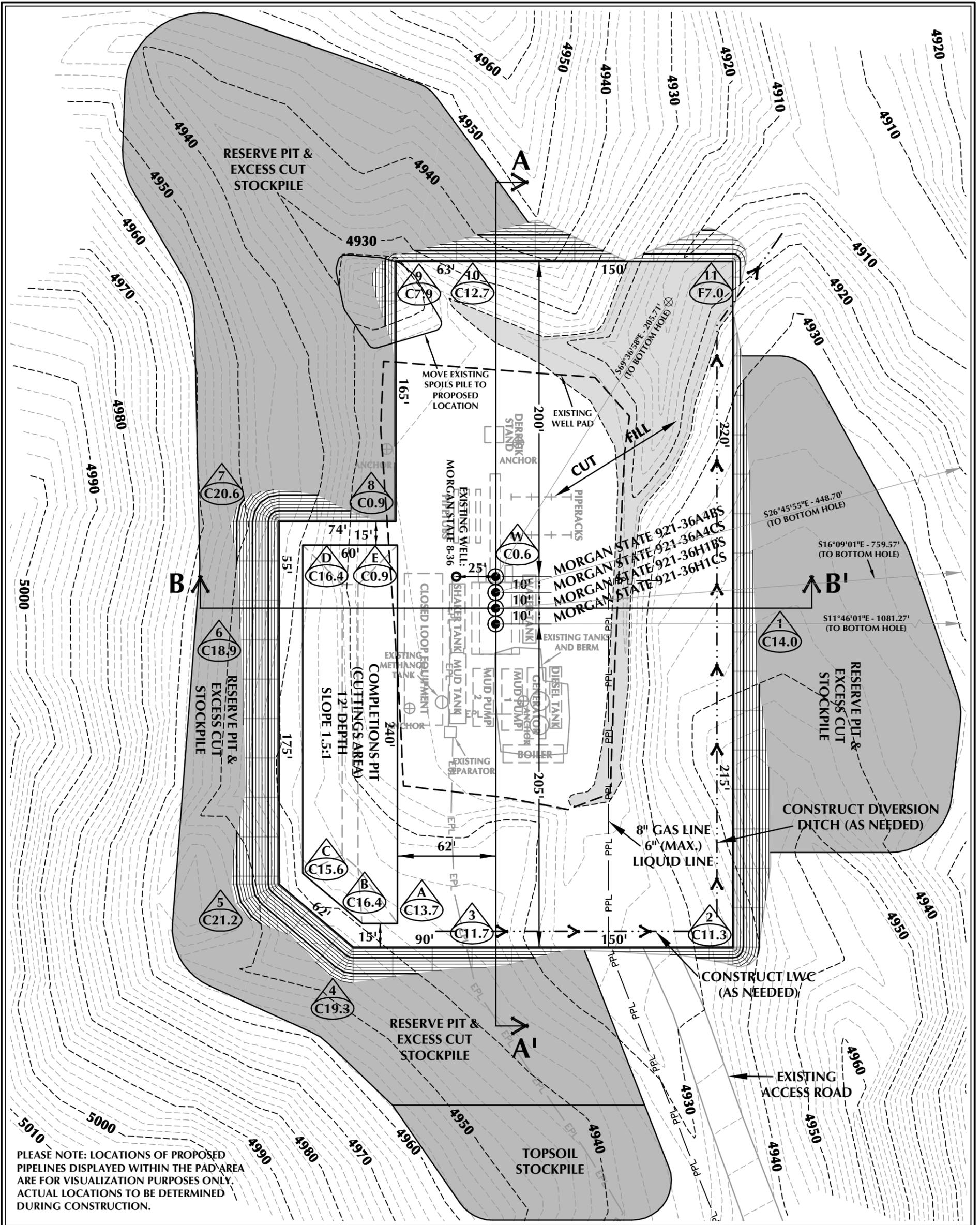
**RESERVE PIT QUANTITIES**  
 TOTAL CUT FOR RESERVE PIT  
 +/- 5,970 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 22,430 BARRELS

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

- WELL PAD LEGEND**
- EXISTING WELL LOCATION
  - PROPOSED WELL LOCATION
  - PROPOSED BOTTOM HOLE LOCATION
  - EXISTING CONTOURS (2' INTERVAL)
  - PROPOSED CONTOURS (2' INTERVAL)
  - PPL - PROPOSED PIPELINE
  - EPL - EXISTING PIPELINE



SCALE: 1"=60' DATE: 11/11/11 SHEET NO:  
 REVISD: **6** 6 OF 16



**WELL PAD - MORGAN STATE 921-36A (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4923.8'  
 FINISHED GRADE ELEVATION = 4923.2'  
 CUT SLOPES = 1:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.06 ACRES  
 TOTAL DISTURBANCE AREA = 5.73 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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 1099 18th Street - Denver, Colorado 80202

**WELL PAD - MORGAN STATE 921-36A**

WELL PAD - LOCATION LAYOUT  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**609**  
 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 = 24,148 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,849 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,765 C.Y.  
 EXCESS MATERIAL = 21,299 C.Y.

**COMPLETIONS PIT QUANTITIES**  
 TOTAL CUT FOR COMPLETIONS PIT  
 +/- 4,000 C.Y.  
 COMPLETIONS PIT CAPACITY  
 (2' OF FREEBOARD)  
 +/- 14,630 BARRELS

**WELL PAD LEGEND**

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

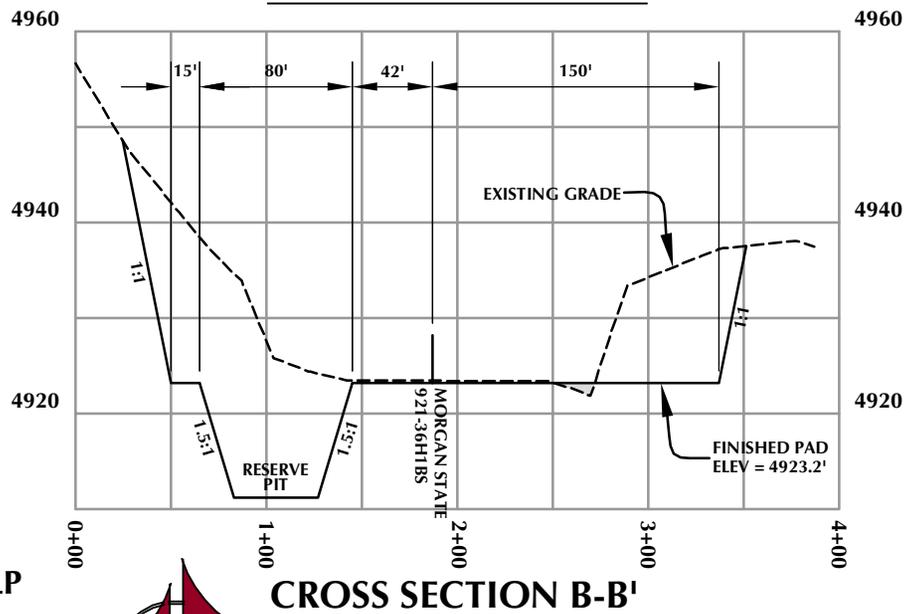
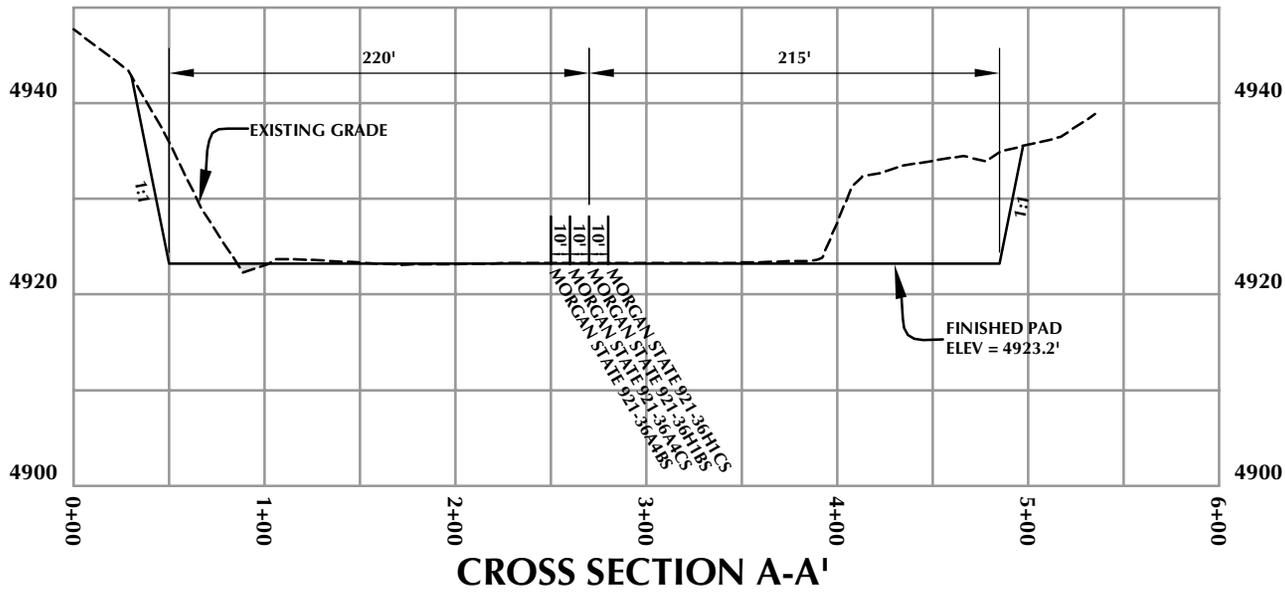
**HORIZONTAL** 0 30' 60' 1" = 60'

**2' CONTOURS**

SCALE: 1"=60' DATE: 11/15/11 SHEET NO: **6B** 6B OF 16

REVISED:

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



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

**WELL PAD - MORGAN STATE 921-36A**

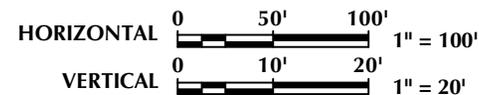
WELL PAD - CROSS SECTIONS  
MORGAN STATE 921-36H1CS,  
MORGAN STATE 921-36H1BS,  
MORGAN STATE 921-36A4CS &  
MORGAN STATE 921-36A4BS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
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Sheridan, WY 82801  
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(435) 789-1365



Scale: 1"=100'

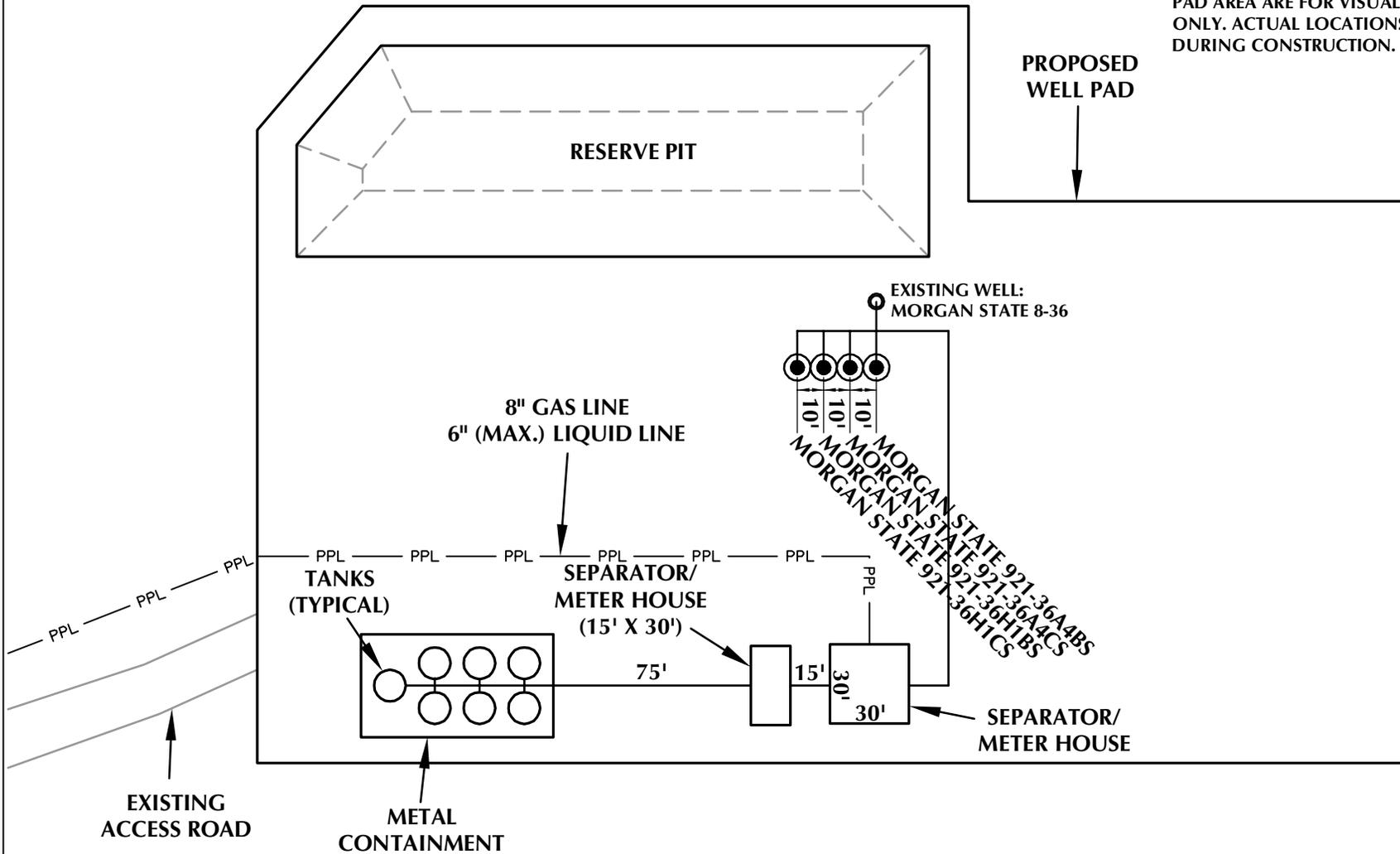
Date: 11/11/11

SHEET NO:

**7**

7 OF 16

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



**Kerr-McGee Oil & Gas Onshore, LP**  
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**WELL PAD - MORGAN STATE 921-36A**

**WELL PAD - FACILITIES DIAGRAM**  
MORGAN STATE 921-36H1CS,  
MORGAN STATE 921-36H1BS,  
MORGAN STATE 921-36A4CS &  
MORGAN STATE 921-36A4BS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH

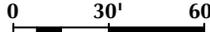


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Sheridan, WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**WELL PAD LEGEND**

-  EXISTING WELL LOCATION
-  PROPOSED WELL LOCATION
-  PPL — PROPOSED PIPELINE
-  EPL — EXISTING PIPELINE



HORIZONTAL  1" = 60'

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

Scale: 1"=60' Date: 11/11/11  
REVISED:

SHEET NO:  
**8** 8 OF 16

K:\MADRID\2011\11\11\2011\_65\_NBU\_FOCUS\_921-36A\MORGAN STATE 921-36A.dwg, 11/11/2011 11:06:06 AM, gntly

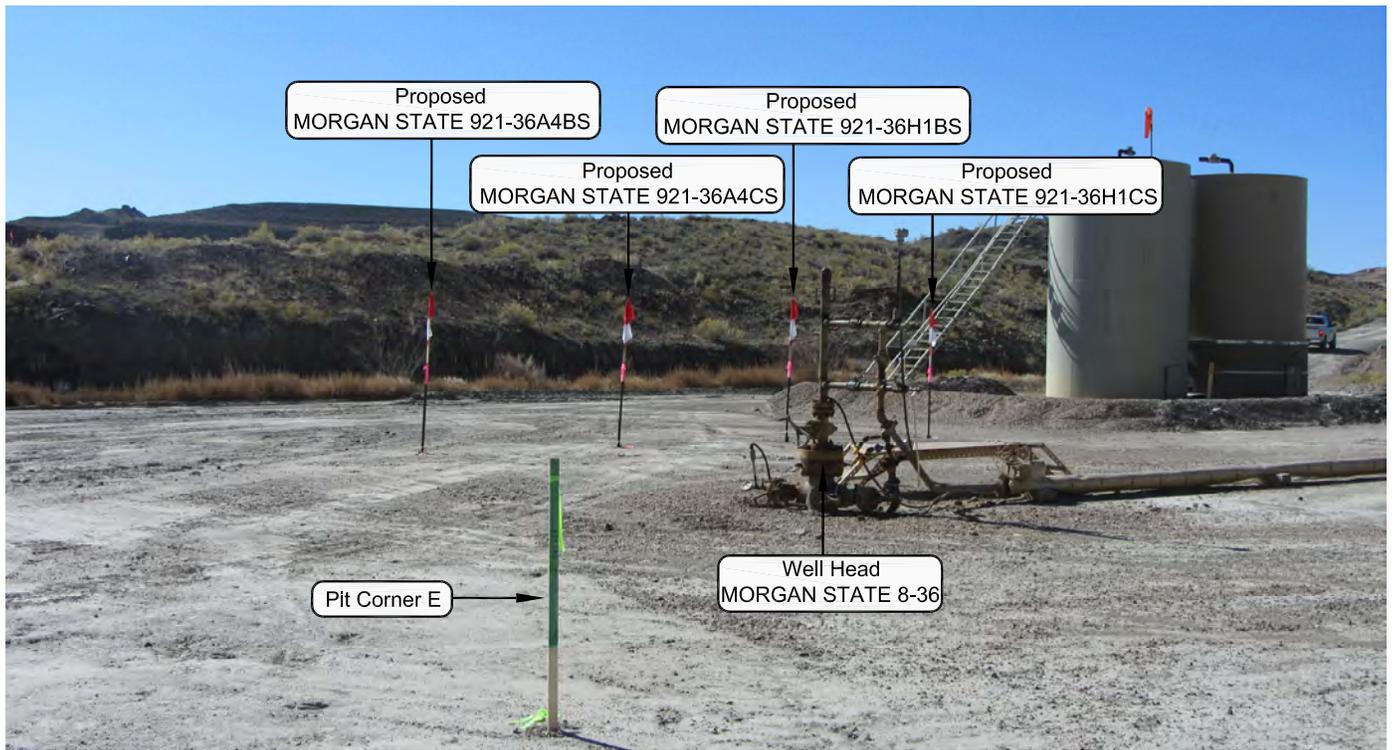


PHOTO VIEW: FROM PIT CORNER E TO LOCATION STAKE

CAMERA ANGLE: SOUTHWESTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: NORTHEASTERLY

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

**WELL PAD - MORGAN STATE 921-36A**

LOCATION PHOTOS  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah.



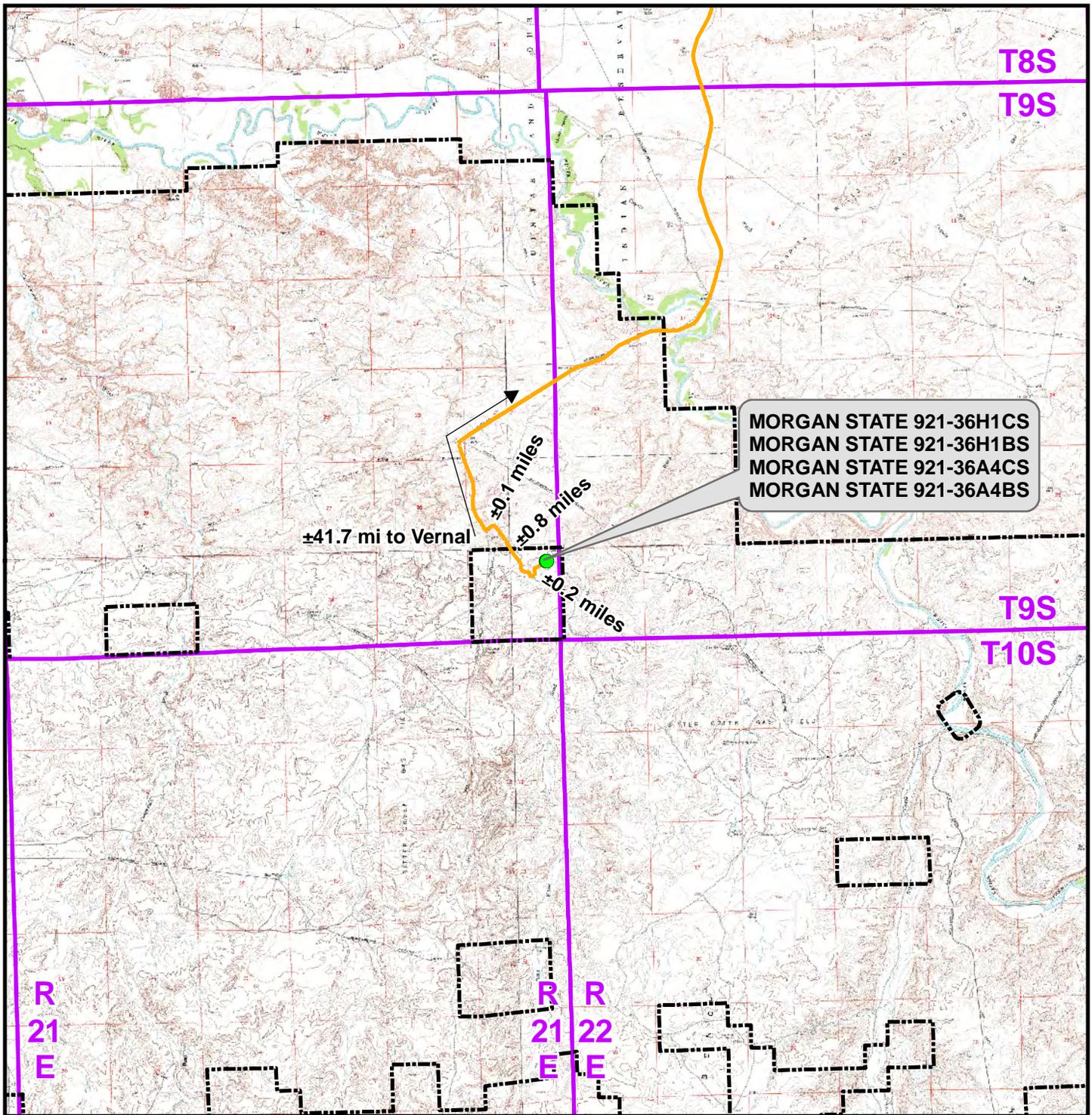
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**TIMBERLINE**

(435) 789-1365

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

DATE PHOTOS TAKEN: 10-18-11	PHOTOS TAKEN BY: J.W.	SHEET NO: <b>9</b> 9 OF 16
DATE DRAWN: 10-28-11	DRAWN BY: T.J.R.	
Date Last Revised:		



MORGAN STATE 921-36H1CS  
 MORGAN STATE 921-36H1BS  
 MORGAN STATE 921-36A4CS  
 MORGAN STATE 921-36A4BS

±41.7 mi to Vernal  
 ±0.1 miles  
 ±0.8 miles  
 ±0.2 miles

**Legend** Distance From Well Pad - MORGAN STATE 921-36A To Unit Boundary: ±675ft

● Proposed Well Location    □ Natural Buttes Unit Boundary

— Access Route - Proposed

**WELL PAD - MORGAN STATE 921-36A**

TOPO A  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

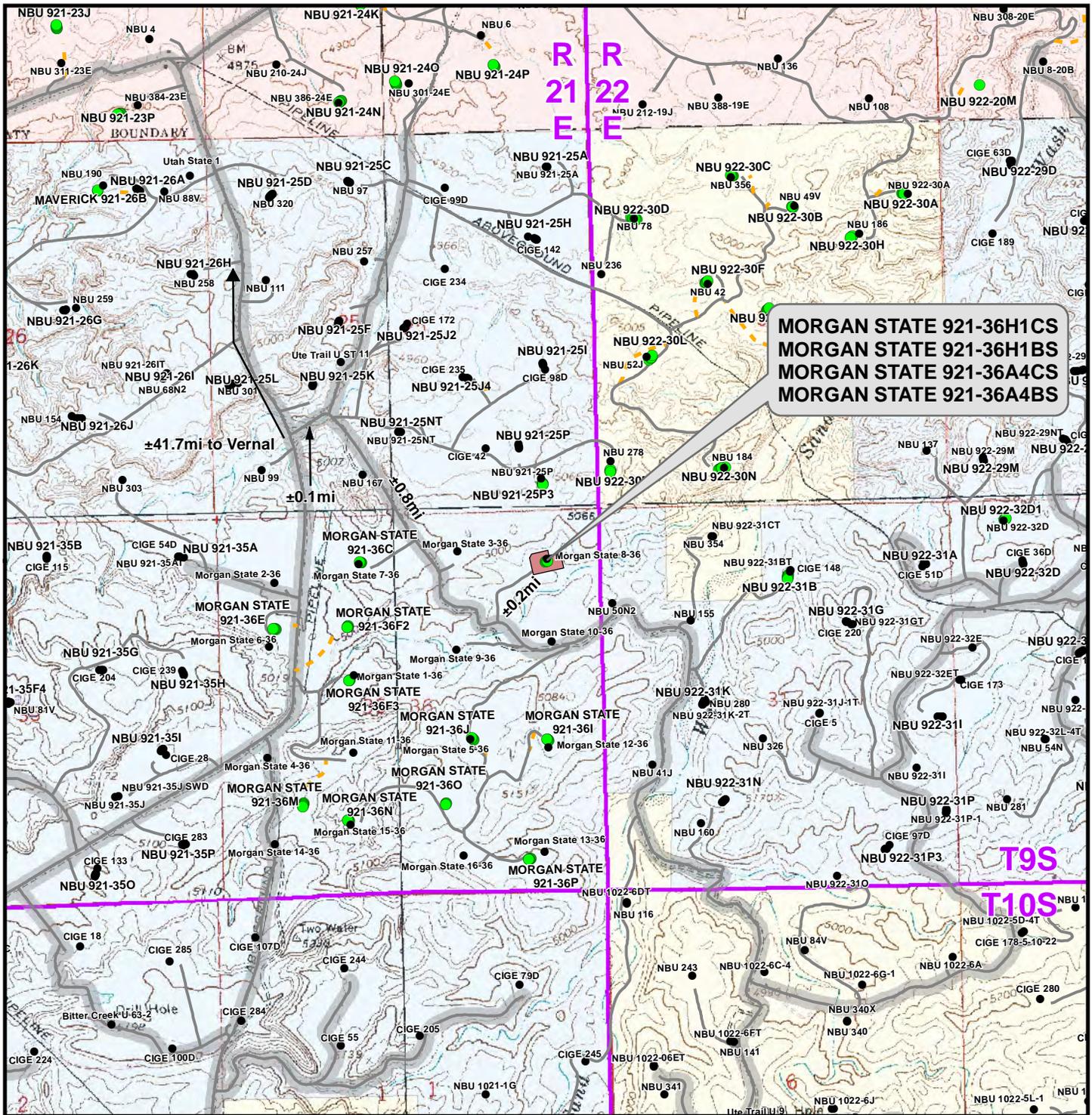
1099 18th Street  
 Denver, Colorado 80202



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



SCALE: 1:100,000	NAD83 USP Central	<b>10</b> 10 OF 16
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	



**MORGAN STATE 921-36H1CS**  
**MORGAN STATE 921-36H1BS**  
**MORGAN STATE 921-36A4CS**  
**MORGAN STATE 921-36A4BS**

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- Road - Proposed
- Road - Existing
- County Road
- Bureau of Land Management
- State
- Indian Reservation
- Private

Total Proposed Road Length: ±0ft

**WELL PAD - MORGAN STATE 921-36A**

TOPO B  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

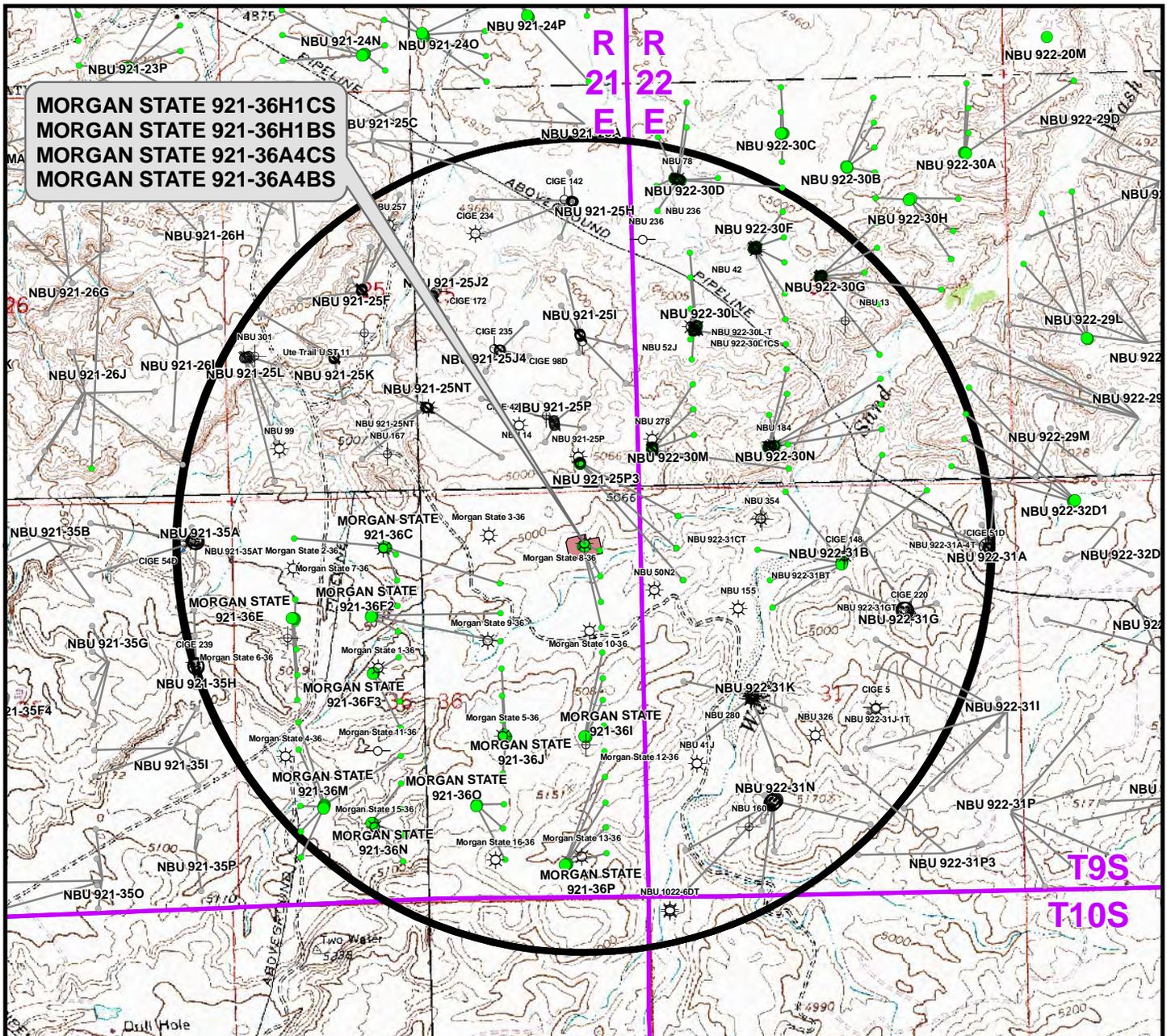
1099 18th Street  
 Denver, Colorado 80202



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

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO:
DRAWN: TL	DATE: 11 Nov 2011	11
REVISED:	DATE:	

11 OF 16



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
MORGAN STATE 921-36H1CS	Morgan State 10-36	167ft
MORGAN STATE 921-36H1BS	Morgan State 10-36	417ft
MORGAN STATE 921-36A4CS	Morgan State 8-36	472ft
MORGAN STATE 921-36A4BS	Morgan State 8-36	220ft

**Legend**

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

**WELL PAD - MORGAN STATE 921-36A**

TOPO C  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

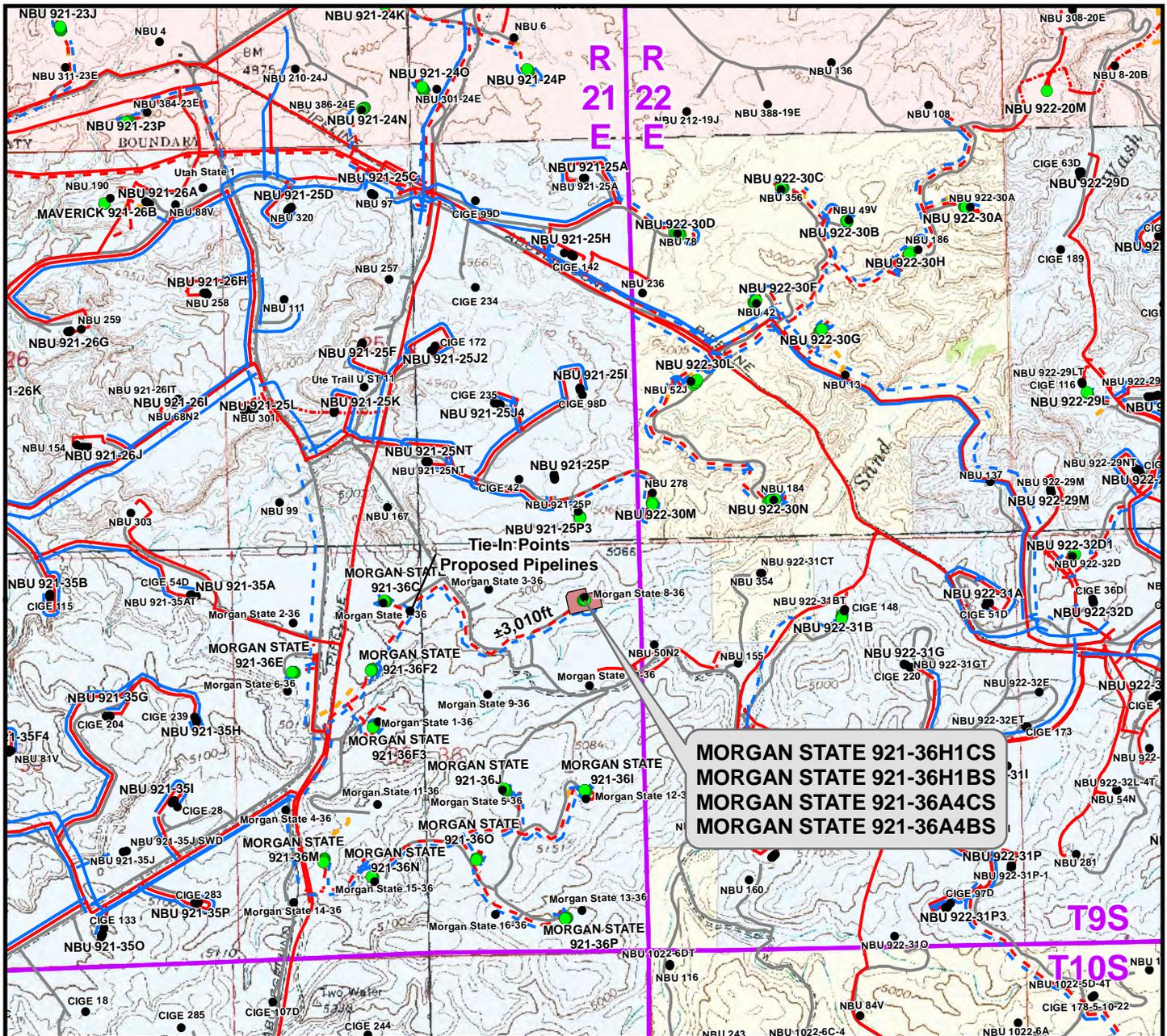
**Kerr-McGee Oil &  
 Gas Onshore L.P.**  
 1099 18th Street  
 Denver, Colorado 80202



**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: 11 Nov 2011	
REVISED:	DATE:	

SHEET NO:  
12 OF 16



**MORGAN STATE 921-36H1CS  
MORGAN STATE 921-36H1BS  
MORGAN STATE 921-36A4CS  
MORGAN STATE 921-36A4BS**

Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±285ft
Buried 6" (Max.) (Edge of Pad to 36C Intersection)	±3,010ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±3,295ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±285ft
Buried 8" (Edge of Pad to 36C Intersection)	±3,010ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±3,295ft</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 - MORGAN STATE 921-36A**

TOPO D  
MORGAN STATE 921-36H1CS,  
MORGAN STATE 921-36H1BS,  
MORGAN STATE 921-36A4CS &  
MORGAN STATE 921-36A4BS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., Uintah County, Utah

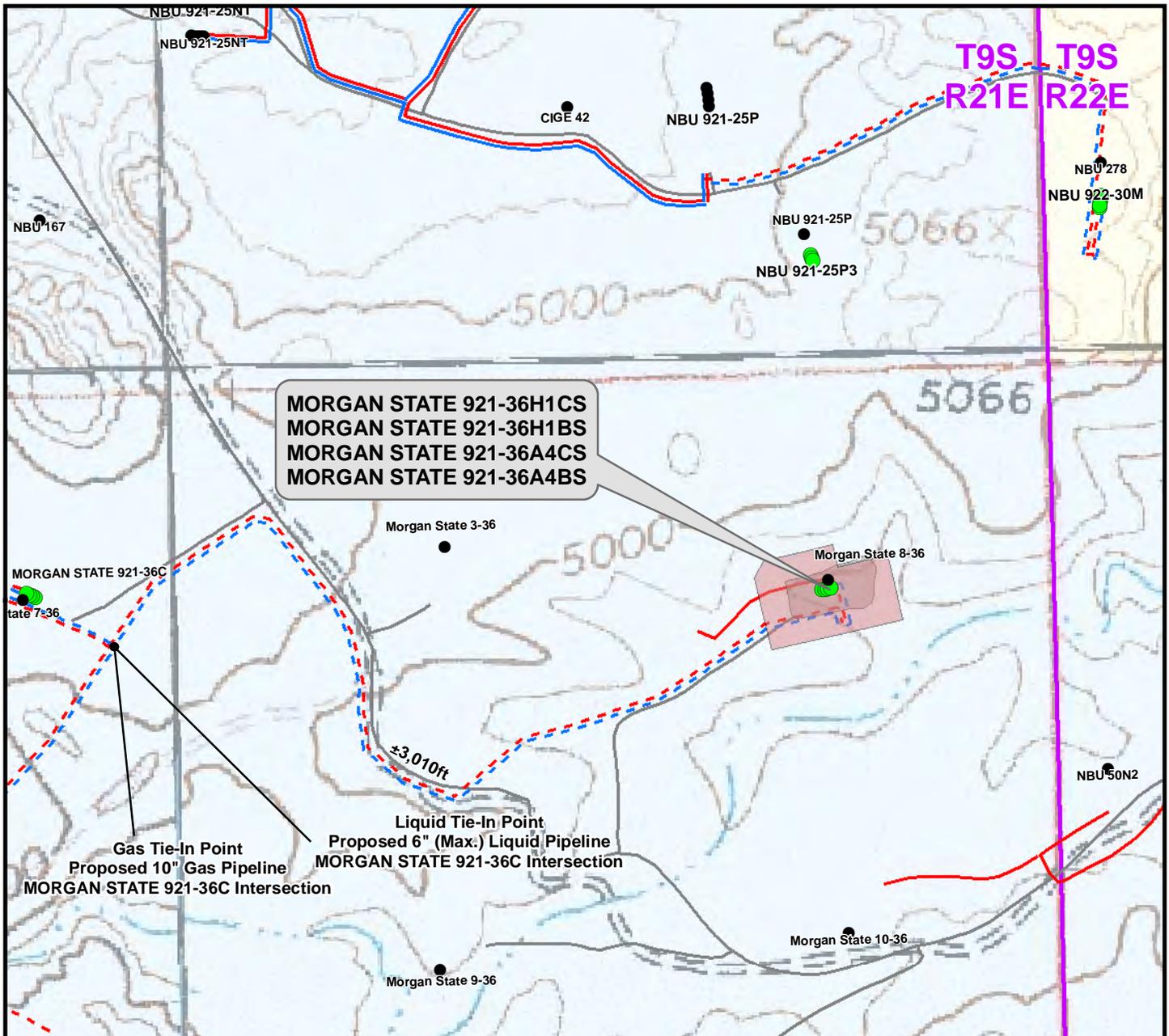
**Kerr-McGee Oil &  
Gas Onshore L.P.**

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	NAD83 USP Central	<b>13</b> 13 OF 16
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	



Proposed Liquid Pipeline	Length	Proposed Gas Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±285ft	Buried 8" (Meter House to Edge of Pad)	±285ft
Buried 6" (Max.) (Edge of Pad to 36C Intersection)	±3,010ft	Buried 8" (Edge of Pad to 36C Intersection)	±3,010ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±3,295ft</b>	<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±3,295ft</b>

**Legend**

<span style="color: green;">●</span> Well - Proposed	<span style="background-color: #d9ead3; border: 1px solid #808080; padding: 2px;"> </span> Well Pad - Proposed	<span style="color: red;">---</span> Gas Pipeline - Proposed	<span style="color: blue;">---</span> Liquid Pipeline - Proposed	<span style="background-color: #fff2cc; border: 1px solid #808080; padding: 2px;"> </span> Road - Proposed	<span style="background-color: #ffffcc; border: 1px solid #808080; padding: 2px;"> </span> Bureau of Land Management
<span style="color: black;">●</span> Well - Existing	<span style="background-color: #d9ead3; border: 1px solid #808080; padding: 2px;"> </span> Well Pad - Existing	<span style="color: red;">---</span> Gas Pipeline - To Be Upgraded	<span style="color: blue;">---</span> Liquid Pipeline - Existing	<span style="background-color: #fff2cc; border: 1px solid #808080; padding: 2px;"> </span> Road - Existing	<span style="background-color: #f4cccc; border: 1px solid #808080; padding: 2px;"> </span> Indian Reservation
		<span style="color: red;">---</span> Gas Pipeline - Existing		<span style="background-color: #fff2cc; border: 1px solid #808080; padding: 2px;"> </span> State	<span style="background-color: #fff2cc; border: 1px solid #808080; padding: 2px;"> </span> Private

**WELL PAD - MORGAN STATE 921-36A**

TOPO D2 (PAD & PIPELINE DETAIL)  
 MORGAN STATE 921-36H1CS,  
 MORGAN STATE 921-36H1BS,  
 MORGAN STATE 921-36A4CS &  
 MORGAN STATE 921-36A4BS  
 LOCATED IN SECTION 36, 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" = 500ft	NAD83 USP Central	<b>14</b> 14 OF 16
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	



**Kerr-McGee Oil & Gas Onshore, LP**  
**WELL PAD – MORGAN STATE 921-36A**  
**WELLS – MORGAN STATE 921-36H1CS, MORGAN STATE 921-36H1BS,**  
**MORGAN STATE 921-36A4CS & MORGAN STATE 921-36A4BS**  
**Section 36, T9S, R21E, S.L.B.&M.**

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 18.2 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 0.8 miles to a service road to the north. Exit left and proceed in a northerly, then northeasterly direction along the service road approximately 0.2 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 42.8 miles in a southerly direction.

WELL DETAILS: MORGAN STATE 921-36H1BS

GL 4923 & KB 4 @ 4927.00ft (ASSUMED)

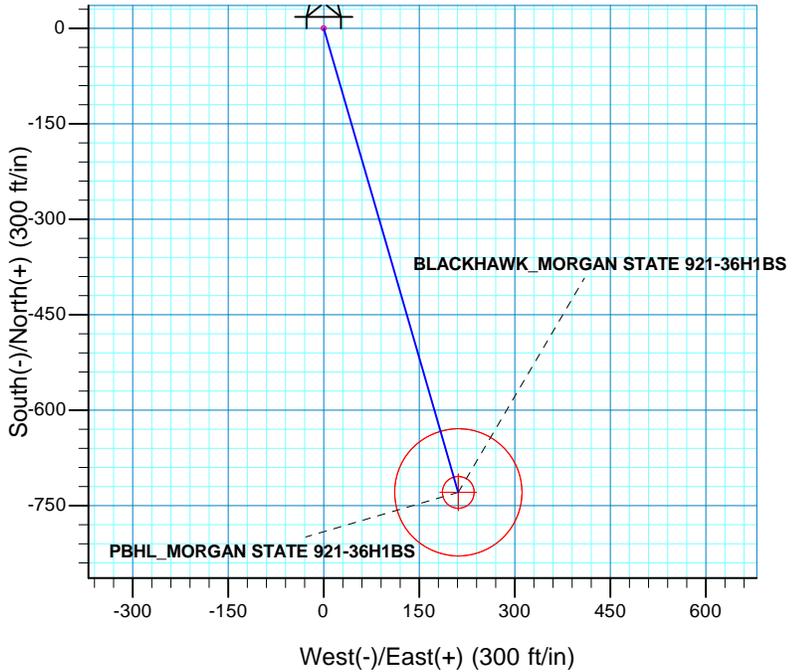
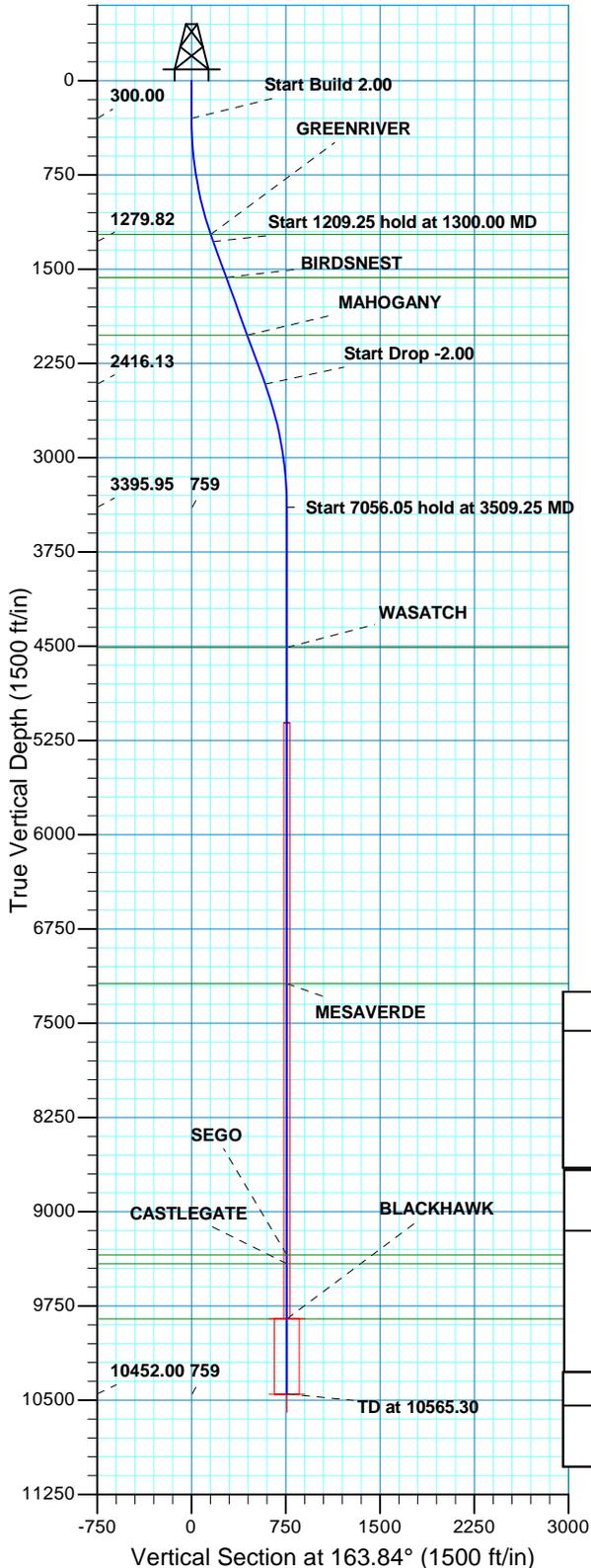
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14528852.89	2062631.34	39° 59' 52.465 N	109° 29' 32.932 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BLACKHAWK	9852.00	-729.15	211.22	14528127.42	2062854.86	39° 59' 45.258 N	109° 29' 30.217 W	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10452.00	-729.15	211.22	14528127.42	2062854.86	39° 59' 45.258 N	109° 29' 30.217 W	Circle (Radius: 100.00)
- plan hits target center								

Azimuths to True North  
Magnetic North: 11.01°

Magnetic Field  
Strength: 52283.6snT  
Dip Angle: 65.86°  
Date: 2011/11/30  
Model: IGRF2010



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	163.84	1279.82	-165.95	48.07	2.00	163.84	172.77	
2509.25	20.00	163.84	2416.13	-563.20	163.15	0.00	0.00	586.35	
3509.25	0.00	0.00	3395.95	-729.15	211.22	2.00	180.00	759.12	
10565.30	0.00	0.00	10452.00	-729.15	211.22	0.00	0.00	759.12	PBHL_MORGAN STATE 921-36H1BS

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)	1225.00	1241.88	GREENRIVER	
Ellipsoid: Clarke 1866	1567.00	1605.62	BIRDSNEST	
Zone: Zone 12N (114 W to 108 W)	2026.00	2094.07	MAHOGANY	
Location: SECTION 36 T9S R21E	4511.00	4624.30	WASATCH	
System Datum: Mean Sea Level	7186.00	7299.30	MESAVERDE	
	9344.00	9457.30	SEGO	
	9415.00	9528.30	CASTLEGATE	
	9852.00	9965.30	BLACKHAWK	

CASING DETAILS
No casing data is available

RECEIVED :



# **US ROCKIES REGION PLANNING**

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

**MORGAN STATE 921-36A PAD**

**MORGAN STATE 921-36H1BS**

**OH**

**Plan: PLAN #1 SURFACE**

## **Standard Planning Report**

**30 November, 2011**





**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36A PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 SURFACE		

<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>	MORGAN STATE 921-36A PAD, SECTION 36 T9S R21E				
<b>Site Position:</b>	<b>Northing:</b>	14,528,850.91 usft	<b>Latitude:</b>	39° 59' 52.447 N	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,062,621.57 usft	<b>Longitude:</b>	109° 29' 33.058 W	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.97 °

<b>Well</b>	MORGAN STATE 921-36H1BS, 679 FNL 706 FEL					
<b>Well Position</b>	<b>+N/-S</b>	1.82 ft	<b>Northing:</b>	14,528,852.89 usft	<b>Latitude:</b>	39° 59' 52.465 N
	<b>+E/-W</b>	9.80 ft	<b>Easting:</b>	2,062,631.34 usft	<b>Longitude:</b>	109° 29' 32.932 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,923.00 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>
	IGRF2010	2011/11/30	11.01	65.86	52,284

<b>Design</b>	PLAN #1 SURFACE			
<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	163.84

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	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	163.84	1,279.82	-165.95	48.07	2.00	2.00	0.00	163.84	
2,509.25	20.00	163.84	2,416.13	-563.20	163.15	0.00	0.00	0.00	0.00	
3,509.25	0.00	0.00	3,395.95	-729.15	211.22	2.00	-2.00	0.00	180.00	
10,565.30	0.00	0.00	10,452.00	-729.15	211.22	0.00	0.00	0.00	0.00	PBHL_MORGAN ST/



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36A PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 SURFACE		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	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	163.84	399.98	-1.68	0.49	1.75	2.00	2.00	2.00	0.00
500.00	4.00	163.84	499.84	-6.70	1.94	6.98	2.00	2.00	2.00	0.00
600.00	6.00	163.84	599.45	-15.07	4.37	15.69	2.00	2.00	2.00	0.00
700.00	8.00	163.84	698.70	-26.78	7.76	27.88	2.00	2.00	2.00	0.00
800.00	10.00	163.84	797.47	-41.80	12.11	43.52	2.00	2.00	2.00	0.00
900.00	12.00	163.84	895.62	-60.13	17.42	62.60	2.00	2.00	2.00	0.00
1,000.00	14.00	163.84	993.06	-81.74	23.68	85.10	2.00	2.00	2.00	0.00
1,100.00	16.00	163.84	1,089.64	-106.59	30.88	110.98	2.00	2.00	2.00	0.00
1,200.00	18.00	163.84	1,185.27	-134.68	39.01	140.21	2.00	2.00	2.00	0.00
1,241.88	18.84	163.84	1,225.00	-147.38	42.69	153.44	2.00	2.00	2.00	0.00
<b>GREENRIVER</b>										
1,300.00	20.00	163.84	1,279.82	-165.95	48.07	172.77	2.00	2.00	2.00	0.00
<b>Start 1209.25 hold at 1300.00 MD</b>										
1,400.00	20.00	163.84	1,373.78	-198.80	57.59	206.97	0.00	0.00	0.00	0.00
1,500.00	20.00	163.84	1,467.75	-231.65	67.10	241.17	0.00	0.00	0.00	0.00
1,600.00	20.00	163.84	1,561.72	-264.50	76.62	275.37	0.00	0.00	0.00	0.00
1,605.62	20.00	163.84	1,567.00	-266.34	77.15	277.29	0.00	0.00	0.00	0.00
<b>BIRDSNEST</b>										
1,700.00	20.00	163.84	1,655.69	-297.35	86.14	309.58	0.00	0.00	0.00	0.00
1,800.00	20.00	163.84	1,749.66	-330.20	95.65	343.78	0.00	0.00	0.00	0.00
1,900.00	20.00	163.84	1,843.63	-363.05	105.17	377.98	0.00	0.00	0.00	0.00
2,000.00	20.00	163.84	1,937.60	-395.91	114.69	412.18	0.00	0.00	0.00	0.00
2,094.07	20.00	163.84	2,026.00	-426.81	123.64	444.36	0.00	0.00	0.00	0.00
<b>MAHOGANY</b>										
2,100.00	20.00	163.84	2,031.57	-428.76	124.20	446.38	0.00	0.00	0.00	0.00
2,200.00	20.00	163.84	2,125.54	-461.61	133.72	480.59	0.00	0.00	0.00	0.00
2,300.00	20.00	163.84	2,219.51	-494.46	143.24	514.79	0.00	0.00	0.00	0.00
2,400.00	20.00	163.84	2,313.48	-527.31	152.75	548.99	0.00	0.00	0.00	0.00
2,500.00	20.00	163.84	2,407.45	-560.16	162.27	583.19	0.00	0.00	0.00	0.00
2,509.25	20.00	163.84	2,416.13	-563.20	163.15	586.35	0.00	0.00	0.00	0.00
<b>Start Drop -2.00</b>										
2,600.00	18.18	163.84	2,501.89	-591.71	171.41	616.04	2.00	-2.00	2.00	0.00
2,700.00	16.18	163.84	2,597.42	-620.09	179.63	645.58	2.00	-2.00	2.00	0.00
2,800.00	14.18	163.84	2,693.93	-645.25	186.92	671.77	2.00	-2.00	2.00	0.00
2,900.00	12.18	163.84	2,791.29	-667.15	193.26	694.58	2.00	-2.00	2.00	0.00
3,000.00	10.18	163.84	2,889.38	-685.79	198.66	713.98	2.00	-2.00	2.00	0.00
3,100.00	8.18	163.84	2,988.10	-701.12	203.10	729.94	2.00	-2.00	2.00	0.00
3,200.00	6.18	163.84	3,087.30	-713.13	206.58	742.45	2.00	-2.00	2.00	0.00
3,300.00	4.18	163.84	3,186.89	-721.81	209.09	751.48	2.00	-2.00	2.00	0.00
3,400.00	2.18	163.84	3,286.73	-727.14	210.64	757.04	2.00	-2.00	2.00	0.00
3,500.00	0.18	163.84	3,386.70	-729.13	211.21	759.11	2.00	-2.00	2.00	0.00
3,509.25	0.00	0.00	3,395.95	-729.15	211.22	759.12	2.00	-2.00	2.00	0.00
<b>Start 7056.05 hold at 3509.25 MD</b>										
3,600.00	0.00	0.00	3,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	0.00



SDI  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36A PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 SURFACE		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,100.00	0.00	0.00	3,986.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,086.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,186.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,286.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,386.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,624.30	0.00	0.00	4,511.00	-729.15	211.22	759.12	0.00	0.00	0.00	
<b>WASATCH</b>										
4,700.00	0.00	0.00	4,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,986.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,086.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,186.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,286.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,386.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,986.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,086.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,186.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,286.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,386.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,986.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,086.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,299.30	0.00	0.00	7,186.00	-729.15	211.22	759.12	0.00	0.00	0.00	
<b>MESAVERDE</b>										
7,300.00	0.00	0.00	7,186.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,286.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,386.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,986.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,086.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,186.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,286.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,386.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,486.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,586.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,686.70	-729.15	211.22	759.12	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,786.70	-729.15	211.22	759.12	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,886.70	-729.15	211.22	759.12	0.00	0.00	0.00	



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36A PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 SURFACE		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,100.00	0.00	0.00	8,986.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,200.00	0.00	0.00	9,086.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,300.00	0.00	0.00	9,186.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,400.00	0.00	0.00	9,286.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,457.30	0.00	0.00	9,344.00	-729.15	211.22	759.12	0.00	0.00	0.00
<b>SEGO</b>									
9,500.00	0.00	0.00	9,386.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,528.30	0.00	0.00	9,415.00	-729.15	211.22	759.12	0.00	0.00	0.00
<b>CASTLEGATE</b>									
9,600.00	0.00	0.00	9,486.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,700.00	0.00	0.00	9,586.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,800.00	0.00	0.00	9,686.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,900.00	0.00	0.00	9,786.70	-729.15	211.22	759.12	0.00	0.00	0.00
9,965.30	0.00	0.00	9,852.00	-729.15	211.22	759.12	0.00	0.00	0.00
<b>BLACKHAWK - BLACKHAWK_MORGAN STATE 921-36H1BS</b>									
10,000.00	0.00	0.00	9,886.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,100.00	0.00	0.00	9,986.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,200.00	0.00	0.00	10,086.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,300.00	0.00	0.00	10,186.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,400.00	0.00	0.00	10,286.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,500.00	0.00	0.00	10,386.70	-729.15	211.22	759.12	0.00	0.00	0.00
10,565.30	0.00	0.00	10,452.00	-729.15	211.22	759.12	0.00	0.00	0.00
<b>PBHL_MORGAN STATE 921-36H1BS</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BLACKHAWK_MORGAI - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,852.00	-729.15	211.22	14,528,127.43	2,062,854.86	39° 59' 45.258 N	109° 29' 30.217 W
PBHL_MORGAN STATI - plan hits target center - Circle (radius 100.00)	0.00	0.00	10,452.00	-729.15	211.22	14,528,127.43	2,062,854.86	39° 59' 45.258 N	109° 29' 30.217 W

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,241.88	1,225.00	GREENRIVER				
1,605.62	1,567.00	BIRDSNEST				
2,094.07	2,026.00	MAHOGANY				
4,624.30	4,511.00	WASATCH				
7,299.30	7,186.00	MESAVERDE				
9,457.30	9,344.00	SEGO				
9,528.30	9,415.00	CASTLEGATE				
9,965.30	9,852.00	BLACKHAWK				



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4923 & KB 4 @ 4927.00ft (ASSUMED)
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<b>Site:</b>	MORGAN STATE 921-36A PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 SURFACE		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	-165.95	48.07	Start 1209.25 hold at 1300.00 MD
2,509.25	2,416.13	-563.20	163.15	Start Drop -2.00
3,509.25	3,395.95	-729.15	211.22	Start 7056.05 hold at 3509.25 MD
10,565.30	10,452.00	-729.15	211.22	TD at 10565.30

**MORGAN STATE 921-36A4BS**

Surface:	675 FNL / 686 FEL	NENE	Lot
BHL:	746 FNL / 493 FEL	NENE	Lot

**MORGAN STATE 921-36A4CS**

Surface:	677 FNL / 696 FEL	NENE	Lot
BHL:	1077 FNL / 493 FEL	NENE	Lot

**MORGAN STATE 921-36H1BS**

Surface:	679 FNL / 706 FEL	NENE	Lot
BHL:	1408 FNL / 493 FEL	SENE	Lot

**MORGAN STATE 921-36H1CS**

Surface:	681 FNL / 715 FEL	NENE	Lot
BHL:	1739 FNL / 493 FEL	SENE	Lot

**Pad: MORGAN STATE 921-36A PAD**

Section 36 T9S R21E

Mineral Lease: ML-22265

Uintah County, Utah

Operator: Kerr-McGee Oil &amp; Gas Onshore LP

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including but not limited to, APDs/SULAs/ROEs/ROWs and/or easements.)

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

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.

**A. Existing Roads:**

Existing roads consist of county and improved/unimproved lease roads. KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

**B. Planned Access Roads:**

No new access road is proposed. (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

If there are roads that are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

During the onsite, turnouts, major cut and fills, culverts, bridges, gates, cattle guards, low water crossings, or modifications needed to existing infrastructure/facilities were determined, as applicable, are typically shown on attached Exhibits and Topo maps.

**C. Location of Existing and Proposed Facilities:**

This pad will expand the existing pad for the Morgan State 8-36. The Morgan State 8-36 well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of December 5, 2011.

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of the well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) above ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

**Gathering Facilities:**

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 3,295'$  and the individual segments are broken up as follows:

$\pm 285'$  (0.05 miles) –New 8" buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.

$\pm 3,010'$  (0.6 miles) –New 8" buried gas pipeline from the edge of pad to the 921-36C intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 3,295'$  and the individual segments are broken up as follows:

$\pm 285'$  (0.05 miles) –New 6" buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.

$\pm 3,010'$  (0.6 miles) –New 6" buried liquid pipeline from the edge of pad to the 921-36C intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

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.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. KMG requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, KMG requests a temporary 45' construction right-of-way 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity and ownership, as well as to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

**D. Location and Type of Water Supply:**

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

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

No water well is to be drilled on this lease.

**E. Source of Construction Materials:**

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

**F. Methods for Handling Waste Materials:**

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E  
 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  
 Ouray #1 SWD in Sec. 1 T9S R21E  
 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. 33 T9S R21E  
 NBU 921-34L SWD in Sec. 34 T9S R21E

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

Unless otherwise approved, no oil or other oil based drill additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water, biodegradable polymer soap, bentonite clay, and /or non-toxic additives will be used in the system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions, or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be release into the pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternative is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as the hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods. (e.g. solidification)

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

For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after after six (6) months 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. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

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 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.

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.

Any undesirable event, including accidental release of fluids, or release in excess of reportable quantities, will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule. Where State wells are participatory to a Federal agreement, according to NTL-3A, the appropriate Federal agencies will be notified.

### **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 Comprehensive Environmental Response, Compensation, and Liability Act (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.

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 and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

### **G. Ancillary Facilities:**

None are anticipated.

**H. Well Site Layout (see Well Pad Design Summary):**

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; 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 and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1927 (NAD27) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

**I. Plans for Reclamation of the Surface:**

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. This 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 materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

**Interim Reclamation**

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

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. 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.

**Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at 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. 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 closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

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 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

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

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

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope 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 and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. 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 site specific seed mix will be provided by SITLA.

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

SITLA  
675 East 500 South, Suite 500  
Salt Lake City, UT 84102

#### **L. Other Information:**

None

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

Danielle Piernot  
Regulatory Analyst II  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6156

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

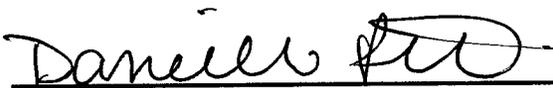
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

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 for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, 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.

  
\_\_\_\_\_  
Danielle Piernot

December 19, 2011  
\_\_\_\_\_  
Date



Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
DENVER, CO 80217-3779

December 14, 2011

Ms. Diana Mason  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11  
Morgan State 921-36H1BS  
T9S-R21E  
Section 36: NENE (Surface), SENE (Bottom Hole)  
Surface: 679' FNL, 706' FEL  
Bottom Hole: 1408' FNL, 493' FEL  
Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling.

- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing roads and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

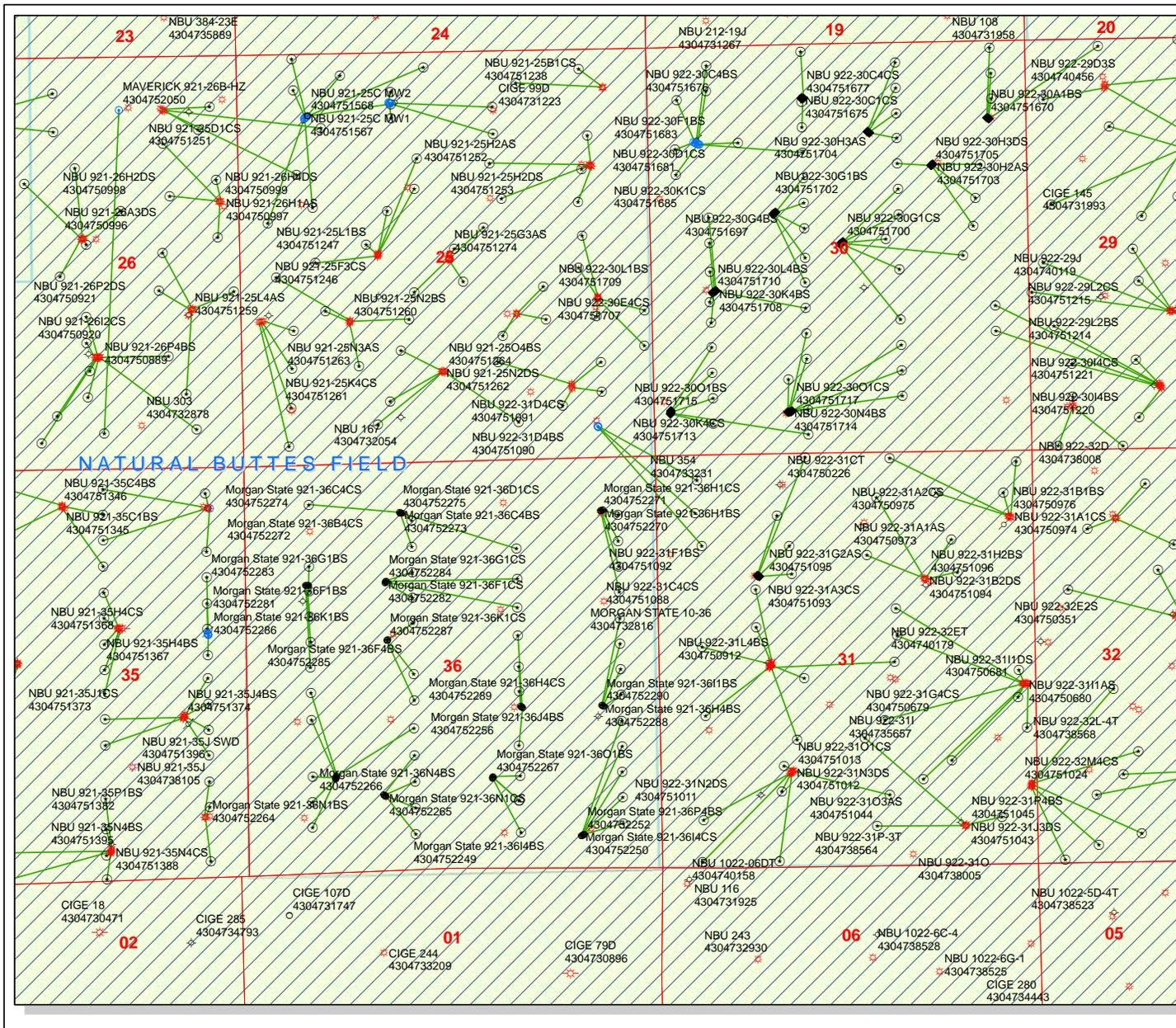
Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

A handwritten signature in blue ink that reads 'Joe Matney'.

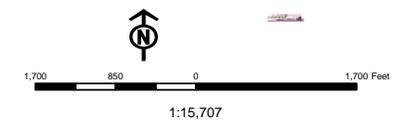
Joe Matney  
Sr. Staff Landman



**API Number: 4304752270**  
**Well Name: Morgan State 921-36H1BS**  
**Township T0.9 Range R2.1 Section 36**  
**Meridian: SLBM**  
**Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.**

Map Prepared:  
 Map Produced by Diana Mason

- |                      |                                    |
|----------------------|------------------------------------|
| <b>Units Status</b>  | <b>Wells Query Status</b>          |
| ACTIVE               | APD - Approved Permit              |
| EXPLORATORY          | DRL - Spudded (Drilling Commenced) |
| GAS STORAGE          | GIW - Gas Injection                |
| NF PP OIL            | GS - Gas Storage                   |
| NF SECONDARY         | LA - Location Abandoned            |
| PI OIL               | LOC - New Location                 |
| PP GAS               | OPS - Operation Suspended          |
| PP GEOTHERM.         | PA - Plugged Abandoned             |
| PP OIL               | PGW - Producing Gas Well           |
| SECONDARY            | POW - Producing Oil Well           |
| TERMINATED           | RET - Returned APD                 |
| <b>Fields Status</b> | SGW - Shut-in Gas Well             |
| Unknown              | SOW - Shut-in Oil Well             |
| ABANDONED            | TA - Temp. Abandoned               |
| ACTIVE               | TW - Test Well                     |
| COMBINED             | WDW - Water Disposal               |
| INACTIVE             | WIW - Water Injection Well         |
| STORAGE              | WSW - Water Supply Well            |
| TERMINATED           |                                    |



Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. Morgan State 921-36H1BS			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2389	10452		
Previous Shoe Setting Depth (TVD)	0	2389		
Max Mud Weight (ppg)	8.4	13.0		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	10690		
Operators Max Anticipated Pressure (psi)	6898	12.7		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	1044	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	757	NO      air drill
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	518	NO      Reasonable depth in area
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	518	NO
Required Casing/BOPE Test Pressure=		2373	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi    *Assumes 1psi/ft frac gradient

Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	7066	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	5812	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	4767	YES      OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	5292	NO      Reasonable
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2389	psi    *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi
*Max Pressure Allowed @ Previous Casing Shoe=			psi    *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi
*Max Pressure Allowed @ Previous Casing Shoe=			psi    *Assumes 1psi/ft frac gradient

# 43047522700000 Morgan State 921-36H1BS

## Casing Schematic

Surface

127  
157

✓ Strip surf. cmt

8-5/8"  
MW 8.4  
Frac 19.3

cmts. proposed to surf

4-1/2"  
MW 13.

TOC @  
649.

Uinta

to surf @ 9% w/o, tail 1259'

1225' Green River  
to 444 @ 9% w/o, tail 3658'

TOC @ 1500 ± BMSW  
1372.

1567' Birds Nest

1815' tail

2026' Mahogany

\*strip

Surface  
2480. MD  
2389. TVD

4095' tail

4511' Wasatch



7186' Mesaverde

9344' Sejo

9415' Castlegate

9852' MNS

Production  
10565. MD  
10452. TVD

679NL

706EL

-729

211

1408 FNL

495 FEL ✓

SENE sec 36-9S-21E

Well name:	<b>43047522700000 Morgan State 921-36H1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-52270
Location:	UINTAH	COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 8.400 ppg  
 Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 107 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 1,372 ft

**Burst**

Max anticipated surface pressure: 2,153 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 2,440 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
 8 Round LTC: 1.70 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.50 (B)

Tension is based on air weight.  
 Neutral point: 2,165 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 576 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 10,452 ft  
 Next mud weight: 13.000 ppg  
 Next setting BHP: 7,058 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 2,447 ft  
 Injection pressure: 2,447 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2480	8.625	28.00	I-55	LT&C	2389	2480	7.892	98208
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	1042	1880	1.804	2440	3390	1.39	66.9	348	5.20 J

Prepared by: Helen Sadik-Macdonald  
 Div of Oil, Gas & Mining

Phone: 801 538-5357  
 FAX: 801-359-3940

Date: March 1, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2389 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Well name: <b>43047522700000 Morgan State 921-36H1BS</b>	
Operator: <b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	Project ID: 43-047-52270
String type: Production	
Location: <b>UINTAH COUNTY</b>	

**Design parameters:**

**Collapse**

Mud weight: 13.000 ppg  
 Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 4,759 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP: 7,058 psi  
 No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

8 Round STC: 1.80 (J)  
 8 Round LTC: 1.80 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.60 (B)

Tension is based on air weight.  
 Neutral point: 8,534 ft

Estimated cost: 158,812 (\$)

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 220 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 649 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
 Departure at shoe: 759 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
2	5000	4.5	11.60	HCP-110	DQX	4887	5000	3.875	132000
1	5565	4.5	11.60	HCP-110	LT&C	10452	10565	3.875	26812

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
2	3300	8129	2.463	5834	10690	1.83	121.2	367.2	3.03 B
1	7058	8650	1.226	7058	10690	1.51	64.6	279	4.32 J

Prepared by: Helen Sadik-Macdonald  
 Div of Oil, Gas & Mining

Phone: 801 538-5357  
 FAX: 801-359-3940

Date: March 1, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 10452 ft, a mud weight of 13 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

# 43047522700000 Morgan State 921-36H1BS

## Casing Schematic

Surface

12.5'  
15.2'

Uinta

to surf @ 9% w/p, fail 3597'

TOC @ 626.

to 0' @ 9% w/p, fail 3658'

TOC @ 1372.

\*stop ✓

✓ Stop surf. cmt.

8-5/8"  
MW 8.4  
Frac 19.3

Surface  
2480. MD  
2389. TVD

Cmts. proposed to surf.

4-1/2"  
MW 12.5

Production  
9457. MD  
9344. TVD

9344' Seg 0

✓

Well name:	<b>43047522700000 Morgan State 921-36H1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-52270
Location:	UINTAH	COUNTY	

**Design parameters:****Collapse**

Mud weight: 8.400 ppg  
Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 2,153 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP: 2,440 psi  
  
No backup mud specified.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.70 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on air weight.  
Neutral point: 2,165 ft

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 107 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft  
  
Cement top: 1,372 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
Departure at shoe: 576 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 9,344 ft  
Next mud weight: 12.500 ppg  
Next setting BHP: 6,067 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,447 ft  
Injection pressure: 2,447 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2480	8.625	28.00	I-55	LT&C	2389	2480	7.892	98208
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	1042	1880	1.804	2440	3390	1.39	66.9	348	5.20 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: March 1, 2012  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2389 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Well name: <b>43047522700000 Morgan State 921-36H1BS</b>	
Operator: <b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	Project ID: 43-047-52270
String type: Production	
Location: <b>UINTAH COUNTY</b>	

**Design parameters:**

**Collapse**

Mud weight: 12.500 ppg  
 Internal fluid density: 1.000 ppg

**Burst**

Max anticipated surface pressure: 4,012 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP: 6,067 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor: 1.125

**Burst:**

Design factor: 1.00

**Tension:**

8 Round STC: 1.80 (J)  
 8 Round LTC: 1.80 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.60 (B)

Tension is based on air weight.  
 Neutral point: 7,711 ft

Estimated cost: 190,832 (\$)

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 205 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 626 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
 Departure at shoe: 759 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
2	5000	4.5	11.60	I-80	DQX	4887	5000	3.875	132000
1	4457	4.5	11.60	I-80	LT&C	9344	9457	3.875	58832

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
2	2919	5918	2.027	5087	7780	1.53	108.4	267	2.46 J
1	5582	6360	1.139	6067	7780	1.28	51.7	212	4.10 J

Prepared by: Helen Sadik-Macdonald  
 Div of Oil, Gas & Mining

Phone: 801 538-5357  
 FAX: 801-359-3940

Date: March 1, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 9344 ft, a mud weight of 12.5 ppg. An internal gradient of .052 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

**From:** Jim Davis  
**To:** APD APPROVAL  
**CC:** Danielle Piernot; Julie Jacobson  
**Date:** 4/2/2012 1:51 PM  
**Subject:** Morgan State 921-36A Morgan State 921-36I pad wells

The following wells have been approved by SITLA including arch and paleo clearance.

Morgan State 921-36A4BS (4304752268)  
Morgan State 921-36A4CS (4304752269)  
Morgan State 921-36H1BS (4304752270)  
Morgan State 921-36H1CS (4304752271)  
Morgan State 921-36I1CS (4304752251)  
Morgan State 921-36H4BS (4304752288)  
Morgan State 921-36H4CS (4304752289)  
Morgan State 921-36I1BS (4304752290)

Thanks.  
-Jim

Jim Davis  
Utah Trust Lands Administration  
jimdavis1@utah.gov  
Phone: (801) 538-5156

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** Morgan State 921-36H1BS  
**API Number** 43047522700000      **APD No** 5054    **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** NENE    **Sec** 36    **Tw** 9.0S    **Rng** 21.0E    679 FNL 706 FEL  
**GPS Coord (UTM)** 628631 4428610      **Surface Owner**

### Participants

Sheila Wopsock, Charles Chase, Danielle Piernot, Doyle Holmes, (Anadarko). John Slaugh, Mitch Batty, (Timberline). Jim Davis (SITLA). Alex Hansen (DWR). Chris Jensen and David Hackford, (DOGGM).

### Regional/Local Setting & Topography

This site is on an existing location, and very little new construction will be necessary.

This location is within the Natural Buttes Unit but this section is not part of the Natural Buttes Unit. It is approximately 14 road miles southeast of Ouray, Utah. The general area is at the head of a long unnamed wash east of Cottonwood Wash. Both washes enter the White River in the same general area, approximately six miles to the north. The area is characterized by rolling hills, which are frequently divided by somewhat gentle draws that drain northerly. This unnamed wash is an ephemeral drainage. No springs, seeps or streams exist in the area. An occasional pond constructed to supply water for cattle and antelope exists. The washes are sometimes rimmed with steep side hills, which have exposed sandstone bedrock cliffs along the rims.

Four new directional wells will be drilled from this location which currently has one well, the Morgan State 8-36. The decision to PA or TA this existing well hasn't been made at this time.

### Surface Use Plan

#### **Current Surface Use**

Grazing  
Wildlfe Habitat  
Existing Well Pad

**New Road  
Miles**

**Well Pad**

**Src Const Material**

**Surface Formation**

0

**Width 287    Length 435**

Onsite

UNTA

**Ancillary Facilities** N

**Waste Management Plan Adequate?**      Y

### Environmental Parameters

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Prickly pear, wild onion, shadscale, mat saltbrush, Indian ricegrass, halogeton, pepper grass. Principal species present are cheatgrass, black sagebrush, stipa, mesquite grass.

Sheep, antelope, coyote, raptors, small mammals and birds.

### Soil Type and Characteristics

Rocky sandy clay loam.

Erosion Issues N

Sedimentation Issues N

Site Stability Issues N

Drainage Diversion Required? N

Berm Required? N

Erosion Sedimentation Control Required? N

Paleo Survey Run? Y    Paleo Potential Observed? N    Cultural Survey Run? Y    Cultural Resources? N

### Reserve Pit

#### Site-Specific Factors

#### Site Ranking

<b>Distance to Groundwater (feet)</b>	>200	0
<b>Distance to Surface Water (feet)</b>	>1000	0
<b>Dist. Nearest Municipal Well (ft)</b>	>5280	0
<b>Distance to Other Wells (feet)</b>		20
<b>Native Soil Type</b>	Mod permeability	10
<b>Fluid Type</b>	Fresh Water	5
<b>Drill Cuttings</b>	Normal Rock	0
<b>Annual Precipitation (inches)</b>		0
<b>Affected Populations</b>		
<b>Presence Nearby Utility Conduits</b>	Not Present	0
<b>Final Score</b>		35

1 Sensitivity Level

#### Characteristics / Requirements

The reserve pit is planned in an area of cut on the northwest corner of the location. Dimensions are 240' x 80' x 12' deep with two feet of freeboard. Kerr McGee has agreed to line this pit with a 30 mil synthetic liner and a layer of felt sub-liner.

Closed Loop Mud Required? N    Liner Required? Y    Liner Thickness 30    Pit Underlayment Required? Y

### Other Observations / Comments

David Hackford  
Evaluator

1/11/2012  
Date / Time

# Application for Permit to Drill Statement of Basis

## Utah Division of Oil, Gas and Mining

4/10/2012

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
5054	43047522700000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	Morgan State 921-36H1BS		<b>Unit</b>		
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	NENE 36 9S 21E S 679 FNL 706 FEL GPS Coord (UTM) 628639E 4428619N				

### Geologic Statement of Basis

Kerr McGee proposes to set 2,480' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 1,500'. A search of Division of Water Rights records shows one water well within a 10,000 foot radius of the center of Section 36. The well is listed as 2,640 feet deep and used for drilling water. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. The proposed casing and cement should adequately protect. Any usable ground water.

Brad Hill  
APD Evaluator

2/7/2012  
Date / Time

### Surface Statement of Basis

The general area is in the central portion of the Natural Buttes Unit. Within this area is the White River and rugged drainages that drain into it. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is six miles. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 42.8 miles to the northwest. Access from Vernal is by following Utah State, Uintah County and oilfield development roads.

Four wells will be directionally drilled from this location. They are the Morgan State 921-36H1CS, Morgan State 921-36H1BS, Morgan State 921-36A4CS and the Morgan State 921-36A4BS. The existing location currently has one well. This well is the Morgan State 8-36. The decision to PA or TA this well has not been made at this time. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and sufficient for five wells, and is the best site for a location in the immediate area.

New construction will consist of approximately 100 feet on the south, 100 feet on the west, 75 feet on the north, and 100 feet on the east side of the existing location.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA and Alex Hansen with DWR were invited by email to the pre-site evaluation. Both were present. Kerr McGee personnel were told to consult with SITLA for reclamation standards including seeding mixes to be used.

**RECEIVED:** April 10, 2012

David Hackford  
Onsite Evaluator

1/11/2012  
Date / Time

**Conditions of Approval / Application for Permit to Drill**

<b>Category</b>	<b>Condition</b>
Pits	A synthetic liner with a minimum thickness of 16 mils with a felt subliner shall be properly installed and maintained in the reserve pit.
Pits	The reserve pit should be located on the northwest side of the location.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 12/19/2011

API NO. ASSIGNED: 43047522700000

WELL NAME: Morgan State 921-36H1BS

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

PHONE NUMBER: 720 929-6156

CONTACT: Danielle Piernot

PROPOSED LOCATION: NENE 36 090S 210E

Permit Tech Review: 

SURFACE: 0679 FNL 0706 FEL

Engineering Review: 

BOTTOM: 1408 FNL 0493 FEL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 39.99796

LONGITUDE: -109.49305

UTM SURF EASTINGS: 628639.00

NORTHINGS: 4428619.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 3 - State

LEASE NUMBER: ML 22265

PROPOSED PRODUCING FORMATION(S): BLACKHAWK

SURFACE OWNER: 3 - State

COALBED METHANE: NO

## RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: STATE/FEE - 22013542
- 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

Commingling Approved

## LOCATION AND SITING:

- R649-2-3.
- Unit:
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: Cause 173-24
- Effective Date: 10/5/2009
- Siting: 460' Fr Exterior Lease Boundary
- R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations: 3 - Commingling - ddoucet  
 5 - Statement of Basis - bhill  
 15 - Directional - dmason  
 17 - Oil Shale 190-5(b) - dmason  
 25 - Surface Casing - hmacdonald



GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lieutenant Governor

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

## Permit To Drill

\*\*\*\*\*

**Well Name:** Morgan State 921-36H1BS  
**API Well Number:** 43047522700000  
**Lease Number:** ML 22265  
**Surface Owner:** STATE  
**Approval Date:** 4/10/2012

### 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 173-24. The expected producing formation or pool is the BLACKHAWK 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. 173-24, 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:

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

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.

Surface casing shall be cemented to the surface.

**Additional Approvals:**

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

**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  
OR  
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website  
at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program  
- contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

**Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office  
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office  
801-231-8956 - after office hours

**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:**

A handwritten signature in black ink, appearing to read "J. Rogers", written in a cursive style.

For John Rogers  
Associate Director, Oil & Gas

BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
Submitted By CARA MAHLER Phone Number 720.929.6029  
Well Name/Number MORGAN STATE 921-36H1BS  
Qtr/Qtr NENE Section 36 Township 9S Range 21E  
Lease Serial Number ML 22265  
API Number 4304752270

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

Date/Time 07/30/2012 14:00 HRS AM  PM

Casing – Please report time casing run starts, not cementing times.

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

Date/Time 08/10/2012 08:00 HRS AM  PM

BOPE

- Initial BOPE test at surface casing point
- BOPE test at intermediate casing point
- 30 day BOPE test
- Other

Date/Time \_\_\_\_\_ AM  PM

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT KENNY GATHINGS AT

435.828.0986 OR LOVEL YOUNG AT 435.781.7051

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: ML 22265
<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:
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: Morgan State 921-36H1BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047522700000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6511  9. FIELD and POOL or WILDCAT: MORGAN STATE BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0679 FNL 0706 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	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 checked="" type="checkbox"/> SPUD REPORT Date of Spud: 7/31/2012	<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.

MIRU TRIPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'.  
 RAN 14" 36.7# SCHEDULE 10 CONDUCTOR PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 7/31/2012 AT 12:30 HRS.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 August 10, 2012

NAME (PLEASE PRINT) Cara Mahler	PHONE NUMBER 720 929-6029	TITLE Regulatory Analyst I
SIGNATURE N/A	DATE 8/9/2012	

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

FORM 6

**ENTITY ACTION FORM**

Operator: KERR McGEE OIL & GAS ONSHORE LP Operator Account Number: N 2995  
 Address: P.O. Box 173779  
city DENVER  
state CO zip 80217 Phone Number: (720) 929-6029

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752271	MORGAN STATE 921-36H1CS		NENE	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	186666	7/31/2012			8/20/2012	
<b>Comments:</b> MIRU BUCKET RIG. <span style="float: right;">MVRD</span> SPUD WELL LOCATION ON 7/31/2012 AT 10:00 HRS. <span style="float: right;">BHL: Sene</span>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752270	MORGAN STATE 921-36H1BS		NENE	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	186667	7/31/2012			8/20/2012	
<b>Comments:</b> MIRU BUCKET RIG. <span style="float: right;">MVRD</span> SPUD WELL LOCATION ON 7/31/2012 AT 12:30 HRS. <span style="float: right;">BHL: Sene</span>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752269	MORGAN STATE 921-36A4CS		NENE	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	186668	7/31/2012			8/20/2012	
<b>Comments:</b> MIRU BUCKET RIG. <span style="float: right;">MVRD</span> SPUD WELL LOCATION ON 7/31/2012 AT 15:00 HRS. <span style="float: right;">BHL: nene</span>							

**ACTION CODES:**

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

CARA MAHLER

Name (Please Print)

Signature

REGULATORY ANALYST

8/9/2012

Title

Date

**RECEIVED**  
AUG 15 2012

Div. of Oil, Gas & Mining

<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> ML 22265
<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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7.UNIT or CA AGREEMENT NAME:</b>
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36H1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047522700000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511  <b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0679 FNL 0706 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> 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: 10/2/2012	<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.  
 No Activity for the month of September 2012. Well TD at 2,585.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 October 03, 2012**

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/2/2012	

<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> ML 22265
<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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b>
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36H1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047522700000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511  <b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0679 FNL 0706 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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<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: 10/23/2012	<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
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	<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.

FINISHED DRILLING TO 9,446' ON 10/22/2012. CEMENTED PRODUCTION CASING. RELEASED H&P 298 RIG ON 10/23/2012. DETAILS OF CASING AND CEMENT WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 October 29, 2012

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/25/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  5. LEASE DESIGNATION AND SERIAL NUMBER: ML 22265
<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:
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: MORGAN STATE 921-36H1BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047522700000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6511  9. FIELD and POOL or WILDCAT: MORGAN STATE LATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0679 FNL 0706 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	COUNTY: UINTAH  STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
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<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: 12/3/2012	<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.

No Activity for the month of November 2012. Well TD at 9,446.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 December 03, 2012

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regularatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/3/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22265
<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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b>
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36H1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047522700000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511  <b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0679 FNL 0706 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> 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: 1/3/2013	<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
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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.

No Activity for the month of December 2012. Well TD at 9,446

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 January 07, 2013

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/3/2013	

<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> ML 22265
<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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7.UNIT or CA AGREEMENT NAME:</b>
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36H1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047522700000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511  <b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0679 FNL 0706 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> 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: 2/4/2013	<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.

Started completing the well. Well TD at 9,446

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 February 08, 2013

<b>NAME (PLEASE PRINT)</b> Laura Abrams	<b>PHONE NUMBER</b> 720 929-6356	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 2/4/2013	

<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: ML 22265
1. TYPE OF WELL Gas Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:  7. UNIT or CA AGREEMENT NAME:
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	8. WELL NAME and NUMBER: MORGAN STATE 921-36H1BS
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	9. API NUMBER: 43047522700000
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0679 FNL 0706 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENE Section: 36 Township: 09.0S Range: 21.0E Meridian: S	9. FIELD and POOL or WILDCAT: MORGAN STATE LATERAL 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: 2/20/2013	<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 subject well was placed on production on 02/20/2013. The Chronological Well History will be submitted with the well completion report.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 February 25, 2013

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 2/25/2013	

RECEIVED

MAR 27 2013

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

DIV. OF OIL, GAS & MINING

AMENDED REPORT [ ] FORM 8
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [x] DRY [ ] OTHER [ ]
b. TYPE OF WORK: NEW WELL [x] HORIZ. LATS. [ ] DEEP-EN [ ] RE-ENTRY [ ] DIFF. RESVR. [ ] OTHER [ ]
2. NAME OF OPERATOR: KERR MCGEE OIL & GAS ONSHORE, L.P.
3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY DENVER STATE CO ZIP 80217 PHONE NUMBER: (720) 929-6000
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: NENE 679 FNL 706 FEL S36,T9S,R21E AT TOP PRODUCING INTERVAL REPORTED BELOW: SENE 1391 FNL 510 FEL S36,T9S,R21E AT TOTAL DEPTH: SENE 1429 FNL 485 FEL S36,T9S,R21E
5. LEASE DESIGNATION AND SERIAL NUMBER: ML 22265
6. IF INDIAN, ALLOTTEE OR TRIBE NAME
7. UNIT or CA AGREEMENT NAME
8. WELL NAME and NUMBER: MORGAN STATE 921-36H1BS
9. API NUMBER: 4304752270
10. FIELD AND POOL, OR WILDCAT: NATURAL BUTTES
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NENE 36 9S 21E S
12. COUNTY: UINTAH 13. STATE: UTAH

14. DATE SPUNNED: 7/31/2012 15. DATE T.D. REACHED: 10/22/2012 16. DATE COMPLETED: 2/20/2013 ABANDONED [ ] READY TO PRODUCE [x]
17. ELEVATIONS (DF, RKB, RT, GL): 4949 RKB
18. TOTAL DEPTH: MD 9,446 TVD 9,349 19. PLUG BACK T.D.: MD 9,405 TVD 9,308 20. IF MULTIPLE COMPLETIONS, HOW MANY? \* 21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each) CBL/GR/CCL/TEMP
23. WAS WELL CORED? NO [x] YES [ ] (Submit analysis) WAS DST RUN? NO [x] YES [ ] (Submit report) DIRECTIONAL SURVEY? NO [ ] YES [x] (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

Table with 9 columns: HOLE SIZE, SIZE/GRADE, WEIGHT (#/ft.), TOP (MD), BOTTOM (MD), STAGE CEMENTER DEPTH, CEMENT TYPE & NO. OF SACKS, SLURRY VOLUME (BBL), CEMENT TOP \*\*, AMOUNT PULLED. Rows include 20", 11", and 7 7/8" hole sizes.

25. TUBING RECORD

Table with 9 columns: SIZE, DEPTH SET (MD), PACKER SET (MD), SIZE, DEPTH SET (MD), PACKER SET (MD), SIZE, DEPTH SET (MD), PACKER SET (MD). Row: 2 3/8", 8,835.

26. PRODUCING INTERVALS

Table with 5 columns: FORMATION NAME, TOP (MD), BOTTOM (MD), TOP (TVD), BOTTOM (TVD). Rows: (A) WASATCH, (B) MESAVERDE, (C), (D).

27. PERFORATION RECORD

Table with 8 columns: INTERVAL (Top/Bot - MD), SIZE, NO. HOLES, PERFORATION STATUS. Rows: 5,956-7,255 (0.36, 96), 7,306-9,300 (0.36, 192).

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

Table with 2 columns: DEPTH INTERVAL, AMOUNT AND TYPE OF MATERIAL. Row: 5956-9300, PUMP 13,079 BBLs SLICK H2O & 316,517 LBS 30/50 OTTAWA SAND, 12 STAGES.

29. ENCLOSED ATTACHMENTS:

- [ ] ELECTRICAL/MECHANICAL LOGS [ ] GEOLOGIC REPORT [ ] DST REPORT [x] DIRECTIONAL SURVEY [ ] SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION [ ] CORE ANALYSIS [ ] OTHER:

30. WELL STATUS: PROD

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED: 2/20/2013		TEST DATE: 2/22/2013		HOURS TESTED: 24		TEST PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 2,477	WATER - BBL: 0	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 2,096	CSG. PRESS. 2,453	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 2,477	WATER - BBL: 0	INTERVAL STATUS: PROD

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

SOLD

33. 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.

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
				GREEN RIVER	1,308
				BIRD'S NEST	1,632
				MAHOGANY	2,127
				WASATCH	4,643
				MESAVERDE	7,287

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/4" bit. The remainder of surface hole was drilled with an 11" bit. DQX csg was run from surface to 5020'; LTC csg was run from 5020' to 9428'. Attached is the chronological well history, perforation report & final survey.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) JAIME SCHARNOWSKE TITLE REGULATORY ANALYST  
 SIGNATURE *Jaime Scharnowske* DATE 3/20/2013

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining  
 1594 West North Temple, Suite 1210  
 Box 145801  
 Salt Lake City, Utah 84114-5801  
 Phone: 801-538-5340  
 Fax: 801-359-3940

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE		Spud Date: 8/14/2012	
Project: UTAH-UINTAH	Site: MORGAN STATE 921-36A PAD	Rig Name No: PROPETRO 11/11, H&P 298/298	
Event: DRILLING	Start Date: 7/19/2012	End Date: 10/23/2012	
Active Datum: RKB @4,949.00usft (above Mean Sea Level)		UWM: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/14/2012	18:30 - 21:30	3.00	MIRU	01	B	P		M.S. 921-36H1BS ( WELL 2 OF 4 ) INSTALL DIVERTOR HEAD AND BLUEY LINE. RIG UP NOV CLOSED LOOP SYSTEM. SPOT IN RIG. SPOT IN CATWALK AND PIPE RACKS. RIG UP PUMP. PRIME PUMP. INSPECT RIG. SAFETY MEETING
	21:30 - 22:00	0.50	DRLSUR	06	A	P		PICK UP #1 BHA
	22:00 - 23:30	1.50	DRLSUR	02	D	P		DRL F/44' - T/210' (166' @ 166' ROP) W.O.B 5-15K UP/DWN ROT 22/20/20 PSI ON/OFF 600/400 M.W. 8.5# VIS 27 491 GPM PUMP RATE / NO AIR NOV-ONLINE
	23:30 - 0:00	0.50	DRLSUR	06	A	P		TOOH WITH #1 BHA / TIH WITH #2 BHA
8/15/2012	0:00 - 0:30	0.50	DRLSUR	06	A	P		TOOH WITH #1 BHA / TIH WITH #2 BHA
	0:30 - 1:00	0.50	DRLSUR	08	A	Z		***REPAIR HYDRAULIC HOSE
	1:00 - 1:30	0.50	DRLSUR	06	A	P		TOOH WITH #1 BHA / TIH WITH #2 BHA
	1:30 - 4:00	2.50	DRLSUR	02	D	P		DRL F/210' - T/490' ( 280' @ 112' ROP ) W.O.B 18-20K RPM 45 POWERHEAD 67 MUD MOTOR UP/DWN/ROT 57/46/52 PSI ON/OFF 930/700 M.W. 8.5# VIS 27 491 GPM PUMP RATE / NO AIR TORQUE ON/OFF 3000/1500 NOV-ONLINE 3.89' HIGH .44' RIGHT OF LINE
	4:00 - 12:00	8.00	DRLSUR	02	D	P		DRILL 11" SURFACE HOLE F/ 490'- 1390' ROP= 900' @ 112 FPH WOB= 18/20K RPM= 50- POWERHEAD /// 67- MUD MOTOR UP/DN/RT= 69/47/59 SPP- ON/OFF= 1300/1200 M.W. 8.4# VIS 27 465 GPM PUMP RATE /// NO AIR TORQUE- ON/OFF= 3000/2400 HOLE IN GOOD SHAPE 12' ABOVE & 3' LEFT OF TARGET LINE NOV - ONLINE 100% RETURNS

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 7/19/2012

End Date: 10/23/2012

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	12:00 - 16:30	4.50	DRLSUR	02	D	P		DRILL 11" SURFACE HOLE F/ 1390'- 1600' ROP= 210' @ 47 FPH WOB= 18/20K RPM= 50- POWERHEAD /// 67- MUD MOTOR UP/DN/RT= 73/58/66 7K DRAG SPP- ON/OFF= 1300/1200 M.W. 8.4# VIS 27 465 GPM PUMP RATE /// AIR @ 2400 CFM TORQUE- ON/OFF= 3000/2400 HOLE IN GOOD SHAPE 15' ABOVE & 3.5' LEFT OF TARGET LINE NOV - ONLINE LOST RETURNS @ 1550'
	16:30 - 0:00	7.50	DRLSUR	02	D	P		DRILL 11" SURFACE HOLE F/ 1600'- 2200' ROP= 600' @ 80 FPH WOB= 18/20K RPM= 50- POWERHEAD /// 67- MUD MOTOR UP/DN/RT= 89/60/74 15K DRAG SPP- ON/OFF= 1300/1200 M.W. 8.4# VIS 27 465 GPM PUMP RATE /// AIR @ 2400 CFM TORQUE- ON/OFF= 3000/2400 HOLE IN GOOD SHAPE 12' ABOVE & 2' LEFT OF TARGET LINE SLIDE = 348' / 18% NOV - ONLINE LOST RETURNS @ 1550'
8/16/2012	0:00 - 6:00	6.00	DRLSUR	02	D	P		DRILL 11" SURFACE HOLE F/ 2200'- 2585' ROP= 385' @ 64 FPH WOB= 18/20K RPM= 50- POWERHEAD /// 67- MUD MOTOR UP/DN/RT= 94/63/70 24K DRAG SPP- ON/OFF= 94/63/70 24K DRAG M.W. 8.4# VIS 27 465 GPM PUMP RATE /// AIR @ 2400 CFM TORQUE- ON/OFF= 3000/2000 HOLE IN GOOD SHAPE 8' ABOVE & .5' LEFT OF TARGET LINE SLIDE = 431' / 17% NOV - ONLINE LOST RETURNS @ 1550'
	6:00 - 8:00	2.00	DRLSUR	05	A	P		CIRCULATE & CONDITION HOLE FOR 8-5/8" SURFACE CSG
	8:00 - 9:00	1.00	DRLSUR	06	A	P		LAY DOWN DRILL STRING
	9:00 - 11:00	2.00	DRLSUR	05	J	X		***CHECK FOR FLOW /// HOLE FLOWING & MAKING GAS /// CIRCULATE & WAIT ON KILL MUD
	11:00 - 11:30	0.50	DRLSUR	05	B	P		SPOT 12ppg MUD FROM SST 54
	11:30 - 14:30	3.00	DRLSUR	06	A	P		LAY DOWN DRILL STRING & DIR. TOOLS
	14:30 - 15:00	0.50	CSGSUR	12	A	P		MOVE PIPE RACKS AND CATWALK. PULL DIVERTER HEAD. RIG UP TO RUN CSG. MOVE CSG INTO POSITION TO P/U.
	15:00 - 17:30	2.50	CSGSUR	12	C	P		PJSM /// RUN 58 JT'S, 8-5/8", 28#, J-55, LT&C CSG /// SHOE SET @ 2554' & BAFFLE @ 2508'

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 7/19/2012

End Date: 10/23/2012

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	17:30 - 18:00	0.50	CSGSUR	12	B	P		HOLD SAFETY MEETING PUMP ON CASING RUN 200' OF 1". RIG DOWN RIG MOVE OFF WELL, RIG UP CEMENT TRUCKS, AND CEMENT HEAD.
	18:00 - 19:30	1.50	CSGSUR	12	E	P		PRO PETRO CMTERS MAKE UP HEAD & LOAD PLUG TEST LINES TO 2000 PSI. PUMP 140 BBLS FOLLOWED BY 20 BBL'S GEL WATER /// TAIL = 380 SX OF 15.8# & 1.15 YIELD (2% CALC, 1/4# /SK OF FLOCELE) /// DROP PLUG & DISPLACE W/ 156.6 BBLS WATER /// PLUG DOWN @ 19:15 08/16/2012 /// BUMP PLUG @ 600 PSI /// FINAL LIFT = 330 PSI. /// CHECK FLOAT -HELD W/ 1 BBL BACK /// NO RETURNS THRU OUT JOB /// PUMP 120 SXS 15.8# CMT W/4% CALCIUM DOWN 1". NO CEMENT TO SURFACE
	19:30 - 21:30	2.00	CSGSUR	12	E	P		WOC PUMP TOP OUT #2 /// 150SXS CMT @ 15.8 WT & 1.15 YIELD + 4% CACL /// NO CMT TO SURFACE
	21:30 - 0:00	2.50	CSGSUR	12	E	P		WOC PUMP TOP OUT #3 /// 404SXS CMT @ 15.8 WT & 1.15 YIELD + 4% CACL /// NO CMT TO SURFACE /// RELEASE RIG @ 00:00 08/17/2012 TO MORGAN STATE 921-36A4CS
10/19/2012	0:00 - 2:00	2.00	MIRU3	01	C	P		PREPARE & SKID RIG
	2:00 - 3:00	1.00	MIRU3	01	B	P		RIG UP ROTARY TOOLS
	3:00 - 3:30	0.50	PRPSPD	14	A	P		NIPPLE UP BOP'S & EQUIPMENT
	3:30 - 4:00	0.50	PRPSPD	01	B	P		RU BAILS & TEST ASSY
	4:00 - 8:30	4.50	PRPSPD	15	A	P		PRESSURE TEST BOP'S & EQUIPMENT AS PER PROGRAM 250/5000 ANNULAR 250/2500 - CASING 1500 FOR 30 MINS
	8:30 - 9:00	0.50	PRPSPD	14	B	P		INSTALL WEAR BUSHING
	9:00 - 11:00	2.00	PRPSPD	15	A	P		INSTALL SMITH BEARING ASSY, TEST MI SWACO PRESSURE CONTROL EQUIPMENT
	11:00 - 12:00	1.00	PRPSPD	23		P		PRE SPUD INSPECTION AND MEETING
	12:00 - 12:30	0.50	PRPSPD	07	A	P		SERVICE RIG
	12:30 - 14:00	1.50	PRPSPD	06	A	P		PICK UP & MAKE UP DIRECTIONAL BHA # 1 WITH WEATHERFORD SCRIBE ,ORIENTATE & TEST SAME
	14:00 - 16:00	2.00	PRPSPD	06	A	P		TIH TO 2,447' TAG CEMENT
	16:00 - 17:30	1.50	PRPSPD	07	B	P		LEVEL DERRICK & INSTALL ROTATING RUBBER
	17:30 - 19:00	1.50	DRLPRC	02	F	P		DRILL CEMENT & SHOE TRACK FROM 2,447' TO 2,569' CLEAN OUT RAT HOLE TO 2,600'

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 7/19/2012

End Date: 10/23/2012

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	19:00 - 0:00	5.00	DRLPRC	02	B	P		DRILL /SLIDE / SURVEY/ F/ 2,600 - 3,470' = 870' @174 FPH WOB 18,000-24,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESSURE ON/OFF BTM 2,000 /1,700 TORQUE ON/OFF BTM 6,000/ 3,000 PICK UP WT 115,000 SLACK OFF WT 95,000 ROT WT 100,000 SLIDE 74' IN 60 MIN 8.55 % OF FOOTAGE DRILLED, 20 %OF HRS DRILLED MUD WT 8.4 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF LINE
10/20/2012	0:00 - 6:00	6.00	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 3,470' - 4,601' = 1131' @ 188.5 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,150 /1,750 TORQUE ON/OFF BTM 7,000/ 5,000 PICK UP WT 130,000 SLACK OFF WT 105,000 ROT WT 117,000 SLIDE 44' IN 45MIN 4.23 % OF FOOTAGE DRILLED, 12.5%OF HRS DRILLED MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF LINE
	6:00 - 15:30	9.50	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 4,601' - 5,831' = 1,230' @ 129.47FPH WOB 18,000-24,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,100 /1,830 TORQUE ON/OFF BTM 12,000/ 10,000 PICK UP WT 162,000 SLACK OFF WT 120,000 ROT WT 140,000 SLIDE 49' IN 30 MIN 3.46 % OF FOOTAGE DRILLED, 4.76 %OF HRS DRILLED MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER 30 BBL FLUID LOSS SWACO OFF LINE
	15:30 - 16:00	0.50	DRLPRV	07	A	P		SERVICE RIG @ 5,831'

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 7/19/2012

End Date: 10/23/2012

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:00 - 0:00	8.00	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 5,831' - 6,800' = 969' @ 121.13 FPH WOB 20,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,100 /1,830 TORQUE ON/OFF BTM 12,000/ 10,000 PICK UP WT 190,000 SLACK OFF WT 130,000 ROT WT 154,000 SLIDE 26' IN 35 MIN 2.88 % OF FOOTAGE DRILLED, 7.29 %OF HRS DRILLED MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF LINE 100 BBL LOSS
10/21/2012	0:00 - 6:00	6.00	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 6,800' - 7,436' = 636' @ 106 FPH WOB 20,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,100 /1,830 TORQUE ON/OFF BTM 12,000/ 10,000 PICK UP WT 190,000 SLACK OFF WT 130,000 ROT WT 154,000 SLIDE 10' IN 35 MIN 1.57 % OF FOOTAGE DRILLED, 9.72 %OF HRS DRILLED MUD WT 8.5 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF LINE 120 BBL LOSS

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE Spud Date: 8/14/2012  
 Project: UTAH-UINTAH Site: MORGAN STATE 921-36A PAD Rig Name No: PROPETRO 11/11, H&P 298/298  
 Event: DRILLING Start Date: 7/19/2012 End Date: 10/23/2012  
 Active Datum: RKB @4,949.00usft (above Mean Sea Level) UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 14:30	8.50	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 7,436' - 8,098' = 662' @ 77.88 FPH WOB 22,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,150 /1,850 TORQUE ON/OFF BTM 16,000/ 15,000 PICK UP WT 216,000 SLACK OFF WT 148,000 ROT WT 176,000 SLIDE 37' IN 105 MIN 2.85 % OF FOOTAGE DRILLED, 12.07%OF HRS DRILLED MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF LINE 100 BBL LOSS
	14:30 - 15:00	0.50	DRLPRV	07	A	P		SERVICE RIG @ 8,098'
	15:00 - 0:00	9.00	DRLPRV	02	B	P		DRILL / SLIDE / SURVEY/ F/ 8,098' - 8,820" = 722' @ 80.22 FPH WOB 22,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESS ON/OFF BTM 2,250 /1,870 TORQUE ON/OFF BTM 18,000/ 15,000 PICK UP WT 226,000 SLACK OFF WT 154,000 ROT WT 186,000 SLIDE 30' IN 110 MIN 3.96 % OF FOOTAGE DRILLED, 20.37%OF HRS DRILLED MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM NOV-D WATER SWACO OFF Line NO FLUID LOSS

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE Spud Date: 8/14/2012  
 Project: UTAH-UINTAH Site: MORGAN STATE 921-36A PAD Rig Name No: PROPETRO 11/11, H&P 298/298  
 Event: DRILLING Start Date: 7/19/2012 End Date: 10/23/2012  
 Active Datum: RKB @4,949.00usft (above Mean Sea Level) UWI: NE/NE/09/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
10/22/2012	0:00 - 8:00	8.00	DRLPRV	02	B	P		DRILL / SURVEY/ F/ 8,820' - 9,446' TD = 626' @ 78.25 FPH WOB 22,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 104 PUMPS 110 SPM=495GPM PUMP PRESS ON/OFF BTM 2,750 /2400 TORQUE ON/OFF BTM 13,000/ 12,000 PICK UP WT 220,000 SLACK OFF WT 166,000 ROT WT 191,000 MUD WT 8.6 VIS 27, PUMPING 5-10 BBL SWEEPS EVERY STAND,W/ 3-4% LCM SWACO OFF LINE DID NOT USE ON THIS WELL DISPLACE WITH 10.5 PPG 10% LCM & BRING MUD WT TO 11.2 PPG NO FLUID LOSS
	8:00 - 9:00	1.00	DRLPRV	05	C	P		CIRULATE & RAISE MUD WT TO 11.3 PPG
	9:00 - 10:30	1.50	DRLPRV	06	E	P		WPER TRIP FROM 9,446' TO 8,400' - 10 STDS WITH NO PROBLEMS, 4' OF FILL
	10:30 - 13:00	2.50	DRLPRV	05	A	P		CIRCULATE & RAISE MUD WT TO 11.5 PPG 2 TENTHS MUD CUT ON BTM'S UP 10' TO 15' FLARE
	13:00 - 19:00	6.00	DRLPRV	06	A	P		SPOT 90 BBL 12.5 PPG WITH 10% LCM ON BOTTOM, FLOW CHECK WELL STATIC, TOOH FROM 9,446' TO BIT WITH NO PROBLEMS
	19:00 - 20:00	1.00	DRLPRV	14	B	P		PULL WEAR BUSHING
	20:00 - 21:00	1.00	CSGPRO	12	A	P		PJSM, CHANGE OUT BAILS RU FRANKS CASING EQUIPMENT
	21:00 - 0:00	3.00	CSGPRO	12	C	P		RUN 4 1/2" PRODUCTION CASING TO 3,700'
10/23/2012	0:00 - 4:30	4.50	CSGPRO	12	C	P		CONTINUE TO RUN 4 1/2" PRODUCTION CASING FROM 3,700' TO 9,427' / SHOE @ 9,427.43 / FLOAT COLLAR @ 9,404.62 / MVerde Marker @ 7,338' / X-O @ 5,020' NO PROBLEMS, HOLE IN GOOD SHAPE, TOTAL JTS RAN 215
	4:30 - 6:00	1.50	CSGPRO	05	A	P		CIRC & CONDITION MUD @ 9,427' , MEANWHILE RIG DOWN FRANKS CASING EQUIPMENT & HOLD PJSM WITH BJ CEMENTERS - NO LOSSES, HOLE IN GOOD SHAPE

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 7/19/2012

End Date: 10/23/2012

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 9:00	3.00	CSGPRO	12	E	P		INSTALL BJ CMT HEAD , TEST PUMP & LINES TO 4,800 PSI , DROP BOTTOM PLUG PUMP 25 BBLS FW PUMP 450 SKS LEAD CEMENT @ 12.0 PPG,(181 BBLS) (PREM LITE II + .025 pps CELLO FLAKE + 5 pps KOL SEAL + .05 lb/sx STATIC FREE + 6% bwoc BENTONITE + 0.4 % R-3 +0.2%bwoc FL-52 +.6% Sodaum Metasilicate / (10.44 gal/sx, 2.26 yield) + 1,102 SX TAIL @ 14.3 ppg(261 BBLS)+ (CLS G 50/50 POZ + 10% SALT + .005lbs/sx STATIC FREE +1.2%SMS + .09% R3 + .002 GPS FP-6L + 2% BENTONITE +0.5%EC-1+ 59.1% FW / (5.94 gal/sx, 1.33 yield) WASH PUMP & LINES DROP TOP PLUG & DISPLACE W/ 146 BBLS H2O + ADDITIVES / PLUG DOWN @08:28 HOURS / FLOATS HELD W/ 1.5 BBLS H2O RETURNED TO INVENTORY// GOOD LIFT PRESSURE @ 2570PSI BUMP PRESSURE @3,100 / LOST 10 BBLS RETURN BETWEEN 100 BBL & 110 BBL INTO DISPLACEMENT THEN REGAIN FULL RETURNS , NO CEMENT TO SURFACE /TOP OF TAIL CEMENT CALCULATED @ 4,100' / RIG DOWN BJ
	9:00 - 11:30	2.50	CSGPRO	14	B	P		FLUSH THROUGH BOP'S & EQUIPMENT, SET PACK OFF , LD RUNNING TOOL & CHANGE OUT BAILS / CLEAN PITS
	11:30 - 12:00	0.50	CSGPRO	14	A	P		NIPPLE DOWN BOP'S & EQUIPMENT / RELEASE RIG @ 12:00 10/23/12

## 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	MORGAN STATE 921-36H1BS BLUE	Wellbore No.	OH
Well Name	MORGAN STATE 921-36H1BS	Wellbore Name	MORGAN STATE 921-36H1BS
Report No.	1	Report Date	1/31/2013
Project	UTAH-UINTAH	Site	MORGAN STATE 921-36A PAD
Rig Name/No.		Event	COMPLETION
Start Date	1/31/2013	End Date	2/20/2013
Spud Date	8/14/2012	Active Datum	RKB @4,949.00usft (above Mean Sea Level)
UWI	NE/NE/O/9/S/21/E/36/O/O/26/PM/N/679/E/O/706/O/O		

### 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	5,956.0 (usft)-9,300.0 (usft)	Start Date/Time	2/4/2013 12:00AM
No. of Intervals	88	End Date/Time	2/4/2013 12:00AM
Total Shots	288	Net Perforation Interval	92.00 (usft)
Avg Shot Density	3.13 (shot/ft)	Final Surface Pressure	
		Final Press Date	

## 2 Intervals

### 2.1 Perforated Interval

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diameter r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	WASATCH/			5,956.0	5,958.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr. Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	WASATCH/			5,962.0	5,964.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			5,978.0	5,980.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			5,988.0	5,990.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,282.0	6,283.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,289.0	6,290.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,319.0	6,320.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,335.0	6,336.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,445.0	6,446.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,499.0	6,500.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,639.0	6,640.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,652.0	6,653.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,685.0	6,686.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,698.0	6,699.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,731.0	6,732.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,754.0	6,755.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,926.0	6,927.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			6,939.0	6,940.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,024.0	7,025.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,041.0	7,042.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,067.0	7,068.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,192.0	7,193.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	WASATCH/			7,211.0	7,212.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,232.0	7,233.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,243.0	7,244.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	WASATCH/			7,254.0	7,255.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,306.0	7,307.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,330.0	7,331.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,364.0	7,365.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,418.0	7,419.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,443.0	7,444.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,500.0	7,501.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,520.0	7,521.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,539.0	7,540.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,583.0	7,584.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,620.0	7,621.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,665.0	7,666.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,679.0	7,680.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,690.0	7,691.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,711.0	7,712.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,721.0	7,722.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,747.0	7,748.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,802.0	7,803.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	MESAVERDE/			7,863.0	7,864.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,946.0	7,947.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			7,984.0	7,985.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,028.0	8,029.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,048.0	8,049.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,086.0	8,087.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,110.0	8,111.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,155.0	8,156.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,168.0	8,169.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,177.0	8,178.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,262.0	8,263.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,269.0	8,270.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,289.0	8,290.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,298.0	8,299.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,314.0	8,315.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,359.0	8,360.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,381.0	8,382.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,434.0	8,435.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,443.0	8,444.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,457.0	8,458.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,506.0	8,507.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

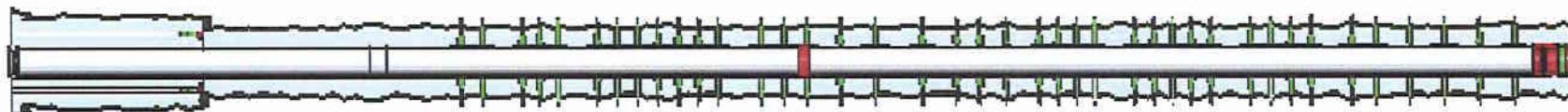
Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	MESAVERDE/			8,519.0	8,520.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,531.0	8,532.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,569.0	8,570.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,587.0	8,588.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,735.0	8,736.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,759.0	8,760.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,770.0	8,771.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,786.0	8,787.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,808.0	8,809.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,826.0	8,827.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,859.0	8,860.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,891.0	8,892.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,900.0	8,901.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,984.0	8,985.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			8,999.0	9,000.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,016.0	9,017.0	4.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,057.0	9,058.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,066.0	9,067.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,079.0	9,080.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,128.0	9,129.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,184.0	9,185.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
2/4/2013 12:00AM	MESAVERDE/			9,273.0	9,274.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,290.0	9,291.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
2/4/2013 12:00AM	MESAVERDE/			9,299.0	9,300.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

3 Plots

3.1 Wellbore Schematic



Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH\_MORGAN STATE 921-36A PAD  
 Well: MORGAN STATE 921-36H1BS  
 Wellbore: MORGAN STATE 921-36H1BS  
 Section:  
 SHL:  
 Design: MORGAN STATE 921-36H1BS (wp01)  
 Latitude: 39.997907  
 Longitude: -109.492481  
 GL: 4923.00  
 KB: 16'RKB+4923'GL @ 4938.00ft

FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
1225.00	1229.76	GREEN RIVER
1567.00	1582.62	BIRDS NEST
2026.00	2069.15	MAHOGANY MARKER
4511.00	4613.89	WASATCH
5111.00	5213.90	INTERCEPT
7186.00	7288.93	MESEVERDE
9344.00	9446.96	SEGO

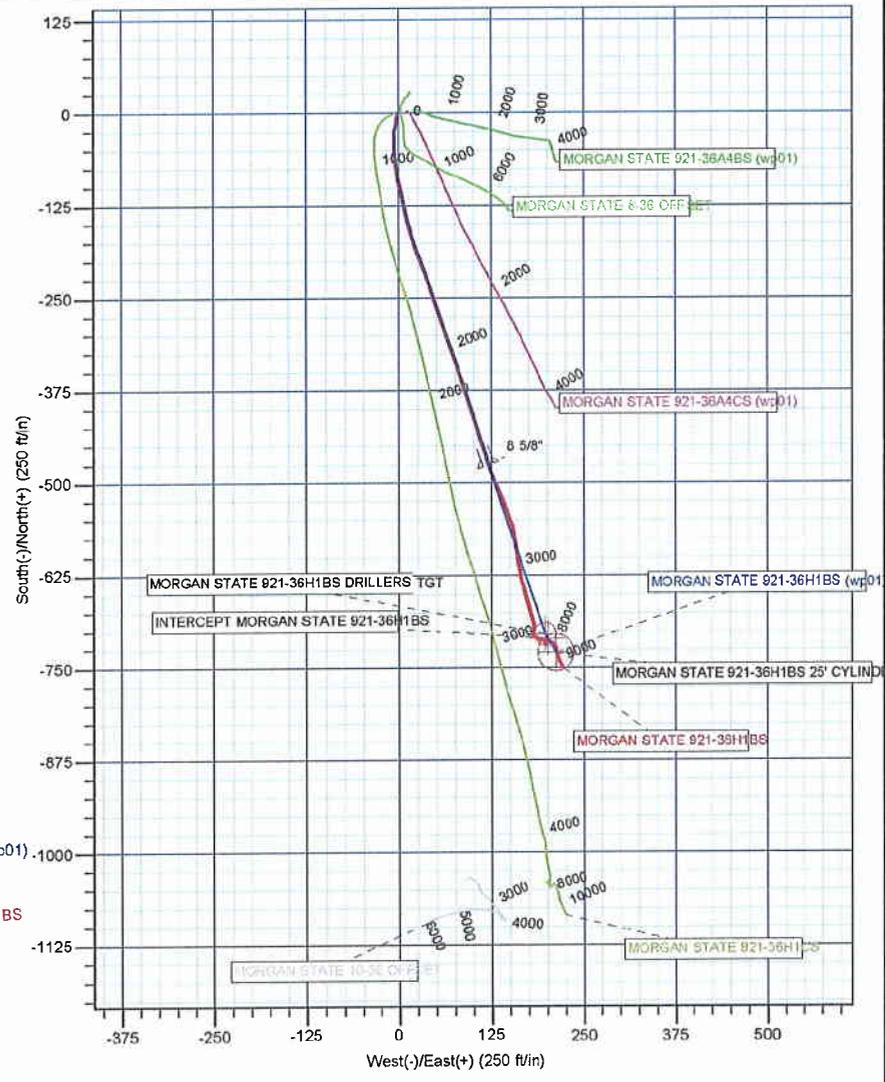
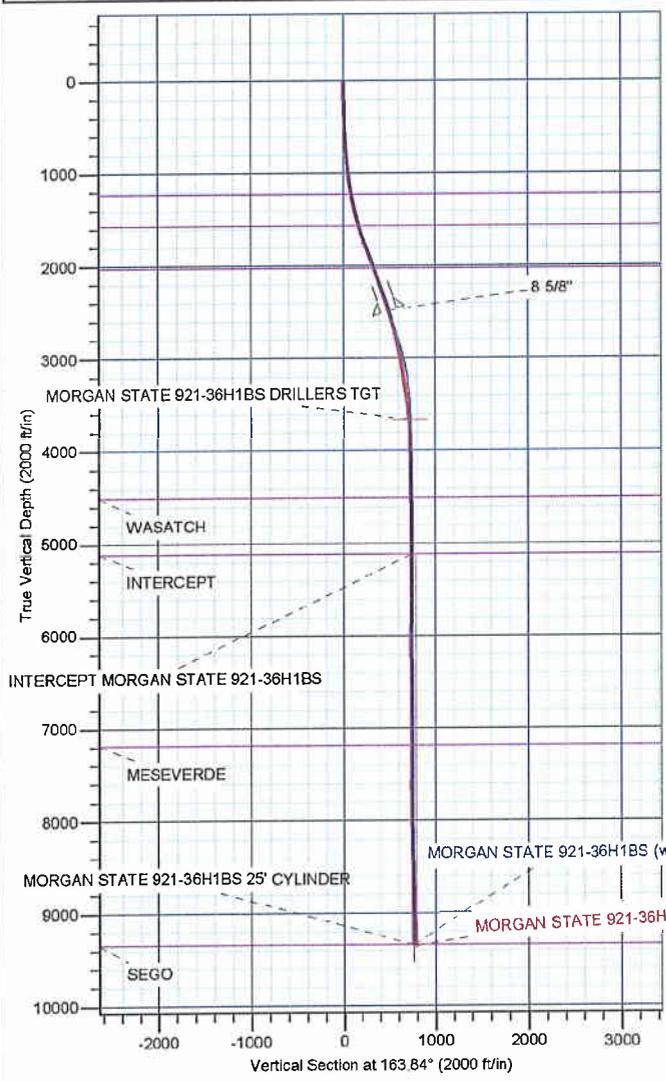
WELL DETAILS: MORGAN STATE 921-36H1BS					
+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	14528852.89	2062631.34	39.997907	-109.492481
					Slot

CASING DETAILS			
TVD	MD	Name	Size
2482.29	2554.00	8 5/8"	8-5/8

Azimuths to True North  
 Magnetic North: 10.90°  
 Magnetic Field  
 Strength: 52199.2snT  
 Dip Angle: 65.83°  
 Date: 10/5/2012  
 Model: IGRF2010

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
MORGAN STATE 921-36H1BS DRILLERS TGT	3665.50	-704.15	196.22	14528152.16	2062839.44	39.995974	-109.491781	Circle (Radius: 15.00)
INTERCEPT MORGAN STATE 921-36H1BS	5111.00	-710.35	199.94	14528146.03	2062843.27	39.995957	-109.491767	Point
MORGAN STATE 921-36H1BS 25' CYLINDER	9344.00	-729.15	211.22	14528127.42	2062854.86	39.995905	-109.491727	Circle (Radius: 25.00)

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
2533.00	18.29	162.27	2462.38	-469.53	118.34	0.00	0.00	483.92	
2553.48	18.65	161.63	2481.80	-475.70	120.35	2.00	-30.01	490.40	
2836.09	18.65	161.63	2749.58	-561.45	148.83	0.00	0.00	580.69	
3768.38	0.00	0.00	3665.50	-704.15	196.22	2.00	180.00	730.94	
3867.28	0.30	149.03	3764.40	-704.37	196.35	0.30	149.03	731.19	
9446.96	0.30	149.03	9344.00	-729.15	211.22	0.00	0.00	759.12	



**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE		Spud Date: 8/14/2012	
Project: UTAH-UINTAH	Site: MORGAN STATE 921-36A PAD	Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3	
Event: COMPLETION	Start Date: 1/31/2013	End Date: 2/20/2013	
Active Datum: RKB @4,949.00usft (above Mean Sea Level)	UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/14/2012	-							
8/15/2012	-							
1/31/2013	11:00 - 12:00	1.00	SUBSPR	33	C	P		FILL SURFACE CSG. MIRU CAMERON QUICK TEST. 1ST PSI TEST T/ 7000 PSI. HELD FOR 15 MIN LOST 41 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI.  PRESSURE TEST 8 5/8 X 4 1/2 TO 603 PSI HELD FOR 5 MIN GAINED +19 PSI, BLED PSI OFF, REINSTALLED POP OFF SWFND ED GUDAC
2/1/2013	7:00 - 12:00	5.00	SUBSPR	37		P		ED GUDAC
2/4/2013	6:45 - 7:00	0.25	FRAC	48		P		HSM, HIGH PRESSURE LINES & OVER HEAD LOADS
	7:00 - 9:00	2.00	FRAC	46	E	Z		CHANGE STARTER ON BLENDER DECK

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 1/31/2013

End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
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9:00 - 17:30 8.50 FRAC 36 B P

PRESSURE TEST SURFACE LINES TO 9446# W/ NO MAJOR LEAKS,BLEED PRESSURE OFF, PERF & FRAC FOLLOWING WELL AS PER DESIGN W/ 30/50 MESH SAND & SLK WTR.  
ALL CBP'S ARE HALIBURTON 8K CBP'S.  
REFER TO STIM PJR FOR FLUID, SAND AND CHEMICAL VOLUME PUM'D

FRAC STG #1] WHP=1,422#, BRK DN  
PERFS=3,172#, @=4.7 BPM, INJ RT=49.9, INJ PSI=4,638#, INITIAL ISIP=2,524#, INITIAL FG=.71, FINAL ISIP=2,855#, FINAL FG=.75, AVERAGE RATE=51.6, AVERAGE PRESSURE=4,996#, MAX RATE=52.6, MAX PRESSURE=5,930#, NET PRESSURE INCREASE=331#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE

PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=9,027', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #2] WHP=2,194#, BRK DN  
PERFS=3,393#, @=4.2 BPM, INJ RT=48, INJ PSI=4,650#, INITIAL ISIP=2,590#, INITIAL FG=.73, FINAL ISIP=3,026#, FINAL FG=.78, AVERAGE RATE=49.7, AVERAGE PRESSURE=5,027#, MAX RATE=50.5, MAX PRESSURE=5,612#, NET PRESSURE INCREASE=436#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE

PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,837', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #3] WHP=2,124#, BRK DN  
PERFS=3,571#, @=5.1 BPM, INJ RT=51.4, INJ PSI=4,695#, INITIAL ISIP=2,679#, INITIAL FG=.75, FINAL ISIP=2,425#, FINAL FG=.72, AVERAGE RATE=51.6, AVERAGE PRESSURE=5,112#, MAX RATE=52.1, MAX PRESSURE=5,684#, NET PRESSURE INCREASE=-254#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE

PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,542', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW

FRAC STG #4] WHP=2,076#, BRK DN  
PERFS=2,369#, @=5.1 BPM, INJ RT=51.3, INJ PSI=4,750#, INITIAL ISIP=2,072#, INITIAL FG=.68, FINAL ISIP=2,515#, FINAL FG=.74, AVERAGE RATE=51.1, AVERAGE PRESSURE=4,982#, MAX

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE Spud Date: 8/14/2012

Project: UTAH-UINTAH	Site: MORGAN STATE 921-36A PAD	Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3
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Event: COMPLETION	Start Date: 1/31/2013	End Date: 2/20/2013
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Active Datum: RKB @4,949.00usft (above Mean Sea Level)	UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
								RATE=51.7, MAX PRESSURE=5,451#, NET PRESSURE INCREASE=441#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE SWFN.
2/5/2013	7:00 - 7:15	0.25	FRAC	48		P		HSM, OPENING / CLOSEING VALVES
	7:15 - 7:45	0.50	FRAC	46	E	Z		BROKE FITTING

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 1/31/2013

End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 17:00	9.75	FRAC	36	B	P		<p>PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=8,345', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #5] WHP=2,001#, BRK DN PERFS=2,905#, @=5.1 BPM, INJ RT=49.3, INJ PSI=4,607#, INITIAL ISIP=2,120#, INITIAL FG=.70, FINAL ISIP=2,658#, FINAL FG=.76, AVERAGE RATE=50.4, AVERAGE PRESSURE=5,027#, MAX RATE=50.9, MAX PRESSURE=5,429#, NET PRESSURE INCREASE=538#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=8,141', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #6] WHP=922#, BRK DN PERFS=2,577#, @=4.1 BPM, INJ RT=51.4, INJ PSI=4,487#, INITIAL ISIP=1,871#, INITIAL FG=.67, FINAL ISIP=2,757#, FINAL FG=.79, AVERAGE RATE=51.3, AVERAGE PRESSURE=5,152#, MAX RATE=52, MAX PRESSURE=5,551#, NET PRESSURE INCREASE=886#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,778', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #7] WHP=700#, BRK DN PERFS=2,464#, @=4.7 BPM, INJ RT=51.8, INJ PSI=4,173#, INITIAL ISIP=1,502#, INITIAL FG=.63, FINAL ISIP=2,368#, FINAL FG=.75, AVERAGE RATE=51.7, AVERAGE PRESSURE=4,376#, MAX RATE=52.3, MAX PRESSURE=5,091#, NET PRESSURE INCREASE=866#, CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,570', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #8] WHP=1,508#, BRK DN PERFS=1,761#, @=4.7 BPM, INJ RT=51.5, INJ PSI=3,646#, INITIAL ISIP=1,555#, INITIAL FG=.65, FINAL ISIP=2,000#, FINAL FG=.71, AVERAGE RATE=51.4, AVERAGE PRESSURE=4,070#, MAX RATE=51.7, MAX PRESSURE=4,831#, NET PRESSURE INCREASE=446#, 23/24 96% CALC PERFS OPEN. X OVER TO WIRE LINE</p>

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

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 1/31/2013

End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
2/6/2013	6:30 - 6:45	0.25	FRAC	48		P		PERF STG #9] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7285', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW SWFN. HSM, OVER HEAD LOADS / RIGGING DOWN

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE Spud Date: 8/14/2012  
 Project: UTAH-UINTAH Site: MORGAN STATE 921-36A PAD Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3  
 Event: COMPLETION Start Date: 1/31/2013 End Date: 2/20/2013  
 Active Datum: RKB @4,949.00usft (above Mean Sea Level) UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:45 - 14:00	7.25	FRAC	36	B	P		<p>FRAC STG #9] WHP=1,072#, BRK DN PERFS=2,644#, @=5.1 BPM, INJ RT=51.5, INJ PSI=4,902#, INITIAL ISIP=1,765#, INITIAL FG=.69, FINAL ISIP=2,586#, FINAL FG=.80, AVERAGE RATE=51.5, AVERAGE PRESSURE=5,064#, MAX RATE=52.1, MAX PRESSURE=5,615#, NET PRESSURE INCREASE=821#, 19/24 79% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #10] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=6,970', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #10] WHP=257#, BRK DN PERFS=1,867#, @=4.8 BPM, INJ RT=51.3, INJ PSI=4,084#, INITIAL ISIP=1,232#, INITIAL FG=.62, FINAL ISIP=2,013#, FINAL FG=.74, AVERAGE RATE=51.2, AVERAGE PRESSURE=4,326#, MAX RATE=51.7, MAX PRESSURE=5,149#, NET PRESSURE INCREASE=781#, 20/24 83% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #11] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=6,530', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #11] WHP=560#, BRK DN PERFS=2,289#, @=4.7 BPM, INJ RT=51.8, INJ PSI=3,584#, INITIAL ISIP=999#, INITIAL FG=.60, FINAL ISIP=1,543#, FINAL FG=.68, AVERAGE RATE=51.7, AVERAGE PRESSURE=3,752#, MAX RATE=52.3, MAX PRESSURE=4,363#, NET PRESSURE INCREASE=544#, 22/24 92% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #12] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=6,020', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #12] WHP=279#, BRK DN PERFS=1,440#, @=4.9 BPM, INJ RT=52.1, INJ PSI=3,128#, INITIAL ISIP=884#, INITIAL FG=.59, FINAL ISIP=#, FINAL FG=#, AVERAGE RATE=#, AVERAGE PRESSURE=#, MAX RATE=#, MAX PRESSURE=#, NET PRESSURE INCREASE=#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=5,906'</p> <p>TOTAL FLUID PUMP'D=13,079 TOTAL SAND PUMP'D=316,517#</p>

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

Well: MORGAN STATE 921-36H1BS BLUE Spud Date: 8/14/2012

Project: UTAH-UINTAH Site: MORGAN STATE 921-36A PAD Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3

Event: COMPLETION Start Date: 1/31/2013 End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level) UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
2/19/2013	7:00 - 7:30	0.50	COMP	48		P		HSM, REVIEW PU TBG F/ TRAILER.
	7:30 - 8:30	1.00	COMP	30	A	P		RD F/ 921-36A4CS, MIRU.
	8:30 - 9:30	1.00	COMP	30	F	P		ND WH, NU 10K BOP'S, RU FLOOR & TBG EQUIPMENT.
	9:30 - 15:00	5.50	COMP	31	I	P		PU 3-7/8 BIT, POBS W/ 1.875 XN, RIH 186 JTS. 2-3/8" L-80 TBG, TAG FILL @ 5886' LD 3 JTS. NU PWR SWVL, SWI, SDFN.
2/20/2013	7:00 - 7:30	0.50	COMP	48		P		HSM, REVIEW D/O PLUGS, PU TBG F/ TRAILER

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 1/31/2013

End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
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7:30 - 17:00

9.50

COMP

44

C

P

PU 3 JTS. TAG FILL @ 5886', BRK CIRC, PRESSURE TEST BOPS TO 3000 PSI FOR 15 MINS, HELD.

PLUG # 1 C/O 20' SAND, TAG CBP @ 5906', D/O HAL 8K CBP IN 5 MINS, NO INCREASE IN PSI.  
 PLUG # 2 C/O 25' SAND, TAG CBP @ 6020', D/O HAL 8K CBP IN 7 MINS, W/ 200 PSI. INCREASE.  
 PLUG # 3 C/O 50' SAND, TAG CBP @ 6530', D/O HAL 8K CBP IN 5 MINS, W/ 200 PSI. INCREASE.  
 PLUG # 4 C/O 80' SAND, TAG CBP @ 6970', D/O HAL 8K CBP IN 5 MINS, W/ 400 PSI. INCREASE.  
 PLUG # 5 C/O 20' SAND, TAG CBP @ 7285', D/O HAL 8K CBP IN 5 MINS, W/ 300 PSI. INCREASE.  
 PLUG # 6 C/O 25' SAND, TAG CBP @ 7570', D/O HAL 8K CBP IN 5 MINS, W/ NO INCREASE.  
 PLUG # 7 C/O 25' SAND, TAG CBP @ 7778', D/O HAL 8K CBP IN 7 MINS, W/ 350 PSI. INCREASE.  
 PLUG # 8 C/O 30' SAND, TAG CBP @ 8141', D/O HAL 8K CBP IN 5 MINS, W/ 350 PSI. INCREASE.  
 PLUG # 9 C/O 25' SAND, TAG CBP @ 8345', D/O HAL 8K CBP IN 6 MINS, W/ 450 PSI. INCREASE.  
 PLUG # 10 C/O 25' SAND, TAG CBP @ 8542', D/O HAL 8K CBP IN 6 MINS, W/ 250 PSI. INCREASE.  
 PLUG # 11 C/O 25' SAND, TAG CBP @ 8837', D/O HAL 8K CBP IN 7 MINS, W/ 300 PSI. INCREASE.  
 PLUG # 12 C/O 20' SAND, TAG CBP @ 9027', D/O HAL 8K CBP IN 12 MINS, W/ 450 PSI. INCREASE.  
 RIH TBG & TAG FILL @ 9387' C/O (18') TO 9405' PBTD, CIRC WELL CLEAN, RD PWR SWWL, POOH & LD 36 JTS. 2-3/8 L-80 TBG ON TRAILER, LAND TBG W/ 278 JTS. 2-3/8 L-80 TBG, EOT @ 8835.44', RD FLOOR & TBG EQUIPMENT, ND BOP'S, NU WH, DROP BALL, WAITED 20 MINS, PUMP OFF-BIT W/ 1950 PSI. PRESSURE TEST FLOWLINES BETWEEN HAL 9000 & WELLHEAD TO 3000 PSI. DRAIN LINES & PUMP, MOVE TO 921-36H1CS, RDMO A.M. TURN WELL OVER TO FBC.

TBG DETAIL:

KB-----  
 --26'  
 HANGER-----  
 -.83  
 278 JTS. 2-3/8" L-80 TBG-----  
 -8806.41'  
 POBS 1.875 XN-----  
 -2.20'  
 EOT @-----  
 -8835.44'  
 TOP PERF @ 5956'  
 BTM PERF @ 9300'  
 PBTD @ 9405'  
 TWTR. 13,079 BBL.S.  
 TWR. 2,240 BBL.S.

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36H1BS BLUE

Spud Date: 8/14/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36A PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 1/31/2013

End Date: 2/20/2013

Active Datum: RKB @4,949.00usft (above Mean Sea Level)

UWI: NE/NE/0/9/S/21/E/36/0/0/26/PM/N/679/E/0/706/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	17:00 - 17:00	0.00	COMP	50				TWLTR. 10,839 BBLs. DELIVERED 314 JTS. 2-3/8" L-80 TBG. USED 278 JTS. 2-3/8" L-80 TBG. RETURN 36 JTS. 2-3/8" L-80 TBG. LAT: 39.997872 LONG: 109.493167 WELL TURNED TO SALES @ 1630 HR ON 2/20/2013. 4000 MCFD, 1560 BWPD, FCP 2300#, FTP 2300#, 20/364" CK.

# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N  
UINTAH\_MORGAN STATE 921-36A PAD  
MORGAN STATE 921-36H1BS**

**MORGAN STATE 921-36H1BS**

**Design: MORGAN STATE 921-36H1BS**

## **Standard Survey Report**

**26 October, 2012**

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Site:</b>	UINTAH_MORGAN STATE 921-36A PAD	<b>MD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36H1BS	<b>Database:</b>	edmp

<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> UINTAH_MORGAN STATE 921-36A PAD			
<b>Site Position:</b>		<b>Northing:</b>	14,528,850.91 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,062,621.57 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.997902
		<b>Longitude:</b>	-109.492516
		<b>Grid Convergence:</b>	0.97 °

<b>Well</b> MORGAN STATE 921-36H1BS			
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 14,528,852.89 usft
	+E/-W	0.00 ft	<b>Easting:</b> 2,062,631.34 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	39.997907
		<b>Longitude:</b>	-109.492481
		<b>Ground Level:</b>	4,923.00 ft

<b>Wellbore</b> MORGAN STATE 921-36H1BS					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/5/2012	10.90	65.83	52,199

<b>Design</b> MORGAN STATE 921-36H1BS					
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	11.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	16.00	0.00	0.00	163.56	

<b>Survey Program</b> Date 10/26/2012					
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
154.00	2,533.00	Survey #1 (MORGAN STATE 921-36H1BS)	MWD	MWD - STANDARD	
2,658.00	9,446.00	Survey #2 (MORGAN STATE 921-36H1BS)	MWD	MWD - STANDARD	

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)
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00
154.00	0.55	267.29	154.00	-0.03	-0.69	-0.16	0.38	0.38	0.00
184.00	0.61	264.18	184.00	-0.06	-0.99	-0.23	0.23	0.20	-10.37
211.00	0.50	246.51	211.00	-0.12	-1.24	-0.24	0.75	-0.41	-65.44
239.00	0.76	233.76	238.99	-0.28	-1.50	-0.16	1.05	0.93	-45.54
267.00	0.79	203.49	266.99	-0.56	-1.73	0.05	1.45	0.11	-108.11
293.00	1.14	194.88	292.99	-0.98	-1.87	0.41	1.45	1.35	-33.12
322.00	1.49	196.46	321.98	-1.62	-2.05	0.97	1.21	1.21	5.45
350.00	1.93	195.50	349.97	-2.42	-2.28	1.68	1.57	1.57	-3.43
440.00	2.81	190.75	439.89	-6.05	-3.09	4.93	1.00	0.98	-5.28

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Site:</b>	UINTAH_MORGAN STATE 921-36A PAD	<b>MD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36H1BS	<b>Database:</b>	edmp

### 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)
530.00	2.64	187.94	529.79	-10.27	-3.79	8.78	0.24	-0.19	-3.12
620.00	3.43	189.61	619.66	-14.98	-4.53	13.08	0.88	0.88	1.86
710.00	3.87	188.47	709.48	-20.63	-5.42	18.26	0.50	0.49	-1.27
800.00	4.92	185.39	799.21	-27.48	-6.23	24.59	1.20	1.17	-3.42
890.00	5.98	179.94	888.80	-36.01	-6.59	32.67	1.31	1.18	-6.06
980.00	7.39	178.01	978.19	-46.49	-6.38	42.78	1.59	1.57	-2.14
1,070.00	8.53	175.02	1,067.32	-58.92	-5.60	54.92	1.35	1.27	-3.32
1,160.00	9.23	171.68	1,156.24	-72.71	-3.98	68.61	0.97	0.78	-3.71
1,250.00	10.46	169.37	1,244.92	-87.88	-1.43	83.89	1.44	1.37	-2.57
1,340.00	12.49	168.51	1,333.11	-105.45	2.02	101.71	2.26	2.26	-0.96
1,430.00	15.12	167.72	1,420.51	-126.46	6.45	123.12	2.93	2.92	-0.88
1,520.00	16.40	166.15	1,507.12	-150.27	11.99	147.52	1.50	1.42	-1.74
1,610.00	17.32	160.87	1,593.26	-175.26	19.42	173.59	1.98	1.02	-5.87
1,700.00	19.17	160.43	1,678.73	-201.85	28.76	201.73	2.06	2.06	-0.49
1,790.00	20.22	159.99	1,763.46	-230.38	39.04	232.01	1.18	1.17	-0.49
1,880.00	20.49	161.92	1,847.84	-259.97	49.25	263.28	0.80	0.30	2.14
1,970.00	19.26	160.78	1,932.48	-288.96	59.02	293.85	1.43	-1.37	-1.27
2,060.00	19.52	160.34	2,017.38	-317.14	68.97	323.69	0.33	0.29	-0.49
2,150.00	19.87	161.92	2,102.11	-345.84	78.77	353.99	0.71	0.39	1.76
2,240.00	20.49	161.57	2,186.59	-375.32	88.50	385.03	0.70	0.69	-0.39
2,330.00	20.93	161.39	2,270.77	-405.50	98.61	416.83	0.49	0.49	-0.20
2,420.00	19.08	163.50	2,355.34	-434.84	107.92	447.61	2.21	-2.06	2.34
2,510.00	18.47	163.29	2,440.55	-462.60	116.20	476.58	0.68	-0.68	-0.23
2,533.00	18.29	162.27	2,462.38	-469.53	118.34	483.83	1.60	-0.78	-4.43
<b>TIE ON</b>									
2,658.00	16.25	156.43	2,581.74	-504.25	131.31	520.80	2.14	-1.63	-4.67
<b>FIRST MWD SURVEY</b>									
2,753.00	15.88	156.63	2,673.03	-528.36	141.78	546.89	0.39	-0.39	0.21
2,847.00	14.71	162.96	2,763.71	-551.58	150.38	571.59	2.17	-1.24	6.73
2,942.00	11.69	169.81	2,856.19	-572.59	155.62	593.23	3.57	-3.18	7.21
3,036.00	11.81	173.43	2,948.22	-591.52	158.41	612.17	0.79	0.13	3.85
3,131.00	10.25	171.18	3,041.47	-609.53	160.81	630.13	1.70	-1.64	-2.37
3,225.00	9.06	167.93	3,134.13	-625.04	163.64	645.79	1.39	-1.27	-3.46
3,320.00	7.81	163.31	3,228.11	-638.53	167.06	659.71	1.50	-1.32	-4.86
3,414.00	8.06	165.31	3,321.21	-651.03	170.57	672.68	0.40	0.27	2.13
3,509.00	7.31	164.93	3,415.35	-663.30	173.83	685.38	0.79	-0.79	-0.40
3,604.00	6.69	163.18	3,509.64	-674.44	177.00	696.96	0.69	-0.65	-1.84
3,698.00	5.69	164.18	3,603.09	-684.16	179.86	707.09	1.07	-1.06	1.06
3,793.00	4.81	169.06	3,697.70	-692.60	181.90	715.77	1.04	-0.93	5.14
3,888.00	4.69	199.18	3,792.38	-700.18	181.38	722.89	2.60	-0.13	31.71
3,982.00	1.44	188.68	3,886.24	-704.98	179.93	727.08	3.49	-3.46	-11.17
4,077.00	2.69	120.18	3,981.19	-707.28	181.68	729.78	2.68	1.32	-72.11
4,172.00	2.75	117.31	4,076.08	-709.45	185.63	732.98	0.16	0.06	-3.02

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Site:</b>	UINTAH_MORGAN STATE 921-36A PAD	<b>MD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36H1BS	<b>Database:</b>	edmp

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)	
4,266.00	2.56	121.56	4,169.98	-711.58	189.43	736.10	0.29	-0.20	4.52	
4,360.00	1.56	102.56	4,263.92	-712.96	192.46	738.28	1.27	-1.06	-20.21	
4,455.00	1.69	123.18	4,358.88	-714.01	194.90	739.97	0.63	0.14	21.71	
4,549.00	0.00	283.18	4,452.87	-714.77	196.06	741.03	1.80	-1.80	0.00	
4,644.00	0.63	170.81	4,547.86	-715.28	196.14	741.55	0.66	0.66	0.00	
4,739.00	0.75	163.68	4,642.86	-716.39	196.40	742.69	0.16	0.13	-7.51	
4,833.00	0.13	26.93	4,736.86	-716.89	196.62	743.23	0.90	-0.66	-145.48	
4,928.00	0.56	83.18	4,831.85	-716.74	197.13	743.23	0.53	0.45	59.21	
5,022.00	0.44	112.60	4,925.85	-716.82	197.92	743.53	0.30	-0.13	31.30	
5,116.00	0.75	320.56	5,019.85	-716.49	197.86	743.19	1.23	0.33	-161.75	
5,211.00	0.50	314.68	5,114.84	-715.71	197.17	742.26	0.27	-0.26	-6.19	
5,305.00	0.31	339.06	5,208.84	-715.19	196.79	741.64	0.27	-0.20	25.94	
5,400.00	0.31	357.31	5,303.84	-714.69	196.69	741.14	0.10	0.00	19.21	
5,495.00	0.31	320.06	5,398.84	-714.24	196.51	740.65	0.21	0.00	-39.21	
5,589.00	0.31	313.43	5,492.84	-713.87	196.16	740.20	0.04	0.00	-7.05	
5,684.00	0.10	304.28	5,587.83	-713.65	195.91	739.91	0.22	-0.22	-9.63	
5,778.00	0.50	233.81	5,681.83	-713.84	195.51	739.99	0.51	0.43	-74.97	
5,873.00	0.81	21.06	5,776.83	-713.46	195.41	739.59	1.33	0.33	155.00	
5,967.00	0.63	31.93	5,870.82	-712.40	195.93	738.72	0.24	-0.19	11.56	
6,062.00	0.63	68.81	5,965.82	-711.77	196.69	738.33	0.42	0.00	38.82	
6,156.00	0.69	83.31	6,059.81	-711.52	197.73	738.39	0.19	0.06	15.43	
6,250.00	0.69	107.81	6,153.81	-711.62	198.83	738.80	0.31	0.00	26.06	
6,345.00	0.44	103.68	6,248.80	-711.88	199.73	739.31	0.27	-0.26	-4.35	
6,439.00	0.56	121.56	6,342.80	-712.21	200.48	739.83	0.21	0.13	19.02	
6,534.00	0.88	134.31	6,437.79	-712.96	201.39	740.81	0.37	0.34	13.42	
6,628.00	1.13	141.81	6,531.77	-714.20	202.48	742.30	0.30	0.27	7.98	
6,723.00	1.06	290.56	6,626.77	-714.62	202.24	742.64	2.22	-0.07	156.58	
6,817.00	0.56	277.81	6,720.76	-714.26	200.97	741.93	0.56	-0.53	-13.56	
6,912.00	0.44	267.43	6,815.76	-714.21	200.15	741.65	0.16	-0.13	-10.93	
7,006.00	0.63	214.18	6,909.75	-714.65	199.49	741.89	0.54	0.20	-56.65	
7,101.00	0.50	209.68	7,004.75	-715.44	199.00	742.51	0.14	-0.14	-4.74	
7,195.00	0.63	196.68	7,098.74	-716.30	198.64	743.23	0.19	0.14	-13.83	
7,289.00	0.94	171.68	7,192.73	-717.55	198.61	744.43	0.48	0.33	-26.60	
7,384.00	0.25	262.31	7,287.73	-718.35	198.52	745.17	1.03	-0.73	95.40	
7,479.00	1.25	347.68	7,382.72	-717.37	198.09	744.10	1.32	1.05	89.86	
7,573.00	0.94	11.43	7,476.70	-715.61	198.02	742.40	0.58	-0.33	25.27	
7,668.00	0.81	14.56	7,571.69	-714.20	198.35	741.13	0.15	-0.14	3.29	
7,762.00	0.50	57.81	7,665.69	-713.34	198.86	740.45	0.60	-0.33	46.01	
7,857.00	0.88	107.93	7,760.68	-713.34	199.90	740.75	0.71	0.40	52.76	
7,951.00	1.19	126.06	7,854.67	-714.14	201.38	741.93	0.48	0.33	19.29	
8,045.00	1.31	123.81	7,948.64	-715.31	203.06	743.53	0.14	0.13	-2.39	
8,140.00	1.94	107.43	8,043.61	-716.39	205.50	745.26	0.82	0.66	-17.24	
8,234.00	0.50	27.43	8,137.59	-716.51	207.21	745.86	2.04	-1.53	-85.11	
8,329.00	0.75	117.18	8,232.58	-716.42	207.95	745.99	0.95	0.26	94.47	

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36H1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Site:</b>	UINTAH_MORGAN STATE 921-36A PAD	<b>MD Reference:</b>	15'RKB+4923'GL @ 4938.00ft
<b>Well:</b>	MORGAN STATE 921-36H1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36H1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36H1BS	<b>Database:</b>	edmp

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)
8,424.00	0.94	144.43	8,327.57	-717.34	208.96	747.15	0.46	0.20	28.68
8,518.00	1.31	154.06	8,421.55	-718.93	209.88	748.94	0.44	0.39	10.24
8,612.00	1.50	163.93	8,515.53	-721.08	210.69	751.23	0.33	0.20	10.50
8,707.00	2.00	169.93	8,610.48	-723.91	211.32	754.12	0.56	0.53	6.32
8,802.00	2.38	165.68	8,705.41	-727.45	212.10	757.74	0.43	0.40	-4.47
8,896.00	2.25	166.68	8,799.33	-731.14	213.01	761.53	0.14	-0.14	1.06
8,990.00	1.56	168.43	8,893.28	-734.19	213.69	764.65	0.74	-0.73	1.86
9,085.00	2.25	159.31	8,988.23	-737.20	214.61	767.80	0.79	0.73	-9.60
9,180.00	2.31	157.06	9,083.15	-740.71	216.01	771.56	0.11	0.06	-2.37
9,274.00	2.00	150.93	9,177.09	-743.89	217.55	775.04	0.41	-0.33	-6.52
9,394.00	2.80	148.30	9,296.98	-748.21	220.10	779.91	0.67	0.67	-2.19
<b>LAST MWD SURVEY</b>									
9,446.00	2.80	148.30	9,348.92	-750.37	221.44	782.36	0.00	0.00	0.00
<b>PROJECTION TO TD</b>									

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