

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

FORM 3

AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>						1. WELL NAME and NUMBER Morgan State 921-36E1BS				
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT NATURAL BUTTES				
4. TYPE OF WELL Gas Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME				
6. NAME OF OPERATOR KERR-MCGEE OIL & GAS ONSHORE, L.P.						7. OPERATOR PHONE 720 929-6515				
8. ADDRESS OF OPERATOR P.O. Box 173779, Denver, CO, 80217						9. OPERATOR E-MAIL julie.jacobson@anadarko.com				
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) ML 22265			11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>				
13. NAME OF SURFACE OWNER (if box 12 = 'fee')						14. SURFACE OWNER PHONE (if box 12 = 'fee')				
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')						16. SURFACE OWNER E-MAIL (if box 12 = 'fee')				
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			19. SLANT VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
20. LOCATION OF WELL		FOOTAGES		QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN		
LOCATION AT SURFACE		1539 FNL 801 FWL		SWNW	36	9.0 S	21.0 E	S		
Top of Uppermost Producing Zone		1612 FNL 818 FWL		SWNW	36	9.0 S	21.0 E	S		
At Total Depth		1612 FNL 818 FWL		SWNW	36	9.0 S	21.0 E	S		
21. COUNTY UINTAH			22. DISTANCE TO NEAREST LEASE LINE (Feet) 818			23. NUMBER OF ACRES IN DRILLING UNIT 639				
27. ELEVATION - GROUND LEVEL 5010			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 205			26. PROPOSED DEPTH MD: 10608 TVD: 10606				
			28. BOND NUMBER 22013542			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 43-8496				
<b>Hole, Casing, and Cement Information</b>										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	12.25	8.625	0 - 2620	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 - 10608	11.6	HCP-110 LT&C	13.0	Premium Lite High Strength	320	3.38	12.0
							50/50 Poz	1530	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					
NAME Danielle Piernot				TITLE Regulatory Analyst			PHONE 720 929-6156			
SIGNATURE				DATE 12/19/2011			EMAIL danielle.piernot@anadarko.com			
API NUMBER ASSIGNED 43047522770000				APPROVAL   Permit Manager						

**Kerr-McGee Oil & Gas Onshore. L.P.****MORGAN STATE 921-36E1BS**

Surface: 1539 FNL / 801 FWL SWNW  
 BHL: 1612 FNL / 818 FWL SWNW

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	1,382'	
Birds Nest	1,671'	Water
Mahogany	2,173'	Water
Wasatch	4,633'	Gas
Mesaverde	7,331'	Gas
Sego	9,530'	Gas
Castlegate	9,579'	Gas
MN5	10,006'	Gas
TVD =	10,606'	
TD =	10,608'	

- 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 Segoe 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 10606' TVD, approximately equals  
7,000 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 4,715 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 9530' TVD, approximately equals  
6,099 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 3,989 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.

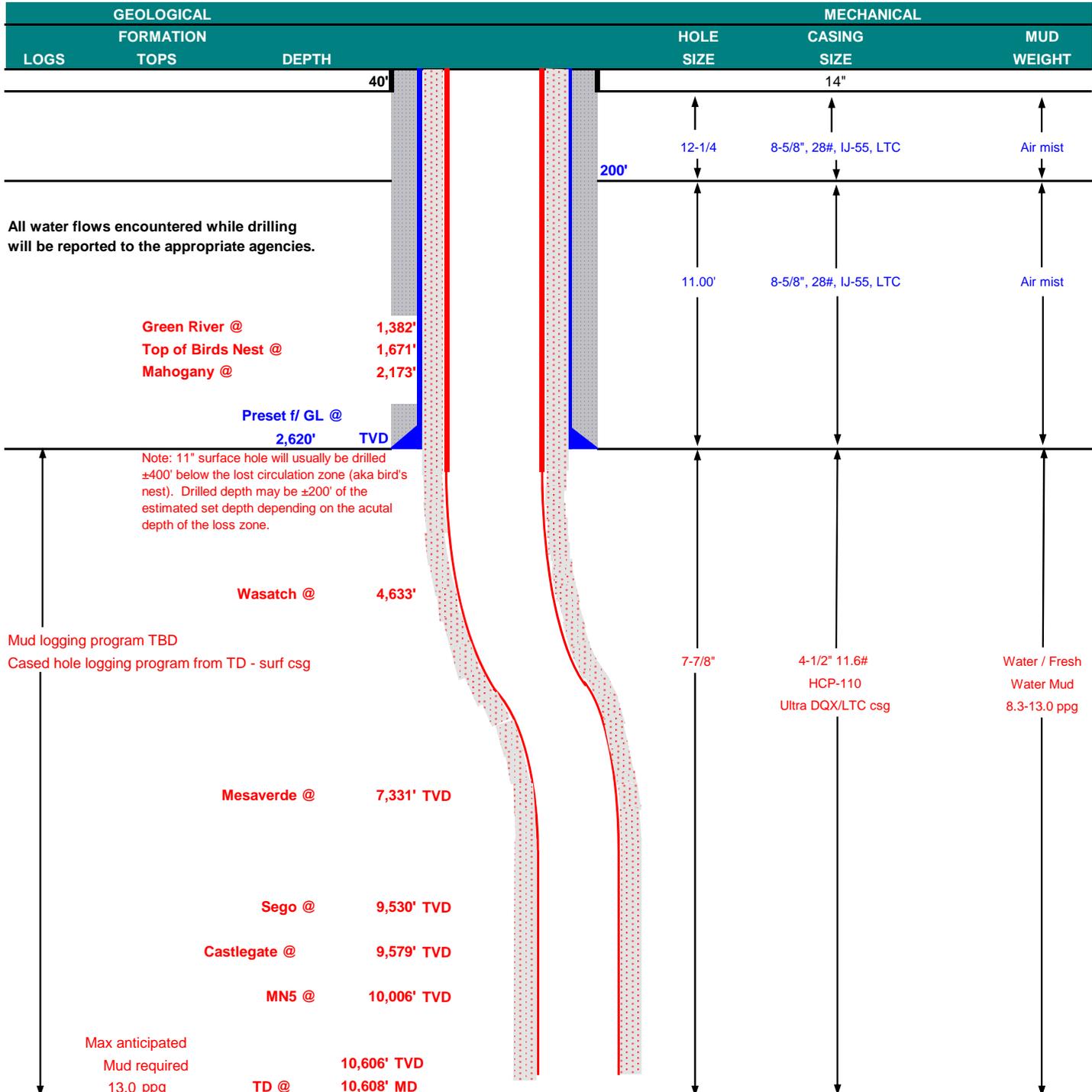
10. **Other Information:**

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 921-36E1BS</b>			TD	10,606' TVD	10,608' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	5,007'
SURFACE LOCATION	SWNW	1539 FNL	801 FWL	Sec 36	T 9S	R 21E	
	Latitude:	39.995554	Longitude:	-109.505934			NAD 27
BTM HOLE LOCATION	SWNW	1612 FNL	818 FWL	Sec 36	T 9S	R 21E	
	Latitude:	39.995353	Longitude:	-109.505873			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 2,620	28.00	IJ-55	LTC	2.05	1.53	5.42	N/A
PRODUCTION	4-1/2"	0	to 5,000	11.60	HCP-110	DQX	1.19	1.21	279,000	367,174
	4-1/2"	5,000	to 10,608'	11.60	HCP-110	LTC	1.19	1.21	5.35	

**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	2,120'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	200	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	4,128'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	320	35%	12.00	3.38
	TAIL	6,480'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,530	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:**

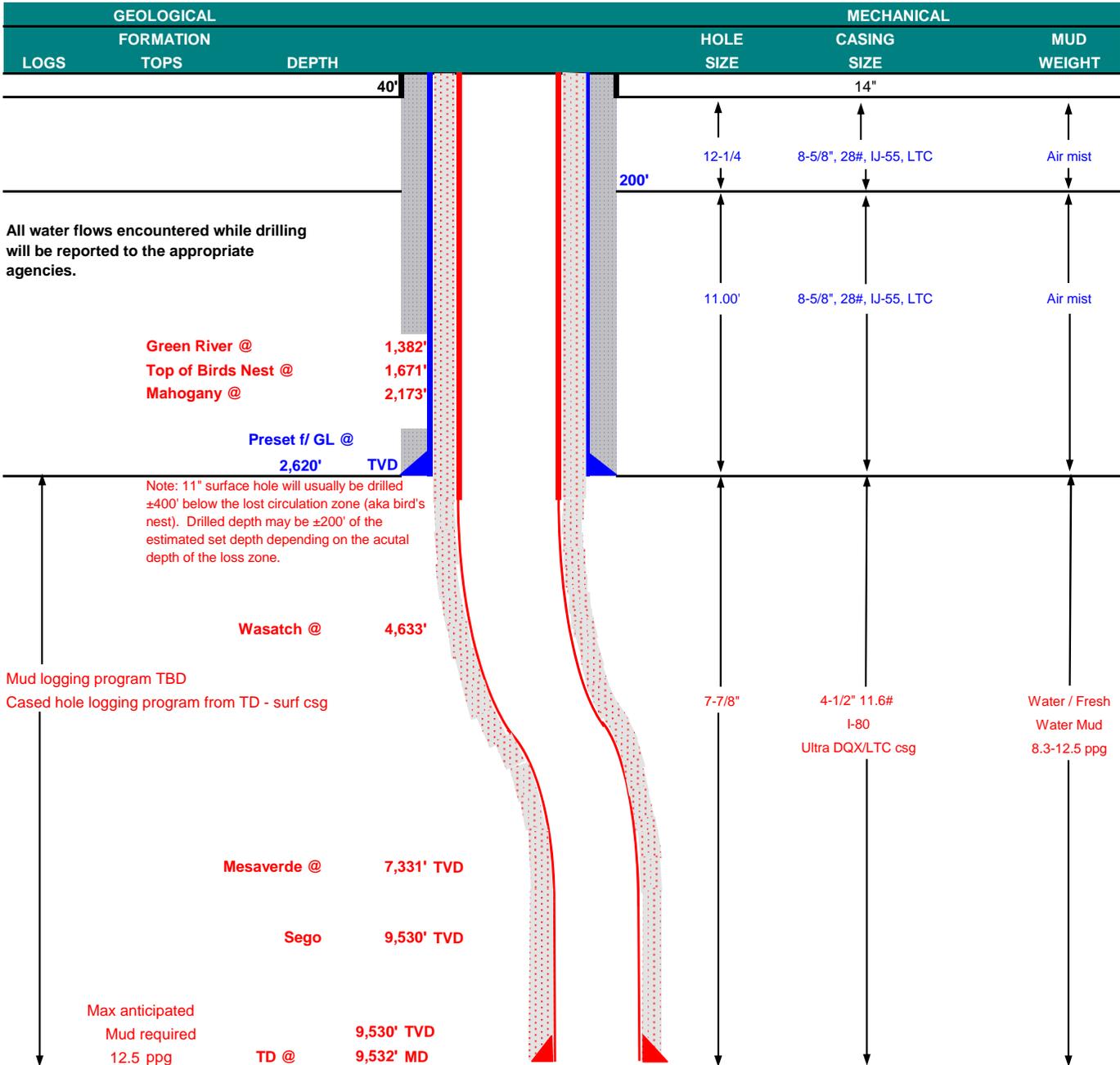
Kenny Gathings / Lovel Young

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 921-36E1BS</b>		TD	9,530'	TVD 9,532' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	SWNW	1539 FNL	801 FWL	Sec 36 T 9S R 21E	FINISHED ELEVATION 5,007'
	Latitude:	39.995554	Longitude:	-109.505934	NAD 27
BTM HOLE LOCATION	SWNW	1612 FNL	818 FWL	Sec 36 T 9S R 21E	
	Latitude:	39.995353	Longitude:	-109.505873	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 2,620	28.00	IJ-55	LTC	2.05	1.53	5.42	N/A	
						7,780	6,350		267,035	
PRODUCTION	4-1/2"	0 to 5,000	11.60	I-80	DQX	1.11	1.03		2.99	
						7,780	6,350	223,000		
	4-1/2"	5,000 to 9,532'	11.60	I-80	LTC	1.11	1.03	5.24		

**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
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE	LEAD	2,120'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	200	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	4,132'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	320	35%	12.00	3.38
	TAIL	5,400'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,280	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**

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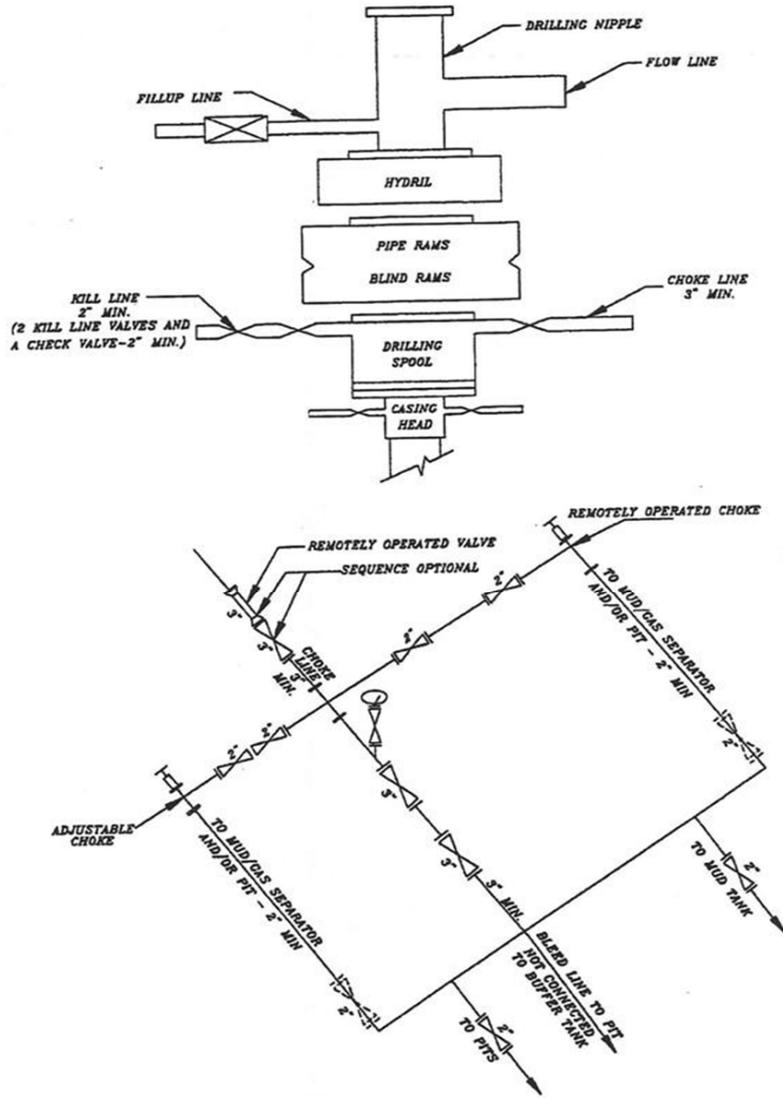
DRILLING ENGINEER: \_\_\_\_\_  
Nick Spence / Danny Showers / Chad Loesel

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

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

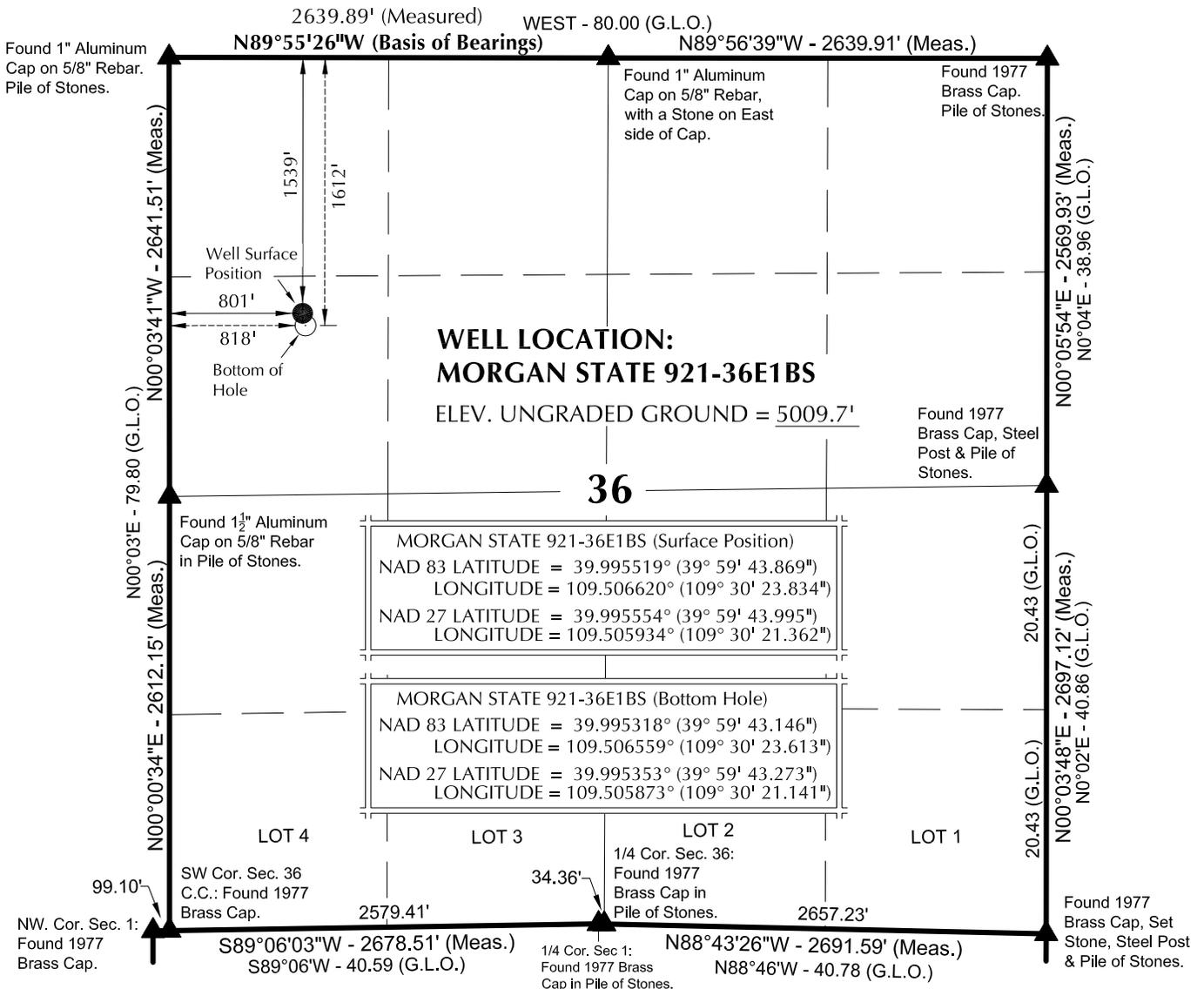
DATE: \_\_\_\_\_

**EXHIBIT A**  
**MORGAN STATE 921-36E1BS**



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

# T9S, R21E, S.L.B.&M.



**WELL LOCATION:  
MORGAN STATE 921-36E1BS**

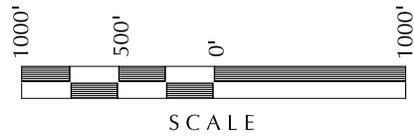
ELEV. UNGRADED GROUND = 5009.7'

**MORGAN STATE 921-36E1BS (Surface Position)**  
 NAD 83 LATITUDE = 39.995519° (39° 59' 43.869")  
 LONGITUDE = 109.506620° (109° 30' 23.834")  
 NAD 27 LATITUDE = 39.995554° (39° 59' 43.995")  
 LONGITUDE = 109.505934° (109° 30' 21.362")

**MORGAN STATE 921-36E1BS (Bottom Hole)**  
 NAD 83 LATITUDE = 39.995318° (39° 59' 43.146")  
 LONGITUDE = 109.506559° (109° 30' 23.613")  
 NAD 27 LATITUDE = 39.995353° (39° 59' 43.273")  
 LONGITUDE = 109.505873° (109° 30' 21.141")

**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
- 3. The Bottom of hole bears S13°11'14"E 75.10' from the Surface Position.
- 4. Bearings are based on Global Positioning Satellite observations.
- 5. Basis of elevation is Tri-Sta "Two Water" located in the NW ¼ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**SURVEYOR'S CERTIFICATE**

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

11-14-11  
 No. 6028691  
 JOHN R. LAUGH  
 PROFESSIONAL LAND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH

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

**WELL PAD: MORGAN STATE 921-36E**

**MORGAN STATE 921-36E1BS**  
**WELL PLAT**  
**1612' FNL, 818' FWL (Bottom Hole)**  
**SW ¼ NW ¼ OF SECTION 36, T9S, R21E,**  
**S.L.B.&M., UTAH COUNTY, UTAH.**

**609**

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

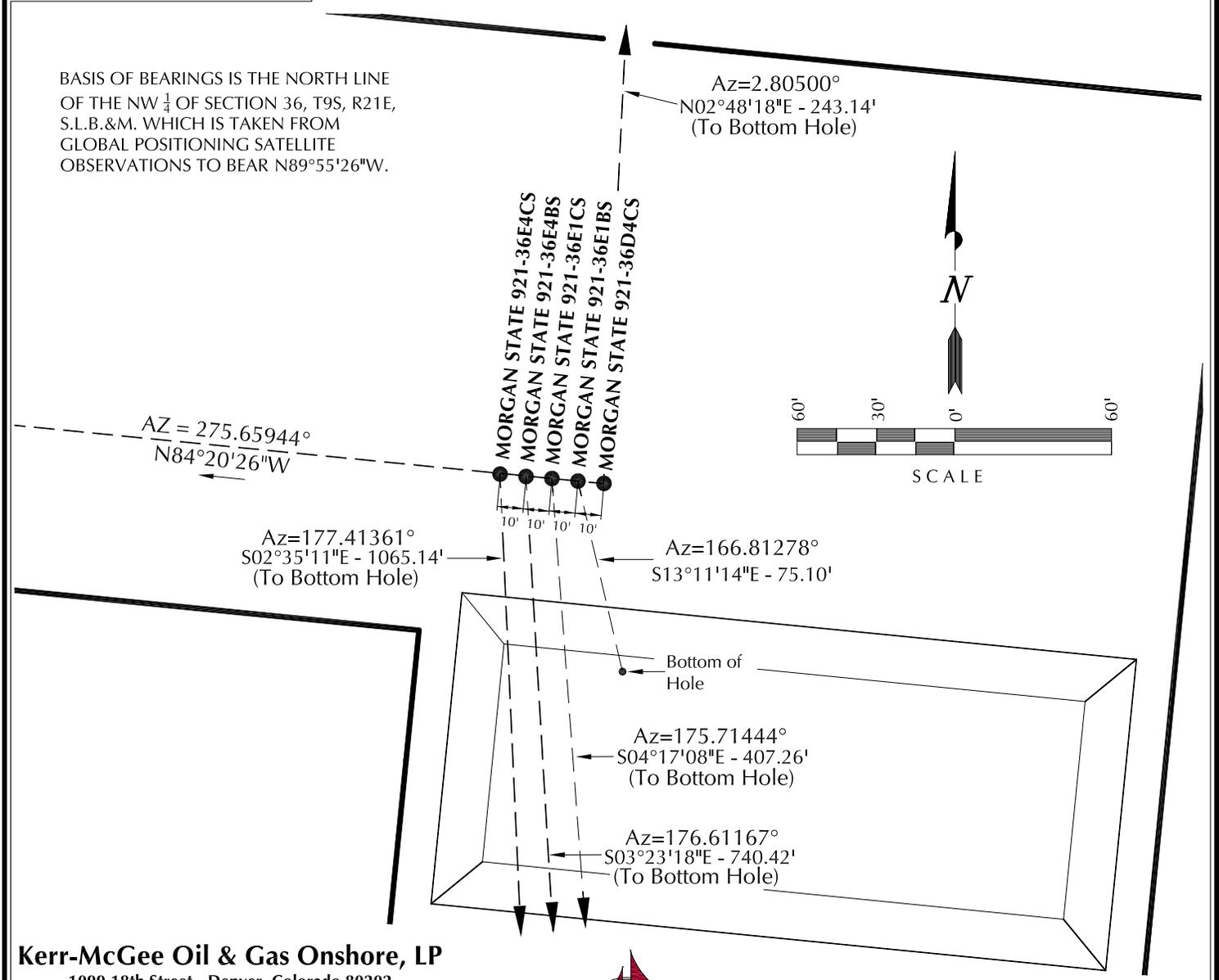
**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 10-11-11	SURVEYED BY: J.W.	SHEET NO: <b>2</b>
DATE DRAWN: 10-31-11	DRAWN BY: T.J.R.	
SCALE: 1" = 1000'		2 OF 17

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
MORGAN STATE 921-36D4CS	39°59'43.859"	109°30'23.706"	39°59'43.985"	109°30'21.234"	1540' FNL 811' FWL	39°59'46.259"	109°30'23.555"	39°59'46.385"	109°30'21.083"	1297' FNL 823' FWL
MORGAN STATE 921-36E1BS	39°59'43.869"	109°30'23.834"	39°59'43.995"	109°30'21.362"	1539' FNL 801' FWL	39°59'43.146"	109°30'23.613"	39°59'43.273"	109°30'21.141"	1612' FNL 818' FWL
MORGAN STATE 921-36E1CS	39°59'43.879"	109°30'23.961"	39°59'44.005"	109°30'21.489"	1538' FNL 791' FWL	39°59'39.866"	109°30'23.568"	39°59'39.992"	109°30'21.096"	1944' FNL 821' FWL
MORGAN STATE 921-36E4BS	39°59'43.888"	109°30'24.089"	39°59'44.015"	109°30'21.617"	1537' FNL 781' FWL	39°59'36.586"	109°30'23.523"	39°59'36.712"	109°30'21.051"	2276' FNL 824' FWL
MORGAN STATE 921-36E4CS	39°59'43.898"	109°30'24.217"	39°59'44.024"	109°30'21.745"	1536' FNL 771' FWL	39°59'33.385"	109°30'23.593"	39°59'33.511"	109°30'21.121"	2600' FNL 818' FWL

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 921-36D4CS	242.8'	11.9'	MORGAN STATE 921-36E1BS	-73.1'	17.1'	MORGAN STATE 921-36E1CS	-406.1'	30.4'	MORGAN STATE 921-36E4BS	-739.1'	43.8'
MORGAN STATE 921-36E4CS	-1064.1'	48.1'									



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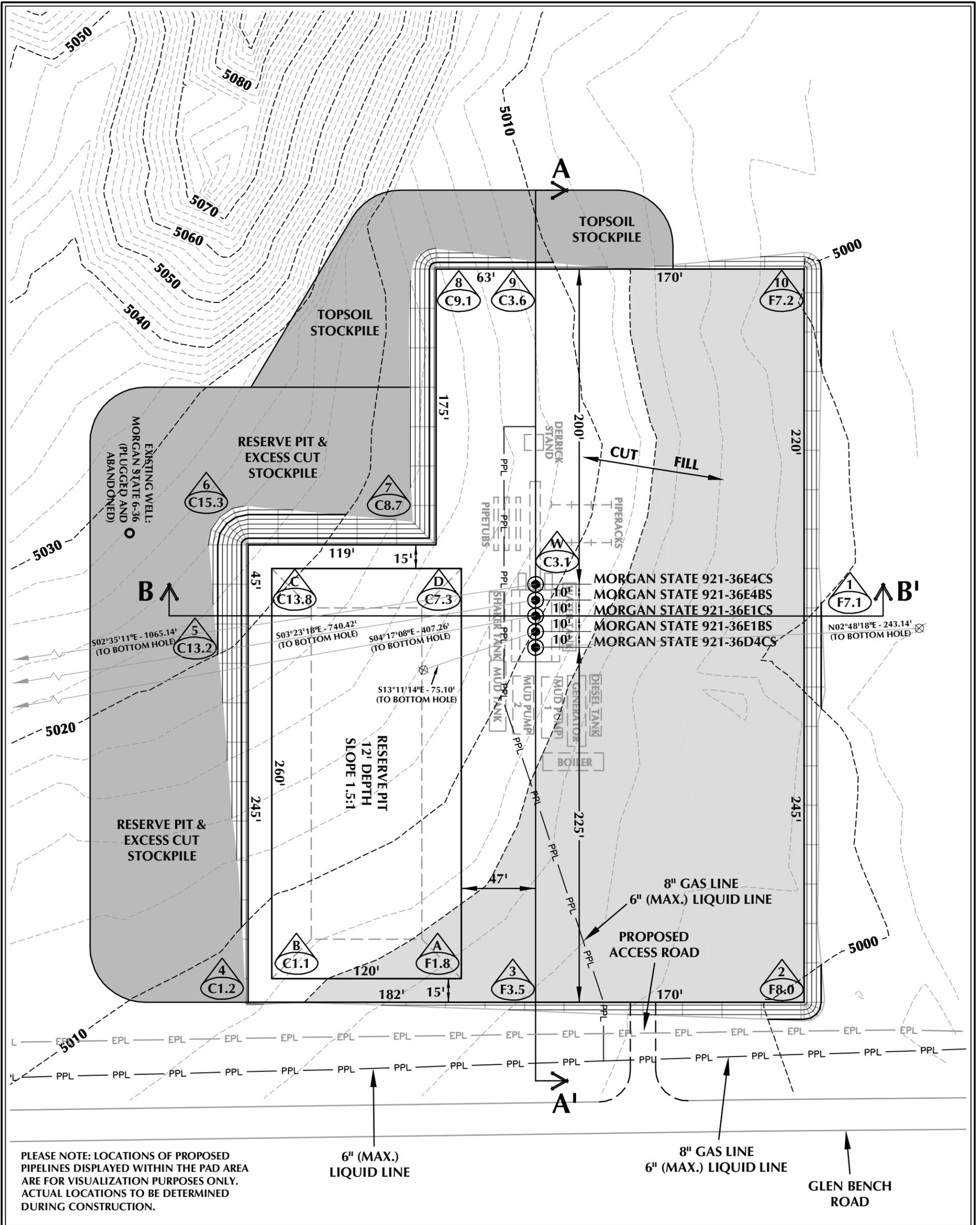
**WELL PAD - MORGAN STATE 921-36E**

**WELL PAD INTERFERENCE PLAT**  
WELLS - MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS, MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS & MORGAN STATE 921-36E4CS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., Uintah County, Utah.

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209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 10-11-11	SURVEYED BY: J.W.	SHEET NO: <b>6</b> 6 OF 17
DATE DRAWN: 10-31-11	DRAWN BY: T.J.R.	
SCALE: 1" = 60'		
Date Last Revised:		



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 921-36E DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5010.3'  
 FINISHED GRADE ELEVATION = 5007.2'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.68 ACRES  
 TOTAL DISTURBANCE AREA = 5.00 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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 1099 18th Street - Denver, Colorado 80202

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

WELL PAD - LOCATION LAYOUT  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 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

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 14,142 C.Y.  
 TOTAL FILL FOR WELL PAD = 12,442 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,811 C.Y.  
 EXCESS MATERIAL = 1,700 C.Y.

**RESERVE PIT QUANTITIES**

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

**WELL PAD LEGEND**

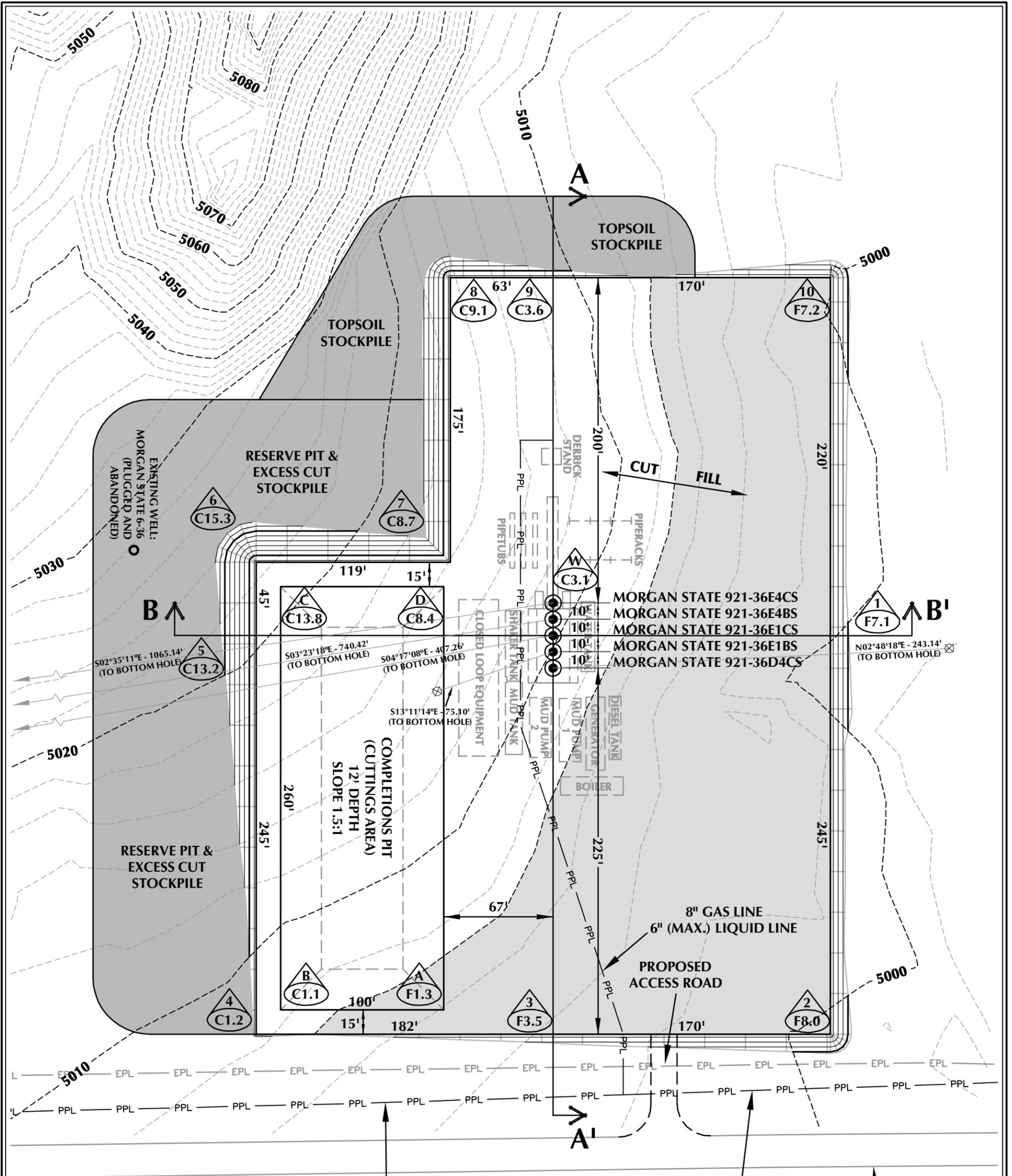
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL - PROPOSED PIPELINE
- EPL - EXISTING PIPELINE



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

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

**TIMBERLINE** (435) 789-1365  
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PLEASE NOTE: LOCATIONS OF PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.

6" (MAX.) LIQUID LINE

8" GAS LINE  
6" (MAX.) LIQUID LINE

GLEN BENCH ROAD

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

EXISTING GRADE @ CENTER OF WELL PAD = 5010.3'  
 FINISHED GRADE ELEVATION = 5007.2'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.68 ACRES  
 TOTAL DISTURBANCE AREA = 5.00 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

WELL PAD - LOCATION LAYOUT  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
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 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 14,142 C.Y.  
 TOTAL FILL FOR WELL PAD = 12,442 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,811 C.Y.  
 EXCESS MATERIAL = 1,700 C.Y.

**COMPLETIONS PIT QUANTITIES**

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

**WELL PAD LEGEND**

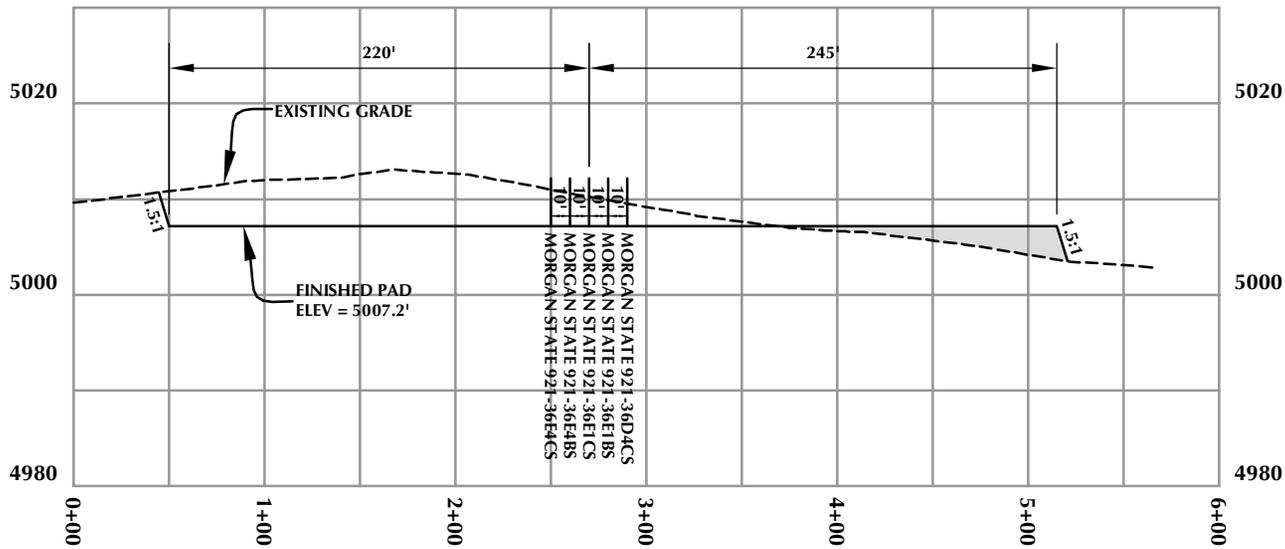
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE



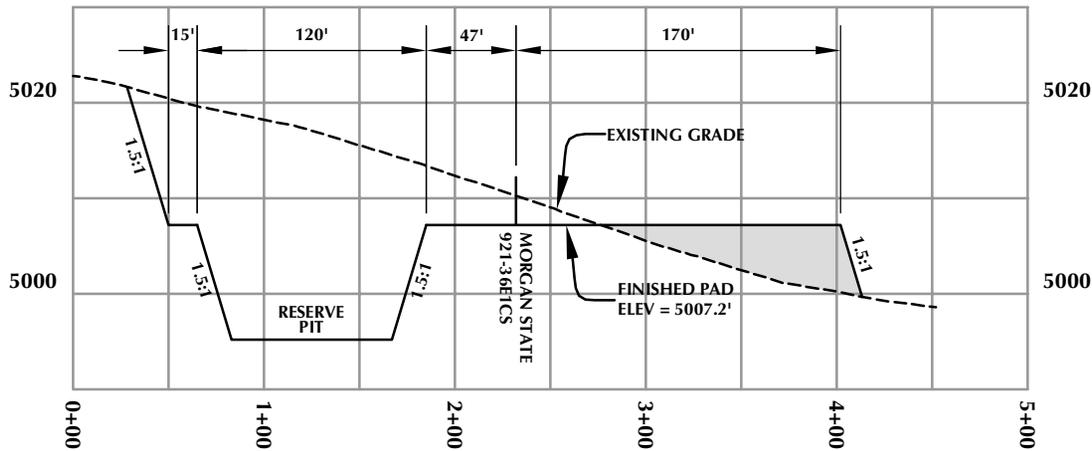
HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

SCALE: 1"=60' DATE: 11/15/11 SHEET NO:  
 REVISED: **7B** 7B OF 17

**TIMBERLINE** (435) 789-1365  
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**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

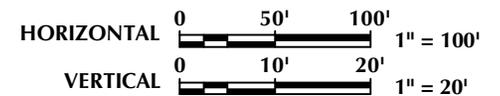
WELL PAD - CROSS SECTIONS  
MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS,  
MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS &  
MORGAN STATE 921-36E4CS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
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ENGINEERING & LAND SURVEYING, INC.  
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Scale: 1"=100'

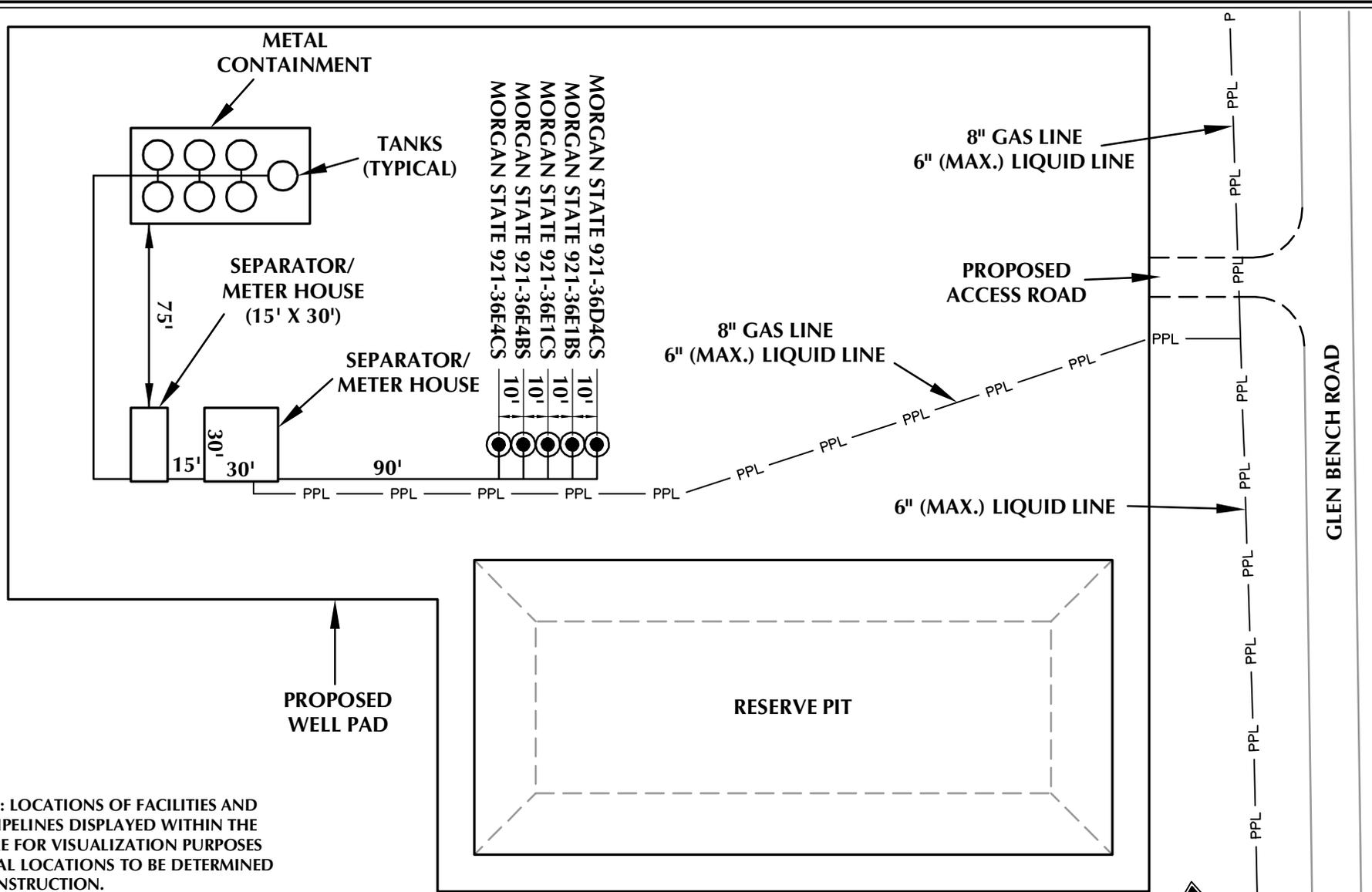
Date: 11/11/11

SHEET NO:

REVISED:

**8**

8 OF 17



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 921-36E**

WELL PAD - FACILITIES DIAGRAM  
MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS,  
MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS &  
MORGAN STATE 921-36E4CS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC  
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Sheridan, WY 82801  
Phone 307-674-0609  
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**WELL PAD LEGEND**

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



HORIZONTAL 0 30' 60' 1" = 60'

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

(435) 789-1365

Scale: 1"=60'

Date: 11/11/11

SHEET NO:

**9**

9 OF 17

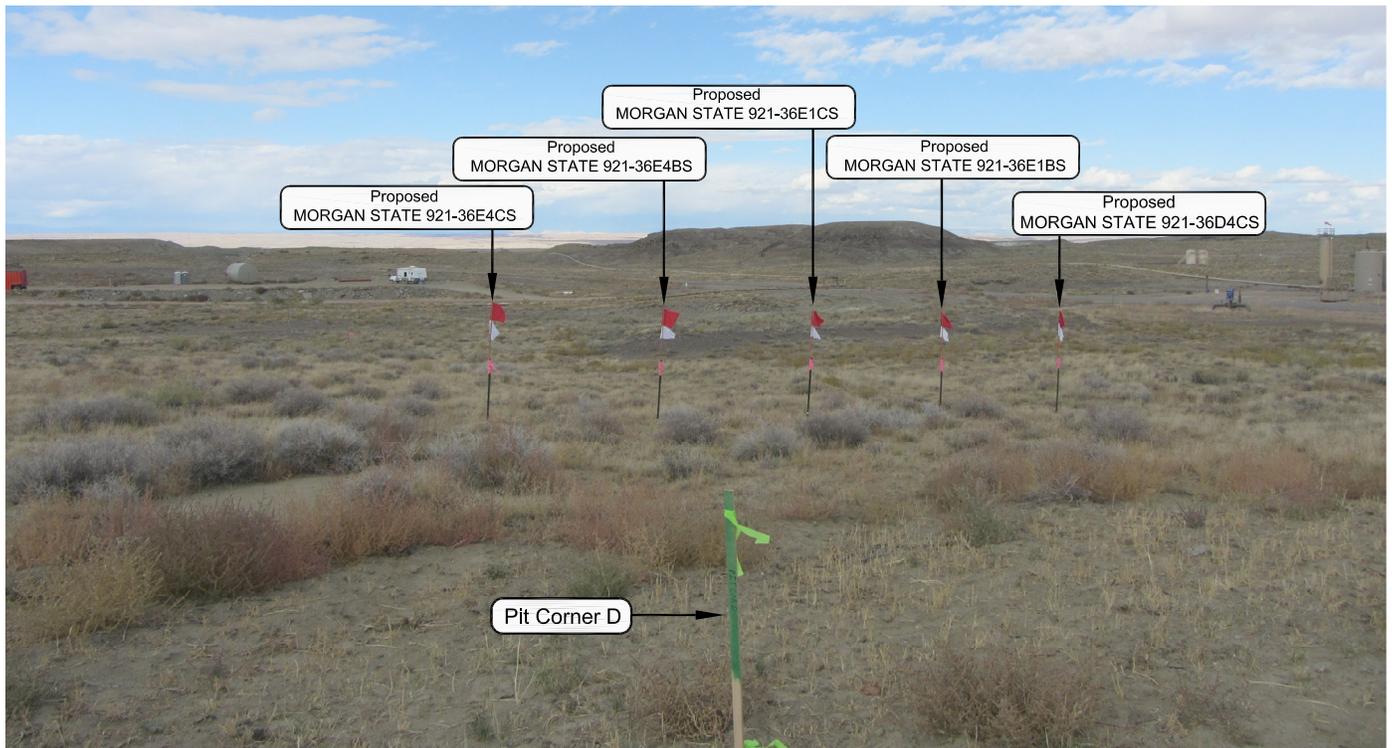


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHEASTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: WESTERLY

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

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

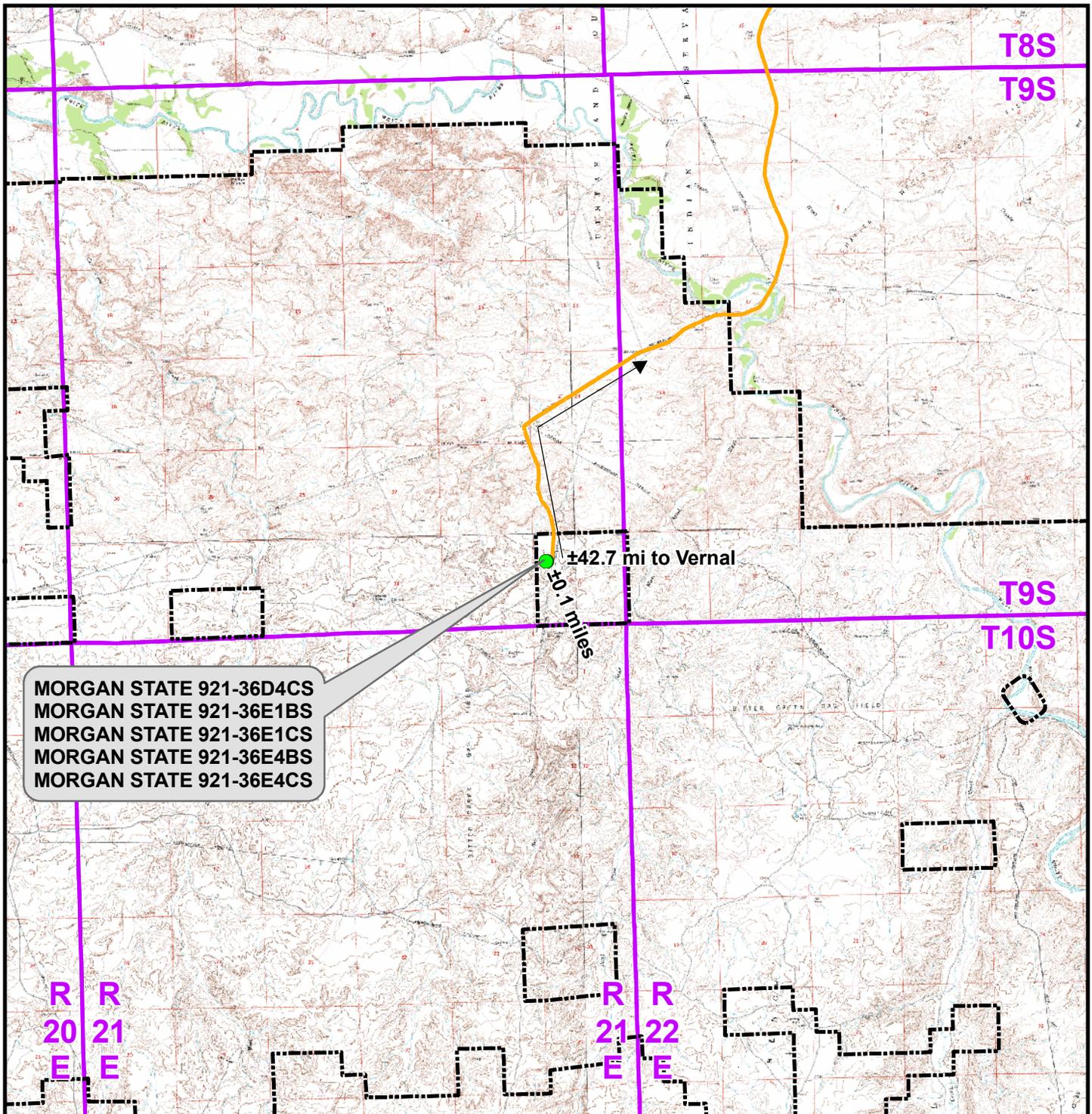
LOCATION PHOTOS  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS, MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS & MORGAN STATE 921-36E4CS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



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

DATE PHOTOS TAKEN: 10-11-11	PHOTOS TAKEN BY: J.W.	SHEET NO: <b>10</b>
DATE DRAWN: 10-31-11	DRAWN BY: T.J.R.	
Date Last Revised:		10 OF 17



MORGAN STATE 921-36D4CS  
 MORGAN STATE 921-36E1BS  
 MORGAN STATE 921-36E1CS  
 MORGAN STATE 921-36E4BS  
 MORGAN STATE 921-36E4CS

**Legend**

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

Distance From Well Pad - MORGAN STATE 921-36E To Unit Boundary: ±771ft

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

TOPO A  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

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 Denver, Colorado 80202



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 Sheridan, Wyoming 82801  
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SCALE: 1:100,000

NAD83 USP Central

SHEET NO:

DRAWN: TL

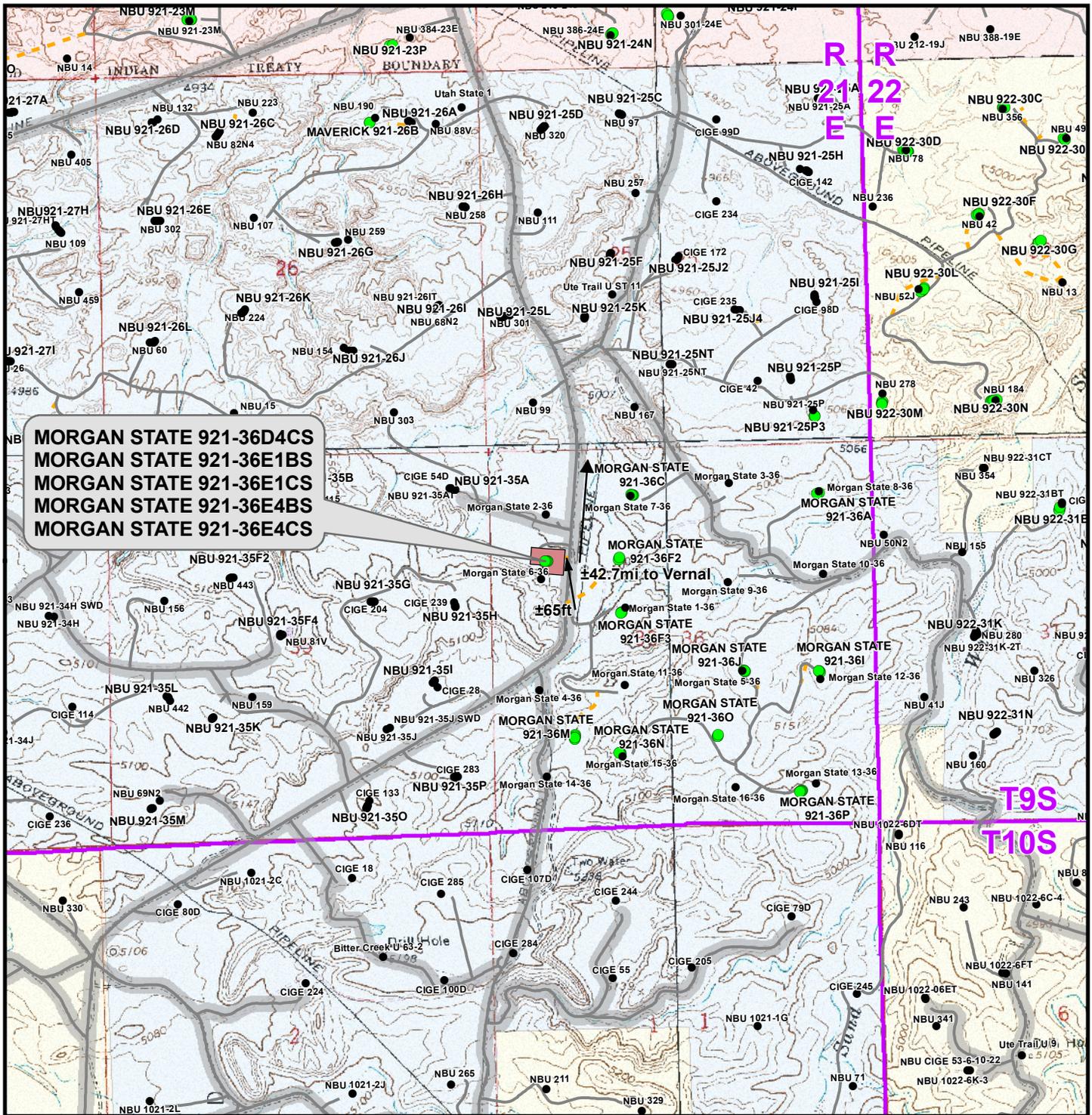
DATE: 11 Nov 2011

**11**

REVISED:

DATE:

11 OF 17



MORGAN STATE 921-36D4CS  
 MORGAN STATE 921-36E1BS  
 MORGAN STATE 921-36E1CS  
 MORGAN STATE 921-36E4BS  
 MORGAN STATE 921-36E4CS

±42.7mi to Vernal

±65ft

**Legend**

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

Total Proposed Road Length: ±65ft

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

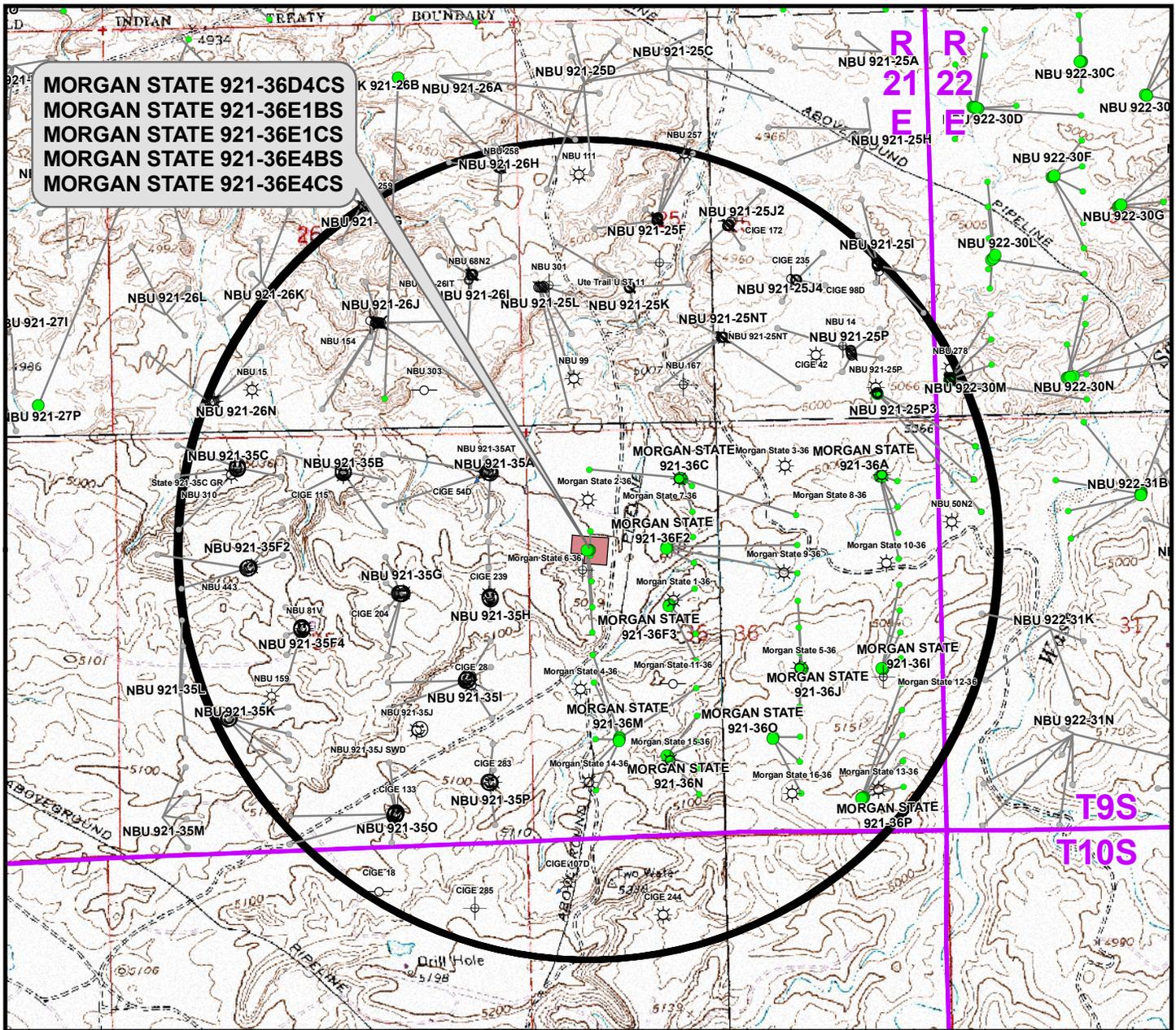
TOPO B  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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 Gas Onshore L.P.**  
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 Denver, Colorado 80202



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SCALE: 1" = 2,000ft	NAD83 USP Central	<b>12</b>	SHEET NO:
DRAWN: TL	DATE: 11 Nov 2011		12 OF 17
REVISED:	DATE:		



**MORGAN STATE 921-36D4CS  
MORGAN STATE 921-36E1BS  
MORGAN STATE 921-36E1CS  
MORGAN STATE 921-36E4BS  
MORGAN STATE 921-36E4CS**

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 921-36D4CS	Morgan State 2-36	398ft
MORGAN STATE 921-36E1BS	Morgan State 6-36	205ft
MORGAN STATE 921-36E1CS	Morgan State 6-36	189ft
MORGAN STATE 921-36E4BS	Morgan State 6-36	500ft
MORGAN STATE 921-36E4CS	Morgan State 4-36	749ft

**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 921-36E**

TOPO C  
MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS,  
MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS &  
MORGAN STATE 921-36E4CS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., Uintah County, Utah

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

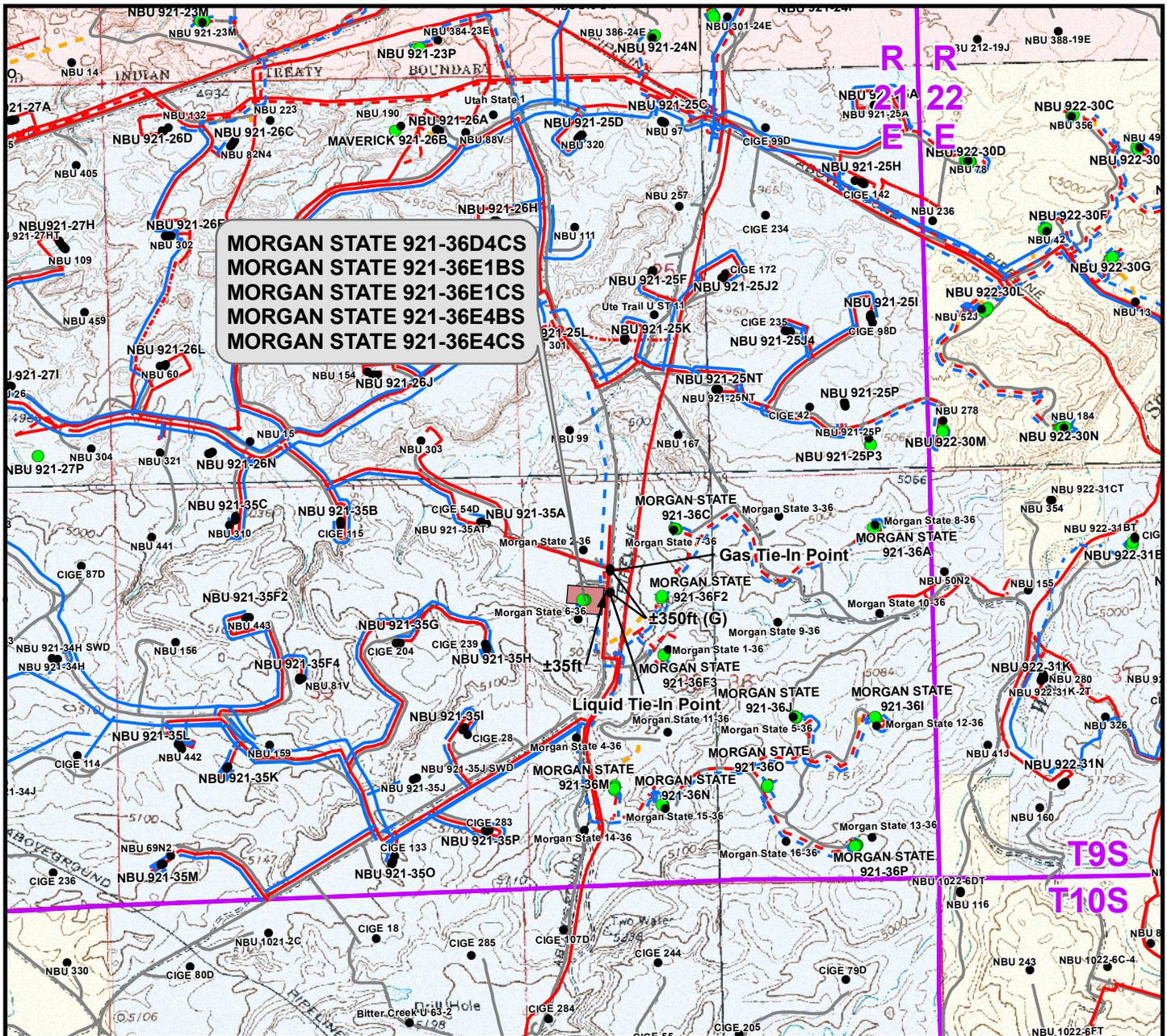
1099 18th Street  
Denver, Colorado 80202

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N

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>13</b>
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	

SHEET NO:  
13 OF 17



Proposed Liquid Pipeline	Length	Proposed Gas Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±395ft	Buried 8" (Meter House to Edge of Pad)	±395ft
Buried 6" (Max.) (Edge of Pad to Proposed Liquid Pipeline ROW In Progress)	±35ft	Buried 8" (Edge of Pad to Existing 16" Buried Gas Pipeline)	±385ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±430ft</b>	<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±780ft</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 921-36E**

TOPO D  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 LOCATED IN SECTION 36, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

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 Denver, Colorado 80202



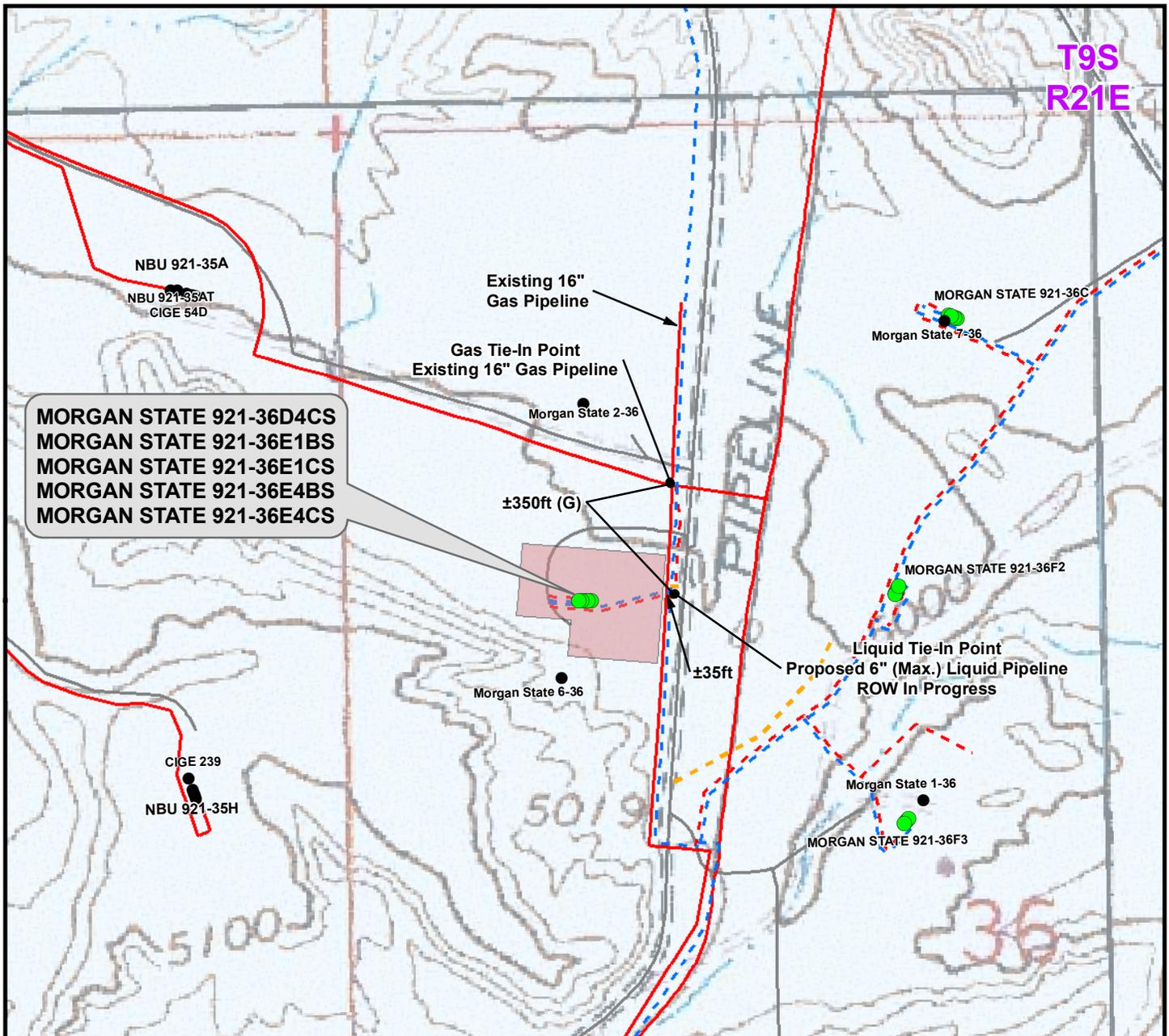
**CONSULTING, LLC**  
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 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
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SCALE: 1" = 2,000ft	NAD83 USP Central	<b>14</b>
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	

SHEET NO:  
14 OF 17

T9S  
R21E



MORGAN STATE 921-36D4CS  
MORGAN STATE 921-36E1BS  
MORGAN STATE 921-36E1CS  
MORGAN STATE 921-36E4BS  
MORGAN STATE 921-36E4CS

Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±395ft
Buried 6" (Max.) (Edge of Pad to Proposed Liquid Pipeline ROW In Progress)	±35ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±430ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±395ft
Buried 8" (Edge of Pad to Existing 16" Buried Gas Pipeline)	±385ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±780ft</b>

**Legend**

<span style="color: green;">●</span> Well - Proposed	<span style="background-color: #f08080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Well Pad - Proposed	<span style="color: red; border-bottom: 1px dashed red;">    </span> Gas Pipeline - Proposed	<span style="color: blue; border-bottom: 1px dashed blue;">    </span> Liquid Pipeline - Proposed	<span style="color: orange; border-bottom: 1px dashed orange;">    </span> Road - Proposed	<span style="background-color: #ffff00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Bureau of Land Management
<span style="color: black;">●</span> Well - Existing	<span style="background-color: #cccccc; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Well Pad - Existing	<span style="color: red; border-bottom: 1px dotted red;">    </span> Gas Pipeline - To Be Upgraded	<span style="color: blue; border-bottom: 1px solid blue;">    </span> Liquid Pipeline - Existing	<span style="color: grey; border-bottom: 1px solid grey;">    </span> Road - Existing	<span style="background-color: #f08080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Indian Reservation
		<span style="color: red; border-bottom: 1px solid red;">    </span> Gas Pipeline - Existing			<span style="background-color: #add8e6; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> State
					<span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Private

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

TOPO D2 (PAD & PIPELINE DETAIL)  
MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS,  
MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS &  
MORGAN STATE 921-36E4CS  
LOCATED IN SECTION 36, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH

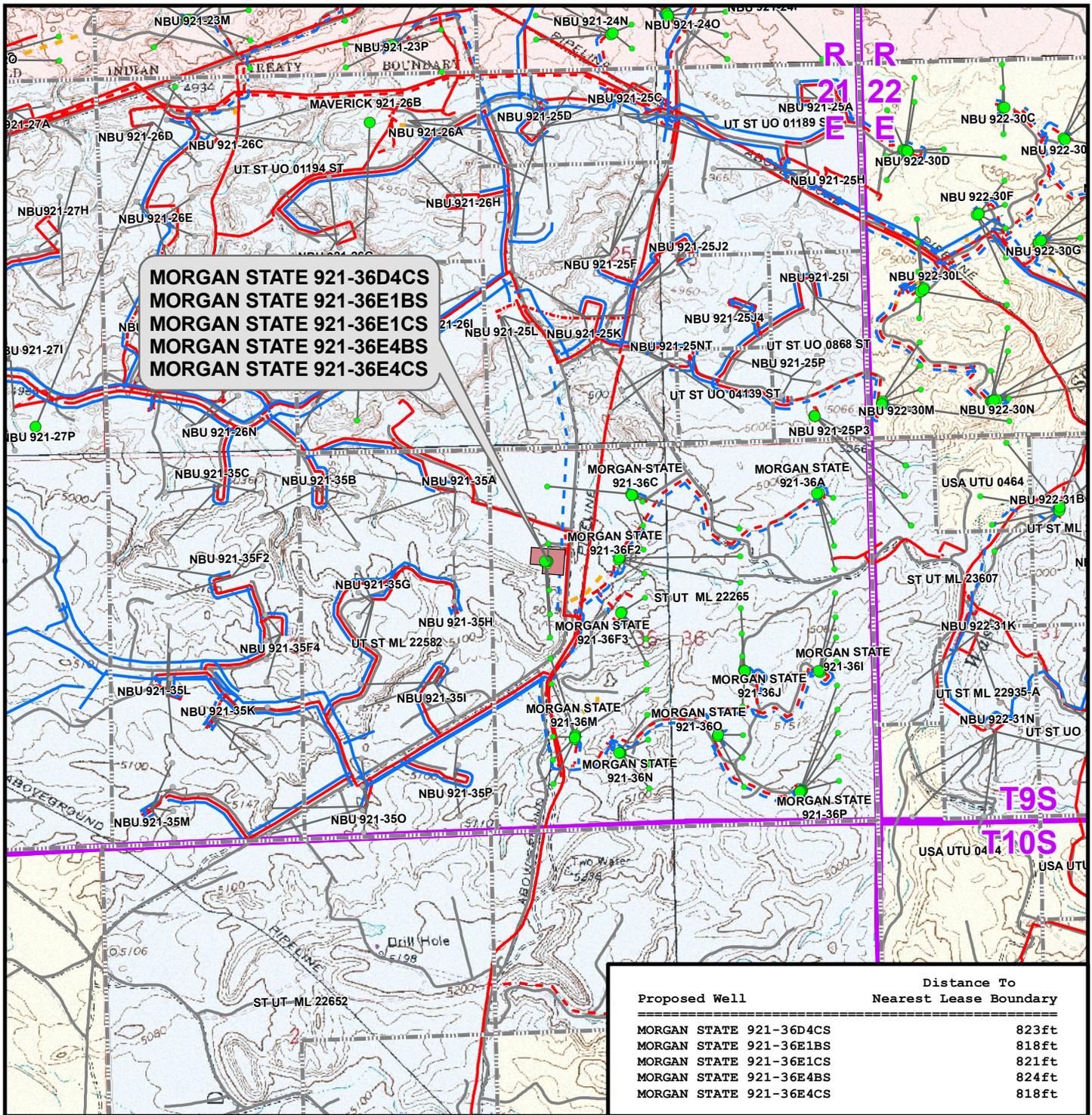
**Kerr-McGee Oil &  
Gas Onshore L.P.**

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>15</b>
DRAWN: TL	DATE: 11 Nov 2011	
REVISED:	DATE:	

SHEET NO:  
15 OF 17



**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- ▭ Lease Boundary
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

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

TOPO E  
 MORGAN STATE 921-36D4CS,  
 MORGAN STATE 921-36E1BS,  
 MORGAN STATE 921-36E1CS,  
 MORGAN STATE 921-36E4BS &  
 MORGAN STATE 921-36E4CS  
 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

DRAWN: TL

REVISED:

NAD83 USP Central

DATE: 11 Nov 2011

DATE:

SHEET NO:

**16**

16 OF 17

**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD – MORGAN STATE 921-36E  
WELLS – MORGAN STATE 921-36D4CS,  
MORGAN STATE 921-36E1BS, MORGAN STATE 921-36E1CS,  
MORGAN STATE 921-36E4BS & MORGAN STATE 921-36E4CS  
Section 36, T9S, R21E, S.L.B.&M.**

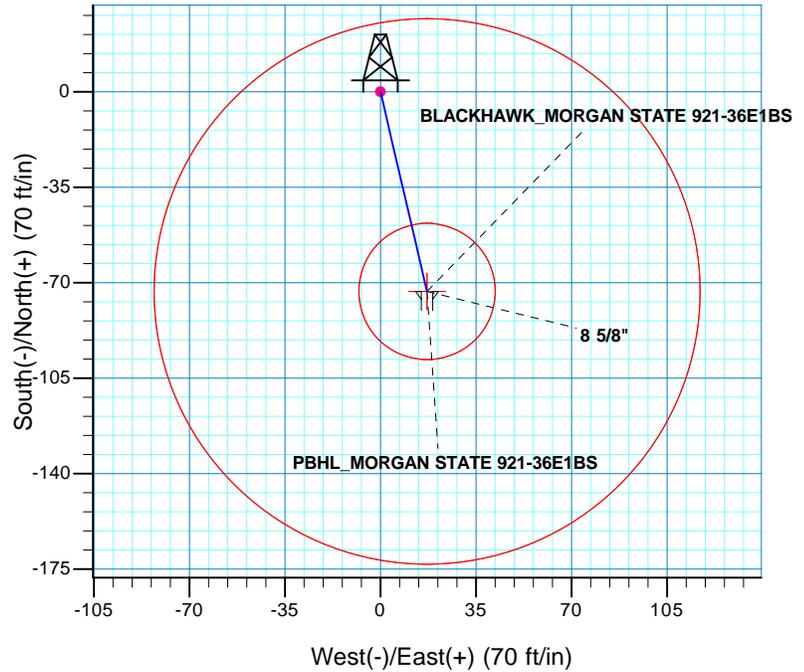
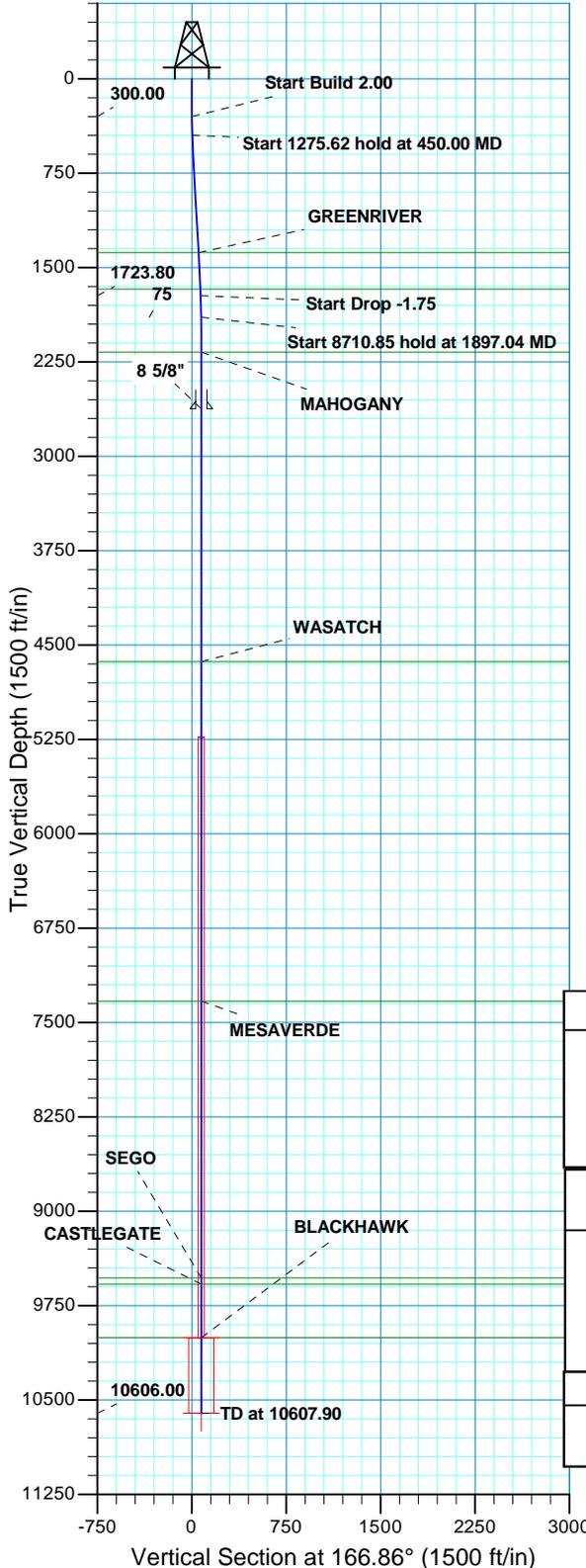
From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles 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 19.2 miles to the proposed access road to the west. Follow road flags in a westerly direction approximately 65 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 42.7 miles in a southerly direction.



WELL DETAILS: MORGAN STATE 921-36E1BS								
GL 5007 & KB 4 @ 5011.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14527932.58	2058877.74	39° 59' 43.994 N	109° 30' 21.362 W			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BLACKHAWK	10006.00	-73.21	17.09	14527859.67	2058896.05	39° 59' 43.271 N	109° 30' 21.143 W	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10606.00	-73.21	17.09	14527859.67	2058896.05	39° 59' 43.271 N	109° 30' 21.143 W	Circle (Radius: 100.00)
- plan hits target center								

Azimuths to True North  
 Magnetic North: 11.02°  
 Magnetic Field  
 Strength: 52278.4snT  
 Dip Angle: 65.85°  
 Date: 2011/12/05  
 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	
450.00	3.00	166.86	449.93	-3.82	0.89	2.00	166.86	3.93	
1725.62	3.00	166.86	1723.80	-68.84	16.07	0.00	0.00	70.69	
1897.04	0.00	0.00	1895.15	-73.21	17.09	1.75	180.00	75.17	
10607.90	0.00	0.00	10606.00	-73.21	17.09	0.00	0.00	75.17	PBHL_MORGAN STATE 921-36E1BS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N					FORMATION TOP DETAILS				
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 36 T9S R21E System Datum: Mean Sea Level					TVDPath	MDPath	Formation		
					1382.00	1383.35	GREENRIVER		
					1671.00	1672.74	BIRDSNEST		
					2173.00	2174.90	MAHOGANY		
					4633.00	4634.90	WASATCH		
					7331.00	7332.90	MESAVERDE		
					9530.00	9531.90	SEGO		
					9579.00	9580.90	CASTLEGATE		
					10006.00	10007.90	BLACKHAWK		
					CASING DETAILS				
					2623.00	2624.90	8 5/8"	8.625	

RECEIVED :



# **US ROCKIES REGION PLANNING**

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

**MORGAN STATE 921-36E PAD**

**MORGAN STATE 921-36E1BS**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**05 December, 2011**





**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36E PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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

<b>Site</b>	MORGAN STATE 921-36E PAD, SECTION 36 T9S R21E				
<b>Site Position:</b>	<b>Northing:</b>	14,527,931.66 usft	<b>Latitude:</b>	39° 59' 43.984 N	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,058,887.84 usft	<b>Longitude:</b>	109° 30' 21.233 W	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	MORGAN STATE 921-36E1BS, 1539 FNL 801 FWL					
<b>Well Position</b>	<b>+N/-S</b>	1.09 ft	<b>Northing:</b>	14,527,932.58 usft	<b>Latitude:</b>	39° 59' 43.994 N
	<b>+E/-W</b>	-10.08 ft	<b>Easting:</b>	2,058,877.74 usft	<b>Longitude:</b>	109° 30' 21.362 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,007.00 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	2011/12/05	11.02	65.85	52,278

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	166.86

<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	
450.00	3.00	166.86	449.93	-3.82	0.89	2.00	2.00	0.00	166.86	
1,725.62	3.00	166.86	1,723.80	-68.84	16.07	0.00	0.00	0.00	0.00	
1,897.04	0.00	0.00	1,895.15	-73.21	17.09	1.75	-1.75	0.00	180.00	
10,607.90	0.00	0.00	10,606.00	-73.21	17.09	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 921-36E1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36E PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/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	166.86	399.98	-1.70	0.40	1.75	2.00	2.00	2.00	0.00
450.00	3.00	166.86	449.93	-3.82	0.89	3.93	2.00	2.00	2.00	0.00
<b>Start 1275.62 hold at 450.00 MD</b>										
500.00	3.00	166.86	499.86	-6.37	1.49	6.54	0.00	0.00	0.00	0.00
600.00	3.00	166.86	599.73	-11.47	2.68	11.78	0.00	0.00	0.00	0.00
700.00	3.00	166.86	699.59	-16.56	3.87	17.01	0.00	0.00	0.00	0.00
800.00	3.00	166.86	799.45	-21.66	5.06	22.24	0.00	0.00	0.00	0.00
900.00	3.00	166.86	899.31	-26.76	6.25	27.48	0.00	0.00	0.00	0.00
1,000.00	3.00	166.86	999.18	-31.85	7.44	32.71	0.00	0.00	0.00	0.00
1,100.00	3.00	166.86	1,099.04	-36.95	8.63	37.94	0.00	0.00	0.00	0.00
1,200.00	3.00	166.86	1,198.90	-42.05	9.82	43.18	0.00	0.00	0.00	0.00
1,300.00	3.00	166.86	1,298.77	-47.14	11.00	48.41	0.00	0.00	0.00	0.00
1,383.35	3.00	166.86	1,382.00	-51.39	12.00	52.77	0.00	0.00	0.00	0.00
<b>GREENRIVER</b>										
1,400.00	3.00	166.86	1,398.63	-52.24	12.19	53.65	0.00	0.00	0.00	0.00
1,500.00	3.00	166.86	1,498.49	-57.34	13.38	58.88	0.00	0.00	0.00	0.00
1,600.00	3.00	166.86	1,598.36	-62.43	14.57	64.11	0.00	0.00	0.00	0.00
1,672.74	3.00	166.86	1,671.00	-66.14	15.44	67.92	0.00	0.00	0.00	0.00
<b>BIRDSNEST</b>										
1,700.00	3.00	166.86	1,698.22	-67.53	15.76	69.35	0.00	0.00	0.00	0.00
1,725.62	3.00	166.86	1,723.80	-68.84	16.07	70.69	0.00	0.00	0.00	0.00
<b>Start Drop -1.75</b>										
1,800.00	1.70	166.86	1,798.12	-71.81	16.76	73.74	1.75	-1.75	0.00	0.00
1,897.04	0.00	0.00	1,895.15	-73.21	17.09	75.17	1.75	-1.75	0.00	0.00
<b>Start 8710.85 hold at 1897.04 MD</b>										
1,900.00	0.00	0.00	1,898.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	1,998.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,098.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,174.90	0.00	0.00	2,173.00	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
<b>MAHOGANY</b>										
2,200.00	0.00	0.00	2,198.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,298.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,398.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,498.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,598.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,624.90	0.00	0.00	2,623.00	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
<b>8 5/8"</b>										
2,700.00	0.00	0.00	2,698.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,798.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,898.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,998.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,098.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.11	-73.21	17.09	75.17	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,698.11	-73.21	17.09	75.17	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 921-36E1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36E PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,800.00	0.00	0.00	3,798.11	-73.21	17.09	75.17	0.00	0.00	0.00
3,900.00	0.00	0.00	3,898.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,000.00	0.00	0.00	3,998.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,100.00	0.00	0.00	4,098.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,200.00	0.00	0.00	4,198.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,300.00	0.00	0.00	4,298.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,500.00	0.00	0.00	4,498.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,600.00	0.00	0.00	4,598.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,634.90	0.00	0.00	4,633.00	-73.21	17.09	75.17	0.00	0.00	0.00
<b>WASATCH</b>									
4,700.00	0.00	0.00	4,698.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.11	-73.21	17.09	75.17	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,000.00	0.00	0.00	4,998.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,700.00	0.00	0.00	5,698.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.11	-73.21	17.09	75.17	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,300.00	0.00	0.00	6,298.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,400.00	0.00	0.00	6,398.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,500.00	0.00	0.00	6,498.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,600.00	0.00	0.00	6,598.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,700.00	0.00	0.00	6,698.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,800.00	0.00	0.00	6,798.11	-73.21	17.09	75.17	0.00	0.00	0.00
6,900.00	0.00	0.00	6,898.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,000.00	0.00	0.00	6,998.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,100.00	0.00	0.00	7,098.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,200.00	0.00	0.00	7,198.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,300.00	0.00	0.00	7,298.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,332.90	0.00	0.00	7,331.00	-73.21	17.09	75.17	0.00	0.00	0.00
<b>MESAVERDE</b>									
7,400.00	0.00	0.00	7,398.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,500.00	0.00	0.00	7,498.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,600.00	0.00	0.00	7,598.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,700.00	0.00	0.00	7,698.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,800.00	0.00	0.00	7,798.11	-73.21	17.09	75.17	0.00	0.00	0.00
7,900.00	0.00	0.00	7,898.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,000.00	0.00	0.00	7,998.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,100.00	0.00	0.00	8,098.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,200.00	0.00	0.00	8,198.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,300.00	0.00	0.00	8,298.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,400.00	0.00	0.00	8,398.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,500.00	0.00	0.00	8,498.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,600.00	0.00	0.00	8,598.11	-73.21	17.09	75.17	0.00	0.00	0.00
8,700.00	0.00	0.00	8,698.11	-73.21	17.09	75.17	0.00	0.00	0.00



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36E PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,800.00	0.00	0.00	8,798.11	-73.21	17.09	75.17	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,898.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,998.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,098.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,198.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,298.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,398.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,498.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,531.90	0.00	0.00	9,530.00	-73.21	17.09	75.17	0.00	0.00	0.00	
<b>SEGO</b>										
9,580.90	0.00	0.00	9,579.00	-73.21	17.09	75.17	0.00	0.00	0.00	
<b>CASTLEGATE</b>										
9,600.00	0.00	0.00	9,598.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,698.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,798.11	-73.21	17.09	75.17	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,898.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,998.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,007.90	0.00	0.00	10,006.00	-73.21	17.09	75.17	0.00	0.00	0.00	
<b>BLACKHAWK - BLACKHAWK_MORGAN STATE 921-36E1BS</b>										
10,100.00	0.00	0.00	10,098.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,198.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,298.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,398.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,498.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,598.11	-73.21	17.09	75.17	0.00	0.00	0.00	
10,607.90	0.00	0.00	10,606.00	-73.21	17.09	75.17	0.00	0.00	0.00	
<b>TD at 10607.90 - PBHL_MORGAN STATE 921-36E1BS</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	10,006.00	-73.21	17.09	14,527,859.67	2,058,896.05	39° 59' 43.271 N	109° 30' 21.143 W	
PBHL_MORGAN STATI - plan hits target center - Circle (radius 100.00)	0.00	0.00	10,606.00	-73.21	17.09	14,527,859.67	2,058,896.05	39° 59' 43.271 N	109° 30' 21.143 W	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,624.90	2,623.00	8 5/8"	8.625	11.000		



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5007 & KB 4 @ 5011.00ft (ASSUMED)
<b>Site:</b>	MORGAN STATE 921-36E PAD	<b>North Reference:</b>	True
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,383.35	1,382.00	GREENRIVER			
1,672.74	1,671.00	BIRDSNEST			
2,174.90	2,173.00	MAHOGANY			
4,634.90	4,633.00	WASATCH			
7,332.90	7,331.00	MESAVERDE			
9,531.90	9,530.00	SEGO			
9,580.90	9,579.00	CASTLEGATE			
10,007.90	10,006.00	BLACKHAWK			

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	
450.00	449.93	-3.82	0.89	Start 1275.62 hold at 450.00 MD	
1,725.62	1,723.80	-68.84	16.07	Start Drop -1.75	
1,897.04	1,895.15	-73.21	17.09	Start 8710.85 hold at 1897.04 MD	
10,607.90	10,606.00	-73.21	17.09	TD at 10607.90	

**MORGAN STATE 921-36D4CS**

Surface:	1540 FNL / 811 FWL	SWNW	Lot
BHL:	1297 FNL / 823 FWL	NWNW	Lot

**MORGAN STATE 921-36E1BS**

Surface:	1539 FNL / 801 FWL	SWNW	Lot
BHL:	1612 FNL / 818 FWL	SWNW	Lot

**MORGAN STATE 921-36E1CS**

Surface:	1538 FNL / 791 FWL	SWNW	Lot
BHL:	1944 FNL / 821 FWL	SWNW	Lot

**MORGAN STATE 921-36E4BS**

Surface:	1537 FNL / 781 FWL	SWNW	Lot
BHL:	2276 FNL / 824 FWL	SWNW	Lot

**MORGAN STATE 921-36E4CS**

Surface:	1536 FNL / 771 FWL	SWNW	Lot
BHL:	2600 FNL / 818 FWL	SWNW	Lot

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

Section 36 T9S R21E  
Mineral Lease: ML-22265

Uintah County, Utah  
Operator: Kerr-McGee Oil & 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:**

Approximately  $\pm 65'$  (0.01 miles) of 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:**

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  $\pm 780'$  and the individual segments are broken up as follows:

- ±395' (0.1 miles) –New 8” buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- ±385' (0.1 miles) –New 8” buried gas pipeline from the edge of pad to the existing 16' buried gas pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the tie in point is ±430' and the individual segments are broken up as follows:

- ±395' (0.1 miles) –New 6” buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- ±35' (0.01 miles) –New 6” buried liquid pipeline from the edge of pad to the proposed liquid pipeline ROW in progress. 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 921-36E1BS  
T9S-R21E  
Section 36: SWNW (Surface), SWNW (Bottom Hole)  
Surface: 1539' FNL, 801' FWL  
Bottom Hole: 1612' FNL, 818' FWL  
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

**From:** Jim Davis  
**To:** APD APPROVAL  
**CC:** Danielle Piernot; Julie Jacobson  
**Date:** 2/23/2012 3:22 PM  
**Subject:** APD Approval: the Kerr McGee Morgan State wells

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

4304752246 Morgan State 921-36G4BS  
4304752253 Morgan State 921-36G4CS  
4304752255 Morgan State 921-36J1CS  
4304752256 Morgan State 921-36J4BS  
4304752281 Morgan State 921-36F1BS  
4304752282 Morgan State 921-36F1CS  
4304752283 Morgan State 921-36G1BS  
4304752284 Morgan State 921-36G1CS  
4304752285 Morgan State 921-36F4BS  
4304752286 Morgan State 921-36K1BS  
4304752287 Morgan State 921-36K1CS  
4304752247 Morgan State 921-36P1BS  
4304752248 Morgan State 921-36P1CS  
4304752249 Morgan State 921-36I4BS  
4304752250 Morgan State 921-36I4CS  
4304752252 Morgan State 921-36P4BS  
4304752263 Morgan State 921-36K4CS  
4304752264 Morgan State 921-36N1BS  
4304752265 Morgan State 921-36N1CS  
4304752266 Morgan State 921-36N4BS  
4304752276 Morgan State 921-36D4CS  
4304752277 Morgan State 921-36E1BS  
4304752278 Morgan State 921-36E1CS  
4304752279 Morgan State 921-36E4BS  
4304752280 Morgan State 921-36E4CS  
4304752245 Morgan State 921-36O4CS  
4304752254 Morgan State 921-36O1CS  
4304752267 Morgan State 921-36O1BS  
4304752257 Morgan State 921-36K4BS  
4304752258 Morgan State 921-36L1BS  
4304752259 Morgan State 921-36L1CS  
4304752260 Morgan State 921-36M1BS  
4304752261 Morgan State 921-36M1CS  
4304752262 Morgan State 921-36M4BS  
4304752272 Morgan State 921-36B4CS  
4304752273 Morgan State 921-36C4BS  
4304752274 Morgan State 921-36C4CS  
4304752275 Morgan State 921-36D1CS

There are eight more wells on two pads in this section, the 36A pad and the 36I pad, that have not yet been approved. Anadarko is gathering reclamation cost figures on pads similar to those as part of the process of acquiring adequate SITLA bonds.

-Jim

Jim Davis  
Utah Trust Lands Administration  
jimdavis1@utah.gov

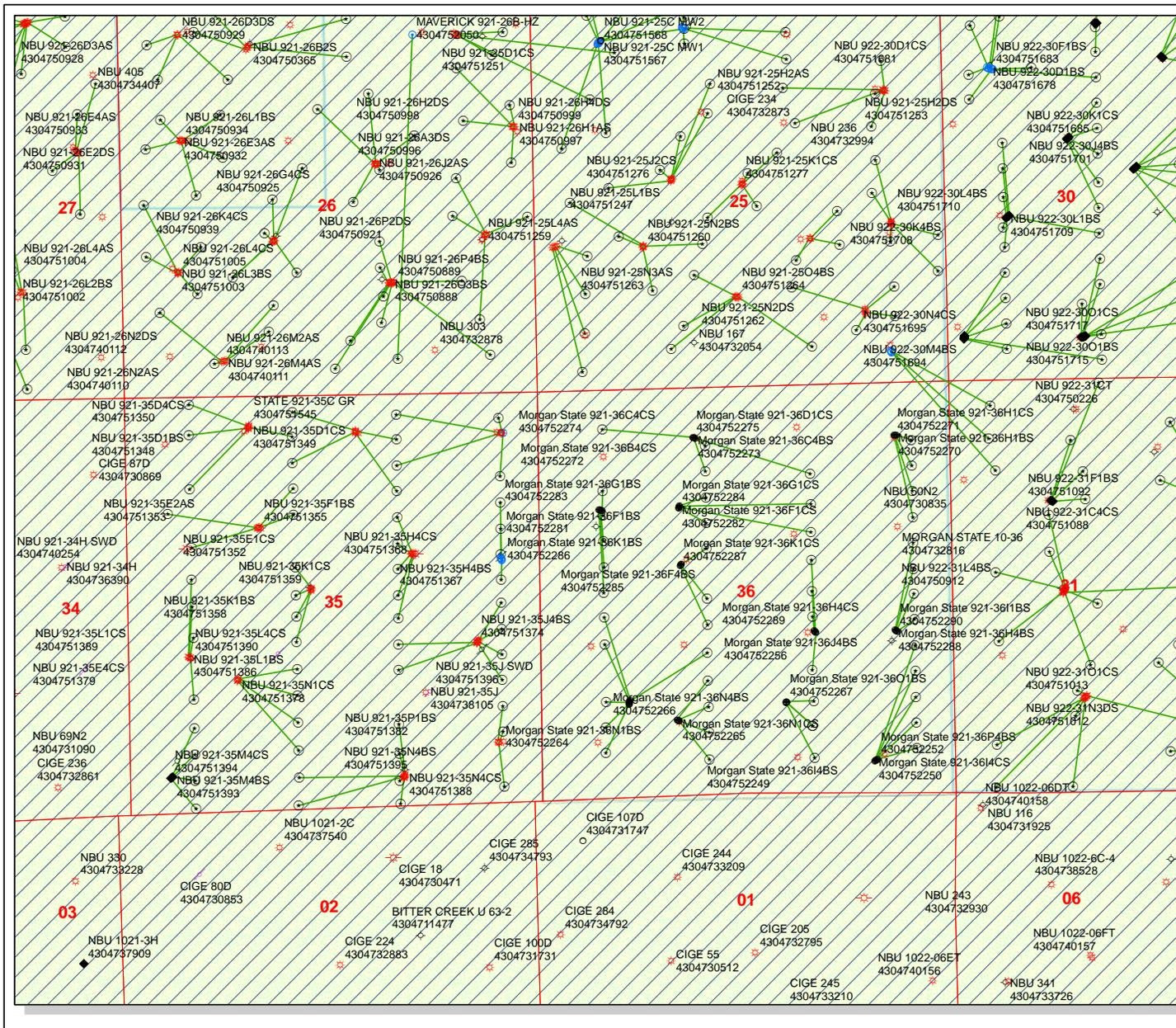
API Well Number: 43047522770000

Phone: (801) 538-5156

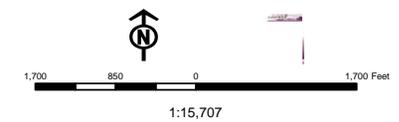
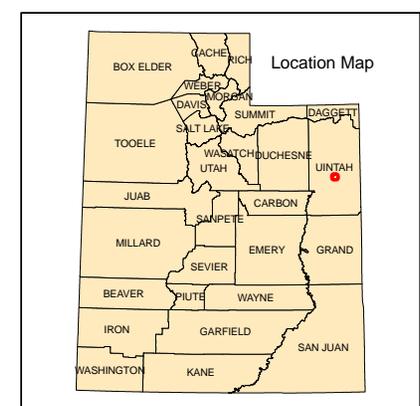
RECEIVED: February 23, 2012

API Number: 4304752277  
Well Name: Morgan State 921-36E1BS  
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             | WW - Water Injection Well          |
| STORAGE              | WSW - Water Supply Well            |
| TERMINATED           |                                    |



Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. Morgan State 921-36E1BS 4			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2618	10606		
Previous Shoe Setting Depth (TVD)	0	2618		
Max Mud Weight (ppg)	8.4	13.0		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	7000	12.7		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	1144	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	830	NO air drill
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	568	NO Reasonbale depth in area
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	568	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=	7170	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	5897	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	4837	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	5413	NO Reasonable
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2618	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

# 43047522770000 Morgan State 921-36E1BS

## Casing Schematic

Surface

1272  
154

Uinta

to 0' @ 8% w/p, tail 3553'

TOC @ 775'

1382' Green River  
1500' ± BMSW

Stop ✓

TOC @ 1512' Birds Nest

1955' tail

2173' Mahogany

Surface

2620. MD

2618. TVD

✓ Stop surf. cmt.

8-5/8"  
MW 8.4  
Frac 19.3

4222' tail

4633' Wasatch

cmts. proposed to surf.

7331' Mesaverde

9530' Sego

9579 Castlegate

10006' Mn 5

4-1/2"  
MW 13.

Production  
10608. MD  
10606. TVD

1539 NL

801 WL

-93

17

1612 FNL ✓

818 FWL ✓

OK

SW NW Sec 36-9S-21E

Well name:	<b>43047522770000 Morgan State 921-36E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-52277
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: 111 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
 Cement top: 1,512 ft

**Burst**

Max anticipated surface pressure: 2,304 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 2,618 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: 2,296 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 75 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

**Re subsequent strings:**

Next setting depth: 10,606 ft  
 Next mud weight: 13.000 ppg  
 Next setting BHP: 7,163 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 2,618 ft  
 Injection pressure: 2,618 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	2620	8.625	28.00	I-55	LT&C	2618	2620	7.892	103752
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	1142	1880	1.646	2618	3390	1.29	73.3	348	4.75 J

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

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

Date: March 5, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2618 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>43047522770000 Morgan State 921-36E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-52277
Location:	UINTAH	COUNTY	

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

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

**Burst**

Max anticipated surface pressure: 4,829 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP: 7,163 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: 8,547 ft

Estimated cost: 159,019 (\$)

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 222 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft  
Cement top: 775 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
Departure at shoe: 75 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	4998	5000	3.875	132000
1	5608	4.5	11.60	HCP-110	LT&C	10606	10608	3.875	27019

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	3375	8124	2.407	5929	10690	1.80	123	367.2	2.98 B
1	7163	8650	1.208	7163	10690	1.49	65.1	279	4.29 J

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

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

Date: March 5, 2012  
Salt Lake City, Utah

**Remarks:**

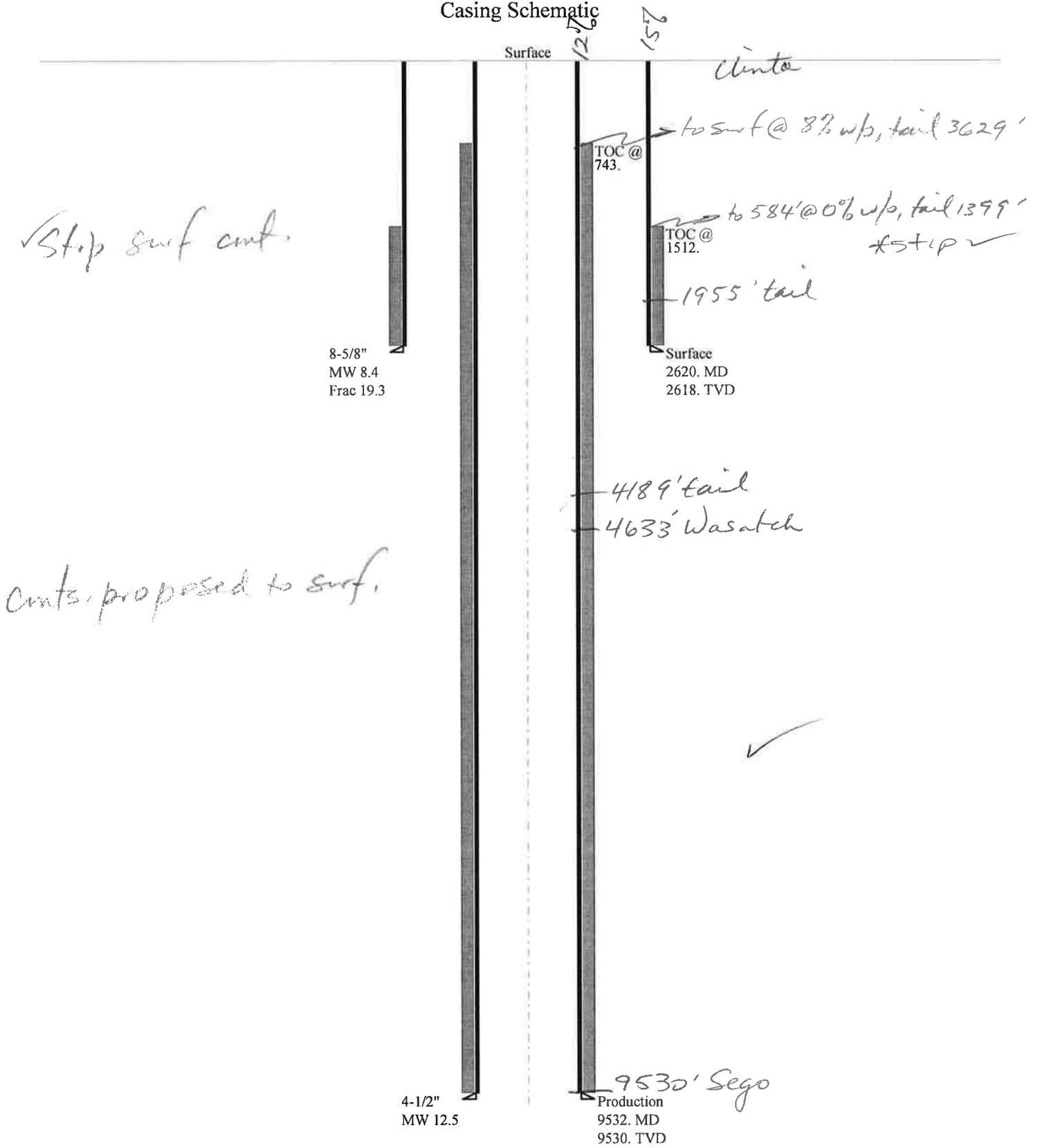
Collapse is based on a vertical depth of 10606 ft, a mud weight of 13 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

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

# 43047522770000 Morgan State 921-36E1BS

## Casing Schematic



Well name:	<b>43047522770000 Morgan State 921-36E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-52277
Location:	UINTAH	COUNTY	

**Design parameters:**

**Collapse**

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

**Burst**

Max anticipated surface pressure: 2,304 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP: 2,618 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: 2,296 ft

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 111 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
  
 Cement top: 1,512 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 75 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

**Re subsequent strings:**

Next setting depth: 9,530 ft  
 Next mud weight: 12.500 ppg  
 Next setting BHP: 6,188 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 2,618 ft  
 Injection pressure: 2,618 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	2620	8.625	28.00	I-55	LT&C	2618	2620	7.892	103752
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	1142	1880	1.646	2618	3390	1.29	73.3	348	4.75 J

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

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

Date: March 5, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2618 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>43047522770000 Morgan State 921-36E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-52277
Location:	UINTAH	COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 12.500 ppg  
 Internal fluid density: 1.500 ppg

**Burst**

Max anticipated surface pressure: 4,092 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP: 6,188 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: 7,751 ft

Estimated cost: 191,822 (\$)

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 207 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
 Cement top: 743 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
 Departure at shoe: 75 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	4998	5000	3.875	132000
1	4532	4.5	11.60	I-80	LT&C	9530	9532	3.875	59822

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	2856	5909	2.069	5191	7780	1.50	110.5	267	2.42 J
1	5446	6360	1.168	6188	7780	1.26	52.6	212	4.03 J

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

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

Date: March 5, 2012  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 9530 ft, a mud weight of 12.5 ppg. An internal gradient of .078 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



**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>	100 to 200	5
<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>		40

1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned in an area of cut except for 1.3 feet on the east side of pit. The reserve pit will be on the south side of the location. Dimensions are 260' x 100' 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, and also place an excess cut stockpile adjacent to and east of the pit where it will be somewhat in fill.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 30 **Pit Underlayment Required?** Y**Other Observations / Comments**David Hackford  
Evaluator1/11/2012  
Date / Time

# Application for Permit to Drill Statement of Basis

3/20/2012

## Utah Division of Oil, Gas and Mining

Page 1

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
5065	43047522770000	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 921-36E1BS		<b>Unit</b>		
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	SWNW 36 9S 21E S 1539 FNL (UTM) 627491E 4428325N		801 FWL GPS Coord		

### Geologic Statement of Basis

Kerr McGee proposes to set 2,620' 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

2/8/2012  
Date / Time

### Surface Statement of Basis

The general area is in the central portion of the Natural Buttes Unit, but this section is not part of that 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 42.7 miles to the northwest. Access from Vernal is by following Utah State, Uintah County and oilfield development roads.

Five wells will be directionally drilled from this location. They are the Morgan State 921-36D4CS, Morgan State 921-36E1BS, Morgan State 921-36E1CS, Morgan State 921-36E4BS and the Morgan State 921-36E4CS. It will be necessary to place an excess cut stockpile along the east side of the reserve pit where the pit will be in 1.3 feet of fill. The pad should be stable and sufficient for five wells, and is the best site for a location in the immediate area.

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.

David Hackford  
Onsite Evaluator

1/11/2012  
Date / Time

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

<b>Category</b>	<b>Condition</b>
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RECEIVED: March 20, 2012

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# Application for Permit to Drill Statement of Basis

3/20/2012

Utah Division of Oil, Gas and Mining

Page 2

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- 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 east side of the location, and an excess cut stockpile shall be placed on the east side of the pit.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 12/19/2011

API NO. ASSIGNED: 43047522770000

WELL NAME: Morgan State 921-36E1BS

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

PHONE NUMBER: 720 929-6156

CONTACT: Danielle Piernot

PROPOSED LOCATION: SWNW 36 090S 210E

Permit Tech Review: 

SURFACE: 1539 FNL 0801 FWL

Engineering Review: 

BOTTOM: 1612 FNL 0818 FWL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 39.99550

LONGITUDE: -109.50655

UTM SURF EASTINGS: 627491.00

NORTHINGS: 4428325.00

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

Commingle 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 - Commingle - 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 921-36E1BS  
**API Well Number:** 43047522770000  
**Lease Number:** ML 22265  
**Surface Owner:** STATE  
**Approval Date:** 3/20/2012

### 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

<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 921-36E1BS
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	9. API NUMBER: 43047522770000
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1539 FNL 0801 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWNW 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 checked="" type="checkbox"/> SPUD REPORT Date of Spud: 5/12/2012	<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 DATE 5/12/2012 AT TIME 7:00 HRS.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 May 16, 2012**

<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/15/2012	

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
 Submitted By J. Scharnowske Phone Number 720.929.6304  
 Well Name/Number MORGAN STATE 921-36E1BS  
 Qtr/Qtr SWNW Section 36 Township 9S Range 21E  
 Lease Serial Number ML 22265  
 API Number 4304752277

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

Date/Time 05/11/2012 09:00 HRS AM  PM

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

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

RECEIVED

MAY 09 2012

DIV. OF OIL, GAS &amp; MINING

Date/Time 05/25/2012 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

**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
4304752276	MORGAN STATE 921-36D4CS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	18529	5/11/2012			5/16/2012	
<b>Comments:</b> MIRU BUCKET RIG. SPUD WELL LOCATION ON 5/11/2012 AT 15:30 HRS. <i>MVRD BHL: nwnw</i>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752277	MORGAN STATE 921-36E1BS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	18530	5/12/2012			5/16/2012	
<b>Comments:</b> MIRU BUCKET RIG. SPUD WELL LOCATION ON 5/12/2012 AT 7:00 HRS. <i>MVRD BHL: swnw</i>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752278	MORGAN STATE 921-36E1CS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
A	99999	18531	5/12/2012			5/16/2012	
<b>Comments:</b> MIRU BUCKET RIG. SPUD WELL LOCATION ON 5/12/2012 AT 9:30 HRS. <i>MVRD BHL: swnw</i>							

- 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 *[Signature]* \_\_\_\_\_  
 REGULATORY ANALYST 5/15/2012  
 Title Date

**RECEIVED**

**MAY 10 2012**

(5/2000)

<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>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b>	
<b>8. WELL NAME and NUMBER:</b> Morgan State 921-36E1BS	
<b>9. API NUMBER:</b> 43047522770000	
<b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

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

<b>1. TYPE OF WELL</b> Gas Well
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1539 FNL 0801 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 36 Township: 09.0S Range: 21.0E Meridian: S

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input 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: 5/30/2012	<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.

MIRU AIR RIG ON 5/28/2012. DRILLED SURFACE HOLE TO 2640'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 June 01, 2012**

<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/1/2012	

<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>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b>	
<b>8. WELL NAME and NUMBER:</b> Morgan State 921-36E1BS	
<b>9. API NUMBER:</b> 43047522770000	
<b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**

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

<b>1. TYPE OF WELL</b> Gas Well
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1539 FNL 0801 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 36 Township: 09.0S Range: 21.0E Meridian: S

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
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<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: 7/7/2012	<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.

MIRU ROTARY RIG. FINISHED DRILLING FROM 2,640' TO 9,530' ON JULY 6, 2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P 298 RIG ON JULY 7, 2012 @ 13:00 HRS. DETAILS OF CEMENT JOB 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  
July 11, 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> 7/8/2012	

<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>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b>	
<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36E1BS	
<b>9. API NUMBER:</b> 43047522770000	
<b>9. FIELD and POOL or WILDCAT:</b> MORGAN STATE LATERAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
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<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>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1539 FNL 0801 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 36 Township: 09.0S Range: 21.0E Meridian: S

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 9/5/2012	<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 August 2012. Well TD at 9,530

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 September 05, 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> 9/5/2012	

<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>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b>	
<b>8. WELL NAME and NUMBER:</b> MORGAN STATE 921-36E1BS	
<b>9. API NUMBER:</b> 43047522770000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

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

<b>1. TYPE OF WELL</b> Gas Well
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1539 FNL 0801 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 36 Township: 09.0S Range: 21.0E Meridian: S

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 9/17/2012	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> 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"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> <b>DRILLING REPORT</b> 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 checked="" type="checkbox"/> OTHER	OTHER: <input type="text" value="Top Down Cement"/>

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

The Operator would like to perform a Top Down Cement job into the Surface Casing in order to bring the Top of Cement above the Surface Casing Shoe. The Surface Casing Shoe is at 2631' and the Top of Cement is currently 2756'. 375 sacks of cement will be used in the Top Down Cement Job. Thank you.

**Approved by the Utah Division of Oil, Gas and Mining**  
**Date:** September 17, 2012  
**By:** *D. K. Duff*

<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/17/2012	

<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 921-36E1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047522770000
<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> MATHEW BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1539 FNL 0801 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW 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: 10/1/2012	<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.

Started completing the well. Well TD at 9,530.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 October 02, 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> 10/1/2012	

<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 921-36E1BS
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	9. API NUMBER: 43047522770000
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1539 FNL 0801 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWNW 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: 10/4/2012	<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 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 10/04/2012. 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  
 October 17, 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> 10/8/2012	

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

C  
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) 929-6857

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752276	Morgan State 921-36D4CS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
E	18529	18529	5/11/2012			10/8/2012	
<b>Comments:</b> This well is completed in the Wasatch and Mesaverde formations. WSMVD BHL: RWNW						11/21/2012	

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752277	Morgan State 921-36E1BS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
E	18530	18530	5/12/2012			10/4/2012	
<b>Comments:</b> This well is completed in the Wasatch and Mesaverde formations. WSMVD BHL: SWNW						11/21/2012	

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304752278	Morgan State 921-36E1CS		SWNW	36	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
E	18531	18531	5/12/2012			10/10/2012	
<b>Comments:</b> This well is completed in the Wasatch and Mesaverde formations. WSMVD BHL: SWNW						11/21/2012	

**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)

Lindsey Frazier

Name (Please Print)

Signature

REGULATORY ANALYST II

Title

11/20/2012

Date

**RECEIVED**

**NOV 20 2012**

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

AMENDED REPORT  FORM 8  
(highlight changes)

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**ML 22265**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME  
**UTU63047A**

8. WELL NAME and NUMBER:  
**MORGAN STATE 921-36E1BS**

9. API NUMBER:  
**4304752277**

10. FIELD AND POOL, OR WLD/CAT  
**NATURAL BUTTES**

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:  
**SWNW 36 9S 21E S**

12. COUNTY  
**UINTAH**

13. STATE  
**UTAH**

14. DATE SPUNDED: **5/12/2012**

15. DATE T.D. REACHED: **7/6/2012**

16. DATE COMPLETED: **10/4/2012**

ABANDONED  READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL):  
**5007 GL**

18. TOTAL DEPTH: MD **9,530** TVD **9,528**

19. PLUG BACK T.D.: MD **9,474** TVD **9,472**

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  YES  (Submit analysis)  
WAS DST RUN? NO  YES  (Submit report)  
DIRECTIONAL SURVEY? NO  YES  (Submit copy)

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

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
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,631		716		0	
7 7/8"	4 1/2" I-80	11.6#	0	9,520		1,590		2756	

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	8,900							

26. PRODUCING INTERVALS					27. PERFORATION RECORD				
FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS	
(A) WASATCH	6,407	7,320			6,407 7,320	0.36	72	Open <input checked="" type="checkbox"/>	Squeezed <input type="checkbox"/>
(B) MESAVERDE	7,400	9,244			7,400 9,244	0.36	179	Open <input checked="" type="checkbox"/>	Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6407-9244	PUMP 12,838 BBLs SLICK H2O & 310,076 LBS 30/50 OTTAWA SAND
	11 STAGES

29. ENCLOSED ATTACHMENTS:

ELECTRICAL/MECHANICAL LOGS       GEOLOGIC REPORT       DST REPORT       DIRECTIONAL SURVEY

SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION       CORE ANALYSIS       OTHER: \_\_\_\_\_

30. WELL STATUS:  
**PROD**

**RECEIVED**

31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED: 10/4/2012		TEST DATE: 10/11/2012		HOURS TESTED: 24		TEST PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 2,008	WATER - BBL: 0	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 1,546	CSG. PRESS. 2,226	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 2,008	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	1,407
				BIRD'S NEST	1,670
				MAHOGANY	2,208
				WASATCH	4,667
				MESAVERDE	7,378

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/2" bit. The remainder of surface hole was drilled with an 11" bit. DQX csg was run from surface to 5065'; LTC csg was run from 5065' to 9520'. 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) LINDSEY FRAZIER TITLE REGULATORY ANALYST  
 SIGNATURE *Lindsey Frazier* DATE 10-31-12

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 Phone: 801-538-5340  
 1594 West North Temple, Suite 1210  
 Box 145801 Fax: 801-359-3940  
 Salt Lake City, Utah 84114-5801

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

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
5/28/2012	10:00 - 12:30	2.50	MIRU	01	C	P		SKID RIG & RIG UP
	12:30 - 15:30	3.00	PRPSPD	14	A	P		WELD ON CONDUCTOR & RIG UP FLOW LINE
	15:30 - 16:00	0.50	PRPSPD	06	A	P		PU 12.25" BIT & 8" MUD MOTOR
	16:00 - 17:00	1.00	DRLSUR	02	B	P		DRILL 12.25" SURFACE HOLE F/ 49'- 210'
								ROP= 161' @ 161 FPH WOB= 14/22K RPM= 55/105 SPP=800/500 GPM= 595 TRQ= 2600/1900 PU/SO/ROT = 49/46/47 NO LOSSES HOLE IN GOOD SHAPE
	17:00 - 17:30	0.50	DRLSUR	06	A	P		TOOH & LAY DOWN 12.25" BIT
	17:30 - 19:00	1.50	DRLSUR	06	A	P		PU 11" BIT, DIR TOOLS, SCRIBE & TIH
5/29/2012	19:00 - 0:00	5.00	DRLSUR	02	D	P		DRILL 12.25" SURFACE HOLE F/ 210'-1097'
								ROP= 887' @ 177 FPH WOB= 24/28K RPM= 55/105 SPP=1200/900 GPM= 595 TRQ= 2800/2400 PU/SO/ROT = 72/59/65 NO LOSSES HOLE IN GOOD SHAPE
	0:00 - 6:00	6.00	DRLSUR	02	D	P		DRILL 12.25" SURFACE HOLE F/ 1097'-1889'
								ROP= 729' @ 132 FPH WOB= 24/28K RPM= 55/105 SPP=1200/900 GPM= 595 TRQ= 2800/2400 PU/SO/ROT = 107/74/84 NO LOSSES HOLE IN GOOD SHAPE
	6:00 - 13:30	7.50	DRLSUR	02	D	P		DRILL 12.25" SURFACE HOLE F/ 1889'-2640'
								ROP= 751' @ 100 FPH WOB= 24/28K RPM= 55/105 SPP=1200/900 GPM= 595 TRQ= 2800/2400 PU/SO/ROT = 126/88/106 LOST 50% RETURNS @ 1890' /// AIR ON @ 700 CFM HOLE IN GOOD SHAPE
	13:30 - 14:00	0.50	DRLSUR	05	F	P		CIRC & COND. HOLE FOR 8.625" CSG
14:00 - 15:30	1.50	DRLSUR	06	A	P		LAY DOWN DRILL STRING & DIR TOOLS	
15:30 - 17:00	1.50	DRLSUR	08	A	Z		REPLACE BOOM CLAMP CYLINDER	
17:00 - 18:30	1.50	DRLSUR	06	A	P		LAY DOWN DRILL STRING & DIR TOOLS	

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

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	18:30 - 21:00	2.50	CSGSUR	12	C	P		PJSM /// RUN 59 JTS, 8.625", 28#, J-55, LT&C CSG /// SHOE SET @ 2613' & BAFFLE @ 2568'
	21:00 - 21:30	0.50	CSGSUR	05	A	P		CIRC 8.625" CSG @ 2613'
	21:30 - 23:30	2.00	CSGSUR	12	E	P		PJSM WITH PRO PETRO CMT CREW /// PUMP 40 BBLs WATER AHEAD FOLLOWED BY 20 BBL GEL WATER FLUSH /// LEAD = 250sx CLASS G CMT @ 11.0 WT & 3.82 YIELD /// TAIL = 165sx CLASS G CMT @ 15.8 WT & 1.15 YIELD /// DROP PLUG & DISPLACE W/ 161 BBL'S WATER /// PLUG DN @ 23:02 5/29/2012 /// BUMP PLUG W/ 600 PSI /// FINAL LIFT = 300 PSI /// CHECK FLOATS - HELD W/ 1 BBL BACK /// LOST RETURNS 60 BBL'S INTO LEAD CMT /// NO CMT TO SURFACE
5/30/2012	23:30 - 0:00	0.50	CSGSUR	14	A	P		CUT OFF CONDUCTOR & HANG 8.625" CSG
	0:00 - 0:30	0.50	CSGSUR	14	A	P		FINISH HANGING 8.625" SURFACE CSG
	0:30 - 1:30	1.00	CSGSUR	12	E	P		RUN 200' OF 1" DN BACK SIDE & TOP OUT W/ 300 sx CLASS G CMT @ 15.8 WT & 1.15 YIELD /// CMT TO SURFACE /// RELEASE RIG @ 01:30 5/30/2012 TO THE MORGAN STATE 921-36E1CS
7/3/2012	13:00 - 15:30	2.50	MIRU	01	C	P		CHANGE BAILS / PREPARE & SKID RIG 10' / CENTER OVER WELL
	15:30 - 16:00	0.50	PRPSPD	14	A	P		NIPPLE UP BOP & EQUIPMENT
	16:00 - 17:30	1.50	PRPSPD	15	B	P		RIG UP FLOOR & PREARE & MU TEST JT
	17:30 - 22:00	4.50	PRPSPD	15	A	P		SAFETY MEETING TEST BOP'S & EQUIPMENT AS PER PROGRAM 250/5000 PSI / ANNULAR 250/ 2500
	22:00 - 23:00	1.00	PRPSPD	14	B	P		INSTALL SMITH BEARING ASSY & WEAR BUSHING
	23:00 - 23:30	0.50	PRPSPD	15	A	P		TEST MI SWACO EQUIPMENT
7/4/2012	23:30 - 0:00	0.50	PRPSPD	07	A	P		SERVICE RIG
	0:00 - 2:30	2.50	PRPSPD	06	A	P		PU & MU BHA # 1 WITH WEATHERFORD, SCRIBE, ORIENTATE & TEST SAME, TIH TO 2,513' TAG CEMENT
	2:30 - 3:30	1.00	PRPSPD	23		P		PRE SPUD INSPECTION & INSTALL ROTATING HEAD RUBBER
	3:30 - 4:30	1.00	DRLPRO	02	F	P		DRILL OUT CEMENT & SHOE TRACK FROM 2,513' TO 2,630', CLEAN OUT RAT HOLE TO 2,657'
	4:30 - 13:30	9.00	DRLPRO	02	D	P		DRILL / SLIDE / SURVEY F/ 2,657' TO 4,308' = 1,651' @ 183.4 FPH WOB 20,000-25,000 TOP DRIVE RPM 45-70 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESSURE ON/OFF BTM 2,050/1,760 TORQUE ON/OFF BTM 6,000/ 3,000 PICK UP WT 123,000 SLACK OFF WT 109,000 ROT WT 116,000 SLIDE 25' IN 20 MIN 1.5 % OF FOOTAGE DRILLED, 3.7 % OF HRS DRILLED MUD WT 8.4 VIS 26
	13:30 - 14:00	0.50	DRLPRO	07	A	P		RIG SERVICE

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	14:00 - 0:00	10.00	DRLPRO	02	D	P		DRILL / SLIDE / SURVEY F/ 4,308' TO 6,000' = 1,692' @ 169.2 FPH WOB 20,000-25,000 TOP DRIVE RPM 45-70 MUD MOTOR RPM 115 PUMPS 124 SPM= 558GPM PUMP PRESSURE ON/OFF BTM 2,275/1,955 TORQUE ON/OFF BTM 8,000/ 4,000 PICK UP WT 160,000 SLACK OFF WT 128,000 ROT WT 139,000 SLIDE 50' IN 25 MIN 2.95 % OF FOOTAGE DRILLED, 4.17 %OF HRS DRILLED MUD WT 8.4 VIS 26,LOST 30 BBLS WATER @ 5,648- 50 BBLS @ 5,728,,PUMPING 10 BBL SWEEPS EVERY STAND,W/ 10# BBL CALCIUM CARBONATE, 150 BBLS MAKE UP WATER NOV -D WATER SWACO -OFF LINE NO FLARE
7/5/2012	0:00 - 6:00	6.00	DRLPRO	02	D	P		DRILL / SLIDE / SURVEY F/ 6,000 TO 6,725' = 725 @ 120.8 FPH WOB 20,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558 GPM PUMP PRESSURE ON/OFF BTM 2,275/1,955 TORQUE ON/OFF BTM 8,000/ 4,000 PICK UP WT 178,000 SLACK OFF WT 135,000 ROT WT 154,000 SLIDE 40' IN 45 MIN 5.5 % OF FOOTAGE DRILLED, 12.5 %OF HRS DRILLED MUD WT 8.4 VIS 26,PUMPING 10 BBL SWEEPS EVERY STAND,W/ 10# BBL CALCIUM CARBONATE, 120 BBLS MAKE-UP WATER USED NOV -D WATER SWACO -OFF LINE NO FLARE

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

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 13:00	7.00	DRLPRO	02	D	P		DRILL / SLIDE / SURVEY F/ 6,725 TO 7,331' = 606 @ 86.6 FPH WOB 23,000-26,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 115 PUMPS 124 SPM= 558 GPM PUMP PRESSURE ON/OFF BTM 2,250/2,005 TORQUE ON/OFF BTM 6,000/ 4,000 PICK UP WT 178,000 SLACK OFF WT 155,000 ROT WT 169,000 SLIDE 57' IN 8 MIN 9.4 % OF FOOTAGE DRILLED, 19 %OF HRS DRILLED MUD WT 8.4 VIS 26,PUMPING 10 BBL SWEEPS EVERY STAND,W/ 10# BBL CALCIUM CARBONATE 95 BBL MAKE-UP WATER USED NOV -D WATER SWACO -OFF LINE NO FLARE
	13:00 - 13:30	0.50	DRLPRO	07	A	P		DAILY RIG SERVICE
	13:30 - 0:00	10.50	DRLPRO	02	D	P		DRILL / SLIDE / SURVEY F/ 7,331' TO 8,465' = 866 @ 82.4 FPH WOB 23,000-28,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 113 PUMPS 120 SPM= 540 GPM PUMP PRESSURE ON/OFF BTM 2,250/1,955 TORQUE ON/OFF BTM 7,000/ 4,000 PICK UP WT 202,000 SLACK OFF WT 165,000 ROT WT 182,000 SLIDE 30' IN 50 MIN 2.6 % OF FOOTAGE DRILLED, 8.3 %OF HRS DRILLED MUD WT 8.4 VIS 26,PUMPING 10 BBL SWEEPS EVERY STAND,W/ 10# BBL CALCIUM CARBONATE 50 BBL MAKE-UP WATER USED NOV -D WATER SWACO -OFF LINE 5 FT FLARE ON CONN

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
7/6/2012	0:00 - 6:00	6.00	DRLPRO	02	D	P		DRILL F/ 8,465' T/ 9,200' = 735' @ 122.5 FPH WOB 23,000-26,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 113 PUMPS 114 SPM= 513 GPM PUMP PRESSURE ON/OFF BTM 2,240/2,055 TORQUE ON/OFF BTM 8,000/ 6,000 PICK UP WT 216,000 SLACK OFF WT 176,000 ROT WT 191,000 SLIDE 0' MUD WT 8.4 VIS 26, SURVEY @ 9,074' INC 1.81 AZM 151.11 / 2' N AND 7' E OF CENTER 65 BBL MAKE-UP WATER NOV-D WATER SWACO ON LINE @ 8,657'/350 ANNULAR PRESSURE / 25' FLARE 130 ANNULAR PRESSURE @ 9,160' W/ 10' FLARE
	6:00 - 12:00	6.00	DRLPRO	02	D	P		DRILL F/ 9,200' T/ 9,530' = 335' @5.8FPH WOB 23,000-26,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 113 PUMPS 114 SPM= 513 GPM PUMP PRESSURE ON/OFF BTM 2,240/2,055 TORQUE ON/OFF BTM 8,000/ 6,000 PICK UP WT 216,000 SLACK OFF WT 176,000 ROT WT 191,000 SLIDE 0' MUD WT 11.3 VIS 26, NOV-OFF LINE @ 9,250 SWACO OFF LINE @ 9,350' 15' FLARE DISPLACE HOLE W/11.3# MUD @ 9,250 CCH FOR WIPER TRIP /LOST 150 BBLS MUD 13 STAND WIPER TRIP, TO 8,330 TIGHT @ 9,428, WASH 200' TO BTM 5' FILL CCH /MUD FOR CASING / MUD WT TO 11.4 / BTS UP MUD CUT 11.0# 15' FLARE SPOT 100 BBLS 12.5# ON BTM, TRIP OUT FOR CASING, FLOW CHECK @ CASING SHOE REMOVE SMITH BEARING ASSEMBLY ,INSTALL CASING ROTATING HEAD HOUSING, PULL WEAR BUSHING, X/O DRILLING BAILS TO CASING BAILS CTJSA RIG UP FRANKS CASING EQUIP MAKE UP FLOAT EQUIP/ RUN 41/2 CASING
	12:00 - 13:00	1.00	DRLPRO	05	C	P		
	13:00 - 14:30	1.50	DRLPRO	06	E	P		
	14:30 - 16:00	1.50	DRLPRO	05	C	P		
	16:00 - 20:30	4.50	DRLPRO	06	D	P		
	20:30 - 22:30	2.00	DRLPRO	14	B	P		
	22:30 - 23:30	1.00	DRLPRO	12	A	P		
	23:30 - 0:00	0.50	DRLPRO	12	C	P		
7/7/2012	0:00 - 6:00	6.00	CSGPRO	12	C	P		RUN 101 JTS I-80 11.6# LTC 4.5 CASING +1 CROSSOVER LTC/ DQX 117 JTS I-80 11.6# DQX 4.5 CASING+ RELATED TOOLS / BREAKING CIRCULATION @ SELECTED INTERVALS / LANDING CASING MANDREL IN BOWL W/98,000, @ 9,516 FOR CIRC & CEMENTING / SHOE @9,516 / FC @ 9,474 / MV MKR @ 7,313 X/O @ 5,038 FILL & CIRC CASING BTMS UP GAS MUD CUT 2/10 -15' FLARE /RD FRANKS / CT-JSA WITH BJ
	6:00 - 7:30	1.50	CSGPRO	05	D	P		

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: H&P 298/298, CAPSTAR 310/310

Event: DRILLING

Start Date: 5/16/2012

End Date: 7/7/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:30 - 10:30	3.00	CSGPRO	12	E	P		INSTALL BJ CMT HEAD , TEST PUMP & LINES TO 4,500 PSI , DROP BOTTOM PLUG PUMP 25 BBLS FW PUMP 470 SKS LEAD CEMENT @ 12.0 PPG,(189.2 BBLS) (PREM LITE II + .0.25 pps CELLO FLAKE + 5 pps KOL SEAL + .05 lb/sx STATIC FREE + 6% bwoc BENTONITE + .2% bwoc SODIUM META SILICATE + 0.2 % R-3 +0.4%bwoc FL-52 100.1% FRESH WATER / (12.48 gal/sx, 2.26 yield) + 1,120 SX TAIL @ 14.3 ppg( 263.3 BBLS)+ (CLS G 50/50 POZ + 10% SALT + .005lbs/sx STATIC FREE + .2% R3 + .002 GPS FP-6L + 2% BENTONITE +0.5%EC-1+ 58.9% FW / (5.94 gal/sx, 1.32 yield) WASH PUMP & LINES DROP TOP PLUG & DISPLACE W/ 147.2 BBLS H2O + ADDITIVES / PLUG DOWN @09:50 HOURS / FLOATS HELD W/ 1.5 BBLS H2O RETURNED TO INVENTORY/ LOST RETURNS @ 70 BBLS IN DISPLACEMENT / LIFT PRESSURE @ 2,500 PSI BUMP PRESSURE @3,050 / TOP OF TAIL CEMENT CALCULATED @ 4,30' / RIG DOWN BJ
	10:30 - 13:00	2.50	CSGPRO	14	A	P		FLUSH BOP'S & EQUIPMENT / SET PACK OFF WITH CAMERON / LAY DOWN RUNNING TOOL / NIPPLE DOWN BOP & EQUIPMENT / PREP FOR SKID / RELEASE RIG @ 13:00 HRS 7/7/2012 TO MORGAN STATE 921-36E1CS

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	MORGAN STATE 921-36E1BS BLUE	Wellbore No.	OH
Well Name	MORGAN STATE 921-36E1BS	Wellbore Name	MORGAN STATE 921-36E1BS
Report No.	1	Report Date	9/17/2012
Project	UTAH-UJINTAH	Site	MORGAN STATE 921-36E PAD
Rig Name/No.	MILES 2/2	Event	COMPLETION
Start Date	9/17/2012	End Date	10/4/2012
Spud Date	5/28/2012	Active Datum	RKB @5,033.00usft (above Mean Sea Level)
UWI	SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/N/0/801/0/0		

1.3 General

Contractor		Job Method	PERFORATE	Supervisor	
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

1.4 Initial Conditions

Fluid Type	KCL WATER	Fluid Density	
Surface Press		Estimate Res Press	
TVD Fluid Top		Fluid Head	
Hydrostatic Press		Press Difference	
Balance Cond	NEUTRAL		

1.5 Summary

Gross Interval	6,407.0 (usft)-9,244.0 (usft)	Start Date/Time	9/18/2012 12:00AM
No. of Intervals	60	End Date/Time	9/18/2012 12:00AM
Total Shots	251	Net Perforation Interval	82.00 (usft)
Avg Shot Density	3.06 (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 (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/18/2012 12:00AM	WASATCH/			6,407.0	6,408.0	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
9/18/2012 12:00AM	WASATCH/			6,483.0	6,484.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,492.0	6,493.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,509.0	6,510.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,535.0	6,536.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,580.0	6,581.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,590.0	6,591.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,607.0	6,608.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,649.0	6,650.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,698.0	6,700.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,730.0	6,731.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,748.0	6,750.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			6,812.0	6,814.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			7,122.0	7,124.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			7,230.0	7,232.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			7,278.0	7,280.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	WASATCH/			7,318.0	7,320.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,400.0	7,408.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,570.0	7,571.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,635.0	7,636.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,728.0	7,729.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,767.0	7,769.0	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
9/18/2012 12:00AM	MESAVERDE/			7,786.0	7,788.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,856.0	7,857.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,956.0	7,958.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			7,991.0	7,992.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,035.0	8,036.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,111.0	8,113.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,144.0	8,145.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,205.0	8,206.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,300.0	8,301.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,362.0	8,363.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,377.0	8,378.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,394.0	8,396.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,424.0	8,425.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,436.0	8,437.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,455.0	8,456.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,495.0	8,496.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,626.0	8,627.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,655.0	8,657.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,689.0	8,690.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,703.0	8,704.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,723.0	8,724.0	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
9/18/2012 12:00AM	MESAVERDE/			8,764.0	8,765.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,806.0	8,807.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,834.0	8,835.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,855.0	8,856.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,921.0	8,922.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,937.0	8,938.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			8,991.0	8,992.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,025.0	9,027.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,041.0	9,042.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,050.0	9,051.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,057.0	9,058.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,085.0	9,086.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,118.0	9,119.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,129.0	9,130.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,145.0	9,146.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,163.0	9,164.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/18/2012 12:00AM	MESAVERDE/			9,242.0	9,244.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 3 Plots

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE		Spud Date: 5/28/2012	
Project: UTAH-UINTAH		Site: MORGAN STATE 921-36E PAD	Rig Name No: MILES 2/2, MILES 2/2
Event: COMPLETION		Start Date: 9/17/2012	End Date: 10/4/2012
Active Datum: RKB @5,033.00usft (above Mean Sea Level)		UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
5/28/2012	-							
9/17/2012	7:00 - 7:30	0.50	FRAC	33	D	P		SURFACE CSG @ 2,632 TOC 2,756  NO PRESSURE ON SURFACE RU HOT OILER, FILLED SURFACE WITH 6 BBLS TMAC, PRESSURED TO 600, PSI BROKE BACK TO 450 PSI, PUMPED 10 BBLS @ 1 1/2 TO 2 BPM 450 PSI, ISIP 450 BLEED PRESSURE OFF MOVED TO NEXT WELL
9/18/2012	7:00 - 8:30	1.50	SURFPR	33	C	P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 12 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 24 PSI. 1ST PSI TEST T/ 7000 PSI. HELD FOR 30 MIN LOST 99 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI.
	9:00 - 10:30	1.50	SURFPR	51	B	P		RU SCHLUMBERGER CEMENTING CREW, PRESSURE TEST PUMP & LINES 2000 PSI, GOOD. ESTABLISH INJECTION RATE @ 3.5 BBL PM 500 PSI. PUMPED 10 BBLS FRESH H2O, 10 BBLS SOO1, 10 BBLS, FRESH H2O, 10 BBLS ZONE LOCK, 5 BBLS, FRESH H2O, 377 SKS CLASS G CEMENT, (377) SKS, 12.5 PPG SLURY, (YIELD=1.93) WATER(=10,332 GAL/SK). DISPLACED WITH 3 BBLS FRESH H2O AVERAGE RATE 3.5 BPM, 450 PSI, SWI WITH 753 PSI ON SURFACE TOTAL FLUID PUMPED 177 BBLS (131 BBLS CEMENT)
9/21/2012	9:00 - 13:00	4.00	FRAC	37		P		RU WL, RAN CBL FROM 3250' TO SURFACE, CEMENT TOP SURFACE  PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SWIFW

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: MILES 2/2, MILES 2/2

Event: COMPLETION

Start Date: 9/17/2012

End Date: 10/4/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/26/2012	7:00 - 18:00	11.00	FRAC	36	B	P		<p>FRAC STG 1)WHP 1550 PSI, BRK 3524 PSI @ 4.4 BPM. ISIP 2261 PSI, FG .69. CALC PERFS OPEN @ 50.3 BPM @ 4928 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN) ISIP 2959 PSI, FG .76, NPI 698 PSI. MP 5960 PSI, MR 51 BPM, AP 5187 PSI, AR 48.2 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 2)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 9075' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 2)WHP 2300 PSI, BRK 3510 PSI @ 4.9 BPM. ISIP 2261 PSI, FG .69. CALC PERFS OPEN @ 46.7 BPM @ 5661 PSI = 71% HOLES OPEN. (17/24 HOLES OPEN) ISIP 2797 PSI, FG .75, NPI 536 PSI. MP 5968 PSI, MR 51.2 BPM, AP 5311 PSI, AR 50.7 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 3)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 8886' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 3)WHP 705 PSI, BRK 2312 PSI @ 4.8 BPM. ISIP 1495 PSI, FG .61. CALC PERFS OPEN @ 51 BPM @ 4286 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN) ISIP 2202 PSI, FG .69, NPI 707 PSI. MP 5884 PSI, MR 51.7 BPM, AP 4453 PSI, AR 50.7 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 4)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8679' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 4)WHP 1447 PSI, BRK 1872 PSI @ 4.9 BPM. ISIP 1578 PSI, FG .62. CALC PERFS OPEN @ 52.8 BPM @ 4874 PSI = 95% HOLES OPEN. (20/21 HOLES OPEN) ISIP 2296 PSI, FG .71, NPI 718 PSI. MP 5842 PSI, MR 55.3 BPM, AP 5061 PSI, AR 54.7 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 5)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8414' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p>

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: MILES 2/2, MILES 2/2

Event: COMPLETION

Start Date: 9/17/2012

End Date: 10/4/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/27/2012	7:00 - 18:00	11.00	FRAC	36	B	P		<p>FRAC STG 5)WHP 1520 PSI, BRK 2339 PSI @ 5.1 BPM. ISIP 1785 PSI, FG .65. CALC PERFS OPEN @ 50.9 BPM @ 5263 PSI = 86% HOLES OPEN. (18/24 HOLES OPEN) ISIP 2546 PSI, FG .75, NPI 761 PSI. MP 6398 PSI, MR 51.2 BPM, AP 5765 PSI, AR 49.3 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 6)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 8134' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>PERF STG 6)WHP 1680 PSI, BRK 2171 PSI @ 4.8 BPM. ISIP 1736 PSI, FG .66. CALC PERFS OPEN @ 52.6 BPM @ 5464 PSI = 82% HOLES OPEN. (18/22 HOLES OPEN) ISIP 2499 PSI, FG .75, NPI 763 PSI. MP 6229 PSI, MR 55.1 BPM, AP 5621 PSI, AR 53.9 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 7)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 7818' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 7)WHP 1360 PSI, BRK 1675 PSI @ 5.0 BPM. ISIP 1456 PSI, FG .63. CALC PERFS OPEN @ 54.8 BPM @ 5205 PSI = 78% HOLES OPEN. (18/23 HOLES OPEN) ISIP 2301 PSI, FG .74, NPI 845 PSI. MP 5548 PSI, MR 55.2 BPM, AP 5258 PSI, AR 54.4 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 8)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 7438' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 8)WHP 850 PSI, BRK 1757 PSI @ 4.7 BPM. ISIP 1198 PSI, FG .60. CALC PERFS OPEN @ 54.7 BPM @ 5114 PSI = 75% HOLES OPEN. (18/24 HOLES OPEN) ISIP 2261 PSI, FG .74, NPI 1063 PSI. MP 5935 PSI, MR 55 BPM, AP 5422 PSI, AR 54.6 BPM, PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 9)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 7350' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p>

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE		Spud Date: 5/28/2012	
Project: UTAH-UINTAH		Site: MORGAN STATE 921-36E PAD	Rig Name No: MILES 2/2, MILES 2/2
Event: COMPLETION		Start Date: 9/17/2012	End Date: 10/4/2012
Active Datum: RKB @5,033.00usft (above Mean Sea Level)		UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/28/2012	7:00 - 18:00	11.00	FRAC	36	B	P		<p>FRAC STG 9)WHP 470 PSI, BRK 2315 PSI @ 4.7 BPM. ISIP 1151 PSI, FG .60.            CALC PERFS OPEN @ 54.8 BPM @ 4241 PSI = 88% HOLES OPEN. (21/24 HOLES OPEN)            ISIP 2306 PSI, FG .76, NPI 1155 PSI.            MP 5165 PSI, MR 55.2 BPM, AP 4392 PSI, AR 54.7 BPM,            PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 10)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 6844' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 10)WHP 490 PSI, BRK 1851 PSI @ 4.7 BPM. ISIP 1567 PSI, FG .67.            CALC PERFS OPEN @ 54.7 BPM @ 4355 PSI = 96% HOLES OPEN. (23/24 HOLES OPEN)            ISIP 2016 PSI, FG .74, NPI 449 PSI.            MP 4946 PSI, MR 55 BPM, AP 4374 PSI, AR 54.5 BPM,            PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 11)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 6638' P/U PERF AS PER DESIGN. POOH, XO T/ FRAC.</p> <p>FRAC STG 11)WHP 1295 PSI, BRK 1844 PSI @ 4.8 BPM. ISIP 1712 PSI, FG .70.            CALC PERFS OPEN @ 54.5 BPM @ 3854 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN)            ISIP 2017 PSI, FG .75, NPI 305 PSI.            MP 4577 PSI, MR 55.1 BPM, AP 3983 PSI, AR 54.5 BPM,            PUMPED 30/50 OWATTA SAND. SWI, XO T/ WL.</p> <p>PERF STG 12)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 6396'. PLUG WOULD NOT SHEER. WORK WL. PULL OUT OF ROPE SOCKET. POOH W/ WL.</p> <p>(( ( IN THE HOLE = CCL, 4 PERF GUNS, &amp; BAKER 10 SETTING TOOL. TOTAL FISH LENGTH 31'. TOP OF FISH @ 6396'. )))</p> <p>TOTAL SAND = 310,076 LBS            TOTAL CLFL = 12,838 BBL</p>
9/29/2012	-							
10/3/2012	7:00 - 7:30	0.50	DRLOUT	48	B	P		FISHING

**US ROCKIES REGION  
Operation Summary Report**

Well: MORGAN STATE 921-36E1BS BLUE

Spud Date: 5/28/2012

Project: UTAH-UINTAH

Site: MORGAN STATE 921-36E PAD

Rig Name No: MILES 2/2, MILES 2/2

Event: COMPLETION

Start Date: 9/17/2012

End Date: 10/4/2012

Active Datum: RKB @5,033.00usft (above Mean Sea Level)

UWI: SW/NW/0/9/S/21/E/36/0/0/26/PM/N/1539/W/0/801/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:30 - 18:00	10.50	DRLOUT	31	B	P		MIRU, NDWH, NU BOP'S, PU OVERSHOT, BUMPER SUB, JARS, TIH TO 6396', TAG FISH, OVERSHOT 2.50', EXT BOWL 3.00', BUMPER SUB 8.01', JARS/ C/O 5.83', BHA 27.89', 200 JTS, LATCH ON FISH, PULL 30,000# OVER, PULL 15,000# SET OFF JARS, PULL 30,000# OVER, FISH RELEASED, POOH, STD BACK TBG, LD TOOLS, FISH, SWIFN
10/4/2012	7:00 - 7:30	0.50	DRLOUT	48		P		MILLING -PLUGS
	7:30 - 17:00	9.50	DRLOUT	44	C	P		TIH 202 JTS, 6396', TAG PLUG# 1, MILL 11 PLUGS, PLUG# 1 6396' 5' SAND 5 MIN 500# KICK PLUG# 2 6638' 30' SAND 5 MIN 200# KICK PLUG# 3 6844' 30' SAND 5 MIN 400# KICK PLUG# 4 7350' 30' SAND 5 MIN 300# KICK PLUG# 5 7438' 30' SAND 5 MIN 500# KICK PLUG# 6 7818' 30' SAND 5 MIN 600# KICK PLUG# 7 8134' 20' SAND 5 MIN 300# KICK PLUG# 8 8414' 20' SAND 5 MIN 500# KICK PLUG# 9 8679' 20' SAND 5 MIN 400# KICK PLUG# 10 8886' 20' SAND 5 MIN 500# KICK PLUG# 11 9075'  BTM PERF 9244' PBDT 9470'  C/O TO 9470', 298 JTS, LD 18 JTS TO 8900', 280 JTS, LAND TBG, ND BOP'S, NUWH, POBS, 2700#, TREST FLOW LINE TO 3000#, TURN TO FB CREW TBG 280 JTS 8871.36' KB 26.00' HANGER .83' XNSN 1.875" 2.20' EOT 8900.39'  FRAC WTR 12,836 BBLS RCVD 2,700 BBLS LTR 10,136 BBLS
	17:00 - 17:00	0.00	DRLOUT	50				WELL TURNED TO SALES @ 1700 HR ON 10/4/2012. 1380 MCFD, 1920 BWPD, FCP 2046#, FTP 1945#, 20/64" CK.

Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH\_MORGAN STATE 921-36E PAD  
 Well: MORGAN STATE 921-36E1BS  
 Wellbore: MORGAN STATE 921-36E1BS  
 Section:  
 SHL:  
 Design: MORGAN STATE 921-36E1BS (wp01)  
 Latitude: 39.995554  
 Longitude: -109.505934  
 GL: 5007.00  
 KB: 28' RKB + 5007' @ 5032.00ft (H&P 298)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4633.00	4633.55	WASATCH
5233.00	5233.68	TOP OF CYLINDER
7331.00	7331.71	MESAVERDE
9530.00	9530.74	SEGO

WELL DETAILS: MORGAN STATE 921-36E1BS

+N/-S	+E/-W	Northing	Ground Level: Easting	5007.00 Latitude	Longitude	Slot
0.00	0.00	14527932.58	2058877.74	39.995554	-109.505934	

CASING DETAILS

TVD	MD	Name	Size
2613.87	2614.00	8-5/8	8-5/8

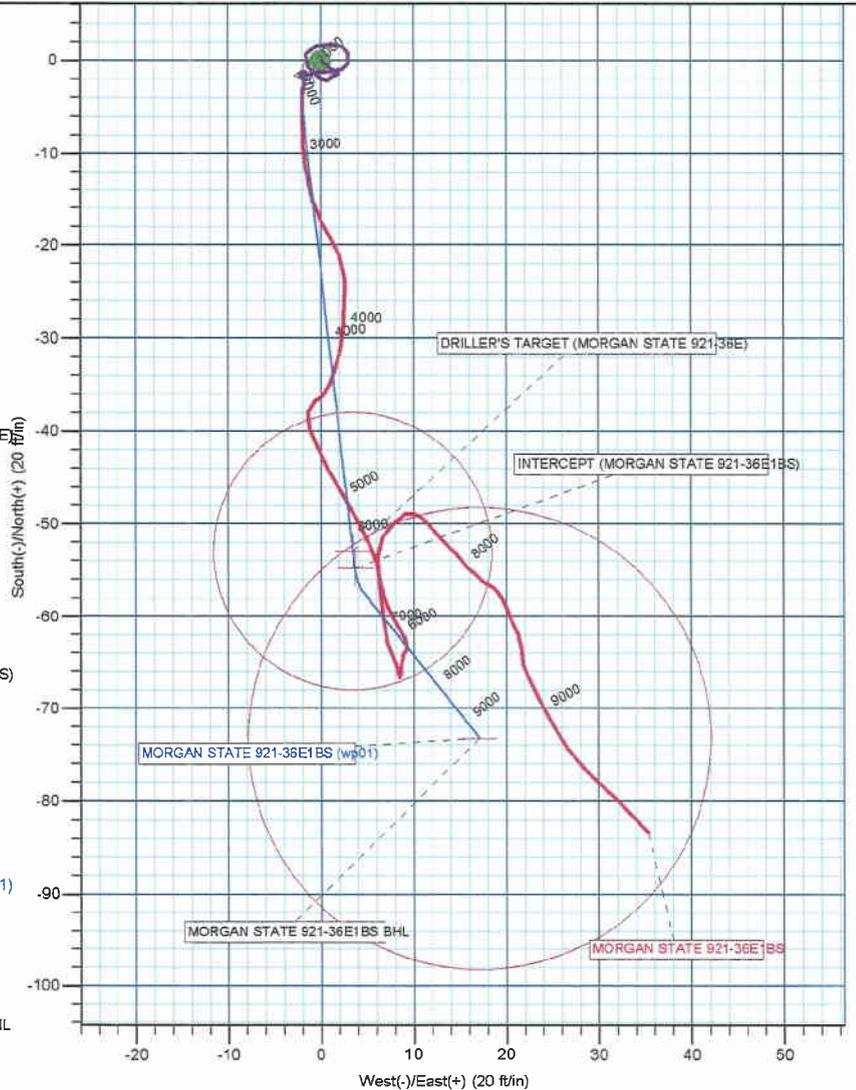
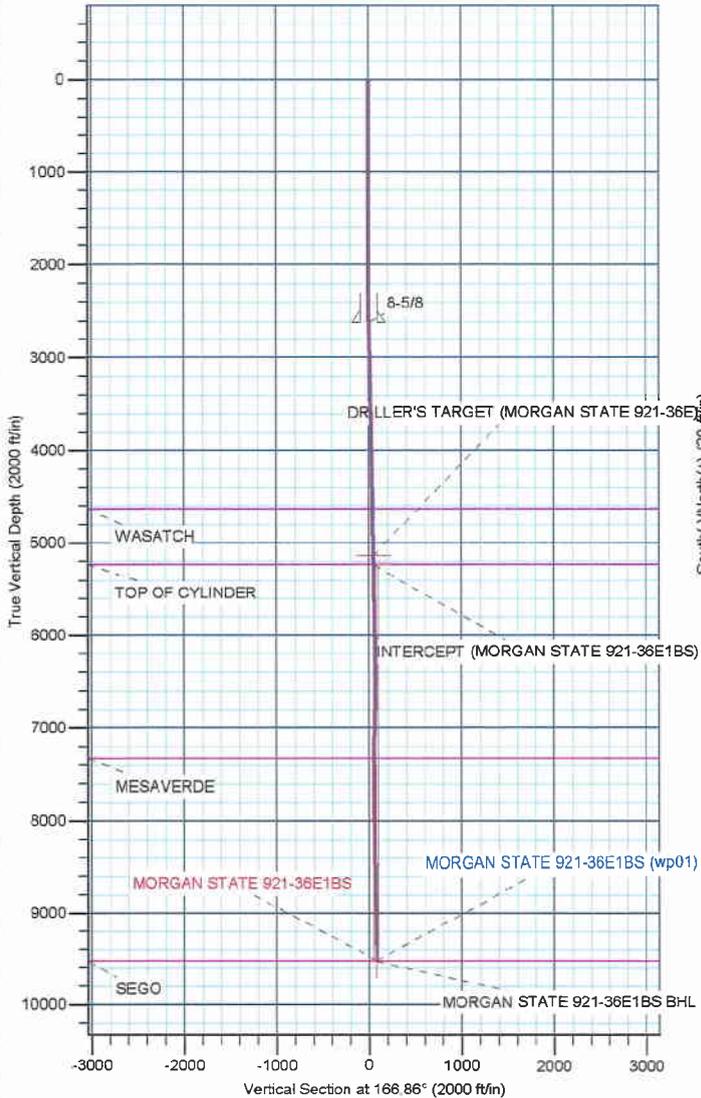
Azimuths to True North  
 Magnetic North: 10.95°  
 Magnetic Field  
 Strength: 52224.6snT  
 Dip Angle: 65.84°  
 Date: 6/20/2012  
 Model: IGRF2010

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
DRILLER'S TARGET (MORGAN STATE 921-36E)	5133.00	-52.97	3.42	14527879.67	2058882.05	39.995409	-109.505922	Circle (Radius: 15.00)
INTERCEPT (MORGAN STATE 921-36E1BS)	5233.00	-54.81	3.67	14527877.84	2058882.33	39.995404	-109.505921	Point
MORGAN STATE 921-36E1BS BHL	9530.00	-73.21	17.09	14527859.67	2058896.05	39.995353	-109.505873	Circle (Radius: 25.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
2600.00	0.50	199.57	2599.87	-1.97	-1.69	0.00	0.00	1.54
2750.00	0.50	199.57	2749.87	-3.21	-2.13	0.00	0.00	2.64
2789.59	1.21	173.55	2789.45	-3.78	-2.14	2.00	-42.10	3.20
5133.66	1.21	173.55	5133.00	-52.97	3.42	0.00	0.00	52.37
5458.95	0.29	141.70	5458.25	-57.03	4.32	0.30	-170.98	56.52
9530.74	0.29	141.70	9530.00	-73.21	17.09	0.00	0.00	75.17



# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N  
UINTAH\_MORGAN STATE 921-36E PAD  
MORGAN STATE 921-36E1BS**

**MORGAN STATE 921-36E1BS**

**Design: MORGAN STATE 921-36E1BS**

## **Standard Survey Report**

**19 July, 2012**

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Site:</b>	UINTAH_MORGAN STATE 921-36E PAD	<b>MD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36E1BS	<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 921-36E PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,527,931.66 usft	<b>Latitude:</b>	39.995551
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,058,887.84 usft	<b>Longitude:</b>	-109.505898
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.96 °

<b>Well:</b>	MORGAN STATE 921-36E1BS					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,527,932.58 usft	<b>Latitude:</b>	39.995554
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,058,877.74 usft	<b>Longitude:</b>	-109.505934
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,007.00 ft

<b>Wellbore:</b>	MORGAN STATE 921-36E1BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF2010	6/20/2012	(°)	(°)	(nT)
			10.95	65.84	52,225

<b>Design:</b>	MORGAN STATE 921-36E1BS				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	16.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	16.00	0.00	0.00	157.04	

<b>Survey Program</b>	<b>Date</b> 7/19/2012				
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
(ft)	(ft)				
245.00	2,600.00	Survey #1 (MORGAN STATE 921-36E1BS)	MWD	MWD - STANDARD	
2,747.00	9,530.00	Survey #2 (MORGAN STATE 921-36E1BS)	MWD	MWD - STANDARD	

<b>Survey</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Vertical</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	
<b>Depth</b>	<b>(°)</b>	<b>(°)</b>	<b>Depth</b>	<b>(ft)</b>	<b>(ft)</b>	<b>Section</b>	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	
<b>(ft)</b>			<b>(ft)</b>			<b>(ft)</b>	<b>(°/100usft)</b>	<b>(°/100usft)</b>	<b>(°/100usft)</b>	
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.18	131.36	245.00	-0.24	0.27	0.32	0.08	0.08	0.00	0.00
336.00	0.35	121.34	336.00	-0.48	0.61	0.68	0.19	0.19	-11.01	-11.01
427.00	0.53	135.93	427.00	-0.92	1.14	1.30	0.23	0.20	16.03	16.03
522.00	0.54	106.31	521.99	-1.37	1.88	1.99	0.29	0.01	-31.18	-31.18
617.00	0.44	273.48	616.99	-1.47	1.95	2.11	1.03	-0.11	175.97	175.97
712.00	0.44	232.08	711.99	-1.67	1.29	2.04	0.33	0.00	-43.58	-43.58
808.00	0.44	219.87	807.99	-2.18	0.77	2.31	0.10	0.00	-12.72	-12.72
902.00	0.96	311.94	901.98	-1.93	-0.05	1.76	1.14	0.55	97.95	97.95
996.00	1.23	316.99	995.96	-0.67	-1.32	0.10	0.30	0.29	5.37	5.37

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Site:</b>	UINTAH_MORGAN STATE 921-36E PAD	<b>MD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36E1BS	<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)
1,089.00	0.88	31.17	1,088.95	0.67	-1.64	-1.26	1.40	-0.38	79.76
1,184.00	0.97	73.97	1,183.94	1.52	-0.49	-1.59	0.72	0.09	45.05
1,279.00	0.88	90.58	1,278.93	1.74	1.02	-1.20	0.30	-0.09	17.48
1,372.00	0.79	108.60	1,371.92	1.52	2.34	-0.49	0.30	-0.10	19.38
1,466.00	0.70	181.55	1,465.91	0.74	2.94	0.46	0.95	-0.10	77.61
1,563.00	0.62	184.01	1,562.90	-0.37	2.88	1.47	0.09	-0.08	2.54
1,656.00	0.62	257.92	1,655.90	-0.98	2.36	1.82	0.80	0.00	79.47
1,752.00	0.53	259.42	1,751.90	-1.17	1.41	1.63	0.10	-0.09	1.56
1,845.00	0.53	265.04	1,844.89	-1.29	0.56	1.40	0.06	0.00	6.04
1,939.00	0.70	271.99	1,938.89	-1.30	-0.45	1.03	0.20	0.18	7.39
2,033.00	0.70	235.77	2,032.88	-1.61	-1.49	0.90	0.46	0.00	-38.53
2,125.00	0.18	308.55	2,124.88	-1.83	-2.07	0.88	0.73	-0.57	79.11
2,217.00	0.26	338.78	2,216.88	-1.55	-2.26	0.54	0.15	0.09	32.86
2,308.00	0.35	74.41	2,307.88	-1.28	-2.07	0.37	0.50	0.10	105.09
2,403.00	0.18	95.24	2,402.87	-1.22	-1.64	0.48	0.20	-0.18	21.93
2,494.00	0.18	187.26	2,493.87	-1.37	-1.51	0.67	0.28	0.00	101.12
2,600.00	0.50	199.57	2,599.87	-1.97	-1.69	1.16	0.31	0.30	11.61
<b>FIRST MWD SURVEY</b>									
2,747.00	0.83	183.29	2,746.86	-3.64	-1.97	2.58	0.26	0.22	-11.08
2,842.00	1.15	177.65	2,841.85	-5.28	-1.97	4.09	0.35	0.34	-5.94
2,936.00	1.34	180.95	2,935.83	-7.32	-1.95	5.98	0.22	0.20	3.51
3,031.00	1.31	175.98	3,030.80	-9.52	-1.89	8.02	0.12	-0.03	-5.23
3,125.00	1.25	168.98	3,124.78	-11.59	-1.62	10.04	0.18	-0.06	-7.45
3,220.00	1.13	168.73	3,219.76	-13.53	-1.24	11.97	0.13	-0.13	-0.26
3,314.00	1.13	164.61	3,313.74	-15.33	-0.81	13.80	0.09	0.00	-4.38
3,408.00	1.38	152.61	3,407.72	-17.23	-0.04	15.85	0.38	0.27	-12.77
3,502.00	1.63	151.23	3,501.68	-19.41	1.12	18.31	0.27	0.27	-1.47
3,597.00	0.81	156.98	3,596.66	-21.21	2.03	20.32	0.87	-0.86	6.05
3,786.00	0.88	178.48	3,785.64	-23.89	2.60	23.01	0.17	0.04	11.38
3,880.00	1.00	183.23	3,879.63	-25.43	2.57	24.42	0.15	0.13	5.05
3,974.00	0.94	180.86	3,973.62	-27.02	2.51	25.86	0.08	-0.06	-2.52
4,069.00	1.13	183.23	4,068.60	-28.74	2.45	27.41	0.20	0.20	2.49
4,163.00	1.56	188.98	4,162.57	-30.92	2.19	29.33	0.48	0.46	6.12
4,258.00	1.06	204.11	4,257.55	-33.00	1.63	31.03	0.64	-0.53	15.93
4,352.00	1.44	194.61	4,351.53	-34.94	0.98	32.55	0.46	0.40	-10.11
4,447.00	0.56	254.23	4,446.51	-36.22	0.23	33.44	1.32	-0.93	62.76
4,541.00	0.75	226.98	4,540.51	-36.77	-0.66	33.60	0.38	0.20	-28.99
4,635.00	1.06	195.86	4,634.50	-38.02	-1.35	34.48	0.61	0.33	-33.11
4,730.00	1.25	155.36	4,729.48	-39.81	-1.15	36.20	0.86	0.20	-42.63
4,824.00	1.38	160.11	4,823.45	-41.81	-0.34	38.36	0.18	0.14	5.05
4,919.00	1.88	148.98	4,918.41	-44.22	0.85	41.04	0.62	0.53	-11.72
5,013.00	1.88	151.36	5,012.36	-46.89	2.38	44.11	0.08	0.00	2.53
5,107.00	1.88	150.61	5,106.31	-49.59	3.88	47.17	0.03	0.00	-0.80

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Site:</b>	UINTAH_MORGAN STATE 921-36E PAD	<b>MD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36E1BS	<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)
5,202.00	1.94	157.11	5,201.26	-52.43	5.27	50.33	0.24	0.06	6.84
5,296.00	0.50	164.86	5,295.24	-54.29	6.00	52.33	1.54	-1.53	8.24
5,391.00	0.44	173.11	5,390.23	-55.05	6.15	53.09	0.10	-0.06	8.68
5,485.00	0.56	166.86	5,484.23	-55.86	6.30	53.89	0.14	0.13	-6.65
5,580.00	0.50	169.86	5,579.23	-56.72	6.47	54.75	0.07	-0.06	3.16
5,674.00	0.69	159.86	5,673.22	-57.65	6.74	55.71	0.23	0.20	-10.64
5,769.00	0.75	159.36	5,768.21	-58.77	7.16	56.91	0.06	0.06	-0.53
5,863.00	0.69	154.61	5,862.21	-59.86	7.62	58.09	0.09	-0.06	-5.05
5,957.00	0.88	149.73	5,956.20	-60.99	8.22	59.37	0.21	0.20	-5.19
6,052.00	1.13	149.48	6,051.18	-62.43	9.07	61.02	0.26	0.26	-0.26
6,147.00	0.44	222.48	6,146.17	-63.51	9.30	62.10	1.14	-0.73	76.84
6,241.00	0.56	199.36	6,240.17	-64.21	8.90	62.59	0.25	0.13	-24.60
6,336.00	0.69	188.61	6,335.17	-65.21	8.66	63.42	0.18	0.14	-11.32
6,430.00	0.75	175.98	6,429.16	-66.38	8.62	64.48	0.18	0.06	-13.44
6,524.00	0.44	328.86	6,523.16	-66.69	8.48	64.71	1.23	-0.33	162.64
6,619.00	0.31	354.48	6,618.15	-66.12	8.26	64.10	0.22	-0.14	26.97
6,713.00	0.06	83.98	6,712.15	-65.86	8.29	63.87	0.34	-0.27	95.21
6,808.00	1.44	336.61	6,807.14	-64.76	7.86	62.70	1.54	1.45	-113.02
6,902.00	1.06	345.86	6,901.12	-62.83	7.18	60.66	0.46	-0.40	9.84
6,997.00	2.31	352.23	6,996.08	-60.08	6.71	57.94	1.33	1.32	6.71
7,092.00	2.06	354.48	7,091.01	-56.49	6.28	54.46	0.28	-0.26	2.37
7,186.00	1.50	357.36	7,184.96	-53.58	6.06	51.70	0.60	-0.60	3.06
7,280.00	1.31	36.11	7,278.94	-51.48	6.64	49.99	1.01	-0.20	41.22
7,375.00	1.19	43.36	7,373.91	-49.89	7.96	49.04	0.21	-0.13	7.63
7,469.00	0.63	67.36	7,467.90	-48.98	9.11	48.65	0.71	-0.60	25.53
7,563.00	0.50	104.23	7,561.90	-48.88	9.98	48.90	0.40	-0.14	39.22
7,658.00	0.69	124.36	7,656.89	-49.30	10.85	49.63	0.29	0.20	21.19
7,752.00	0.94	144.61	7,750.88	-50.25	11.77	50.86	0.40	0.27	21.54
7,846.00	1.19	133.98	7,844.87	-51.56	12.92	52.51	0.34	0.27	-11.31
7,941.00	1.31	136.86	7,939.85	-53.04	14.37	54.44	0.14	0.13	3.03
8,035.00	1.31	142.48	8,033.82	-54.67	15.76	56.49	0.14	0.00	5.98
8,130.00	1.63	121.86	8,128.79	-56.25	17.57	58.64	0.65	0.34	-21.71
8,224.00	0.44	133.60	8,222.77	-57.20	18.96	60.07	1.28	-1.27	12.49
8,318.00	0.69	153.61	8,316.77	-57.96	19.48	60.96	0.33	0.27	21.29
8,413.00	0.81	156.48	8,411.76	-59.08	20.00	62.20	0.13	0.13	3.02
8,507.00	1.00	157.61	8,505.75	-60.45	20.58	63.69	0.20	0.20	1.20
8,602.00	1.06	151.48	8,600.73	-61.99	21.31	65.39	0.13	0.06	-6.45
8,696.00	1.00	183.73	8,694.72	-63.57	21.67	66.99	0.61	-0.06	34.31
8,791.00	1.13	164.61	8,789.70	-65.30	21.87	68.66	0.40	0.14	-20.13
8,885.00	1.13	152.73	8,883.68	-67.02	22.54	70.50	0.25	0.00	-12.64
8,980.00	1.63	152.48	8,978.66	-69.05	23.59	72.78	0.53	0.53	-0.26
9,074.00	1.81	151.11	9,072.61	-71.54	24.93	75.59	0.20	0.19	-1.46
9,169.00	2.06	146.11	9,167.56	-74.27	26.61	78.76	0.32	0.26	-5.26

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well MORGAN STATE 921-36E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Site:</b>	UINTAH_MORGAN STATE 921-36E PAD	<b>MD Reference:</b>	26' RKB + 5007' @ 5032.00ft (H&P 298)
<b>Well:</b>	MORGAN STATE 921-36E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	MORGAN STATE 921-36E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	MORGAN STATE 921-36E1BS	<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)	
9,263.00	2.00	134.23	9,261.50	-76.81	28.72	81.93	0.45	-0.06	-12.64	
9,358.00	2.06	133.73	9,356.44	-79.15	31.14	85.03	0.07	0.06	-0.53	
9,452.00	1.94	135.73	9,450.38	-81.46	33.48	88.06	0.15	-0.13	2.13	
<b>LAST MWD SURVEY</b>										
9,530.00	1.94	135.73	9,528.34	-83.35	35.32	90.52	0.00	0.00	0.00	
<b>PROJECTION TO TD</b>										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,600.00	2,599.87	-1.97	-1.69	FIRST MWD SURVEY	
9,452.00	9,450.38	-81.46	33.48	LAST MWD SURVEY	
9,530.00	9,528.34	-83.35	35.32	PROJECTION TO TD	

Checked By: _____	Approved By: _____	Date: _____
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