API Well Number: 43047555100000

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

FORM 3

AMENDED REPORT ☐

APPLICATION FOR PERMIT TO DRILL

1. WELL NAME and NUMBER
NBU 1022-9P1BS

2. TYPE OF WORK
DRILL NEW WELL ■ REENTER P&A WELL ☐ DEEPEN WELL ☐

3. FIELD OR WILDCAT
NATURAL BUTTES

4. TYPE OF WELL
Gas Well Coalbed Methane Well: NO

5. UNIT or COMMUNITIZATION AGREEMENT NAME
NATURAL BUTTES

6. NAME OF OPERATOR
KERR-MCGEE OIL & GAS ONSHORE, L.P.

7. OPERATOR PHONE
720 929-6507

8. ADDRESS OF OPERATOR
P.O. Box 173779, Denver, CO, 80217

9. OPERATOR E-MAIL
mike.mcconaughey@anadarko.com

10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)
UTU 01196-D

11. MINERAL OWNERSHIP
FEDERAL ■ INDIAN ☐ STATE ☐ FEE ☐

12. SURFACE OWNERSHIP
FEDERAL ■ INDIAN ☐ STATE ☐ FEE ☐

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 ■ (Submit Commingling Application) NO ☐

19. SLANT
VERTICAL ☐ DIRECTIONAL ■ HORIZONTAL ☐

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	762 FSL 809 FEL	SESE	9	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	1113 FSL 434 FEL	SESE	9	10.0 S	22.0 E	S
At Total Depth	1113 FSL 434 FEL	SESE	9	10.0 S	22.0 E	S

21. COUNTY
UINTAH

22. DISTANCE TO NEAREST LEASE LINE (Feet)
434

23. NUMBER OF ACRES IN DRILLING UNIT
320

25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)
437

26. PROPOSED DEPTH
MD: 9924 TVD: 9882

27. ELEVATION - GROUND LEVEL
5236

28. BOND NUMBER
WYB000291

29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE
43-8496

Hole, Casing, and Cement Information

String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2330	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 - 9924	11.6	HCP-110 LT&C	12.5	Class G	770	3.38	12.0
							Class G	1400	1.31	14.3

ATTACHMENTS

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES

- ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- ☑ COMPLETE DRILLING PLAN
- ☐ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)
- ☐ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER
- ☑ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)
- ☑ TOPOGRAPHICAL MAP

NAME Joel Malefyt **TITLE** Regualtory Analyst **PHONE** 720 929-6828

SIGNATURE **DATE** 12/21/2015 **EMAIL** joel.malefyt@anadarko.com

API NUMBER ASSIGNED
43047555100000

APPROVAL
Permit Manager

RECEIVED: January 13, 2016

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

NBU 1022-9P1BS

Surface:	762 FSL / 809 FEL	SESE
BHL:	1113 FSL / 434 FEL	SESE

Section 9 T10S R22E

Unitah County, Utah
Mineral Lease: UTU-01196D

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:

Formation	Depth	Resource
Uinta	0 - Surface	
Green River	1,092'	
Birds Nest	1,394'	Water
Mahogany	1,876'	Water
Wasatch	4,235'	Gas
Mesaverde	6,688'	Gas
Sego	8,755'	Gas
Castlegate	8,851'	Gas
Blackhawk	9,282'	Gas
TVD =	9,882'	
TD =	9,924'	

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

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

3. **Pressure Control Equipment**

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

RECEIVED: December 21, 2015

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 Group)

Maximum anticipated bottom hole pressure calculated at 9882' TVD, approximately equals 6,324 psi (0.64 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,137 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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 Wasatch Formation/Mesaverde Group

Maximum anticipated bottom hole pressure calculated at 8755' TVD, approximately equals 5,341 psi (0.61 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 3,438 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

8. Anticipated Starting Dates:

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

9. Variances:

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

10. Other Information:

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

RECEIVED: December 21, 2015

KerrMcGee

KERR-McGEE OIL & GAS ONSHORE LP

Blackhawk Drilling Program

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	August 25, 2015
WELL NAME	**NBU 1022-9P1BS**	TD	9,882' TVD 9,924' MD
FIELD	Natural Buttes	COUNTY Uintah	STATE Utah FINISHED ELEVATION 5,236'
SURFACE LOCATION	SESE 762 FSL 809 FEL	Sec 9 T 10S R 22E	
	Latitude: 39.958348	Longitude: -109.438235	NAD 83
BTM HOLE LOCATION	SESE 1113 FSL 434 FEL	Sec 9 T 10S R 22E	
	Latitude: 39.959311	Longitude: -109.436901	NAD 83
OBJECTIVE ZONE(S)	BLACKHAWK (Part of the Mesaverde Group)		
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), BLM (Surface), UDOGM Tri-County Health Dept.		

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		40'		14"	
			12-1/4	8-5/8", 28#, IJ-55, LTC	Air mist
		200'			
			11.00'	8-5/8", 28#, IJ-55, LTC	Air mist
	Green River @	1,092'			
	Top of Birds Nest @	1,394'			
	Mahogany @	1,876'			
	Preset f/ GL @ 2,330' TVD				
	Wasatch @	4,235'			
Mud logging program TBD Cased hole logging program from TD - surf csg			7-7/8"	4-1/2" 11.6# HCP-110 LTC csg	Water / Fresh Water Mud 8.3-12.5 ppg
	Mesaverde @	6,688' TVD			
	Sego @	8,755' TVD			
	Castlegate @	8,851' TVD			
	Blackhawk	9,282' TVD			
Max anticipated Mud required 12.5 ppg	TD @	9,882' TVD 9,924' MD			

All water flows encountered while drilling will be reported to the appropriate agencies.

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

KerrMcGee

KERR-McGEE OIL & GAS ONSHORE LP

Blackhawk Drilling Program

CASING PROGRAM

	SIZE	INTERVAL			WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	TENSION LTC	TENSION DQX
CONDUCTOR	14"	0-40'									
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,330	28.00	IJ-55	LTC	2.31	1.72	6.09	N/A
PRODUCTION	4-1/2"							10,690	8,650	279,000	
	4-1/2"	0	to	9,924'	11.60	HCP-110	LTC	1.19	1.35	2.40	

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 @ 9000 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	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**					
Option 2	LEAD	1,830'	Premium cmt + 16% Gel + 10 pps gilsonite	220	35%	12.00		2.86
			+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,734'	13.5ppg yield 1.29, 65:35 Poz:G	770	35%	13.50		1.29
			+ .3% Dispersant + .1% Extender					
			+ .05% High-Temp Retarder					
	TAIL	6,190'	14.5ppg yield 1.37, 50:50 Poz:G	1,400	35%	14.50		1.37
			+ 35% BWOC Silica + .2% Extender					
			+ .3% FLAC + .3% High-Temp Retarder					

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

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

FLOAT EQUIPMENT & CENTRALIZERS

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

ADDITIONAL INFORMATION

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

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

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

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

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

DRILLING ENGINEER: _____ **DATE:** _____

Zach Haynes/Eric Giles

DRILLING SUPERINTENDENT: _____ **DATE:** _____

Lovel Young

RECEIVED: December 21, 2015

KerrMcGee

KERR-McGEE OIL & GAS ONSHORE LP

Wasatch/Mesaverde Drilling Program

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	August 25, 2015
WELL NAME	**NBU 1022-9P1BS**	TD	8,755' TVD 8,797' MD
FIELD	Natural Buttes	COUNTY Uintah STATE Utah	FINISHED ELEVATION 5,236'
SURFACE LOCATION	SESE 762 FSL 809 FEL Sec 9 T 10S R 22E		
	Latitude: 39.958348 Longitude: -109.438235		NAD 83
BTM HOLE LOCATION	SESE 1113 FSL 434 FEL Sec 9 T 10S R 22E		
	Latitude: 39.959311 Longitude: -109.436901		NAD 83
OBJECTIVE ZONE(S)	Wasatch Formation/Mesaverde Group		
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), BLM (Surface), UDOGM Tri-County Health Dept.		

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		40'		14"	
		200'	12-1/4	8-5/8", 28#, IJ-55, LTC	Air mist
			11.00'	8-5/8", 28#, IJ-55, LTC	Air mist
			7-7/8"	4-1/2" 11.6# I-80 LTC csg	Water / Fresh Water Mud 8.3-12.0 ppg

All water flows encountered while drilling will be reported to the appropriate agencies.

Green River @ 1,092'
Top of Birds Nest @ 1,394'
Mahogany @ 1,876'

Preset f/ GL @ 2,330' TVD

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

Wasatch @ 4,235'

Mud logging program TBD
Cased hole logging program from TD - surf csg

Mesaverde @ 6,688' TVD

Sego @ 8,755' TVD

Max anticipated Mud required 12.0 ppg

TD @ 8,755' TVD 8,797' MD

KerrMcGee

KERR-McGEE OIL & GAS ONSHORE LP

Wasatch/Mesaverde Drilling Program

CASING PROGRAM

	SIZE	INTERVAL			WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	TENSION LTC	TENSION DQX
CONDUCTOR	14"	0-40'									
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,330	28.00	IJ-55	LTC	2.31	1.72	6.09	N/A
PRODUCTION											
								7,780	6,350	223,000	
	4-1/2"	0	to	8,797'	11.60	I-80	LTC	0.86	1.16	2.20	

Surface Casing:

(Burst Assumptions: TD = 12.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

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

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi) 0.61 psi/ft = bottomhole gradient

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CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT		YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**					
Option 2	LEAD	1,830'	Premium cmt + 16% Gel + 10 pps gilsonite	220	35%	12.00		2.86
			+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,727'	12.5ppg yield 1.45, 75:25 Poz:G	680	35%	12.50		1.45
			+ .2% Dispersant + .5% Extender					
			+ .43% Mid-Temp Retarder					
	TAIL	5,070'	14.5ppg yield 1.34, 50:50 Poz:G	1,170	35%	14.50		1.34
			+ 35% BWOC Silica + .3% FLAC					
			+ .17% Mid Temp Retarder					

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

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

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

DRILLING ENGINEER: _____ **DATE:** _____

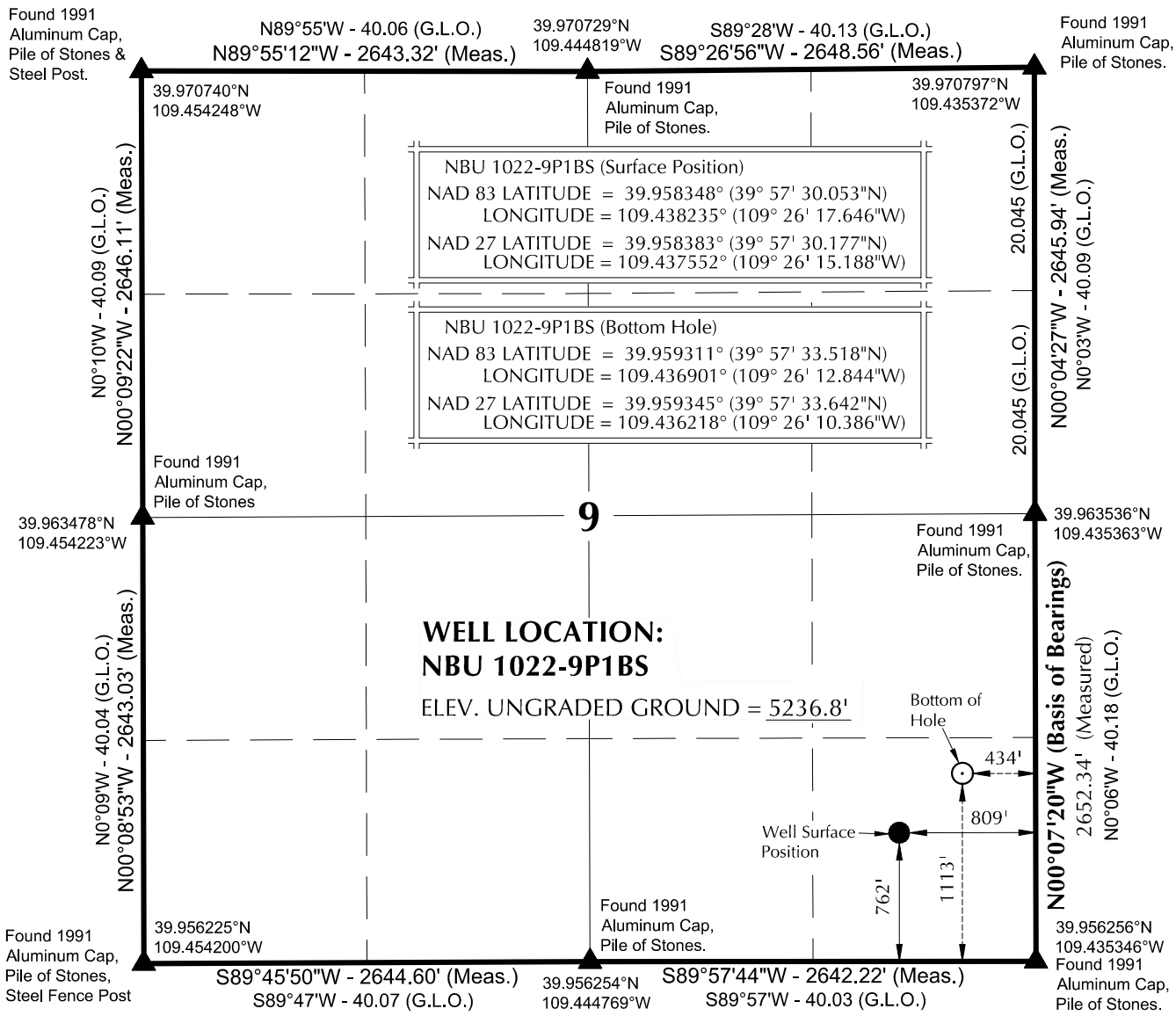
Zach Haynes/Eric Giles

DRILLING SUPERINTENDENT: _____ **DATE:** _____

Lovel Young

RECEIVED: December 21, 2015

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



NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines. G.L.O. distances are shown in feet or chains.
2. 1 chain = 66 feet.
3. The Bottom of hole bears N46°49'37"E 512.68' from the Surface Position.
4. NAD 83 Latitude & Longitude are (CORS 96)(EPOCH:2002).
5. Bearings and Distances are based upon a Local Cartesian Grid, oriented to Geodetic North at the North 1/4 Corner of Section 8, T10S, R22E, S.L.B.&M. The Grid having a mean project height of 5300'. Lineal units used are U.S. Survey Foot.
6. Basis of elevation is Tri-Sta "Two Water" located in Lot 4 of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.

N

1000' 500' 0' 1000'

SCALE

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.

7-21-15

PROFESSIONAL LAND SURVEYOR No.6028691 JOHN R LAUGHLIN STATE OF UTAH

PROFESSIONAL LAND SURVEYOR
REGISTRATION No. 6028691
STATE OF UTAH

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

WELL PAD - NBU 1022-9P

NBU 1022-9P1BS
WELL PLAT
1113' FSL, 434' FEL (Bottom Hole)
SE ¼ SE ¼ OF SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

609 CONSULTING, LLC
1095 Saberton Ave.
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

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

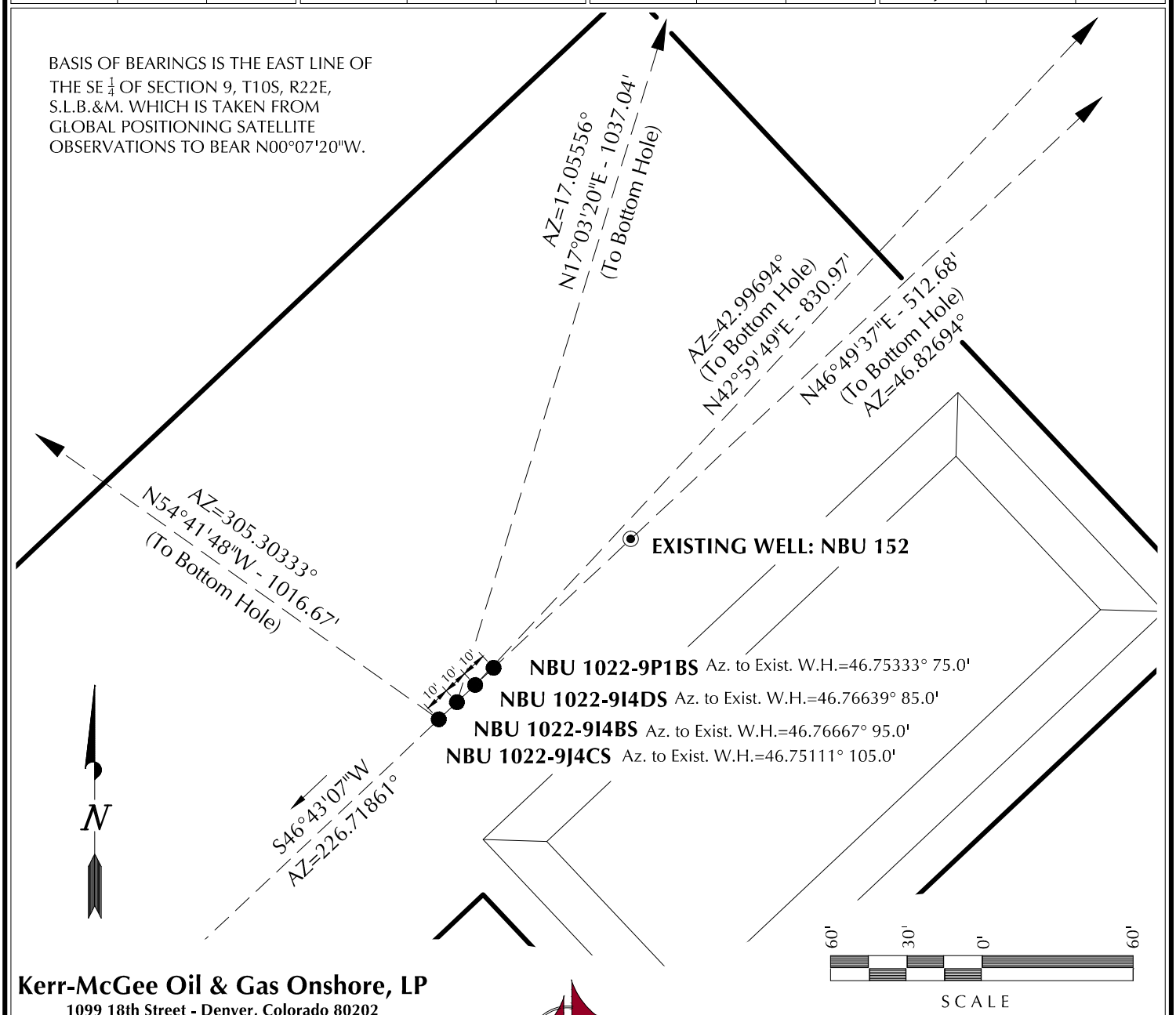
DATE SURVEYED: 5-27-15	SURVEYED BY: J.W.	SHEET NO: 1
DATE DRAWN: 6-2-15	DRAWN BY: M.W.W.	
SCALE: 1" = 1000'	Date Last Revised: 7-20-15 M.W.W.	1 OF 16

API Well Number: 43047555100000

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27			NAD83		NAD27		
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	FOOTAGES	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	FOOTAGES
NBU 1022-9P1BS	39°57'30.053"N 39.958348°N	109°26'17.646"W 109.438235°W	39°57'30.177"N 39.958383°N	109°26'15.188"W 109.437552°W	762' FSL 809' FEL	39°57'33.518"N 39.959311°N	109°26'12.844"W 109.436901°W	39°57'33.642"N 39.959345°N	109°26'10.386"W 109.436218°W	1113' FSL 434' FEL
NBU 1022-9I4DS	39°57'29.986"N 39.958329°N	109°26'17.740"W 109.438261°W	39°57'30.110"N 39.958364°N	109°26'15.282"W 109.437578°W	756' FSL 816' FEL	39°57'35.989"N 39.959997°N	109°26'10.462"W 109.436239°W	39°57'36.113"N 39.960031°N	109°26'08.004"W 109.435557°W	1363' FSL 248' FEL
NBU 1022-9I4BS	39°57'29.918"N 39.958311°N	109°26'17.833"W 109.438287°W	39°57'30.042"N 39.958345°N	109°26'15.375"W 109.437604°W	749' FSL 823' FEL	39°57'39.712"N 39.961031°N	109°26'13.924"W 109.437201°W	39°57'39.836"N 39.961066°N	109°26'11.467"W 109.436519°W	1740' FSL 517' FEL
NBU 1022-9J4CS	39°57'29.850"N 39.958292°N	109°26'17.926"W 109.438313°W	39°57'29.974"N 39.958326°N	109°26'15.469"W 109.437630°W	742' FSL 831' FEL	39°57'35.657"N 39.959905°N	109°26'28.577"W 109.441271°W	39°57'35.781"N 39.959939°N	109°26'26.118"W 109.440588°W	1330' FSL 1659' FEL
NBU 152	39°57'30.561"N 39.958489°N	109°26'16.944"W 109.438040°W	39°57'30.685"N 39.958523°N	109°26'14.487"W 109.437357°W	814' FSL 754' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-9P1BS	350.8'	373.9'	NBU 1022-9I4DS	607.8'	566.7'	NBU 1022-9I4BS	991.4'	304.2'	NBU 1022-9J4CS	587.5'	-829.7'



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WELL PAD - NBU 1022-9P

WELL PAD INTERFERENCE PLAT
WELLS - NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

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Fax 307-674-0182

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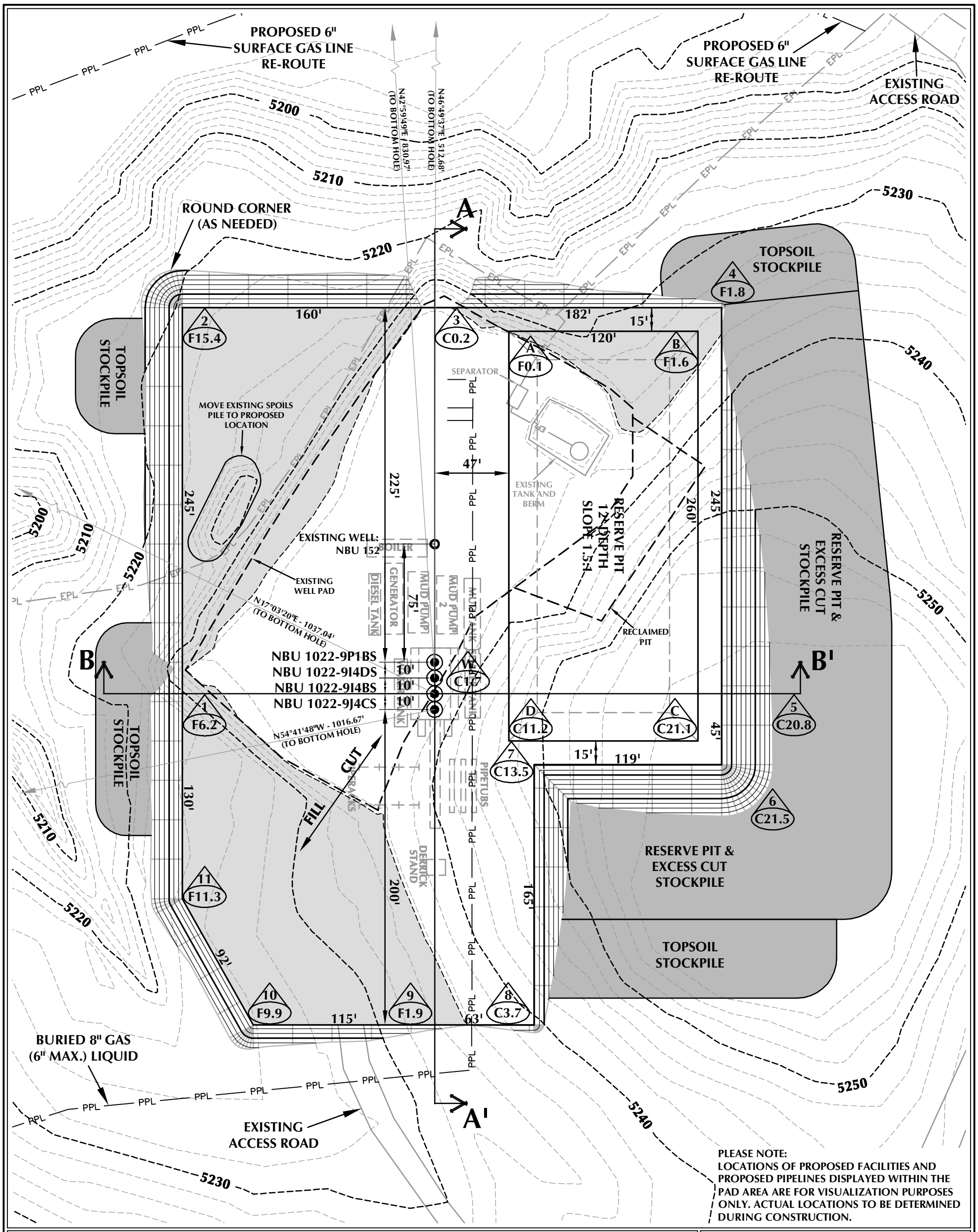
209 NORTH 300 WEST - VERNAL, UTAH 84078
(435) 789-1365

DATE SURVEYED: 5-27-15	SURVEYED BY: J.W.	SHEET NO: 5
DATE DRAWN: 6-2-15	DRAWN BY: M.W.W.	5 OF 16
SCALE: 1" = 60'	Date Last Revised:	

RECEIVED: December 21, 2015



WELL PAD - NBU 1022-9P DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5237.4'
FINISHED GRADE ELEVATION = 5235.7'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.75 ACRES
TOTAL DISTURBANCE AREA = 5.18 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

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1099 18th Street - Denver, Colorado 80202

WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 19,189 C.Y.
TOTAL FILL FOR WELL PAD = 18,152 C.Y.
TOPSOIL @ 6" DEPTH = 2,172 C.Y.
EXCESS MATERIAL = 1,037 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

WELL PAD - NBU 1022-9P

WELL PAD - LOCATION LAYOUT
NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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

SCALE: 1"=60' | DATE: 6/15/15 | SHEET NO: 6
REVISED:
6 OF 16

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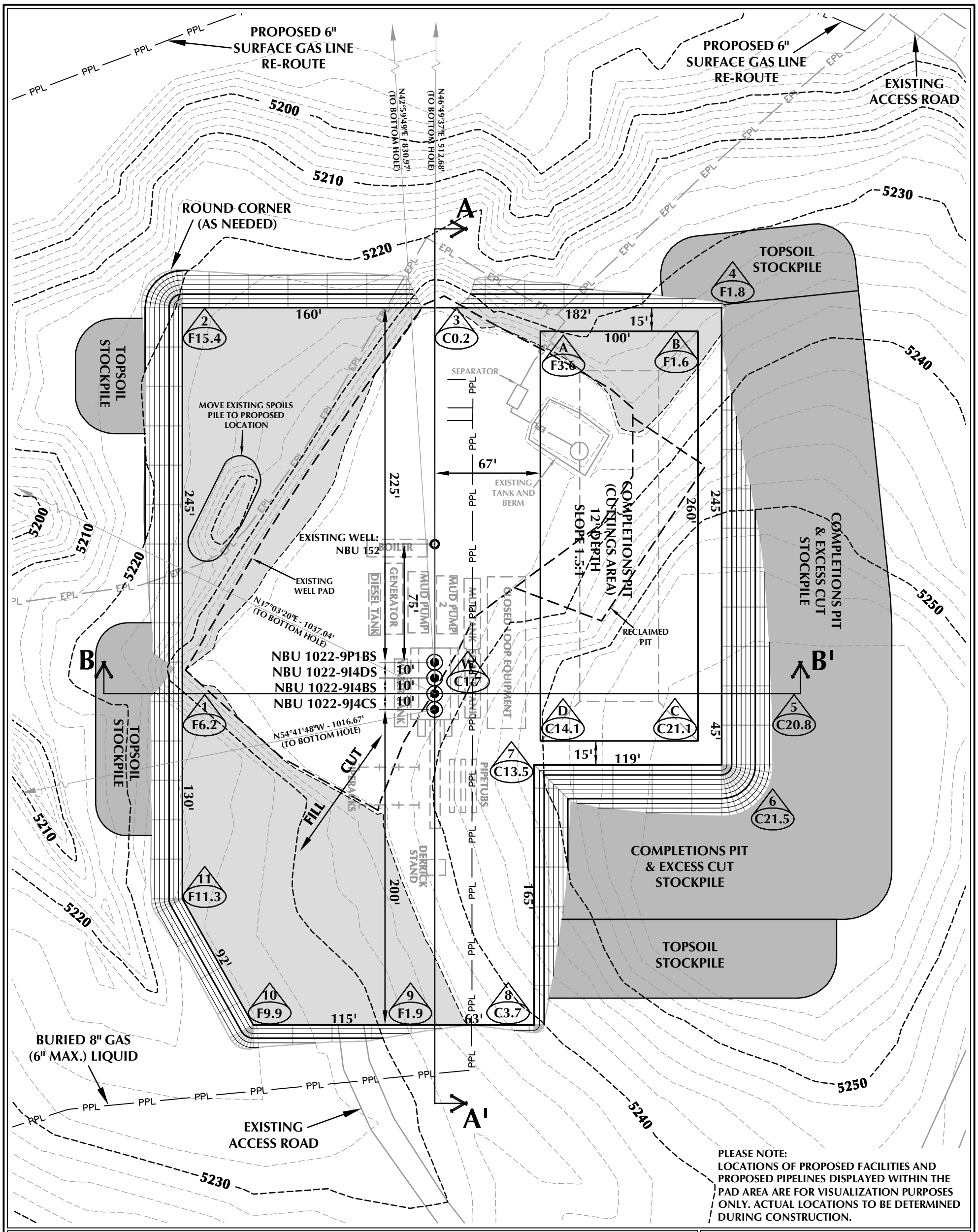

WELL PAD - NBU 1022-9P (CLOSED LOOP) DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5237.4'
FINISHED GRADE ELEVATION = 5235.7'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.75 ACRES
TOTAL DISTURBANCE AREA = 5.18 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

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WELL PAD - NBU 1022-9P

WELL PAD - LOCATION LAYOUT
NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 19,189 C.Y.
TOTAL FILL FOR WELL PAD = 18,152 C.Y.
TOPSOIL @ 6" DEPTH = 2,172 C.Y.
EXCESS MATERIAL = 1,037 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)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE

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

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SCALE: 1"=60'	DATE: 7/13/15	SHEET NO:
REVISED:		6B 6B OF 16

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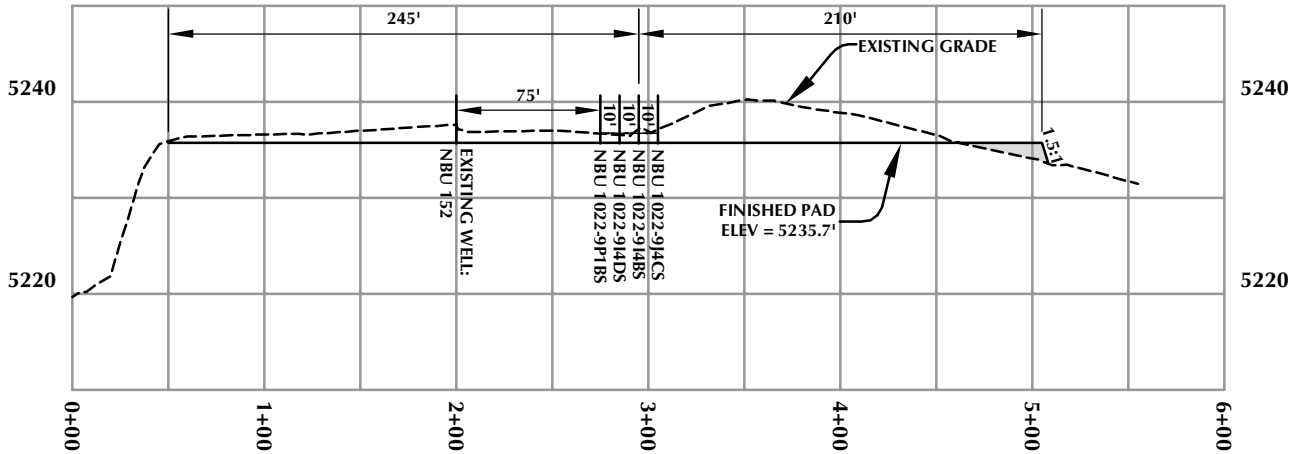
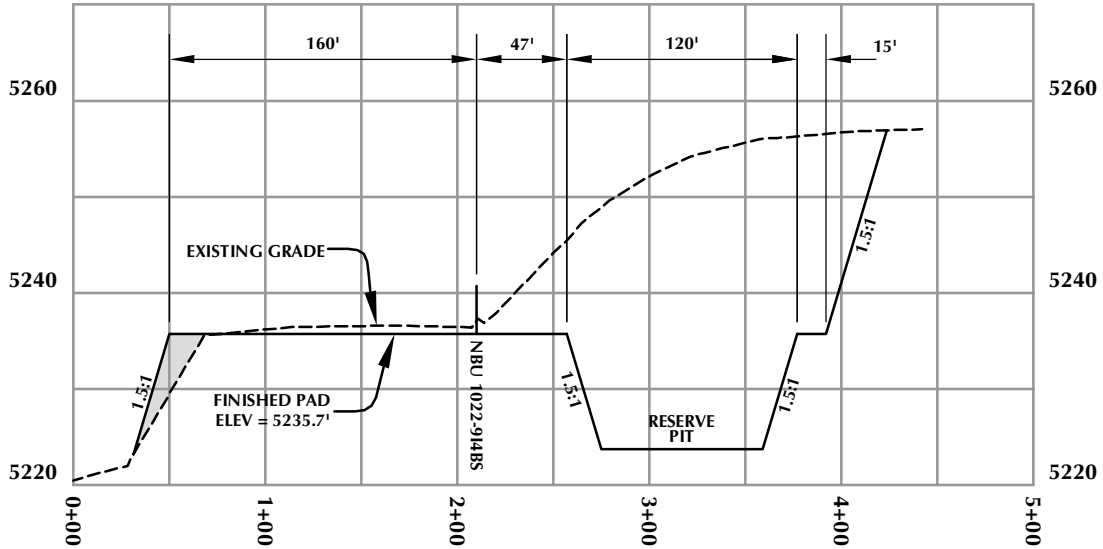
RECEIVED: December 21, 2015



CROSS SECTION A-A'



CROSS SECTION B-B'

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

WELL PAD - NBU 1022-9P

WELL PAD - CROSS SECTIONS
NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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HORIZONTAL 0 50' 100' 1" = 100'
VERTICAL 0 10' 20' 1" = 20'

SCALE: 1"=100'	DATE: 6/15/15	SHEET NO:
REVISED:		7 OF 16

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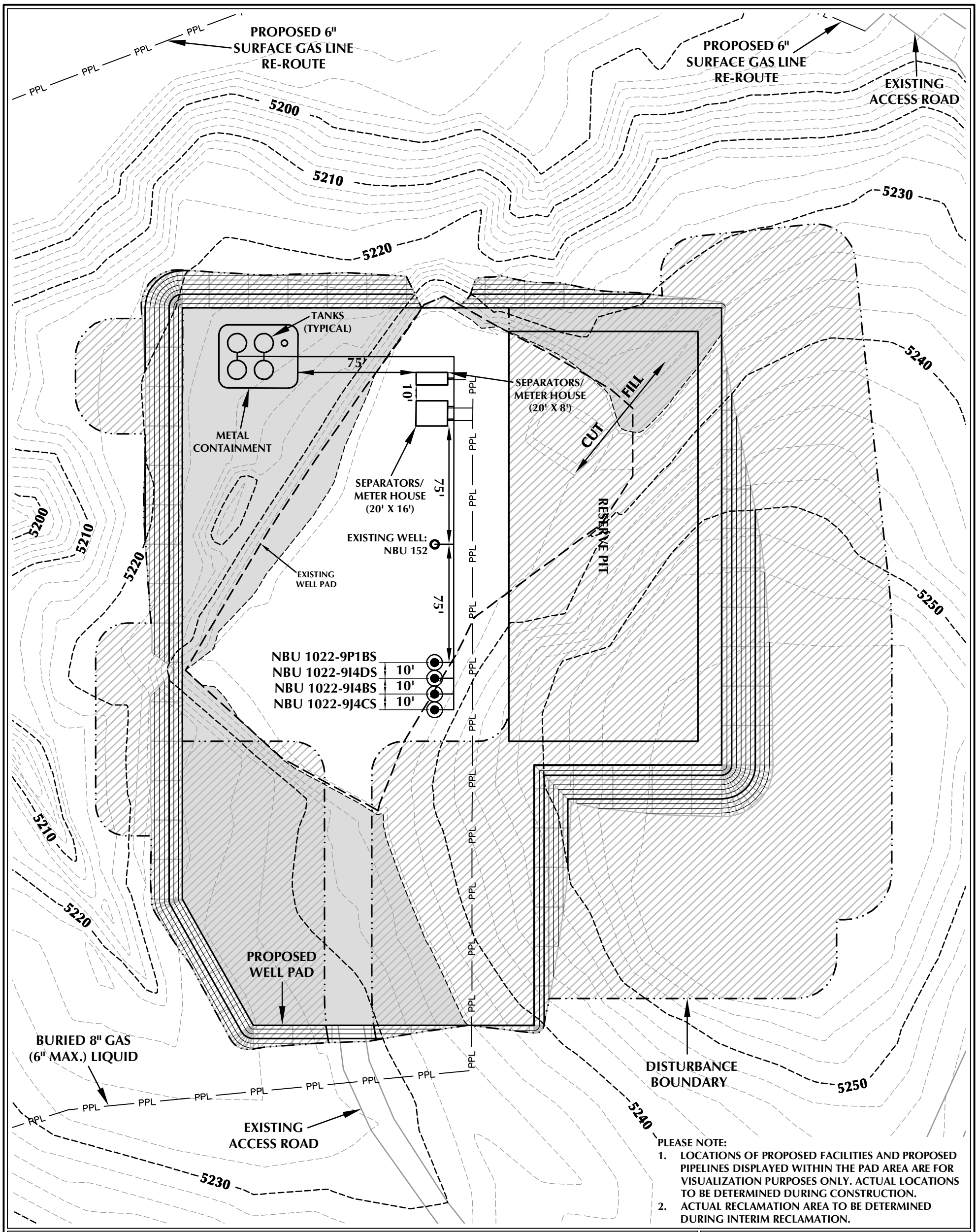

PLEASE NOTE:
1. LOCATIONS OF PROPOSED FACILITIES AND PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.
2. ACTUAL RECLAMATION AREA TO BE DETERMINED DURING INTERIM RECLAMATION.

WELL PAD - NBU 1022-9P RECLAMATION DESIGN SUMMARY

TOTAL DISTURBANCE AREA = 5.18 ACRES (INCLUDING EXISTING)
RECLAMATION AREA = 3.74 ACRES
TOTAL WELL PAD AREA AFTER RECLAMATION = 1.44 ACRES

WELL PAD LEGEND

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE
- RECLAMATION AREA

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

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WELL PAD - NBU 1022-9P

WELL PAD - RECLAMATION LAYOUT
NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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SCALE: 1"=60' | DATE: 6/15/15 | SHEET NO: 8
REVISED:
8 OF 16

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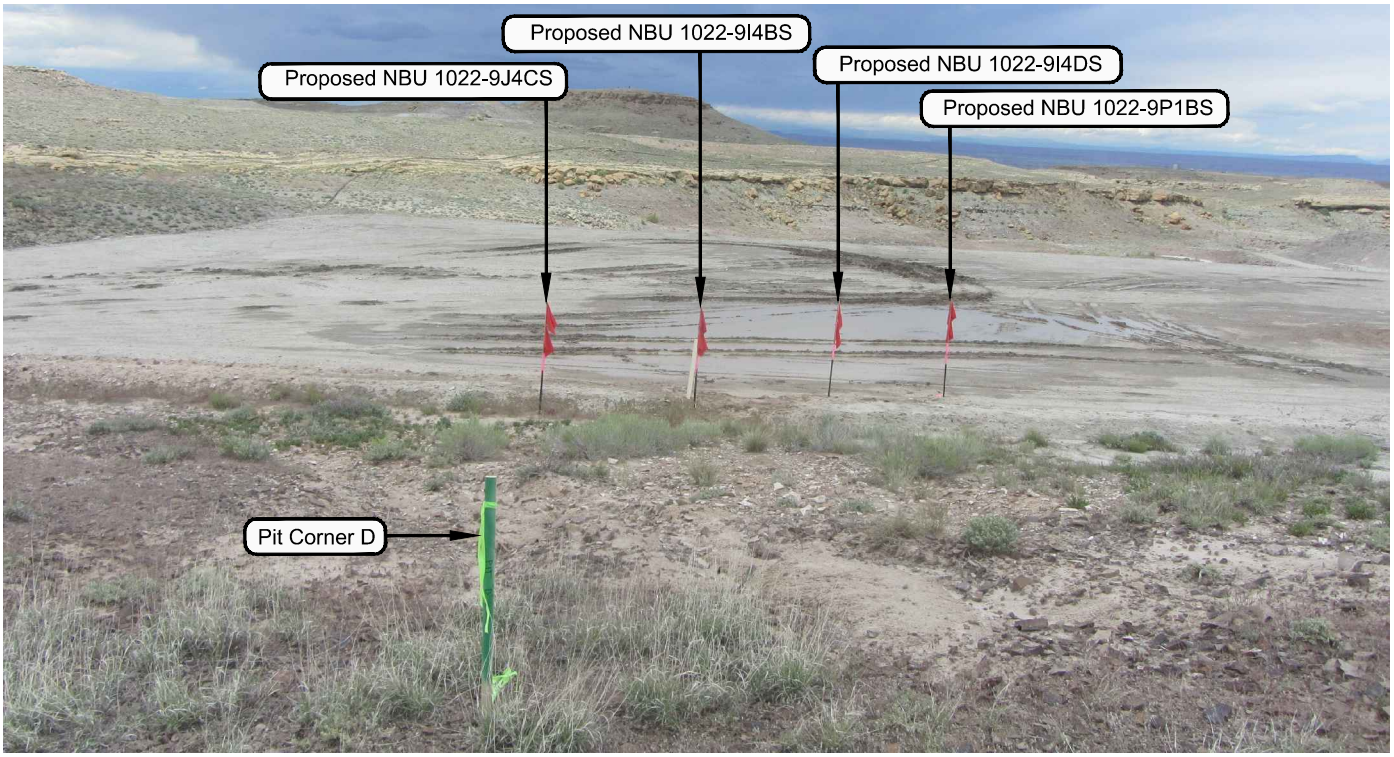

PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE CAMERA ANGLE: NORTHWESTERLY

PHOTO VIEW: FROM EXISTING ACCESS ROAD CAMERA ANGLE: NORTHEASTERLY

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WELL PAD - NBU 1022-9P

LOCATION PHOTOS
NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

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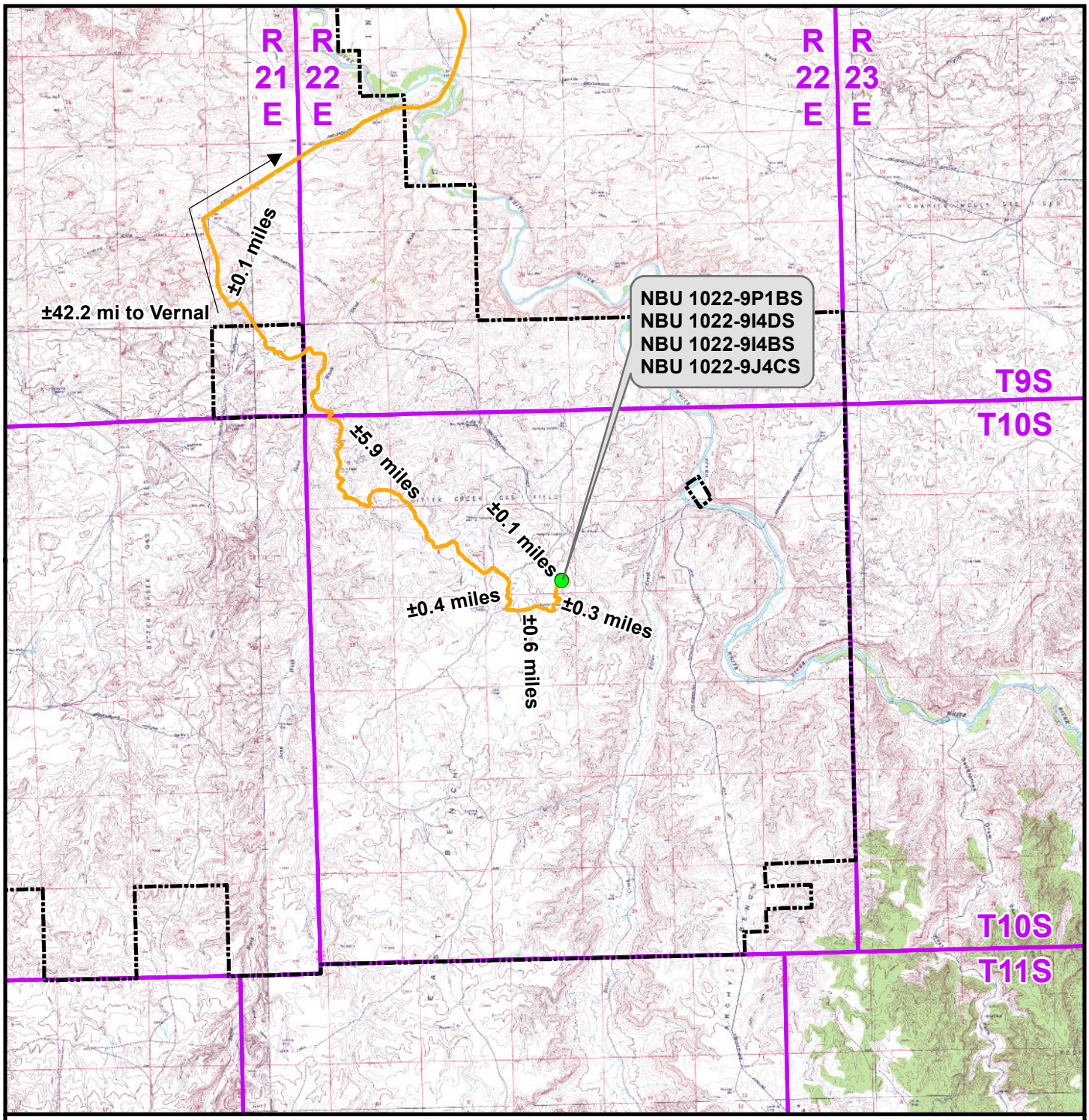
DATE PHOTOS TAKEN: 5-27-15	PHOTOS TAKEN BY: J.W.	SHEET NO: 9
DATE DRAWN: 6-2-15	DRAWN BY: M.W.W.	
Date Last Revised:		9 OF 16

RECEIVED: December 21, 2015

API Well Number: 43047555100000



Legend

Distance From Well Pad - NBU 1022-9P To Unit Boundary: ±8,936ft

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

WELL PAD - NBU 1022-9P

TOPO A
NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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SCALE: 1:100,000	NAD83 USP Central	SHEET NO: 10
DRAWN: TL	DATE: 15 June 2015	10 OF 16
REVISED:	DATE:	

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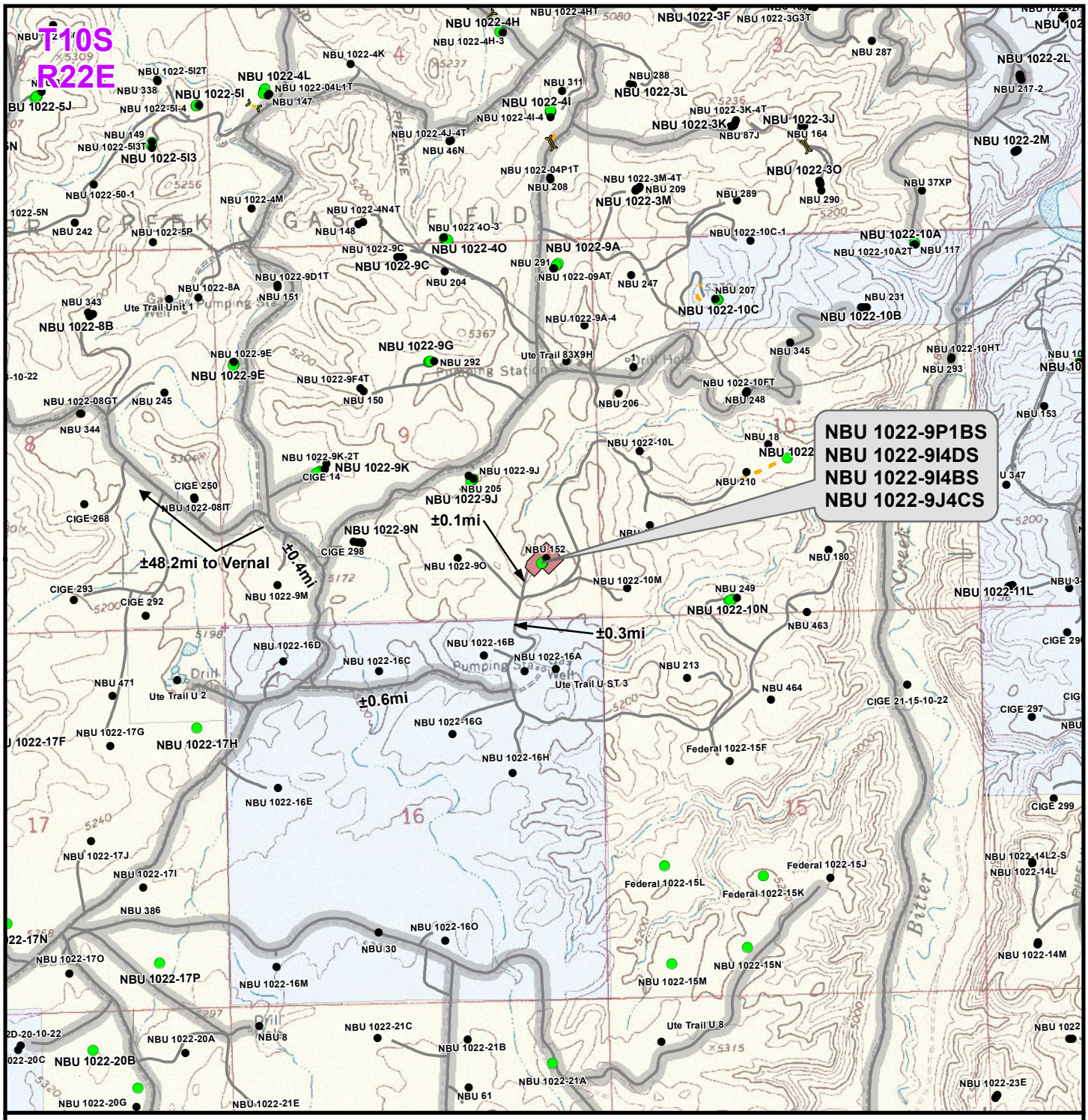
API Well Number: 43047555100000



Legend

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

Total Proposed Road Length: ±0ft

WELL PAD - NBU 1022-9P

TOPO B

NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO: 11
DRAWN: TL	DATE: 15 June 2015	11 OF 16
REVISED:	DATE:	

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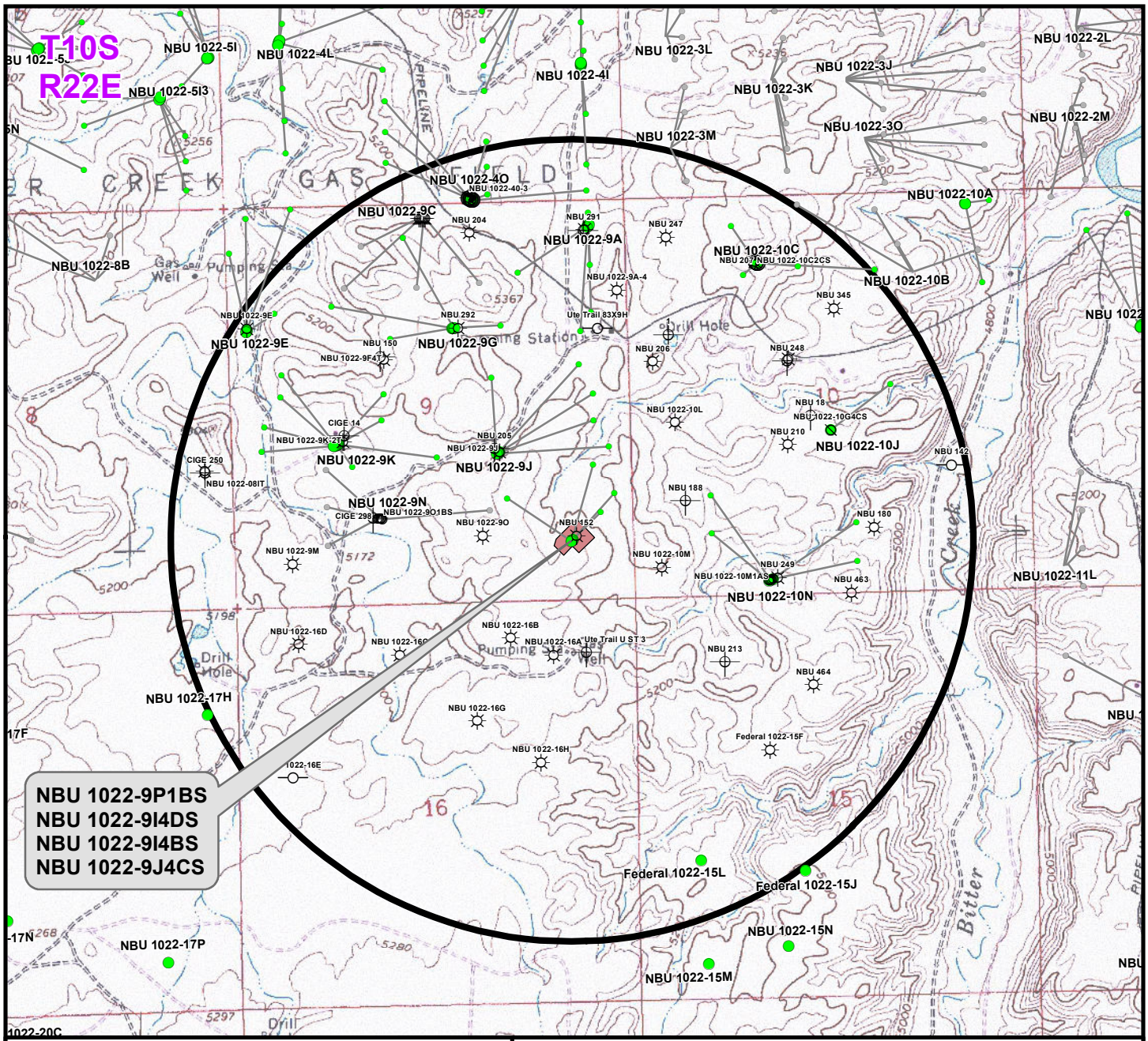
RECEIVED: December 21, 2015

API Well Number: 43047555100000



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

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9P1BS	NBU 152	±437ft
NBU 1022-9I4DS	NBU 152	±746ft
NBU 1022-9I4BS	NBU 152	±955ft
NBU 1022-9J4CS	NBU 1022-9O1BS BH	±278ft

Legend

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

WELL PAD - NBU 1022-9P

TOPO C

NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO: 12
DRAWN: TL	DATE: 13 July 2015	12 OF 16
REVISED:	DATE:	

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RECEIVED: December 21, 2015

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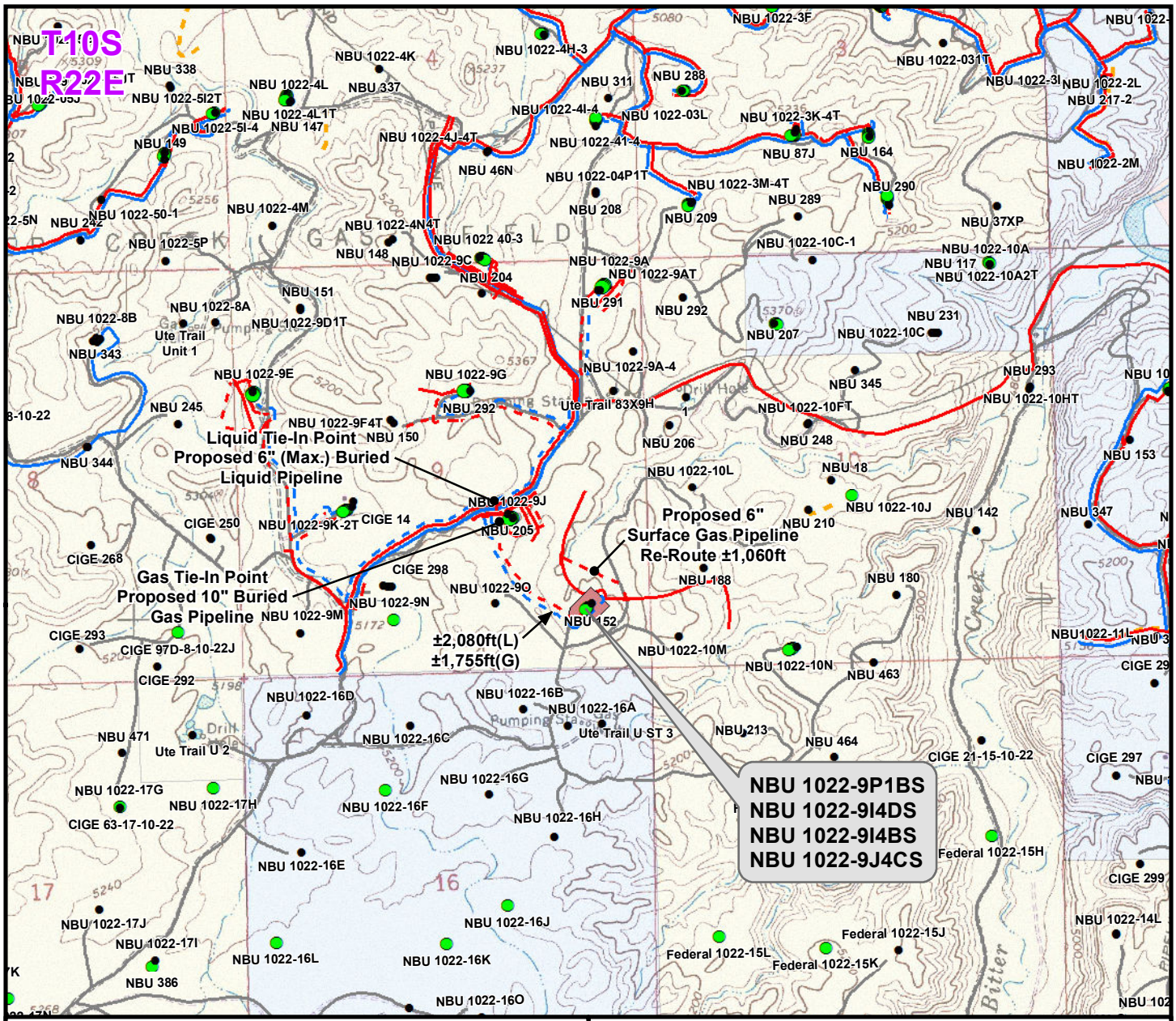

Proposed Liquid Pipeline	Length
Buried 6"(Max.) (Separator to Edge of Pad)	±425ft
Buried 6"(Max.) (Edge of Pad to Proposed 6" (Max.) Liquid Pipeline)	±2,080ft
TOTAL PROPOSED BURIED LIQUID PIPELINE =	±2,505ft

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±425ft
Buried 8" (Edge of Pad to Proposed 10" Gas Pipeline)	±1,755ft
Surface 6" (Proposed Pipeline Re-Route)	±1,060ft
TOTAL PROPOSED BURIED GAS PIPELINE =	±2,180ft
TOTAL PROPOSED SURFACE GAS PIPELINE =	±1,060ft

Legend

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

WELL PAD - NBU 1022-9P

TOPO D

NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO:	13
DRAWN: TL	DATE: 13 July 2015		
REVISED: JW	DATE: 21 Aug 2015		13 OF 16

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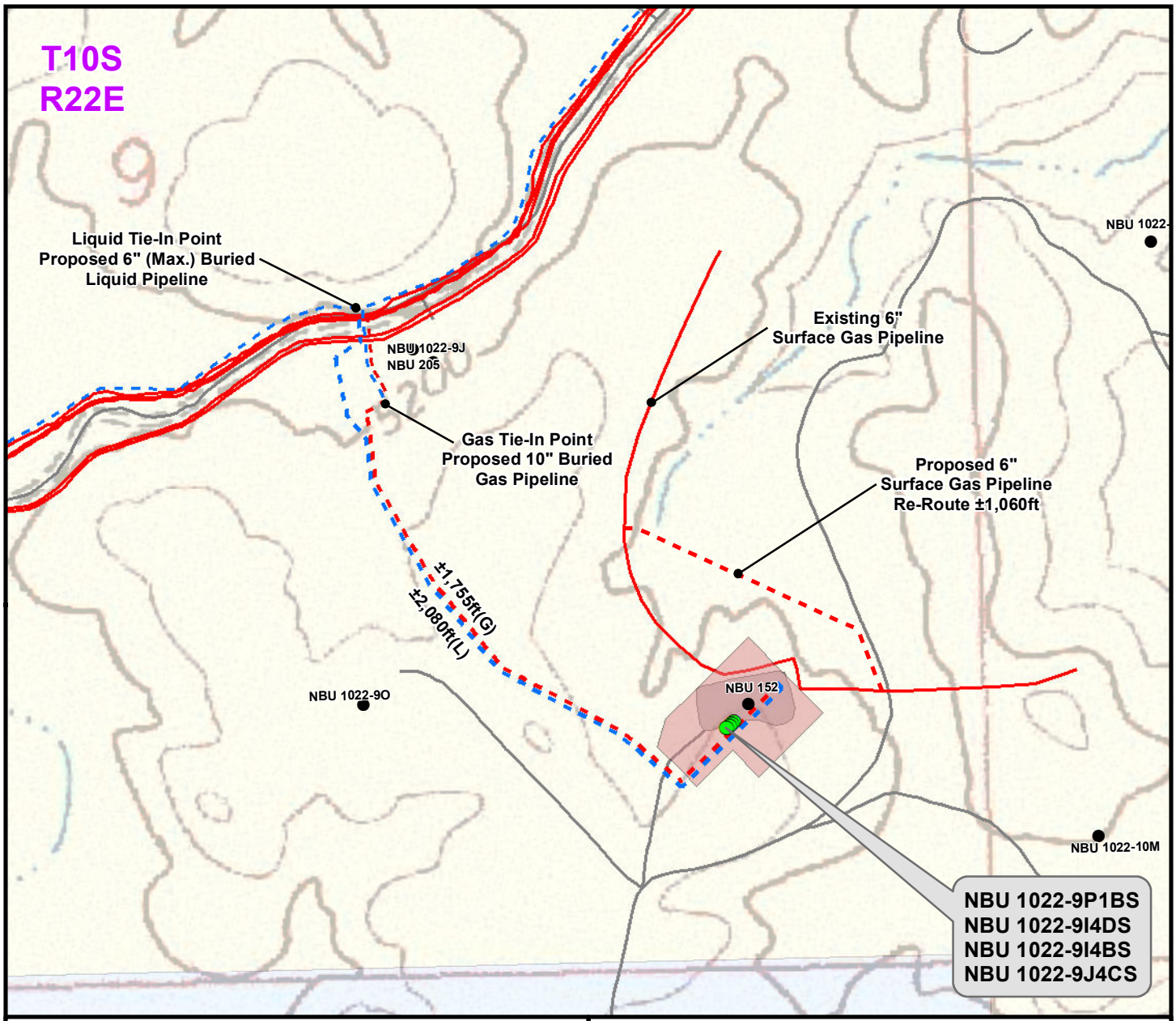

Proposed Liquid Pipeline	Length
Buried 6"(Max.) (Separator to Edge of Pad)	±425ft
Buried 6"(Max.) (Edge of Pad to Proposed 6" (Max.) Liquid Pipeline)	±2,080ft
TOTAL PROPOSED BURIED LIQUID PIPELINE =	±2,505ft

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±425ft
Buried 8" (Edge of Pad to Proposed 10" Gas Pipeline)	±1,755ft
Surface 6" (Proposed Pipeline Re-Route)	±1,060ft
TOTAL PROPOSED BURIED GAS PIPELINE =	±2,180ft
TOTAL PROPOSED SURFACE GAS PIPELINE =	±1,060ft

Legend

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

WELL PAD - NBU 1022-9P

TOPO D2 (PAD & PIPELINE DETAIL)
NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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Denver, Colorado 80202

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Sheridan, Wyoming 82801
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Fax 307-674-0182

N

SCALE: 1" = 500ft	NAD83 USP Central	SHEET NO:	
DRAWN: TL	DATE: 15 June 2015	14	
REVISED: JW	DATE: 20 Aug 2015	14 OF 16	

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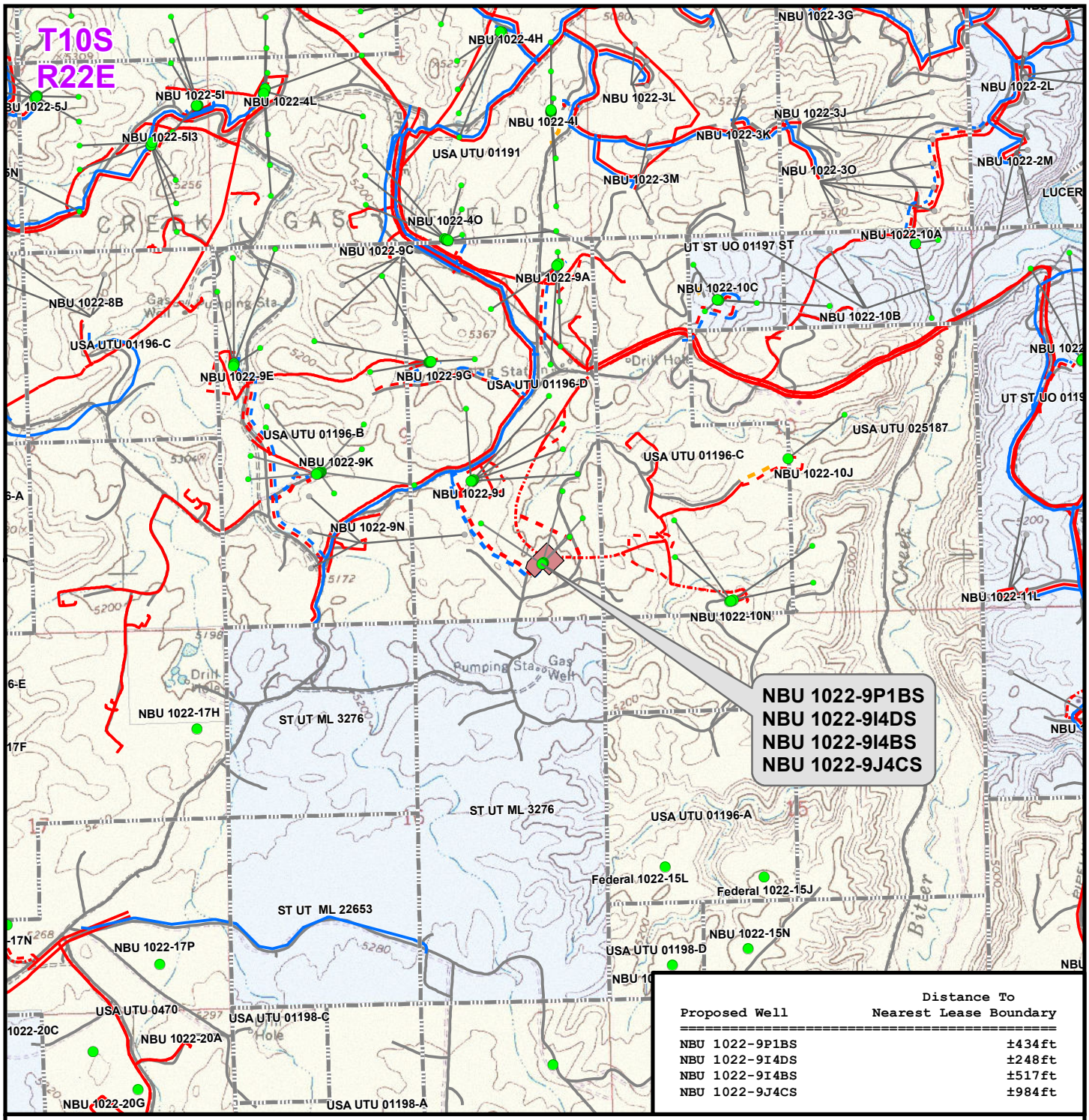
RECEIVED: December 21, 2015

API Well Number: 43047555100000



Proposed Well	Distance To Nearest Lease Boundary
NBU 1022-9P1BS	±434ft
NBU 1022-9I4DS	±248ft
NBU 1022-9I4BS	±517ft
NBU 1022-9J4CS	±984ft

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 - NBU 1022-9P

TOPO E

NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS LOCATED IN SECTION 9, T10S, R22E, 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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N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO: 15
DRAWN: TL	DATE: 13 July 2015	15 OF 16
REVISED:	DATE:	

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Kerr-McGee Oil & Gas Onshore, LP
WELL PAD – NBU 1022-9P
WELLS - NBU 1022-9P1BS, NBU 1022-9I4DS,
NBU 1022-9I4BS & NBU 1022-9J4CS
Section 9, T10S, R22E, S.L.B.&M., Uintah County, Utah.

From the intersection of U.S. Highway 40 and 500 East street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45; exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 18.7 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.1 miles to a second Class D County Road to the southeast. Exit right and proceed in a southeasterly direction along the second Class D County Road approximately 5.9 miles to a third Class D County Road to the southwest. Exit right and proceed in a southwesterly direction along the third Class D County Road approximately 0.4 miles to a fourth Class D County Road to the east. Exit left and proceed in an easterly direction along the fourth Class D County Road approximately 0.6 miles to a service road to the north. Exit left and proceed in a northerly direction along the service road approximately 0.3 miles to a second service road to the north. Exit left and proceed in a northerly direction along the second service road approximately 0.1 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 49.6 miles in a southerly direction.

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9P PAD
Well: NBU 1022-9P1BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

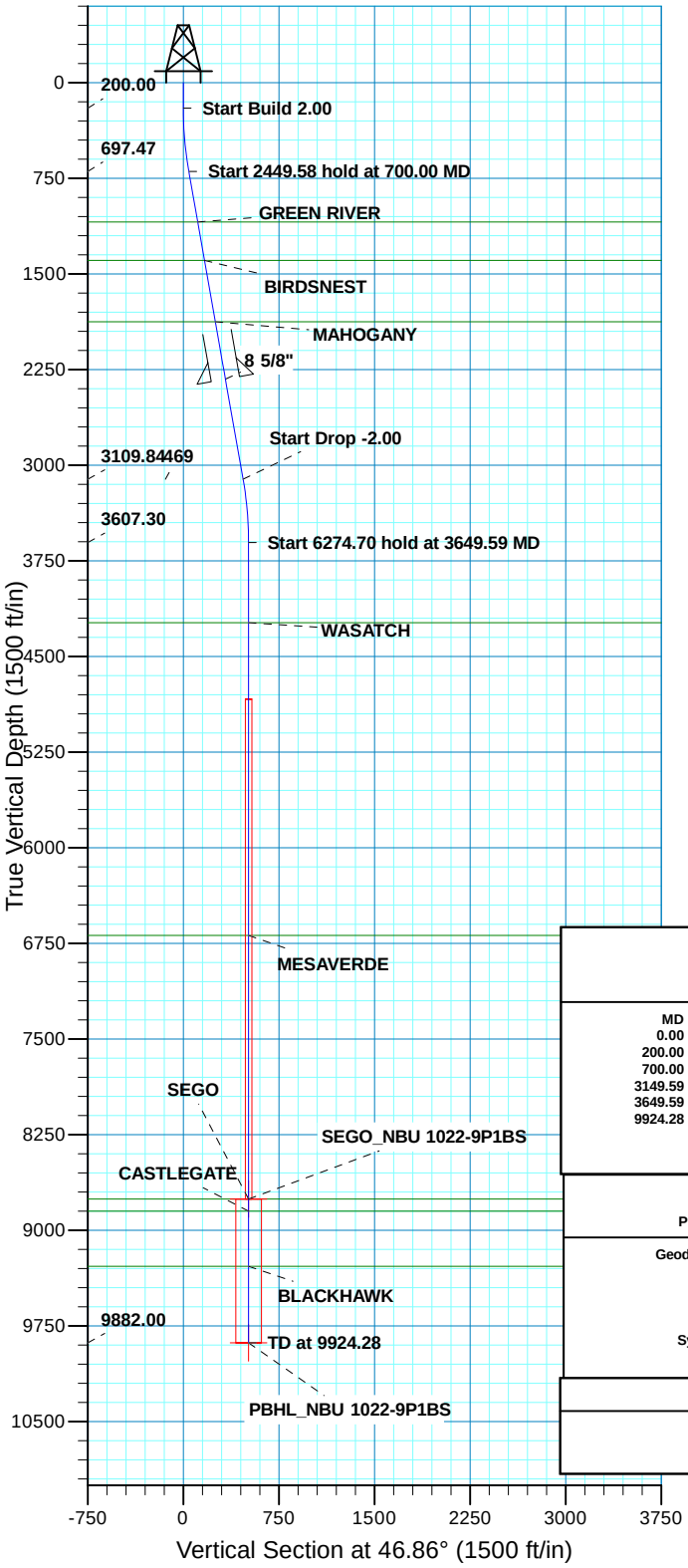
WELL DETAILS: NBU 1022-9P1BS

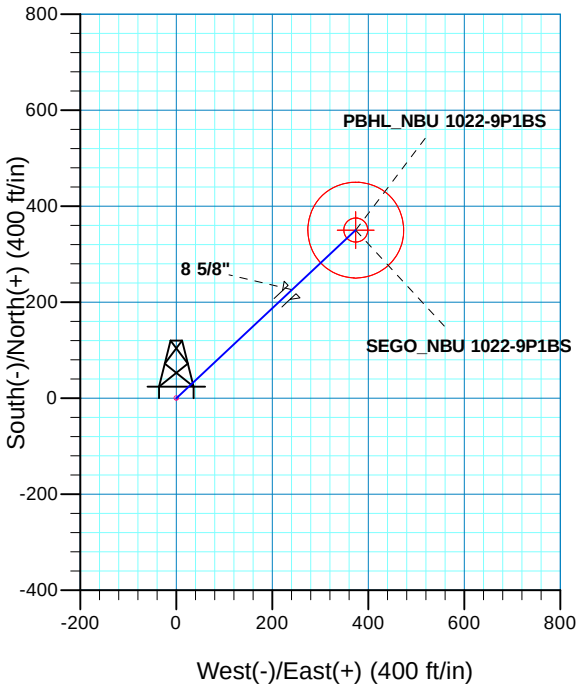
GL 5236 @ 5240.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14514724.96	2078268.34	39.9583830	-109.4375520

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8755.00	350.37	373.90	14515081.83	2078636.05	39.9593450	-109.4362180	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9882.00	350.37	373.90	14515081.83	2078636.05	39.9593450	-109.4362180	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
700.00	10.00	46.86	697.47	29.76	31.76	2.00	46.86	43.52	Start 2449.58 hold at 700.00 MD
3149.59	10.00	46.86	3109.84	320.61	342.14	0.00	0.00	468.89	
3649.59	0.00	0.00	3607.30	350.37	373.90	2.00	180.00	512.41	
9924.28	0.00	0.00	9882.00	350.37	373.90	0.00	0.00	512.41	PBHL_NBU 1022-9P1BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1092.00	1100.62	GREEN RIVER
1394.00	1407.28	BIRDSNEST
1876.00	1896.72	MAHOGANY
4235.00	4277.28	WASATCH
6688.00	6730.28	MESAVERDE
8755.00	8797.28	SEGO
8851.00	8893.28	CASTLEGATE
9282.00	9324.28	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2326.00	2353.66	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9P1BS/OH)

Created By: RobertScott Date: 17:04, August 06 2015

RECEIVED:

API Well Number: 43047555100000

US ROCKIES REGION PLANNING

UTAH - UTM (feet), NAD27, Zone 12N
NBU 1022-9P PAD
NBU 1022-9P1BS

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 August, 2015

RECEIVED: December 21, 2015

Anadarko Petroleum Corporation

Planning Report

Scientific Drilling

Database:	Denver Sales	**Local Co-ordinate Reference:**	Well NBU 1022-9P1BS
Company:	US ROCKIES REGION PLANNING	**TVD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Site:	NBU 1022-9P PAD	**North Reference:**	True
Well:	NBU 1022-9P1BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

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

Map System:	Universal Transverse Mercator (US Survey Feet)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 12N (114 W to 108 W)		

Site NBU 1022-9P PAD, SECTION 9 T10S R22E

Site Position:		**Northing:**	14,514,724.96 usft	**Latitude:**	39.9583830
From:	Lat/Long	**Easting:**	2,078,268.34 usft	**Longitude:**	-109.4375520
Position Uncertainty:	3.28 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.00 °

Well NBU 1022-9P1BS, 762 FSL 809 FEL

Well Position	**+N/-S**	0.00 ft	**Northing:**	14,514,724.96 usft	**Latitude:**	39.9583830
	+E/-W	0.00 ft	**Easting:**	2,078,268.34 usft	**Longitude:**	-109.4375520
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	5,236.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	8/6/2015	10.56	65.80	51,854

Design PLAN #1 PRELIMINARY

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	46.86

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	10.00	46.86	697.47	29.76	31.76	2.00	2.00	0.00	46.86	
3,149.59	10.00	46.86	3,109.84	320.61	342.14	0.00	0.00	0.00	0.00	
3,649.59	0.00	0.00	3,607.30	350.37	373.90	2.00	-2.00	0.00	180.00	
9,924.28	0.00	0.00	9,882.00	350.37	373.90	0.00	0.00	0.00	0.00	PBHL_NBU 1022-9P

RECEIVED: December 21, 2015

Anadarko Petroleum Corporation

Planning Report

Scientific Drilling

Database:	Denver Sales	**Local Co-ordinate Reference:**	Well NBU 1022-9P1BS
Company:	US ROCKIES REGION PLANNING	**TVD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Site:	NBU 1022-9P PAD	**North Reference:**	True
Well:	NBU 1022-9P1BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	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
Start Build 2.00									
300.00	2.00	46.86	299.98	1.19	1.27	1.75	2.00	2.00	0.00
400.00	4.00	46.86	399.84	4.77	5.09	6.98	2.00	2.00	0.00
500.00	6.00	46.86	499.45	10.73	11.45	15.69	2.00	2.00	0.00
600.00	8.00	46.86	598.70	19.06	20.34	27.88	2.00	2.00	0.00
700.00	10.00	46.86	697.47	29.76	31.76	43.52	2.00	2.00	0.00
Start 2449.58 hold at 700.00 MD									
800.00	10.00	46.86	795.95	41.63	44.43	60.89	0.00	0.00	0.00
900.00	10.00	46.86	894.43	53.51	57.10	78.25	0.00	0.00	0.00
1,000.00	10.00	46.86	992.91	65.38	69.77	95.62	0.00	0.00	0.00
1,100.00	10.00	46.86	1,091.39	77.25	82.44	112.98	0.00	0.00	0.00
1,100.62	10.00	46.86	1,092.00	77.33	82.52	113.09	0.00	0.00	0.00
GREEN RIVER									
1,200.00	10.00	46.86	1,189.87	89.13	95.11	130.35	0.00	0.00	0.00
1,300.00	10.00	46.86	1,288.35	101.00	107.78	147.71	0.00	0.00	0.00
1,400.00	10.00	46.86	1,386.83	112.88	120.45	165.08	0.00	0.00	0.00
1,407.28	10.00	46.86	1,394.00	113.74	121.38	166.34	0.00	0.00	0.00
BIRDSNEST									
1,500.00	10.00	46.86	1,485.31	124.75	133.13	182.44	0.00	0.00	0.00
1,600.00	10.00	46.86	1,583.79	136.62	145.80	199.81	0.00	0.00	0.00
1,700.00	10.00	46.86	1,682.27	148.50	158.47	217.17	0.00	0.00	0.00
1,800.00	10.00	46.86	1,780.75	160.37	171.14	234.54	0.00	0.00	0.00
1,896.72	10.00	46.86	1,876.00	171.85	183.39	251.33	0.00	0.00	0.00
MAHOGANY									
1,900.00	10.00	46.86	1,879.23	172.24	183.81	251.90	0.00	0.00	0.00
2,000.00	10.00	46.86	1,977.72	184.12	196.48	269.27	0.00	0.00	0.00
2,100.00	10.00	46.86	2,076.20	195.99	209.15	286.63	0.00	0.00	0.00
2,200.00	10.00	46.86	2,174.68	207.86	221.82	303.99	0.00	0.00	0.00
2,300.00	10.00	46.86	2,273.16	219.74	234.49	321.36	0.00	0.00	0.00
2,353.66	10.00	46.86	2,326.00	226.11	241.29	330.68	0.00	0.00	0.00
8 5/8"									
2,400.00	10.00	46.86	2,371.64	231.61	247.16	338.72	0.00	0.00	0.00
2,500.00	10.00	46.86	2,470.12	243.49	259.84	356.09	0.00	0.00	0.00
2,600.00	10.00	46.86	2,568.60	255.36	272.51	373.45	0.00	0.00	0.00
2,700.00	10.00	46.86	2,667.08	267.23	285.18	390.82	0.00	0.00	0.00
2,800.00	10.00	46.86	2,765.56	279.11	297.85	408.18	0.00	0.00	0.00
2,900.00	10.00	46.86	2,864.04	290.98	310.52	425.55	0.00	0.00	0.00
3,000.00	10.00	46.86	2,962.52	302.85	323.19	442.91	0.00	0.00	0.00
3,100.00	10.00	46.86	3,061.00	314.73	335.86	460.28	0.00	0.00	0.00
3,149.59	10.00	46.86	3,109.84	320.61	342.14	468.89	0.00	0.00	0.00
Start Drop -2.00									
3,200.00	8.99	46.86	3,159.56	326.30	348.21	477.21	2.00	-2.00	0.00
3,300.00	6.99	46.86	3,258.58	335.81	358.36	491.11	2.00	-2.00	0.00
3,400.00	4.99	46.86	3,358.03	342.94	365.97	501.55	2.00	-2.00	0.00
3,500.00	2.99	46.86	3,457.78	347.70	371.05	508.51	2.00	-2.00	0.00
3,600.00	0.99	46.86	3,557.72	350.08	373.59	511.98	2.00	-2.00	0.00
3,649.59	0.00	0.00	3,607.30	350.37	373.90	512.41	2.00	-2.00	0.00
Start 6274.70 hold at 3649.59 MD									
3,700.00	0.00	0.00	3,657.72	350.37	373.90	512.41	0.00	0.00	0.00
3,800.00	0.00	0.00	3,757.72	350.37	373.90	512.41	0.00	0.00	0.00

RECEIVED: December 21, 2015

Anadarko Petroleum Corporation

Planning Report

Scientific Drilling

Database:	Denver Sales	**Local Co-ordinate Reference:**	Well NBU 1022-9P1BS
Company:	US ROCKIES REGION PLANNING	**TVD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Site:	NBU 1022-9P PAD	**North Reference:**	True
Well:	NBU 1022-9P1BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,900.00	0.00	0.00	3,857.72	350.37	373.90	512.41	0.00	0.00	0.00
4,000.00	0.00	0.00	3,957.72	350.37	373.90	512.41	0.00	0.00	0.00
4,100.00	0.00	0.00	4,057.72	350.37	373.90	512.41	0.00	0.00	0.00
4,200.00	0.00	0.00	4,157.72	350.37	373.90	512.41	0.00	0.00	0.00
4,277.28	0.00	0.00	4,235.00	350.37	373.90	512.41	0.00	0.00	0.00
WASATCH									
4,300.00	0.00	0.00	4,257.72	350.37	373.90	512.41	0.00	0.00	0.00
4,400.00	0.00	0.00	4,357.72	350.37	373.90	512.41	0.00	0.00	0.00
4,500.00	0.00	0.00	4,457.72	350.37	373.90	512.41	0.00	0.00	0.00
4,600.00	0.00	0.00	4,557.72	350.37	373.90	512.41	0.00	0.00	0.00
4,700.00	0.00	0.00	4,657.72	350.37	373.90	512.41	0.00	0.00	0.00
4,800.00	0.00	0.00	4,757.72	350.37	373.90	512.41	0.00	0.00	0.00
4,900.00	0.00	0.00	4,857.72	350.37	373.90	512.41	0.00	0.00	0.00
5,000.00	0.00	0.00	4,957.72	350.37	373.90	512.41	0.00	0.00	0.00
5,100.00	0.00	0.00	5,057.72	350.37	373.90	512.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,157.72	350.37	373.90	512.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,257.72	350.37	373.90	512.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,357.72	350.37	373.90	512.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,457.72	350.37	373.90	512.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,557.72	350.37	373.90	512.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,657.72	350.37	373.90	512.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,757.72	350.37	373.90	512.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,857.72	350.37	373.90	512.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,957.72	350.37	373.90	512.41	0.00	0.00	0.00
6,100.00	0.00	0.00	6,057.72	350.37	373.90	512.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,157.72	350.37	373.90	512.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,257.72	350.37	373.90	512.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,357.72	350.37	373.90	512.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,457.72	350.37	373.90	512.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,557.72	350.37	373.90	512.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,657.72	350.37	373.90	512.41	0.00	0.00	0.00
6,730.28	0.00	0.00	6,688.00	350.37	373.90	512.41	0.00	0.00	0.00
MESAVERDE									
6,800.00	0.00	0.00	6,757.72	350.37	373.90	512.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,857.72	350.37	373.90	512.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,957.72	350.37	373.90	512.41	0.00	0.00	0.00
7,100.00	0.00	0.00	7,057.72	350.37	373.90	512.41	0.00	0.00	0.00
7,200.00	0.00	0.00	7,157.72	350.37	373.90	512.41	0.00	0.00	0.00
7,300.00	0.00	0.00	7,257.72	350.37	373.90	512.41	0.00	0.00	0.00
7,400.00	0.00	0.00	7,357.72	350.37	373.90	512.41	0.00	0.00	0.00
7,500.00	0.00	0.00	7,457.72	350.37	373.90	512.41	0.00	0.00	0.00
7,600.00	0.00	0.00	7,557.72	350.37	373.90	512.41	0.00	0.00	0.00
7,700.00	0.00	0.00	7,657.72	350.37	373.90	512.41	0.00	0.00	0.00
7,800.00	0.00	0.00	7,757.72	350.37	373.90	512.41	0.00	0.00	0.00
7,900.00	0.00	0.00	7,857.72	350.37	373.90	512.41	0.00	0.00	0.00
8,000.00	0.00	0.00	7,957.72	350.37	373.90	512.41	0.00	0.00	0.00
8,100.00	0.00	0.00	8,057.72	350.37	373.90	512.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,157.72	350.37	373.90	512.41	0.00	0.00	0.00
8,300.00	0.00	0.00	8,257.72	350.37	373.90	512.41	0.00	0.00	0.00
8,400.00	0.00	0.00	8,357.72	350.37	373.90	512.41	0.00	0.00	0.00
8,500.00	0.00	0.00	8,457.72	350.37	373.90	512.41	0.00	0.00	0.00
8,600.00	0.00	0.00	8,557.72	350.37	373.90	512.41	0.00	0.00	0.00
8,700.00	0.00	0.00	8,657.72	350.37	373.90	512.41	0.00	0.00	0.00
8,797.28	0.00	0.00	8,755.00	350.37	373.90	512.41	0.00	0.00	0.00

RECEIVED: December 21, 2015

Anadarko Petroleum Corporation

Planning Report

Scientific Drilling

Database:	Denver Sales	**Local Co-ordinate Reference:**	Well NBU 1022-9P1BS
Company:	US ROCKIES REGION PLANNING	**TVD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Site:	NBU 1022-9P PAD	**North Reference:**	True
Well:	NBU 1022-9P1BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SEGO - SEGO_NBU 1022-9P1BS									
8,800.00	0.00	0.00	8,757.72	350.37	373.90	512.41	0.00	0.00	0.00
8,893.28	0.00	0.00	8,851.00	350.37	373.90	512.41	0.00	0.00	0.00
CASTLEGATE									
8,900.00	0.00	0.00	8,857.72	350.37	373.90	512.41	0.00	0.00	0.00
9,000.00	0.00	0.00	8,957.72	350.37	373.90	512.41	0.00	0.00	0.00
9,100.00	0.00	0.00	9,057.72	350.37	373.90	512.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,157.72	350.37	373.90	512.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,257.72	350.37	373.90	512.41	0.00	0.00	0.00
9,324.28	0.00	0.00	9,282.00	350.37	373.90	512.41	0.00	0.00	0.00
BLACKHAWK									
9,400.00	0.00	0.00	9,357.72	350.37	373.90	512.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,457.72	350.37	373.90	512.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,557.72	350.37	373.90	512.41	0.00	0.00	0.00
9,700.00	0.00	0.00	9,657.72	350.37	373.90	512.41	0.00	0.00	0.00
9,800.00	0.00	0.00	9,757.72	350.37	373.90	512.41	0.00	0.00	0.00
9,900.00	0.00	0.00	9,857.72	350.37	373.90	512.41	0.00	0.00	0.00
9,924.28	0.00	0.00	9,882.00	350.37	373.90	512.41	0.00	0.00	0.00
TD at 9924.28 - PBHL_NBU 1022-9P1BS									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SEGO_NBU 1022-9P1B - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,755.00	350.37	373.90	14,515,081.83	2,078,636.05	39.9593450	-109.4362180
PBHL_NBU 1022-9P1B - plan hits target center - Circle (radius 100.00)	0.00	0.00	9,882.00	350.37	373.90	14,515,081.83	2,078,636.05	39.9593450	-109.4362180

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,353.66	2,326.00	8 5/8"	8.625	11.000

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Planning Report

Scientific Drilling

Database:	Denver Sales	**Local Co-ordinate Reference:**	Well NBU 1022-9P1BS
Company:	US ROCKIES REGION PLANNING	**TVD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	GL 5236 @ 5240.00ft (ASSUMED)
Site:	NBU 1022-9P PAD	**North Reference:**	True
Well:	NBU 1022-9P1BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,100.62	1,092.00	GREEN RIVER			
1,407.28	1,394.00	BIRDSNEST			
1,896.72	1,876.00	MAHOGANY			
4,277.28	4,235.00	WASATCH			
6,730.28	6,688.00	MESAVERDE			
8,797.28	8,755.00	SEGO			
8,893.28	8,851.00	CASTLEGATE			
9,324.28	9,282.00	BLACKHAWK			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
200.00	200.00	0.00	0.00	Start Build 2.00
700.00	697.47	29.76	31.76	Start 2449.58 hold at 700.00 MD
3,149.59	3,109.84	320.61	342.14	Start Drop -2.00
3,649.59	3,607.30	350.37	373.90	Start 6274.70 hold at 3649.59 MD
9,924.28	9,882.00	350.37	373.90	TD at 9924.28

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

NBU 1022-9P PAD

API #		NBU 1022-9I4BS		
	Surface:	749 FSL / 823 FEL	SESE	Lot
	BHL:	1740 FSL / 517 FEL	NESE	Lot

API #		NBU 1022-9I4DS		
	Surface:	756 FSL / 816 FEL	SESE	Lot
	BHL:	1363 FSL / 248 FEL	NESE	Lot

API #		NBU 1022-9J4CS		
	Surface:	742 FSL / 831 FEL	SESE	Lot
	BHL:	1330 FSL / 1659 FEL	NWSE	Lot

API #		NBU 1022-9P1BS		
	Surface:	762 FSL / 809 FEL	SESE	Lot
	BHL:	1113 FSL / 434 FEL	SESE	Lot

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

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

An on-site meeting was held on July 7, 2015. Present were:

- Christine Cimiluca, Nick Day, Tyler Cox - BLM;
- Mitch Batty - Timberline Engineering & Land Surveying, Inc.;
- Joel Malefyt, Roger Parry, Chantill Recker, Lovel Young, Doyle Holmes, Kelly Reyos - Kerr-McGee

A. Existing Roads:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Please refer to Topo B for existing roads.

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B. New or Reconstructed Access Roads:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

C. Location of Existing Wells:

Please refer to Topo C for exiting wells.

D. Location of Existing and/or Proposed Facilities:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

This pad will expand the existing pad for the NBU 152, which is a producing gas well according to Utah Division of Oil, Gas and Mining (UDOGM) records on August 20, 2015. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

GAS GATHERING

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

The total gas gathering pipeline distance from the meter to the tie in point is ±3,240' and the individual segments are broken up as follows:

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

±425' (0.1 miles) – Section 9 T10S R22E (SE/4 SE/4) – On-lease UTU 01196D, BLM surface, New 8" (max) buried gas gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.

±1755' (0.33 miles) – Section 9 T10S R22E (SE/4 SE/4) – On-lease UTU01196D, BLM surface, New 8" (max buried gas gathering pipeline from the edge of the pad to proposed 10"(max) gas pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

±1060' (0.2 miles) – Section 9 T10S R22E (SE/4 SE/4) – On-lease UTU01196D, BLM surface, New 8" (max) surface gas gathering pipeline reroute. Please refer to Topo D2 - Pad and Pipeline Detail.

LIQUID GATHERING

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

The total liquid gathering pipeline distance from the separator to the tie in point is ±2400' and the individual segments are broken up as follows:

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

±425' (0.1 miles) – Section 9 T10S R22E (SE/4 SE/4) – On-lease UTU01196D, BLM surface, New 6" (max) buried liquid gathering pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.

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±1975' (0.4 miles) – Section 9 T10S R22E (SE/4 SE/4) – On-lease UTU01196D, BLM surface, New 6" (max) buried liquid gathering pipeline from the edge of pad to proposed 6"(max) liquid pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

Pipeline Gathering Construction

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

The Anadarko Completions Transportation System (ACTS) information:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Please refer to Exhibit C for ACTS Lines

E. Location and Types of Water Supply:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

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

F. Construction Materials:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

G. Methods for Handling Waste:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Materials Management

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

H. Ancillary Facilities:

No additional ancillary facilities are planned for this location.

I. Well Site Layout:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

J. Plans for Surface Reclamation:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Interim Reclamation

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Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Final Reclamation

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Measures Common to Interim and Final Reclamation

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Weed Control

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Monitoring

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

K. Surface/Mineral Ownership:

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

L. Other Information:

Cultural and Paleontological Resources

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated May 13, 2014.

Resource Reports:

A Class I literature survey was completed on July 15, 2015 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 15-063.

A paleontological reconnaissance survey was completed on July 23, 2015 by SWCA Environmental Consultants. For additional details please refer to report UT15-14314-21.

Biological field survey was completed on July 10, 2014 by SWCA Environmental Consultants. . For additional details please refer to report for the NBU 1022-9P pad expansion

Proposed Action Annual Emissions Tables:

Please refer to the Appendix in the Standard Operating Practices on file at the BLM Vernal Field Office dated

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May 13, 2014.

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

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

Scott Rovira
General Manager, Drilling
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6243

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

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

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

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

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

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Joel Malefyt

August 21, 2015
Date

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

Drilling Program

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

Bureau of Land Management Notification Requirements:

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

Location Completion: Prior to moving on the drilling rig

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

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

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

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

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

1. Estimated Tops of Important Geologic Markers:

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

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

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

3. Pressure Control Equipment:

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

4. Proposed Casing & Cementing Program:

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

5. Drilling Fluids Program:

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

6. Evaluation Program:

Evaluation program will be submitted with site-specific APDs.

7. Abnormal Conditions:

Any abnormal condition will be submitted with site specific APDs.

8. Anticipated Starting Dates:

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

9. Variances:

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

Variance for air drilling

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

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

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

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

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

Variance for BOPE Requirements

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

Variance for Mud Material Requirements

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

Variance for Special Drilling Operation (surface equipment placement)

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

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

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

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

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

Variance for FIT Requirements

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

10. Other Information:

Drilling Program will be submitted with site-specific APDs.

SURFACE USE PROGRAM

A. Existing Roads:

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

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

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

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

B. New or Reconstructed Access Roads:

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

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

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

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

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

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

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

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

For individual APDs, refer to Topo B.

C. Location of Existing Wells:

For individual APDs, refer to Topo C

D. Location of Existing and/or Proposed Facilities:

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

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

Gas Gathering

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

Liquid Gathering

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

Pipeline Gathering Construction

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

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

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

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

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

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

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

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

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

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

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

The Anadarko Completions Transportation System (ACTS) information:

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

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

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

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

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

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

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

E. Location and Types of Water Supply:

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

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

RN Industries:

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

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

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	959’ FNL & 705’ FEL, Sec. 13 – T10S – R22E
	600’ FSL & 900’ FEL, Sec. 13 – T10S – R22E
Water Plant:	481’ FNL & 2176’ FEL, Sec. 9 – T8S – R20E
	471’ FNL & 2176’ FEL, Sec. 9 – T8S – R20E
Frog Pond:	4820’ FNL & 1200’ FWL, Sec. 33 – T8S – R20E
	4850’ FNL & 700’ FWL, Sec. 33 – T8S – R20E
Blue Tanks:	200’ FNL & 405’ FEL, Sec. 32 – T4S – R3E

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

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

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

F. Construction Materials:

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

G. Methods for Handling Waste:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Materials Management

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

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

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

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

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

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

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

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

H. Ancillary Facilities:

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

I. Well Site Layout:

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

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

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

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

J. Plans for Surface Reclamation:

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

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

Interim Reclamation

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

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

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

Final Reclamation

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

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

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

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

Measures Common to Interim and Final Reclamation

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

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

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

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

Bonanza Area Mix	**Pure Live Seed lbs/acre**
Crested Wheat (Hycrest)	1.5
Bottlebrush Squirreltail	1
Western Wheatgrass (Arriba)	1
Thick Spike Wheatgrass	1.5
Indian Ricegrass	1
Fourwing Saltbush	2
Shadscale	2
Forage Kochia	0.25
Rocky Mountain Bee Plant	0.5
Total	10.75

Natural Buttes Area Mix Option 1:	**Pure Live Seed lbs/acre**
Indian Ricegrass (Nezpar)	3
Thick Spike Wheatgrass	2
Sandberg bluegrass	0.5
Bottlebrush squirreltail	1
Crested wheatgrass (Hycrest)	1
Winterfat	0.25
Shadscale	1.5
Four-wing saltbush	0.75
Forage Kochia	0.25
Total	10.25

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

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

Natural Buttes Area Mix Option 3:	**Pure Live Seed lbs/acre**
Galleta Grass	2
Sandberg bluegrass	0.5
Shadscale	0.5
Bluebunch (secar)	2
Indian Ricegrass (Nezpar)	2
Western Wheatgrass (Arriba)	2
Palmer penstemon	0.25
Munro Globemallow	0.15
Black Sage	0.25
Winterfat	0.25
Forage Kochia	0.25
Total	10.15

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

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Weed Control

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

Monitoring

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

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

K. Surface/Mineral Ownership:

Depicted on site specific APDs.

L. Other Information:

Cultural and Paleontological Resources

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

Resource Reports

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

Proposed Action Annual Emissions Tables:

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

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

Depicted on site specific APDs.

Appendix A:

Proposed Action Annual Emissions Tables: 4 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	1.2	5
CO	2.2	1.08	3.28
VOC	0.1	6.8	6.9
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

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Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5	16,547	0.03%
VOC	6.9	127,495	0.01%

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix B:

Proposed Action Annual Emissions Tables: 5 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	1.5	5.3
CO	2.2	1.08	3.28
VOC	0.1	8.5	8.6
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

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

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix C:

Proposed Action Annual Emissions Tables: 6 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	1.8	5.6
CO	2.2	1.08	3.28
VOC	0.1	10.2	10.3
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5.6	16,547	0.03%
VOC	10.3	127,495	0.01%

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[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix D:

Proposed Action Annual Emissions Tables: 7 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]			
Pollutant	**Development**	**Production**	**Total**
NOx	3.8	2.1	5.9
CO	2.2	1.08	3.28
VOC	0.1	11.9	12
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix E:

Proposed Action Annual Emissions Tables: 8 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

RECEIVED: December 21, 2015

Pollutant	Development	Production	Total
NOx	3.8	2.4	6.2
CO	2.2	1.08	3.28
VOC	0.1	13.6	13.7
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	6.2	16,547	0.03%
VOC	13.7	127,495	0.01%

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix F:

Proposed Action Annual Emissions Tables: 10 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	3	6.8
CO	2.2	1.08	3.28
VOC	0.1	17	17.1
SO_2	0.005	0.01	0.02

RECEIVED: December 21, 2015

PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	6.8	16,547	0.03%
VOC	17.1	127,495	0.01%

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix G:

Proposed Action Annual Emissions Tables: 12 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	3.6	7.4
CO	2.2	1.08	3.28
VOC	0.1	20.4	20.5
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45

RECEIVED: December 21, 2015

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

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

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

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

Appendix G:

Proposed Action Annual Emissions Tables: 15 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)[1]

Pollutant	Development	Production	Total
NOx	3.8	4.5	8.3
CO	2.2	1.08	3.28
VOC	0.1	25.5	25.6
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
$PM_{2.5}$	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

RECEIVED: December 21, 2015

[1] Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

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

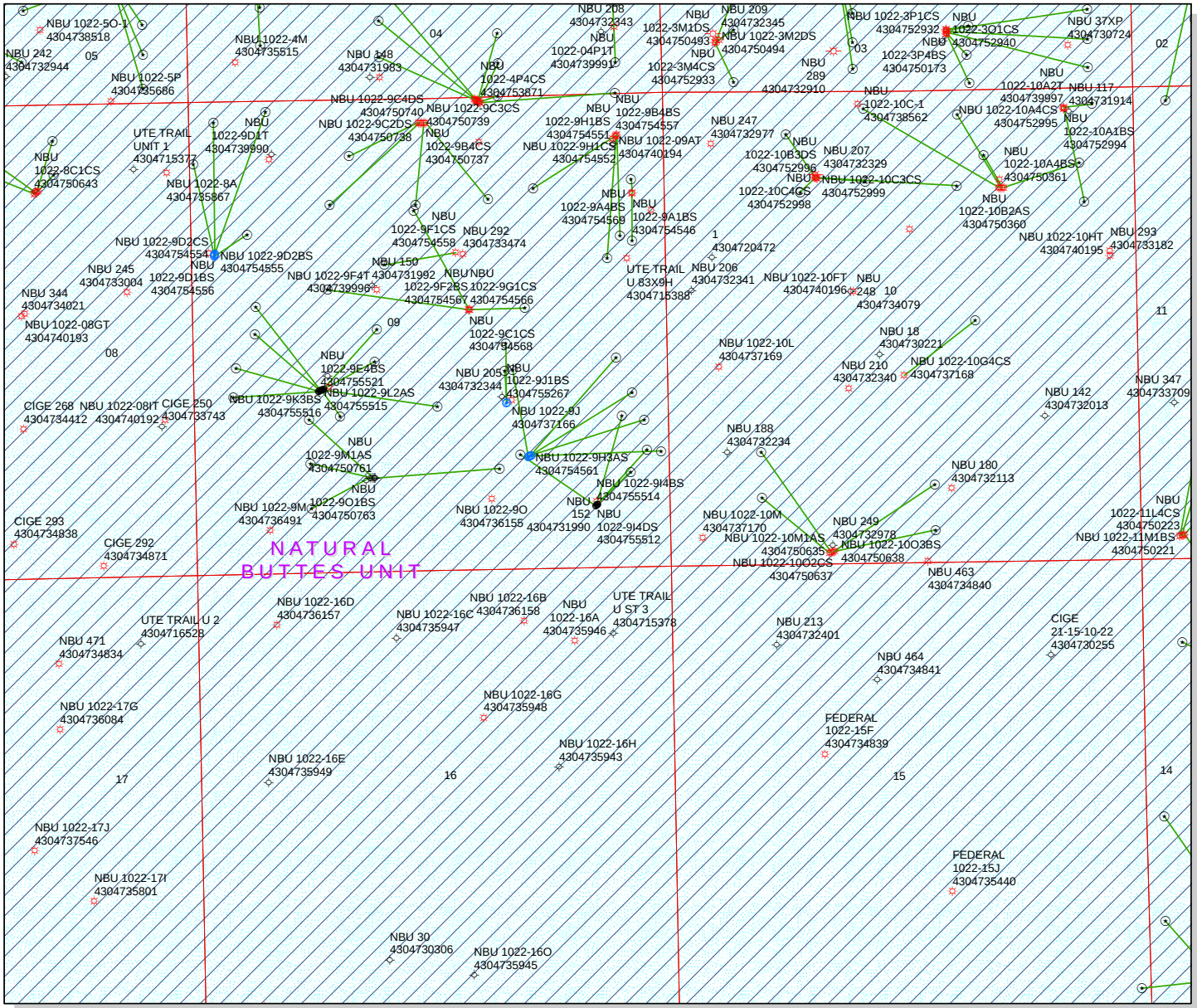
Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	8.3	16,547	0.03%
VOC	25.6	127,495	0.01%

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin Data

RECEIVED: December 21, 2015

API Well Number: 43047555100000



API Number: 4304755510

Well Name: NBU 1022-9P1BS

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

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

Map Prepared: 12/24/2015
Map Produced by Diana Mason

Wells Query

Status

- APD - Aproved Permit
- DRL - Spuded (Drilling Commenced)
- GIW - Gas Injection
- GS - Gas Storage
- LOC - New Location
- OPS - Operation Suspended
- PA - Plugged Abandoned
- PGW - Producing Gas Well
- POW - Producing Oil Well
- SGW - Shut-in Gas Well
- SOW - Shut-in Oil Well
- TA - Temp. Abandoned
- TW - Test Well
- WDW - Water Disposal
- WIW - Water Injection Well
- WSW - Water Supply Well

Units

STATUS

- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Fields

STATUS

- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED

1,400 700 0 1,400 Feet

1:13,809

RECEIVED: December 24, 2015

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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

IN REPLY REFER TO:
3160
(UT-922)

January 12, 2016

Memorandum

To: Assistant Field Office Manager Minerals, Vernal Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2016 Plan of Development Natural Buttes Unit Uintah County, Utah.

Pursuant to email between Diana Mason, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2016 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
PAD NBU 1022-9P		
43-047-55510	NBU 1022-9P1BS	Sec 09 T10S R22E 0762 FSL 0809 FEL BHL Sec 09 T10S R22E 1113 FSL 0434 FEL
43-047-55511	NBU 1022-9J4CS	Sec 09 T10S R22E 0742 FSL 0831 FEL BHL Sec 09 T10S R22E 1330 FSL 1659 FEL
43-047-55512	NBU 1022-9I4DS	Sec 09 T10S R22E 0756 FSL 0816 FEL BHL Sec 09 T10S R22E 1363 FSL 0248 FEL
43-047-55514	NBU 1022-9I4BS	Sec 09 T10S R22E 0749 FSL 0823 FEL BHL Sec 09 T10S R22E 1740 FSL 0517 FEL
PAD NBU 1022-9K		
43-047-55513	NBU 1022-9L2DS	Sec 09 T10S R22E 2072 FSL 1360 FWL BHL Sec 09 T10S R22E 2020 FSL 0412 FWL
43-047-55515	NBU 1022-9L2AS	Sec 09 T10S R22E 2076 FSL 1369 FWL BHL Sec 09 T10S R22E 2347 FSL 0452 FWL
43-047-55516	NBU 1022-9K3BS	Sec 09 T10S R22E 2088 FSL 1397 FWL BHL Sec 09 T10S R22E 1792 FSL 1598 FWL
43-047-55517	NBU 1022-9K1BS	Sec 09 T10S R22E 2100 FSL 1424 FWL BHL Sec 09 T10S R22E 2396 FSL 1999 FWL
43-047-55518	NBU 1022-9J3BS	Sec 09 T10S R22E 2092 FSL 1406 FWL BHL Sec 09 T10S R22E 1881 FSL 2572 FEL

RECEIVED: January 12, 2016

API #	WELL NAME	LOCATION

(Proposed PZ WASATCH-MESA VERDE)

PAD NBU 1022-99K

43-047-55519	NBU 1022-9F4CS	Sec 09 T10S R22E 2096 FSL 1415 FWL
		BHL Sec 09 T10S R22E 2533 FNL 2033 FWL
43-047-55520	NBU 1022-9E4CS	Sec 09 T10S R22E 2080 FSL 1378 FWL
		BHL Sec 09 T10S R22E 2555 FNL 0672 FWL
43-047-55521	NBU 1022-9E4BS	Sec 09 T10S R22E 2084 FSL 1387 FWL
		BHL Sec 09 T10S R22E 2258 FNL 0693 FWL

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

Michael Coulthard

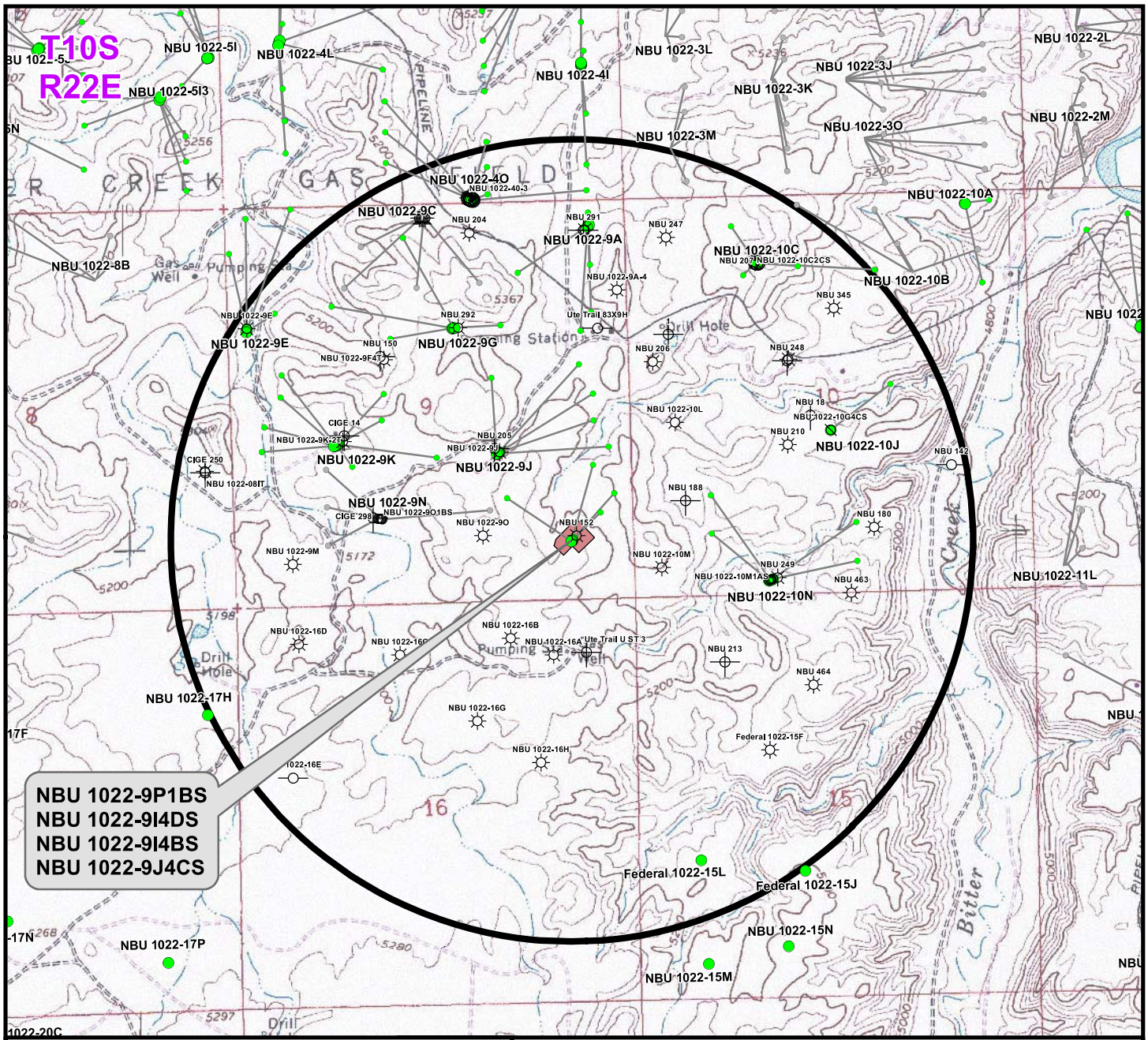
Digitally signed by Michael Coulthard
DN: cn=Michael Coulthard, o=Bureau of Land Management, ou=Division of Minerals, email=mcoultha@blm.gov, c=US
Date: 2016.01.12 14:00:03 -07'00'

bcc: File - Natural Buttes Unit
Division of Oil Gas and Mining
UT920 - Reading File
Agr. Sec. Chron

MCoulthard:mc:1-12-16

RECEIVED: January 12, 2016

API Well Number: 43047555100000



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

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9P1BS	NBU 152	±437ft
NBU 1022-9I4DS	NBU 152	±746ft
NBU 1022-9I4BS	NBU 152	±955ft
NBU 1022-9J4CS	NBU 1022-9O1BS BH	±278ft

Legend

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

WELL PAD - NBU 1022-9P

TOPO C
NBU 1022-9P1BS, NBU 1022-9I4DS, NBU 1022-9I4BS & NBU 1022-9J4CS
LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

Kerr-McGee Oil & Gas Onshore L.P.

1099 18th Street
Denver, Colorado 80202

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

N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO: 12
DRAWN: TL	DATE: 13 July 2015	12 OF 16
REVISED:	DATE:	

K:\ANADARKO\2013\2013_55_NBU_1022-9_FOCUS\GIS\Maps_ABCDE\NBU 1022-9P\NBU 1022-9P_C.mxd7/27/2015 2:19:18 PM

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9P PAD
Well: NBU 1022-9P1BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

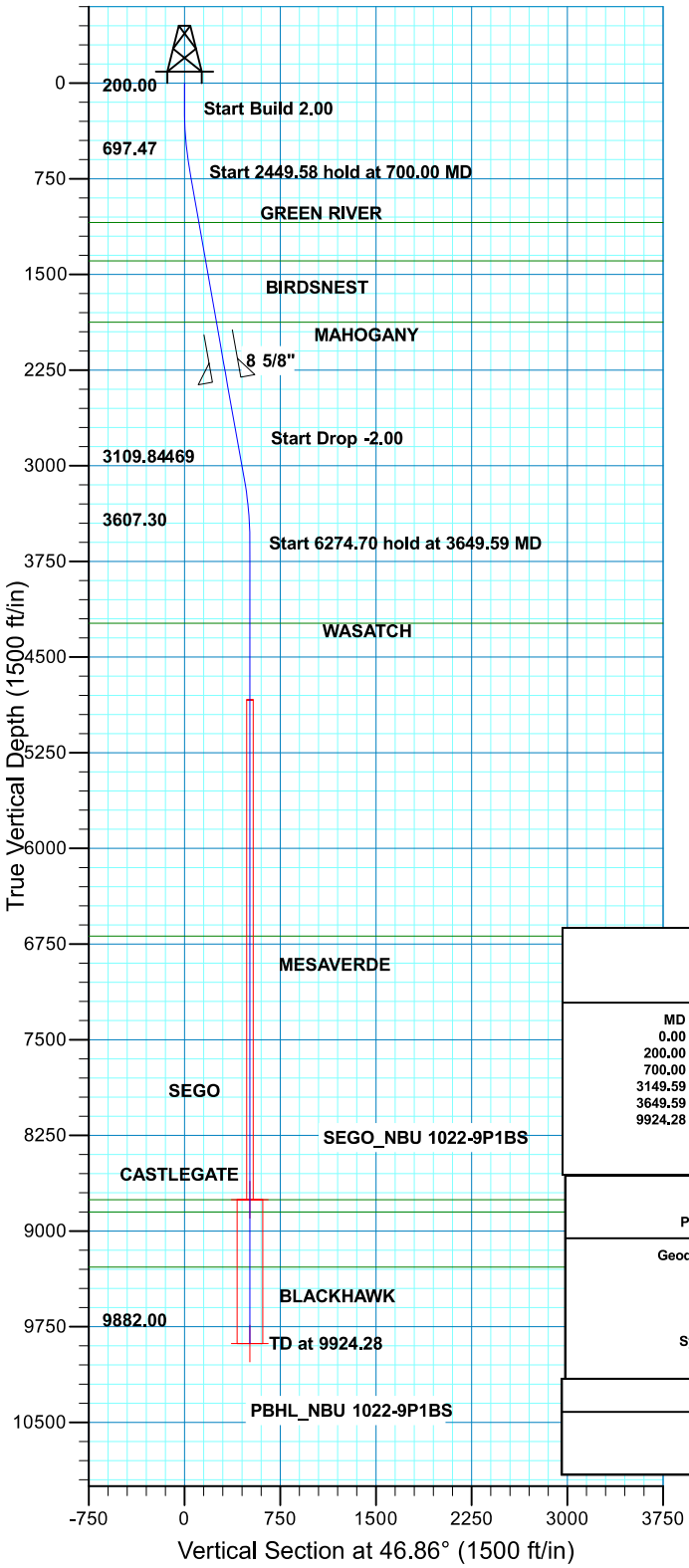
WELL DETAILS: NBU 1022-9P1BS

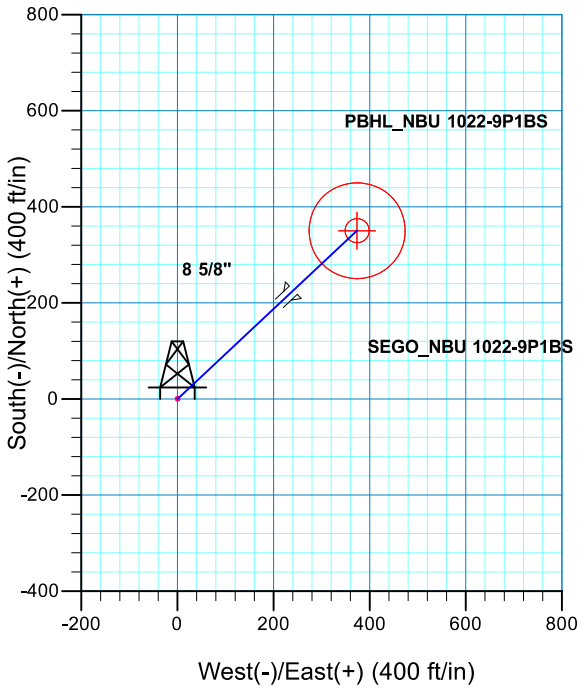
GL 5236 @ 5240.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14514724.96	2078268.34	39.9583830	-109.4375520

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8755.00	350.37	373.90	14515081.83	2078636.05	39.9593450	-109.4362180	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9882.00	350.37	373.90	14515081.83	2078636.05	39.9593450	-109.4362180	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	
0.00	0.00	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	
700.00	10.00	46.86	697.47	29.76	31.76	2.00	46.86	43.52	Start 2449.58 hold at 700.00 MD
3149.59	10.00	46.86	3109.84	320.61	342.14	0.00	0.00	468.89	
3649.59	0.00	0.00	3607.30	350.37	373.90	2.00	180.00	512.41	PBHL_NBU 1022-9P1BS
9924.28	0.00	0.00	9882.00	350.37	373.90	0.00	0.00	512.41	

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1092.00	1100.62	GREEN RIVER
1394.00	1407.28	BIRDSNEST
1876.00	1896.72	MAHOGANY
4235.00	4277.28	WASATCH
6688.00	6730.28	MESAVERDE
8755.00	8797.28	SEGO
8851.00	8893.28	CASTLEGATE
9282.00	9324.28	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2326.00	2353.66	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9P1BS/OH)

Created By: Bailey Brook Date: 17:04, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9P PAD
Well: NBU 1022-9J4CS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

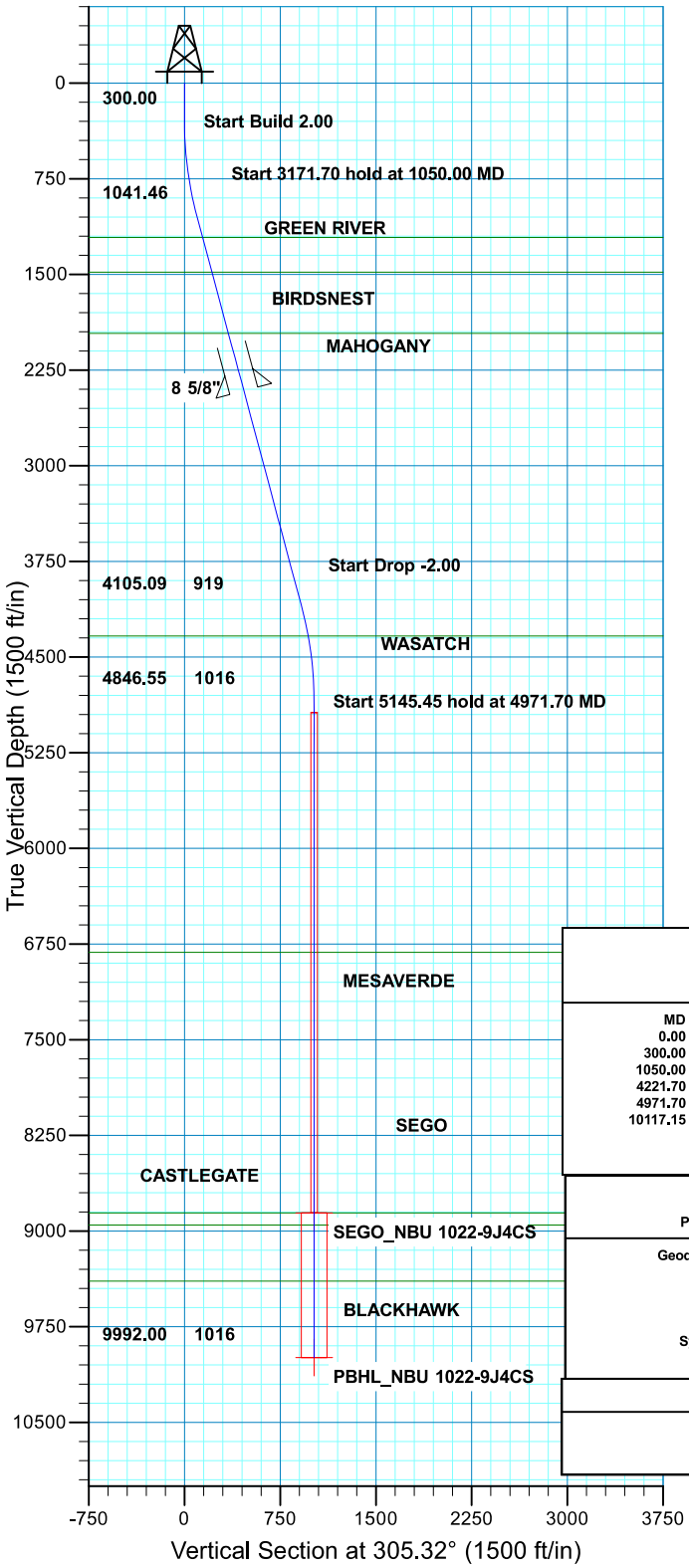
WELL DETAILS: NBU 1022-9J4CS

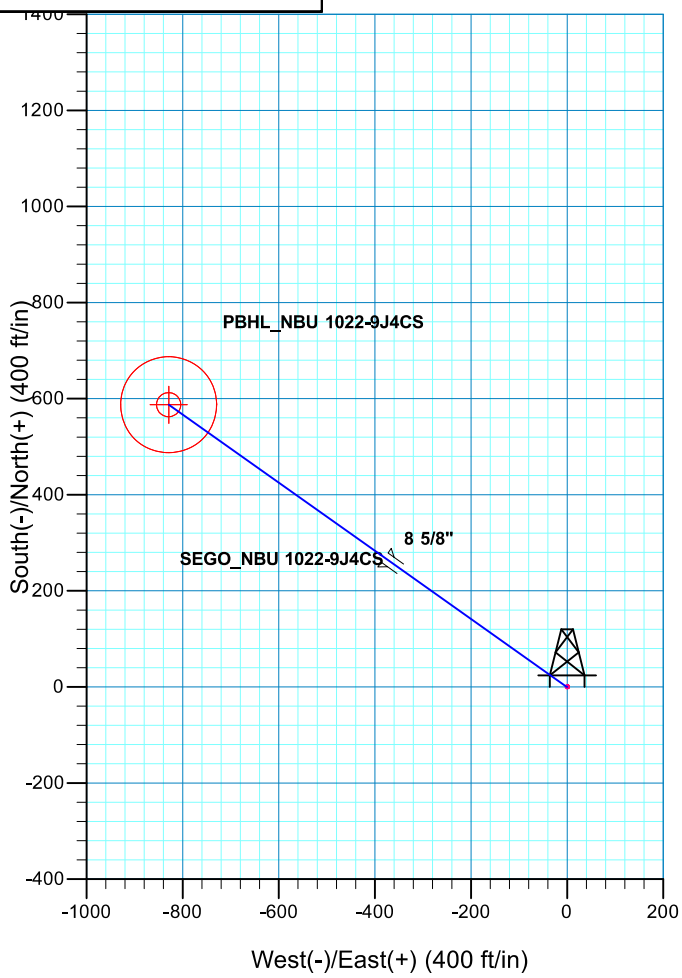
GL 5236 & KB 4 @ 5240.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14514703.82	2078246.85	39.9583260	-109.4376300

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8858.00	587.49	-829.08	14515276.69	2077407.61	39.9599390	-109.4405880	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9992.00	587.49	-829.08	14515276.69	2077407.61	39.9599390	-109.4405880	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	305.32	1041.46	56.44	-79.65	2.00	305.32	97.62	
4221.70	15.00	305.32	4105.09	531.05	-749.43	0.00	0.00	918.51	
4971.70	0.00	0.00	4846.55	587.49	-829.08	2.00	180.00	1016.13	
10117.15	0.00	0.00	9992.00	587.49	-829.08	0.00	0.00	1016.13	PBHL_NBU 1022-9J4CS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1209.00	1223.45	GREEN RIVER
1483.00	1507.11	BIRDSNEST
1963.00	2004.05	MAHOGANY
4336.00	4458.41	WASATCH
6815.00	6940.15	MESAVERDE
8858.00	8983.15	SEGO
8953.00	9078.15	CASTLEGATE
9392.00	9517.15	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2413.00	2469.92	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9J4CS/OH)

Created By: Bailey Brook Date: 16:49, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9P PAD
Well: NBU 1022-9I4DS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

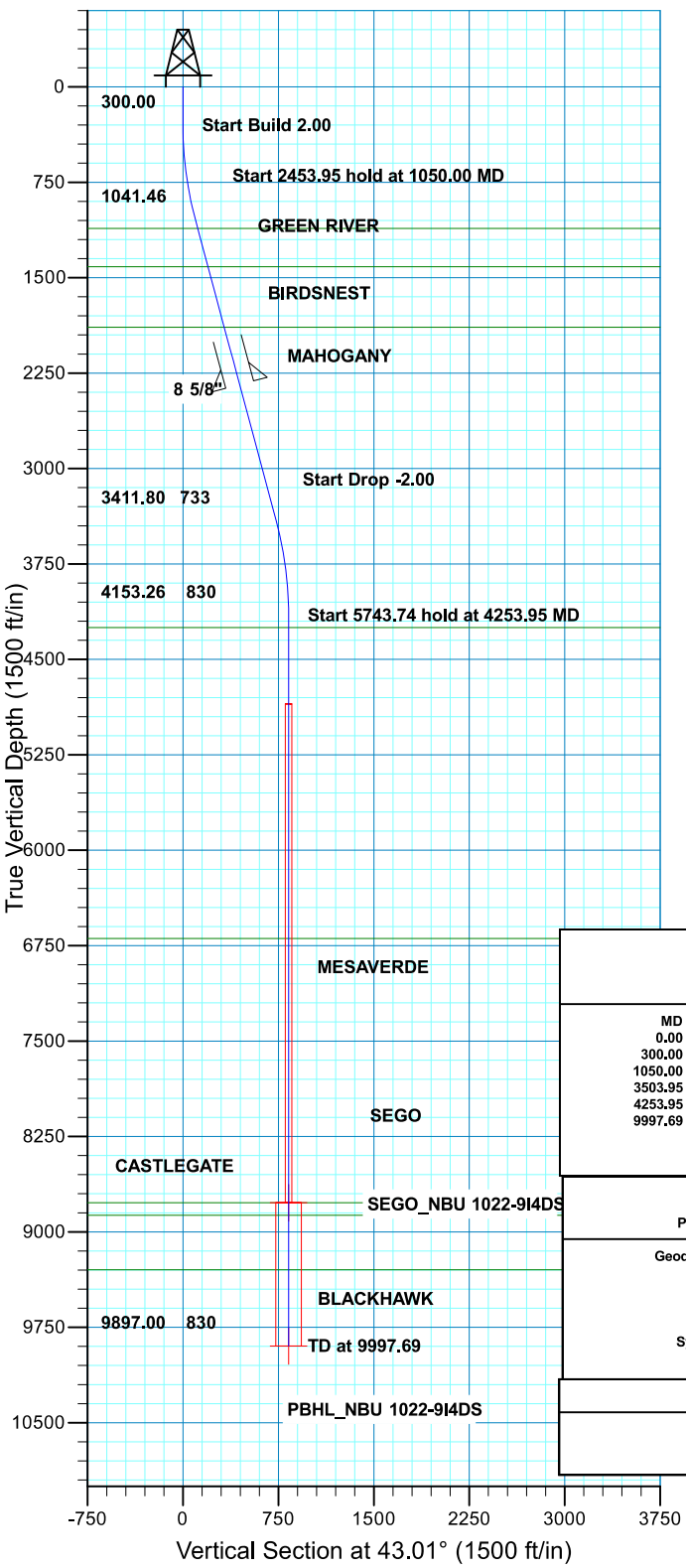
WELL DETAILS: NBU 1022-9I4DS

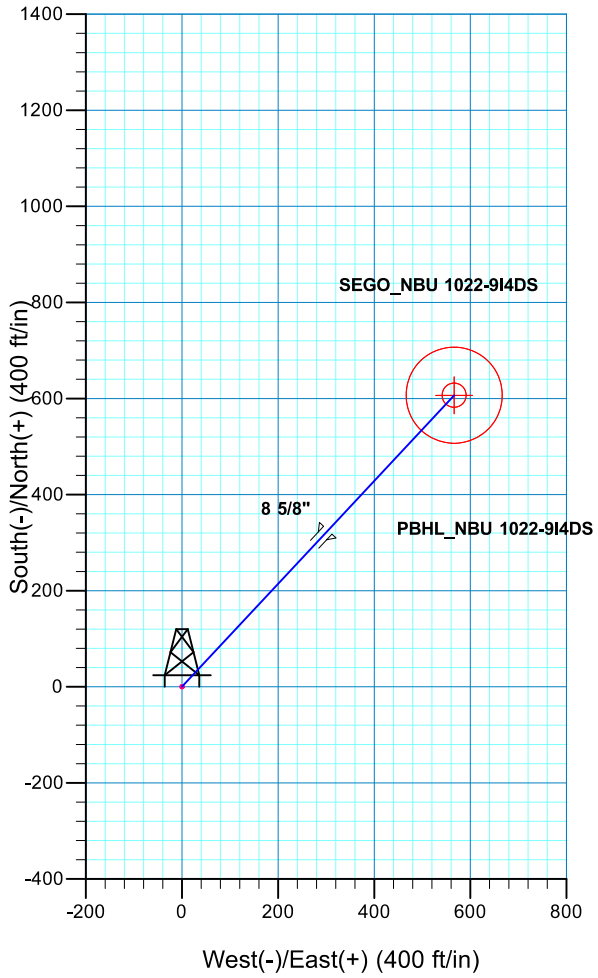
GL 5236 & KB 4 @ 5240.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14514717.91	2078261.18	39.9583640	-109.4375780

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8771.00	607.15	566.45	14515334.89	2078816.91	39.9600310	-109.4355570	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9897.00	607.15	566.45	14515334.89	2078816.91	39.9600310	-109.4355570	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	43.01	1041.46	71.38	66.59	2.00	43.01	97.62	
3503.95	15.00	43.01	3411.80	535.77	499.86	0.00	0.00	732.74	
4253.95	0.00	0.00	4153.26	607.15	566.45	2.00	180.00	830.36	
9997.69	0.00	0.00	9897.00	607.15	566.45	0.00	0.00	830.36	PBHL_NBU 1022-9I4DS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1112.00	1123.03	GREEN RIVER
1414.00	1435.68	BIRDSNEST
1890.00	1928.47	MAHOGANY
4250.00	4350.69	WASATCH
6694.00	6794.69	MESAVERDE
8771.00	8871.69	SEGO
8868.00	8968.69	CASTLEGATE
9297.00	9397.69	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2340.00	2394.35	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9I4DS/OH)

Created By: Bailey Brook Date: 16:40, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047505100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9P PAD
Well: NBU 1022-9I4BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

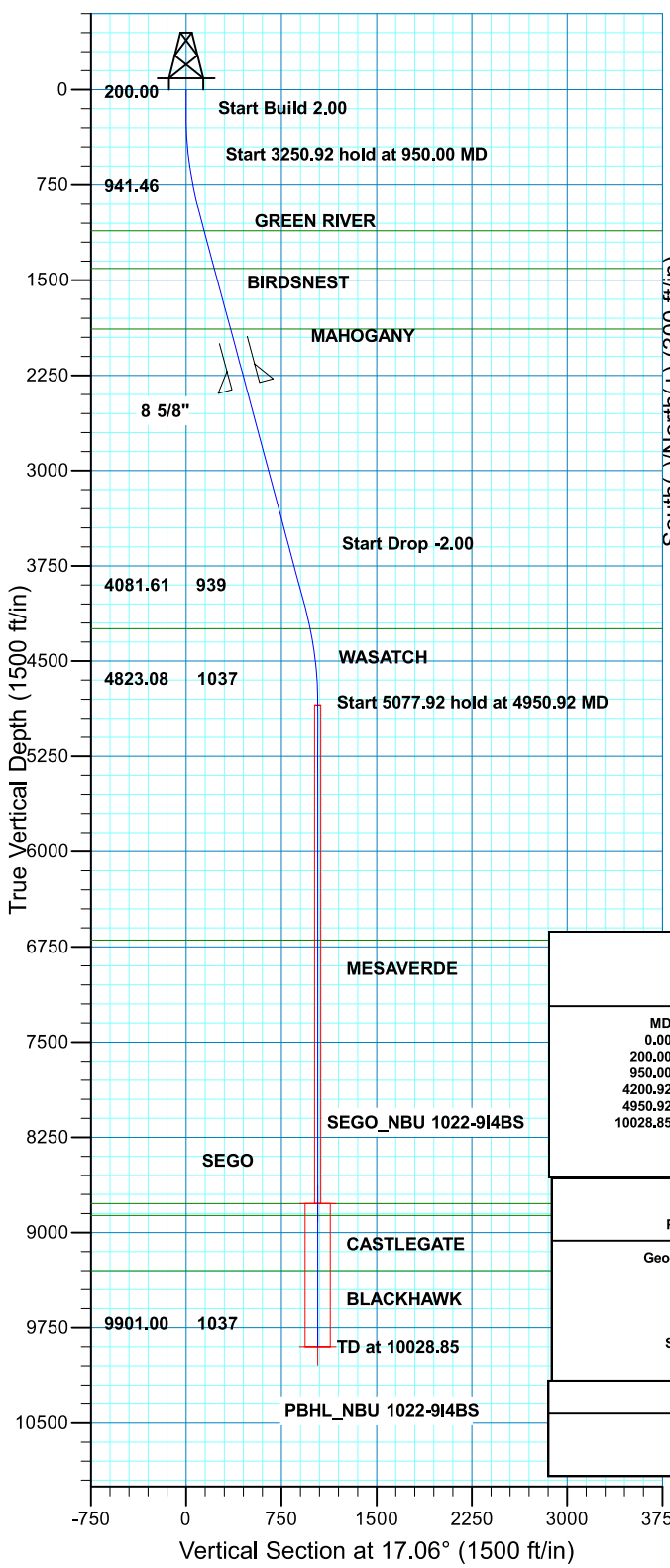
WELL DETAILS: NBU 1022-9I4BS

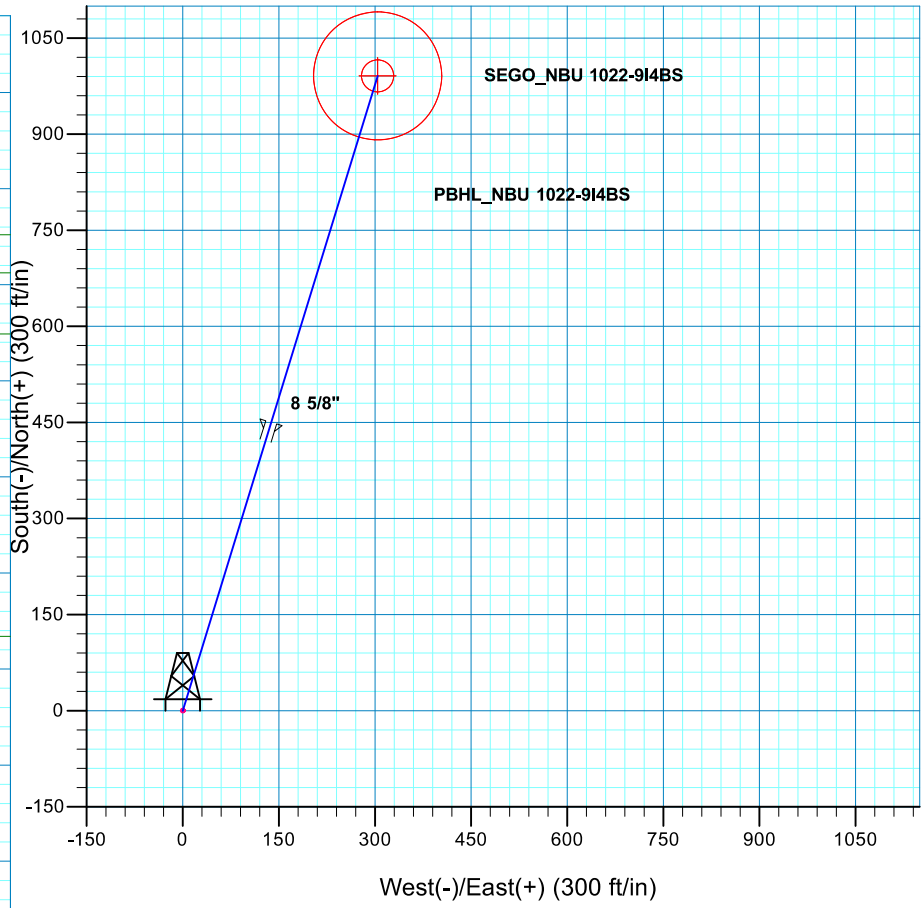
GL 5236 & KB 4 @ 5240.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14514710.86	2078254.01	39.9583450	-109.4376040

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8773.00	991.02	304.10	14515707.06	2078540.71	39.9610660	-109.4365190	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9901.00	991.02	304.10	14515707.06	2078540.71	39.9610660	-109.4365190	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
950.00	15.00	17.06	941.46	93.32	28.64	2.00	17.06	97.62	
4200.92	15.00	17.06	4081.61	897.70	275.47	0.00	0.00	939.02	
4950.92	0.00	0.00	4823.08	991.02	304.10	2.00	180.00	1036.63	
10028.85	0.00	0.00	9901.00	991.02	304.10	0.00	0.00	1036.63	PBHL_NBU 1022-9I4BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	
1110.00	1124.48	GREEN RIVER	
1407.00	1431.96	BIRDSNEST	
1884.00	1925.79	MAHOGANY	
4246.00	4369.87	WASATCH	
6697.00	6824.85	MESAVERDE	
8773.00	8900.85	SEGO	0.00
8865.00	8992.85	CASTLEGATE	0.00
9301.00	9428.85	BLACKHAWK	0.00

CASING DETAILS

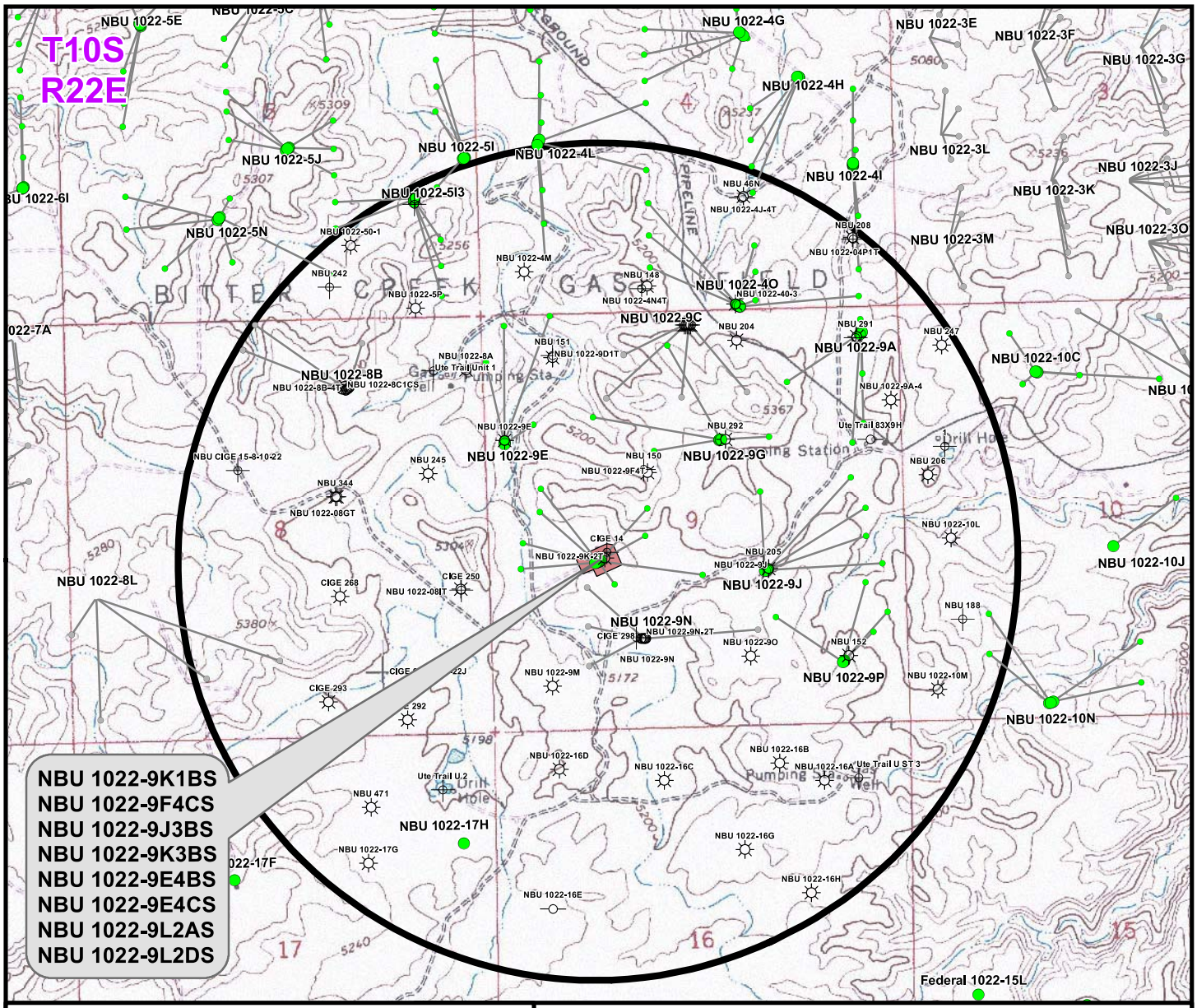
TVD	MD	Name	Size
2334.00	2391.66	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9I4BS/OH)

Created By: Bailey Brook Date: 17:42, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000



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

Proposed Well	Nearest Well Bore	Footage
NBU 1022-9K1BS	CIGE 14	±532ft
NBU 1022-9F4CS	NBU 1022-9F4T	±448ft
NBU 1022-9J3BS	NBU 205	±771ft
NBU 1022-9K3BS	NBU 1022-9L4AS BH	±349ft
NBU 1022-9E4BS	NBU 1022-9E	±758ft
NBU 1022-9E4CS	CIGE 14	±984ft
NBU 1022-9L2AS	NBU 1022-08IT	±981ft
NBU 1022-9L2DS	CIGE 250	±796ft

Legend

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

WELL PAD - NBU 1022-9K

TOPO C
NBU 1022-9K1BS, NBU 1022-9F4CS, NBU 1022-9J3BS, NBU 1022-9K3BS, NBU 1022-9E4BS, NBU 1022-9E4CS, NBU 1022-9L2AS & NBU 1022-9L2DS
LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

Kerr-McGee Oil & Gas Onshore L.P.

1099 18th Street
Denver, Colorado 80202

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

N

SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO: 16
DRAWN: TL	DATE: 13 July 2015	16 OF 20
REVISED:	DATE:	

K:\ANADARKO\2013\2013_55_NBU_1022-9_FOCUS\GIS\Maps_ABCDE\NBU 1022-9K\NBU 1022-9K_C.mxd7/27/2015 2:02:46 PM

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9L2DS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

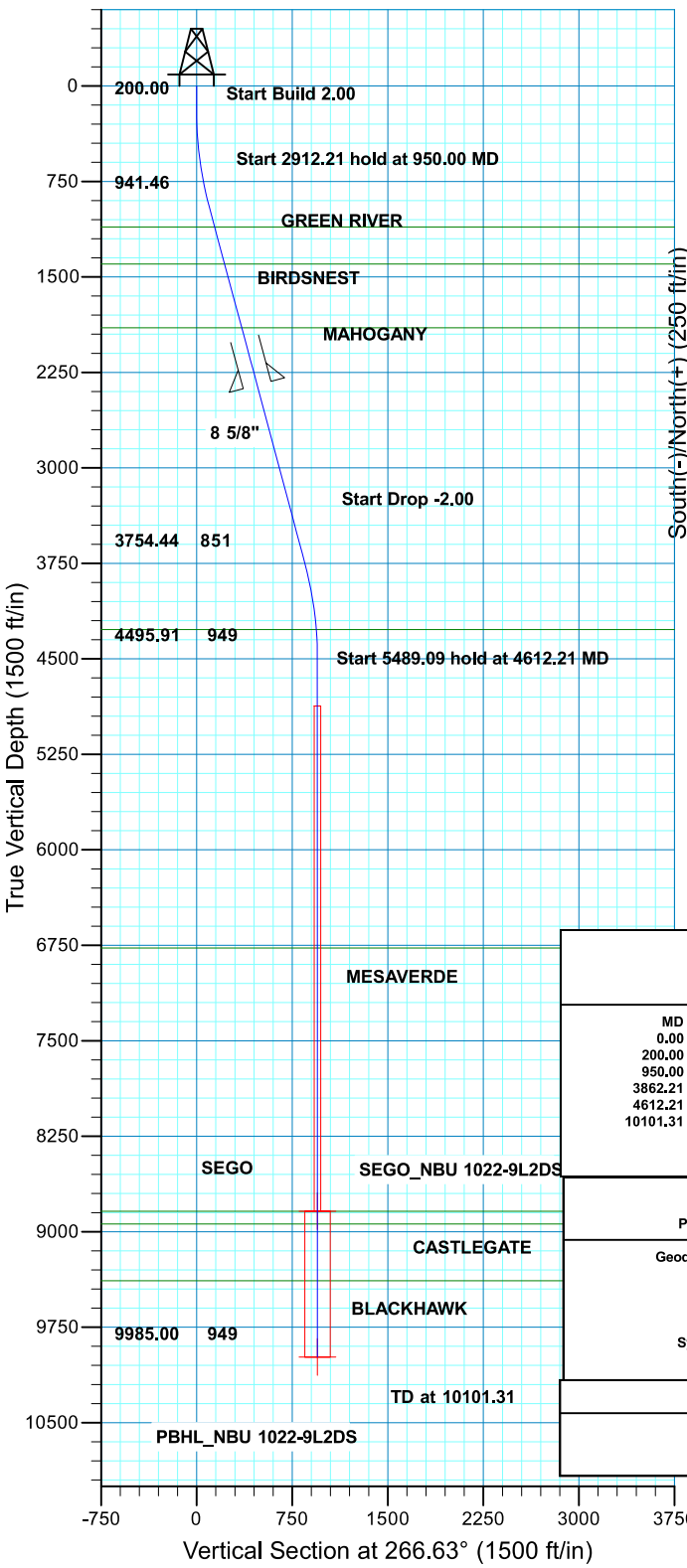
WELL DETAILS: NBU 1022-9L2DS

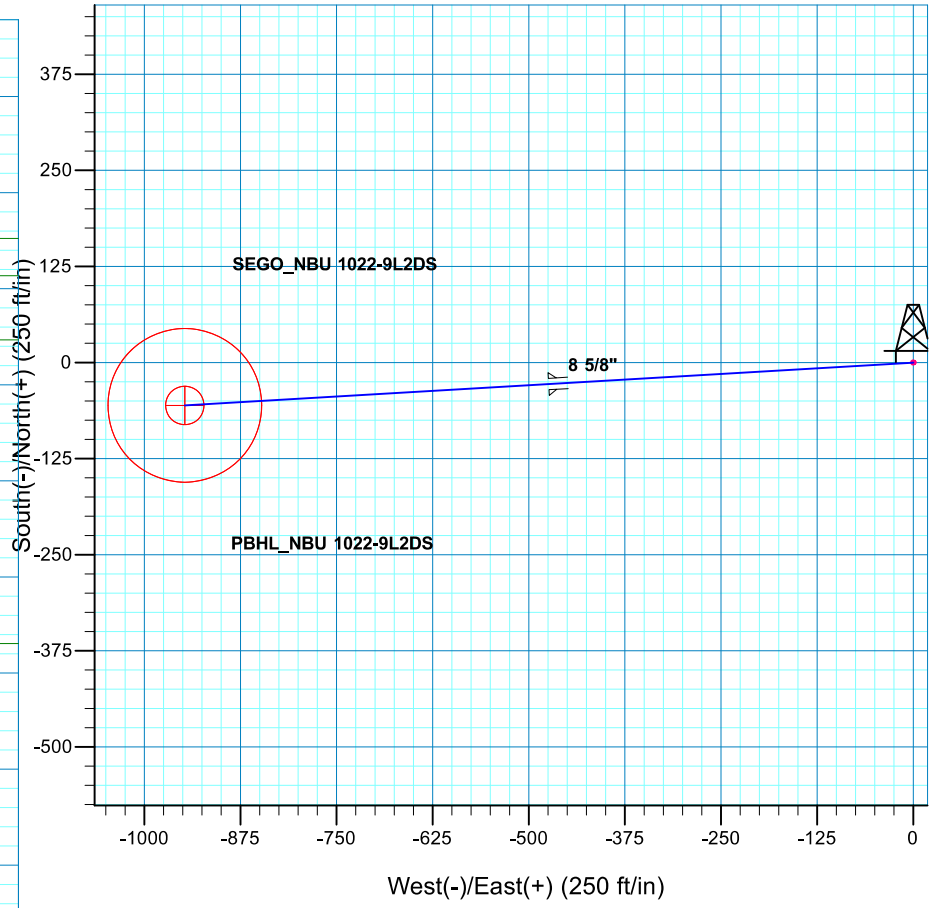
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515973.44	2075125.70	39.9619610	-109.4486850

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8838.00	-55.71	-947.33	14515901.27	2074179.48	39.9618080	-109.4520650	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9985.00	-55.71	-947.33	14515901.27	2074179.48	39.9618080	-109.4520650	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
950.00	15.00	266.63	941.46	-5.73	-97.45	2.00	266.63	97.62	
3862.21	15.00	266.63	3754.44	-49.98	-849.88	0.00	0.00	851.35	
4612.21	0.00	0.00	4495.91	-55.71	-947.33	2.00	180.00	948.97	
10101.31	0.00	0.00	9985.00	-55.71	-947.33	0.00	0.00	948.97	PBHL_NBU 1022-9L2DS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1108.00	1122.41	GREEN RIVER
1398.00	1422.64	BIRDSNEST
1899.00	1941.32	MAHOGANY
4269.00	4385.07	WASATCH
6771.00	6887.31	MESAVERDE
8838.00	8954.31	SEGO
8939.00	9055.31	CASTLEGATE
9385.00	9501.31	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2349.00	2407.19	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9L2DS/OH)

Created By: Bailey Brook Date: 15:50, August 12 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9L2AS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

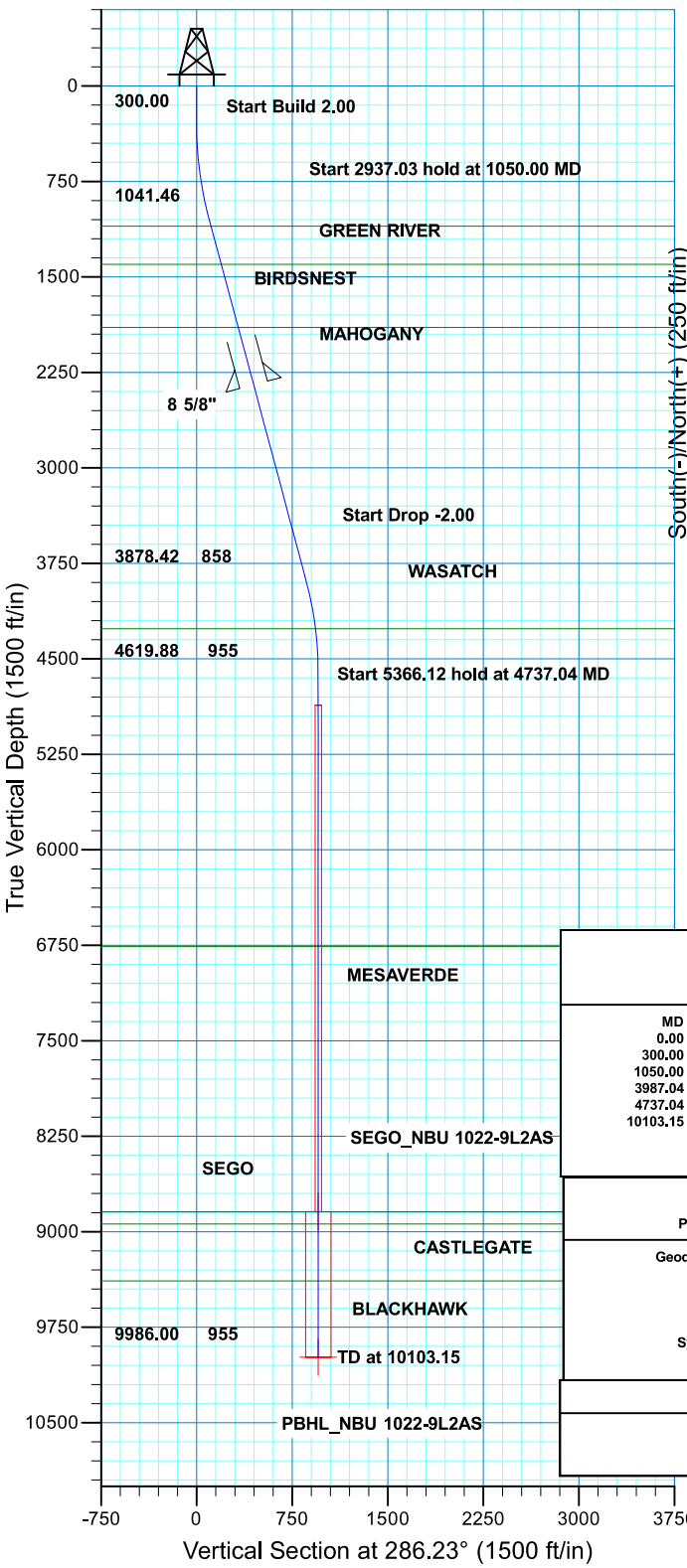
WELL DETAILS: NBU 1022-9L2AS

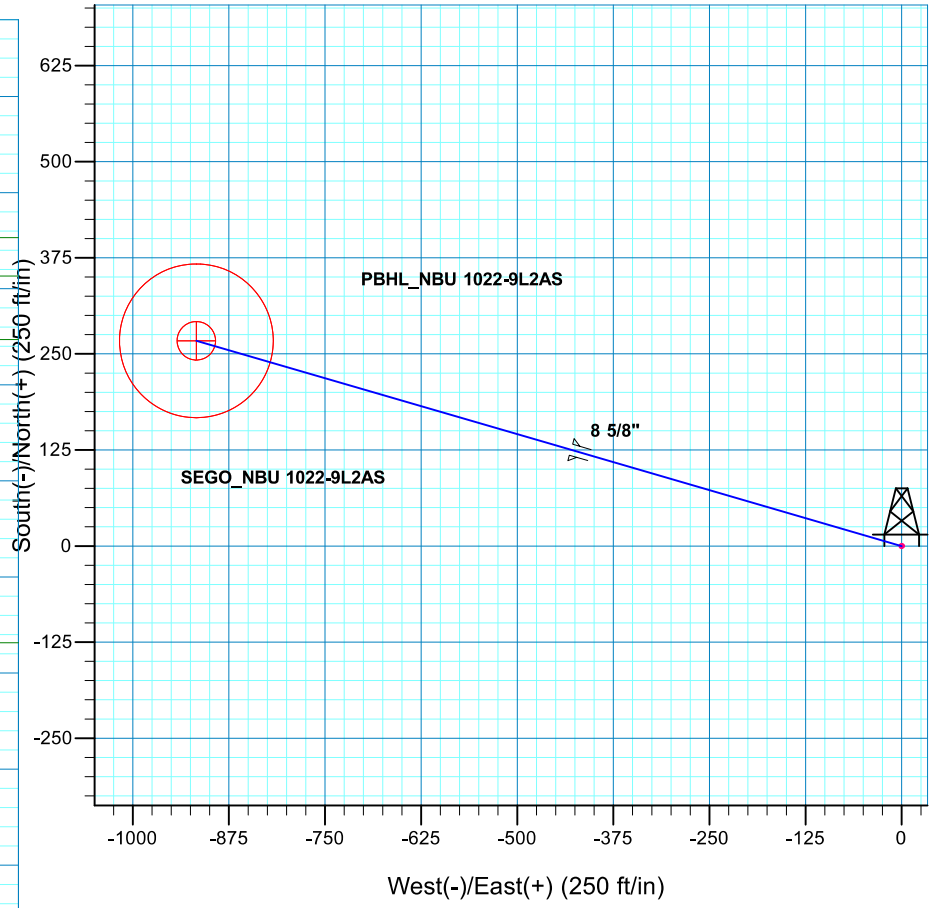
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515977.61	2075134.87	39.9619720	-109.4486520

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8843.00	266.98	-917.33	14516228.60	2074213.04	39.9627050	-109.4519250	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9986.00	266.98	-917.33	14516228.60	2074213.04	39.9627050	-109.4519250	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	286.23	1041.46	27.28	-93.73	2.00	286.23	97.62	
3987.04	15.00	286.23	3878.42	239.71	-823.60	0.00	0.00	857.78	
4737.04	0.00	0.00	4619.88	266.98	-917.33	2.00	180.00	955.39	
10103.15	0.00	0.00	9986.00	266.98	-917.33	0.00	0.00	955.39	PBHL_NBU 1022-9L2AS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1102.00	1112.67	GREEN RIVER
1402.00	1423.26	BIRDSNEST
1898.00	1936.75	MAHOGANY
4263.00	4379.22	WASATCH
6759.00	6876.15	MESAVERDE
8843.00	8960.15	SEGO
8939.00	9056.15	CASTLEGATE
9386.00	9503.15	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2348.00	2402.63	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9L2AS/OH)

Created By: Bailey Brook Date: 15:57, August 12 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9K3BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

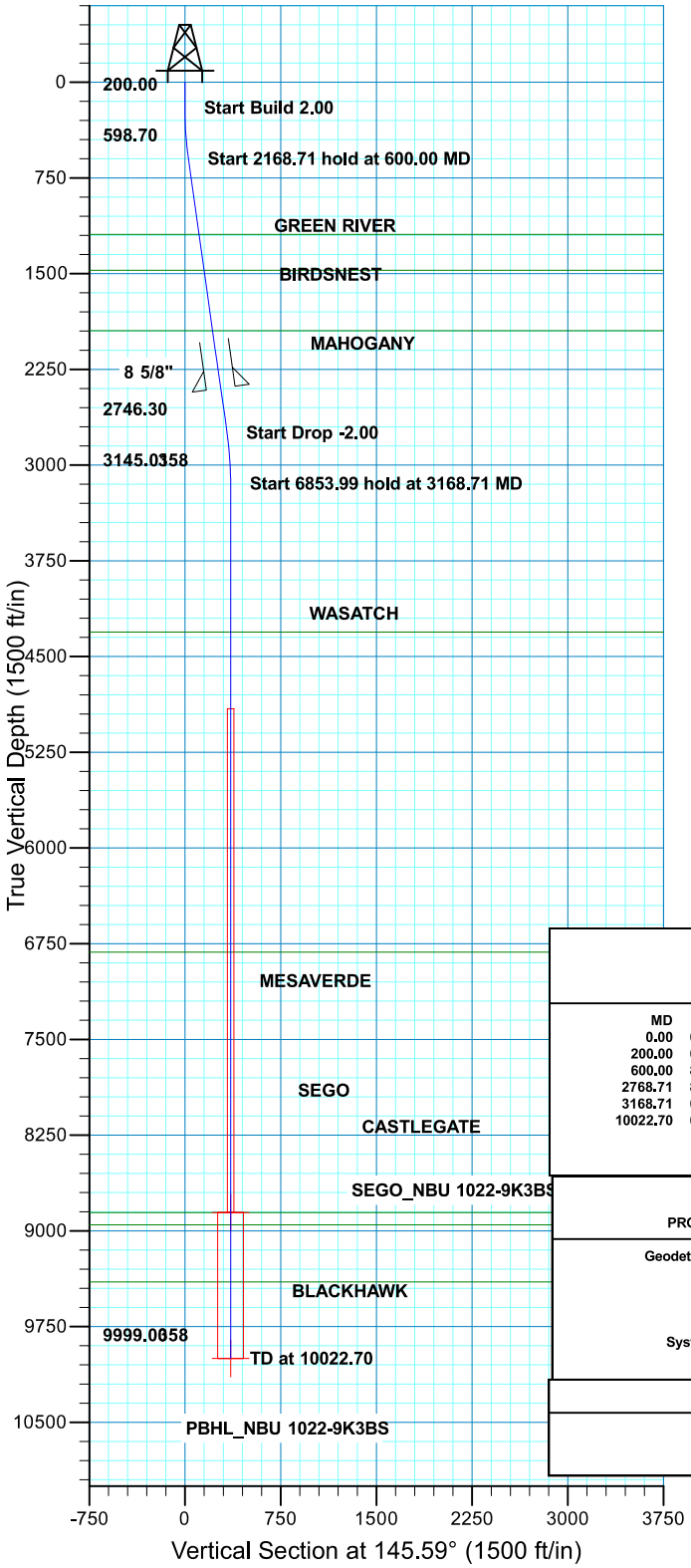
WELL DETAILS: NBU 1022-9K3BS

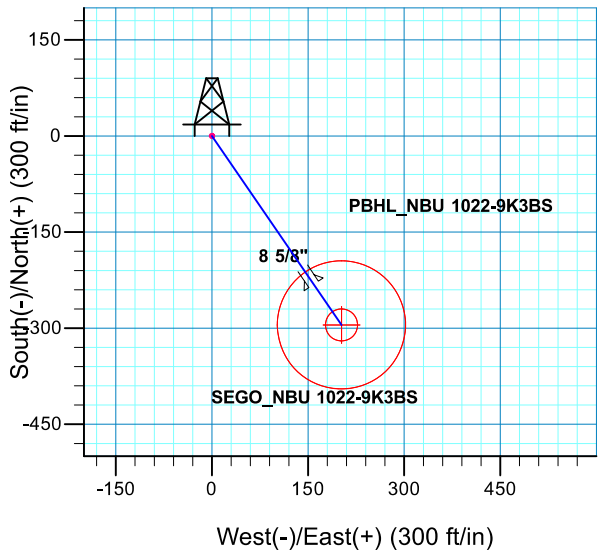
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515990.10	2075162.13	39.9620050	-109.4485540

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8857.00	-295.01	202.08	14515698.65	2075369.31	39.9611950	-109.4478330	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9999.00	-295.01	202.08	14515698.65	2075369.31	39.9611950	-109.4478330	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	
0.00	0.00	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	
600.00	8.00	145.59	598.70	-23.00	15.76	2.00	145.59	27.88	
2768.71	8.00	145.59	2746.30	-272.01	186.32	0.00	0.00	329.71	
3168.71	0.00	0.00	3145.01	-295.01	202.08	2.00	180.00	357.59	
10022.70	0.00	0.00	9999.00	-295.01	202.08	0.00	0.00	357.59	PBHL_NBU 1022-9K3BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1193.00	1200.14	GREEN RIVER
1473.00	1482.89	BIRDSNEST
1948.00	1962.56	MAHOGANY
4308.00	4331.70	WASATCH
6817.00	6840.70	MESAVERDE
8857.00	8880.70	SEGO
8952.00	8975.70	CASTLEGATE
9399.00	9422.70	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2398.00	2416.98	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9K3BS/OH)

Created By: Bailey Brook Date: 17:19, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9K1BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

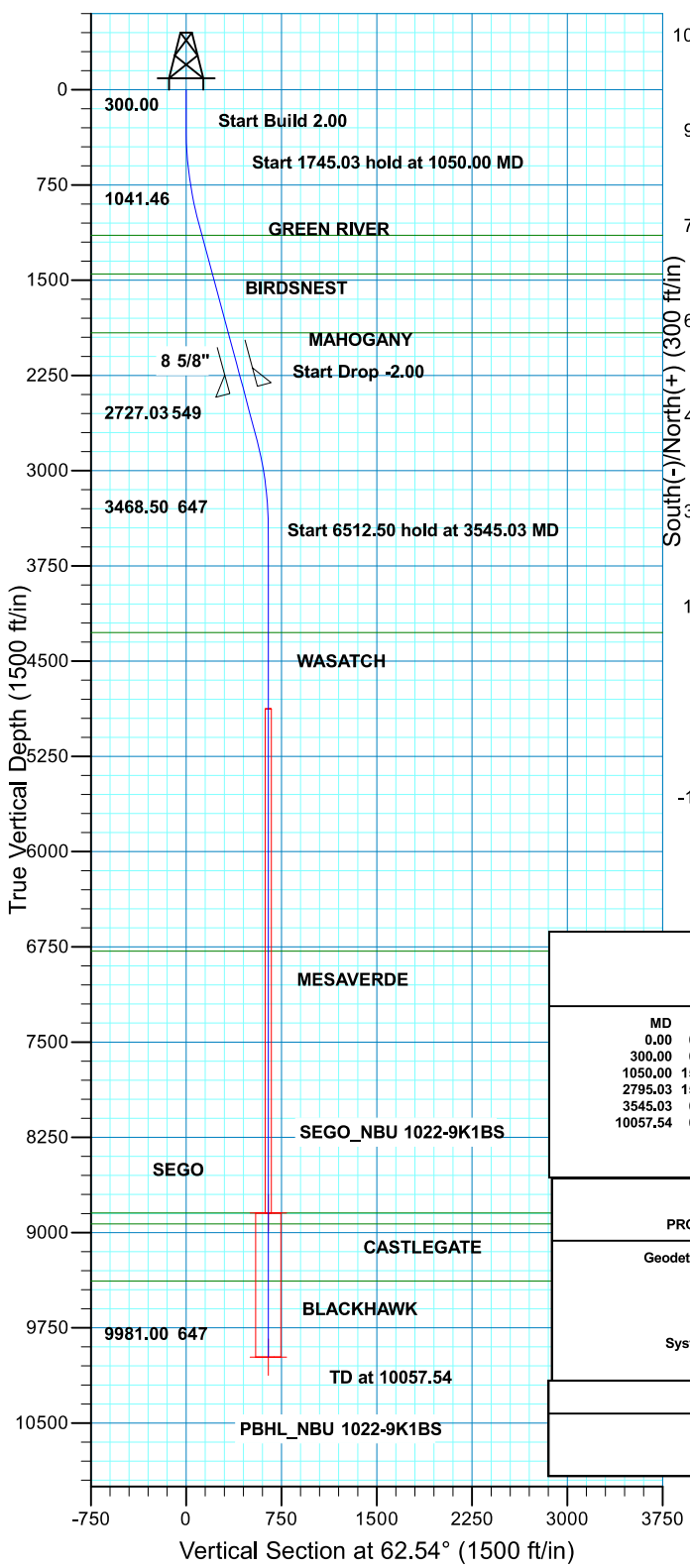
WELL DETAILS: NBU 1022-9K1BS

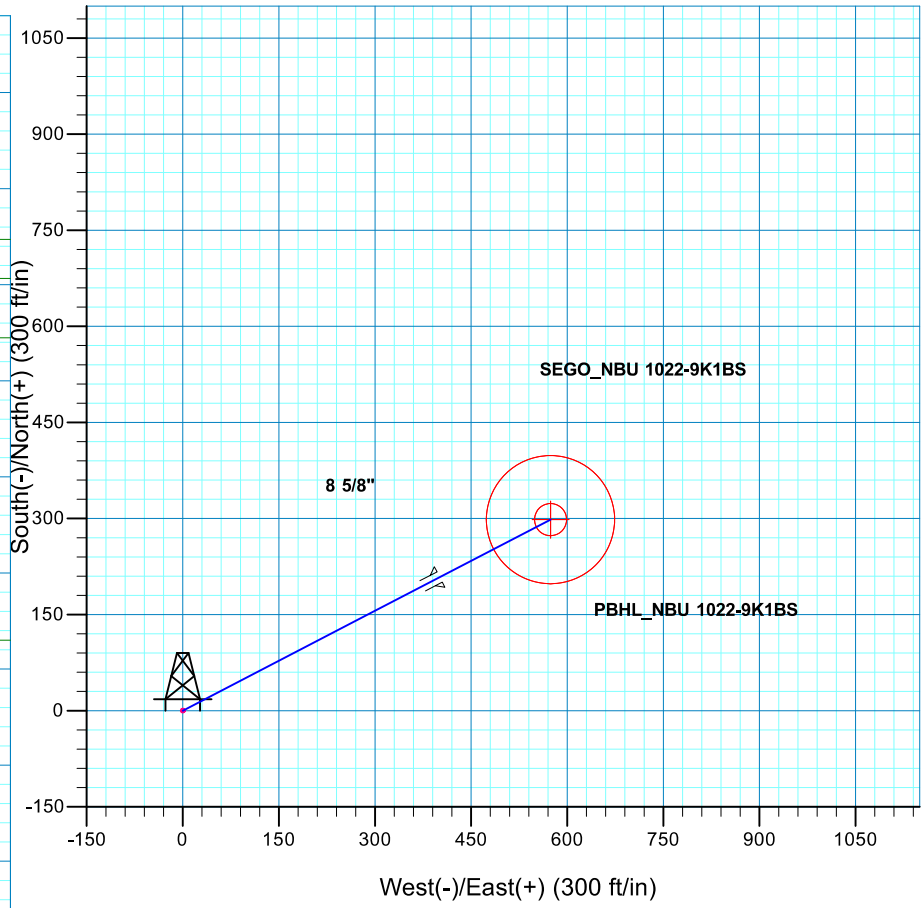
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14516002.60	2075189.38	39.9620380	-109.4484560

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8845.00	298.30	574.00	14516310.83	2075758.10	39.9628570	-109.4464080	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9981.00	298.30	574.00	14516310.83	2075758.10	39.9628570	-109.4464080	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	62.54	1041.46	45.01	86.62	2.00	62.54	97.62	
2795.03	15.00	62.54	2727.03	253.28	487.38	0.00	0.00	549.26	
3545.03	0.00	0.00	3468.50	298.30	574.00	2.00	180.00	646.88	
10057.54	0.00	0.00	9981.00	298.30	574.00	0.00	0.00	646.88	PBHL_NBU 1022-9K1BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1146.00	1158.23	GREEN RIVER
1451.00	1473.98	BIRDSNEST
1915.00	1954.35	MAHOGANY
4276.00	4352.54	WASATCH
6783.00	6859.54	MESAVERDE
8845.00	8921.54	SEGO
8931.00	9007.54	CASTLEGATE
9381.00	9457.54	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2365.00	2420.23	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9K1BS/OH)

Created By: Bailey Brook Date: 17:59:24, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9J3BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Scientific Drilling

Anadarko Petroleum Corporation

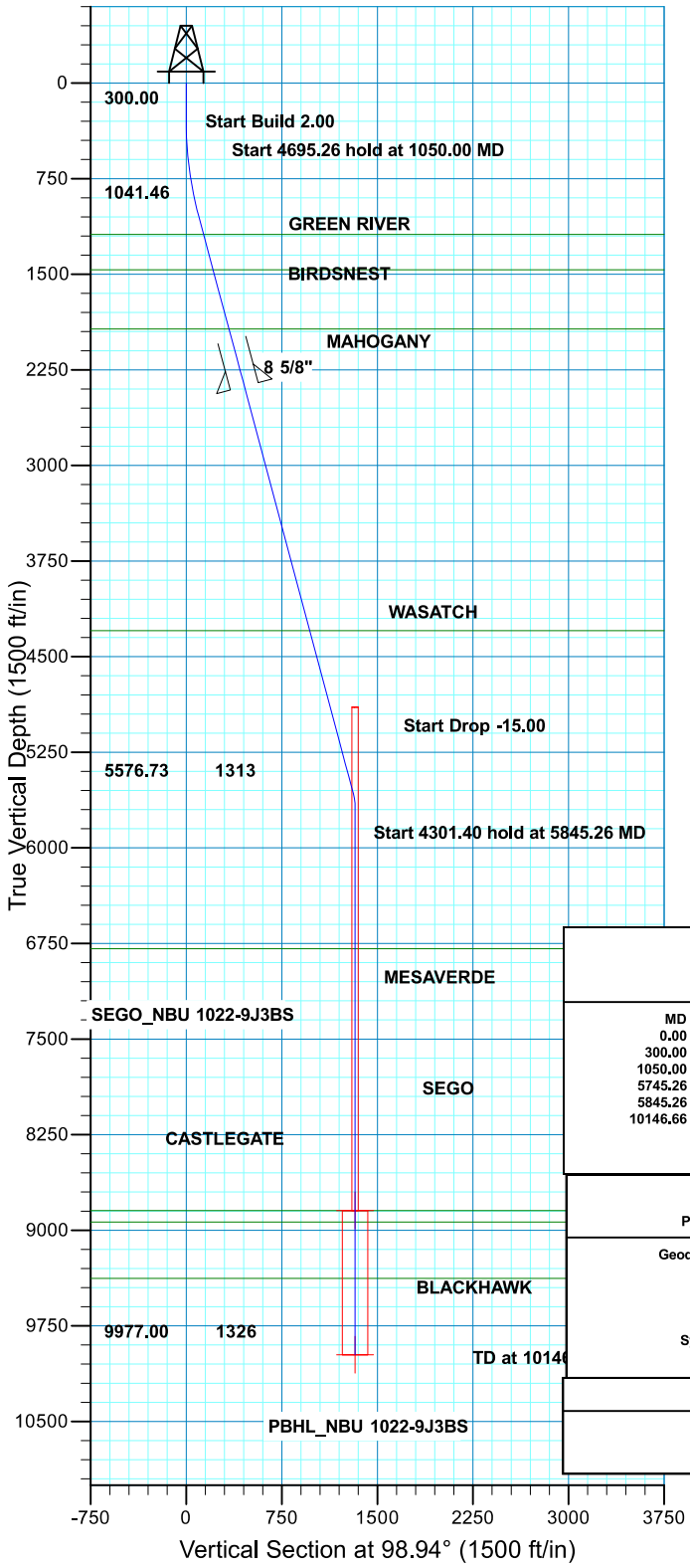
WELL DETAILS: NBU 1022-9J3BS

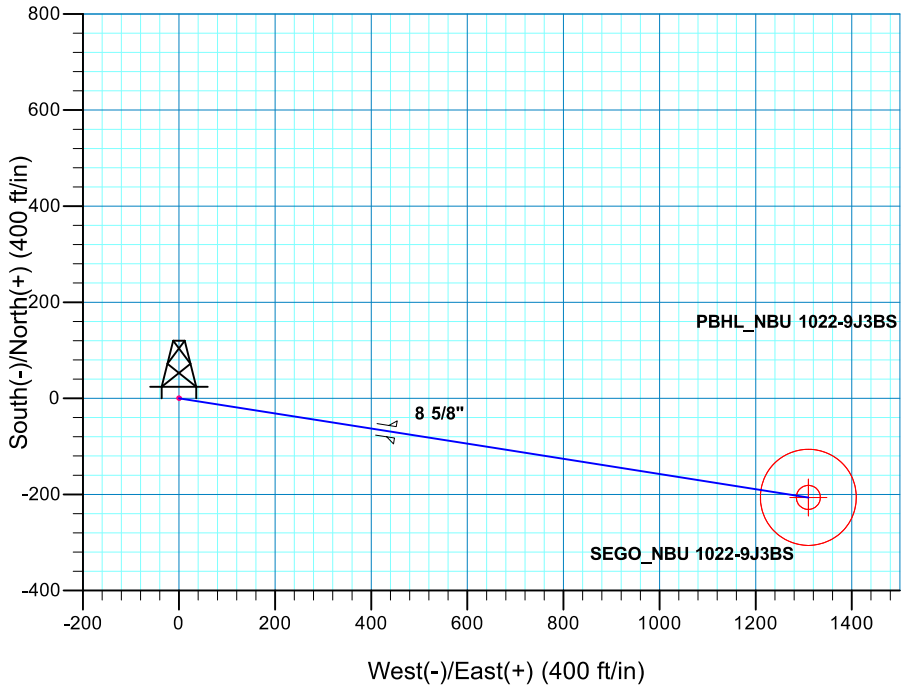
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515994.27	2075171.31	39.9620160	-109.4485210

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8845.00	-206.11	1309.73	14515810.97	2076484.42	39.9614500	-109.4438480	Circle (Radius: 25.00)
- plan hits target center								
PBHL	9977.00	-206.11	1309.73	14515810.97	2076484.42	39.9614500	-109.4438480	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	98.94	1041.46	-15.17	96.43	2.00	98.94	97.62	
5745.26	15.00	98.94	5576.73	-204.09	1296.88	0.00	0.00	1312.84	
5845.26	0.00	0.00	5675.60	-206.11	1309.73	15.00	180.00	1325.85	
10146.66	0.00	0.00	9977.00	-206.11	1309.73	0.00	0.00	1325.85	PBHL_NBU 1022-9J3BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1187.00	1200.67	GREEN RIVER
1464.00	1487.44	BIRDSNEST
1929.00	1968.85	MAHOGANY
4296.00	4419.35	WASATCH
6791.00	6960.66	MESAVERDE
8845.00	9014.66	SEGO
8934.00	9103.66	CASTLEGATE
9377.00	9546.66	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2379.00	2434.72	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9J3BS/OH)

Created By: Bailey Brook Date: 17:19, August 06 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9F4CS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

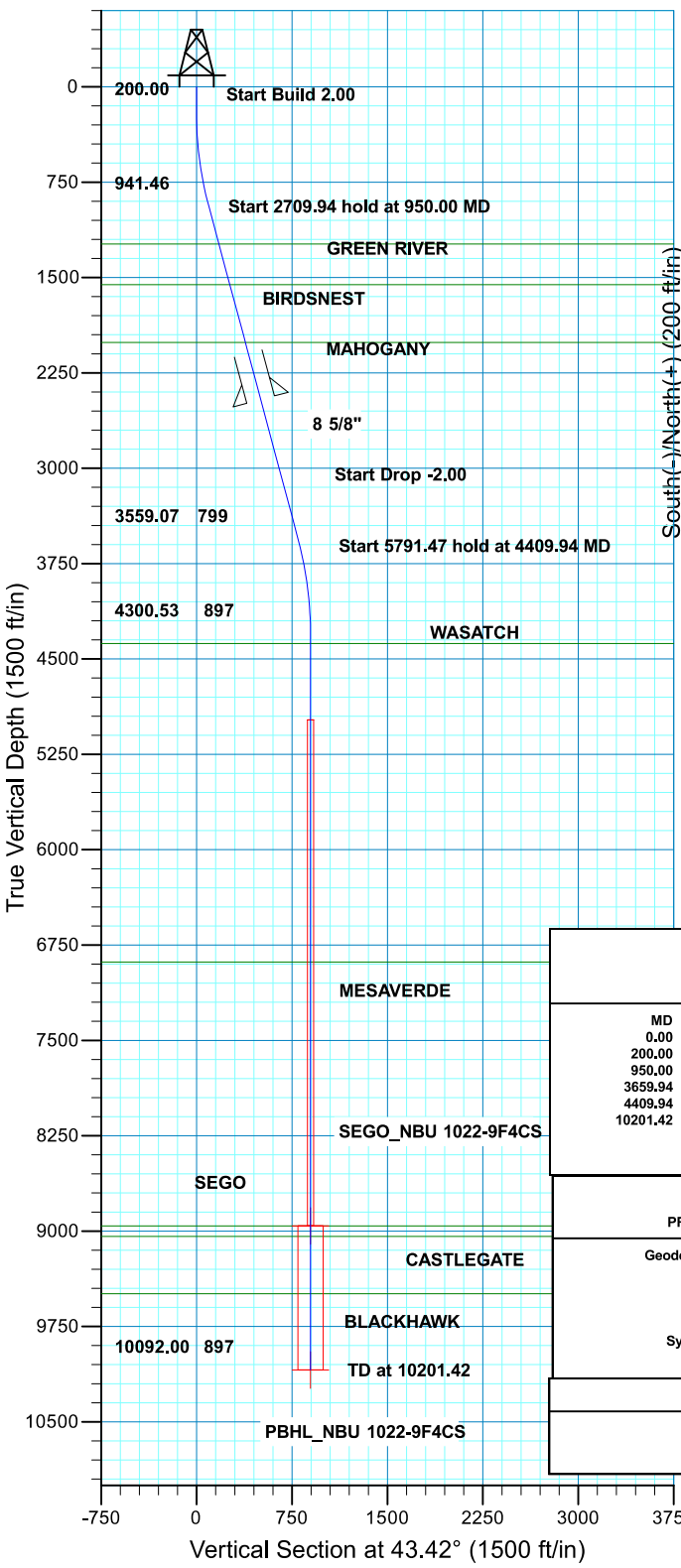
WELL DETAILS: NBU 1022-9F4CS

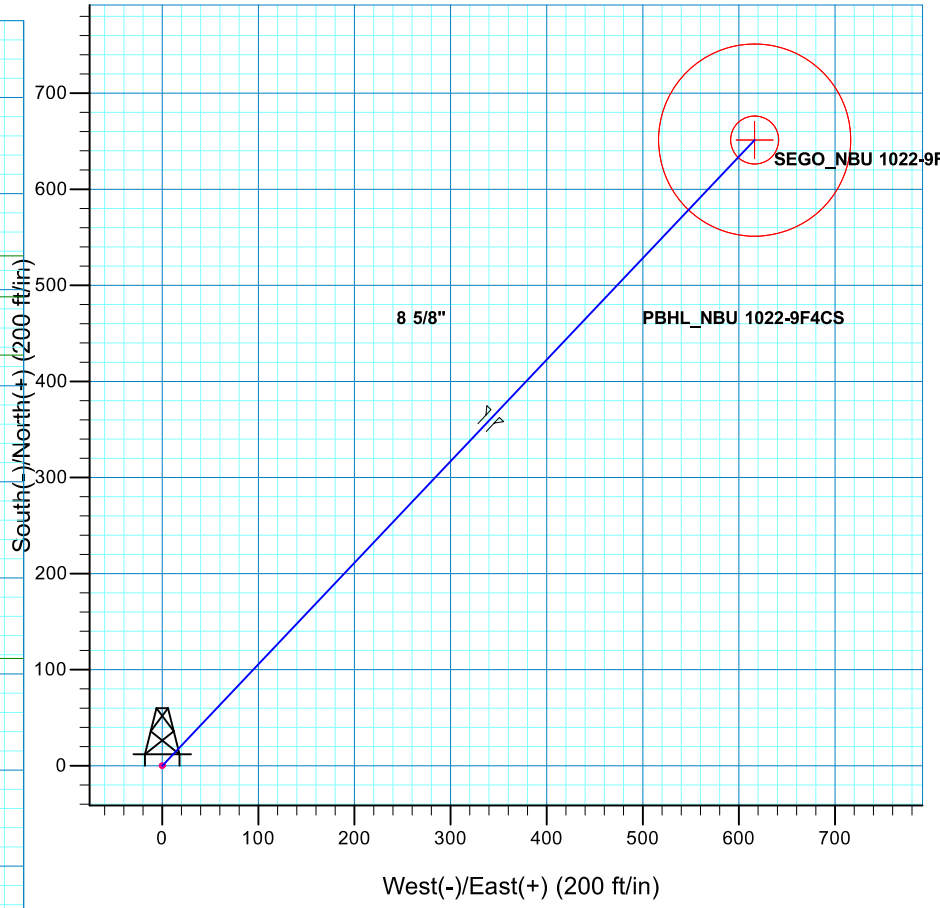
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515998.43	2075180.20	39.9620270	-109.4484890

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8959.00	651.22	616.31	14516660.27	2075785.09	39.9638150	-109.4462900	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10092.00	651.22	616.31	14516660.27	2075785.09	39.9638150	-109.4462900	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
950.00	15.00	43.42	941.46	70.90	67.10	2.00	43.42	97.62	
3659.94	15.00	43.42	3559.07	580.32	549.21	0.00	0.00	799.00	
4409.94	0.00	0.00	4300.53	651.22	616.31	2.00	180.00	896.62	
10201.42	0.00	0.00	10092.00	651.22	616.31	0.00	0.00	896.62	PBHL_NBU 1022-9F4CS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1237.00	1255.96	GREEN RIVER
1556.00	1586.22	BIRDSNEST
2010.00	2056.23	MAHOGANY
4379.00	4488.42	WASATCH
6884.00	6993.42	MESAVERDE
8959.00	9068.42	SEGO
9041.00	9150.42	CASTLEGATE
9492.00	9601.42	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2460.00	2522.11	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9F4CS/OH)

Created By: Bailey Brook Date: 16:02, August 12 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9E4CS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Scientific Drilling

Anadarko Petroleum Corporation

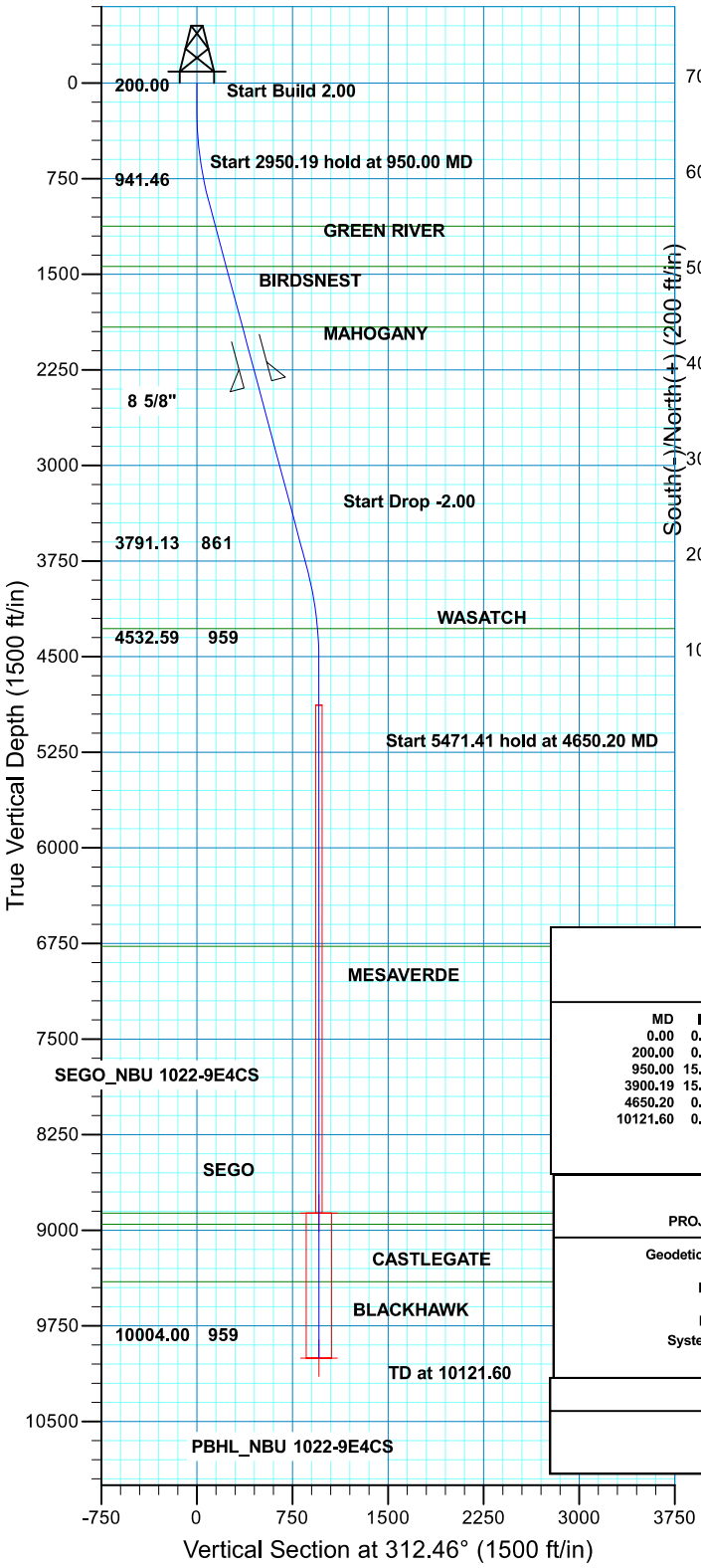
WELL DETAILS: NBU 1022-9E4CS

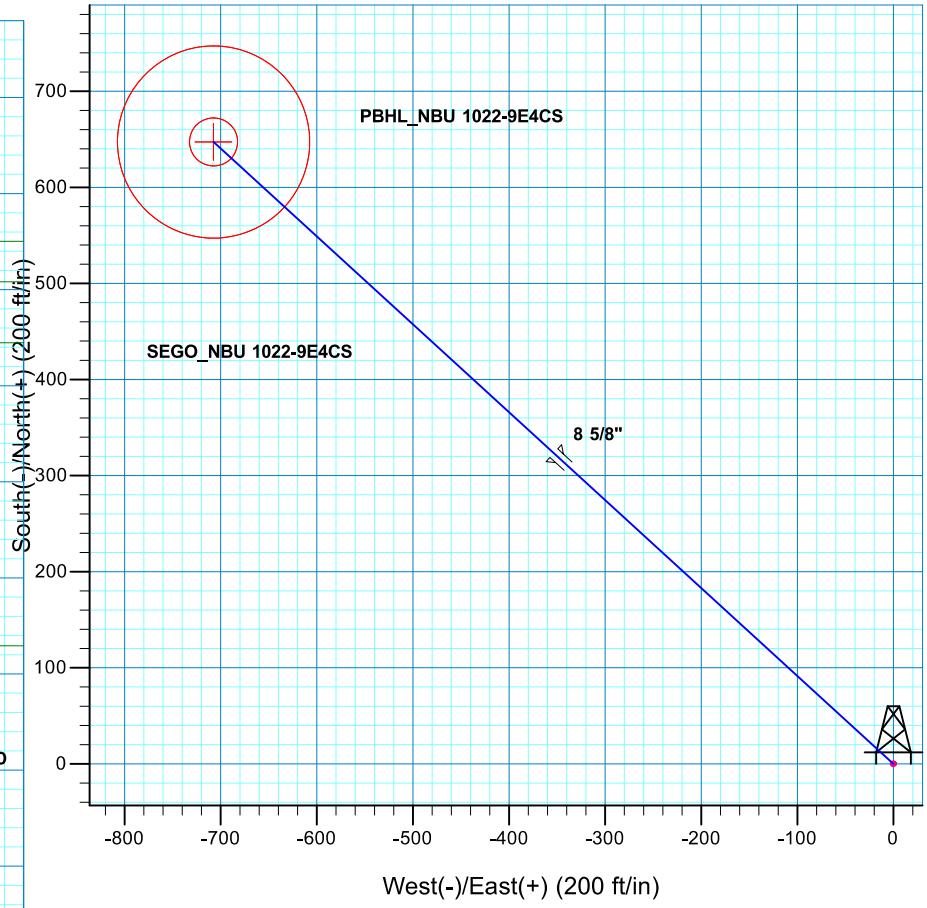
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515981.77	2075143.77	39.9619830	-109.4486200

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8866.00	647.21	-707.39	14516616.58	2074425.23	39.9637600	-109.4511440	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10004.00	647.21	-707.39	14516616.58	2074425.23	39.9637600	-109.4511440	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
950.00	15.00	312.46	941.46	65.89	-72.02	2.00	312.46	97.62	
3900.19	15.00	312.46	3791.13	581.32	-635.37	0.00	0.00	861.18	
4650.20	0.00	0.00	4532.59	647.21	-707.39	2.00	180.00	958.80	
10121.60	0.00	0.00	10004.00	647.21	-707.39	0.00	0.00	958.80	PBHL_NBU 1022-9E4CS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1123.00	1137.94	GREEN RIVER
1439.00	1465.09	BIRDSNEST
1914.00	1956.85	MAHOGANY
4280.00	4397.27	WASATCH
6773.00	6890.60	MESAVERDE
8866.00	8983.60	SEGO
8953.00	9070.60	CASTLEGATE
9404.00	9521.60	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2364.00	2422.72	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9E4CS/OH)

Created By: Bailey Brook Date: 16:04, August 12 2015

RECEIVED: December 21, 2015

API Well Number: 43047555100000

Scientific Drilling

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-9K PAD
Well: NBU 1022-9E4BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation

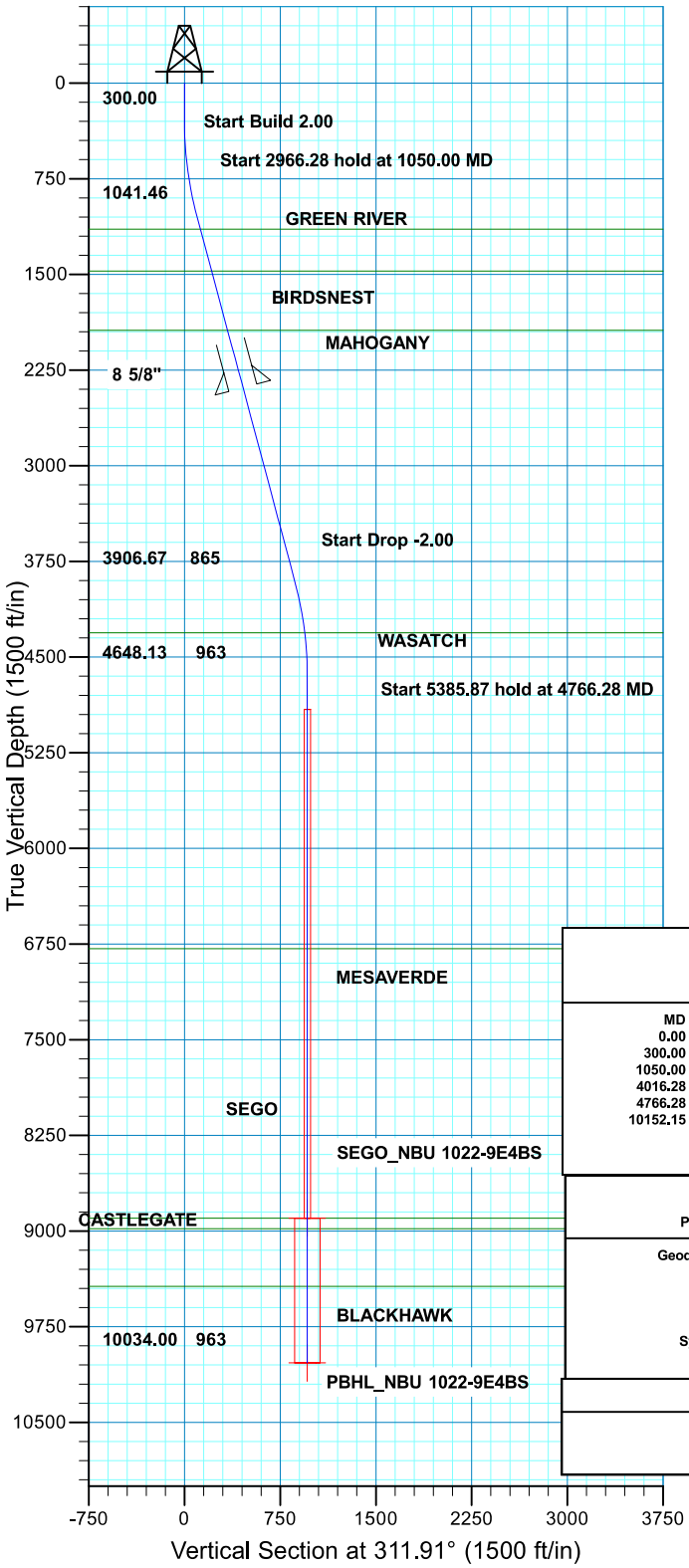
WELL DETAILS: NBU 1022-9E4BS

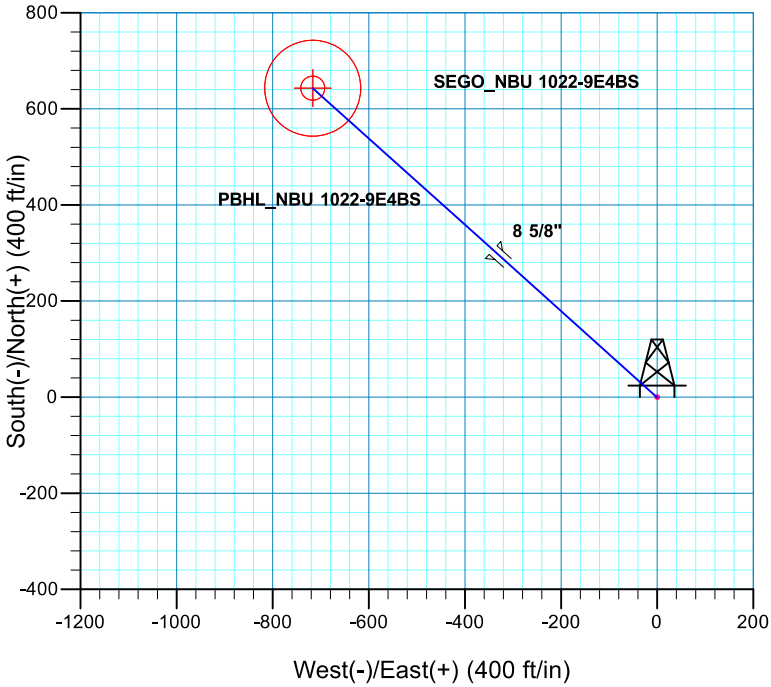
GL 5152 & KB 4 @ 5156.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14515985.94	2075152.95	39.9619940	-109.4485870

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8899.00	643.21	-716.64	14516616.58	2074425.23	39.9637600	-109.4511440	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10034.00	643.21	-716.64	14516616.58	2074425.23	39.9637600	-109.4511440	Circle (Radius: 100.00)
- plan hits target center								





SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1050.00	15.00	311.91	1041.46	65.20	-72.65	2.00	311.91	97.62	
4016.28	15.00	311.91	3906.67	578.01	-644.00	0.00	0.00	865.35	
4766.28	0.00	0.00	4648.13	643.21	-716.64	2.00	180.00	962.96	
10152.15	0.00	0.00	10034.00	643.21	-716.64	0.00	0.00	962.96	PBHL_NBU 1022-9E4BS

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

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1145.00	1157.19	GREEN RIVER
1473.00	1496.76	BIRDSNEST
1938.00	1978.16	MAHOGANY
4310.00	4427.36	WASATCH
6787.00	6905.15	MESAVERDE
8899.00	9017.15	SEGO
8981.00	9099.15	CASTLEGATE
9434.00	9552.15	BLACKHAWK

CASING DETAILS

TVD	MD	Name	Size
2388.00	2444.04	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-9E4BS/OH)

Created By: Bailey Brook Date: 17:11, August 06 2015

RECEIVED: December 21, 2015

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 12/21/2015
API NO. ASSIGNED: 43047555100000
WELL NAME: NBU 1022-9P1BS
OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)
PHONE NUMBER: 720 929-6828
CONTACT: Joel Malefyt

PROPOSED LOCATION: SESE 09 100S 220E
Permit Tech Review: ✔

SURFACE: 0762 FSL 0809 FEL
Engineering Review: ✔

BOTTOM: 1113 FSL 0434 FEL
Geology Review: ✔

COUNTY: UINTAH
LATITUDE: 39.95821
LONGITUDE: -109.43823
UTM SURF EASTINGS: 633396.00
NORTHINGS: 4424287.00
FIELD NAME: NATURAL BUTTES
LEASE TYPE: 1 - Federal
LEASE NUMBER: UTU 01196-D
PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE
SURFACE OWNER: 1 - Federal
COALBED METHANE: NO

RECEIVED AND/OR REVIEWED:

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

Commingling Approved

LOCATION AND SITING:

- ☐ **R649-2-3.**

Unit: NATURAL BUTTES

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ✔ **Drilling Unit**

Board Cause No: Cause 173-14
Effective Date: 12/2/1999
Siting: Suspends General Siting

- ✔ **R649-3-11. Directional Drill**

Comments: Presite Completed

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

RECEIVED: January 13, 2016

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

Permit To Drill

****

Well Name: NBU 1022-9P1BS
API Well Number: 43047555100000
Lease Number: UTU 01196-D
Surface Owner: FEDERAL
Approval Date: 1/13/2016

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

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

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

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

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

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

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

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

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

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

- Within 24 hours following the spudding of the well - contact Alexis Huefner at 801-538-5302
  (please leave a voicemail message if not available)
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website
  at http://oilgas.ogm.utah.gov

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

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

Approved By:

For John Rogers
Associate Director, Oil & Gas

RECEIVED

Form 3160-3
(August 2007)

SEP 08 2015

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT BLM VERNAL UTAH

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
UTU01196D

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
UTU63047A

8. Lease Name and Well No.
NBU 1022-9P1BS

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone

2. Name of Operator
KERR-MCGEE OIL & GAS ONSHORE
Contact: JOEL MALEFYT
Email: JOEL.MALEFYT@ANADARKO.COM

9. API Well No.
43-047-55510

3a. Address
P.O. BOX 173779
DENVER, CO 80202-3779

3b. Phone No. (include area code)
Ph: 720-929-6828
Fx: 720-929-7828

10. Field and Pool, or Exploratory
NATURAL BUTTES

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SESE 762FSL 809FEL 39.958348 N Lat, 109.438235 W Lon

At proposed prod. zone SESE 1113FSL 434FEL 39.959311 N Lat, 109.436901 W Lon

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

14. Distance in miles and direction from nearest town or post office*
49.6 MILES SOUTH OF VERNAL, UT

12. County or Parish
UINTAH

13. State
UT

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
434

16. No. of Acres in Lease
320.00

17. Spacing Unit dedicated to this well

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
437

19. Proposed Depth
9924 MD
9882 TVD

20. BLM/BIA Bond No. on file
WYB000291

21. Elevations (Show whether DF, KB, RT, GL, etc.
5236 GL

22. Approximate date work will start
03/01/2016

23. Estimated duration
60-90 DAYS

24. Attachments

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

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

25. Signature
(Electronic Submission)

Name (Printed/Typed)
JOEL MALEFYT Ph: 720-929-6828

Date
08/26/2015

Title
REGULATORY ANALYST

Approved by (Signature)

Name (Printed/Typed)
Jerry Kenczka

DEC 28 2015

Title
Assistant Field Manager
Lands & Mineral Resources

Office
VERNAL FIELD OFFICE

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

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

RECEIVED
JAN 11 2016
DIV. OF OIL, GAS & MINING

Additional Operator Remarks (see next page)

Electronic Submission #314248 verified by the BLM Well Information System
For KERR-MCGEE OIL & GAS ONSHORE, sent to the Vernal
Committed to AFMSS for processing by STEVE HIRSCHI on 09/17/2015

UDOGM

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

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VERNAL FIELD OFFICE
170 South 500 East VERNAL, UT 84078 (435) 781-4400

CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company:	**Kerr-McGee Oil and Gas Onshore L.P.**	**Location:**	**SESE, Sec. 9, T10S, R22E**
Well No:	**1022-9P1BS**	**Lease No:**	**UTU01196D**
API No:	**43-047-55510**	**Agreement:**	**UTU63047A**

OFFICE NUMBER: (435) 781-4400

OFFICE FAX NUMBER: (435) 781-3420

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

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

NOTIFICATION REQUIREMENTS

Construction Activity (Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist)	-	The Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist shall be notified at least 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday.
Construction Completion (Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist)	-	Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion. Notify the BLM Environmental Scientist prior to moving on the drilling rig.
Spud Notice (Notify BLM Petroleum Engineer)	-	Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify BLM Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to running casing and cementing all casing strings to:blm_ut_vn_opreport@blm.gov.
BOP & Related Equipment Tests (Notify BLM Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify BLM Petroleum Engineer)	-	Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

SURFACE USE PROGRAM
CONDITIONS OF APPROVAL (COAs)

- Geology, Minerals, and Paleontology
    - If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
    - If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontological material before construction can continue.
    - A BLM-permitted paleontologist will oversee monitoring of construction activities as indicated in SWCA Environmental Consultants' report number UT15–14314–21. Note that this is in addition to those already required in the Greater Natural Buttes FEIS/ROD (UT-080-07-807).
- Threatened, Endangered, Candidate and Proposed Plant Species: Uinta Basin hookless cactus (Sclerocactus wetlandicus)
    - Site inventory surveys will be valid for 4 years from the survey date. If more than 4 years pass between the original survey date and construction, a new clearance survey/site inventory will be required. If construction is to occur within the 4 year window, and at least 1 year after the initial survey date, an additional spot check survey will be required following the methodology established in the 2010 Memorandum of Understanding (MOU) between USFWS and BLM regarding Sclerocactus survey data use timing restrictions. Review of spot checks may result in requirements for additional pre-construction plant surveys or other requirements as directed by USFWS and the BLM Authorized Officer (AO).
    - The applicant will perform ground disturbing activities outside of the flowering period for Sclerocactus wetlandicus (April 1 through May 30).
    - Only water and methods approved by the BLM (no chemicals, reclaimed production water or oil field brine) will be used for dust abatement measures within Sclerocactus habitat.
    - Dust abatement will be employed in suitable Sclerocactus habitat over the life of the project (during ground disturbing activities, and/or periods of increased travel frequency and amount of traffic to the Project Area; does not apply to general maintenance activities) during the time of the year when Sclerocactus species are most vulnerable to dust-related impacts (March through August).
    - Noxious weeds within Sclerocactus habitat may be controlled with herbicides, in accordance with the BLM Herbicide PEIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). Guidelines and the BLM's Standard Operating Procedures for Threatened and Endangered Plant Species (Table 1).

- Application for a Pesticide Use Permit will include provisions for mechanical removal, as opposed to chemical removal, for Utah Class A, B, and C noxious weeds within 50 feet of individual/populations of Sclerocactus.

- Erosion control measures (e.g., silt fencing) will be implemented to minimize sedimentation to Sclerocactus plants and populations located down slope of proposed surface disturbance activities, and should only be implemented within the area proposed for disturbance.

- All disturbed areas will be reclaimed with plant species native to Utah, or seed mixtures approved by the BLM and our office, which may include the use of sterile, non-native, non-invasive, annuals to help secure topsoil and encourage native perennials to establish.

- Discovery Stipulation: Reinitiation of section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for Uinta Basin hookless cactus is anticipated as a result of project activities.

- Green River District Reclamation Guidelines

  - The Operator will comply with the requirements of Appendix B: Green River District Reclamation Guidelines (p. 59), formalized by Green River District Instructional Memo UTG000-2014-004 on May 21, 2014.

DOWNHOLE PROGRAM
CONDITIONS OF APPROVAL (COAs)

- Cement for the 4.5 inch casing shall be brought up to a minimum of 200 feet above the surface casing shoe.

- A CBL shall be run from TD to TOC in the Production Casing.

- Variances shall be granted as requested in Section 9 of the Drilling Program of the SOP.

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

DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.

- <u>Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.</u>

- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.

- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.

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

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.

- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.

- No aggressive/fresh hard-banded drill pipe shall be used within casing.

- **Cement baskets shall not be run on surface casing.**

- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.

- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.

- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.

- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.

- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.

- **Please submit an electronic copy of all other logs run on this well in CD (compact disc) format to the Vernal BLM Field Office. This submission will supersede the requirement for submittal of paper logs to the BLM.**

- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

OPERATING REQUIREMENT REMINDERS:

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator,

lease serial number, well number, and surveyed description of the well.

- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.

- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:

    - Operator name, address, and telephone number.

    - Well name and number.

    - Well location (¼¼, Sec., Twn, Rng, and P.M.).

    - Date well was placed in a producing status (date of first production for which royalty will be paid).

    - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).

    - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.

    - Unit agreement and/or participating area name and number, if applicable.

    - Communitization agreement number, if applicable.

- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.

- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.

- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have

prior written approval from the BLM Vernal Field Office.

- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.

- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.

- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.

- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.

- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.

- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 01196-D

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.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-9P1BS

2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.

9. API NUMBER: 43047555100000

3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

PHONE NUMBER: 720 929-6404 EXT

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0762 FSL 0809 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESE Section: 09 Township: 10.0S Range: 22.0E Meridian: S

COUNTY: UINTAH

STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 1/4/2017	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

Approved by the Utah Division of Oil, Gas and Mining
January 04, 2017
Date:
By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Candice Barber	435 781-9749	HSE Representative

SIGNATURE	DATE
N/A	1/4/2017

RECEIVED: Jan. 04, 2017

The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43047555100000

API: 43047555100000
Well Name: NBU 1022-9P1BS
Location: 0762 FSL 0809 FEL QTR SESE SEC 09 TWNP 100S RNG 220E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 1/13/2016

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- **If located on private land, has the ownership changed, if so, has the surface agreement been updated?** ○ **Yes** ◉ **No**
- **Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?** ○ **Yes** ◉ **No**
- **Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?** ○ **Yes** ◉ **No**
- **Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?** ○ **Yes** ◉ **No**
- **Has the approved source of water for drilling changed?** ○ **Yes** ◉ **No**
- **Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?** ○ **Yes** ◉ **No**
- **Is bonding still in place, which covers this proposed well?** ◉ **Yes** ○ **No**

Signature: Candice Barber **Date:** 1/4/2017
Title: HSE Representative **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Jan. 04, 2017