WESTERN LAND SERVICES

August 5, 2004

Utah Division of Oil, Gas & Mining
1594 W. N. Temple Suite 1210
Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the Wolverine Federal #17-4 well as an exception to Rule R649-3-3

Gentlemen:

Pursuant to Rule R649-3-3 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-4 well to a total depth of 6,950 feet. Wolverine is the only operator within a 460 foot radius.

The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

Respectfully submitted,

Wolverine Gas & Oil Company of Utah, LLC

By_____
Shawn Burd
Authorized Agent

WESTERN LAND SERVICES - UTAH
310 South 100 East • Richfield, UT 84701 • Phone: (435) 896-1943 • Fax: (435) 893-2134
Web: www.westernls.com

005

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

CONFIDENTIAL

FORM 3

AMENDED REPORT ☐
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

5. MINERAL LEASE NO: UTU-73528
6. SURFACE: Fee
7. IF INDIAN, ALLOTTEE OR TRIBE NAME:
8. UNIT or CA AGREEMENT NAME: Wolverine Fed. Exploration Unit
9. WELL NAME and NUMBER: Wolverine Federal # 17-4
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: ~~NWSE~~ BHL 17 23S 1W S
12. COUNTY: Sevier
13. STATE: UTAH

1A. TYPE OF WORK: DRILL ☑ REENTER ☐ DEEPEN ☐

B. TYPE OF WELL: OIL ☑ GAS ☐ OTHER ______ SINGLE ZONE ☑ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC

3. ADDRESS OF OPERATOR: One Riverfront Plaza CITY Grand Rapids STATE MI ZIP 49503 PHONE NUMBER: (616) 458-1150

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 1,736' FNL & 2,298' FWL - Sec17,T23S,R1W SENW
AT PROPOSED PRODUCING ZONE: 1,980' FSL & 1980' FEL - Sec17,T23S,R1W NWSE

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 3.5 miles South of Sigurd

15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): appr. 200'
16. NUMBER OF ACRES IN LEASE: 8236 ac
17. NUMBER OF ACRES ASSIGNED TO THIS WELL: 40

18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): appr. 600'
19. PROPOSED DEPTH: 6,950
20. BOND DESCRIPTION: BLM # Wy 3329

21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 5,740' - GR
22. APPROXIMATE DATE WORK WILL START: 9/15/2004
23. ESTIMATED DURATION: 40 days

24. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT			SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
20	14			80	Conductor
12 1/4	9 5/8	36 ppf	J55 STC	1,510	lead:c,360sx, 1.78, 12.8/tail:g, 280sx, 1.20, 15.6
8 3/4	5 1/2	17 ppf	L80 LTC	6,950	lead:Poz, 750sx, 1.76, 13.0/tail:Poz, 350sx, 1.49 13.4

old location DW 10/15

RECEIVED
AUG - 5 2004
DIV OF OIL, GAS & MINING

25. 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
☒ EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER
☑ COMPLETE DRILLING PLAN
☐ FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Richard Moritz TITLE Vice President, Land & Legal

SIGNATURE [signature] DATE 07/22/2004

(This space for State use only)

Surf 418965 X 4295396 Y
BHL 419198 X 4294905 Y

API NUMBER ASSIGNED: 43-041-30035

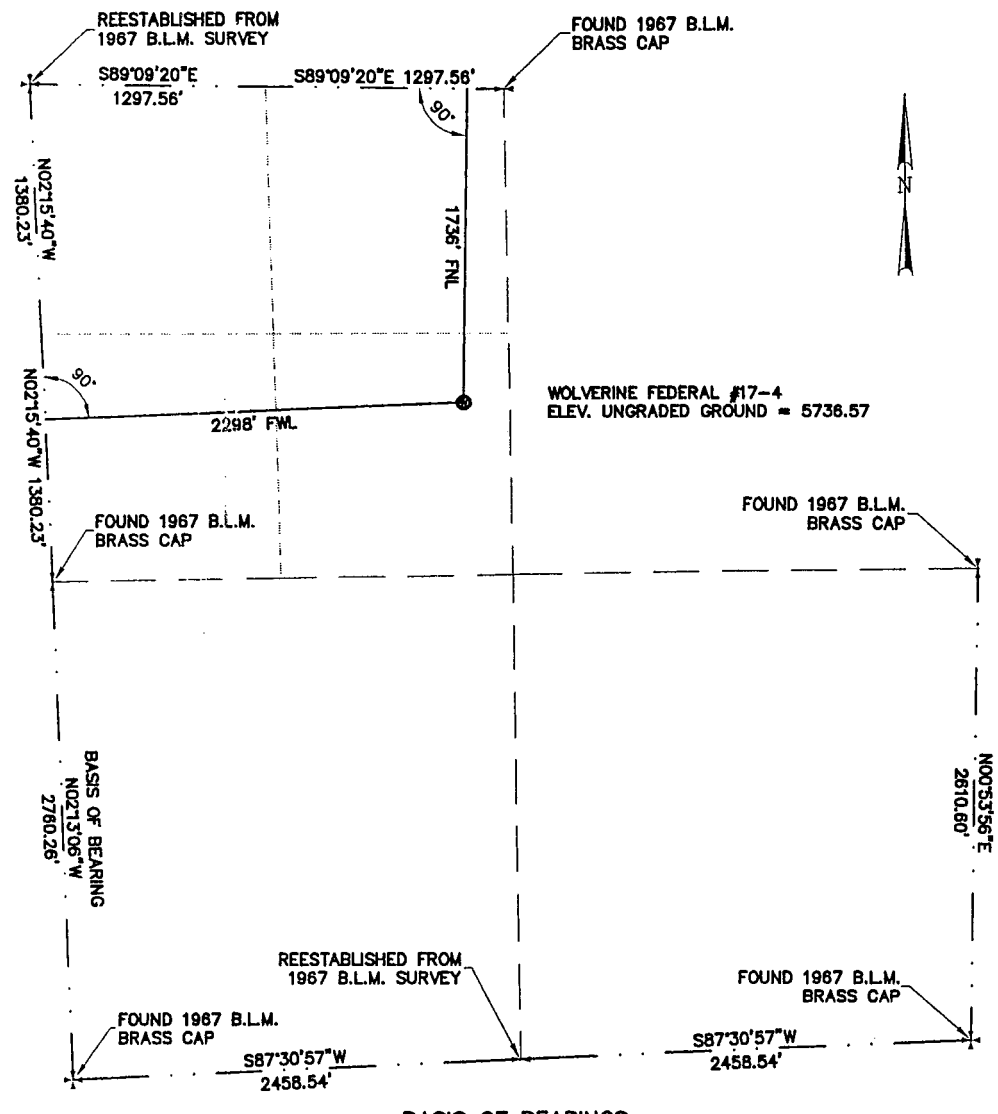
APPROVAL:

38.80547
-111.93325

38.80104
-111.93050

(11/2001) (See Instructions on Reverse Side)

Section 17, T.23 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°13'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38°48'18.901" (38.805250278)
LONGITUDE = -111°56'01.826" (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

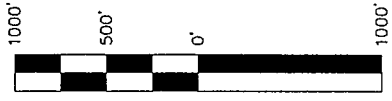
LEGEND

- = SECTION CORNERS LOCATED
- = QUARTER SECTION CORNERS LOCATED
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS 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.

RYAN W. SAVAGE, L.S. #183343 DATE

Jones & DeMille Engineering
1535 South 100 West - Richfield, Utah 84701
Phone (435) 896-8266
Fax (435) 896-8268
www.jonesanddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	K.B.B.	0406-160	1
DATE		DWG.NAME	SCALE		
July 2004		Wells	1" =1000'		

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
RICHFIELD FIELD OFFICE
150 East 900 North
Richfield, Utah 84701

TAKE PRIDE IN AMERICA

In Reply Refer To:

3160
(UT-050)

August 10, 2004

Mr. Richard D. Moritz
Wolverine Gas and Oil Company of Utah, LLC
One Riverfront Plaza
55 Campau NW
Grand Rapids, Michigan 49503

Dear Mr. Moritz:

On July 22, 2004, four Applications for Permit to Drill and on July 28, 2004, three additional Applications for Permit to Drill were filed in this office. These seven wells are Wolveine #17-3, 17-4, 17-5, 16-1, 18-1, 19-1, and 20-1 and are on Federal lease UTU-73528. The well pad locations for these wells are in Section 17, T. 23 S., R. 1 W., SLM, Sevier County, Utah. Your applications have been reviewed for completeness in accordance with the provisions of the Federal regulations and the Onshore Oil and Gas Orders.

Based on Onshore Order 1, with the reference to the appropriate section, the following items are missing or need clarification in your applications:

Section III.G. 3, Form 3160-3 or as an attachment:
- c. Type of drilling tools (rotary or cable).
- d. Casing condition (new or used).

Section III.G. 4. a., Drilling Plan:
- (2) The anticipated contents of each geologic structure or stratum (water, oil, gas or other minerals).
- (3) Pressure control schematic.
- (4) As these are exploratory wells, the design factors for each casing string. (See Onshore Order #2, *Drilling Operations*, III. B. Casing and Cementing Requirements.)

Section III.G. 4. b., Surface Use Program:
- (3) Location of existing wells. For 17-3, 17-4, 17-5, and 16-1, the Location Map does not show the existing Well 17-2. For 18-1, 19-1, and 20-1, the Location Map does not show the existing well 17-1. Are any water wells within the one-mile parameter of the Order? At the proposed well site for 17-3, 17-4, 17-5, and 16-1, three well pads are shown. Two of the pads are assumed to be

the existing well pad (17-1) and the proposed pad (17-3 and others); however, the third pad is not identified.

(4) Location of proposed production facilities.

(5) Location of water supply. Be specific as to the source, if it is non-Federal.

(9) Well site layout. Living facilities and the orientation of the rig and other facilities are not included on a layout.

(11) Surface Ownership. The surface ownership of the well and access road shall be indicated. Where the surface of the well is privately owned, the operator shall include the name, address, and phone number, if known, of the surface owner. If privately owned, the existence of an agreement between the operator and owner needs to be provided.

All the above items will be necessary before approval can be granted. All other portions of your application are in place, and we will continue to process your application up to the point the missing information prevents further action.

If future applications are filed, we request that Wolverine Gas and Oil adhere closely to Onshore Order No. 1, Section III. G. *Components of a Complete Application for Permit to Drill.* In the order, the Drilling Plan and the Surface Plan items are enumerated for ease of reference during both the preparation and the review of a proposal. All these items are required by regulation, and following the outline in the Order will facilitate the review of your applications. Although some items appear unnecessary or outdated, please provide the information. Unless specifically requested, additional information is unnecessary and may lengthen the review time frames.

In addition, the Application for Permit to Drill package does not need to be filed in a binder for the BLM. BLM records are kept in a file folder, so we remove the binder for ease of filing for our record keeping.

If you have any questions, please contact Michael Jackson at (435) 896-1522. Technical questions on the Drilling Plan may be directed to Al McKee at (801) 539-4045.

Sincerely,

Gary L. Hall

Gary L. Hall
Assistant Field Manager

cc: Western Land Services, 54 West Seymour Street, Sheridan, Wyoming 82801

006

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 08/05/2004

API NO. ASSIGNED: 43-041-30035

WELL NAME: WOLVERINE FED 17-4
OPERATOR: WOLVERINE GAS & OIL CO (N1655)
CONTACT: RICHARD MORITZ

PHONE NUMBER: 616-458-1150

PROPOSED LOCATION:
SENW 17 230S 010W
SURFACE: ~~1736~~ 1679 FNL ~~2298~~ 2306 FWL
NWSE BOTTOM: 1980 FSL 1980 FEL
SEVIER
WILDCAT (1)

LEASE TYPE: 1 - Federal
LEASE NUMBER: UTU-73528
SURFACE OWNER: 4 - Fee
PROPOSED FORMATION: NAVA
COALBED METHANE WELL? NO

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LATITUDE: 38.80547
LONGITUDE: 111.93325

RECEIVED AND/OR REVIEWED:

✓ Plat
✓ Bond: Fed[1] Ind[] Sta[] Fee[]
(No. WY 3329)
N Potash (Y/N)
N Oil Shale 190-5 (B) or 190-3 or 190-13
✓ Water Permit
(No. 63-2529)
NR RDCC Review (Y/N)
(Date:)
✓ Fee Surf Agreement (Y/N)
Wolverine is Surface Owner

LOCATION AND SITING:

___ R649-2-3.
Unit WOLVERINE
___ R649-3-2. General
Siting: 460 From Qtr/Qtr & 920' Between Wells
___ R649-3-3. Exception
___ Drilling Unit
Board Cause No:
Eff Date:
Siting:
✓ R649-3-11. Directional Drill

COMMENTS: Needs Presite (09-07-04)

STIPULATIONS: 1- Federal Approval
2- Spacing Slip
3- STATEMENT OF BASIS

WESTERN LAND SERVICES

August 18, 2004

Utah Division of Oil, Gas & Mining
1594 W. N. Temple Suite 1210
Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the Wolverine Federal #17-4

Gentlemen:

Pursuant to Rule R649-3-3-11 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-4 well to a total depth of 6,950 feet and is an exception to Rule R-649-3-3. Wolverine is the surface owner as well as the only leasehold operator within a 460 foot radius of the bore hole.

The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

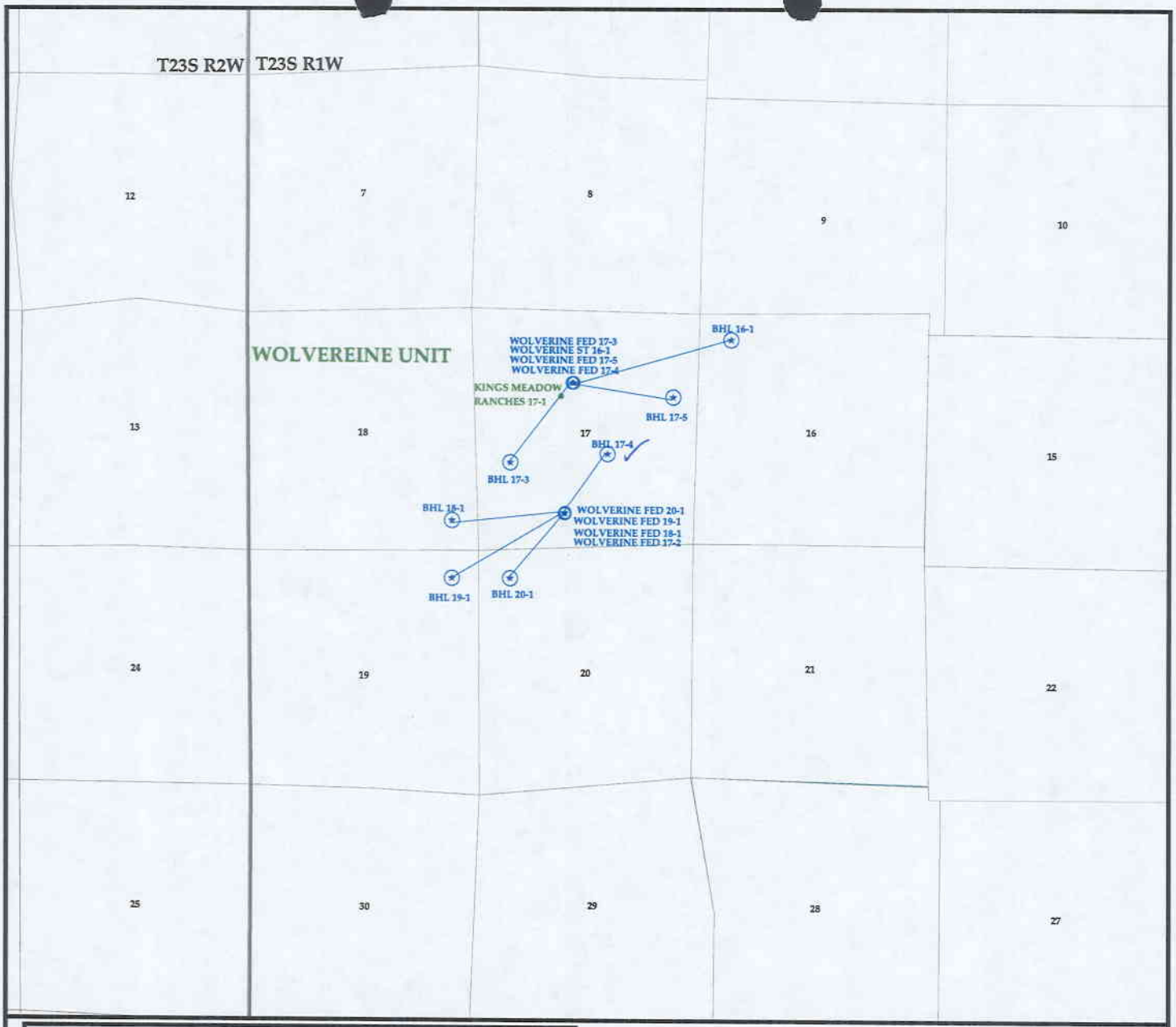
Respectfully submitted,

Wolverine Gas & Oil Company of Utah, LLC

By: Shawn Burd
Shawn Burd
Authorized Agent

RECEIVED
AUG 19 2004
DIV. OF OIL, GAS & MINING

WESTERN LAND SERVICES - UTAH
310 South 100 East • Richfield, UT 84701 • Phone: (435) 896-1943 • Fax: (435) 893-2134
Web: www.westernls.com



OPERATOR: WOLVERINE G&O CO (N1655)

SEC. 17 T.23S R.1W

FIELD: WILDCAT (001)

COUNTY: SEVIER

SPACING: R649-3-11 / DIRECTIONAL DRILLING

Utah Oil Gas and Mining

Wells
- GAS INJECTION
- GAS STORAGE
- LOCATION ABANDONED
- NEW LOCATION
- PLUGGED & ABANDONED
- PRODUCING GAS
- PRODUCING OIL
- SHUT-IN GAS
- SHUT-IN OIL
- TEMP. ABANDONED
- TEST WELL
- WATER INJECTION
- WATER SUPPLY
- WATER DISPOSAL

Units.shp
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Fields.shp
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

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W E
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PREPARED BY: DIANA WHITNEY
DATE: 12-AUG-2004

003

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:
3160
(UT-922)

August 16, 2004

Memorandum

To: Field Office Manger, Richfield Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2004 Plan of Development Wolverine Unit Sevier County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2004 within the Wolverine Unit, Sevier County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ Navajo)		
43-041-30032	Wolverine Federal 20-1	Sec 17 T23S R01W 0833 FSL 1925 FWL
	BHL	Sec 20 T23S R01W 0660 FNL 0660 FWL
43-041-30033	Wolverine Federal 19-1	Sec 17 T23S R01W 0857 FSL 1919 FWL
	BHL	Sec 19 T23S R01W 0660 FNL 0660 FEL
43-041-30034	Wolverine Federal 18-1	Sec 17 T23S R01W 0845 FSL 1922 FWL
	BHL	Sec 18 T23S R01W 0660 FSL 0660 FEL
43-041-30035	Wolverine Federal 17-4	Sec 17 T23S R01W 1736 FNL 2298 FWL
	BHL	Sec 17 T23S R01W 1980 FSL 1980 FEL
43-041-30036	Wolverine Federal 17-3	Sec 17 T23S R01W 1736 FNL 2283 FWL
	BHL	Sec 17 T23S R01W 1980 FSL 0660 FWL
43-041-30037	Wolverine State 16-1	Sec 17 T23S R01W 1736 FNL 2253 FWL
	BHL	Sec 16 T23S R01W 0660 FNL 0660 FWL
43-041-30038	Wolverine Federal 17-5	Sec 17 T23S R01W 1736 FNL 2268 FWL
	BHL	Sec 17 T23S R01W 1980 FNL 0660 FEL

ON-SITE PREDRILL EVALUATION
Division of Oil, Gas and Mining

OPERATOR: Wolverine Gas and Oil Company
WELL NAME & NUMBER: Wolverine Federal 17-4
API NUMBER: 43-041-30035
LEASE: Fed **FIELD/UNIT:**
LOCATION: 1/4,1/4 SENW **Sec:** 17 **TWP:** 23S **RNG:** 1W 1736 FNL 2298 FWL
LEGAL WELL SITING: 460 F **SEC. LINE;** 460 F **1/4,1/4 LINE;** 920 F **ANOTHER WELL.**
GPS COORD (UTM): X= 428547 E; Y= 4295894 N **SURFACE OWNER:** Wolverine.

PARTICIPANTS

M. Jones (DOGM), Shaun Burd (Western Land Services), Ed Bonner (SITLA).

REGIONAL/LOCAL SETTING & TOPOGRAPHY

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat, from where the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area.

SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE: 180' x 360' w/ 240' x 100' x 10' (excluded) pit.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: 8 proposed, producing, and/or PA wells are within a 1 mile radius of the above proposed well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: On location and along roadway to production facilities south of 17-1 location.

SOURCE OF CONSTRUCTION MATERIAL: Obtained locally and trucked to site.

ANCILLARY FACILITIES: None anticipated.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OR CONCERNS? (EXPLAIN): This well will be drilled on a pad consisting of 4 wells, all to be drilled directionally. The pad sits next to a recently drilled vertical well, Kings Meadow Ranches 17-1. Highway 24 runs past all of this activity, therefore any and all activity associated with these wells can be seen by the public, which may increase public interest and/or concern.

WASTE MANAGEMENT PLAN:

Portable chemical toilets will be emptied into the municipal waste treatment system; garbage cans on location will be emptied into centralized dumpsters, which will be emptied into an approved landfill. Drilling fluid, and completion/frac fluid will be removed from the pit upon completion of the well. Cuttings will be buried in the pit unless oil based mud is used. If oil based mud is used disposal of the cuttings should be discussed with the Division. Used oil from drilling operations and support will be hauled to a used oil recycling facility. Produced water will be disposed of at an approved facility.

ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: Dry washes run throughout the immediate area of the proposed well location.

FLORA/FAUNA: Sagebrush, greasewood, winterfat, 4-wing salt brush, deer rodents, fowl.

SOIL TYPE AND CHARACTERISTICS: Rocky clay.

SURFACE FORMATION & CHARACTERISTICS: Arapien Shale

EROSION/SEDIMENTATION/STABILITY: Erosive upon disturbance.

PALEONTOLOGICAL POTENTIAL: None observed.

RESERVE PIT

CHARACTERISTICS: Dugout earthen, 240'x100'x10', exterior to location.

LINER REQUIREMENTS (Site Ranking Form attached): Liner required.

SURFACE RESTORATION/RECLAMATION PLAN

As per Wolverine.

SURFACE AGREEMENT: Wolverine owns the surface.

CULTURAL RESOURCES/ARCHAEOLOGY: Mountain States Archaeology.

OTHER OBSERVATIONS/COMMENTS

Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction.

ATTACHMENTS

Photos of this location were taken and placed on file.

Mark L. Jones	September 7, 2004 / 3:00 pm
DOGM REPRESENTATIVE	DATE/TIME

Evaluation Ranking Criteria and Ranking Score
For Reserve and Onsite Pit Liner Requirements

Site-Specific Factors	Ranking	Site Ranking
Distance to Groundwater (feet)		
>200	0	
100 to 200	5	
75 to 100	10	
25 to 75	15	
<25 or recharge area	20	0
Distance to Surf. Water (feet)		
>1000	0	
300 to 1000	2	
200 to 300	10	
100 to 200	15	
< 100	20	0
Distance to Nearest Municipal Well (feet)		
>5280	0	
1320 to 5280	5	
500 to 1320	10	
<500	20	0
Distance to Other Wells (feet)		
>1320	0	
300 to 1320	10	
<300	20	0
Native Soil Type		
Low permeability	0	
Mod. permeability	10	
High permeability	20	10
Fluid Type		
Air/mist	0	
Fresh Water	5	
TDS >5000 and <10000	10	
TDS >10000 or Oil Base Mud Fluid containing significant levels of hazardous constituents	15 20	10
Drill Cuttings		
Normal Rock	0	
Salt or detrimental	10	0
Annual Precipitation (inches)		
<10	0	
10 to 20	5	
>20	10	5
Affected Populations		
<10	0	
10 to 30	6	
30 to 50	8	
>50	10	0
Presence of Nearby Utility Conduits		
Not Present	0	
Unknown	10	
Present	15	10

Final Score 35 (Level I Sensitivity)

Sensitivity Level I = 20 or more; total containment is required, consider criteria for excluding pit use.
Sensitivity Level II = 15-19; lining is discretionary.
Sensitivity Level III = below 15; no specific lining is required.

DIVISION OF OIL, GAS AND MINING
APPLICATION FOR PERMIT TO DRILL
STATEMENT OF BASIS

OPERATOR: Wolverine Gas and Oil Company
WELL NAME & NUMBER: Wolverine Federal 17-4
API NUMBER: 43-041-30035
LOCATION: 1/4,1/4 SENW Sec: 17 TWP: 23 S RNG: 1 W 1736 FNL 2298 FWL

Geology/Ground Water:

This location is placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range - Colorado Plateau transition zone. The location is on fee acreage a few miles east of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek, which subsequently flows into the Sevier River. The rancher heavily allocates water rights for the local springs, which arise from the volcanic rocks just to the east, for agriculture.

The well will likely spud into a thin alluvium covering the evaporite-rich Jurassic age Arapien Shale. The proposal calls for a saturated salt mud system from below the surface casing into the Navajo Sandstone. The quality of any surface water that manages to escape upstream allocation is diminished as it flows past the location and into Brine Creek, owing to the evaporite minerals in the Arapien Shale. Any water contained in the Arapien Shale is also likely to be of poor quality. A Division of Water Rights publication notes that aquifers in close proximity to the Arapien Shale are also likely to contain ground water with high TDS levels. Inasmuch as there do not appear to be any intervening aquifers documented in this area, which lie between the Arapien Shale and the underlying Navajo Sandstone, it is unlikely that any high quality ground water will be encountered.

At this location it is unlikely that any high quality ground water resource will be encountered in the Navajo, at that depth, in any strata drilled below the Navajo or at all. The proposed casing, cementing and drilling fluid program should be sufficient to control and isolate the poor quality ground waters expected to be encountered in a well at this location. Two surface water rights, a point to point right and an underground water right are found within a mile to the east. The underground water right is for a 156' deep well more than half a mile east.

Reviewer: Christopher J. Kierst **Date:** October 19, 2004

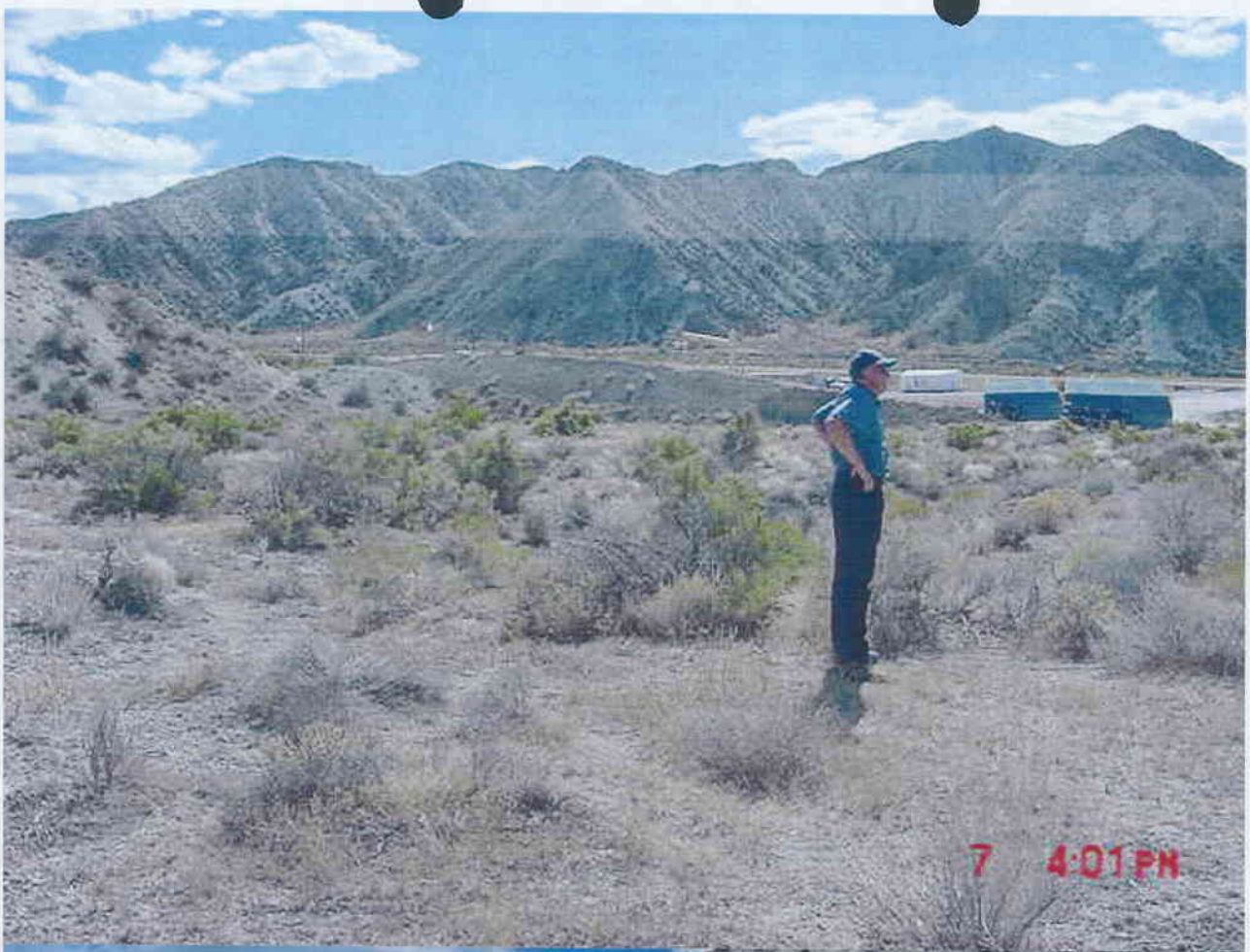
Surface:

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat from which the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area. Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction. Shaun Burd, Western Land Services, represented Wolverine Gas and Oil, while Ed Bonner was in attendance, representing the SITLA royalty interest. Sevier County was invited but chose not to attend this on-site evaluation.

Reviewer: Mark L. Jones **Date:** October 14, 2004

Conditions of Approval/Application for Permit to Drill:

1. A synthetic liner with a minimum thickness of 12 mills shall be properly installed and maintained in the reserve pit.
2. Diversion of drainages around the pad.
3. Berm the location.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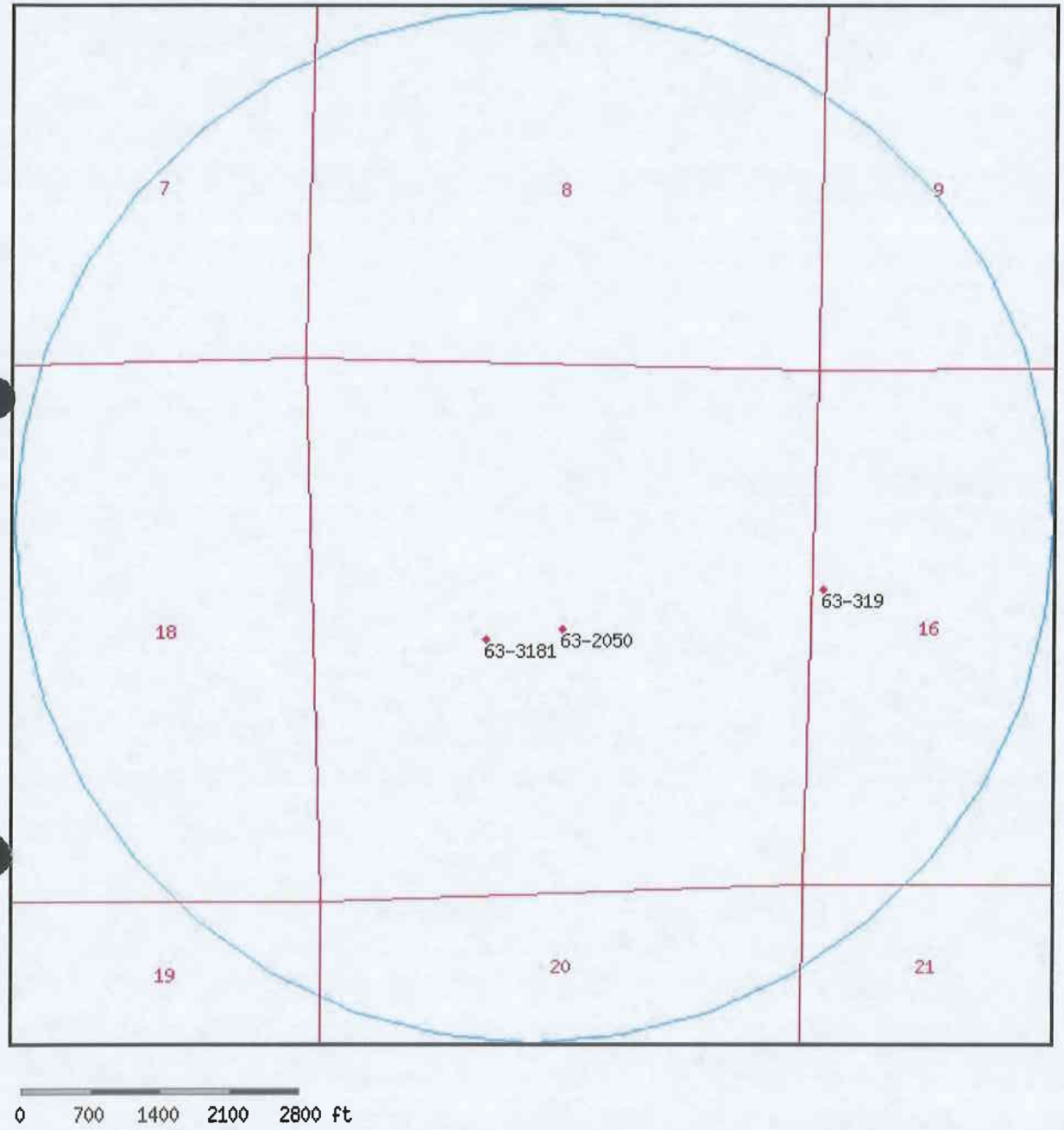


Water Rights

UTAH DIVISION OF WATER RIGHTS

WRPLAT Program Output Listing

Version: 2004.03.26.00 Rundate: 10/20/2004 05:00 PM

Radius search of 5280 feet from a point S1736 E2298 from the NW corner, section 17, Township 23S, Range 1W, SL b&m Criteria:wrtypes=W,C,E podtypes=all status=U,A,P usetypes=all

WR Number	Diversion Type/Location	Well Log	Status	Priority	Uses	CFS	ACFT	Owner Name
63-2050	Point to Point		P	19030000	OS	0.010	0.000	RICHFIELD DISTRICT USA BUREAU OF LAND MANAGEMENT
	0 0 17 23S 1W SL							150 EAST 900 NORTH
63-3180	Surface		P	18700000	I	3.160	0.000	G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL							SIGURD UT 84657
63-3181	Surface		P	18700000	DS	0.010	0.000	G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL							SIGURD UT 84657
63-319	Underground		P	19560121	S	0.015	0.000	A. BRYANT AND J. LLEWELLYN YOUNG
	N330 E100 W4 16 23S 1W SL							RICHFIELD UT 84701

STATE OF UTAH – DIVISION OF WATER RIGHTS – DATA PRINT OUT for 63-319(A27813)

(WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 10/20/2004 Page 1

WRNUM: 63-319 APPLICATION/CLAIM NO.: A27813 CERT. NO.:

OWNERSHIP**********

NAME: A. Bryant and J. Llewellyn Young
ADDR: Richfield UT 84701

LAND OWNED BY APPLICANT?

DATES, ETC.**********

FILED: 01/21/1956	PRIORITY: 01/21/1956	PUB BEGAN:	PUB ENDED:	NEWSPAPER:	
ProtestEnd:	PROTESTED: [No]	HEARNG HLD:	SE ACTION: [ ]	ActionDate:02/28/1957	PROOF DUE:
EXTENSION:	ELEC/PROOF: [ ]	ELEC/PROOF:	CERT/WUC:	LAP, ETC:	PROV LETTER:
RENOVATE:	RECON REQ:	TYPE: [ ]			

PD Book No. Map:

Type of Right: Application to Appropriate Source of Info: Application to Appropriate Status: No Prf Req

---

LOCATION OF WATER RIGHT**********

FLOW: 0.015 cfs SOURCE: Underground Water Well

COUNTY: Sevier COMMON DESCRIPTION:

POINT OF DIVERSION -- UNDERGROUND:
(1) N 330 ft E 100 ft from W4 cor, Sec 16, T 23S, R 1W, SLBM
Comment:

USES OF WATER RIGHT**********

WATER RIGHT CLAIMS IN COMMON: 319

###STOCKWATERING: 250 Cattle or Equivalent Diversion Limit: PERIOD OF USE: 01/01 TO 12/31

****

**********E N D O F D A T A**********

****

002

WESTERN LAND SERVICES

November 9, 2004

Diana Whitney
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Re: WGO-04-004-ARA

Dear Diana,

Enclosed you will find the APD, POD packet and the drilling prognosis for the Wolverine Federal #17-4 well. Once again the on-site was completed by Mark Jones and the enclosed information defines these changes.

If you have any questions on this matter, please contact me at (435) 896-1943, cell (435) 979-4689.

Sincerely,

Shawn Burd

RECEIVED
NOV 10 2004
DIV. OF OIL, GAS & MINING

WESTERN LAND SERVICES - UTAH
310 South 100 East • Richfield, UT 84701 • Phone: (435) 896-1943 • Fax: (435) 893-2134
Web: www.westernls.com

001

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

FORM 3

AMENDED REPORT ☐
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

5. MINERAL LEASE NO: UTU-73528	6. SURFACE: Fee
7. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
8. UNIT or CA AGREEMENT NAME: Wolverine Fed. Exploration Unit	
9. WELL NAME and NUMBER: Wolverine Federal # 17-4	
10. FIELD AND POOL, OR WILDCAT: Wildcat	
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 17 23S 1W S	
12. COUNTY: Sevier	13. STATE: UTAH

1A. TYPE OF WORK: DRILL ☑ REENTER ☐ DEEPEN ☐

B. TYPE OF WELL: OIL ☑ GAS ☐ OTHER _____ SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC

3. ADDRESS OF OPERATOR: One Riverfront Plaza CITY Grand Rapids STATE MI ZIP 49503 PHONE NUMBER: (616) 458-1150

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 1679' FNL & 2306' FWL-Sec17,T23S,R1W
AT PROPOSED PRODUCING ZONE: 1980' FSL & 1980' FEL-Sec17,T23S,R1W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 3.5 miles South of Sigurd

15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET)	16. NUMBER OF ACRES IN LEASE:	17. NUMBER OF ACRES ASSIGNED TO THIS WELL:
appr. 200'	8236 ac	40
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET)	**19. PROPOSED DEPTH:**	**20. BOND DESCRIPTION:**
appr. 600'	6,950	BLM # WY 3329
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.):	**22. APPROXIMATE DATE WORK WILL START:**	**23. ESTIMATED DURATION:**
5737' - GR	11/15/2004	40 days

24. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
20	14	80	Conductor
12 1/4	9 5/8 36 ppf J55 STC	1,510	lead:c,360sx,1.78, 12.8/tail:g, 280sx, 1.20, 15.6
8 3/4	5 1/2 17 ppf L80 LTC	6,950	lead:c,360sx, 1.76, 13.0/tail:Poz, 350sx, 1.49 13.4

25. **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
☐ EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER
☑ COMPLETE DRILLING PLAN
☐ FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

RECEIVED
NOV 10 2004
DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Shawn Burd TITLE Authorized Agent

SIGNATURE Shawn Burd DATE 10/19/2004

(This space for State use only)

API NUMBER ASSIGNED 43-041-30035

APPROVAL

Approved by the
Utah Division of
Oil, Gas and Mining
Date: 11-17-04
By:

Surf
418985X
4429405Y
38.80555
-111.93301

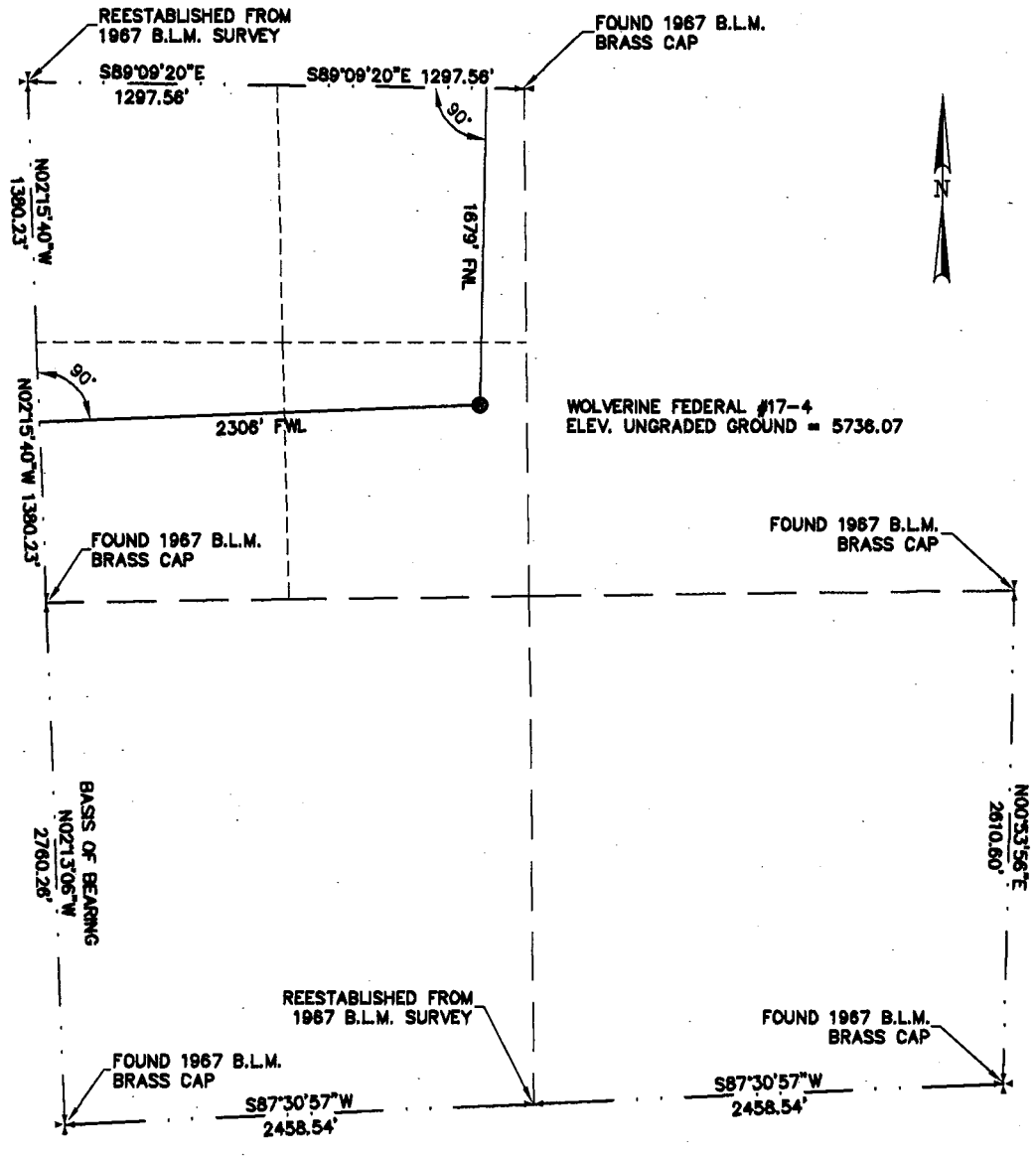
BHL
419198X
4429402Y
38.80104
-111.93050

(11/2001)

Federal Approval of this Action is Necessary

(See Instructions on Reverse Side)

Section 17, T.23 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°13'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38°48'18.901" (38.805250278)
LONGITUDE = -111°56'01.826" (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

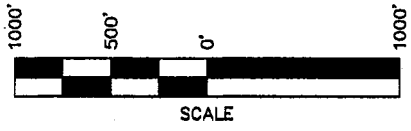
LEGEND

- = SECTION CORNERS LOCATED
- = QUARTER SECTION CORNERS LOCATED
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

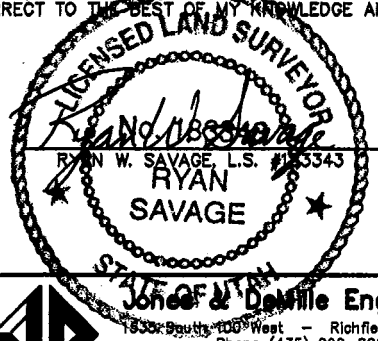
BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS 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.



RYAN W. SAVAGE, L.S. #155343 — 10/01/04 DATE

Jones & DeMille Engineering
1535 South 100 West – Richfield, Utah 84701
Phone (435) 896-8266
Fax (435) 896-8268
www.jonesanddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	K.B.B.	0406-160	1
DATE		DWG.NAME	SCALE		
Sept. 2004		Wells	1" =1000'		

PROJECT PLAN OF DEVELOPMENT AND MASTER SURFACE USE PLAN

Wolverine FEDERAL #17-4

NAME OF APPLICANT:	Wolverine Gas and Oil Company of Utah, LLC One Riverfront Plaza, 55 Campau NW Grand Rapids, Michigan 49503-2616
PROJECT NAME:	"Wolverine Federal #17-4" NW/SE of Section 17 Township 23 South – Range 1 West
ATTACHMENTS:	A.) Project Map/Survey B.) Well Site Location Layout C.) Typical Cross Sections (Cut and Fill) D.) Wildlife & Vegetative Species of Concern Summary E.) Cultural Resource Survey Report

I. DESCRIPTION OF PROJECT:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) proposes to drill and explore for hydrocarbons, using a directional drilling program, from the Navajo Formation at depths of approximately 4,810' – 7,036' and approximately 8,062' – 9,100' within the Wolverine Federal Exploration Unit situated in Sevier County, Utah:

TOWNSHIP 23 SOUTH, RANGE 1 WEST

Northwest Quarter of Southeast Quarter (NW/SE) of Section 17

Well Name & No.	Target	Elev.	Location	TD	Footages
LEASE # UTU-73528					
Wolverine Federal #17-4	Navajo 1 and 2	5737'	NW SE Sec 17, T23S-R1W	6,950'	1,679' FNL; 2,306' FWL

The attached Project Map (Attachment A) indicates the proposed well site and its intended configuration. Additionally, the existing access route is indicated. This well is being drilled within the "Wolverine Federal Exploration Unit" and upon privately owned surface.

Mineral rights within the Wolverine Federal Exploration Unit are owned by a variety of interests and are federally owned at the target bottom-hole location for this proposed well. The proposed surface plan will be reviewed and inspected by the appropriate regulatory agencies, state and federal, to ensure proper utilization of the surface reflecting an effort by Wolverine to minimize surface disturbance and waste. Appropriate Onshore Oil and Gas Orders and those of the Utah Division of Oil, Gas and Mining will be followed in the constructing, drilling, completion, operation, plugging and surface reclamation of this well.

The project is situated within an area that is referred to by the Utah Division of Oil, Gas and Mining (Statement of Basis, Kings Meadow Ranches 17-1, October 21, 2003) as "... placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range – Colorado Plateau transition zone." The drill site itself is located in a flat area between steep hills and is contiguous to Highway 24 from which access to this site will be established. The flat area is dominated by sagebrush – grass communities and the nearby hillsides are dominated by Pinyon Pine – Juniper communities. The access route consists of an improved driveway off from Highway 24 entering onto the well site. BLM road construction standards will be adhered to as new improvements are constructed.

Wolverine's proposed "Wolverine Federal #17-4" project is most easily accessible from Sigurd, Utah. From Sigurd, one would drive down Highway 24 heading east/southeasterly. At mile marker 13, drive approximately 0.6 miles and turn easterly onto the existing access road driving approximately 200 yards to the proposed well pad location.

Surface water is located in the area primarily in the form of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek. Local springs arising from the volcanic rocks and ephemeral drainages also exist in the area including a drainage way situated along Highway 24. The Sevier River is approximately three (3) miles west of this proposed location.

Geology and Soil Types

Again quoting from the "Division of Oil, Gas and Mining, Statement of Basis, Kings Meadow Ranches 17-1", the well "...will likely spud into a thin alluvium covering the evaporate-rich Jurassic age Arapien shale." "The Arapien Shale may have been somewhat intruded or elevated into the area between the Sevier Fault and the considerable parallel secondary faulting mapped in the Cedar Mountain – Black Mountain area..." It is anticipated that from surface to approximately 400 feet in depth, the lithology of the Quaternary will consist of unconsolidated sediments.

The soil type classified at the Wolverine Federal #17-4 wellsite is the Billings silty clay loam. This soil type is a fine-silty, mixed calcareous, mesic Typic Torrifluvents and is usually found in areas containing two (2) to five (5) percent slopes. The soil is a deep, drained, silty clay loam. It features a light gray, moderately alkaline, strongly calcareous, silty clay loam surface soil that is approximately ten (10) inches thick. The subsoils consist of a light gray, moderately alkaline, friable, silty clay loam approximately 32 inches thick. The substrate material is a light gray, moderately alkaline, friable, silty clay loam with a small amount of gypsum veining.

Assuming that the drilling and completion of this well results in its ability to commercially produce hydrocarbons, appropriate market connections will be made upon proper permitting of such activities by all agencies having jurisdiction over said activities.

II. SOIL EROSION CONTROL MEASURES:

The well pad will be sloped at about 1%, in the direction of the site's drainage so as to provide for a well-drained work area during drilling operations. Appropriate collection and infiltration basins will be constructed in the sloped area of the drill pad.

In all fill areas, the edges shall be diked to control run off.

Appropriate drill site drainage and sedimentation control measures will be incorporated in the operational plan. These may include utilization of earthen dikes along the fill portion of the drilling pad perimeter, stabilization of slopes as needed, location of the reserve pits in the cut portion of the drilling pad and the pad constructed so as to slope toward a collection and infiltration basin. Construction of the drill site shall be in accordance with the regulations and stipulations as defined by the State of Utah, Department of Natural Resources, Division of Water Rights.

Reclamation of the site will be in accordance with Best Management Practices and requirements of the Bureau of Land Management.

III. EXISTING ACCESS ROADS AND ROAD IMPROVEMENTS

The existing access road is identified and labeled on the project map. Steep, rough topography is not identified as a problem along our access route which was constructed by initially using fill material and covering it with approximately eight (8) inches of shale/gravel. Another layer of road base material, approximately four (4) inches in depth, was placed on top of the shale/gravel.

IV. LOCATION OF EXISTING WELLS

The recently drilled "King Meadow Ranches 17-1" well is situated approximately 200 yards southwesterly of this proposed well site location and is situated in the Southeast Quarter of the Northwest Quarter (SE/NW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah. "Wolverine Federal 17-2" is located approximately one-half mile southerly of this proposed well site and is situated in the Southeast Quarter of the Southwest Quarter (SE/SW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah.

V. DRILLING METHOD

Wolverine proposes to use a directional drilling program for the Wolverine Federal #17-4. The mountainous terrain of the area is such that directional drilling is the most efficient method to minimize surface disturbance. By locating the well pad on a relatively flat surface, and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

VI. LOCATION AND TYPE OF WATER SUPPLY

Water for drilling the Wolverine Federal #17-4 will be purchased from water wells nearby or drilled on location and pumped into storage tanks at the site. Water for drilling from nearby well(s) will be hauled to location and stored in storage tanks on the drill site. Wastewater will not be discharged on the surface at this site and the drilling of the well will not require a wastewater management plan.

VII. CONSTRUCTION MATERIALS

In most circumstances, natural earth materials were used for the construction of roads and fills. These were taken from locations essentially contiguous to or nearby the locations to be improved. When necessary, road base materials were used and delivered

by the contractor for application on site and specifically as the initial fill material for the access road, which was then covered with approximately eight (8) inches of shale/gravel.

VIII. METHODS FOR HANDLING WASTE

The Reserve Pit will be dug on the well pad per the attached Well Site Location Layout (Attachment B). It will be used for the disposal of waste mud and drill cuttings and will be located on the south portion of the well site plan. The pit will be 100 feet X 240 feet and will be 10 feet deep. The pit will be lined with a synthetic liner having a minimum thickness of 12 mills and if the reserve pit is built in rock, geotextile or some other material approved by the Division of Oil, Gas and Mining shall be utilized. The Division of Oil, Gas and Mining shall be notified prior to lining the reserve pit in order to allow for Division inspection. Rules pursuant to R649-3-16 will be followed regarding the reserve pit as well as those governing Onshore Oil and Gas Operations (43 CFR 3160.)

Upon evaporation of fluids, pit closure occurs with the back fill of soil and its compaction to prevent settling. The usage of the pit is further described in the section VIII under pit closure.

All garbage will be taken off site and disposed of properly. Pursuant to R649-3-14, all rubbish and debris shall be kept in containers on the well site, and will be hauled to an approved disposal site upon completion of drilling and completion operations and as needed during such operations. There will be no chemical disposal of any type. Sewage is handled through the renting of portable toilets. These are serviced by the rental company and removed from site when no longer required.

IX. PLANS FOR RECLAMATION OF THE SURFACE

Pit closure: The pits will be fenced on three sides during all drilling operations and then the fourth side will be immediately fenced when the rig is moved off location. After evaporation of fluids, back-fill of sub-soil and compaction to prevent settling will occur within 90 days of the drilling and completing of the well. If necessary after 90 days, the fluids will be sucked out of the pit and transported off site.

The topsoil will be stripped off and stock piled in an area not to be disturbed. The topsoil will be placed back on the pit after back filling and then prepped for re-seeding.

The approximate Pit size is indicated on the Well Site Location Layout diagram attached hereto (Attachment B).

Revegetation Methods: Disturbed areas will be disked, seeded and "dragged", as needed; seeding with a mixture approved by the local USDA Natural Resource Conservation Service or the Bureau of Land Management.

Wolverine generally requires at least twelve (12) pounds per acre of seed distribution. Wolverine suggests that autumn seeding practices be used due to the terrain in this project area. Spring rain events are common and tend to cause severe run-off. Fall seeding will allow any moisture, whether rain or snow, to assist the seed into the ground.

Other Practices: Other practices that will be utilized to reclaim disturbed areas will include riprap when and if necessary to prevent erosion and the installation of silt fencing in sensitive and/or erosive areas.

Timetable: Reclamation of the surface will commence as soon thereafter construction, drilling and well completion are concluded, as is practicable, depending on weather. In the event of a dry hole, the drill site and roadways will be restored to their original condition as nearly as practicable within 180 days after plugging date of the well.

X. SURFACE OWNERSHIP

The surface of the proposed well site is privately owned.

XI. WELLSITE LAYOUT

Please see the attached "Well Site Location Layout" (Attachment B) for the well configurations.

XII. PIPELINES AND STREAM CROSSINGS

PIPELINES: In the event of hydrocarbon production requiring transmission by pipeline, the proposed pipeline(s) will be designed, constructed, tested, operated and maintained in accordance with standard safety practices and by a combination of construction techniques intended to minimize to the greatest extent practical the impacts upon natural resources.

Pipelines will typically be installed by trenching. In these trenched areas, the contractor shall strip and stockpile topsoil to be replaced over the backfill portion upon completion of construction operations. Silt fencing will be installed at all stream crossings.

The proposed pipelines will be constructed with a combination of methods intended to minimize impacts to private, state and federally owned property, county roads and natural resources. The pipeline will be constructed by a combination of conventional construction techniques and special measures designed to minimize impacts to natural

resources. Pipelines will be adequately compacted before the topsoil is replaced for re-seeding.

In general and where required, soil erosion control measures will consist of appropriate BMPs (Best Management Practices) to reduce the potential for erosion. The BMPs that will be utilized in upland areas include use of construction barriers where appropriate, land clearing, spoil piles, staging and scheduling, seeding and mulching. Note that spoil piles will not typically be seeded since exposure of the spoil piles should be minimal in time. All other proper BMP measures will be implemented to reduce the potential for erosion. Seeding of all raw soils after burial of pipe will be performed. However, mulching will be performed only within state or county road right-of-ways.

Generally speaking, in wetlands, appropriate BMPs will be implemented to minimize the potential for soil erosion within wetland construction zones. These measures shall include, but not be limited to, clearing, barriers, staging, filters, silt fencing, spoil piles, dewatering, seeding, and mulching.

XIII. GENERAL

TIMELINE: The following is a general order of construction and sequence of earth change by which our operations will proceed:

1.) Access Road and Well Pad Construction

2.) Drilling and Well Completion Operations

3.) Initial Well Pad Restoration

4.) Clearing of Pipeline Rights-of-way (if needed)

5.) Delivery and Layout of Pipe

6.) Pipe Welding and Inspection

7.) Trenching of Pipe

8.) Placement and Burying of Pipe

9.) Final Restoration of Site/Access/Pipeline Route

10.) Re-Seeding

All hillsides, creek banks, and other places where contractor has moved earth to facilitate operations shall be restored to as near original condition as practical. Replaced

material and/or backfill will be protected from erosion to the satisfaction of Wolverine, the Bureau of Land Management and the Utah Division of Oil, Gas and Mining without undue delay.

Upon completion of any backfill, contractor shall clear pipeline rights-of-way and access routes of large rocks, stumps and other debris; fill holes, ruts and depressions, and shall keep the access road in a neat and acceptable condition. All cleanup shall be maintained by the contractor until final acceptance by Wolverine and the enforcing agency.

XIV. ENVIRONMENTAL IMPACT ASSESSMENT:

It is anticipated that the drilling and operations planned, provided the success of this well, will not have any adverse affects to any wildlife or aquatic life in the area. There will be only a minor effect on the surface cover. Drilling and production operations should have minimal effect on the population patterns, land use, public utilities or public services in the near future for this rural area.

Noise levels during drilling and completion operations may be continuous but not unusually high. If production is achieved, noise levels should be minimal during the operation and maintenance of the wells.

Necessary soil erosion and sedimentation safeguards will be built into the well pad, access and future proposed pipeline routes to protect any nearby lowlands, where appropriate. Particular care will be exercised in order that all drain ditches be maintained and kept unobstructed to prevent water backup against spoil banks or backfill, causing erosion. The cumulative long-term effect on the immediate environment should be minimal.

If the well is productive, the effect on the air quality in the area is expected to be practically non-existent. Human activity in this area is somewhat limited, due to the nature of the location. Ranching operations and any activities in the area should not be adversely affected.

The site will then be contoured as closely as practical to its natural state, fine graded and stabilized. The well site and access route will be restored as soon as practical. If a well is productive, existing dikes will be maintained and erosion control procedures, as specified and required by the Bureau of Land Management, will be followed to insure protection of the local ecosystem.

Cultural

Please see, "Attachment E", Cultural Resource of A Well Pad (A-2) Near Sigurd, Sevier County, Utah.

Wildlife

Please see "Attachment D", a summary of Wildlife and Vegetative Species of Concern.

XV. SUMMARY:

In conclusion, the environmental impact of this project is considered to be minimal and every effort will be made to ensure the protection and preservation of the environment, as well as the standard of living for those affected by its operation.

This proposed project is aimed at increasing the hydrocarbon reserves within the State of Utah. In addition, in the event that production can be established in this project, it will be of financial benefit to the private holders of oil and gas rights within the "Wolverine Federal Exploration Unit", including the Bureau of Land Management in fulfillment of its stewardship responsibilities over federally owned oil and gas assets. We consider the environmental impact of this project to be slight and we will make every effort to be conscientious operators and to insure protection and preservation of the environment during the course of our drilling and producing operations.

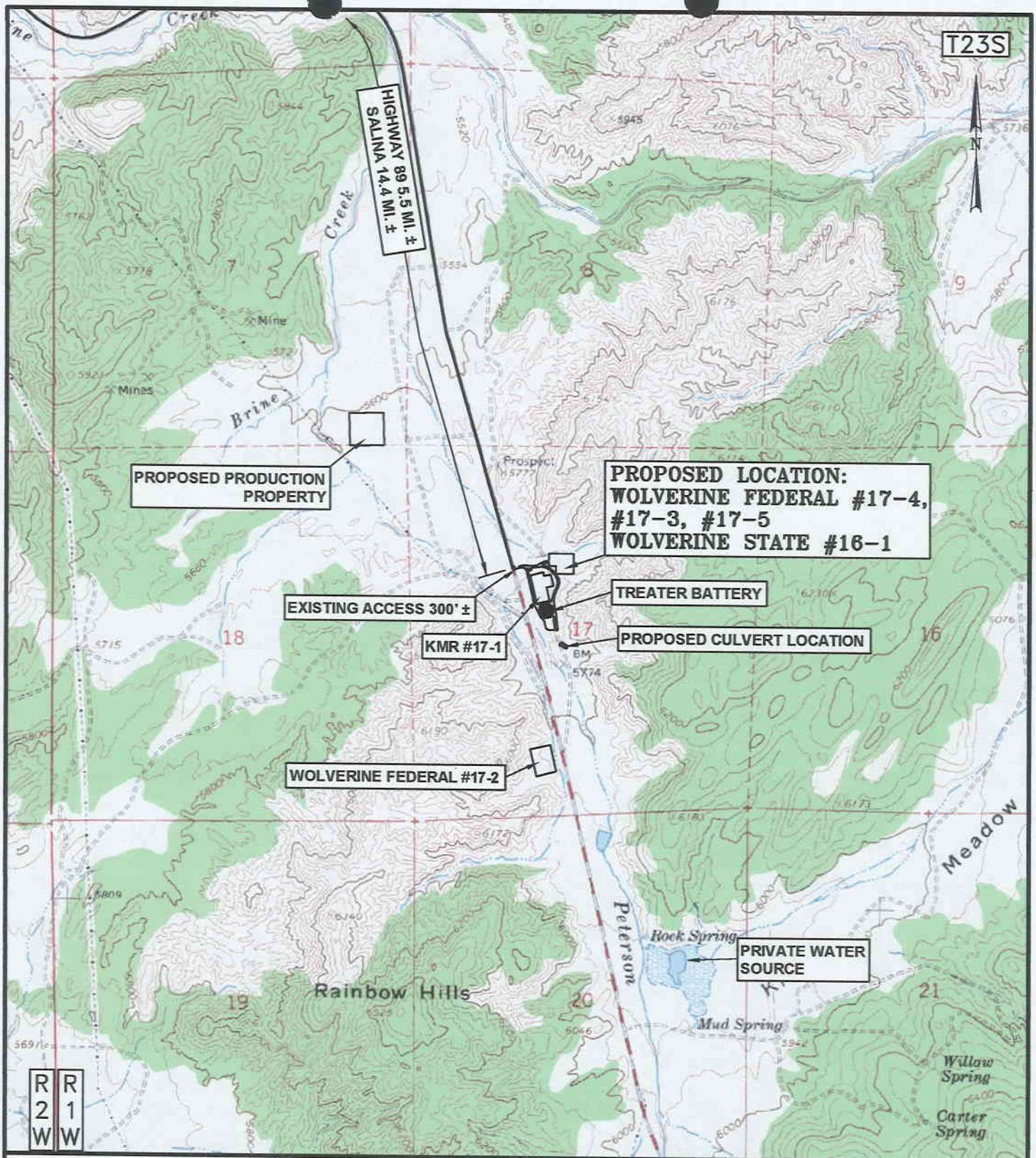
Sincerely,

Wolverine Gas and Oil Company of Utah, LLC

By: _____
Shawn Burd

Authorized Permitting Agent:

Western Land Services – Western Division
54 West Seymour Street
Sheridan, WY 82801
Donald L. Anderson, Chief Operating Officer
Phone: 307-673-1817
Local Contact: Shawn Burd
Phone: 435-896-1943



LEGEND

EXISTING ROAD

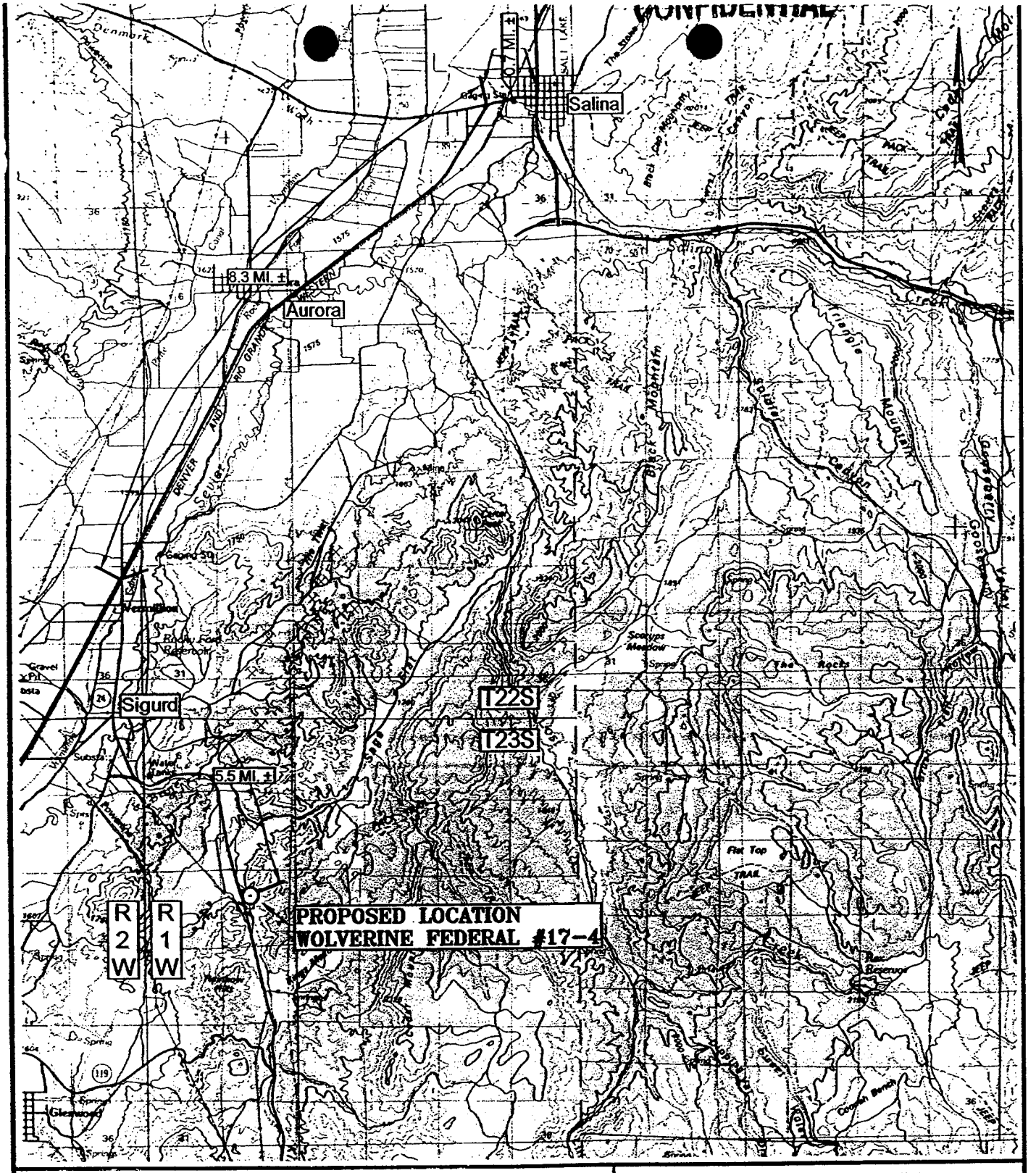
EXISTING ACCESS ROAD

Wolverine Federal #17-4, #17-3, #17-5 and Wolverine State #16-1
Section 17, T.23 S., R.1 W., S.L.B. & M.

Jones & DeMille Engineering
1535 South 100 West – Richfield, Utah 84701
(435) 896-8266 Phone
(435) 896-8268 Fax
www.jonesanddemille.com

Wolverine Gas and Oil Co.
Wolverine Federal
Location Map

SCALE: 1" = 2000'	ENG.:	PROJ.#: 0406-160
DATE: Oct. 2004	DWG.BY: K.B.B.	DWG.NAME: Wells



LEGEND

⊙ PROPOSED LOCATION

Wolverine Federal # 17-4
Section 17, T.23 S., R.1 W., S.L.B. & M.
1679' FNL 2306' FWL

Jones & DeMille Engineering
1535 South 100 West – Richfield, Utah 84701
(435) 896-8266 Phone
(435) 896-8268 Fax
www.jonesanddemille.com

Wolverine Gas & Oil Corp.

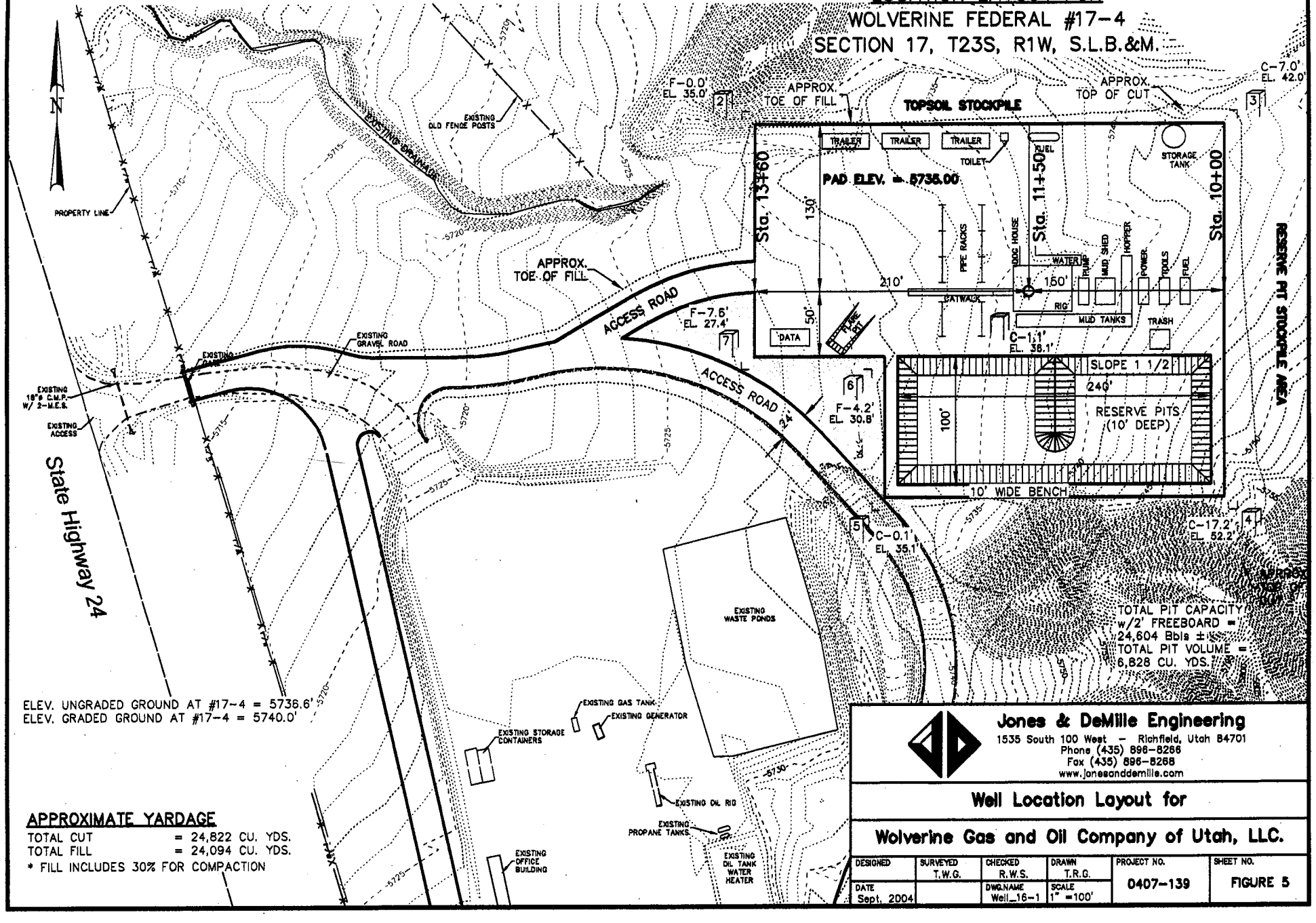
Wolverine Federal #17-4

Location Map

SCALE: 1" = 10000'	ENG.:	PROJ.#: 0406-160
DATE: July 2004	DWG.BY: T.R.G.	DWG.NAME: pro_location

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC.

LOCATION LAYOUT FOR
WOLVERINE FEDERAL #17-4
SECTION 17, T23S, R1W, S.L.B.&M.



APPROXIMATE YARDAGE

TOTAL CUT	= 24,822 CU. YDS.
TOTAL FILL	= 24,094 CU. YDS.

* FILL INCLUDES 30% FOR COMPACTION

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Fax (435) 896-8268
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Well Location Layout for

Wolverine Gas and Oil Company of Utah, LLC.

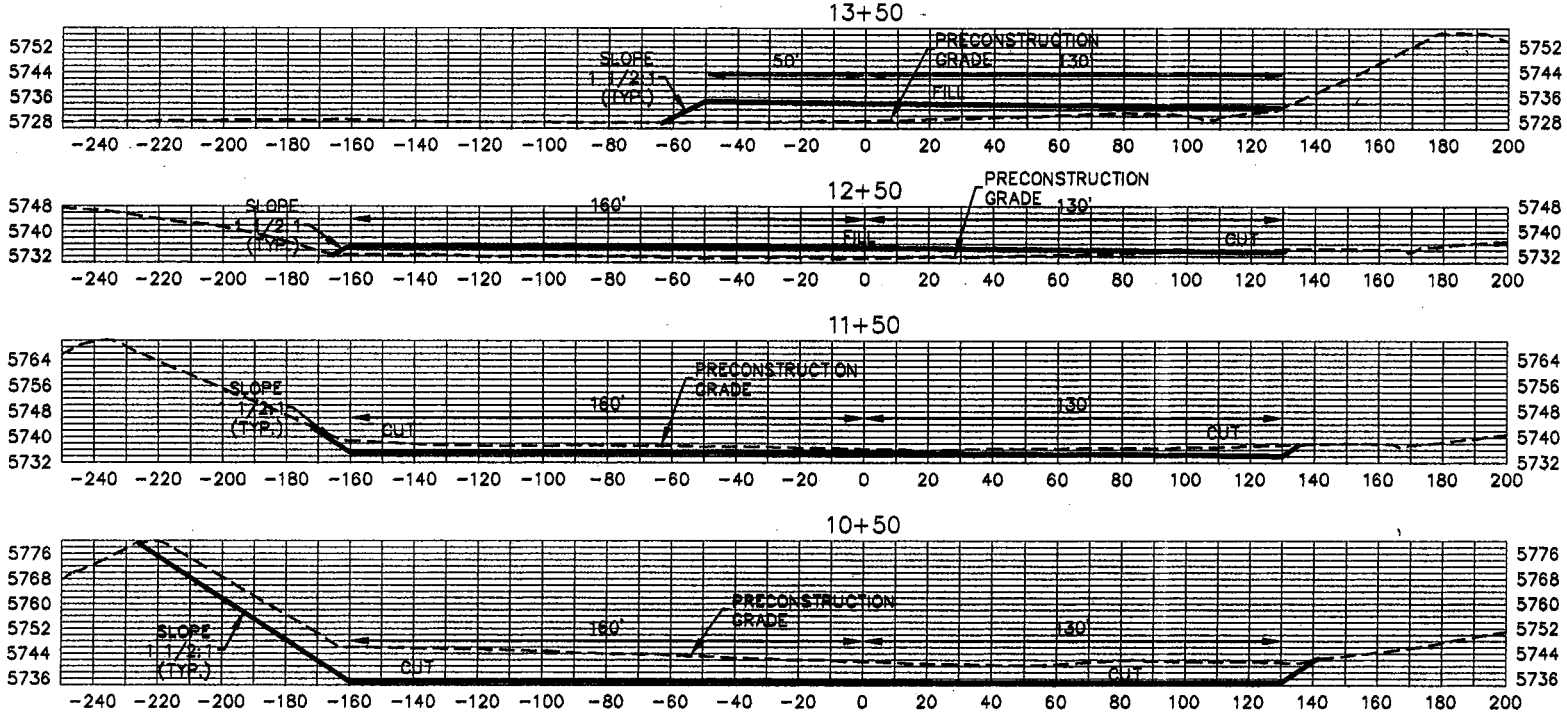
DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	T.R.G.	0407-139	FIGURE 5
DATE		DWG.NAME	SCALE		
Sept. 2004		Well_16-1	1" =100'		

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

TYPICAL CROSS SECTIONS FOR

WOLVERINE FEDERAL #17-4

SECTION 17, T23S, R1W, S.L.B.&M.



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Typical Cross Sections for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	T.R.G.	0407-139	FIGURE 5A
DATE		DWG.NAME	SCALE		
Sept. 2004		Design	1" =60'		

Wolverine Federal #17-4

The Wolverine Federal #17-4 well site is located approximately 3.5 miles southeast of the town of Sigurd in Township 23 South - Range 1 West, Section 17: Northwest Quarter of the Southeast Quarter (NW/SE) Salt Lake Base and Meridian in Sevier County, Utah.

The proposed Wolverine Federal #17-4 is situated adjacent to Highway 24 in a gentle rolling plains with hilly terrain on the east side. Plant habitat types within the area consist of a combination of Pinyon Pine– Juniper, located on the hillsides, and sagebrush – grass communities in the less gradient areas.

THE PROPOSED ACTIONS

The proposed depth is 6,950 feet for the Wolverine Federal #17-4 well. The well pad dimensions will be approximately 360 feet by 280 feet. The access road was constructed by initially using fill material and covering it with approximately 8 inches of shale/gravel. Another layer of road base material, approximately 4 inches in depth, will be placed on top of the shale/gravel.

WILDLIFE AND VEGETATIVE SPECIES OF CONCERN

Potential effects concerning federally endangered, threatened, proposed, candidate, sensitive, and management indicator wildlife and vegetative species has been evaluated in the proposed area of disturbance before any surface disturbing activities have occurred. It is understood that these activities and the proposed location will be monitored by a BLM staff or approved biologist. A habitat analysis has been completed to evaluate which species may occur in the area. Surface use guidelines will be followed as will surface use restrictions and time limit stipulations in the area of concern for all affected species. There is the possibility that small clumps of Penstemon plants may be located within this project area. Wolverine Gas and Oil Company of Utah, LLC will take all necessary steps to protect the species of concern and as stipulated by the Bureau of Land Management.

Cultural Resource Inventory of A Well Pad (A-2) Near Sigurd, Sevier County, Utah

Jason Bright
Mountain States Archaeology, LLC
7190 South State Street
Midvale, Utah 84047

Project Number U-04-MV-0646p
BLM Permit UT0480011

Cultural Resources Report UT0421

July 13, 2004

Project Description

In July 2004, Western Land Services contracted Mountain States Archaeology to perform Class III cultural resource inventory of a small well pad and access route in Sevier County, Utah on behalf of Wolverine Oil and Gas.

The well pad and access route are located in Township 23 South Range 1 West, NW ¼ of SE ¼ of NW ¼ of Section 17 (Figure 1). A records search was performed for this area on March 2, 2004 at Utah SHPO. Craig Harmon at the Richfield BLM office forwarded records search information for a nearby project (Bright 2004a) on March 26th, 2004. Fieldwork was completed July 12th 2004.

Records Search

A number of previously completed projects were found within a mile of the current project locations. These include U-89-BL-0464 (the Sigurd/Kings Meadow Power Line), U-91-BL-0409 (Telephone Reroute), U-93-BL-0184 (Sage Flat Landfill), U-94-BL-0078 (Sage Flat Landfill Road), U-97-SC-0217 (Chevron Seismic Prospect) and U-99-BL-0488 (Salina Exchange).

In addition to these projects, MSA has completed or is currently involved with a number of other nearby projects. These include U-04-MV-0262 (Wellpad 17-2) located just southwest and across Highway 24 of the current or project, U-04-MV0395b, a pipeline from Wellpad 17-2 to Sigurd, U-04-MV-0647, another well pad located immediately north and east of A-2 (Figure 1) and U-04-MV-0106, a series of 8 seismic lines, one of which runs to the south of the current project location.

The seismic line survey documented two sites within a mile of the current project. Site 42SV2667 and 42SV2668 are small historic sites consisting of fence posts (e.g corrals) and trash scatters located west (42SV2667) and south (42SV2668) of the current project location. Neither site will be impacted by proposed activities.

Methods

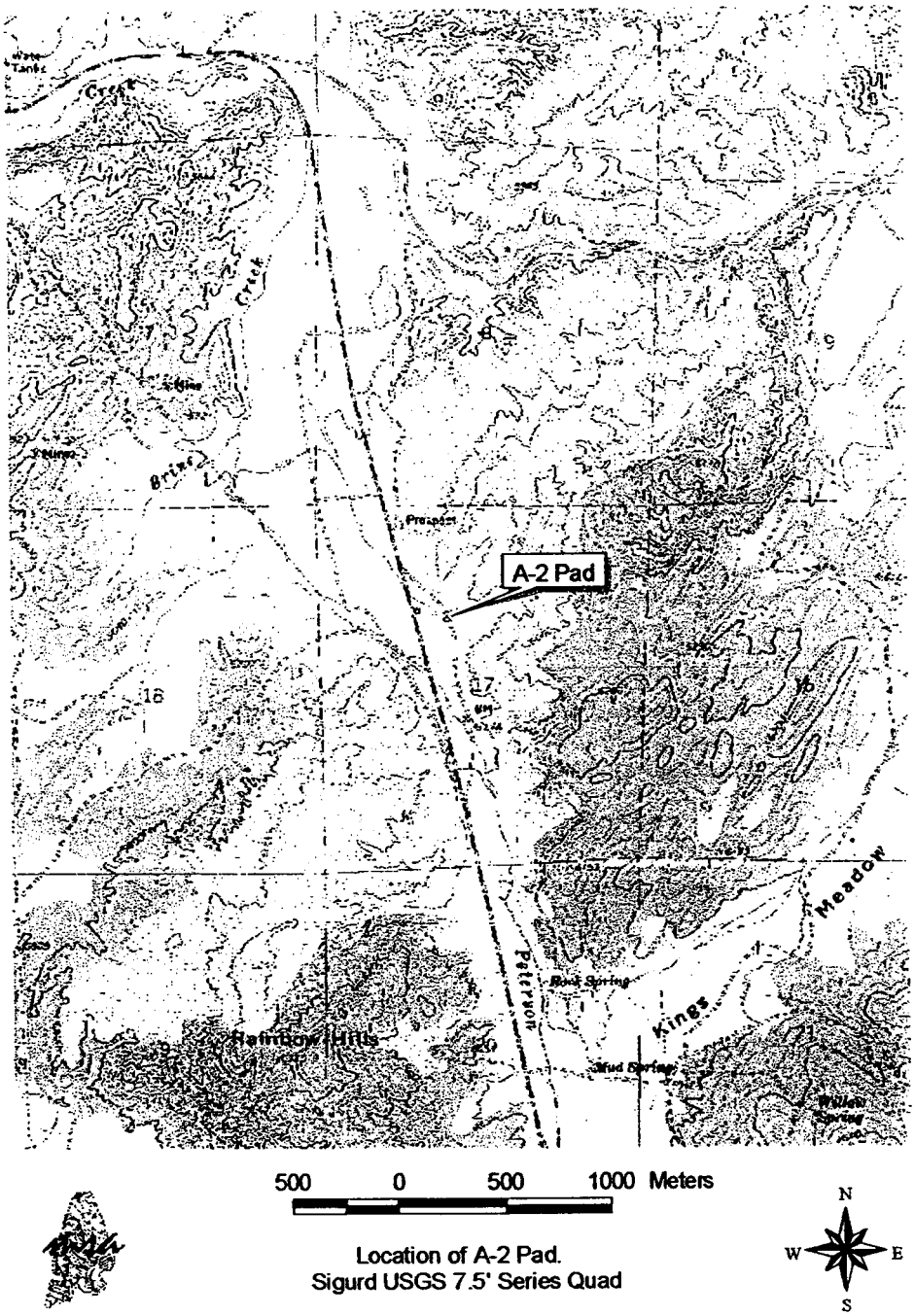
The well pad location was plotted by MSA with coordinates provided by the client. The well pad itself is 360 feet by 180 feet, and was inventoried by one archaeologist walking 15-meter transects.

Environment

The project location is located just east of Highway 24, south of Sigurd, Utah. Ground visibility was good within the well pad. The general area has already been developed. Vegetation is composed sagebrush with various bunch grasses and forbs. Sediments are a light brown sand and silt.

Results

No cultural resources were located within the well pad or access route. This includes archaeological sites and isolated finds.



Location of A-2 Pad.
Sigurd USGS 7.5' Series Quad

Figure 1. Location of A-2 well pad

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal #17-4
NW SE SEC 17-T23S-R1W
SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6950' MD (6550'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 located in Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location: 1679' fnl & 2306' fwl of Sec 17 T23N – R01W
BHL @ top of NVJO1 (5700' TVD) 1980' fsl & 1980' fel of Sec 17 T23N – R01W

14" conductor casing will be cemented to surface at approximately 80 ft BGL. 9-5/8" surface casing will be set & cemented to surface in a 12-1/4" hole deviated to approximately 10 deg at +/-1506' (+/-1500' TVD). An 8-3/4" hole will then be drilled to +/- 6950' (6550' TVD). 5-1/2" production casing will then be set & cemented to 500' into the surface casing.

EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5700' (TVD)

ELEVATION: 5740' GL (est)

PROJECTED TOTAL DEPTH: 6,950 MD; 6550' TVD

SURFACE LOCATION: 1679' FNL & 2306' FWL
Section 17-23S-1W

COUNTY: Sevier

STATE: Utah

DIRECTIONS TO LOCATION: From town of Sigurd, Utah go south approximately 3.5 miles on Hwy #24 to location on the left side of the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
	14"				80'
12¼"	9-5/8"	36#	J-55	STC	0'-1,510'
8-3/4"	5½"	17#	L-80	LTC	0'-6,950'

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
	14"					
12¼"	9-5/8"	8.379	10.625	0.3127	0.4659	0.4340
8-3/4"	5½"	4.767	6.050	0.2526	0.2691	0.1305

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 5404'	Surf – 5747'	sh, siltstone,salt,evaporites		
TwinCreek1	5404'- 5700'	5747' –6062'	Carbonates		
Navajo 1	5700- 6350'	6062' –6742'	Sandstone w/ minor shale	X	
Total Depth	**6550'**	6950'	Sandstone w/ minor shale		

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad
250'x 100' x 10' Reserve Pit with a 12 mil synthetic liner
72" diameter tin horn cellar, 4' to 5' deep.
Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 1510'

Directionally drill a 12-1/4" hole with a TCI rock bit, mud motor & MWD equipment to approximately 1510' using fresh water and gel/lime sweeps when necessary (make hole to fit 9-5/8" casing). Loss circulation is not expected to be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Run survey at every 200' and at TD or as needed to insure bottom hole location.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top
14" x 13-5/8" 3M weld on flange
13-5/8" 3M x 13-5/8" 3M spacer spool w/ 3" outlets & valves.
13-5/8" 3M Annular preventer, connected to accumulator with enough capacity to close annular and retain 200 psi above pre-charge pressure
13-5/8" Drilling Nipple with fill up and circulating line.
Upper kelly cock valves with handles available

Test Annular to 1500 psi. Test all valves and lines.

MUD PROGRAM FOR SURFACE HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	PH	FLUID LOSS
0 -1510'	8.4 – 8.9	FW/Gel/Lime	26-45	7-9	N/C

Note: Sweep hole every 100 – 200 feet or as needed for hole cleaning. Control the pH with Lime & Caustic to aid in gel flocculation for better carrying capacity.

CASING PROGRAM FOR SURFACE HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0 - 1510'	9 5/8"	1510'	36#	J-55	ST&C	

Casing Running Sequence:
Texas pattern notched guide shoe,
1 jt of 9 5/8" 36# J-55 ST&C
Float collar
Balance of 9-5/8" 36# J-55 ST&C
10 – centralizers equally spaced.
RU cement co., hold safety meeting, test lines, cement 9-5/8" casing per cement company recommendation. Displace with fresh water or mud if used. ***Do not overdisplace cement.***

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

360 sx 35:65 Poz: Class C or type 5	Mixed at:	12.8 ppg
6% Bentonite	Yield:	1.78 ft^3/sx
1% Calcium Chloride	Water:	9.42 gal/sx
0.25 lb/sx Cello Flake		

Tail:

280 sx Class G	Mixed at:	15.6 ppg
2% Calcium Chloride	Yield:	1.20 ft^3/sx
.25 lb/sx Cello Flake	Water:	5.25 gal/sx

MUST CIRCULATE CEMENT TO SURFACE per BLM requirements. If the cement does **not** circulate to surface contact the BLM office at (435) 896-1500. They will require either a temperature survey or a cement bond log to be run, then determine what remedial action will be taken before drilling out.

WOC A TOTAL OF 24 HOURS:
Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on an 11" 3M x 9-5/8" SOW casing head. NU BOPE and choke manifold.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION STRING

Bottom to Top
11" 3M x 9-5/8" csg head.
11" 3M x 11" 3M spacer spool
11" 3M Double Ram Preventer w/ 4-1/2" Pipe ram on top and blind ram on bottom. Two side outlets, choke side will have two 3" x 3M gate valves. Kill side will have two 2-1/16 x 3M gate valves and one 2" x 3M check valve. Connect BOP to choke manifold with pressure guage.
11" 3M Annular preventer.
11" 3M short rotating head with fill-up line

Upper kelly cock valves with handles available
Safety valves and subs to fit all drill string connections in use
Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

1) When the annular is initially installed
2) Whenever any seal subject to test pressure is broken
3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 2500 psi, 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

1) When the BOP is initially installed
2) Whenever any seal subject to test pressure is broken
3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have 2 independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this well.

A flare line will be installed after the choke manifold, extending 125 feet from the center of the drill hole to a separate flare pit.

PRODUCTION HOLE: 1,510' TO 6,950'

Trip in the hole with an 8 3/4" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform an integrity test to 820 psi (10.5 ppg mud wt equivalent). Drill with a salt saturated mud to the top of the Twin Creek formation.

MUD PROGRAM FOR PRODUCTION HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	pH	FLUID LOSS
1510' – 6000'	9.8 – 10.3	Saturated Salt	34-45	9.0-10.0	20cc or Less
6000' - 6950'	9.8 – 10.3	Saturated Salt	36-45	9.0-10.0	12cc or Less

Add bulk salt to increase weight to 9.8 ppg. Maintain the pH at 9.0 to 10.0 using lime and caustic. Walk viscosity up to 34 cp. Start bringing fluid loss up to 20 cc. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the last bit trip depth monitoring well closely for flow. TOH for logs.

Mudlogger: From surface casing to total depth.

Electric Logs:

Tool	Surf csg to TD
Dipole Sonic w/ GR	Yes
Dual laterolog and microlog w/ GR & Caliper	Yes, GR to surf
LithoDensity/Neutron w/ GR & Caliper	Yes
Micro Imaging Dipmeter	Yes

DST: To be decided
Cores: To be decided

CASING PROGRAM FOR PRODUCTION HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	5 ½	6950'	17.0#	L-80	LT&C	

Rig up casing tools and run 5 ½" production casing as follows:
Float shoe
2 joint of 5 ½" 17.0# L-80 LT&C casing
Float collar
28 Centralizers, middle shoe joint and one every other joint to 5000'.
Run balance of 5 ½" 17.0# L-80.

CEMENT PROGRAM FOR PRODUCTION CASING

Lead:

750 sx (50:50) Poz: Premium — Weight: 13.0 ppg
3 % Bentonite — Yield: 1.76 ft^3/sx
0.4% Halad R-567 (Low Fluid Loss Control) — Water: 8.44 gal/sx
15 % Salt
5 lbm/sk Gilsonite
0.3% D-AIR 3000 (Defoamer)
0.25 lb/sx Flocele

Tail:

350 sx (50:50) Poz: Premium — Weight: 13.4 ppg
2 % Bentonite — Yield: 1.49 ft^3/sx
0.2% Halad R-322 (Low Fluid Loss Control) — Water: 7.09 gal/sx
3 % KCLSalt
3 lbm/sk Silicate Compacted (light Weight Additive)
1 lbm/sk Granulite TR ¼ (Lost Circulation Additive)
0.2% WG-17 (Suspension Agent)
0.25 lb/sx Flocele

TOC at ± 1,000 ft
Calculate cement volume based on log caliper +/- 20%. Displace cement w/water.
Set slips, ND BOP's, cut off, NU & test wellhead. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about October 15, 2004
Drilling operations are anticipated to begin on or about December 1, 2004

end

Wolverine Gas & Oil Co of Utah, LLC

Weatherford

Azimuths to True North
Magnetic North: 12.95°

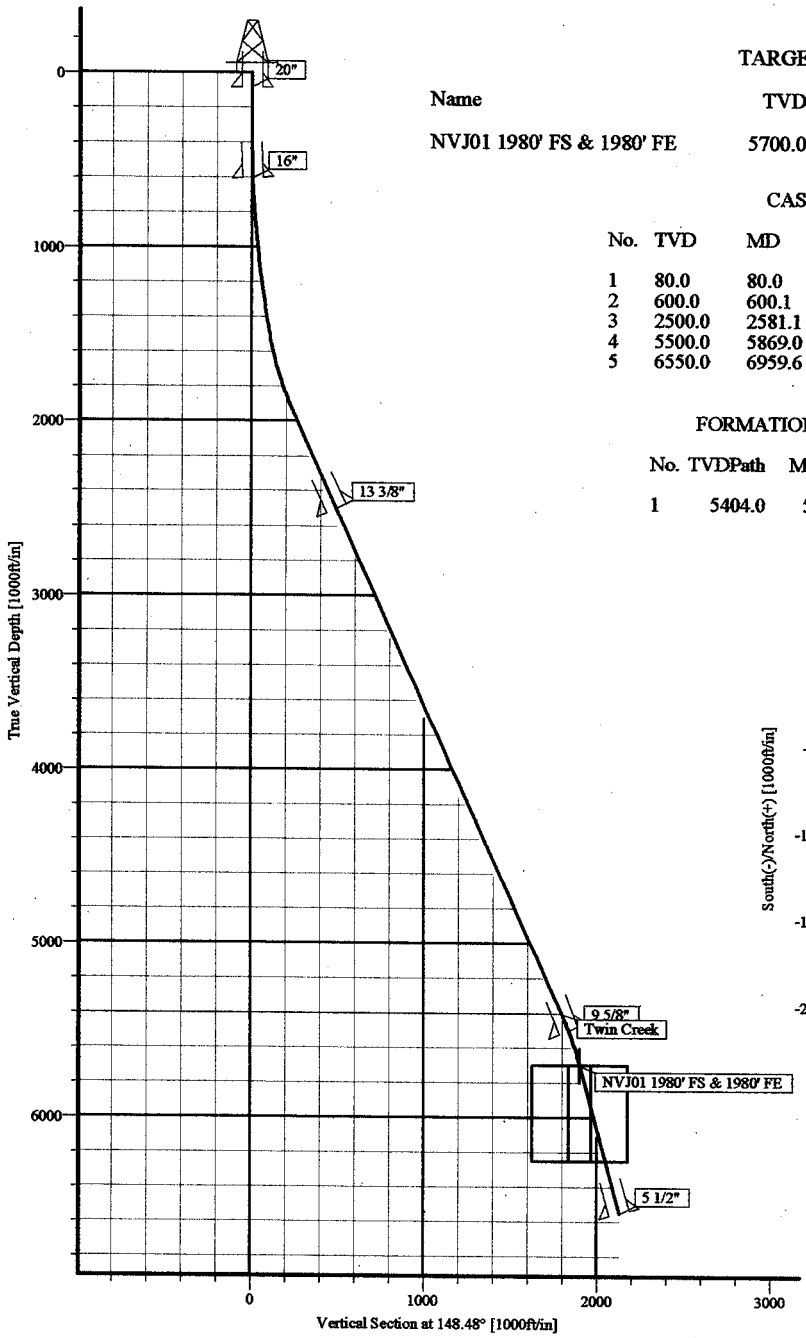
Magnetic Field
Strength: 52133nT
Dip Angle: 64.57°
Date: 7/6/2004
Model: igrf2000

Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

17-4 SFC Location
1679' FN & 2306' FW Sec 17

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	148.48	300.0	0.0	0.0	0.00	148.48	0.0	
3	1506.1	10.00	148.48	1500.0	-89.5	54.9	0.83	148.48	105.0	
4	1979.4	24.20	148.48	1951.2	-207.8	127.4	3.00	0.00	243.8	
5	5773.0	24.20	148.48	5411.5	-1533.4	940.3	0.00	0.00	1798.8	
6	6079.6	15.00	148.48	5700.0	-1621.0	994.0	3.00	180.00	1901.5	NVJ01 1980' FS & 1980' FE
7	6959.6	15.00	148.48	6550.0	-1815.2	1113.1	0.00	0.00	2129.3	



TARGET DETAILS

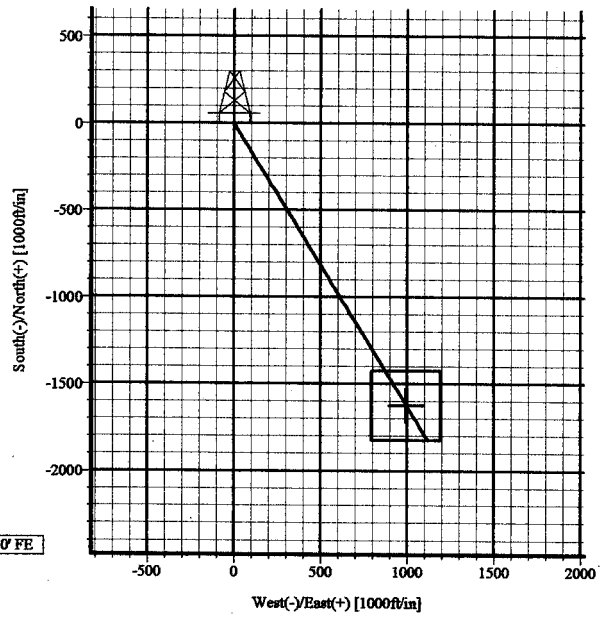
Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1980' FS & 1980' FE	5700.0	-1621.0	994.0	Rectangle (400x400)

CASING DETAILS

No.	TVD	MD	Name	Size
1	80.0	80.0	20"	20.000
2	600.0	600.1	16"	16.000
3	2500.0	2581.1	13 3/8"	13.375
4	5500.0	5869.0	9 5/8"	9.625
5	6550.0	6959.6	5 1/2"	5.500

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	5404.0	5764.8	Twin Creek



Plan: 17-4 (17-4/1)

Created By: Steve Schmitz, P.E. Date: 10/20/2004

Checked: _____ Date: _____

Weatherford Directional Services
Planning Report

Company:	Wolverine Gas & Oil Co of Utah	**Date:**	10/20/2004	**Time:** 09:17:38	**Page:** 1
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,148.48Azi)		
Wellpath:	1	**Plan:**	17-4		

Field: Sevier County, Utah

Map System:	US State Plane Coordinate System 1927	**Map Zone:**	Utah, Central Zone
Geo Datum:	NAD27 (Clarke 1866)	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	igrf2000

Site: Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Site Position:		**Northing:**	ft	**Latitude:**	
From:	Lease Line	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	0.0 ft			**North Reference:**	True
Ground Level:	0.0 ft			**Grid Convergence:**	-0.28 deg

Well: 17-4
1679' FN & 2306' FW of Sec 17

Slot Name:								
Well Position:	+N/-S	0.0 ft	**Northing:**	172191.29 ft	**Latitude:**	38	48	18.900 N
	+E/-W	0.0 ft	**Easting:**	1876352.49 ft	**Longitude:**	111	56	1.824 W
Position Uncertainty:		0.0 ft						

Wellpath: 1

Drilled From:	Surface				
Tie-on Depth:	0.0 ft				
Current Datum:	SITE	**Height**	0.0 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	7/6/2004			**Declination:**	12.95 deg
Field Strength:	52133 nT			**Mag Dip Angle:**	64.57 deg

Vertical Section:	Depth From (TVD) ft	+N/-S ft	+E/-W ft	Direction deg
	0.0	0.0	0.0	148.48

Plan: 17-4

Date Composed:	7/6/2004		
Version:	1		
Principal:	Yes	**Tied-to:**	From Surface

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	148.48	100.0	0.0	0.0	0.0	0.00	0.00	0.00	148.48
200.0	0.00	148.48	200.0	0.0	0.0	0.0	0.00	0.00	0.00	148.48
300.0	0.00	148.48	300.0	0.0	0.0	0.0	0.00	0.00	0.00	148.48

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.0	0.83	148.48	400.0	-0.6	0.4	0.7	0.83	0.83	0.00	0.00
500.0	1.66	148.48	500.0	-2.5	1.5	2.9	0.83	0.83	0.00	0.00
600.0	2.49	148.48	599.9	-5.6	3.4	6.5	0.83	0.83	0.00	0.00
600.1	2.49	148.48	600.0	-5.6	3.4	6.5	0.00	0.00	0.00	0.00
700.0	3.32	148.48	699.8	-9.9	6.1	11.6	0.83	0.83	0.00	0.00
800.0	4.15	148.48	799.6	-15.4	9.5	18.1	0.83	0.83	0.00	0.00
900.0	4.97	148.48	899.2	-22.2	13.6	26.0	0.83	0.83	0.00	0.00
1000.0	5.80	148.48	998.8	-30.2	18.5	35.4	0.83	0.83	0.00	0.00
1100.0	6.63	148.48	1098.2	-39.4	24.2	46.3	0.83	0.83	0.00	0.00
1200.0	7.46	148.48	1197.5	-49.9	30.6	58.5	0.83	0.83	0.00	0.00
1300.0	8.29	148.48	1296.5	-61.6	37.8	72.2	0.83	0.83	0.00	0.00
1400.0	9.12	148.48	1395.4	-74.5	45.7	87.4	0.83	0.83	0.00	0.00
1506.1	10.00	148.48	1500.0	-89.5	54.9	105.0	0.83	0.83	0.00	0.00

Weatherford Directional Services
Planning Report

Company:	Wolverine Gas & Oil Co of Utah	**Date:**	10/20/2004	**Time:** 09:17:38	**Page:** 2
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,148.48Azi)		
Wellpath:	1	**Plan:**	17-4		

Section 3 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1600.0	12.82	148.48	1592.0	-105.3	64.6	123.6	3.00	3.00	0.00	0.00
1700.0	15.82	148.48	1688.9	-126.4	77.5	148.3	3.00	3.00	0.00	0.00
1800.0	18.82	148.48	1784.4	-151.8	93.1	178.0	3.00	3.00	0.00	0.00
1900.0	21.82	148.48	1878.1	-181.4	111.2	212.8	3.00	3.00	0.00	0.00
1979.4	24.20	148.48	1951.2	-207.8	127.4	243.8	3.00	3.00	0.00	0.03

Section 4 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
2000.0	24.20	148.48	1970.0	-215.0	131.9	252.2	0.00	0.00	0.00	0.00
2100.0	24.20	148.48	2061.2	-250.0	153.3	293.2	0.00	0.00	0.00	0.00
2200.0	24.20	148.48	2152.4	-284.9	174.7	334.2	0.00	0.00	0.00	0.00
2300.0	24.20	148.48	2243.6	-319.9	196.1	375.2	0.00	0.00	0.00	0.00
2400.0	24.20	148.48	2334.9	-354.8	217.6	416.2	0.00	0.00	0.00	0.00
2500.0	24.20	148.48	2426.1	-389.7	239.0	457.2	0.00	0.00	0.00	0.00
2581.1	24.20	148.48	2500.0	-418.1	256.4	490.4	0.00	0.00	0.00	0.00
2600.0	24.20	148.48	2517.3	-424.7	260.4	498.2	0.00	0.00	0.00	0.00
2700.0	24.20	148.48	2608.5	-459.6	281.8	539.2	0.00	0.00	0.00	0.00
2800.0	24.20	148.48	2699.7	-494.6	303.3	580.1	0.00	0.00	0.00	0.00
2900.0	24.20	148.48	2790.9	-529.5	324.7	621.1	0.00	0.00	0.00	0.00
3000.0	24.20	148.48	2882.1	-564.5	346.1	662.1	0.00	0.00	0.00	0.00
3100.0	24.20	148.48	2973.3	-599.4	367.6	703.1	0.00	0.00	0.00	0.00
3200.0	24.20	148.48	3064.6	-634.3	389.0	744.1	0.00	0.00	0.00	0.00
3300.0	24.20	148.48	3155.8	-669.3	410.4	785.1	0.00	0.00	0.00	0.00
3400.0	24.20	148.48	3247.0	-704.2	431.8	826.1	0.00	0.00	0.00	0.00
3500.0	24.20	148.48	3338.2	-739.2	453.3	867.1	0.00	0.00	0.00	0.00
3600.0	24.20	148.48	3429.4	-774.1	474.7	908.1	0.00	0.00	0.00	0.00
3700.0	24.20	148.48	3520.6	-809.1	496.1	949.1	0.00	0.00	0.00	0.00
3800.0	24.20	148.48	3611.8	-844.0	517.5	990.0	0.00	0.00	0.00	0.00
3900.0	24.20	148.48	3703.1	-878.9	539.0	1031.0	0.00	0.00	0.00	0.00
4000.0	24.20	148.48	3794.3	-913.9	560.4	1072.0	0.00	0.00	0.00	0.00
4100.0	24.20	148.48	3885.5	-948.8	581.8	1113.0	0.00	0.00	0.00	0.00
4200.0	24.20	148.48	3976.7	-983.8	603.3	1154.0	0.00	0.00	0.00	0.00
4300.0	24.20	148.48	4067.9	-1018.7	624.7	1195.0	0.00	0.00	0.00	0.00
4400.0	24.20	148.48	4159.1	-1053.7	646.1	1236.0	0.00	0.00	0.00	0.00
4500.0	24.20	148.48	4250.3	-1088.6	667.5	1277.0	0.00	0.00	0.00	0.00
4600.0	24.20	148.48	4341.5	-1123.5	689.0	1318.0	0.00	0.00	0.00	0.00
4700.0	24.20	148.48	4432.8	-1158.5	710.4	1358.9	0.00	0.00	0.00	0.00
4800.0	24.20	148.48	4524.0	-1193.4	731.8	1399.9	0.00	0.00	0.00	0.00
4900.0	24.20	148.48	4615.2	-1228.4	753.2	1440.9	0.00	0.00	0.00	0.00
5000.0	24.20	148.48	4706.4	-1263.3	774.7	1481.9	0.00	0.00	0.00	0.00
5100.0	24.20	148.48	4797.6	-1298.3	796.1	1522.9	0.00	0.00	0.00	0.00
5200.0	24.20	148.48	4888.8	-1333.2	817.5	1563.9	0.00	0.00	0.00	0.00
5300.0	24.20	148.48	4980.0	-1368.1	838.9	1604.9	0.00	0.00	0.00	0.00
5400.0	24.20	148.48	5071.3	-1403.1	860.4	1645.9	0.00	0.00	0.00	0.00
5500.0	24.20	148.48	5162.5	-1438.0	881.8	1686.9	0.00	0.00	0.00	0.00
5600.0	24.20	148.48	5253.7	-1473.0	903.2	1727.8	0.00	0.00	0.00	0.00
5700.0	24.20	148.48	5344.9	-1507.9	924.7	1768.8	0.00	0.00	0.00	0.00
5764.8	24.20	148.48	5404.0	-1530.6	938.5	1795.4	0.00	0.00	0.00	0.00
5773.0	24.20	148.48	5411.5	-1533.4	940.3	1798.8	0.00	0.00	0.00	0.00

Section 5 : Start Drop -3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
5800.0	23.39	148.48	5436.2	-1542.7	946.0	1809.7	3.00	-3.00	0.00	180.00
5869.0	21.32	148.48	5500.0	-1565.1	959.7	1835.9	3.00	-3.00	0.00	180.00
5900.0	20.39	148.48	5529.0	-1574.5	965.5	1846.9	3.00	-3.00	0.00	-180.00
6000.0	17.39	148.48	5623.6	-1602.1	982.4	1879.3	3.00	-3.00	0.00	180.00
6079.6	15.00	148.48	5700.0	-1621.0	994.0	1901.5	3.00	-3.00	0.00	180.00

Weatherford Directional Services
Planning Report

Company:	Wolverine Gas & Oil Co of Utah	**Date:**	10/20/2004	**Time:** 09:17:38	**Page:** 3
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,148.48Azi)		
Wellpath:	1	**Plan:**	17-4		

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6100.0	15.00	148.48	5719.7	-1625.5	996.8	1906.8	0.00	0.00	0.00	0.00
6200.0	15.00	148.48	5816.3	-1647.6	1010.3	1932.7	0.00	0.00	0.00	0.00
6300.0	15.00	148.48	5912.9	-1669.6	1023.8	1958.5	0.00	0.00	0.00	0.00
6400.0	15.00	148.48	6009.5	-1691.7	1037.3	1984.4	0.00	0.00	0.00	0.00
6500.0	15.00	148.48	6106.1	-1713.8	1050.9	2010.3	0.00	0.00	0.00	0.00
6600.0	15.00	148.48	6202.7	-1735.8	1064.4	2036.2	0.00	0.00	0.00	0.00
6700.0	15.00	148.48	6299.3	-1757.9	1077.9	2062.1	0.00	0.00	0.00	0.00
6800.0	15.00	148.48	6395.9	-1780.0	1091.5	2087.9	0.00	0.00	0.00	0.00
6900.0	15.00	148.48	6492.5	-1802.0	1105.0	2113.8	0.00	0.00	0.00	0.00
6959.6	15.00	148.48	6550.0	-1815.2	1113.1	2129.3	0.00	0.00	0.00	0.00

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<— Latitude —> Deg	Min	Sec	<— Longitude —> Deg	Min	Sec
NVJ01 1980' FS & 1980' FE -Rectangle (400x400) -Plan hit target			5700.0	-1621.0	994.0	170565.49	1877338.61	38	48	2.878 N	111	55	49.269 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
80.0	80.0	20.000	26.000	20"
600.1	600.0	16.000	17.500	16"
2581.1	2500.0	13.375	14.750	13 3/8"
5869.0	5500.0	9.625	12.250	9 5/8"
6959.6	6550.0	5.500	8.750	5 1/2"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
5764.8	5404.0	Twin Creek		0.00	0.00

CONFIDENTIAL

BOND STATEMENT

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Wolverine Gas and Oil Company of Utah, LLC with their Bond, filed with Bureau of Land Management in the amount of $25,000.

The Bond Number is WY3329

OPERATOR'S REPRESENTATIVE AND CERTIFICATIONS

The responsible field representative for the Wolverine Federal #17-4, on behalf of Wolverine Gas and Oil Company of Utah, LLC, is Steve Hash, PE, available via Wolverine Gas and Oil Company of Utah, LLC, One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI 49503. (616) 458-1150.

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access route; that I am familiar with the conditions that currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Wolverine Gas and Oil Company of Utah, LLC and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date: July 20, 2004

Name and Title: Richard Moritz, Vice-President, Land and Legal

BLM Bond No. WY3329

OPERATOR RIDER

This rider is being submitted to comply with 43 CFR 3104.2 which states " . . . The operator on the ground shall be covered by a bond in his/her own name as principal, or a bond in the name of the lessee or sublessee, provided that a consent of the surety, or the obligor in the case of a personal bond, to include the operator under the coverage of the bond is furnished to the Bureau office maintaining the bond."

The obligor hereby agrees to extend the coverage of their bond to include liabilities for operations conducted by Wolverine Gas and Oil Company of Utah, LLC and Wolverine Gas and Oil Company of Wyoming, LLC on Federal oil and gas leases.

Coverage includes the performance of all lease obligations, both past and future, including the responsibility to properly plug and abandon any and all wells, including related surface restoration, and to pay any outstanding rentals or royalties due.

This coverage of operations shall continue whether or not the lease subsequently expires, terminates, is canceled, or relinquished; provided, however, that this rider shall not act to increase the actual cumulative or potential liability of the obligor above the face amount of the bond.

Executed this 3rd day of March, 2004.

Witness:

Evelyn Telgen

Evelyn Telgen

One Riverfront Plaza, 55 Campau NW
Grand Rapids, MI 49503-2616
Address of witness

Wolverine Gas and Oil Corporation
Obligor

Gary R Bleeker

For Obligor: Gary R. Bleeker
Vice President and COO

One Riverfront Plaza, 55 Campau NW
Grand Rapids, MI 49503-2616
Obligor's address

007

State of Utah

Department of
Natural Resources

ROBERT L. MORGAN
Executive Director

Division of
Oil, Gas & Mining

LOWELL P. BRAXTON
Division Director

OLENE S. WALKER
Governor

GAYLE F. McKEACHNIE
Lieutenant Governor

November 17, 2004

Wolverine Gas & Oil Company of Utah, LLC
One Riverfront Plaza
55 Campau NW
Grand Rapids, MI 49503

Re: Wolverine Federal 17-4 Well, Surface Location 1679' FNL, 2306' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 1980' FSL, 1980' FEL, NW SE, Sec. 17, T. 23 South, R. 1 West, Sevier County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

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. The API identification number assigned to this well is 43-041-30035.

Sincerely,

John R. Baza
Associate Director

pab
Enclosures
cc: Sevier County Assessor
Bureau of Land Management, Moab District Office

Operator: Wolverine Gas & Oil Company of Utah, LLC
Well Name & Number Wolverine Federal 17-4
API Number: 43-041-30035
Lease: UTU-73528

Surface Location: SE NW **Sec.** 17 **T.** 23 South **R.** 1 West
Bottom Location: NW SE **Sec.** 17 **T.** 23 South **R.** 1 West

Conditions of Approval

1. 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.

2. Notification Requirements

   Notify the Division within 24 hours of spudding the well.
   - Contact Carol Daniels at (801) 538-5284.

   Notify the Division prior to commencing operations to plug and abandon the well.
   - Contact Dan Jarvis at (801) 538-5338

3. Reporting Requirements

   All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

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

5. 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.

6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

7. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

008

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other

8. Well Name and No.
Wolverine Federal #17-4

2 Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**

9. API Well No.
43-041-30035

3a Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Covenant Field

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SHL: 1736' FNL & 2283' FWL
BHL: 1980' FSL & 1980' FEL

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☑ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **move sur loc 56' N & 49' W from permited spot**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13 Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Permission is requested for the following:

1) amend location spot FROM: 1736' FNL & 2298' FWL TO: 1680' FNL & 2249' FWL

2) amend drilling & casing program as outlined in the attached Drilling Prognosis (reference Ver4 2004.12.22)

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

RECEIVED
DEC 23 2004
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Steven R Hash - EXACT Engineering Inc Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash Date **12/22/2004**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

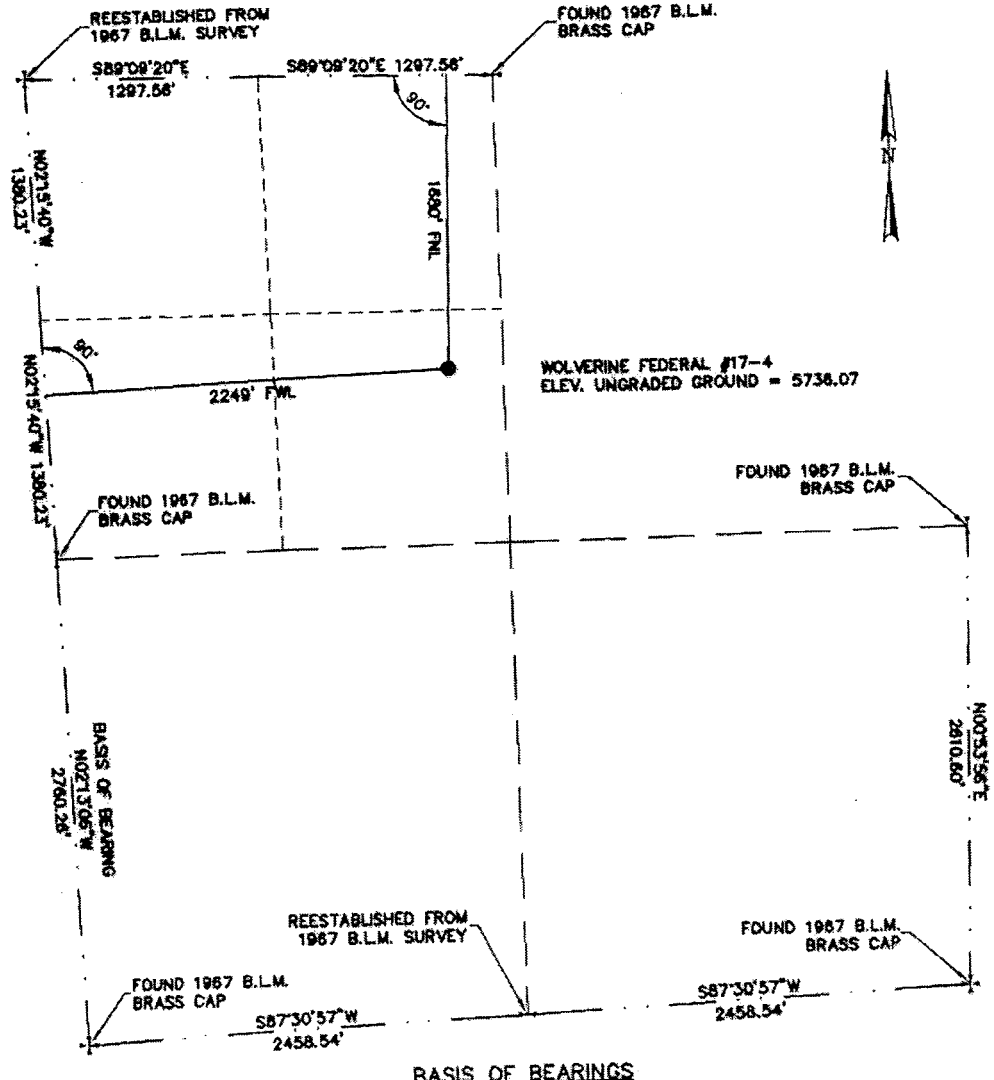
Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

Section 17, T.23 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°13'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38°48'18.901" (38.805250278)
LONGITUDE = -111°56'01.826" (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

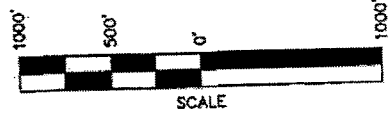
LEGEND

- ⊹ = SECTION CORNERS LOCATED
- ⊶ = QUARTER SECTION CORNERS LOCATED
- ● = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS 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.

LICENSED LAND SURVEYOR
No. 183543
RYAN
SAVAGE

RYAN W. SAVAGE, L.S. #183543 — DATE 12/16/04

Jones & DeMille Engineering
1535 South 100 West - Richfield, Utah 84701
Phone (435) 896-8266
Fax (435) 896-8268
www.jonesanddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	K.B.B.	0406-160	1
DATE		DWG.NAME	SCALE		
Oct. 2004		Wells	1" =1000'		

CONFIDENTIAL

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal #17-4
NW SE SEC 17-T23S-R1W
SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6970' MD (6550'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 located in Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location:	1680' fnl & 2249' fwl of Sec 17 T23N – R01W
BHL @ top of NVJO1 (5700' TVD)	1980' fsl & 1980' fel of Sec 17 T23N – R01W

20" conductor casing will be cemented to surface at approximately 100-120 ft BGL. 16" surface casing will be set & cemented to surface in a 17-1/2" hole deviated to approximately 3 deg at +/-600' (+/-600' TVD). A 12-1/4" hole will then be drilled to +/- 5570' (5200' TVD) deviated to approximately 30 deg from vertical by 2200' maintaining tangent to TD of 5570'. 9-5/8" intermediate casing will be set from surface to TD & cemented across the lowermost 2500'. An 8-1/2" hole will then be drilled to +/- 6970' (6550' TVD). 5-1/2" production casing will then be run from TD back to surface & cemented to approximately 300' into the 9-5/8" intermediate casing. In the event of lost circulation or other problems while drilling the 12-1/4" hole from 600' to 2700', the hole will be enlarged to 15" and a 13-3/8" casing string will be run from surface to TD (no deeper than 2700') and cemented into the surface casing. This is a contingency only.

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EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

United States Bureau of Land Management

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5700' (TVD)

ELEVATION: 5736' GL (actual)

PROJECTED TOTAL DEPTH: 6970' MD; 6550' TVD

SURFACE LOCATION: 1680' FNL & 2249' FWL
Section 17-23S-1W

COUNTY: Sevier

STATE: Utah

DIRECTIONS TO LOCATION: From the town of Sigurd, Utah go south approximately 3.5 miles on Hwy #24 to location on the left side of the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
	20"	.25 wall	X42	PE welded	100-120'
17-1/2"	16"	65#	H-40	BTC	0'-600'
*** 15"	13-3/8"	68#	J-55	BTC	0' – 2700'
12-1/4"	9-5/8"	47#	N-80	LTC	0'-5,570'
8-1/2"	5-1/2"	17#	N-80	LTC	0'- 6970'

*** contingency only – set only if hole conditions dictate

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Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
20"	16"	15.062	17.0	.7854	.7854	1.2476
*** 15"	13-3/8"	12.259	14.375	.2927	.2927	.8406
12¼"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2"	5-1/2"	4.767	6.050	0.2291	0.2291	0.1305

*** contingency only – set only if hole conditions dictate

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 5400'	Surf – 5770'	sh, siltstone,salt,evaporites		
TwinCreek1	5400'- 5700'	5770' –6090'	Carbonates	X	
Navajo 1	5700- 6350'	6090' –6770'	Sandstone w/ minor shale	X	
Total Depth	**6550'**	6970'	Sandstone w/ minor shale		

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad
150'x 100' x 10' Reserve Pit with a 12 mil synthetic liner
96" diameter tin horn cellar, 10' deep.
Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 600'

Directionally drill a 17-1/2" hole with a TCI rock bit, mud motor & MWD equipment to approximately 600' using fresh water and gel/lime sweeps when necessary (make hole to fit 16" casing). Loss circulation is not expected to be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Maintain hole direction to approximately 230 degr azimuth in keeping with the attached directional plan.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top
20" drilling nipple – returns to mud pits – no pressure control

MUD PROGRAM FOR SURFACE HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	PH	FLUID LOSS
0 -600'	8.4 – 8.9	FW/Gel/Lime	26-45	7-9	N/C

Note: Sweep hole every 100 – 200 feet or as needed for hole cleaning. Control the pH with Lime & Caustic to aid in gel flocculation for better carrying capacity.

CASING PROGRAM FOR SURFACE HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0 - 600'	16"	600'	65#	H-40	BT&C	

Casing Running Sequence:
guide shoe
1 jt of 16" 65# H-40 BT&C
Float collar
Balance of 16" 65# H-40 BT&C
Centralizers as reqd.
RU cement co., hold safety meeting, test lines, cement 16" casing per cement company recommendation. Displace with fresh water or mud if used.

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

855 sx Premium Class G	Mixed at:	15.8 ppg
2% calcium chloride	Yield:	1.17 ft^3/sx
0.25 lb/sx flocele	Water:	5.01 gal/sx

MUST CIRCULATE CEMENT TO SURFACE If the cement does **not** circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions.

WOC A TOTAL OF 24 HOURS:
Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 16-3/4" 3M x 16" SOW casing head. NU 20" 2M diverter w/ 7-1/16" HCR valve rigged to mud/gas separator, mud tanks and flare pit.

PROTECTIVE CASING HOLE: 600' to 5570'

Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor & MWD equipment to approximately 5570' MD using a low solids – non dispersed system converting to salt mud in the lower portion. Loss circulation may be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). If conditions are severe consider implementing a contingency for casing the problem zone with 13-3/8" csg as outlined above. Build hole angle to approximately 30 degrees by 2200' then maintain hole angle and direction to casing point in keeping with the attached directional plan. Protective casing should be set near the base of the Arapien interval to isolate potential poor hole conditions prior to drilling potential pay zones in the Twin Creek Lime.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PROTECTIVE CASING STRING

Bottom to Top (see attached 2M Diverter diagram)
16-3/4" 3M x 16" SOW csg head.
16-3/4" 3M x 20" 2M spacer spool
20" 2M x 20" 2M x (2) 7-1/16" 2m side outlets
one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit
one outlet (blank)
20" 2M Annular Preventer
20" 2M flanged btm drilling nipple w/ fillup line

Upper kelly cock valves with handles available
Safety valves and subs to fit all drill string connections in use
Inside BOP or float sub available

Testing Procedure:

Annular Preventer & HCR Valve

The annular preventer will be pressure tested to 1000 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

1) When the annular is initially installed
2) Whenever any seal subject to test pressure is broken
3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

MUD PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	pH	FLUID LOSS
600' – 5570'	8.7 – 9.6	LSND	34-45	9.0-10.0	12cc or Less

If required, implement a natural breakover to a salt or gypsum system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole. Implement casing contingency if absolutely necessary.

CASING PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	9-5/8"	5570'	47#	N-80	LT&C	

Rig up casing tools and run 9-5/8" protective casing as follows:
Float shoe, 2 joint of 9-5/8" 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80

CEMENT PROGRAM FOR PROTECTIVE CASING

725 sx (50:50) Poz: Premium
3 % Bentonite
0.3% Halad R-344 (Low Fluid Loss Control)
gal/sx
15 % Salt
0.3% D-AIR 3000 (Defoamer)
0.25 lb/sx Flocele

Weight: 13.8 ppg
Yield: 1.43 ft^3/sx
Water: 6.45

TOC at ± 3500 ft
Calculate cement volume based on gauge hole plus 30% excess. Displace with mud. Set slips, ND diverter stack, cut off, NU & test wellhead. Clean pits and prepare for next hole section.

PRODUCTION HOLE: 5,570 to 6970'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20'of new hole. Perform an integrity test to 500 psi w/ 9ppg mud (10.5 ppg mud wt equivalent). Drill with a low colloid polymer system.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Bottom to Top (see attached 5M BOP Stack diagram)
11" 5M x 9-5/8" SOW csg head.
11" 5M x 11" 5M mud cross w/ (2) side outlets
one outlet 2-1/16 5M kill line
one outlet 3-1/16" 5M choke line
11" 5M double ram blowout preventers with 4-1/2" pipe rams top & CSO rams btm
11" 5M annular preventer
11" Rotating head w/ fillup line

Connect BOP to choke manifold with pressure guage
Upper kelly cock valves with handles available
Safety valves and subs to fit all drill string connections in use
Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

4) When the annular is initially installed
5) Whenever any seal subject to test pressure is broken
6) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

1) When the BOP is initially installed
2) Whenever any seal subject to test pressure is broken
3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this well.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

MUD PROGRAM FOR PRODUCTION HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	pH	FLUID LOSS
5570' - 6970'	8.7 – 9.9	LC Polymer	34-50	9.0-10.0	10cc or Less

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs.
Mudlogger: From 1500' to total depth.
Electric Logs:

Tool	PCP to TD
Dual Laterolog/GR/Caliper (DLL) (DIL if fresh mud system)	Yes
Micro Spherically Focused Log (MFSL)	Yes
CNL/LithoDensity/GR/Caliper (CNL/LD/GR/CAL)	Yes
Formation Micro Scanner/GR	Yes

DST: To be decided
Cores: To be decided

CASING PROGRAM FOR PRODUCTION HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	5-1/2"	6970'	17#	N-80	LT&C	

Rig up casing tools and run 5-1/2" production casing as follows:
Float shoe
2 joints of 5-1/2" 17# N-80 LT&C casing
Float collar
Centralizers as reqd.
Run balance of 5-1/2" 17# N-80.

CEMENT PROGRAM FOR PRODUCTION CASING

245 sx (50:50) Poz: Premium
2 % Bentonite
0.3% Halad R-344 (Low Fluid Loss Control)
5 % Salt
0.25 lb/sx Flocele

Weight: 14.35 ppg
Yield: 1.23 ft^3/sx
Water: 4.81 gal/sx

TOC at ± 5200 ft in 9-5/8" csg
Calculate cement volume based on log caliper +/- 25%. Displace cement w/water.
Set slips, ND BOP's, cut off, NU & test wellhead. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about January 1, 2005
Drilling operations are anticipated to begin on or about January 1, 2005

end

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PRESSURE CONTROL SYSTEM SCHEMATIC	Operator:
Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400	**Wolverine Gas & Oil Co. of Utah, LLC**
2M Diverter Stack — to be utilized while drilling holes for surface and protective casing thru Arapien formation section	Well name and number Wolverine Federal #17-4

Max. anticipated surface pressure 2000 psi

Annular B.O.P. 20____", 2M W.P.

B.O.P.
___ Manual
_x_ Hydraulic
___ Sour Trim

B.O.P. none Rams none ", na W.P.
(Pipe/Blind)

B.O.P. none Rams _____", _____ W.P.
(Pipe/Blind)

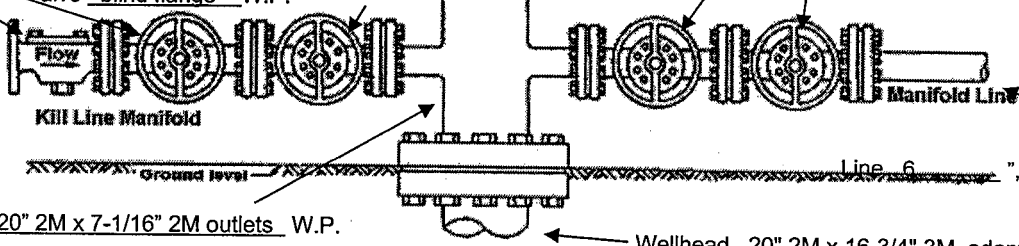
Check Valve none ", _____ W.P.

Valve none ", _____ W.P.

Valve blind flange W.P.

Valve 7-1/16" 2M "HCR"

Valve none



Line 6 ", 1000 W.P.

Spool 20" 2M x 20" 2M x 7-1/16" 2M outlets W.P.

Wellhead 20" 2M x 16-3/4" 3M adapter
w/ 16-3/4" 3M x 16" SOW csg head

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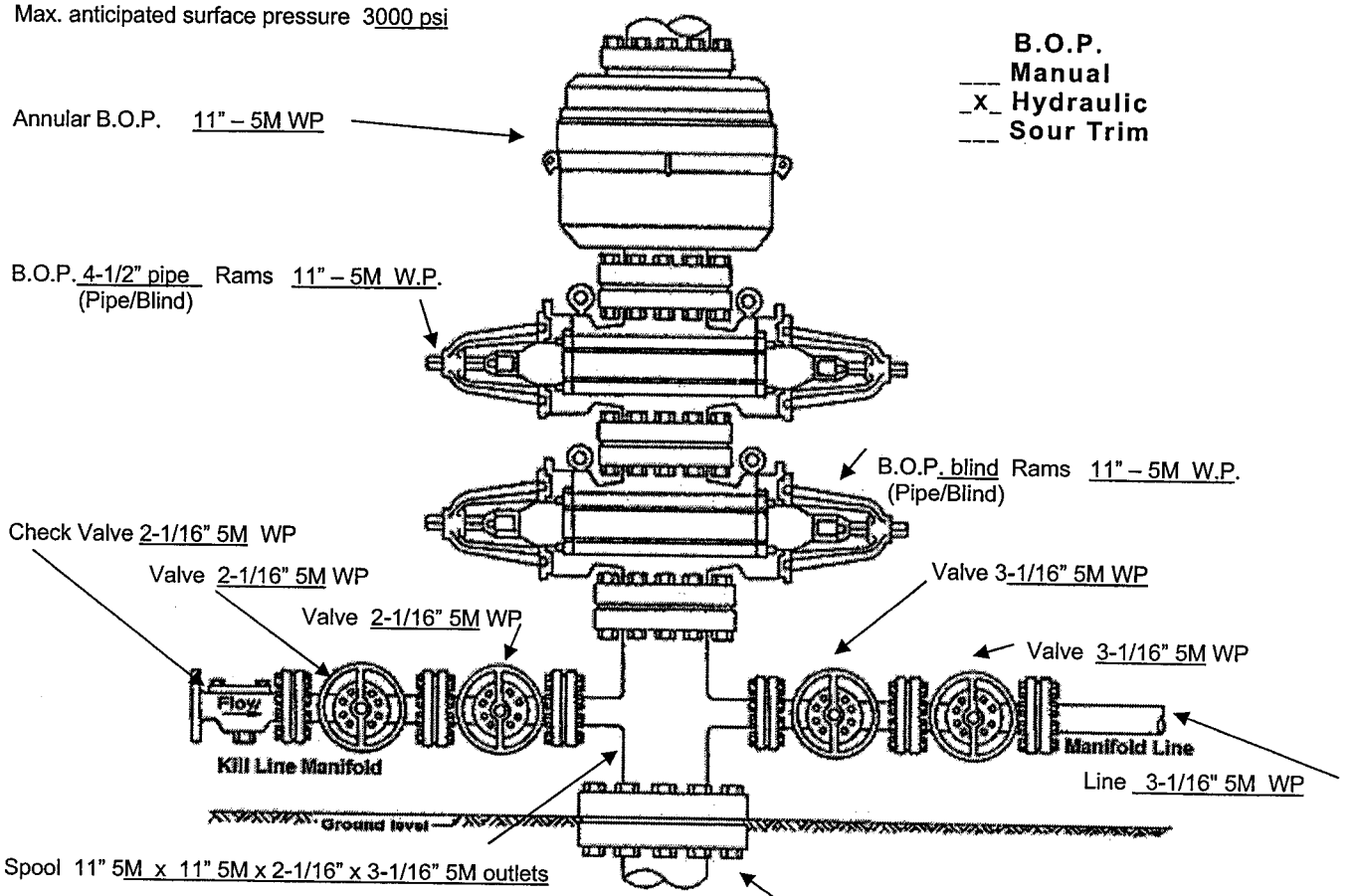
PRESSURE CONTROL SYSTEM SCHEMATIC	Operator:
Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400	**Wolverine Gas & Oil Co. of Utah, LLC**
5M BOP Stack --- to be utilized while drilling holes for production casing thru Twin Creek & Navajo intervals	Well name and number Wolverine Federal #17-4

Max. anticipated surface pressure 3000 psi

B.O.P.
___ Manual
_x_ Hydraulic
___ Sour Trim



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Wolverine Gas & Oil Co of Utah, LLC

Azimuths to True North
Magnetic North: 12.95°

Magnetic Field
Strength: 52133nT
Dip Angle: 64.57°
Date: 7/6/2004
Model: igrf2000

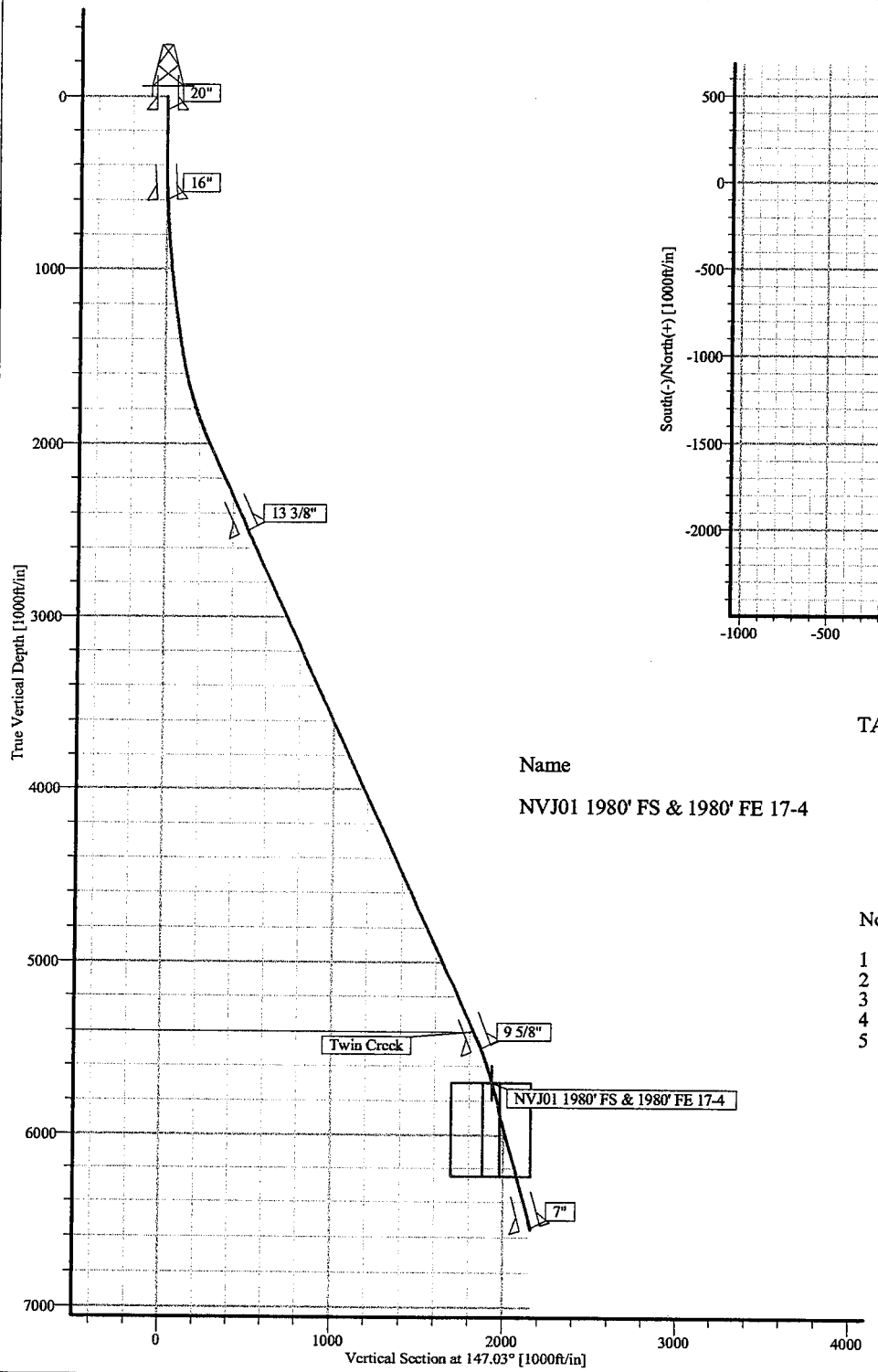
SITE DETAILS

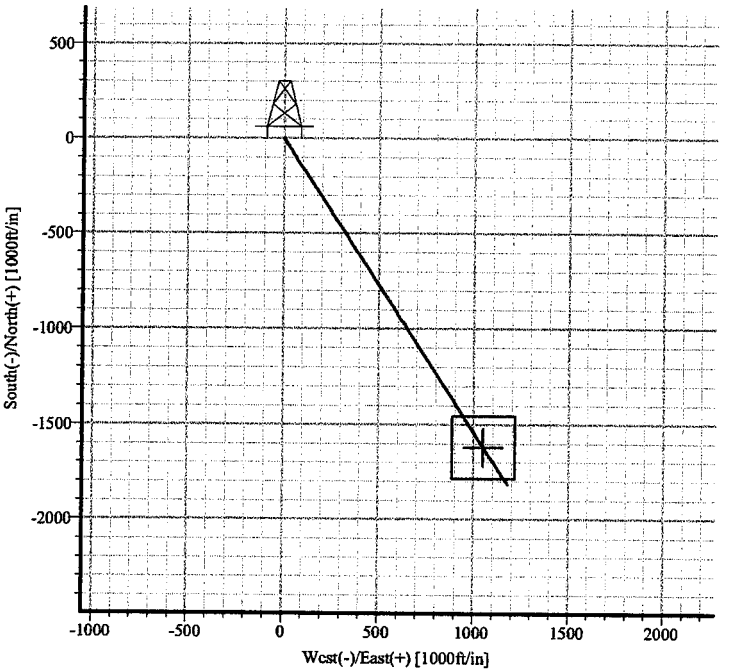
Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

17-4 SFC Location
1680' FNL & 2249' FWL Sec 17

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	147.03	300.0	0.0	0.0	0.00	147.03	0.0	
3	1506.1	10.00	147.03	1500.0	-88.1	57.1	0.83	147.03	105.0	
4	1993.8	24.63	147.03	1964.3	-209.5	135.9	3.00	0.00	249.7	
5	5767.1	24.63	147.03	5394.3	-1528.8	991.8	0.00	0.00	1822.4	
6	6088.2	15.00	147.03	5696.0	-1620.0	1051.0	3.00	180.00	1931.1	NVJ01 1980' FS & 1980' FE 17-4
7	6972.3	15.00	147.03	6550.0	-1812.0	1175.5	0.00	0.00	2159.9	





TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1980' FS & 1980' FE 17-4	5696.0	-1620.0	1051.0	Rectangle (330x330)

CASING DETAILS

No.	TVD	MD	Name	Size
1	80.0	80.0	20"	20.000
2	600.0	600.1	16"	16.000
3	2500.0	2583.1	13 3/8"	13.375
4	5500.0	5881.9	9 5/8"	9.625
5	6550.0	6972.3	7"	7.000

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	5400.0	5773.4	Twin Creek

Plan: 17-4 (17-4/1)

Created By: Steve Schmitz Date: 12/22/2004

Checked: _____ Date: _____

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Wolverine Gas & Oil Co of Utah, LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	147.03	300.0	0.0	0.0	0.00	147.03	0.0	
3	1506.1	10.00	147.03	1500.0	-88.1	57.1	0.83	147.03	105.0	
4	1993.8	24.63	147.03	1964.3	-209.5	135.9	3.00	0.00	249.7	
5	5767.1	24.63	147.03	5394.3	-1528.8	991.8	0.00	0.00	1822.4	
6	6088.2	15.00	147.03	5696.0	-1620.0	1051.0	3.00	180.00	1931.1	NVJ01 1980' FS & 1980' FE 17-4
7	6972.3	15.00	147.03	6550.0	-1812.0	1175.5	0.00	0.00	2159.9	

SITE DETAILS

Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Water Depth: 0.0
Positional Uncertainty: 0.0
Convergence: -0.28

Wolverine Federal 17-4
1680' FNL & 2249' FWL

WELL DETAILS

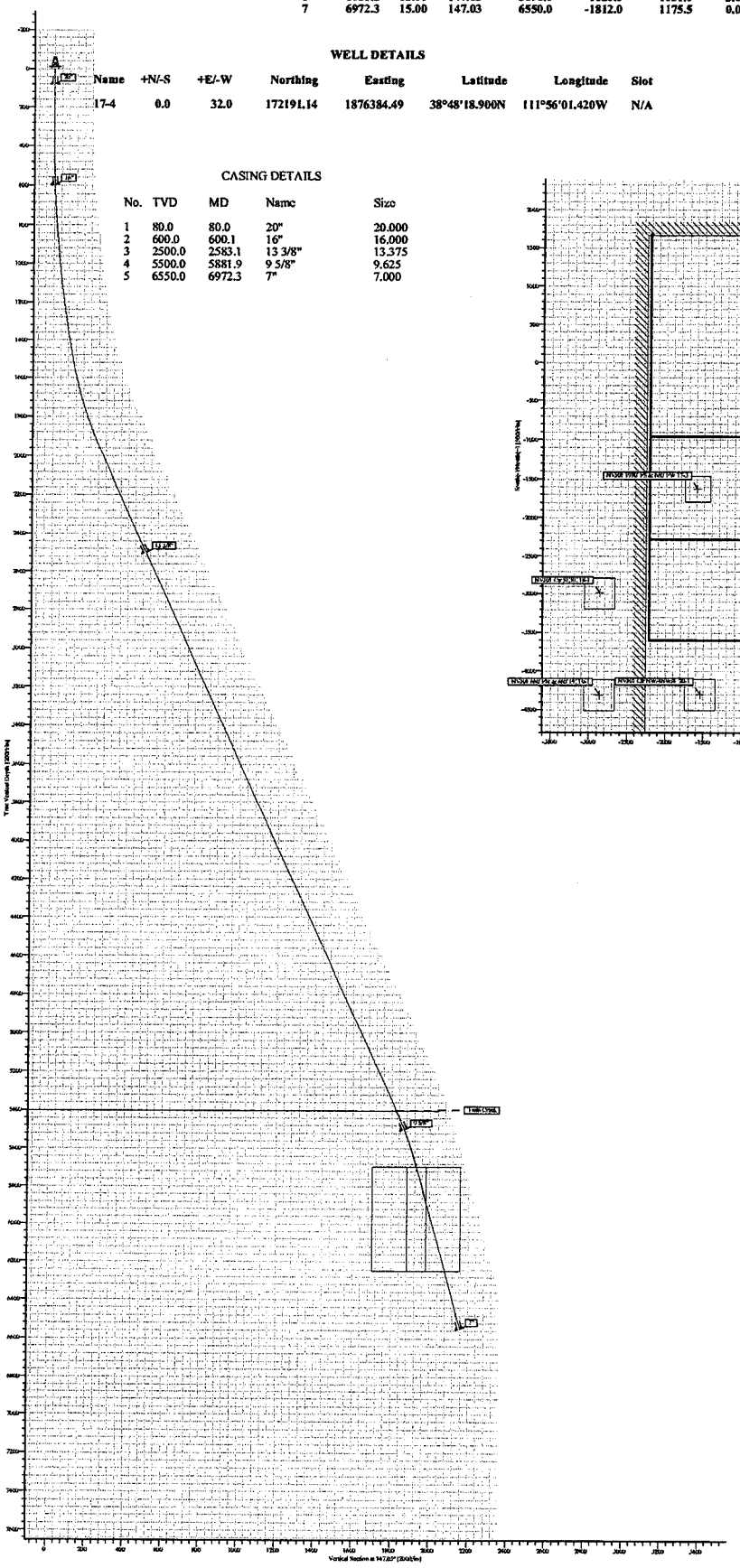
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
17-4	0.0	32.0	172191.14	1876384.49	38°48'18.900N	111°56'01.420W	N/A

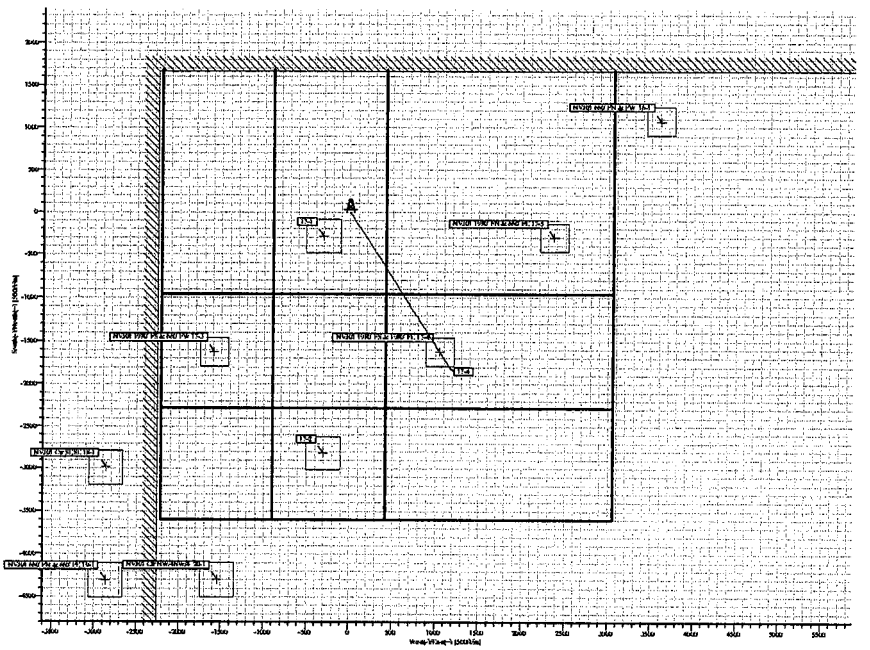
TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1980' FS & 1980' FE 17-4	5696.0	-1620.0	1051.0	Rectangle (330x330)

CASING DETAILS

No.	TVD	MD	Name	Size
1	80.0	80.0	20"	20.000
2	600.0	600.1	16"	16.000
3	2500.0	2583.1	13 3/8"	13.375
4	5500.0	5881.9	9 5/8"	9.625
5	6550.0	6972.3	7"	7.000





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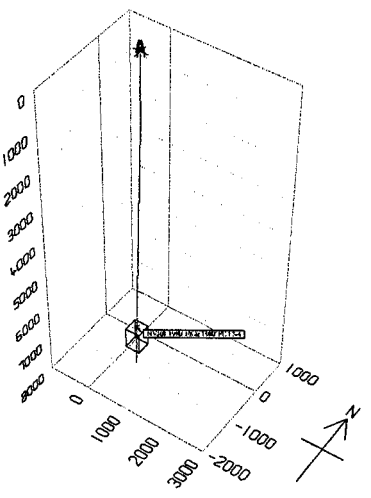

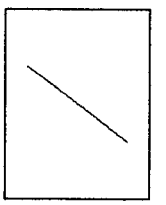

Plan: 17-4 (17-4/1)
Created By: Steve Schmitz Date: 12/22/2004

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Planning Report

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Company:	Wolverine Gas & Oil Co of Utah	**Date:** 12/22/2004	**Time:** 09:51:15	**Page:**	1
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,147.03Azi)		
Wellpath:	1	**Plan:**	17-4		

Field: Sevier County, Utah

Map System:	US State Plane Coordinate System 1927	**Map Zone:**	Utah, Central Zone
Geo Datum:	NAD27 (Clarke 1866)	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	igrf2000

Site: Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Site Position:		**Northing:**	ft	**Latitude:**	
From:	Lease Line	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	0.0 ft			**North Reference:**	True
Ground Level:	0.0 ft			**Grid Convergence:**	-0.28 deg

Well: 17-4
1680' FN & 2249FW of Sec 17

Well Position:	+N/-S	0.0 ft	**Northing:**	172191.14 ft	**Latitude:**	38 48 18.900 N
	+E/-W	32.0 ft	**Easting:**	1876384.49 ft	**Longitude:**	111 56 1.420 W
Position Uncertainty:		0.0 ft			**Slot Name:**	

Wellpath:	1			**Drilled From:**	Surface
				Tie-on Depth:	0.0 ft
Current Datum:	SITE	**Height**	0.0 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	7/6/2004			**Declination:**	12.95 deg
Field Strength:	52133 nT			**Mag Dip Angle:**	64.57 deg

Vertical Section:	**Depth From (TVD)**	**+N/-S**	**+E/-W**	**Direction**
	ft	ft	ft	deg
	0.0	0.0	0.0	147.03

Plan:	17-4	**Date Composed:**	7/6/2004
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	147.03	300.0	0.0	0.0	0.00	0.00	0.00	147.03	
1506.1	10.00	147.03	1500.0	-88.1	57.1	0.83	0.83	0.00	147.03	
1993.8	24.63	147.03	1964.3	-209.5	135.9	3.00	3.00	0.00	0.00	
5767.1	24.63	147.03	5394.3	-1528.8	991.8	0.00	0.00	0.00	0.00	
6088.2	15.00	147.03	5696.0	-1620.0	1051.0	3.00	-3.00	0.00	180.00	NVJ01 1980' FS & 1980' FE
6972.3	15.00	147.03	6550.0	-1812.0	1175.5	0.00	0.00	0.00	0.00	

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	147.03	100.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03
200.0	0.00	147.03	200.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03
300.0	0.00	147.03	300.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.0	0.83	147.03	400.0	-0.6	0.4	0.7	0.83	0.83	0.00	0.00
500.0	1.66	147.03	500.0	-2.4	1.6	2.9	0.83	0.83	0.00	0.00
600.0	2.49	147.03	599.9	-5.5	3.5	6.5	0.83	0.83	0.00	0.00
600.1	2.49	147.03	600.0	-5.5	3.5	6.5	0.00	0.00	0.00	0.00
700.0	3.32	147.03	699.8	-9.7	6.3	11.6	0.83	0.83	0.00	0.00
800.0	4.15	147.03	799.6	-15.2	9.8	18.1	0.83	0.83	0.00	0.00
900.0	4.97	147.03	899.2	-21.8	14.2	26.0	0.83	0.83	0.00	0.00

Weatherford
Planning Report

CONFIDENTIAL

Company:	Wolverine Gas & Oil Co of Utah	**Date:** 12/22/2004	**Time:** 09:51:15	**Page:**	2
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,147.03Azi)		
Wellpath:	1	**Plan:**	17-4		

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1000.0	5.80	147.03	998.8	-29.7	19.3	35.4	0.83	0.83	0.00	0.00
1100.0	6.63	147.03	1098.2	-38.8	25.2	46.3	0.83	0.83	0.00	0.00
1200.0	7.46	147.03	1197.5	-49.1	31.8	58.5	0.83	0.83	0.00	0.00
1300.0	8.29	147.03	1296.5	-60.6	39.3	72.2	0.83	0.83	0.00	0.00
1400.0	9.12	147.03	1395.4	-73.3	47.5	87.4	0.83	0.83	0.00	0.00
1506.1	10.00	147.03	1500.0	-88.1	57.1	105.0	0.83	0.83	0.00	0.00

Section 3 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1600.0	12.82	147.03	1592.0	-103.7	67.2	123.6	3.00	3.00	0.00	0.00
1700.0	15.82	147.03	1688.9	-124.4	80.7	148.3	3.00	3.00	0.00	0.00
1800.0	18.82	147.03	1784.4	-149.4	96.9	178.0	3.00	3.00	0.00	0.00
1900.0	21.82	147.03	1878.1	-178.5	115.8	212.8	3.00	3.00	0.00	0.00
1993.8	24.63	147.03	1964.3	-209.5	135.9	249.7	3.00	3.00	0.00	-0.04

Section 4 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
2000.0	24.63	147.03	1970.0	-211.7	137.3	252.3	0.00	0.00	0.00	0.00
2100.0	24.63	147.03	2060.9	-246.6	160.0	294.0	0.00	0.00	0.00	0.00
2200.0	24.63	147.03	2151.8	-281.6	182.7	335.7	0.00	0.00	0.00	0.00
2300.0	24.63	147.03	2242.7	-316.6	205.4	377.4	0.00	0.00	0.00	0.00
2400.0	24.63	147.03	2333.6	-351.5	228.1	419.0	0.00	0.00	0.00	0.00
2500.0	24.63	147.03	2424.5	-386.5	250.7	460.7	0.00	0.00	0.00	0.00
2583.1	24.63	147.03	2500.0	-415.6	269.6	495.3	0.00	0.00	0.00	0.00
2600.0	24.63	147.03	2515.4	-421.5	273.4	502.4	0.00	0.00	0.00	0.00
2700.0	24.63	147.03	2606.3	-456.4	296.1	544.1	0.00	0.00	0.00	0.00
2800.0	24.63	147.03	2697.2	-491.4	318.8	585.7	0.00	0.00	0.00	0.00
2900.0	24.63	147.03	2788.1	-526.4	341.5	627.4	0.00	0.00	0.00	0.00
3000.0	24.63	147.03	2879.0	-561.3	364.2	669.1	0.00	0.00	0.00	0.00
3100.0	24.63	147.03	2969.9	-596.3	386.8	710.8	0.00	0.00	0.00	0.00
3200.0	24.63	147.03	3060.8	-631.2	409.5	752.5	0.00	0.00	0.00	0.00
3300.0	24.63	147.03	3151.7	-666.2	432.2	794.1	0.00	0.00	0.00	0.00
3400.0	24.63	147.03	3242.6	-701.2	454.9	835.8	0.00	0.00	0.00	0.00
3500.0	24.63	147.03	3333.5	-736.1	477.6	877.5	0.00	0.00	0.00	0.00
3600.0	24.63	147.03	3424.4	-771.1	500.3	919.2	0.00	0.00	0.00	0.00
3700.0	24.63	147.03	3515.3	-806.1	522.9	960.8	0.00	0.00	0.00	0.00
3800.0	24.63	147.03	3606.2	-841.0	545.6	1002.5	0.00	0.00	0.00	0.00
3900.0	24.63	147.03	3697.1	-876.0	568.3	1044.2	0.00	0.00	0.00	0.00
4000.0	24.63	147.03	3788.0	-911.0	591.0	1085.9	0.00	0.00	0.00	0.00
4100.0	24.63	147.03	3878.9	-945.9	613.7	1127.5	0.00	0.00	0.00	0.00
4200.0	24.63	147.03	3969.8	-980.9	636.4	1169.2	0.00	0.00	0.00	0.00
4300.0	24.63	147.03	4060.7	-1015.8	659.0	1210.9	0.00	0.00	0.00	0.00
4400.0	24.63	147.03	4151.6	-1050.8	681.7	1252.6	0.00	0.00	0.00	0.00
4500.0	24.63	147.03	4242.5	-1085.8	704.4	1294.3	0.00	0.00	0.00	0.00
4600.0	24.63	147.03	4333.4	-1120.7	727.1	1335.9	0.00	0.00	0.00	0.00
4700.0	24.63	147.03	4424.3	-1155.7	749.8	1377.6	0.00	0.00	0.00	0.00
4800.0	24.63	147.03	4515.2	-1190.7	772.5	1419.3	0.00	0.00	0.00	0.00
4900.0	24.63	147.03	4606.1	-1225.6	795.1	1461.0	0.00	0.00	0.00	0.00
5000.0	24.63	147.03	4697.0	-1260.6	817.8	1502.6	0.00	0.00	0.00	0.00
5100.0	24.63	147.03	4787.9	-1295.6	840.5	1544.3	0.00	0.00	0.00	0.00
5200.0	24.63	147.03	4878.8	-1330.5	863.2	1586.0	0.00	0.00	0.00	0.00
5300.0	24.63	147.03	4969.7	-1365.5	885.9	1627.7	0.00	0.00	0.00	0.00
5400.0	24.63	147.03	5060.6	-1400.4	908.6	1669.3	0.00	0.00	0.00	0.00
5500.0	24.63	147.03	5151.5	-1435.4	931.2	1711.0	0.00	0.00	0.00	0.00
5600.0	24.63	147.03	5242.4	-1470.4	953.9	1752.7	0.00	0.00	0.00	0.00
5700.0	24.63	147.03	5333.3	-1505.3	976.6	1794.4	0.00	0.00	0.00	0.00
5767.1	24.63	147.03	5394.3	-1528.8	991.8	1822.4	0.00	0.00	0.00	0.00

Weatherford
Planning Report

CONFIDENTIAL

Company:	Wolverine Gas & Oil Co of Utah	**Date:** 12/22/2004	**Time:** 09:51:15	**Page:**	3
Field:	Sevier County, Utah	**Co-ordinate(NE) Reference:**	Well: 17-4, True North		
Site:	Pad A-2	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	17-4	**Section (VS) Reference:**	Well (0.00N,0.00E,147.03Azi)		
Wellpath:	1	**Plan:**	17-4		

Section 5 : Start Drop -3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
5773.4	24.44	147.03	5400.0	-1531.0	993.2	1825.0	3.00	-3.00	0.00	180.00
5800.0	23.65	147.03	5424.3	-1540.1	999.2	1835.8	3.00	-3.00	0.00	-180.00
5881.9	21.19	147.03	5500.0	-1566.3	1016.1	1867.0	3.00	-3.00	0.00	-180.00
5900.0	20.65	147.03	5516.9	-1571.7	1019.7	1873.5	3.00	-3.00	0.00	180.00
6000.0	17.65	147.03	5611.4	-1599.2	1037.5	1906.3	3.00	-3.00	0.00	180.00
6088.2	15.00	147.03	5696.0	-1620.0	1051.0	1931.1	3.00	-3.00	0.00	180.00

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6100.0	15.00	147.03	5707.4	-1622.6	1052.7	1934.1	0.00	0.00	0.00	0.00
6200.0	15.00	147.03	5804.0	-1644.3	1066.8	1960.0	0.00	0.00	0.00	0.00
6300.0	15.00	147.03	5900.6	-1666.0	1080.8	1985.9	0.00	0.00	0.00	0.00
6400.0	15.00	147.03	5997.2	-1687.7	1094.9	2011.8	0.00	0.00	0.00	0.00
6500.0	15.00	147.03	6093.8	-1709.4	1109.0	2037.7	0.00	0.00	0.00	0.00
6600.0	15.00	147.03	6190.4	-1731.1	1123.1	2063.5	0.00	0.00	0.00	0.00
6700.0	15.00	147.03	6287.0	-1752.8	1137.2	2089.4	0.00	0.00	0.00	0.00
6800.0	15.00	147.03	6383.6	-1774.6	1151.3	2115.3	0.00	0.00	0.00	0.00
6900.0	15.00	147.03	6480.2	-1796.3	1165.4	2141.2	0.00	0.00	0.00	0.00
6972.3	15.00	147.03	6550.0	-1812.0	1175.5	2159.9	0.00	0.00	0.00	0.00

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<— Latitude —> Deg Min Sec	<— Longitude —> Deg Min Sec
NVJ01 1980' FS & 1980' FE 17-4 -Rectangle (330x330) -Plan hit target			5696.0	-1620.0	1051.0	170566.06	1877427.62	38 48 2.888 N	111 55 48.145 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
80.0	80.0	20.000	26.000	20"
600.1	600.0	16.000	17.500	16"
2583.1	2500.0	13.375	14.750	13 3/8"
5881.9	5500.0	9.625	12.250	9 5/8"
6972.3	6550.0	7.000	8.500	7"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
5773.4	5400.0	Twin Creek		0.00	0.00

EXACT Engineering, Inc.
415 S. Boston Ave., Suite 734
Tulsa, Oklahoma 74103

EXACT Engineering, Inc.
www.exactengineering.com

Steven R. Hash, P.E.

office 918.599.9400 *Steve 24/7 & mobil 918.599.9801*
office fax 918.599.9401 *stevehash@exactengineering.com*

Fax

To:	Al McKee (BLM)	Dustin Doucet (UDOGM)	**From:**	Steve Hash (EXACT)
Fax:	(801) 539-4200	(801) 359-3940	**Pages:**	2 total
Phone:	(801) 539-4045	(801) 538-5281	**Date:**	Dec 22, 2004
Re:	Wolverine Federal #17-4 API# 43-041-30035		**CC:**	

Dear Mr McKee & Mr Doucet,

Please be aware that BLM Sundry Notice in triplicate, (form 3160-5) is being mailed to your office today to 1) move surface location and 2) revise drilling, casing and cement program for the subject well. These proposed changes are identical to those recently approved on the Wolverine Federal 17-3 well. The complete package will include sundry notice, drilling prognosis incl BOP plats, directional plan & revised survey plat. Please call if further questions or concerns. Thanks for you cooperation.

Regards,
Steve Hash

009

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other CONFIDENTIAL

8. Well Name and No.
Wolverine Federal #17-4

2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**

9. API Well No.
43-041-30035

3a. Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Covenant Field

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SHL: 1736' FNL & 2298' FWL
BHL: 1980' FSL & 1980' FEL

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☑ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **move sur loc 56' N & 49' W from permited spot**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Permission is requested for the following:

1) amend location spot FROM: 1736' FNL & 2298' FWL TO: 1680' FNL & 2249' FWL

2) amend drilling & casing program as outlined in the attached Drilling Prognosis (reference Ver4 2004.12.22)

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Steven R Hash - EXACT Engineering Inc Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash Date **12/22/2004**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

RECEIVED
DEC 27 2004
DIV. OF OIL, GAS & MINING

010

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

FORM 9

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.

5. LEASE DESIGNATION AND SERIAL NUMBER: FEE UTU-73528	
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
7. UNIT or CA AGREEMENT NAME: Wolverine Fed Exploration Unit	
1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Drilling Well	8. WELL NAME and NUMBER: Wolverine Federal #17-4
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC CONFIDENTIAL	9. API NUMBER: 4304130035
3. ADDRESS OF OPERATOR: 55 Campau, NW CITY Grand Rapids STATE MI ZIP 49203 PHONE NUMBER: (616) 458-1150	10. FIELD AND POOL, OR WILDCAT: Covenant Field
4. LOCATION OF WELL: FOOTAGES AT SURFACE: ~~1679~~ 1680' FNL & ~~2306~~ 2249' FWL; QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 17 23S 1W	COUNTY: Sevier; STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 12/22/2004	☑ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☑ CHANGE TO PREVIOUS PLANS	☐ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☑ OTHER: move surf locn
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

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

1. Amend surf locn: move 01' S & 57' W for best rig layout: move FROM 1679' FNL & 2306' FWL TO 1680' FNL & 2249' FWL

2. Amend drilling & casing program as outlined in the attached Drilling Prognosis (reference Ver4 2004.12.22)

PLEASE MAINTAIN THE ENCLOSED INFORMATION CONFIDENTIAL - thank you!

Surf
418968 X
4395403 Y
38.805536
-111.933212

Approved by the
Utah Division of
Oil, Gas and Mining
Date: 12-28-04
By:

Federal Approval of this Action is Necessary

COPY SENT TO OPERATOR
Date: 12-29-04
Initials: CHD

NAME (PLEASE PRINT) Steven R. Hash - EXACT Engineering, Inc. TITLE Consulting Engineer (918) 599-9400

SIGNATURE Steven R. Hash DATE 12/22/2004

(This space for State use only)

RECEIVED
DEC 21 2004
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

CONFIDENTIAL

EXACT Engineering, Inc.
415 S. Boston Ave., Suite 734
Tulsa, Oklahoma 74103

EXACT Engineering, Inc.
www.exactengineering.com

Steven R. Hash, P.E.

office 918.599.9400 *Steve 24/7 & mobil 918.599.9801*
office fax 918.599.9401 *stevehash@exactengineering.com*

Fax

To:	Al McKee (BLM)	Dustin Doucet (UDOGM)	**From:**	Steve Hash (EXACT)
Fax:	(801) 539-4200	(801) 359-3940	**Pages:**	2 total
Phone:	(801) 539-4045	(801) 538-5281	**Date:**	Dec 22, 2004
Re:	Wolverine Federal #~~17-4 API# 43-041~~-30035		**CC:**	

Dear Mr McKee & Mr Doucet,

Please be aware that BLM Sundry Notice in triplicate, (form 3160-5) is being mailed to your office today to 1) move surface location and 2) revise drilling, casing and cement program for the subject well. These proposed changes are identical to those recently approved on the Wolverine Federal 17-3 well. The complete package will include sundry notice, drilling prognosis incl BOP plats, directional plan & revised survey plat. Please call if further questions or concerns. Thanks for you cooperation.

Regards,
Steve Hash

011

WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

January 31, 2005

T.23S, R.1W, S.17

State of Utah
Division of Oil, Gas & Mining
1594 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Via Fax (801) 359-3940

Re: Approved APDs
Wolverine Federal 17-4

To Whom It May Concern:

Wolverine Gas and Oil Corporation of Utah, as operator of the captioned well (API Nos. 43-041-30035), hereby requests copies of the approved Applications to Drill with any conditions for approval for said wells. Please fax them to my attention at (616) 458-0869.

If you have any questions or concerns, please feel free to contact me.

Very truly,

Helene Bardolph

Helene Bardolph

RECEIVED
JAN 31 2005
DIV. OF OIL, GAS & MINING

One Riverfront Plaza • 55 Campau, N.W. • Grand Rapids, MI 49503-2616 • 616.458.1150
FAX 616.458.0869

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

012

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other	5. Lease Serial No. **UTU-73528**
2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**	6. If Indian, Allottee or Tribe Name
3a. Address **One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI** 3b. Phone No. *(include area code)* **616-458-1150**	7. If Unit or CA/Agreement, Name and/or No. **Wolverine Fed Exploration Unit**
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* **SHL: ~~1736~~ 1680' FNL & ~~2298~~ 2249' FWL** **BHL: 1980' FSL & 1980' FEL** T. 23S, R. 1W, S. 17	8. Well Name and No. **Wolverine Federal #17-4**
	9. API Well No. **43-041-30035**
	10. Field and Pool, or Exploratory Area **Exploratory**
	11. County or Parish, State **Sevier Co, UT**

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☑ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Permission is requested to amend approved drilling & casing program (ver4 2004.12.22) as follows: new version to be (ver5 2005.01.24)

Surface Csg>>> FR: 16" 65ppf H40 BTC @ 0-600' in fresh mud system TO: 13-3/8" 68ppf J55 BTC @ 0-2700' in salt mud sys using 20" 2M diverter; cmt to surf with 1500 sx lead lite weight (12.8ppg;1.97 yld) plus 350 sx tail Prem G (15.8ppg; 1.15 yld) must circ to surface, top out cmt if reqd

Protection Csg>>> FR: 9-5/8" 47ppf N80 LTC @ 0-5570' (csg pt in Arapien) in salt mud system using 20" 2M diverter
TO: 9-5/8" 47ppf N80 LTC @ 0-5800' (csg pt in Twin Creek) in salt mud system using 13-5/8" 5M dbl ram BOP w/ 5M annular; cmt to surf with 460 sx lead Type 5 high fill (11 ppg; 3.83 yld) plus 850 sx tail 50/50 POZ (14.35 ppg; 1.27 yld)

Production Csg>>> FR: 5-1/2" 17ppf N80 LTC @ 0-6970' TO: either 5-1/2" 17ppf N80 LTC or 7" 26ppf N80 LTC @ 0-6970' in salt mud sys; cmt to 5500' in 9-5/8" with 400 sx 50/50 POZ (14.35ppg;1.27 yld)
PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

RECEIVED
JAN 26 2005
DIV. OF OIL, GAS & MINING

COPY SENT TO OPERATOR
Date: 2-4-05
Initials: CHD

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Steven R Hash - EXACT Engineering Inc** Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash Date **01/24/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

Accepted by the Utah Division of Oil, Gas and Mining
Date: 2/2/05
By:

Federal Approval Of This Action Is Necessary

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.

(Instructions on page 2)

CONFIDENTIAL

COPY

RECEIVED FORM 6
FEB 01 2005
DIV. OF OIL, GAS & MINING

013

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

ENTITY ACTION FORM

Operator: Wolverine Gas and Oil Company of Utah, LLC
Operator Account Number: N 1655
Address: 55 Campau NW, One Riverfront Plaza
city Grand Rapids
state MI zip 49503-2616
Phone Number: (616) 458-1150

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130035	Wolverine Federal 17-4		NWSE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
C ~~B~~ A	99999	14559	1/31/2005				K
Comments: NAVA Bottom Hole NOT IN Unit PA. CONFIDENTIAL							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
Comments:							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
Comments:							

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

Steven R Hash - Consulting Engineer
Name (Please Print)
Steven R. Hash
Signature
EXACT (918) 599-9400
Title
2/1/2005
Date

(5/2000)

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

015

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160 - 3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on reverse side.*

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other

8. Well Name and No.
Wolverine Federal #17-4

2. Name of Operator
Wolverine Gas & Oil Co of Utah, LLC

9. API Well No.
43-041-30035

3a. Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Exploratory

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SHL: 1680' FNL & 2249' FWL
BHL: 1980' FSL & 1980' FEL

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☑ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

On February 18, 2005, drilling of the 12-1/4" intermediate hole was suspended at 3360' due to uncontrolled deviation. This portion of the well was being drilled with MWD tools which could not arrest both the angle build or direction due to steeply dipping formations. The BHL at 3278' was 464' south and 678' east of the SHL at an angle of 46.8 deg and azimuth of 97.3. The well was plugged back on February 19, 2005 with 550 sx of Premium cmt (17ppg; .94 cfps yield). WOC 24 hrs, top of cmt found at 2390', sidetracked with 2-1/2 deg directional assy by time drilling at 155 deg azimuth. Verbal approval for this plugback was granted by Al McKee on February 19, 2005.

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

RECEIVED
FEB 2 4 2005
DIV. OF OIL, GAS & MINING

CONFIDENTIAL

xc: UDOGM

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Steven R Hash - EXACT Engineering Inc

Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash

Date **02/20/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

Office

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.

(Instructions on page 2)

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

014

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE *- Other instructions on reverse side.*

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other

8. Well Name and No.
Wolverine Federal #17-4

2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**

9. API Well No.
43-041-30035

3a. Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Exploratory

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
SHL: 1680' FNL & 2249' FWL
BHL: 1980' FSL & 1980' FEL

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☑ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

On February 10, 2005, drilling of the 17-1/2" surface hole was suspended at 2127' and 13-3/8" 68ppf J55 BTC was run and cemented to surface with 650 sx of CBM lite cement plus 470 sx of Premium. There was full circulation but cement did not reach the surface initially. 1" pipe was run to 100' and cement circulated after 25 sx pumped; 25 sx were circulated to the pit. UDOGM inspector Mark Jones witnessed the procedure.

This was a departure from the previously approved setting depth of 2700'. Verbal permission was granted by Al McKee via email dated Feb 10, 2005. The reason for this change was slow penetration rates and a suitable casing seat had been encountered.

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

cc: UDOGM

CONFIDENTIAL

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Steven R Hash - EXACT Engineering Inc Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash Date **02/20/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

016

EXACT Engineering, Inc.

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

www.exactengineering.com

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

February 20, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 well
Sec 17 T23S R01W
Sevier Co., UT
API# 43-041-30035

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from inception January 26, 2005 (spud Jan 31, 2005) through February 19, 2005. Our present status is sidetracking at 2440'. We respectfully request that the enclosed information remain confidential

Very Truly Yours,

Steven R. Hash
Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson
EXACT Engineering, Inc. well file

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/26/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT		43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	Rig down				#VALUE!		6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1						0						
2						0						
Both				0	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	
Cell No	
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	

LAST CASING	NEXT CASING

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD
								MWD

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD
								MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
7:00	5:00	10.00	Rig down, set off sub, when mats were pulled up found cellar rings had fallen 18" & pad for sub base had deteriorated.
5:00	0:00	7.00	Mobilized Neilsen construction & began repair of pad. Suspect vibration tool used on WF 17-3 may have caused settling
0:00			
0:00			CONFIDENTIAL
0:00			**FIRST REPORT - new drilling well, directional**
0:00			**Well Name: Wolverine Federal 17-4**
0:00			Well Location SHL: SE/4 - NW/4; 1680 FNL & 2249' FWL of Sec 17, T23S - R01W , SLB&M Svy, Sevier Co, UT
0:00			Operator: Wolverine Gas and Oil Company of Utah, LLC Grand Rapids, MI main office
0:00			Surface Owner: Wolverine Gas & Oil Co of Utah, LLC
0:00			BLM Minerals - Wolverine Federal Exploration Unit; Lease SN UTU-73528
0:00			API# 43-041-30035 ATD 6640' TVD 6960' MD Actual GL 5736' KB 5753'
0:00			Directions to Location:
0:00			1) from SLC; take I-15 south to exit #222 @ Nephi, then HW 28 south to Salina, then I-70 west to Sigurd exit #48, then HW
0:00			east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of road
0:00			2) from Vernal; take HW 40 west to Duchesne, then HW 191 south to Price, then HW 10 south to I-70, then west on I-70 to
0:00			Sigurd exit #48, then HW 24 east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of roa
0:00			
Daily Total		17.00	

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/27/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT		43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	Repair drilling pad				#VALUE!		6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1						0						
2						0						
Both				0	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	
Cell No	
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	

LAST CASING	NEXT CASING

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
7:00	5:00	10.00	Replace caved in dirt with 6 to 8" rock.,whack & pack drill pad, repair & shore up conductors.
5:00	0:00		
0:00			
0:00			
0:00			
0:00			**FIRST REPORT - new drilling well, directional**
0:00			**Well Name: Wolverine Federal 17-4**
0:00			Well Location SHL: SE/4 - NW/4; 1680 FNL & 2249' FWL of Sec 17, T23S - R01W , SLB&M Svy, Sevier Co, UT
0:00			Operator: Wolverine Gas and Oil Company of Utah, LLC Grand Rapids, MI main office
0:00			Surface Owner: Wolverine Gas & Oil Co of Utah, LLC
0:00			BLM Minerals - Wolverine Federal Exploration Unit; Lease SN UTU-73528
0:00			API# 43-041-30035 ATD 6640' TVD 6960' MD Actual GL 5736' KB 5753'
0:00			Directions to Location:
0:00			1) from SLC; take I-15 south to exit #222 @ Nephi, then HW 28 south to Salina, then I-70 west to Sigurd exit #48, then HW
0:00			east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of road
0:00			2) from Vernal; take HW 40 west to Duchesne, then HW 191 south to Price, then HW 10 south to I-70, then west on I-70 to
0:00			Sigurd exit #48, then HW 24 east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of roa
Daily Total		10.00	

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/28/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT		43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	Rig up				#VALUE!		6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1						0						
2						0						
Both				0	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	
Cell Nc	
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Rar	
Last Operate Blind Ra	
Last Operate Annular	

LAST CASING	NEXT CASING

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
7:00	5:00	10.00	Set mats & sub. Put derrick & drawtool on floor. Finish with & release cranes.
5:00	0:00		
0:00			
0:00			
0:00			
0:00			
0:00			**FIRST REPORT - new drilling well, directional**
0:00			**Well Name: Wolverine Federal 17-4**
0:00			Well Location SHL: SE/4 - NW/4; 1680 FNL & 2249' FWL of Sec 17, T23S - R01W , SLB&M Svy, Sevier Co, UT
0:00			Operator: Wolverine Gas and Oil Company of Utah, LLC Grand Rapids, MI main office
0:00			Surface Owner: Wolverine Gas & Oil Co of Utah, LLC
0:00			BLM Minerals - Wolverine Federal Exploration Unit; Lease SN UTU-73528
0:00			API# 43-041-30035 ATD 6640' TVD 6960' MD Actual GL 5736' KB 5753'
0:00			Directions to Location:
0:00			1) from SLC; take I-15 south to exit #222 @ Nephi, then HW 28 south to Salina, then I-70 west to Sigurd exit #48, then HW
0:00			east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of road
0:00			2) from Vernal; take HW 40 west to Duchesne, then HW 191 south to Price, then HW 10 south to I-70, then west on I-70 t
			Sigurd exit #48, then HW 24 east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of roa
Daily Total		10.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/29/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT		43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	Rig up				#VALUE!		6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1						0						
2						0						
Both				0	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	
Cell Nc	
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Rar	
Last Operate Blind Ra	
Last Operate Annular	

LAST CASING	NEXT CASING

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
7:00	12:00	5.00	Finish setting in & rigging up with trucks. Release trucks
12:00	0:00	12.00	Rig up
0:00			
0:00			
0:00			
0:00			**FIRST REPORT - new drilling well, directional**
0:00			**Well Name: Wolverine Federal 17-4**
0:00			Well Location SHL: SE/4 - NW/4; 1680 FNL & 2249' FWL of Sec 17, T23S - R01W , SLB&M Svy, Sevier Co, UT
0:00			Operator: Wolverine Gas and Oil Company of Utah, LLC Grand Rapids, MI main office
0:00			Surface Owner: Wolverine Gas & Oil Co of Utah, LLC
0:00			BLM Minerals - Wolverine Federal Exploration Unit; Lease SN UTU-73528
0:00			API# 43-041-30035 ATD 6640' TVD 6960' MD Actual GL 5736' KB 5753'
0:00			Directions to Location:
0:00			1) from SLC; take I-15 south to exit #222 @ Nephi, then HW 28 south to Salina, then I-70 west to Sigurd exit #48, then HW
0:00			east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of road
0:00			2) from Vernal; take HW 40 west to Duchesne, then HW 191 south to Price, then HW 10 south to I-70, then west on I-70 to
0:00			Sigurd exit #48, then HW 24 east 2 mi into Sigurd, continue on HW 24 east thru Sigurd 3.5 mi to location on left side of roa
Daily Total		17.00	

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/30/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT		43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
0	Rig up				#VALUE!		6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1						0						
2						0						
Both				0	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	
Cell Nc	
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Ran	
Last Operate Blind Ra	
Last Operate Annular	

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
0:00	0:00	24.00	Rig up, Nipple up 20" Diverter on 20" conductor csg, change liners in pumps
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			On 11/22/04 Set Conductor Casing as follows:
0:00			MIRU Martin Rathole, build (4) well slots (B=#17-5; C=#16-1; D=#17-4; E=#17-3)
0:00			Drill 30" hole, **set 20" (1/4" wall) conductor csg @ 121 ft.** Cement with 640 sx class G
0:00			Full circ, TOC @ surface, no fall back, hit water @ 55' & 85'
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
01/31/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
1	Drilling	460	323	12.50	25.8	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
9.9	34	47.8	2/32	10.5	0.50	2.8	6	5	3/5	221	1/31/12:00	150,000	800	3.0	247,500

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137		323	12.50	25.8	Y	160	5			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	102	329						
2	National	6 1/4	8.5	3.23	102	329						
Both				6.46	204	659	57	67	1100	300		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.50		
Directional Assembly	110.00		
6 - 6 5/8" SWDP	180.00		
5 - 5" SWDP	150.00		
Total BHA:	441.50		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
65	65	65	65	200

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell Narren	918-645-6671
Last BOP Test	
Next BOP Test	
Last Safety Meeting	1/31
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
								MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	TO	HRS	LAST 24 HOURS:
0:00	7:30	7.50	PU BHA, Work on pumps, Rig up.
7:30	12:30	5.00	Drill 137 to 251, Very rough.
12:30	14:00	1.50	POOH for excessive pressure
14:00	15:30	1.50	Change MWD, Tool parted.
15:30	16:30	1.00	RIH
16:30	0:00	7.50	Drill 251 to 460
0:00			
0:00			
0:00			
0:00			
0:00			**Start Day Rate @ 02:00 1/31/05**
0:00			
0:00			**Spud 17-1/2" hole @ 07:30 hrs Jan 31, 2005**
0:00			
0:00			Notified BLM & UDOGM by email of spud time & date
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

DAILY DRILLING REPORT

Operator: Wolverine G&O Co of Utah, LLC — 24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/01/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
2	Drilling	770	310	17.00	18.2	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
10.0	34	n/c	2/32	9.0	0.50	3.7	6	5	3/5	495	2/1/9:07	140,000	1880	2.0	231,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497		273	15.50	17.6	Y	160	40			
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.50		
Directional Assembly	110.00		
6 - 6 5/8" SWDP	180.00		
16 - 5" SWDP	480.00		
Total BHA:	771.50		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
65	65	65	65	200

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell Narren	918-645-6671
Last BOP Test	
Next BOP Test	
Last Safety Meeting	1/31
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
191	0.60	41.60	191	-0.25	0.75	0.66	0.31	MWD	617	2.30	255.00	617	-14.29	10.55	-9.91	4.50	MWD
495	3.10	305.10	495	-9.30	7.97	-4.83	1.80	MWD	708	4.10	198.40	708	-12.74	6.91	-12.54	3.27	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:30	1.50	Drill 460 to 497
1:30	8:00	6.50	POOH change bit to tricone, change MWD to btm. seat.
8:00	15:00	7.00	Drill & surveys 497 to 610
15:00	15:30	0.50	Rig service
15:30	0:00	8.50	Drill & surveys 610 to 770
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7 AM Drilling @ 857
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/02/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
3	Trip for bit	976	206	19.50	10.6	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
10.0	34	n/c	2/32	9.0	0.50	3.7	6	5	3/5	495	2/1/9:07	140,000	1880	2.0	231,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.50		
Directional Assembly	110.00		
6 - 6 5/8" SWDP	180.00		
16 - 5" SWDP	480.00		
Total BHA:	771.50		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
65	65	65	65	200

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell Narren	918-645-6671
Last BOP Test	
Next BOP Test	
Last Safety Meeting	1/31
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
916	9.00	156.40	915	7.00	-16.00	-11.00	4.40	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	7:00	7.00	Drill & survey 770 to 857
7:00	7:30	0.50	Rig service
7:30	20:00	12.50	Drill & surveys 770 to 976
20:00	22:00	2.00	POOH for PDC bit
22:00	0:00	2.00	Change bit check MWD & motor
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/03/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
4	Drilling	1,105	129	16.00	8.1	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.9	35	n/c	2/32	8.0	tr	3.5	5	5	3/5	1000	2/3/9:15a	125,000	3200	1.0	206,250

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003		102	10.00	10.2	Y	40+120	22-25			

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	117.20	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	752.54	3.125	
Total BHA:	1,054.72		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
85,000	46	100,000	80,000	300

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell Nc Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/3
Last BOP Drill	
Last Operate Pipe Ran	
Last Operate Blind Ra	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,005	12.20	143.70	1002	23.53	-30.50	-3.13	3.13	MWD
1,067	13.00	137.40	1062	37.10	-41.02	5.53	2.39	MWD

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	0:30	0.50	Test MWD
0:30	1:00	0.50	TIH
1:00	3:00	2.00	Wash to btm - tight @ 940
3:00	9:00	6.00	Drilling 976 to 1003; poor P rate
9:00	12:00	3.00	Trip for new bit #3
12:00	13:30	1.50	TIH
13:30	19:30	6.00	Drilling 1003 to 1065
19:30	20:00	0.50	Rig service
20:00	0:00	4.00	Drilling 1065 to 1105
0:00			
0:00			
0:00			
0:00			
0:00			6am update - drlg @ 1160'
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/04/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
5	Drilling	1,340	235	24.00	9.8	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	34	n/c	2/32	7.5	tr	2.8	5	5	3/4	1190	2/4/8:30a	118,000	2720		194,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003		337	34.00	9.9	Y	40+120	22-25			

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	117.20	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	752.54	3.125	
Total BHA:	1,054.72		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
95,000	46	100,000	90,000	300

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/4
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,193	12.40	130.70	1185	64.24	-60.19	25.64	1.13	MWD
1,319	12.10	127.70	1308	89.36	-76.62	46.22	1.00	MWD

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	0:00	24.00	Drilling from 1105 to 1340
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 1409'
0:00			Pump #2 clutch acting up, mechanic on location, will check out this am
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/05/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
6	Drilling	1,467	127	17.00	7.5	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	35	n/c	2/32	8.1	tr	4.5	4	19	12/18	1419	2/5/8am	114,000	2640		188,100

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003		464	51.00	9.1	Y	40+120	22-25			

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	117.20	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	752.54	3.125	
3 - 5" HWDP	88.75		
Jars	32.61		
4 - 5" HWDP	118.76		
Total BHA:	1,294.84		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
98,000	46,000	105,000	90,000	300

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/4
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700'

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
1,319	11.80	128.30	1277	-72.54	41.00	83.06	0.97	MWD
1,417	11.30	130.60	1404	-89.40	61.88	102.72	2.06	MWD

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	10:00	10.00	Drilling from 1340 to 1430
10:00	10:30	0.50	Circulate
10:30	11:30	1.00	TOOH
11:30	12:30	1.00	PU jars, LD 2 jts 5" HWDP
12:30	13:30	1.00	TIH
13:30	14:00	0.50	Rig service
14:00	17:00	3.00	Rig Repair - replace clutch plate pump #2
17:00	0:00	7.00	Drilling from 1430 to 1467
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 1510
0:00			Hole wanting to go down to left - sliding to pull up to right - new target 2100' for 13-3/8"
0:00			
0:00			
Daily Total		24.00	

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/06/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
7	Drilling	1,637	170	23.50	7.2	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	39	n/c	2/32	9.0	tr	4.3	7	27	14/22	1525	2/6/8am	108,000	2520		178,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003		634	74.50	8.5	Y	40+120	22-25			

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	117.20	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	752.54	3.125	
3 - 5" HWDP	88.75		
Jars	32.61		
4 - 5" HWDP	118.76		
Total BHA:	1,294.84		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
98,000	46,000	105,000	90,000	300

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/6
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,543	10.70	136.00	1528	#####	79.69	132.18	1.26	MWD									
1,639	11.20	138.80	1622	#####	91.86	149.88	1.72	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	15:00	15.00	Drilling from 1467 to 1572
15:00	15:30	0.50	Rig Service
15:30	0:00	8.50	Drilling from 1572 to 1637
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 1698
0:00			100% slide to maintain direction
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/07/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
8	Drilling	1,734	97	12.00	8.1	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.7	36	n/c	2/32	10.0	tr	4.0	7	21	13/21	1700	2/7/7am	106,000	2520		174,900

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003	1734	731	86.50	8.5	Y	40+120	16-22	6	4	I

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	117.20	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	752.54	3.125	
3 - 5" HWDP	88.75		
Jars	32.61		
4 - 5" HWDP	118.76		
Total BHA:	1,294.84		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
98,000	46,000	105,000	90,000	300

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/7
Last BOP Drill	
Last Operate Pipe Ram	
Last Operate Blind Ram	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
1,543	10.70	136.00	1528	-105.68	79.69	132.18	1.26	MWD	1,669	11.30	141.30	1651	-123.32	95.62	155.70	1.61	MWD
1,639	11.20	138.80	1622	-118.82	91.86	149.88	1.72	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	12:00	12.00	Drilling from 1637 to 1734
12:00	15:00	3.00	Blow down kelly & TOOH - motor stalling; bit hrs 86.5, mtr hrs 145
15:00	18:00	3.00	Break out bit, LD MWD, LD (2) monels, LD SS & LD (1) xover (6-5/8 FH x 6-5/8 Reg on top of SS cracked)
18:00	23:00	5.00	PU new mud motor, bit, (2) monels, UBHO, Shock Sub
23:00	0:00	1.00	Wait on hotshot for replacement x-over
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 1746
0:00			100% slide to maintain direction
0:00			
0:00			
Daily Total		24.00	

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/08/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
9	Drilling	1,861	127	17.50	7.3	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.7	36	n/c	2/32	10.0	tr	4.0	7	21	13/21	1700	2/7/7am	106,000	2520		174,900

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
1	17.500	DPI	SC63LT		54869		8x15		137	497	360	14.00	25.7	Y	160	5	2	2	I
2	17.500	SEC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	SEC	STXR+C		MR4163	2x28	1x18	1x22	1003	1734	731	86.50	8.5	Y	40+120	16-22	6	4	I

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	118.52	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	485.14	3.125	
3 - 5" HWDP	88.75		
Jars	32.61		
4 - 5" HWDP	118.76		
Total BHA:	1,028.76		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	115,000	105,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell Nc Steve	918-629-9801
Last BOP Test	
Next BOP Test	
Last Safety Meeting	2/8
Last BOP Drill	
Last Operate Pipe Rar	
Last Operate Blind Ra	
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
1,764	14.50	145.30	1744	-139.99	107.74	176.30	5.05	MWD
1,827	17.90	143.00	1805	-154.16	117.88	193.72	6.46	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	3:00	3.00	Wait on hotshot for replacement x-over
3:00	4:30	1.50	Make up tools & TIH
4:30	5:00	0.50	PU kelly, test MWD
5:00	6:00	1.00	TIH
6:00	14:30	8.50	Drilling 1734 to 1792
14:30	15:00	0.50	Rig service
15:00	0:00	9.00	Drilling 1792 to 1861
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 1912
0:00			hole beginning to turn, began rotate @ 1846 @ 3am
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/09/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
10	Drilling	2,024	163	23.50	6.9	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.6	34	n/c	2/32	10.3	tr	5.5	5	17	11/19	1919	2/9/9am	67,000	2240		110,550

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734		290	41.00	7.1	Y	40+120	10-32			
2	17.500	STC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	STC	STXR+C		MR4163	2x28	1x18	1x22	1003	1734	731	86.50	8.5	Y	40+120	16-22	6	4	I

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY #5	LENGTH	O.D.	I.D.
17 1/2" Bit	1.40	17.500	
Directional Assembly	118.52	2.813	
6 - 6 5/8" SWDP	183.58	2.813	
16 - 5" SWDP	485.14	3.125	
3 - 5" HWDP	88.75		
Jars	32.61		
4 - 5" HWDP	118.76		
Total BHA:	1,028.76		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	115,000	105,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	1/31
Next BOP Test	2/28
Last Safety Meeting	2/9
Last BOP Drill	2/9
Last Operate Pipe Ram	na
Last Operate Blind Ram	na
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
1,891	21.30	140.00	1865	-171.04	131.26	215.20	5.25	MWD									
1,986	21.40	134.40	1954	-196.29	155.02	249.41	0.86	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	14:00	14.00	Drilling from 1861 to 1951
14:00	14:30	0.50	Rig Service
14:30	0:00	9.50	Drilling from 1951 to 2024
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am update - drlg @ 2061
0:00			May decide to TD 17-1/2" hole ~ 2127 in lime csg seat
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/10/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
11	Trip	2,127	163	19.50	8.4	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	36	n/c	2/32	8.8	tr	6.0	7	21	13/20	2071	2/10/9am	78,000	2260		128,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38			
2	17.500	STC	MGS5H		MJ3820	20	20	20	497	976	479	35.00	13.7	Y	160	40	6	6	I
1RR	17.500	DPI	SC63LT		54869		8x15		976	1003	27	6.00	4.5	Y	160	30-45	2	2	I
3	17.50	STC	STXR+C		MR4163	2x28	1x18	1x22	1003	1734	731	86.50	8.5	Y	40+120	16-22	6	4	I

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	#5	LENGTH	O.D.	I.D.
17 1/2" Bit		1.40	17.500	
Directional Assembly		118.52	2.813	
6 - 6 5/8" SWDP		183.58	2.813	
16 - 5" SWDP		485.14	3.125	
3 - 5" HWDP		88.75		
Jars		32.61		
4 - 5" HWDP		118.76		
Total BHA:		1,028.76		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	125,000	100,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	1/31
Next BOP Test	2/28
Last Safety Meeting	2/10
Last BOP Drill	2/9
Last Operate Pipe Ram	na
Last Operate Blind Ram	na
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,048	22.70	132.10						MWD									
2,067	23.00	130.70						MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	11:00	11.00	Drilling from 2024 to 2082
11:00	12:00	1.00	Pump repair - seat in pump #2
12:00	16:30	4.50	Drilling from 2082 to 2108
16:30	17:00	0.50	Rig service
17:00	21:00	4.00	Drilling from 2108 to 2127; TD 17-1/2" hole @ 9pm @ 2127'
21:00	0:00	3.00	TOH
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/11/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
12	Circulate Casing	2,127	0	0.00	#DIV/0!	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	36	n/c	2/32	8.8	tr	6.0	7	21	13/20	2071	2/11/9am	78,000	2260		128,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38	4	4	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23	125	404						
2	National	6 1/4	8.5	3.23	125	404						
Both				6.46	250	808	65	75	1400	150		

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	#5	LENGTH	O.D.	I.D.
17 1/2" Bit		1.40	17.500	
Directional Assembly		118.52	2.813	
6 - 6 5/8" SWDP		183.58	2.813	
16 - 5" SWDP		485.14	3.125	
3 - 5" HWDP		88.75		
Jars		32.61		
4 - 5" HWDP		118.76		
Total BHA:		1,028.76		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	125,000	100,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	1/31
Next BOP Test	2/28
Last Safety Meeting	2/11
Last BOP Drill	2/9
Last Operate Pipe Ram	na
Last Operate Blind Ram	na
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,048	22.70	132.10	2011	-212.17	171.99	272.08	2.51	MWD									
2,067	23.00	130.70	2028	-217.05	177.53	279.22	3.27	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	3:30	3.50	TOH & LD MWD
3:30	7:00	3.50	TIH
7:00	8:00	1.00	PU Kelly, wash to btm last joint
8:00	10:00	2.00	Circulate
10:00	12:00	2.00	Pump slug, set back kelly, TOH to run csg
12:00	13:30	1.50	RU csg crew, hold safety meeting
13:30	21:30	8.00	Run 13-3/8" 68ppf J55 BTC surface csg as follows: GS (.90), shoe jt (44.71), FC (1.1), 47 jts (2085.0); total 2131.71', FC@
21:30	21:30	0.00	Thd lok-tack weld GS,FC; strap FC, run 3 cent on btm, 1 in 20", 6750 csg torque opt, break circ @ 120', fill ea jt (see detail
21:30	22:00	0.50	Wash last 10 ft to btm, set on btm @ 2127' w/ full string wt hanging ~120k
22:00	0:00	2.00	Circulate csg @ 10 bpm
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am MST drlg update; cmt csg, PD @ 4am, did not circ cmt, top out, cmt was near top, WOC
0:00			
Daily Total		24.00	

Engineering & Supervision — **EXACT Engineering, Inc.** — (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/12/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
13	Circulate Casing	2,127	0	0.00	#DIV/0!	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	36	n/c	2/32	8.8	tr	6.0	7	21	13/20	2071	2/11/9am	78,000	2260		128,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38	4	4	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23		0						
2	National	6 1/4	8.5	3.23		0						
Both				6.46	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BOTTOMHOLE ASSEMBLY	#5	LENGTH	O.D.	I.D.
17 1/2" Bit		1.40	17.500	
Directional Assembly		118.52	2.813	
6 - 6 5/8" SWDP		183.58	2.813	
16 - 5" SWDP		485.14	3.125	
3 - 5" HWDP		88.75		
Jars		32.61		
4 - 5" HWDP		118.76		
Total BHA:		1,028.76		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	125,000	100,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	1/31
Next BOP Test	2/28
Last Safety Meeting	2/12
Last BOP Drill	2/9
Last Operate Pipe Ram	na
Last Operate Blind Ram	na
Last Operate Annular	1/31

LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,048	22.70	132.10	2011	-212.17	171.99	272.08	2.51	MWD									
2,067	23.00	130.70	2028	-217.05	177.53	279.22	3.27	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:00	1.00	RU cementers, hold safety meeting & pressure test P&L to 3000 psi
1:00	5:00	4.00	Cmt 13-3/8" csg w/ 650 sx CBM lite (10.5;4.12) lead & 470 sx Prem (15.6;1.19); displace w/ 312 bbls, PD @ 2:30, float held
5:00	5:00		circ, no cement to surface. Ran 1" to 100' as planned, circ cmt with 25 sx, 25 sx to pit, JC @ 5am; UDOGM witness Mark J.
5:00	6:00	1.00	Rinse out flowline & annular with freshwater
6:00	11:00	5.00	Set out V-door & catwalks, ND flowline, prep to set out diverter
11:00	16:00	5.00	Cut off 20", ND diverter, set out with gin truck, cut off 13-3/8" @ 62" below top of mats
16:00	19:00	3.00	Weld on 13-3/8" SOW x 13-5/8" 5M A-section; allow to cool
19:00	0:00	5.00	Install 13-5/8" 5M x 13-5/8" 5M multi bowl spool & begin NU 13-5/8" 5M BOP stack
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			Drilling update @ 7am MST - Pressure testing BOPE
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/13/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
14	Make up BHA	2,127	0	0.00	#DIV/0!	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.7	28	n/c	1/32	14.0	0.00	1.8	1	1	1/1	2127	2/13/10am	23,000	1520		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38	4	4	I
5	12.250	DPI	MP45B2MF		2016038		1.335		2127				#DIV/0!	Y					
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23		0						
2	National	6 1/4	8.5	3.23		0						
Both				6.46	0	0						

SLOW PUMP

	60 spm	80 spm	100 spm
1			
2			

DRILL STRING

BHA no. 6	LENGTH	O.D.	I.D.
12-1/4" Bit	1.25	12.250	
DHM 1.25 deg	28.30	2.813	
Roller reamer (3)	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,026.85		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
100,000	46,000	125,000	100,000	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/13
Last BOP Drill	2/9
Last Operate Pipe Ram	2/13
Last Operate Blind Ram	2/13
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
								MWD
2,067	23.00	130.70	2028	-217.05	177.53	279.22	3.27	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	5:00	5.00	NU (2) 13-5/8" x 5m spools; mud cross, (2) 13-5/8" 5m single BOPs, !3-5/8" 5m annular, 13-5/8" rotating head, chk manifol
5:00	6:00	1.00	Change pipe rams from 4-1/2" to 5"
6:00	16:00	10.00	RU Single Jack testers, PT 250 low-5000 high; kelly, U&L valves,PR,BR,Annular, choke manifold, test csg to 1500 psi
16:00	18:00	2.00	Clean floor, set in V-door, prep to PU tools. Dump & clean mud tanks of cmt contaminated mud
18:00	0:00	6.00	Make up BHA #6 & TIH
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

COST DATA

Engineering & Supervision — **EXACT Engineering, Inc.** — (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/14/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Steve Hash

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
15	Drilling	2,406	279	18.00	15.5	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.6	33	n/c	1/32	14.0	tr	1.0	4	15	5/9	2153	2/14/8am	19,000	1400		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38	4	4	I
5	12.250	DPI	MP45B2MF		2016038		1.335		2127		279	18.00	15.5	Y					
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6 1/4	8.5	3.23		0						
2	National	6 1/4	8.5	3.23		0						
Both				6.46	0	0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 6	LENGTH	O.D.	I.D.
12-1/4" Bit	1.25	12.250	
DHM 1.25 deg	28.30	2.813	
Roller reamer (3)	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,026.85		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-629-9801
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/14
Last BOP Drill	2/9
Last Operate Pipe Ram	2/13
Last Operate Blind Ram	2/13
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,067	23.00	130.70	2028	-217.05	177.53	279.22	3.27	MWD	2,271	24.00	132.70	2216	-269.32	239.53	357.22	1.85	MWD
2,176	23.40	128.60	2128	-244.44	210.59	320.41	0.84	MWD	2,366	24.50	141.60	2302	-297.86	265.97	395.67	3.88	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	0:30	0.50	TIH
0:30	1:30	1.00	PU kelly, test motor & MWD
1:30	3:00	1.50	Finish TIH, LD top of each stand, tag cmt @ 2061'
3:00	5:30	2.50	Drill cmt, float @ 2076', shoe @ 2127'
5:30	16:00	10.50	Drill new formation from 2128 to 2265'
16:00	16:30	0.50	Rig service
16:30	0:00	7.50	Drilling from 2265 to 2406
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			Update @ 3:00am - Start TOH @ 2425' for mud motor???
0:00			
0:00			
0:00			
Daily Total		24.00	

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/15/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
16	Trip	2,425	19	2.50	7.6	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.6	33	n/c	1/32	14.0	tr	1.0					2/15/8am				

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
4	17.500	STC	STXR+XV		WMP3127	2x28	1x18	1x22	1734	2127	393	60.50	6.5	Y	40+120	15-38	4	4	I
5	12.250	DPI	MP45B2MF		2016038		1.335		2127	2425	298	20.50	14.5	Y	0+120	10-35	8	8	I
6	12.250	STC	EBXS12S		10676670		1		2425				#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5			0						
2	National	6	8.5			0						
Both				0	0	0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
Roller reamer (3)	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/15
Last BOP Drill	2/9
Last Operate Pipe Ram	2/13
Last Operate Blind Ram	2/15
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,067	23.00	130.70	2028	-217.05	177.53	279.22	3.27	MWD	2,271	24.00	132.70	2216	-269.32	239.53	357.22	1.85	MWD
2,176	23.40	128.60	2128	-244.44	210.59	320.41	0.84	MWD	2,366	24.50	141.60	2302	-297.86	265.97	395.67	3.88	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:00	1.00	Drilling from 2406 to 2421
1:00	1:30	0.50	Pump repair - chg valve & seat in pump #1
1:30	3:00	1.50	Drilling from 2421 to 2425
3:00	7:00	4.00	TOOH for mud motor??? No P-rate
7:00	10:00	3.00	Chg bit, mud motor, set MWD
10:00	22:00	12.00	Dump shale pit, discover more cement contaminated mud, dump all mud tanks, clean out tanks, lines, suctions, refill, circu
22:00	0:00	2.00	TIH to shoe, displace contaminated mud in hole
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			Update @ 8:00am - drilling @ 2527
0:00			
0:00			
0:00			
Daily Total		24.00	

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/16/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
17	Drilling	2,856	431	21.50	20.0	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.6	35	n/c	2/32	9.0	tr	1.5	6	20	7/3	2543	2/16/8:40	18,000	800		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
6	12.250	STC	EBXS12S		10676670	243	24	24	2425		431	21.50	20.0	Y	40+120	15-38			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.8	125	350						
2	National	6	8.5	2.8	125	350						
Both				5.6	250	700	140	200	1500	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Steve	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/16
Last BOP Drill	2/9
Last Operate Pipe Ram	2/13
Last Operate Blind Ram	2/15
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,554	23.80	136.90	2474	-356.65	314.21	471.38	2.19	MWD	2,743	24.70	120.90	2646	-403.00	376.00	544.00	1.69	MWD
2,649	24.30	124.60	2561	-382.00	343.00	509.00	5.29	MWD	2,837	26.30	112.80	2731	-421.00	412.00	580.00	4.00	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	2:00	2.00	Finish trip in hole
2:00	10:30	8.50	Drill & surveys 2425 to 2580
10:30	11:00	0.50	Rig service
11:00	0:00	13.00	Drill & surveys 2580 to 2856
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			9:00 am. Rih with 2 deg motor
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

DAILY DRILLING REPORT

Operator: Wolverine G&O Co of Utah, LLC — 24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/17/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
18	Drilling	3,177	321	16.00	20.1	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.9	31	n/c	2/32	7.0	tr	2.0	4	11	5/8	2905	2/17/11am	48,000	1840		79,200

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
6	12.250	STC	EBXS12S		10676670	24	24	24	2425		752	37.50	20.1	Y	40+120	15-40			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.8	125	350						
2	National	6	8.5	2.8	125	350						
Both				5.6	250	700	140	200	1500	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/17
Last BOP Drill	2/9
Last Operate Pipe Ram	2/13
Last Operate Blind Ram	2/17
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,900	28.90	107.00	2787	-430.72	439.64	602.93	5.97	MWD	3,057	40.40	96.10	2915	-446.36	528.03	665.32	6.29	MWD
2,995	36.60	97.80	2867	-441.76	489.72	640.08	9.72	MWD	3,120	42.10	95.60	2962	-450.51	569.42	691.91	2.26	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	2:30	2.50	Drill & surveys from 2856 to 2894
2:30	6:00	3.50	TOH to adjust mud motor from 1.25 to 1.75 degrees
6:00	10:00	4.00	TIH, wash & ream 2834 to 2894
10:00	17:30	7.50	Drilling 2894 to 3020
17:30	18:00	0.50	Rig service
18:00	0:00	6.00	Drill & surveys from 3020 to 3177
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			100% slide - combatting angle build and left turn
0:00			Received 9-5/8" csg
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/18/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
19	WOC, for sidetrack	3,360	183	8.00	22.9	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	32	n/c	2/32	7.5	tr	1.8	5	12	4/6	3360	2/18/8:30	112,000	1800		184,800

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
6	12.250	STC	EBXS12S		10676670	24	24	24	2425		935	45.50	20.5	Y	40+120	15-40	2	2	I
													#DIV/0!						
													#DIV/0!						
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HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.8	125	350						
2	National	6	8.5	2.8	125	350						
Both				5.6	250	700	140	200	1500	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/18
Last BOP Drill	2/18
Last Operate Pipe Ram	2/18
Last Operate Blind Ram	2/18
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
3,183	43.00	96.80	3009	-455	611	719	1.69	MWD	3,247	45.50	97.50	3055	-461	656	749	4.40	MWD
3,215	44.10	97.30	3032	-458	633	734	3.60	MWD	3,278	46.80	97.30	3076	-464	678	764	4.22	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	8:00	8.00	Drill & surveys from 3177 to 3360
8:00	13:00	5.00	Pump dry job POOH, to plug back for sidetrack
13:00	16:00	3.00	PU 16 jts. DP RIH to 2771
16:00	19:30	3.50	Circ. Wo cementers
19:30	20:30	1.00	RU cementers
20:30	21:30	1.00	Mix & pump 550 sks. 17.5 lb/gal. .94 cuft/sk yield PREMAG300 cement
21:30	0:00	2.50	WOC
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

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Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/19/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
20	Drill cement	2,440	-920	0.00	#DIV/0!	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	32	n/c	2/32	7.5	tr	1.8	5	12	4/6	3360	2/18/8:30	112,000	1800		184,800

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
RR6	12.250	STC	EBXS12S		10676670	24	24	24	2440		0	0.00	#DIV/0!	Y	40+120	15-40	2	2	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.96	100	296						
2	National	6	8.5	2.96	100	296						
Both				5.92	200	592	140	200	1500	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
2.5 deg motor	22.30	2.813	
		7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5"	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.40		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/19
Last BOP Drill	2/18
Last Operate Pipe Ram	2/18
Last Operate Blind Ram	2/18
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	21:30	21.50	WOC
21:30	0:00	2.50	Wash from 2280 to 2375 tagged cement @ 2375, firm @ 2390
0:00			
0:00			
0:00			
0:00			Plug back TD 2440
0:00			
0:00			
0:00			
0:00			9:am time drill 2 min. an inch 2440 to 2452
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

017

EXACT Engineering, Inc. www.exactengineering.com
415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

March 7, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 well
Sec 17 T23S R01W
Sevier Co., UT
API# 43-041-30035

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from February 19, 2005 through March 6, 2005. Our present status is drilling at 6195'. We expect to TD and log within the next 24 hours. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,
Steven R. Hash

Steven R. Hash
Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson
EXACT Engineering, Inc. well file

RECEIVED
MAR 11 2005
DIV. OF OIL, GAS & MINING

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Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/19/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
20	Drill cement	2,440	-920	0.00	#DIV/0!	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	32	n/c	2/32	7.5	tr	1.8	5	12	4/6	3360	2/18/8:30	112,000	1800		184,800

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
RR6	12.250	STC	EBXS12S		10676670	24	24	24	2440		0	0.00	#DIV/0!	Y	40+120	15-40	2	2	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	100	296						
2	National	6	8.5	2.96	100	296						
Both				5.92	200	592	140	200	1500	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
2.5 deg motor	22.30	2.813	
		7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.40		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/19
Last BOP Drill	2/18
Last Operate Pipe Ram	2/18
Last Operate Blind Ra	2/18
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	21:30	21.50	WOC
21:30	0:00	2.50	Wash from 2280 to 2375 tagged cement @ 2375, firm @ 2390
0:00			
0:00			
0:00			
0:00			Plug back TD 2440
0:00			
0:00			
0:00			
0:00			9:am time drill 2 min. an inch 2440 to 2452
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $ 2,276,579 DAILY MUD $ 295 DAILY DRILLING COST $

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/20/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
21	Drilling	2,618	178	10.00	17.8	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.4	32	n/c	2/32	14.0	tr	2.3	3	17	8/11	2447	2/20/07:30	98,000	1700		161,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
RR6	12.250	STC	EBXS12S		10676670	24	24	24	2440		178	10.00	17.8	Y	40+120	15-40			
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													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	120	355						
2	National	6	8.5	2.96	120	355						
Both				5.92	240	710	155	215	1650	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
2.5 deg motor	22.30	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.40		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/20
Last BOP Drill	2/20
Last Operate Pipe Ram	2/18
Last Operate Blind Ra	2/18
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,394	23.80	143.20	2328	-306	273	406	3.40	MWD	2,588	17.80	170.10	2509	-366	306	474	6.60	MWD
2,493	20.40	149.50	2419	-337	295	445	7.30	MWD	2,619	17.50	174.10	2539	-375	307	483	4.00	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:30	1.50	Dress plug to 2437
1:30	14:00	12.50	Time drill 2437 to 2517
14:00	0:00	10.00	Drill & surveys 100% sidetracked @ 2517
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			8 am drilling @ 2775
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

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COST DATA

AFE DHC $	2,276,579	DAILY MUD $	1,720

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/21/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
22	RIH	2,914	296	17.50	16.9	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	32	n/c	2/32	11.0	tr	3.0	4	10	4/7	2447	2/21/09:00	94,000	1700		155,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
RR6	12.250	SEC	EBXS12S		10676670	24	24	24	2440	2914	474	27.50	17.2	Y	40+120	15-40	6	4	I
7	12.250	SEC	EBXS12S						2914				#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	120	355						
2	National	6	8.5	2.96	120	355						
Both				5.92	240	710	155	215	1650	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell NoDarren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/21
Last BOP Drill	2/20
Last Operate Pipe Ran	2/18
Last Operate Blind Ra	2/18
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,682	17.10	182.60	2599	-394	308	499	5.00	MWD
2,872	19.50	177.30	2778	-456	304	548	6.90	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,809	20.60	186.40	2719	-434	304	530	3.80	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	11:00	11.00	Drill & surveys 2618 to 2820
11:00	11:30	0.50	Rig service
11:30	18:00	6.50	Drill & surveys 2820 to 2914
18:00	19:00	1.00	Wash & ream high torque 2883 TO 2914
19:00	22:30	3.50	Pump slug POOH to adjust motor
22:30	0:00	1.50	PU stabilized motor & new bit
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6 am drilling ahead @ 2930
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

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COST DATA

AFE DHC $	2,276,579	DAILY MUD $	800	DAILY DRILLING COST $	20,455

, *Engineering & Supervision* **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/22/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
23	RIH	3,259	345	18.50	18.6	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	30	n/c	2/32	10.5	0.50	2.6	3	12	5/9	2972	2/22/9:30	105,000	1880		175,250

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
7	12.250	SEC	EBXS12S		10686671	22	22	22	2914		345	18.50	18.6	Y	40+120	15-40			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	120	355						
2	National	6	8.5	2.96	120	355						
Both				5.92	240	710	155	215	1650	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	100
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/22
Last BOP Drill	2/22
Last Operate Pipe Ram	2/22
Last Operate Blind Ra	2/22
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
2,997	16.10	158.10	2898	-491	312	582	1.64	MWD
3,249	17.40	158.30	3140	-556	342	652	0.97	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:30	1.50	RIH to 2746
1:30	5:00	3.50	Wash & ream 2746 to 2914
5:00	13:30	8.50	Drill & surveys 2914 to 3052
13:30	14:00	0.50	Rig service
14:00	0:00	10.00	Drill & surveys 3052 to 3259
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			7am drilling @ 3400
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $ 2,276,570 DAILY MUD $

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/23/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
24	Drilling	3,727	468	23.00	20.3	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.6	32	n/c	2/32	8.8	0.50	2.8	5	12	6/10	3433	2/23/8:30	193,050	20000		117,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
7	12.250	SEC	EBXS12S	437	10686671	22	22	22	2914		813	41.50	19.6	Y	40+120	15-40			
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													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	146	212	1650	150		

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	28.91	2.813	
3 pt. reamer	5.20	7.938	
float,UBHO, 2 monels,;	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,027.21		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell N(Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/23
Last BOP Drill	2/22
Last Operate Pipe Rar	2/22
Last Operate Blind Ra	2/22
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
3,344	18.10	156.60	3229	-583	352	680	1.65	MWD	3,470	19.50	148.60	3349	-618	371	720	3.45	MWD
3,596	20.30	145.70	3468	-654	393	762	3.35	MWD	3,722	20.00	148.50	3586	-691	416	806	0.89	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	11:30	11.50	Drill & surveys 3259 to 3488
11:30	12:00	0.50	Work on # 2 pump
12:00	16:30	4.50	Drill & surveys 3488 to 3588
16:30	17:00	0.50	Rig service
17:00	0:00	7.00	Drill & surveys 3588 to 3727
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			5am drilling @ 3809
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $ 2,276,579 DAILY MUD $ 3,428 DAILY DRILLING COST $ [illegible]

Engineering & Supervision | **EXACT Engineering, Inc.** | *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/24/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
25	Ream thru sidetrack @ 2500	3,809	82	5.00	16.4	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.5	35	n/c	2/32	8.5	0.50	2.3	5	17	12/20	3809	2/24/09:00	118,000	1800		194,700

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
7	12.250	SEC	EBXS12S	437	10686671	22	22	22	2914		893	46.50	19.2	Y	40+120	15-40			
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													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1650	150	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/24
Last BOP Drill	2/24
Last Operate Pipe Ram	2/24
Last Operate Blind Ra	2/24
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
3,344	18.10	156.60	3229	-583	352	680	1.65	MWD	3,470	19.50	148.60	3349	-618	371	720	3.45	MWD
3,596	20.30	145.70	3468	-654	393	762	3.35	MWD	3,722	20.00	148.50	3586	-691	416	806	0.89	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	5:00	5.00	Drill & surveys 3727 to 3809
5:00	6:00	1.00	Circ. Pump sweep
6:00	11:00	5.00	POOH for wiper trip, check motor & pressure loss
11:00	16:00	5.00	Change motor MWD, LD stabilizer check bit
16:00	18:00	2.00	RIH to shoe
18:00	19:00	1.00	Slip & cut drilling line
19:00	19:30	0.50	RIH to 2385
19:30	0:00	4.50	Wash & ream thru sidetrack 2385 to 2500
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am Wash & Ream @ 3764
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $ 2,276,579 DAILY MUD $

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/25/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
26	Drilling	4,024	215	15.50	13.9	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	30	n/c	2/32	7.5	0.50	4.0	3	6	4/7	3865	2/25/12:00	114,000	2560		188,100

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
7	12.250	SEC	EBXS12S	437	10686671	22	22	22	2914		1108	62.00	17.9	Y	40+120	15-40			
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													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1700	200	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
110,000	45,000	120,000	105,000	

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/25
Last BOP Drill	2/24
Last Operate Pipe Ram	2/24
Last Operate Blind Ra	2/24
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
3,780	19.60	152.30	3641	-708	426	825	1.65	MWD
3,969	19.50	146.50	3819	-762	459	888	0.52	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:30	1.50	RIH LD 6 jts.
1:30	5:00	3.50	Wash & ream thru tight hole 2810 2997,
5:00	6:00	1.00	RIH
6:00	7:30	1.50	Work on # 2 pump, Replace pop off
7:30	8:30	1.00	Wash & ream 60' to btm.
8:30	0:00	15.50	Drill & surveys 3809 to 4024
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 4100
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/26/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
27	RIH	4,200	176	15.50	11.4	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.9	30	n/c	2/32	9.0	0.50	4.0	3	7	4/7	4108	2/26/8:30	122,000	2560		201,300

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
7	12.250	SEC	EBXS12S	437	10686671	22	22	22	2914	4200	1286	77.50	16.6	Y	40+120	15-40	6	8	I
8	12.250	SEC	EBXS16S	437		22	22	22	4200				#DIV/0!						
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													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1700	200	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
130,000	45,000	200,000	100,000	400

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell N(Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/26
Last BOP Drill	2/24
Last Operate Pipe Ran	2/26
Last Operate Blind Ra	2/26
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
4,000	19.80	145.30	3848	-771	465	899	1.62	MWD
4,167	17.90	143.70	4006	-815	496	953	2.00	MWD

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	13:30	13.50	Drill & surveys 4024 to 4170
13:30	14:00	0.50	Rig service
14:00	16:00	2.00	Drill & surveys 4170 to 4200
16:00	19:00	3.00	Pump pill POOH for bit
19:00	22:30	3.50	Change bit motor MWD
22:30	0:00	1.50	RIH
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 4278
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/27/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
28	Drilling	4,600	400	19.50	20.5	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
9.8	30	n/c	2/32	7.5	0.50	3.6	3	7	4/6	4330	2/27/08:00	128,000	3680		211,200

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
8	12.250	SEC	EBXS16S	437	10687152	22	22	22	4200		400	19.50	20.5	Y	20+120	15-40			
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													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1700	200	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,S	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
145,000	45,000	220,000	110,000	400

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/27
Last BOP Drill	2/24
Last Operate Pipe Ram	2/26
Last Operate Blind Ra	2/26
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
4,199	17.60	145.30	4037	-823	502	963	1.79	MWD	4,293	18.50	146.00	4126	-847	518	992	0.20	MWD
4,388	19.20	147.60	4216	-873	535	1023	0.78	MWD	4,514	19.30	147.10	4335	-908	557	1064	0.52	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	1:30	1.50	RIH
1:30	2:30	1.00	Wash & ream 4140 to 4200
2:30	13:00	10.50	Drill & surveys 4200 to 4450
13:00	14:30	1.50	Go thru pumps, look for 400 psi. press loss, could not find anything
14:30	16:00	1.50	Drill & surveys 4450 to 4476
16:00	16:30	0.50	Go thru # 2 pump, look for 400 psi. press loss, Found piece of rubber.
16:30	0:00	7.50	Drill & surveys 4476 to 4600
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
02/28/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
29	Drilling	5,083	483	23.50	20.6	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
10.0	29	n/c	2/32	8.8	0.50	3.5	3	4	2/3	4790	2/28/8:45	144,000	3320		273,600

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
8	12.250	SEC	EBXS16S	437	10687152	22	22	22	4200		883	43.00	20.5	Y	20+120	15-40			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1700	200	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
155	45	265	125	400

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	2/28
Last BOP Drill	2/28
Last Operate Pipe Ra	2/26
Last Operate Blind Ra	2/26
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
4,734	18.90	147.60	4543	-968	596	1136	0.11	MWD	4,829	19.60	147.60	4633	-995	613	1167	0.74	MWD
4,924	20.30	150.10	4722	-1023	630	1200	1.10	MWD	5,018	20.10	149.50	4810	-1051	646	1232	0.31	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	15:00	15.00	Drill & surveys 4600 to 4939
15:00	15:30	0.50	Rig service
15:30	0:00	8.50	Drill & surveys 4939 to 5083
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 5191
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/01/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
30	Drilling	5,389	306	23.50	13.0	Arapien	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
10.1	29	n/c	2/32	9.0	0.50	3.0	3	7	3/4	5223	3/1/09:15	169,000	3240		278,850

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
8	12.250	SEC	EBXS16S	437	10687152	22	22	22	4200		1189	63.50	18.7	Y	20+120	15-40			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	115	340						
2	National	6	8.5	2.96	115	340						
Both				5.92	230	681	133	194	1700	200	133.2/1.127	

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	2296	67	9-Apr
2	2296	77	140

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
155	45	265	125	400

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/1
Last BOP Drill	2/28
Last Operate Pipe Ram	2/26
Last Operate Blind Ra	2/26
Last Operate Annular	2/13

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
5,018	20.10	149.50	4810	-1051	646	1232	0.31	MWD									
5,301	20.50	154.30	5075	-1137	694	1321	1.20	MWD									

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	13:30	13.50	Drill & surveys 5083 to 5285
13:30	14:00	0.50	Rig service
14:00	0:00	8.50	Drill & surveys 5285 to 5389
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 5443
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		22.50	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/04/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
33	WOC	5,851	0	0.00	#DIV/0!	Twin Creek	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
10.1	32	n/c	2/32	7.5	0.50	3.0	4	12	5/8	5578	3/3/08:30	170,000	2600		280,500

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!	Y	20+120	15-40	2	2	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96		0						
2	National	6	8.5	2.96		0						
Both				5.92		0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1			
2			

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
12-1/4" Bit	1.00	12.250	
DHM 1.25 deg	22.00	2.813	
		7.938	
float,UBHO, 2 monels,	79.66	3.500	
xo, 6 jts 6-5/8 SWDP	184.27		
xo,(16)5" SWDP, (3) 5'	576.80		
Drilling jars	32.61	2.250	
(4) 5" HWDP	118.76		
Total BHA:	1,015.10		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
175	45	280	139	480

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/4
Last BOP Drill	3/2
Last Operate Pipe Ram	3/4
Last Operate Blind Ra	3/4
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
9-5/8" ~ 6000	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
5,585	19.80	162.40	5342	-1228	730	1427	0.75	MWD
5,774	17.00	166.40	5521	-1285	746	1483	1.20	MWD
5,679	17.90	163.90	5431	-1258	739	1456	2.00	MWD
5,805	16.80	167.30	5551	-1294	748	1491	1.00	MWD

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	4:00	4.00	POOH to run pipe
4:00	6:00	2.00	LD directional assembly & 6 5/8" HWDP
6:00	7:00	1.00	Pull wear bushing, clean rig floor
7:00	9:00	2.00	Rig up csng. Crew
9:00	18:00	9.00	Safety meeting, PU & run 133 jts. 47# P110 LT&C 9 5/8" intermediate csng. Set @ 5823'
18:00	19:00	1.00	Rig down csng. Crew
19:00	19:30	0.50	Circ. Csng.
19:30	21:30	2.00	Safety meeting, Cement csng. With 470 sks. 50/50 pos. 13# 1.71 yield cement
21:30	0:00	2.50	WOC. Float did not hold
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			This am WOC
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision | **EXACT Engineering, Inc.** | (918) 599-9400

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/06/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
35	Drilling	6,195	344	16.00	21.5	Twin Creek	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.4	34	12.6	2/32	11.0	0.00	0.5	5	6	2/3	5851	3/6/08:30	8,000	450		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
10	8.500	SEC	XS20S	447	10626203	12	12	12	5851		344	16.00	21.5	Y	30+110	38			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	125	370	190		1000	150	204 / 1.806	8.5
2	National	6	8.5	2.96		0						
Both				5.92		370						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	5851	68	260
2	5851	75	320

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
8 1/2" Bit	1.00	8.500	NP
DHM 1.25 deg	20.40	6.500	NP
float,UBHO, 2 monels	71.00	6.500	3.000
,(16)5" SWDP, (3) 5" H	485.14	5.000	3.000
Drilling jars	32.61	6.500	2.500
(4) 5" HWDP	576.80	5.000	3.000
Total BHA:	1,186.95		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
175	45	260	135	350

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell N(Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/6
Last BOP Drill	3/6
Last Operate Pipe Ra	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
5,804	16.80	167.30	5550	-1294	748	1491	1.10	mwd	5,885	16.90	163.60	5627	-1316	754	1513	1.30	mwd
5,979	16.10	160.60	5718	-1342	762	1539	1.24	mwd	6,073	15.30	158.70	5808	-1366	771	1563	1.00	mwd

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	2:00	2.00	POOH for press loss
2:00	2:30	0.50	Check bit mtr. Mwd
2:30	7:00	4.50	RIH
7:00	8:00	1.00	Drill cement & shoe 5795 to 5823, Wash 5823 to 5851
8:00	0:00	16.00	Drill & survey 5851 to 6195
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 6350
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

EXACT Engineering, Inc. www.exactengineering.com
415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

CONFIDENTIAL

March 22, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 well
Sec 17 T23S R01W
Sevier Co., UT
API# 43-041-30035

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from March 7, 2005 through March 12, 2005. Production casing was run and cemented on March 11, 2005 and the rig released to the next well on March 12, 2005. Well completion is estimated to begin in July 2005 upon completion of drilling the remaining wells from this drill pad. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Steven R. Hash
Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson
EXACT Engineering, Inc. well file

CONFIDENTIAL

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/12/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
41	Move rig	6,908	0	0.00	#DIV/0!	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.96	0	0						
2	National	6	8.5	2.96		0						
Both				5.92		0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1			
2			

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	
Navajo	6,194	5,924	SS,

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell NoDarren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/12
Last BOP Drill	3/6
Last Operate Pipe Ram	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6908

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	5:00	5.00	Nipple down clean mud tanks
5:00	12:00	7.00	Rig down
12:00			**Rig released 05:00 3/12/05**
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			**FINAL DRLG REPORT THIS WELL - OFF REPT UNTIL COMPLETION BEGINS AFTER ALL WELLS DRILLED THIS PA**
0:00			
0:00			Production casing and casing running cost will be included with Completion Cost on completion report
0:00			
0:00			
0:00			
Daily Total		12.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/11/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
40	Set csng. Slips	6,908	0	0.00	#DIV/0!	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA	IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
											#DIV/0!						
											#DIV/0!						
											#DIV/0!						
											#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.96	0	0						
2	National	6	8.5	2.96		0						
Both				5.92		0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1			
2			

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
Total BHA:	0.00		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	
Navajo	6,194	5,924	SS,

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/11
Last BOP Drill	3/6
Last Operate Pipe Ram	3/6
Last Operate Blind Ram	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	7:00	7.00	Lay down 5' DP & BHA
7:00	8:30	1.50	Break kelly, pull wear bushing
8:30	9:30	1.00	Rig up casers, Hold safety meeting
9:30	16:00	6.50	Run 157 jts. 23#, HCP110, 7" casing
16:00	17:00	1.00	Rig up to & circ. Casing. Had 35' fill washed to btm. 6908
17:00		2.50	Rig up & cement w/ Haliburton 295 sks. 14.35# Class G 50/50 pos. Dispacement was mis calculated, may have 500' cement in
	19:30		pipe. Should have 500' cverage in 9 5/8
19:30	20:00	0.50	Rig down Haliburton
20:00	0:00	4.00	Set 7" casing slips cut off
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

AFE DHC $	2,276,579	DAILY MUD $	295	DAILY DRILLING COST $	19,360
AFE CWC $	2,967,353	CUM MUD $	74,387	CUM DRILLING COST $	2,058,207

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/10/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
39	LD DP	6,908	0	0.00	#DIV/0!	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.7	35	6.0	1/32	7.0	0.75	1.8	7	8	4/7	6908	3/9/08:30	20,000	500		33,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA	IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
											#DIV/0!						
											#DIV/0!						
											#DIV/0!						
											#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	0	0						
2	National	6	8.5	2.96		0						
Both				5.92		0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1			
2			

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
8 1/2" Bit	1.00	8.500	NP
		6.500	NP
		6.500	3.000
(16)5" SWDP, (3) 5" H	485.14	5.000	3.000
Drilling jars	32.61	6.500	2.500
(4) 5" HWDP	576.80	5.000	3.000
Total BHA:	1,095.55		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
187	45	290	135	320

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	
Navajo	6,194	5,924	SS,

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/10
Last BOP Drill	3/6
Last Operate Pipe Ram	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	5:00	5.00	Run # 5 2nd attempt @ MRIL
5:00	7:30	2.50	Wait on logging tools
7:30	14:30	7.00	Run # 6 DLL, failed on btm. Run # 7 DLL, Run # 8 EMI failed.
14:30	15:00	0.50	Rig down loggers
15:00	19:30	4.50	RIH 45' fill
19:30	21:00	1.50	Circ. Sweep
21:00	22:00	1.00	POOH 14 stds. To csng.
22:00	23:00	1.00	RIG up lay down machiene
23:00	0:00	1.00	Lay down 5' DP
0:00			
0:00			
0:00			
0:00			This am laying down DP
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/09/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
38	logging run # 4, MRIL	6,908	0	0.00	#DIV/0!	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.7	35	6.0	1/32	7.0	0.75	1.8	7	8	4/7	6908	3/9/08:30	20,000	500		33,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN^2	ECD
1	National	6	8.5	2.96	0	0						
2	National	6	8.5	2.96		0						
Both				5.92		0						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	6800	68	400
2	6800	75	520

DRILL STRING

BHA	no. 7	LENGTH	O.D.	I.D.
8 1/2" Bit		1.00	8.500	NP
			6.500	NP
			6.500	3.000
,(16)5" SWDP, (3) 5" H		485.14	5.000	3.000
Drilling jars		32.61	6.500	2.500
(4) 5" HWDP		576.80	5.000	3.000
Total BHA:		1,095.55		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
187	45	290	135	320

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	
Navajo	6,194	5,924	SS,

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell NoDarren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/9
Last BOP Drill	3/6
Last Operate Pipe Ram	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	2:30	2.50	Wait on logging truck repair
2:30	16:00	13.50	Logging, Run # 1 HRI. Tool length 50' Run # 2 DSN/SDL tool length 45' Run # 3 EMI tool length 65'
16:00	23:00	7.00	Wait on logging tools
23:00	0:00	1.00	Run # 4 MRIL tool length 47' wt. 1600 lbs. Tool was stuck @ shoe for 1 hour
0:00			
0:00			This am waiting on DLL
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/08/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
37	Wait on logging truck repair	6,908	143	7.00	20.4	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.7	35	8.0	1/32	7.0	0.50	1.6	5	9	4/7	6908	3/8/08:00	19,000	480		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
10	8.500	SEC	XS20S	447	10626203	12	12	12	5851	6908	1057	47.00	22.5	Y	30+110	38	8	E	3/16
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	125	370	190		1000	150	204 / 1.806	8.5
2	National	6	8.5	2.96		0						
Both				5.92		370						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	6800	68	400
2	6800	75	520

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
8 1/2" Bit	1.00	8.500	NP
DHM 1.25 deg	20.40	6.500	NP
float,UBHO, 2 monels	71.00	6.500	3.000
,(16)5" SWDP, (3) 5" H	485.14	5.000	3.000
Drilling jars	32.61	6.500	2.500
(4) 5" HWDP	576.80	5.000	3.000
Total BHA:	1,186.95		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
187	45	290	135	320

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	
Navajo	6,194	5,924	SS,

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO

Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/8
Last BOP Drill	3/6
Last Operate Pipe Ram	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	7:00	7.00	Drill & Surveys 6765 to 6908 TD - **TD 8-1/2" hole @ 7am 3/8/05**
7:00	8:30	1.50	Circ. & condition for logs
8:30	9:30	1.00	Wiper trip to shoe
9:30	10:30	1.00	Circ. & condition for logs
10:30	11:30	1.00	RIH, 30' fill
11:30	13:00	1.50	Circ. & condition for logs
13:00	15:00	2.00	POOH to shoe, trip back to btm. 15' fill
15:00	19:00	4.00	POOH for logs
19:00	21:00	2.00	LD directional assembly
21:00	0:00	3.00	Wait on logging truck repair
0:00			
0:00			
0:00			
0:00			
0:00			6am logging to a TD of 6880
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Engineering & Supervision **EXACT Engineering, Inc.** *(918) 599-9400*

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR
03/07/05	Wolverine Federal 17-4	Unit Rig #111	Sevier, UT	1/31/05	43-041-30035	Darren Naylor

DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
36	Drilling	6,765	570	24.00	23.8	Navajo	6950

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	OIL	SALT PPM
8.5	32	8.0	1/32	9.0	0.50	1.3	4	6	2/3	6393	3/7/8:30	13,000	400		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION T	B	G
10	8.500	SEC	XS20S	447	10626203	12	12	12	5851		914	40.00	22.9	Y	30+110	38			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN²	ECD
1	National	6	8.5	2.96	125	370	190		1000	150	204 / 1.806	8.5
2	National	6	8.5	2.96		0						
Both				5.92		370						

SLOW PUMP

PMP#	DEPTH	SPM	PSI
1	6800	68	400
2	6800	75	520

DRILL STRING

BHA no. 7	LENGTH	O.D.	I.D.
8 1/2" Bit	1.00	8.500	NP
DHM 1.25 deg	20.40	6.500	NP
float,UBHO, 2 monels	71.00	6.500	3.000
,(16)5" SWDP, (3) 5" H	485.14	5.000	3.000
Drilling jars	32.61	6.500	2.500
(4) 5" HWDP	576.80	5.000	3.000
Total BHA:	1,186.95		

STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
187	45	290	135	320

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapien			Shale. Anhy, Lm
Twin Creek	5,796	5,543	

GAS DATA

BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS

SHOWS

GAS UNITS	FROM	TO	ROP (FT/HR)

GRD. ELEVATION	GL TO KB	KB ELEVATION	SURFACE CASING
5,736	17	5,753	13-3/8" 68ppf @ 2127

GENERAL INFO

RIG INFO	
Rig No	Unit 111
Cell No Darren	918-645-6671
Last BOP Test	2/13
Next BOP Test	3/12
Last Safety Meeting	3/7
Last BOP Drill	3/6
Last Operate Pipe Ran	3/6
Last Operate Blind Ra	3/6
Last Operate Annular	3/4

INTERMEDIATE CSG	PRODUCTION CSG
7#9 5/8 @ 582	7" ~ 6950

SURVEYS

MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL
6,262	17.90	139.90	5989	-1411	799	1617	3.10	mwd	6,451	17.40	137.60	6169	-1454	837	1673	0.31	mwd
6,640	16.40	136.40	6350	-1493	875	1728	0.90	mwd	6,735	13.80	143.70	6442	-1512	891	1752	3.30	mwd

DAILY ACTIVITY

FROM			LAST 24 HOURS:
0:00	0:00	24.00	Drill & Surveys 6195 to 6765
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			6am drilling @ 6885
0:00			
0:00			
Daily Total		24.00	

CONFIDENTIAL

COST DATA

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160 - 3 (APD) for such proposals.

019

SUBMIT IN TRIPLICATE *- Other instructions on reverse side.*

1. Type of Well ☐ Oil Well ☐ Gas Well ☑ Other CONFIDENTIAL	5. Lease Serial No. **UTU-73528**
2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**	6. If Indian, Allottee or Tribe Name
3a. Address **One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI** 3b. Phone No. *(include area code)* **616-458-1150**	7. If Unit or CA/Agreement, Name and/or No. **Wolverine Fed Exploration Unit**
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* **SHL: 1680' FNL & 2249' FWL** **BHL: 1980' FSL & 1980' FEL** 23S 1W 17	8. Well Name and No. **Wolverine Federal #17-4**
	9. API Well No. **43-041-30035**
	10. Field and Pool, or Exploratory Area **Exploratory**
	11. County or Parish, State **Sevier Co, UT**

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **suspend operations**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Drilling operations were completed on March 12, 2005

Operations will be suspended until additional (total 5) permitted wells can be drilled from the same drilling pad location, at which time, completion operations will commence as soon thereafter as a well service rig becomes available. This well is secured with a cap flange.

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

RECEIVED
APR 2 1 2005
DIV. OF OIL, GAS & MINING

xc: UDOGM

COPY SENT TO OPERATOR
Date: 5-4-05
Initials: CHD

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Steven R Hash - EXACT Engineering Inc** Title **Consulting Engineer (918) 599-9400**

Signature Steven R. Hash Date **04/18/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title **Accepted by the Utah Division of Oil, Gas and Mining** Date

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

Federal Approval Of This Action Is Necessary

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.

(Instructions on page 2)

Date: 5/2/05
By: Dustin Doucet

CONFIDENTIAL

EXACT Engineering, Inc. www.exactengineering.com
415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

September 6, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 well
Sec 17 T23S R01W
Sevier Co, UT
API# 43-041-30035
BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our daily completion activity reports for the subject well. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Chris Nicely
Engineering Technician

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph
EXACT Engineering, Inc. well file

RECEIVED
SEP 0 9 2005
DIV. OF OIL, GAS & MINING

Daily Completion Report

Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-4 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

"TIGHT HOLE"

New Completion
7" 23# HCP110 @ 6908' TD
PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs – 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP set @ na
GL to RKB: 17'

08/26/05 **FIRST COMPLETION REPORT** – during July cleaned location, installed 11" 5m x 7-1/16" 5m tbg head with (2) 2-1/16" 5m gate valves w/ single valve tree, move in 4% KCL treating fluid and flowback tanks. Offload 2-7/8" 6.5ppf N80 EUE 8rd new tbg. MIRU Pool Well Service Unit @ 6am from WF 17-5. ND wellhead & flowline, NU 7-1/16" 5m BOP, set up pipe racks & load with tbg & strap. Note: CBL log run on 7/21/05 found good cement w/ TOC @ 5670' & marker jt @ 5833-5845. Pickup 6-1/4" bit & csg scraper and TIH w 213 jts of 2-7/8" tbg, tag PBTD @ 6640'. RU Halco & pump 1500 gal caustic-chemical tubular cleanup job, displace hole w 4% Kcl. RD Halco. Swab well down to 2500' fs, SDFN. Tomorrow's plan: perf & test. CMOL: Steve Hash

Est Daily Completion Cost $ [redacted] (incl csg,FL,WH,tbg)
Est Cumulative Comp Cost $ [redacted] Completion AFE $ [redacted]
Est Dryhole Cost $ [redacted] Dryhole AFE $ [redacted]
Est Total Well Cost to date $ [redacted] Total Well Cost AFE $ [redacted]

08/27/05 POOH w/ tbg & laydown tools, RU WellServ WLU w/ lubricator. Perforated in four gun runs the (8) Upper Navajo 1 intervals listed below with 4 jpf (260 holes total) per Spectral Density – Dual Spaced Neutron log dated 09-Mar-2005. Used 4" HSC gun, Titan 39 gm charges for .47" hole diam, 90 deg phased and 59" penetration, standby

set	zone	interval	ft	density	# holes	Phase	diam	Pene
(1)	Upr Navajo 1	6292-6310	18	4 jpf	72	90	.47	59"
(2)	Upr Navajo 1	6327-6350	23	4 jpf	92	90	.47	59"
(3)	Upr Navajo 1	6360-6362	2	4 jpf	8	90	.47	59"
(4)	Upr Navajo 1	6370-6382	12	4 jpf	48	90	.47	59"
(5)	Upr Navajo 1	6386-6388	2	4 jpf	8	90	.47	59"
(6)	Upr Navajo 1	6406-6409	3	4 jpf	12	90	.47	59"
(7)	Upr Navajo 1	6411-6413	2	4 jpf	8	90	.47	59"
(8)	Upr Navajo 1	6416-6419	3	4 jpf	12	90	.47	59"
	total	127 gross	65		260			

Make up 7" RBP, ball catcher & pkr assy & TIH to 6440, set RBP. Pull EOT to 6266, run in hole w/ CCL, & log in pkr, make -15ft correction. RD WLU. Reset RBP @ 6384 & pkr @ 6304 wlm. RU to swab, BFL 2000', made 7 runs and recv 35 bbls fluid, EFL 5300' pulling from 6000'. Sample 95% oil, recovering grit & fines in swab, leave well open to tank. SDF weekend. Monday's plan: test remaining perfs natural & acidize Tuesday. CMOL: Steve Hash This am FTP zero, flwd 2 BO in 10 hrs overnight

Est Daily Completion Cost $ [redacted]
Est Cumulative Comp Cost $ [redacted]

08/28/05 Flwd 18 BO and no water on open chk in 24 hrs, FTP 0 psi

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-4 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

"TIGHT HOLE"

New Completion
7" 23# HCP110 @ 6908' TD
PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs – 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP set @ na
GL to RKB: 17'

08/29/05 Flwd 20 BO and no water on open chk in 24 hrs, FTP 0 psi

08/30/05 Kill well by reversing one tbg volume, release tools, reset across perf zone #1 6276-6294 w/ RBP @ 6302 & pkr @ 6247 wlm. RU to swab, made 11 runs and recovered 73 bbls fluid. EFL @ 5300', sample 95% oil. Fill tbg, release tools @ 2pm and reset across perf zones 6-7-8 w/ RBP @ 6448 & pkr @ 6382 wlm. RU swab, made 2 runs and rec 28 bbls fluid. Sandline clutch failed on rig, waiting on parts and mechanic. Postponed acid work until Thursday 9/1/05. CMOL: SRHash
Est Daily Completion Cost $ [redacted]
Est Cumulative Comp Cost $ [redacted]

08/31/05 Rig repair

09/01/05 Rig repair complete, made 1 swab run, BFL 2600' fs, rec 8 bbl, clutch ok.

09/02/05 Shut down waiting on Halliburton – prep to acidize today 9/2

09/03/05 RU Halco to acidize, HSF. All fluid NeFeHCl w/ inhibitor, morflo III surfactant & penetrating surfactant. Spot 350 gal to btm perf set 6-7-8. Pressured zone to 3300 psi (~1 psi/ft) for 14 attempts bleeding off to 2500 each time, surged last two attempts, could not breakdown. Reset pkr @ 6304 wlm w/ remaining acid in tbg, pressured perf sets 2-8 to 3000 psi for 11 attempts, surged twice, pressured to 3050 psi and communicated, reset pkr @ 6338 wlm, pressure perf sets 3-8 and communicated to annulus. Reset pkr above perf sets 2-8 and pumped 5800 gal acid w/ 1600 gal ahead then 3000 gal w 282 BS (1.3 sg, 7/8" dia, 150%), then 1200 gal with 50 bbl flush. Acid at 3.3 bpm @ 3400 psi tbg and 2800 psi on csg throughout job, flush @ 4.7 bpm @ 3500 psi. ISDP 2400, 5=825, 10=535, 15=380. Bleed off, move pkr to 6382' & pump into perf set 6-7-8 @ 2 bpm @ 3600 psi w 20 bbl, no break. Move RBP to 6304' and pkr to 6248 across top perf set 1. Pump 2000 gal with 108 BS (1.3 sg, 7/8" dia, 150%) at 2.5 bpm @ 2450 psi, incr rate to 3.5 bpm @ 2750 psi, flush with 48 bbls @ 3100 psi. ISDP 2000, 5=645, 10=360, 15=225 psi. Bleed off, RD Halco, release pkr, catch RBP and pull up to 6216' w/ RBP swinging, reverse 60 bbls to pit, set pkr at 6216'. 248 BLWTR. RU swab. BFL surf, made 5 runs and hung swab cup, worked free in 1-1/2 hrs, resume swabbing. Recovered 128 bbls fluid in 16 runs in 7 hrs total swabbing, EFL @ 2200', pulling from 4000'. Last sample 90% oil, left well open to tank on 24/64" chk @ 11pm. Release rig crew, SDFN, well flowing by 12 midnite, next am, made 34 bbls in 6 hrs flowing by 6am, 5.5 bbl/hr avg rate. CMOL: SRHash
Est Daily Completion Cost $ [redacted]
Est Cumulative Comp Cost $ [redacted]

09/04/05 Monitor well and police location, release crew for holiday weekend at 10am. Well flowed 47 bbls fluid on open chk in 8hrs until 2pm 9/3, avg 6 bphr, 20% load water, 209 bbls total recovery, approx 140 BLWR, 108 BLWTR. Made 69 BO. Prep to trip tools and run BHP instruments on Tuesday 9/6. Will continue to flow well on test thru weekend.
Est Daily Completion Cost $ [redacted]
Est Cumulative Comp Cost $ [redacted]

09/05/05 Flowed 196 bbls on open chk in 24 hrs until 2pm 9/4, FTP zero. Approx 166 BO & 30 BLW, 78 BLWTR. Switch well into frac tank A3, Approx 300 BO production to date

Daily Completion Report

Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-4 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

"TIGHT HOLE"

New Completion
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PBTD 6869' on 3/11/05; CBL TD 6590'
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6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP set @ na
GL to RKB: 17'

09/06/05 Flowed 186 bbls on open chk in 24 hrs until 2pm 9/5, FTP zero. Approx 10% load water in samples, ph 5.5, 176 BO & 10 BLW, 68 BLWTR, Total production approx 476 BO. Prep to trip tools 9/6, CMOL: SRHash **FIRST OIL SALES FROM WF 17-4 TO CHEVRON on 9/5/05 – run ticket #75238**

EXACT Engineering, Inc. www.exactengineering.com
415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

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September 19, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 well
Sec 17 T23S R01W
Sevier Co, UT
API# 43-041-30035
BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our final daily completion activity reports for the subject well for September 6 through September 16, 2005. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Chris Nicely
Engineering Technician

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph
EXACT Engineering, Inc. well file

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-4 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

"TIGHT HOLE"

New Completion
7" 23# HCP110 @ 6908' TD
PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs – 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP intake set @ 5189 (4970' tvd)
GL to RKB: 17'

09/15/05 Pmpd 162 bbls fluid to test tank in 6 hrs on a 14/64" chk, 350 psi PTP from 8am to 2pm 9/14/05. Running 51 hz pump speed, est production at 130 BO & 32 BLW

Production Tubing Setting - run in hole on 9/13/05

	Description	*SN*	*Length*	*Top @ kb*
1	4.50"od, 54hp, 1020v,35a,FMH motor	21F-0068747	14.80	5194 md
1	4.0"od, FSB3 SSCV SB seal	31F-0071886	5.58	5189 md
1	4.0"od, type P8, model 400P, 147 stg pump w intake	01F-0007454	13.50	5175 md
1	2-3/8" x 2-7/8" EUE 8rd xover		.75	
1	2-7/8" EUE 8rd SN (2.25" min id)		1.10	5173 md
1	2-7/8" 6.5# N80 EUE 8rd handling sub		6.18	
164	2-7/8" 6.5# N-80 EUE 8rd tbg joints		5149.99	
	Overall		5191.95	
	Set below KB (GL to KB = 17')		+17.0	
	EOT set @ KB		5208.90	
	EOT 5209'kb md; intake @ 5189'kb md (4970' tvd)			
	Note: there is NO check or drain valve in this well			

09/16/05 Pmpd 696 bbls fluid to test tank in 24 hrs on 14/64" chk @ 320 psi PTP from 2pm 9/14 to 2pm 9/15; running 51 hz. Samples trace water, estimate production at 675 BO & 21 BLW; Total production to date 2289 BO, **TURNED WELL OVER TO PRODUCTION @ 2pm 9/15/05 – FINAL COMPLETION REPORT – Thank you!**

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Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-4 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

New Completion
7" 23# HCP110 @ 6908' TD
PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs – 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP intake set @ 5189 (4970' tvd)
GL to RKB: 17'

"TIGHT HOLE"

09/06/05 Flowed 186 bbls on open chk in 24 hrs until 2pm 9/5, FTP zero. Approx 10% load water in samples, ph 5.5, 176 BO & 10 BLW, 68 BLWTR, Total production approx 476 BO. Prep to trip tools 9/6, CMOL: SRHash **FIRST OIL SALES FROM WF 17-4 TO CHEVRON on 9/5/05 – run ticket #75238**

09/07/05 Flowed 121 bbls on open chk in 16 hrs fr 2pm until 6am 9/6; SWI, reverse tbg volume w KCl, released pkr, POOH w 199 jts, LD tools. Pick up 2-7/8" MA on btm of pkr, install pressure recorder, RIH with tbg & set pkr @ 6221' w EOT & recorders at 6234'. ND BOP, NU tree & land tbg. RU to swab, recv 83 bbls fluid, last sample 95% oil, leave well open to tank, flwg by 6pm. Rig down and move rig to WF 17-5. SDFN. Flowed well overnight

09/8/05 Flowed 152 BO and tr water on open chk in 20 hrs on test from 6pm 9/6 until 2pm 9/7, FTP 0

09/9/05 Flowed 172 BO and tr water on open chk in 25 hrs on test from 2pm 9/7 to 2:45 pm 9/8. FTP 0 SWI for BHPBU @ 2:45pm 9/8/05

09/10/05 Well shut in 23 hrs for BHPBU from 2:45pm 9/8 to 2pm 9/9; SITP 410 psi in 23 hrs

09/11/05 Well shut in 24 hrs for BHPBU from 2pm 9/9 to 2pm 9/10; SITP 420 psi in 47 hrs

09/12/05 Well shut in 25 hrs for BHPBU from 2pm 9/10 to 3pm 9/11; SITP 420 psi in 72 hrs; turn well back on to main battery @ 3pm 9/11

09/13/05 Flowed est 192 BO and tr water on open chk in 23 hrs from 3pm 9/11 to 2pm 9/12. FTP 0

09/14/05 Flowed est 125 BO and tr water on open chk in 18 hrs from 2pm 9/12 to 8am 9/13. FTP 0
RU Pool WSU, top kill well with 15 bbls KCl, ND tree & NU BOPE w/ annular & test. Release 7" Arrowset pkr, reverse tbg clean with 30 bbls KCl. Lay down 35 jts tbg & stand back remaining 164 jts, lay down tools. RU Baker Centrilift to run ESP, pick up motor, seal & pump w/ 2.25 SN & TIH banding #4 cable 3 bands per jt, splice feed thru and land btm of tbg @ 5209' md. ND BOPE & NU wellhead. Complete tbg setting report to follow. Hook up flowlines, air supply & shutdowns. Pump in operation and on test @ 7:00pm 9/13 on a 24/64" chk, PTP 150 psi. This am pmpd 444 bbls fluid in 12 hrs til 8am 9/14, 246 BO & 198 BLW. Sample this am 10% water, reduce to 14/64" chk, PTP 350 psi, pumping ARO 27 bphr. RD WSU.

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WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

September 22, 2005

CONFIDENTIAL

Ms. Carol Daniels
Utah Division of Oil, Gas & Mining
1594 W.N. Temple
Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 Well Completion Report

Dear Carol:

Enclosed please find the Completion Report (form #8) for the captioned well. Attached to the report are the following documents:

- Directional Survey
- Geologic Report
- Logs
    1. Mudlog
    2. Dipmeter Monitor Log
    3. Spectral Density/DSN/GR - TVD
    4. Spectral Density/DSN/GR - MD
    5. Dual Laterolog MSFL DFL – TVD
    6. Dual Laterolog MSFL DFL – MD

Please keep this report and all attachments confidential. If you have any questions or concerns, please feel free to contact me.

Sincerely,

Helene Bardolph

enclosures

RECEIVED
SEP 26 2005
DIV. OF OIL, GAS & MINING

One Riverfront Plaza • 55 Campau, N.W. • Grand Rapids, MI 49503-2616 • 616.458.1150
FAX 616.458.0869

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

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AMENDED REPORT ☐ (highlight changes) — FORM 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-73528
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME: Wolverine Fed. Exploration Unit
8. WELL NAME and NUMBER: Wolverine Federal 17-4
9. API NUMBER: 4304130035
10. FIELD AND POOL, OR WILDCAT: Covenant Field

1a. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ DRY ☐ OTHER
b. TYPE OF WORK: NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER Well Completion

2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC

3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503 PHONE NUMBER: (616) 458-1150

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 1680' FNL & 2249' FWL, Sec 17, T23S, R1W
AT TOP PRODUCING INTERVAL REPORTED BELOW: 2,062' FEL & 2264' FSL, Sec 17, T23S, R1W
AT TOTAL DEPTH: 1932' FEL & 2109' FSL, Sec 17, T23S, R1W

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W 26
12. COUNTY: Sevier
13. STATE: UTAH

14. DATE SPUDDED: 1/31/2005
15. DATE T.D. REACHED: 3/8/2005
16. DATE COMPLETED: 9/5/2005 ABANDONED ☐ READY TO PRODUCE ☑
17. ELEVATIONS (DF, RKB, RT, GL): 5752,5753,5753,5736

18. TOTAL DEPTH: MD 6,908 TVD 6,611
19. PLUG BACK T.D.: MD 6,869 TVD 6,573
20. IF MULTIPLE COMPLETIONS, HOW MANY? *
21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
Dual Laterolog MD & TVD, Spectral Density/DSN/GR - MD & TVD, Dipmeter Monitor, MUD LOG

23.
WAS WELL CORED? NO ☑ YES ☐ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy)

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

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
30	20	14" wall	0	121		Class G 640	134	Surface circ	
17.5	13 3/8 J55	68	0	2,127		1,120	237	Surface circ	
12.25	9 5/8	47	0	5,823		50/50 470	143	4800 CAL	
8.5	7	23	0	6,908		50/50 295	90	5670 CBL	
		P110 LTC							
		HCP 110				CBM lite/Prem			

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	5,209							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) Navajo	6,191	6,908	5,921	6,611
(B)				
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
See Addendum #1			Open ☑ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6292 - 6310	2000 gal NeFeHCL w/ inhib., morflow III surfactant & penetrat. surfac. + 108 RBS, 48 bbls overflush
6327 - 6419	5800 gal NeFeHCL w/ inhib., morflow III surfactant & penetrat. surfac. + 282 RBS, 50 bbls overflush
6406 - 6419	20 bbl KCL water

29. ENCLOSED ATTACHMENTS:
☑ ELECTRICAL/MECHANICAL LOGS ☑ GEOLOGIC REPORT ☐ DST REPORT ☑ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER:

30. WELL STATUS: Producing

RECEIVED
SEP 26 2005
DIV. OF OIL, GAS & MINING

(5/2000) (CONTINUED ON BACK)

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31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
9/5/2005	9/16/2005	24		696	0		Pumping

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:
14/64	420	0	40.00	0	0		696	0		Producing

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

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

Venting (gas too small to measure)

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
Arapien	55	85	Water	Arapien	0
Navajo	6,191	6,908	Oil & water	Twin Creek	5,863
				Navajo	6,191

35. ADDITIONAL REMARKS (Include plugging procedure)

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

NAME (PLEASE PRINT) John Vrona TITLE Manager of Geology

SIGNATURE [signature] DATE 9/22/2005

This report must be submitted within 30 days of

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

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

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

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

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(5/2000)

ADDENDUM #1

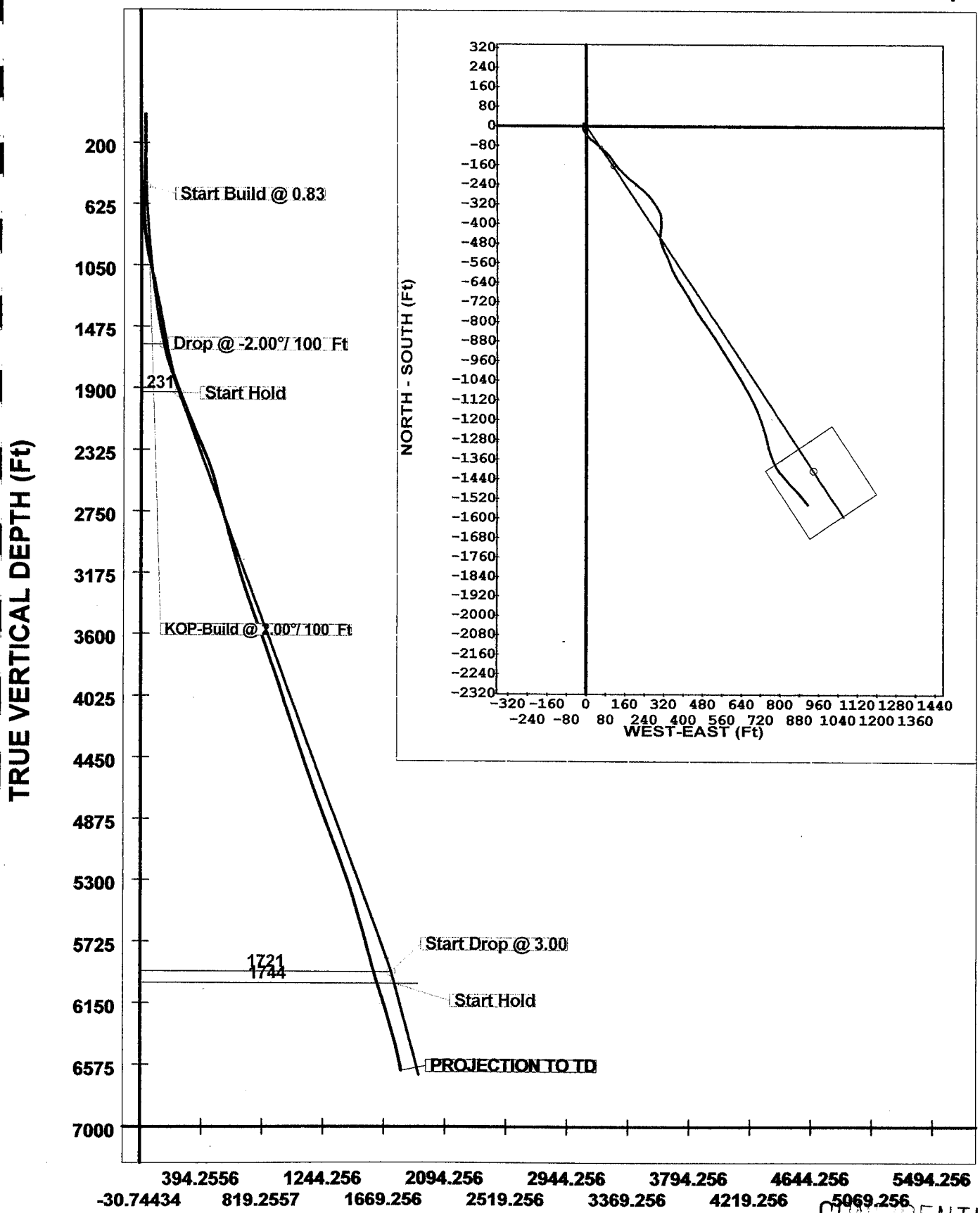
Perforation Details

Wolverine Federal 17-4
1680' FNL & 2249' FWL, Sec 17, T23S, R1W
Sevier County, Utah
API# 43-041-30035

Perforations:

set	zone	interval	ft	density	# holes	Phase	diam	Pene
(1)	Upr Navajo 1	6292-6310	18	4 jpf	72	90	.47	59"
(2)	Upr Navajo 1	6327-6350	23	4 jpf	92	90	.47	59"
(3)	Upr Navajo 1	6360-6362	2	4 jpf	8	90	.47	59"
(4)	Upr Navajo 1	6370-6382	12	4 jpf	48	90	.47	59"
(5)	Upr Navajo 1	6386-6388	2	4 jpf	8	90	.47	59"
(6)	Upr Navajo 1	6406-6409	3	4 jpf	12	90	.47	59"
(7)	Upr Navajo 1	6411-6413	2	4 jpf	8	90	.47	59"
(8)	Upr Navajo 1	6416-6419	3	4 jpf	12	90	.47	59"
	total	127 gross	65		260			

Company: Wolverine Gas & Oil Co of Utah
Lease/Well: Federal 17-4
Location: Covenant Field
State/Country: Sevier County, Utah



° -- S/T Surveys --

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Weatherford

Job Number: WYL0105D015
Company: Wolverine Gas & Oil Co of Utah
Lease/Well: Federal 17-4
Location: Covenant Field
Rig Name: Unit 111
RKB:
G.L. or M.S.L.:

State/Country: Sevier County, Utah
Declination: 12.95
Grid:
File name: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~2\1
Date/Time: 12-Jul-05 / 11:56
Curve Name: S/T Surveys

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 146.00
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100	CLOSURE Distance FT	CLOSURE Direction Deg
.00	.00	.00		.00	.00	.00	.00	.00	.00	.00
191.00	.60	41.60	191.00	191.00	.75	.66	-.25	.31	1.00	41.60
345.00	1.90	320.20	154.00	344.96	3.31	-.43	-2.99	1.24	3.34	352.52
437.00	2.50	319.00	92.00	436.90	6.00	-2.73	-6.50	.65	6.59	335.55
465.00	2.90	315.10	28.00	464.86	6.96	-3.63	-7.80	1.57	7.85	332.47
495.00	3.10	305.10	30.00	494.82	7.97	-4.83	-9.30	1.86	9.31	328.78
526.00	3.00	312.70	31.00	525.78	9.00	-6.11	-10.88	1.34	10.88	325.82
556.00	2.80	302.50	30.00	555.74	9.92	-7.30	-12.31	1.84	12.32	323.64
587.00	2.70	285.10	31.00	586.71	10.52	-8.65	-13.56	2.70	13.62	320.58
617.00	2.30	255.00	30.00	616.68	10.55	-9.91	-14.29	4.51	14.47	316.78
647.00	2.50	226.90	30.00	646.65	9.95	-10.97	-14.38	3.94	14.81	312.19
677.00	3.20	205.80	30.00	676.62	8.74	-11.81	-13.86	4.17	14.70	306.51
708.00	4.10	198.40	31.00	707.55	6.91	-12.54	-12.74	3.27	14.32	298.87
738.00	5.10	192.90	30.00	737.46	4.60	-13.18	-11.18	3.64	13.95	289.23
768.00	5.60	195.10	30.00	767.33	1.88	-13.85	-9.31	1.80	13.98	277.74
797.00	6.50	186.60	29.00	796.17	-1.11	-14.41	-7.14	4.37	14.46	265.58
827.00	7.00	178.80	30.00	825.96	-4.63	-14.57	-4.31	3.48	15.29	252.38
857.00	7.70	170.80	30.00	855.71	-8.44	-14.21	-.95	4.13	16.53	239.29
886.00	8.00	162.50	29.00	884.44	-12.28	-13.29	2.75	4.04	18.10	227.26
916.00	9.00	156.40	30.00	914.11	-16.42	-11.72	7.06	4.48	20.18	215.52
947.00	10.20	150.90	31.00	944.68	-21.04	-9.42	12.18	4.87	23.06	204.11
976.00	11.40	145.80	29.00	973.16	-25.66	-6.56	17.60	5.29	26.48	194.34
1005.00	12.20	143.70	29.00	1001.55	-30.50	-3.13	23.53	3.13	30.66	185.87
1035.00	12.80	140.70	30.00	1030.84	-35.62	.85	30.01	2.95	35.63	178.64
1067.00	13.00	137.40	32.00	1062.03	-41.02	5.53	37.10	2.39	41.39	172.32

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100	CLOSURE Distance FT	CLOSURE Direction Deg
1098.00	12.90	134.90	31.00	1092.25	-46.03	10.34	43.94	1.84	47.17	167.34
1130.00	12.80	133.40	32.00	1123.44	-50.98	15.45	50.90	1.09	53.27	163.15
1161.00	12.60	132.10	31.00	1153.69	-55.61	20.45	57.54	1.13	59.25	159.81
1193.00	12.40	130.70	32.00	1184.93	-60.19	25.64	64.24	1.13	65.43	156.92
1224.00	12.10	128.60	31.00	1215.22	-64.39	30.71	70.55	1.73	71.34	154.50
1256.00	12.10	128.30	32.00	1246.51	-68.56	35.96	76.95	.20	77.42	152.32
1287.00	11.80	128.30	31.00	1276.84	-72.54	41.00	83.06	.97	83.32	150.53
1319.00	12.10	127.70	32.00	1308.15	-76.62	46.22	89.36	1.01	89.48	148.90
1350.00	12.10	129.10	31.00	1338.46	-80.65	51.31	95.56	.95	95.59	147.54
1386.00	11.90	129.50	36.00	1373.67	-85.39	57.10	102.73	.60	102.73	146.23
1417.00	11.30	130.60	31.00	1404.04	-89.40	61.88	108.72	2.06	108.73	145.31
1449.00	11.30	130.70	32.00	1435.42	-93.49	66.63	114.76	.06	114.80	144.52
1479.00	11.00	131.60	30.00	1464.85	-97.30	71.00	120.37	1.16	120.45	143.88
1512.00	10.90	134.20	33.00	1497.25	-101.57	75.59	126.48	1.53	126.61	143.34
1543.00	10.70	136.00	31.00	1527.70	-105.68	79.69	132.18	1.26	132.36	142.98
1575.00	10.60	136.70	32.00	1559.15	-109.96	83.78	138.01	.51	138.24	142.70
1606.00	10.70	137.40	31.00	1589.62	-114.15	87.68	143.67	.53	143.94	142.47
1638.00	11.20	138.80	32.00	1621.03	-118.68	91.74	149.69	1.77	150.00	142.30
1669.00	11.30	141.30	31.00	1651.44	-123.32	95.62	155.70	1.61	156.04	142.21
1701.00	11.80	144.10	32.00	1682.79	-128.41	99.50	162.10	2.35	162.45	142.23
1732.00	12.90	144.30	31.00	1713.07	-133.79	103.38	168.72	3.55	169.08	142.31
1764.00	14.50	145.30	32.00	1744.16	-139.99	107.74	176.30	5.05	176.65	142.42
1795.00	15.90	144.80	31.00	1774.07	-146.65	112.40	184.43	4.54	184.77	142.53
1827.00	17.90	143.00	32.00	1804.69	-154.16	117.88	193.72	6.46	194.06	142.59
1860.00	19.80	141.80	33.00	1835.92	-162.60	124.39	204.36	5.88	204.73	142.58
1891.00	21.30	140.00	31.00	1864.95	-171.04	131.26	215.20	5.25	215.60	142.50
1923.00	21.60	137.90	32.00	1894.73	-179.86	138.95	226.81	2.58	227.28	142.31
1954.00	21.30	135.10	31.00	1923.58	-188.08	146.75	237.99	3.44	238.56	142.04
1986.00	21.40	134.40	32.00	1953.39	-196.29	155.02	249.41	.86	250.12	141.70
2017.00	22.00	133.00	31.00	1982.19	-204.20	163.31	260.61	2.56	261.47	141.35
2048.00	22.70	132.10	31.00	2010.86	-212.17	171.99	272.08	2.51	273.13	140.97
2067.00	23.00	130.70	19.00	2028.37	-217.05	177.53	279.22	3.27	280.40	140.72
2176.00	23.40	128.60	109.00	2128.56	-244.44	210.59	320.41	.84	322.64	139.26
2208.00	23.40	128.80	32.00	2157.93	-252.39	220.50	332.54	.25	335.14	138.86
2239.00	23.70	130.00	31.00	2186.35	-260.25	230.07	344.41	1.82	347.37	138.52
2271.00	24.00	132.70	32.00	2215.61	-268.80	239.78	356.93	3.54	360.21	138.27
2302.00	24.20	135.50	31.00	2243.91	-277.61	248.87	369.31	3.74	372.83	138.12
2334.00	24.50	138.60	32.00	2273.07	-287.26	257.86	382.34	4.10	386.02	138.09
2366.00	24.50	141.60	32.00	2302.19	-297.44	266.37	395.54	3.89	399.27	138.15
2394.00	23.80	143.20	28.00	2327.74	-306.51	273.36	406.97	3.42	410.70	138.27
2431.00	23.30	143.40	37.00	2361.65	-318.36	282.19	421.74	1.37	425.43	138.45
2462.00	22.00	145.10	31.00	2390.26	-328.05	289.17	433.67	4.69	437.30	138.60
2493.00	20.40	149.50	31.00	2419.17	-337.47	295.23	444.87	7.28	448.38	138.82
2525.00	19.10	155.50	32.00	2449.29	-347.04	300.24	455.60	7.52	458.89	139.14
2556.00	17.90	163.20	31.00	2478.69	-356.22	303.72	465.15	8.77	468.12	139.55

S/T Surveys File: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~2\17-4.SVY

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100	CLOSURE Distance FT	CLOSURE Direction Deg
2588.00	17.80	170.10	32.00	2509.15	-365.74	305.98	474.32	6.61	476.86	140.08
2619.00	17.50	174.10	31.00	2538.69	-375.05	307.27	482.75	4.03	484.85	140.67
2651.00	17.50	177.50	32.00	2569.21	-384.64	307.98	491.10	3.19	492.75	141.32
2682.00	17.10	182.60	31.00	2598.81	-393.85	307.98	498.73	5.06	499.97	141.98
2714.00	17.70	182.40	32.00	2629.35	-403.41	307.56	506.43	1.88	507.28	142.68
2745.00	18.50	184.90	31.00	2658.81	-413.02	306.94	514.05	3.60	514.59	143.38
2777.00	19.40	187.30	32.00	2689.08	-423.35	305.83	521.99	3.72	522.26	144.16
2809.00	20.60	186.40	32.00	2719.15	-434.22	304.53	530.27	3.87	530.36	144.96
2840.00	21.00	182.10	31.00	2748.13	-445.19	303.72	538.91	5.09	538.92	145.70
2872.00	19.50	177.30	32.00	2778.15	-456.25	303.76	548.11	6.99	548.12	146.35
2903.00	17.10	169.60	31.00	2807.59	-465.91	304.83	556.71	10.97	556.77	146.80
2934.00	16.00	163.80	31.00	2837.31	-474.49	306.84	564.96	6.40	565.06	147.11
2966.00	16.00	159.90	32.00	2868.07	-482.87	309.59	573.44	3.36	573.59	147.33
2997.00	16.10	158.10	31.00	2897.86	-490.87	312.66	581.79	1.64	581.99	147.51
3029.00	16.00	157.40	32.00	2928.61	-499.06	316.01	590.45	.68	590.70	147.66
3060.00	15.70	155.86	31.00	2958.43	-506.83	319.37	598.77	1.67	599.06	147.78
3091.00	16.10	153.60	31.00	2988.25	-514.51	322.99	607.16	2.38	607.49	147.88
3123.00	16.50	153.40	32.00	3018.96	-522.55	327.00	616.07	1.26	616.43	147.96
3165.00	16.80	154.80	42.00	3059.20	-533.37	332.25	627.98	1.19	628.39	148.08
3186.00	16.80	157.10	21.00	3079.30	-538.91	334.73	633.96	3.17	634.41	148.15
3218.00	17.10	158.30	32.00	3109.91	-547.55	338.27	643.09	1.44	643.61	148.29
3249.00	17.40	158.30	31.00	3139.52	-556.09	341.67	652.07	.97	652.66	148.43
3281.00	17.90	159.20	32.00	3170.01	-565.13	345.18	661.54	1.78	662.21	148.58
3312.00	18.10	158.30	31.00	3199.50	-574.06	348.65	670.88	1.11	671.64	148.73
3344.00	18.10	156.60	32.00	3229.91	-583.24	352.47	680.62	1.65	681.47	148.85
3375.00	18.10	154.10	31.00	3259.38	-591.99	356.48	690.12	2.51	691.04	148.94
3407.00	18.20	151.80	32.00	3289.79	-600.87	361.01	700.02	2.26	700.98	149.00
3439.00	18.60	150.40	32.00	3320.15	-609.71	365.90	710.08	1.86	711.07	149.03
3470.00	19.50	148.60	31.00	3349.45	-618.42	371.03	720.17	3.47	721.19	149.04
3501.00	19.80	149.50	31.00	3378.65	-627.36	376.39	730.58	1.37	731.61	149.04
3533.00	20.00	149.70	32.00	3408.74	-636.76	381.91	741.45	.66	742.50	149.05
3564.00	19.50	147.80	31.00	3437.91	-645.71	387.34	751.92	2.62	752.98	149.04
3596.00	20.30	145.70	32.00	3468.00	-654.82	393.31	762.81	3.35	763.86	149.01
3627.00	20.30	146.40	31.00	3497.08	-663.74	399.32	773.56	.78	774.60	148.97
3659.00	20.00	146.50	32.00	3527.12	-672.93	405.41	784.58	.94	785.61	148.93
3690.00	19.80	147.90	31.00	3556.27	-681.79	411.13	795.13	1.67	796.16	148.91
3722.00	20.00	148.50	32.00	3586.36	-691.05	416.87	806.02	.89	807.05	148.90
3749.00	19.80	150.80	27.00	3611.75	-698.98	421.51	815.19	2.99	816.24	148.91
3780.00	19.60	152.20	31.00	3640.93	-708.16	426.50	825.59	1.65	826.68	148.94
3812.00	19.70	152.30	32.00	3671.07	-717.69	431.51	836.28	.33	837.42	148.98
3843.00	19.50	149.40	31.00	3700.27	-726.77	436.57	846.64	3.20	847.81	149.01
3874.00	19.40	148.60	31.00	3729.50	-735.61	441.89	856.95	.92	858.13	149.01
3906.00	19.50	147.40	32.00	3759.68	-744.65	447.53	867.60	1.29	868.79	148.99
3937.00	19.40	146.90	31.00	3788.91	-753.32	453.13	877.92	.63	879.10	148.97
3969.00	19.50	146.50	32.00	3819.08	-762.23	458.98	888.57	.52	889.75	148.95

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Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100	CLOSURE Distance FT	CLOSURE Direction Deg
4000.00	19.80	145.30	31.00	3848.28	-770.86	464.83	899.00	1.62	900.16	148.91
4032.00	18.80	145.50	32.00	3878.48	-779.56	470.83	909.57	3.13	910.72	148.87
4063.00	18.90	144.40	31.00	3907.82	-787.76	476.58	919.59	1.19	920.71	148.83
4095.00	19.00	145.00	32.00	3938.08	-796.24	482.59	929.98	.68	931.07	148.78
4126.00	18.70	144.60	31.00	3967.42	-804.43	488.36	939.99	1.05	941.07	148.74
4167.00	17.90	143.70	41.00	4006.35	-814.86	495.90	952.86	2.07	953.90	148.68
4199.00	17.60	145.30	32.00	4036.82	-822.81	501.57	962.61	1.79	963.63	148.63
4230.00	18.00	146.00	31.00	4066.34	-830.63	506.91	972.08	1.46	973.09	148.61
4262.00	18.50	146.20	32.00	4096.73	-838.95	512.50	982.11	1.57	983.10	148.58
4293.00	18.50	146.00	31.00	4126.13	-847.11	517.99	991.94	.20	992.93	148.56
4356.00	19.10	146.90	63.00	4185.77	-864.03	529.21	1012.24	1.06	1013.22	148.51
4388.00	19.20	147.60	32.00	4215.99	-872.86	534.88	1022.74	.78	1023.71	148.50
4451.00	19.30	148.10	63.00	4275.47	-890.45	545.94	1043.50	.31	1044.48	148.49
4514.00	19.30	147.10	63.00	4334.93	-908.03	557.09	1064.31	.52	1065.30	148.47
4577.00	19.40	146.40	63.00	4394.37	-925.48	568.54	1085.18	.40	1086.17	148.44
4640.00	18.80	147.60	63.00	4453.91	-942.77	579.77	1105.79	1.14	1106.77	148.41
4734.00	18.90	147.60	94.00	4542.86	-968.41	596.04	1136.15	.11	1137.14	148.39
4829.00	19.60	147.60	95.00	4632.55	-994.86	612.82	1167.46	.74	1168.46	148.37
4924.00	20.30	150.10	95.00	4721.85	-1022.60	629.58	1199.83	1.16	1200.86	148.38
5018.00	20.10	149.50	94.00	4810.07	-1050.65	645.90	1232.21	.31	1233.31	148.42
5112.00	20.50	149.20	94.00	4898.23	-1078.71	662.53	1264.77	.44	1265.92	148.44
5207.00	20.90	151.10	95.00	4987.10	-1107.83	679.24	1298.26	.82	1299.48	148.49
5301.00	20.50	154.30	94.00	5075.03	-1137.34	694.48	1331.25	1.28	1332.61	148.59
5396.00	20.70	157.30	95.00	5163.96	-1167.82	708.17	1364.17	1.13	1365.76	148.77
5490.00	19.70	160.30	94.00	5252.18	-1198.06	719.92	1395.82	1.53	1397.73	149.00
5585.00	19.80	162.40	95.00	5341.59	-1228.48	730.19	1426.77	.75	1429.10	149.27
5679.00	17.90	163.90	94.00	5430.55	-1257.53	739.01	1455.79	2.09	1458.60	149.56
5774.00	17.00	166.40	95.00	5521.18	-1285.06	746.32	1482.70	1.23	1486.06	149.85
5804.00	16.80	167.30	30.00	5549.88	-1293.55	748.31	1490.85	1.10	1494.40	149.95
5885.00	16.90	163.60	81.00	5627.41	-1316.27	754.20	1512.98	1.33	1517.03	150.19
5979.00	16.10	160.60	94.00	5717.54	-1341.67	762.39	1538.62	1.24	1543.15	150.39
6073.00	15.30	158.70	94.00	5808.03	-1365.52	771.23	1563.33	1.01	1568.26	150.54
6168.00	16.50	148.60	95.00	5899.41	-1388.72	782.81	1589.04	3.17	1594.15	150.59
6262.00	17.90	139.90	94.00	5989.22	-1411.16	799.07	1616.75	3.11	1621.70	150.48
6357.00	17.50	138.50	95.00	6079.72	-1433.03	817.94	1645.42	.61	1650.03	150.28
6451.00	17.40	137.60	94.00	6169.40	-1453.99	836.79	1673.34	.31	1677.59	150.08
6546.00	17.00	134.20	95.00	6260.15	-1474.17	856.32	1700.99	1.14	1704.83	149.85
6640.00	16.40	136.40	94.00	6350.19	-1493.36	875.32	1727.52	.93	1730.98	149.62
6735.00	13.80	143.70	95.00	6441.91	-1512.20	891.28	1752.07	3.39	1755.32	149.49
6830.00	12.20	142.30	95.00	6534.47	-1529.28	904.13	1773.41	1.72	1776.56	149.41
6861.00	11.80	141.80	31.00	6564.79	-1534.36	908.09	1779.84	1.33	1782.95	149.38
PROJECTION TO TD										
6908.00	11.80	141.80	47.00	6610.80	-1541.92	914.04	1789.43	.00	1792.48	149.34

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WOLVERINE GAS & OIL CORPORATION
WOLVERINE FEDERAL #17-4
NW/SE SECTION 17,T23S,R1W
SEVIER COUNTY, UTAH

CONFIDENTIAL

GEOLOGIC REPORT

ON

WOLVERINE FEDERAL #17-4
NW/SE SEC. 17,T23S,R1W
SEVIER COUNTY, UTAH

FOR

WOLVERINE GAS AND OIL CORPORATION
ONE RIVERFRONT PLAZA
55 CAMPPAU NW
GRAND RAPIDS, MI 49503-2616

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March 2005

Roger Charbonneau, B.Sc.
Decollement Consulting, Inc.

WELL DATA SUMMARY

WELL NAME	WOLVERINE FEDERAL #17-4
OPERATOR	WOLVERINE GAS & OIL CORP.
SURFACE LOCATION	NW/SE SEC. 17,T23S,R1W SEVIER, CO., UT
API#	043-041-30035
WELL CLASSIFACTION	DEVELOPMENT-COVENANT FIELD
DRILLING CONTRACTOR	UNIT #111
WELL LIESENCE #	043-041-30035
ELEVATION-GROUND LEVEL KELLY BUSHING	5740' 5753'
SPUD DATE	1-31-05
SURFACE CASING	2127' OF 13 3/8"
INTERMEDIATE CASING	5823' OF 9 5/8"
PRODUCTION CASING	6908' OF 7"
HOLE SIZE	16", 12 ¼",8 ½"
SAMPLE INTERVAL	2130-6908
GAS DETECTION	2170-6908
OPEN HOLE LOGS	GR,SP,CAL,HRI,DSN/SDL,DLL

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WELL DATA SUMMARY CONTINUED

MUD TYPE	SALT GEL, FLOWZAN
WELL STATUS	AWAITING COMPLETION

FORMATION TOPS

KELLY BUSHING 5753'

Formation	Prog. TVD	Sample MD	TVD	Log MD	TVD	Subsea
Arapien	Surface					
Twin Creek	5640	5797	5543	5794	5540	+213
Navajo	6008	6194	5926	6191	5923	-170

FORMATION EVALUATION

WOLVERINE GAS & OIL CORP.
WOLVERINE FEDERAL #17-5
NW/SE SEC.17,T23S,R1W
SEVIER, CO., UT

The Wolverine Federal #17-4 was the forth well drilled in the Covenant Field. Decollement Consulting began sample coverage at 2130' on Unit Rig # 111, March 24, 2005. Crews collected 30' samples to Total Depth (6908'). Surface casing (13 3/8") was set to 2127' and 12 ¼" drilled to 5823'. Intermediate casing (9 5/8") was set at 5823' and 8 ½" hole drilled to total depth. Production casing (7") was set at 6908'. A full suite of E-Logs was run. Gas detection was run from 2170-6908'

NAVAJO SANDSTONE 5923Log TVD -170 SS

The Navajo Sandstone was white, clear, quartzose, fine (lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 50-98% unconsolidated, light brown oil stain, rainbows on wash fluid, yellow to white oil fluorescence, blue to white milky cut fluorescence, yellow-gold residual ring cut, strong hydrocarbon odor, 10-16% intergranular porosity, abundant white chalky bit flour.

CONCLUSION: Oil Saturated Reservoir-Awaiting Completion

BIT RECORD

WELL NAME	WOLVERINE FEDERAL #17-5
LOCATION	NW/SE SEC. 17,T23S,R1W
SURFACE CASING	2127' OF 13 3/8"
SPUD DATE	1-31-05
TD DATE	3-9-05

BIT	1	2	3	4	5
SIZE	17 1/2	17 ½	17 ½	17 ½	12 1/4
MAKE	DPI	SEC.	STC	STC	DPI
TYPE	PDC	MC55H26	XRC	XRVC	MP4B2MF
SERIAL#	54869	MJ3820	MR463	WMR8127	2016038
JETS	5X15	4-24	3X22	3X22	3X22
OUT@	497	976	1734	2127	2425
FOOTAGE	393	479	731	394	293
HOURS	13	35	86 ½	60	36
ACC.HRS	13	48	134 ½	194 ½	230 1/2
WT	5	20	25	30	25
RPM	35	0/20	0/25	0/30	0/33
PP	1700	1580	1480	1300	1350
MUD WT	9.9	9.8	9.7	9.5	8.7
VIS	38	36	38	37	32
DEV	2.5	9.0	19	23	24 1/2

BIT RECORD CONTINUED

BIT	6	7	8	9
SIZE	12 ¼	12 ¼	12 ¼	12 ¼
MAKE	SEC	SEC	SEC	SEC
TYPE	EBSXS12S	EXSXS12S	EBXS16S	EBXS165S
SERIAL#	10686670	10686671	10687152	10627406
JETS	3X22	3X22	3X22	3X20
OUT@	3360	4200	5549	5851
FOOTAGE	1612	1286	1349	302
HOURS	82	77 ½	84 ½	15 1/2
ACC.HRS	312 ½	390	474 ½	490
WT	45	30	40	40
RPM	0/30	0/25	0/30	0/30
PP	1800	1700	1900	1800
MUD WT	9.2	9.7	9.8	10.1
VIS	33	30	35	35
DEV	46.8	18.9	19.7	17

BIT	10
SIZE	8 1/2
MAKE	SEC
TYPE	EBXS20S
SERIAL#	10625203
JETS	3X12
OUT@	6903
FOOTAGE	1057
HRS	47
ACC.HRS	537
WT	40
RPM	0/30
PP	1040
MUD WT	8.9
VIS	33
DEV	16.6

DAILY DRILLING SUMMARY

Date	Depth	Prog.	Hrs	Mud	Vis	WL	PH	Activity
1-31-05	283	283	6 ½	9.9+	34	nc	10.5	Spud,Drill Surface
2-1-05	677	394	17	10.0	34	nc	9.0	Drill,Trip,MWD
2-2-05	960	283	23	9.9+	34	nc	8.5	Drill
2-3-05	1049	89	12 ½	9.8	33	nc	8.0	Drill,Trip Bit
2-4-05	1296	247	23 ½	9.7	36	nc	7.5	Drill
2-5-05	1435	138	17	9.8+	35	nc	8.1	Drill,Trip Jars
2-6-05	1582	147	23 ½	9.8	39	nc	9.0	Drill
2-7-05	1734	152	18	9.7+	36	nc	10.0	Drill,Trip MWD
2-8-05	1816	82	11 ½	9.5	37	nc	7.5	RIH,Drill
2-9-05	1979	163	23 ½	9.6	34	nc	10.3	Drill
2-10-05	2115	136	22	9.8	36	nc	8.8	Drill
2-11-05	2127	12	3	9.8	37	nc	8.0	Drill,POOH,Casing
2-12-05	2127	Nil	Nil	9.3	30	nc	14	Run 13 3/8,Cement
2-13-05	2127	Nil	Nil	8.7	28	nc	14	Nipple Up
2-14-05	2296	169	12	8.5+	33	nc	14	Press.Test,Drill
2-15-05	2425	129	8 ½	8.9	34	nc	9.0	Drill,Trip-Motor
2-16-05	2726	301	15 ½	8.6+	35	nc	8.5	RIH,Drill
2-17-05	3020	294	17	8.9+	31	nc	7.0	Drill,Trip-Motor
2-18-05	3360	340	14	9.5+	32	nc	7.5	Drill,Plug Back
2-19-05	3360	Nil	Nil	9.5+	32	nc	7.5	WOC
2-20-05	2514	24	1 ½	9.4+	32	nc	14	Time Drill,Drill
2-21-05	2914	400	23 ½	9.5	30	nc	11	Drill
2-22-05	3130	216	11 ½	9.5	30	nc	10.5	Drill,Trip-Bit
2-23-05	3600	470	22 ½	9.6+	32	nc	8.8	Drill
2-24-05	3809	209	11	9.5	35	nc	8.5	Drill,Trip-Motor
2-25-05	3945	136	9 ½	9.8	29	nc	7.5	RIH,Drill
2-26-05	4200	255	21 ½	9.9	30	nc	9.0	Drill,Trip
2-27-05	4510	310	13 ½	9.8	29	nc	7.5	RIH,Drill
2-28-05	5005	495	23 ½	10.0	29	nc	8.8	Drill
3-1-05	5328	323	23 ½	10.1	29	nc	9.0	Drill
3-2-05	5537	209	22	10.0	32	nc	8.0	Drill
3-3-05	5795	258	13 ½	10.0	32	nc	7.5	Drill,Trip-Bit
3-4-05	5851	56	4	10.3	31	nc	7.0	Drill,Run 9 5/8
3-5-05	5851	Nil	Nil	8.4	26	nc	7.0	WOC,RIH

DAILY DRILLING SUMMARY CONTINUED

3-6-05	6080	229	11	8.4	34	nc	11.0	Drill Shoe,Drill
3-7-05	6350	270	24	8.5+	32	nc	9.0	Drill
3-8-05	6903	558	13	8.7+	35	nc	7.0	Drill,Wiper Trip
3-9-05	6908	5	½	8.7+	35	nc	7.0	POOH,Log
3-10-05	6908	Nil	Nil	8.9	36	nc	7.5	Logging

DEVIATION SURVEYS

MEASURED DEPTH	ANGLE	AZMUTH
2067	23.0	130.7
2176	23.4	128.6
2271	24.0	132.7
2366	24.5	141.6
2394	23.8	143.2
2431	23.3	143.4
2462	22.0	145.1
2493	20.4	149.5
2525	19.1	155.5
2556	17.9	163.2
2588	17.8	170.1
2619	17.5	174.1
2651	17.5	177.5
2682	17.1	182.6
2714	17.7	182.4
2745	18.5	184.9
2777	19.4	187.3
2809	20.6	186.4
2840	21.0	182.1
2872	19.5	177.3
2903	17.1	169.6
2934	16.0	163.80
2997	16.1	158.1
3029	16.0	157.4
3060	15.7	155.9
3091	16.1	153.6
3123	16.5	153.4
3165	16.8	154.8
3186	16.8	157.1
3218	17.1	158.3
3249	17.4	158.3
3281	17.9	159.2
3312	18.1	158.3
3344	18.1	156.6

DEVIATION SURVEY CONTINUED

MEASURED DEPTH	ANGLE	AZMUTH
3375	18.1	154.1
3407	18.2	151.8
3439	18.6	150.4
3470	19.5	148.6
3501	19.8	149.5
3533	20.0	149.7
3564	19.5	147.8
3596	20.3	145.7
3627	20.3	146.6
3659	20.0	146.5
3690	19.8	147.9
3722	20.0	148.5
3749	19.8	150.8
3780	19.6	152.2
3812	19.7	152.3
3843	19.5	149.4
3874	19.4	148.6
3906	19.5	147.4
3937	19.4	146.9
3969	19.5	146.5
4000	19.8	145.3
4032	18.8	145.5
4063	18.9	144.4
4095	19.0	145.0
4126	18.7	144.6
4167	17.9	143.7
4199	17.6	145.3
4230	18.0	146.0
4262	18.5	146.2
4293	18.5	146.0
4365	19.1	146.9
4388	19.2	147.6
4451	19.3	148.1
4514	19.3	147.1

DEVIATION SURVEY CONTINUED

MEASURED DEPTH	ANGLE	AZMUTH
4577	19.4	146.4
4640	18.8	147.6
4743	18.9	147.6
4829	19.6	147.6
4924	20.3	150.1
5018	20.1	149.5
5112	20.5	149.2
5207	20.9	151.1
5301	20.5	154.3
5396	20.7	157.3
5490	19.7	160.3
5585	19.8	162.4
5679	17.9	163.9
5774	17.0	166.4
5804	16.8	167.3
5885	16.9	163.6
5979	16.1	160.0
6073	15.3	158.7
6168	16.5	148.6
6262	17.9	139.9
6357	17.5	138.5
6451	17.4	137.6
6546	17.0	134.2
6640	16.4	136.4
6735	13.8	143.7

LITHOLOGIC DESCRIPTIONS

2130-60	LIMESTONE-100% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2160-90	LIMESTONE-80% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-20% white, light gray, argillaceous, limy, grades to silty, limestone.
2190-2220	LIMESTONE-90% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-10% white, light gray, argillaceous, limy, grades to silty, limestone.
2220-50	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2250-80	LIMESTONE-70% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-30% white, light gray, argillaceous, limy, grades to silty, limestone.
2280-2310	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2310-40	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2340-70	LIMESTONE-30% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-70% white, light gray, argillaceous, limy, grades to silty, limestone.

2370-2400	SANDSTONE-light red, clear, quartzose, fine(lower) to medium(lower)grained, sub angular, fair to poor sorted, unconsolidated. LIMESTONE-As Above.
2400-30	SHALE-50% Red brown, blocky, calcareous, silty, firm to hard. SILTSTONE-10% Light brown, white, arenaceous, argillaceous, slightly calcareous. SANDSTONE-40% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated.
2430-60	SHALE-10% Red brown, blocky, calcareous, silty, firm to hard. SANDSTONE-90% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated.
2460-90	SHALE-30% Red brown, blocky, calcareous, silty, firm to hard. SANDSTONE-60% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated. SILTSTONE-10% Light brown, white, arenaceous, argillaceous, slightly calcareous.
2490-2520	SHALE-60% Red brown, blocky, calcareous, silty, firm to hard. SANDSTONE-10% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated. ANHYDRITE-30% White, light gray, chalky, soft, greasy texture.
2520-50	SHALE-50% Red brown, blocky, calcareous, silty, firm to hard. SANDSTONE-20% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated. SILTSTONE-20% Light brown, white, arenaceous, argillaceous, slightly calcareous. ANHYDRITE-10% White, light gray, chalky, soft, greasy texture.

2550-80	SHALE-30% Red brown, blocky, calcareous, silty, firm to hard. LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2580-2610	SHALE-10% Red brown, blocky, calcareous, silty, firm to hard. ANHYDRITE-10% White, light gray, chalky, soft, greasy texture. LIMESTONE-80% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2610-40	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2640-70	SHALE-20% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-60% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone. SANDSTONE-20% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, unconsolidated.
2670-2700	SHALE-30% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-50% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone. ANHYDRITE-20% White, light gray, chalky, soft, greasy texture.
2700-30	SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-20% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone. SANDSTONE-70% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, unconsolidated.

2730-60	SHALE-20% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2760-90	SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2790-2820	SILTSTONE-90% White, anhydritic matrix, clay filled, firm. LIMESTONE-10% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2820-50	SILTSTONE-10% White, anhydritic matrix, clay filled, firm. LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone. ANHYDRITE-10% White, light gray, chalky, soft, greasy texture.
2850-80	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2880-2910	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.
2910-40	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.
2940-70	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.

2970-3000	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.
3000-30	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3030-60	LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-20% White, anhydritic matrix, clay filled, firm.
3060-90	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3090-3120	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3120-50	LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-10% White, anhydritic matrix, clay filled, firm. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3150-80	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.

3180-3210	LIMESTONE-60% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3210-40	LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty inpart. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3240-70	LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3270-3300	LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty inpart. SHALE-20% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3300-30	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.
3330-60	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.

SIDE TRACK #1

2470-2500	SHALE-20% Red brown, silty, blocky. SILTSTONE-10% Red brown, white, argillaceous, arenaceous, calcareous, anhydrite matrix in part. SANDSTONE-70% Red brown, light red, clear, quartzose, fine(lower) to medium(lower) grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, predominately unconsolidated, friable, no show.
2500-30	SHALE-40% Red brown, silty, blocky. SILTSTONE-10% Red brown, white, argillaceous, arenaceous, calcareous, anhydrite matrix in part. SANDSTONE-50% Red brown, light red, clear, quartzose, fine(lower) to medium(lower) grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, predominately unconsolidated, friable, no show.
2530-60	SHALE-80% Red brown, silty, blocky. SILTSTONE-10% Red brown, white, argillaceous, arenaceous, calcareous, anhydrite matrix in part. SANDSTONE-10% Red brown, light red, clear, quartzose, fine(lower) to medium(lower) grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, predominately unconsolidated, friable, no show.
2560-90	SHALE-40% Red brown, light gray, blocky, earthy, slightly calcareous. LIMESTONE-60% Light gray, earthy, lithographic, mudstone.
2590-2620	SHALE-40% Red brown, light gray, blocky, earthy, slightly calcareous. LIMESTONE-60% Light gray, earthy, lithographic, mudstone.
2620-50	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone (70%), white, soft, chalky, mudstone (30%).

2650-80	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2680-2710	SHALE-40% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-60% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2710-40	SHALE-60% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. SILTSTONE-20% Red brown, arenaceous, argillaceous, calcareous. SANDSTONE-20% White, red brown, very fine(upper) to medium (lower) grained, sub angular, fair to poor sorted, dirty silty matrix, slightly calcareous, tight, no show.
2740-70	SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2770-2800	SHALE-20% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-70% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations. SANDSTONE-10% White, red brown, very fine(upper) to medium (lower) grained, sub angular, fair to poor sorted, dirty silty matrix, slightly calcareous, tight, no show.
2800-30	SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

2830-60	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2860-90	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2890-2920	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2920-50	SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2950-80	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2980-3010	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
3010-40	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3040-70	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3070-3100	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.

3100-30	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3130-60	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3160-90	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3190-3220	LIMESTONE-80% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-20% White, arenaceous, argillaceous, limy, grades to silty limestone.
3220-50	LIMESTONE-90% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-10% White, arenaceous, argillaceous, limy, grades to silty limestone.
3250-80	LIMESTONE-90% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-10% White, arenaceous, argillaceous, limy, grades to silty limestone.
3280-3310	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3310-40	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3340-70	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3370-3400	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.

3400-30	SHALE-40% Red brown, blocky, silty, slightly calcareous. SILTSTONE-10% Light red, arenaceous, argillaceous, calcareous. SANDSTONE-10% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight. LIMESTONE-40% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3430-60	SHALE-10% Red brown, blocky, silty, slightly calcareous. SANDSTONE-90% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.
3460-90	SANDSTONE-100% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.
3490-3520	SHALE-20% Red brown, blocky, silty, slightly calcareous. SANDSTONE-50% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight. LIMESTONE-30% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3520-50	SHALE-70% Red brown, white, blocky, silty, slightly calcareous. SILTSTONE-30% White, arenaceous, argillaceous, calcareous.
3550-80	LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SHALE-30% Red brown, white, blocky, silty, slightly calcareous. SILTSTONE-10% White, arenaceous, argillaceous, calcareous.

3580-3610	LIMESTONE-80% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SHALE-20% Red brown, white, blocky, silty, slightly calcareous.
3610-40	LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous.
3640-70	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3690-3700	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3700-30	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3730-60	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3760-3790	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3790-3820	SHALE-30% Red brown, white, blocky, silty, slightly calcareous. LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

3820-50	SHALE-10% Red brown, white, blocky, silty, slightly calcareous. LIMESTONE-90% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3850-3880	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3880-3910	LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous.
3910-40	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3940-70	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3970-4000	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4000-30	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4030-60	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4060-90	LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-40% White, arenaceous, argillaceous, calcareous.
4090-4120	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4120-50	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4150-80	LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous. SANDSTONE-10% White, very fine (upper) to fine (upper) grained, sub angular, fair to poor sorted, clay filled, tight.
4180-4210	LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-20% White, arenaceous, argillaceous, calcareous. SHALE-10% Red brown, silty, blocky, firm.
4210-40	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4240-70	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4270-4300	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4300-30	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4330-60	SHALE-10% Red brown, silty, blocky, firm. ANHYDRITE-10% White, sucrosic texture, soft to firm. LIMESTONE-80% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4360-90	SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous. ANHYDRITE-10% White, sucrosic texture, soft to firm. LIMESTONE-50% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4390-4420	SHALE-30% Red brown, silty, sandy, blocky, firm, slightly calcareous. ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash. LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4420-50	LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous.

4450-80	SHALE-40% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash. SILTSTONE-20% White, limey, soft to firm.
4480-4510	LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous.
4510-40	SHALE-50% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash. SILTSTONE-20% White, limey, soft to firm.
4540-70	SHALE-40% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-60% White, limey, soft to firm, sandy.
4570-4600	SHALE-80% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy.
4600-30	SHALE-70% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash.

4630-60	SHALE-80% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy.
4660-90	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4690-4720	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4720-50	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, limey, soft to firm, sandy. LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4750-80	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. SANDSTONE-60% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4780-4810	SHALE-30% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4810-40	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-40% White, limey, soft to firm, sandy. SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4840-70	SHALE-60% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-30% White, limey, soft to firm, sandy. SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4870-4900	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. SANDSTONE-70% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
4900-30	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. SANDSTONE-70% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4930-60	SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy. SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4960-90	SHALE-60% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, limey, soft to firm, sandy. SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4690-5020	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, limey, soft to firm, sandy. LIMESTONE-80% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5020-50	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, limey, soft to firm, sandy. SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5050-80	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, limey, soft to firm, sandy. LIMESTONE-80% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5080-5110	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-30% White, limey, soft to firm, sandy. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5110-40	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-40% White, limey, soft to firm, sandy. LIMESTONE-50% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5140-70	SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-30% White, limey, soft to firm, sandy. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5170-5200	SILTSTONE-20% White, limey, soft to firm, sandy, calcareous, anhydritic. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-20% White, chalky, soft.

5200-30	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-10% White, light gray, gray brown, limey, soft to firm, sandy, calcareous, anhydritic. SANDSTONE-10% White, tan, very fine to medium grained, sub angular, poor sorted, dirty clay matrix, limey, tight, no show. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.
5230-60	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.
5260-90	SHALE-40% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5290-5320	SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part. LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5320-50	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.
5350-80	SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part. LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5380-5410	SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part. LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5410-40	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

5440-70	SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SANDSTONE-10% White, light brown, very fine to fine grained, sub angular, clay matrix, calcareous cement, tight, no show.
5470-5500	SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-40% White, light gray, arenaceous, argillaceous, limey.
5500-30	LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

5530-60	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.
5560-5590	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.
5590-5620	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.

5620-50	SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.
5650-5680	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-30% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.
5680-5710	SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-20% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.

5710-40	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-20% White, chalky, soft, sucrosic, crystalline in part. SANDSTONE-20% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, unconsolidated.
5740-70	SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-90% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
5770-5800	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.
5800-10	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

5810-20	SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.
5820-30	LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill.
5830-40	LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill.
5840-50	LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill.
5851-70	SHALE-70% Red brown, silty, blocky, firm, slightly calcareous. SILTSTONE-20% White, chalky, limey, firm, arenaceous. LIMESTONE-10% Light to medium gray, tan, very fine to microcrystalline, lithographic, mudstone.
5870-5900	SHALE-10% Red brown, silty, blocky, firm, slightly calcareous. LIMESTONE-90% Light to medium gray, tan, very fine to microcrystalline, lithographic, mudstone.
5900-30	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone.

5930-60	LIMESTONE-90% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone. SILTSTONE-10% White, chalky, limey, firm, arenaceous.
5960-90	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant fracture in fill.
5990-6020	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6020-50	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6050-80	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6080-6110	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6110-40	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill, packstone to grainstone, white, light gray, sucrosic texture, chalky, oolitic.
6140-70	SHALE-10% Red brown, silty, blocky, firm, slightly calcareous. LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill, packstone to grainstone, white, light gray, sucrosic texture, chalky, oolitic.

6170-6200	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.
6200-30	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.
6230-60	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.
6260-90	SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 99% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6290-6320	SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.
6320-50	SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.
6350-80	SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 60% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.
6380-6410	SHALE-10% Red brown, silty, blocky. SILTSTONE-30% Light brown, brick red, arenaceous, argillaceous, anhydritic. SANDSTONE-30% white, clear, very fine(upper) to fine(lower) grained, clay matrix, calcareous cement, trace unconsolidated. ANHYDRITE-30% White, chalky, silty, soft.

6410-40	SHALE-40% Red brown, silty, blocky. SILTSTONE-30% Light brown, brick red, arenaceous, argillaceous, anhydritic. SANDSTONE-20% white, clear, very fine(upper) to fine(lower) grained, clay matrix, calcareous cement, trace unconsolidated. ANHYDRITE-10% White, chalky, silty, soft.
6440-70	SHALE-20% Red brown, silty, blocky. SILTSTONE-30% Light brown, brick red, arenaceous, argillaceous, anhydritic. SANDSTONE-20% white, clear, very fine(upper) to fine(lower) grained, clay matrix, calcareous cement, trace unconsolidated. ANHYDRITE-30% White, chalky, silty, soft.
6470-6500	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.
6500-30	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.

6530-60	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.
6560-90	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 50% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.
6590-6620	SANDSTONE-100% White, clear, quartzose, fine (lower) to medium (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour, weaker show, top mixed zone.
6620-50	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, minor show, oil water contact.
6650-80	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, weak to no show.

6680-6710	SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 65% unconsolidated, weak to no show.
6710-40	SANDSTONE-100% White, clear, quartzose, very fine(lower) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 65% unconsolidated, abundant medium to course scattered quartz grains, weak to no show.
6740-70	SANDSTONE-100% White, clear, quartzose, very fine(lower) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.
6770-6800	SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 50% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.
6800-30	SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 70% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.
6830-60	SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 20% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

6860-90	SANDSTONE-100% White, clear, quartzose, very fine(upper) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 40% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.
6890-6908	SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 40% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

well file

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

IN REPLY REFER TO
3180
UT-922

October 20, 2005

Wolverine Gas and Oil Corporation
Attn: Richard D. Moritz
One Riverfront Plaza
55 Campau, N.W.
Grand Rapids, Michigan 49503-2616

Re: 3rd Revision of the Navajo Formation PA
Wolverine Unit
Sanpete and Sevier Counties, Utah

Gentlemen:

The 3rd Revision of the Navajo Formation Participating Area, Wolverine Unit, UTU80800A, is hereby approved effective as of September 1, 2005, pursuant to Section 11 of the Wolverine Unit Agreement, Sanpete and Sevier Counties, Utah.

The 3rd Revision of the Navajo Formation Participating Area results in an addition of 155.41 acres to the participating area for a total of 635.41 acres and is based upon the completion of Well No. 17-4, API No. 43-041-30035, located in the NW¼ SE¼ of Section 17, Township 23 South, Range 1 West (BHL), SLM&B, Federal Unit Tract No. 6, Federal Lease UTU73528, as being a well capable of producing unitized substances in paying quantities.

Copies of the approved request are being distributed to the appropriate agencies and one copy is returned herewith. Please advise all interested parties of the establishment of the 3rd Revision of the Navajo Formation Participating Area, Wolverine Unit, and the effective date.

Sincerely,

/s/ David H. Murphy

David H. Murphy
Acting Chief, Branch of Fluid Minerals

Enclosure

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

FORM 6

ENTITY ACTION FORM

Operator: Wolverine Gas and Oil Company of Utah, LLC

Operator Account Number: N 1655

Address: 55 Campau NW, One Riverfront Plaza

city Grand Rapids

state MI zip 49503

Phone Number: (616) 458-1150

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130035	Wolverine Federal 17-4		NWSE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
C	14559	13995	1/31/2005			10/31/05	

Comments: Existing Participating Area expanded to include lands effective as of 9/1/2005 production.
NAVA J

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Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130038	Wolverine Federal 17-5		SENE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
C	14626	13995	3/14/2005			10/31/05	

Comments: Existing Participating Area expanded to include lands effective as of 8/1/2005 production.
NAVA J

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Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130037	Wolverine Fedoral 17-6 (WF 8-1)		NWNE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
C	14667	13995	4/16/2005			10/31/05	

Comments: Existing Participating Area expanded to include lands effective as of 8/1/2005 production.
NAVA J

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ACTION CODES:

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

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Edward A. Higuera
Name (Please Print)

Signature

Manager Development
Title

10/31/2005
Date

(5/2000)

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

AMENDED REPORT ☐ (highlight changes) FORM 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

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5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-73528

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ DRY ☐ OTHER

7. UNIT or CA AGREEMENT NAME: Wolverine Fed. Exploration Unit

b. TYPE OF WORK: (amended) NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER Well Completion

8. WELL NAME and NUMBER: Wolverine Federal 17-4

2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC

9. API NUMBER: 4304130035

3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503 PHONE NUMBER: (616) 458-1150

10. FIELD AND POOL, OR WILDCAT: Covenant Field

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 1680' FNL & 2249' FWL, Sec 17, T23S, R1W
AT TOP PRODUCING INTERVAL REPORTED BELOW: 2,062' FEL & 2264' FSL, Sec 17, T23S, R1W
AT TOTAL DEPTH: 1932' FEL & 2109' FSL, Sec 17, T23S, R1W

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W 26

12. COUNTY: Sevier 13. STATE: UTAH

14. DATE SPUDDED: 1/31/2005 15. DATE T.D. REACHED: 3/8/2005 16. DATE COMPLETED: 9/5/2005 ABANDONED ☐ READY TO PRODUCE ☑

17. ELEVATIONS (DF, RKB, RT, GL): 5752,5753,5753,5736

18. TOTAL DEPTH: MD 6,908 TVD 6,611 19. PLUG BACK T.D.: MD 6,869 TVD 6,573 20. IF MULTIPLE COMPLETIONS, HOW MANY? * 21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
Dual Laterolog MD & TVD, Spectral Density/DSN/GR - MD & TVD, Dipmeter Monitor

23. WAS WELL CORED? NO ☑ YES ☐ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy)

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

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
30	20	14" wall	0	121		Class G 640	131	Surface circ	
17.5	13 3/8 J55	68	0	2,127		1,120	237	Surface circ	
12.25	9 5/8	47	0	5,823		50/50 470	143	4800 CAL	
8.5	7	23	0	6,908		50/50 295	90	5670 CBL	
		P110 LTC							
		HCP 110				4BM Lite/Prem			

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	5,209							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) Navajo	6,191	6,908	5,921	6,611
(B)				
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
See Addendum #1			Open ☑ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6292 - 6310	2000 gal NeFeHCL w/ inhib., morflow III surfactant & penetrat. surfac. + 108 RBS, 48 bbls overflush
6327 - 6419	5800 gal NeFeHCL w/ inhib., morflow III surfactant & penetrat. surfac. + 282 RBS, 50 bbls overflush
6406 - 6419	20 bbl KCL water

29. ENCLOSED ATTACHMENTS:

☑ ELECTRICAL/MECHANICAL LOGS ☑ GEOLOGIC REPORT ☐ DST REPORT ☑ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER:

30. WELL STATUS: Producing

(5/2000)

(CONTINUED ON BACK)

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31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
9/5/2005	9/16/2005	24		696	0		Pumping

CHOKE SIZE:	TBG. PRESS	CSG. PRESS	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:
14/64	420	0	40.00	0	0		696	0		Producing

INTERVAL B (As shown in Item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in Item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in Item #26)

DATE FIRST PRODUCED:	TEST DATE:	HOURS TESTED:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:

CHOKE SIZE:	TBG. PRESS	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, etc.)
Venting (gas too small to measure)

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.
Arapien	55	85	Water
Navajo	6,191	6,908	Oil & water

34. FORMATION (Log) MARKERS:

Name	Top (Measured Depth)
Arapien	0
Twin Creek	5,863
Navajo	6,191

35. ADDITIONAL REMARKS (Include plugging procedure)

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

NAME (PLEASE PRINT) John Vrona TITLE Manager of Geology

SIGNATURE DATE 9/22/2005

This report must be submitted within 30 days of
- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

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

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

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340
Fax: 801-359-3940

(6/2000)

CONFIDENTIAL

RECEIVED
OCT 31 2005
DIV. OF OIL, GAS & MINING

WOLVERINE GAS AND OIL COMPANY
OF UTAH, LLC

Energy Exploration in Partnership with the Environment

February 14, 2008

Mr. Stan Andersen
Fluid Minerals Group
Bureau of Land Management
Richfield Field Office
150 East 900 North
Richfield, Utah 84701

Re: Sundry Notice - Wolverine Gas and Oil Company of Utah, LLC
Wolverine Federal 17-4

43 041 30035
23S 1W 17

Dear Mr. Anderson:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) respectfully submits the enclosed Sundry Notice in triplicate for the Wolverine Federal 17-4 well. The Sundry Notice provides our notice of intent to fracture stimulate the referenced well. If regulatory approval is obtained, the planned activities on the Wolverine Federal 17-4 are expected to commence as early as February 14, 2008.

Please accept this letter as Wolverine's written request for confidential treatment of all information relating to this notice.

Please advise if you have any questions or need additional information.

Sincerely,

Ellis M. Peterson
Senior Production Engineer
Wolverine Gas and Oil

RECEIVED
FEB 20 2008
DIV. OF OIL, GAS & MINING

COPY

cc: UDOGM w/ attachments in duplicate

COPY SENT TO OPERATOR
Date: 3-3-2008
Initials: KS

~~CONFIDENTIAL~~

One Riverfront Plaza • 55 Campau, N.W. • Grand Rapids, MI 49503-2616 • 616.458.1150 • FAX 616.458.0869

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160 - 3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

3a. Address **55 Campau NW, Grand Rapids, MI 49503**

3b. Phone No. *(include area code)* **616-458-1150**

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Surface: 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&M
Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Exploration Unit

8. Well Name and No.
Wolverine Federal 17-4

9. API Well No.
43-041-30035

10. Field and Pool, or Exploratory Area
Covenant Field

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☑ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

It is planned to fracture stimulate the Navajo Formation in the Wolverine Federal 17-4 through existing perforations. The proposed workover is expected to commence as early as Fedruary 25, 2008.

See the attached procedure for details of planned activities.

Attachment: Wolverine Federal 17-4 Workover Procedure

RECEIVED
FEB 20 2008
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Ellis M. Peterson** Title **Sr. Production Engineer**

Signature Ellis M. Peterson Date **02/14/2008**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by Title Date

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

Accepted by the Utah Division of Oil, Gas and Mining
Date: 3/26/08
By:

Federal Approval Of This Action is Necessary

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.

(Instructions on page 2)

CONFIDENTIAL COPY

Wolverine Gas & Oil Company of Utah, LLC
Workover Procedure

Wolverine Federal 17-4

Covenant Field

Purpose: Fracture Stimulate Upper Navajo

PERTINENT INFORMATION

Location: 1680' FNL, 2249' FWL (SENW)
Section 17, Township 23 South, Range 1 West
Sevier County, Utah

Elevation: 5736' GL, 5753' KB

TD: 6908'

PBTD: 6610' (tubing tagged cement top)

API No.: 43-041-30035

Casing: 13-3/8", 68.0# @ 2027', cemented to surface
9-5/8", 47.0#, HCP-110, LT&C @ 5823', cemented with 470 sks 50:50 Poz
7", 23.0#, HCP-110, LT&C @ 6908', cemented with 295 sks 50:50 Poz

Wellhead: Tubing Head Flange – 7-1/16" 5k w/ 2-7/8" EUE top connection

Tubing: 5150' of 2-7/8", 6.5#, N-80, EUE, 8rd w/ SN, x-over, and ESP equipment

Production Casing Specs: 7", 23.0#, HCP-110, LT&C, 8rd, ID: 6.366" Drift: 6.241"
Collapse: 5650 psi Burst: 8720 psi (80% 6976 psi)

Tubing Specs: 2-7/8", 6.5#, N-80/L-80, EUE, 8rd, ID: 2.441" Drift: 2.347"
Collapse: 11,170 psi Burst: 10,570 psi (80% 8456 psi)
Joint: 145,000 lbs (80% 116,000 lbs)

Capacities:		
7", 23.0#:	0.03936 Bbls/ft	0.2210 ft^3/ft
2-7/8", 6.5#	0.00579 Bbls/ft	0.0325 ft^3/ft
7" x 2-7/8" Annulus	0.0313 Bbls/ft	0.1759 ft^3/ft
3-1/2", 9.3#	0.00870 Bbls/ft	0.04883 ft^3/ft
7" x 3-1/2" Annulus	0.0275 Bbls/ft	0.1542 ft^3/ft

BH Temperature: 182 °F @ 6378' MD (6100' TVD)

Current Upper Navajo Formation Completion Interval: 6292' – 6419' (8/27/05)

Current Perforations:
6292' - 6310' MD (6018' – 6035' TVD), 18', 72 holes
6327' - 6350' MD (6051' – 6073' TVD), 23', 92 holes
6360' - 6362' MD (6083' – 6084' TVD), 2', 8 holes
6370' - 6382' MD (6092' – 6104' TVD), 12', 48 holes
6386' - 6388' MD (6107' – 6109' TVD), 2', 8 holes

6406' - 6409' MD (6126' – 6129' TVD), 3', 12 holes
6411' - 6413' MD (6131' – 6133' TVD), 2', 8 holes
6416' - 6419' MD (6136' – 6139' TVD), 3', 12 holes

Perforation Depths are referenced to Halliburton SDL-DSN-GR dated 03/9/05. CBL-GR-CCL dated 07/21/05 is 15' shallow to open-hole logs at perforation depth.

Proposed Re-Perforation Interval: 6292' – 6310'

Proposed New Perforations:
6292' - 6310' MD (6018' – 6035' TVD), 18', 108 holes

PROCEDURE

1. Remove fence, cover ground, and prepare location for workover. Spot four 500 Bbl tanks and fill one with completion fluid (CF) consisting of filtered produced water containing 21 gallons (1000 ppm) Baker Petrolite WAW 3003 non-ionic surfactant, 5.25 gallons (250 ppm) XC102W biocide, and 1.25 gallons (60 ppm) OSW5200 Oxygen Scavenger.
2. Shut in well and disconnect power.
3. MIRUSU. Reverse circulate completion fluid to recover oil and kill well. Disconnect flow lines, ND wellhead, and NU BOP.
4. RU cable spoolers. POOH and lay down ESP equipment. RD cable spoolers.
5. PU tubing as needed to round trip a 6-1/8" bit and casing scraper to PBTD. Tag PBTD and spot 10 Bbls of 9+ ppg salt brine containing recommended biocide and corrosion inhibitor to fill casing below perforations. POOH with bit and casing scraper.
6. RIH with a 7" (23#) RBP and retrieving head on 2-7/8" tubing. RU wireline and run a CCL/GR log through tubing to determine WLM to SLM depth correction. RD wireline and set RBP it at 6435' WLM. Pull end of tubing to ~6250'.
7. Rig up Halliburton and place a sand plug from RBP at 6435' to 6321' by circulating slickened completion fluid at down tubing and up casing while trickling 27 sacks (2700 lb) of 20/40 mesh sand into the pump intake fluid. Slow the circulation rate down to 1.0 BPM after pumping 30 Bbls of fluid. Displace sand laden fluid to end of tubing with 35 Bbls of completion fluid. RD pumping service and pull tubing up 13 stands, and then wait at least 2 hours for sand to settle.
8. RIH and tag sand top with tubing and POOH with tubing and RBP retrieving head.
9. RU wireline service. Perforate 6292' - 6310' WLM with 0.40"+ diameter holes using 4" hollow carriers loaded 6 SPF on 60° phasing with 22+ gram charges. RD and release wireline unit.
10. Change out BOP pipe rams for 3-1/2" tubing. RIH with a 7" (23#) stimulation packer on rented 3-1/2", 6.3#, P-105, EUE, 8rd tubing and set packer at ~6150'. Slack off minimum of 30,000 lbs tubing weight. Connect rig pump and establish an injection rate down tubing with produced water at 3000 psi and monitor casing to check for tubing/packer leaks.
11. RU Halliburton to fracture stimulate through the isolated perforations at 6292' - 6310' using 20,000 lbs of 20/40 mesh ISP with 2% SandWedge and 10,000 gallons of 20# Delta 200 fluid. Sand concentration will be ramped from 1 to 5 ppg. Have a full 500 Bbl tank of

filtered (5 micron) produced water at 100 °F available to mix stimulation fluid. Plan to use the rig pump to hold 2000 psi on 7" casing during frac and install a pressure relief valve to limit casing pressure at 3000 psi maximum. Install piping and a choke to allow for controlled flow back following the frac. Three different Protechnics RA tracer materials are to be used to separately tag the pad fluid, 1-3 ppg sand stages, and 4-5 ppg sand stages.

12. Hold safety meeting and pressure test surface lines to 10,000 psi. Pump fracture stimulation per accepted recommendation at 25 BPM. Maintain 2000 psi on 7" casing with rig pump while pumping down tubing. Monitor tubing pressure for 15 minutes following frac, and then start controlled flow back of stimulation fluid at a rate not exceeding 1/2 BPM. RD and release Halliburton.

13. After tubing pressure falls to 0 psi, open bypass on packer and reverse circulate clean with 100 Bbls of completion fluid. Release packer and POOH laying down the 3-1/2" tubing.

14. Change out BOP pipe rams for 2-7/8" tubing. RIH with a RBP retrieving head, 6 joints of tubing, 7" (23#) packer, and a SN on 2-7/8" tubing. Reverse circulate sand out to 6430' and continue circulating until returning fluid is sand free.

15. RU slick line unit and run a Protechnics SpectraScan log inside the tubing from 6430' to 6100'. RD and release slick line unit and Protechnics.

16. Pull up and set packer at ~6190'.

17. RU and swab for cleanup until load fluid is recovered and rate, fluid level, and water-cut stabilize.

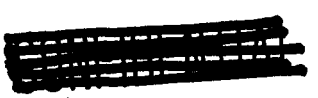
18. Release packer and circulate clean to RBP. Release RBP and POOH with tubing and tools.

19. RU to run ESP equipment and Y-tool. Determine length of instrument tube required to extend from Y-tool to a couple of inches up from the bottom of the ESP centralizer. Pre-assemble (weld) the tubes so a full length tube will be on bottom across the motor and Centinel and drift the tubes to make sure 1" instruments will run through it. Make up the Centrilift ESP equipment with a 7" casing centralizer on bottom, Centinel, 450 series motor, 400P18SSD pump with intake and discharge, a 10' 2-3/8" tubing sub, Y-tool with blanking plug in place, 2-3/8"x 2-7/8" crossover, 2.25" ID SN, and a 6' 2-7/8" tubing sub. Connect instrument to Y-tool and band the tube to the ESP equipment as recommended. Connect and band new cable and continue running ESP assembly in on 2-7/8" production tubing. Land tubing with bottom of assembly at ±6150'.

20. ND BOP, install wellhead, connect electricity to ESP and check startup and rotation.

21. RDMOSU.

22. Plan to run a production log and possibly obtain a pressure build-up as soon as well production stabilizes.



Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on reverse side.*

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Exploration Unit

1. Type of Well
☑ Oil Well ☐ ☐ Gas Well ☐ ☐ Other

8. Well Name and No.
Wolverine Federal 17-4

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

9. API Well No.
43-041-30035

3a. Address
55 Campau NW, Grand Rapids, MI 49503

3b. Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Covenant Field

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Surface: 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&M
Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☑ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

The Wolverine Federal 17-4 was reperforated at 6292' - 6310' with 6 SPF and a fracture stimulation was pumped through the reperforated interval. Early screen-out occured during the fracture stimulation and a total of 3100 lbs of 20/40 mesh IS propant were placed into the formation. The well bore was then cleaned out, ESP production equipment was rerun, and the well was returned to production.

See the attached summary for more details of work performed.

Attachment: Wolverine Federal 17-4 Workover Summary and Results

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Ellis M. Peterson Title **Sr. Production Engineer**

Signature Date **04/11/2008**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

RECEIVED
APR 18 2008
DIV. OF OIL, GAS & MINING

Workover Summary and Results

Wolverine Federal 17-4
Covenant Field

March 3 to March 20, 2008

Purpose of Workover: Fracture Stimulate Upper Navajo

Work Summary:

1. Pulled production equipment.
2. Ran a bit and casing scraper and tagged new PBTD at 6643'
3. Set RBP at 6435' and plugged back with sand from the RBP to 6318'.
4. Re-perforated 6292' – 6310' with 6 SPF.
5. Ran a stimulation packer on 3-1/2" rented tubing and set packer at 6131'.
6. Halliburton pumped fracture stimulation designed to place 20,000 lbs of 20/40 mesh Econoprop through perforations at 6292' – 6310'. Screen-out occurred with 3 ppg stage at perforations with only 3100 lbs of proppant into formation. Pad and sand stages were tagged with different RA materials.
7. Washed sand out of tubing and casing using coiled tubing.
8. Pulled frac string and pulled RBP.
9. Ran Protechnics SpectraLog.
10. Swabbed for clean-up.
11. Ran Weatherford Y-Tool and ESP. Placed well on production.

Current Perforations: (Upper Navajo)

6292' - 6310' MD (6018' – 6035' TVD), 18', 180 holes
6327' - 6350' MD (6051' – 6073' TVD), 23', 92 holes
6360' - 6362' MD (6083' – 6084' TVD), 2', 8 holes
6370' - 6382' MD (6092' – 6104' TVD), 12', 48 holes
6386' - 6388' MD (6107' – 6109' TVD), 2', 8 holes
6406' - 6409' MD (6126' – 6129' TVD), 3', 12 holes
6411' - 6413' MD (6131' – 6133' TVD), 2', 8 holes
6416' - 6419' MD (6136' – 6139' TVD), 3', 12 holes

Production before Workover: 221 BOPD and 0 BWPD with 913 psi FBHP (3/2/08)

Production after Workover: 789 BOPD and 0 BWPD with 1538 psi FBHP (4/3/08)

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
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6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
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1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
Wolverine Federal 17-4

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55 Campau NW, Grand Rapids, MI 49503

3b. Phone No. *(include area code)*
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Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **Workover**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Wolverine Gas & Oil Co. of Utah, LLC intends to workover the Wolverine Federal 17-4. The perforations in this well are underperforming. Perforations will be added in the Navajo and stimulated as necessary. The well will be returned to production once an ESP and y-tool are run.

COPY SENT TO OPERATOR
Date: 3-22-2012
Initials: KS

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Matthew Rivers

Title **Production Engineer**

Signature

Date **03/02/2012**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title Pet. Eng.

Date 3/21/12

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

Office DOGM

Federal Approval Of This Action Is Necessary

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.

(Instructions on page 2)

RECEIVED
MAR 09 2012
DIV. OF OIL, GAS & MINING

Dustin Doucet - Wolverine Covenant Perf Intervals

From: "Matt Rivers" <mrivers@wolvgas.com>
To: <dustindoucet@utah.gov>
Date: 3/21/2012 2:34 PM
Subject: Wolverine Covenant Perf Intervals

Dustin,

Below are the wells that I sent you Sundries on for our planned workovers at Covenant. All of the proposed intervals will be in the Covenant Navajo. We are planning to start on the WF 17-6 April 2nd then move to the WF 17-4 later in the month.

Please let me know when you approve the Sundries.

-

Wolverine Federal 17-4
6490' - 6500', 6517' - 6537'& 6550' - 6570'

Wolverine Federal 17-6
6306' – 6310' & 6353' – 6363'

Wolverine Federal 18-1
No perforations planned

Wolverine Federal 20-2
6873' – 6898', 6912' – 6934', 6950' – 6958' & 6972' – 6992'

Regards,

-

Matt Rivers
Production Engineer
Wolverine Gas & Oil Co.
(616) 929-1932 - Office Direct
(616) 490-1954 - Cell
(616) 458-0969 - Fax

RECEIVED
JUN 28 2012
DIV. OF OIL, GAS & MINING

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Unit

1. Type of Well
☑ Oil Well ☐ ☐ Gas Well ☐☐ ☐ Other

8. Well Name and No.
Wolverine Federal 17-4

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

9. API Well No.
43-041-30035

3a. Address
55 Campau NW, Grand Rapids, MI 49503

3b. Phone No. *(include area code)*
616-458-1150

10. Field and Pool, or Exploratory Area
Covenant Field

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Surface: 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&M
Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **Workover**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Wolverine completed a workover on the Wolverine Federal 17-4 on May 11, 2012. A DFIT was pumped in existing perforation intervals at 6292' – 6310' and 6327' – 6350' with 50 bbls of 4% KCl and analyzed for the design of potential fracture stimulation in the future. Perforations were added in the Navajo at 6490' – 6500', 6517' – 6537' and 6550' – 6560' and acidized with 4000 gallons of 7-1/2% FE HCL. A final perforation set was added at 6250'-6266' and the well was returned to production with a rate of 410 BOPD and 175 BWPD with a FBHP of 1200 psi. See attached WBD and Daily Reports for additional details.

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Matthew Rivers** Title **Production Engineer**

Signature Date **06/27/2012**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

Covenant Field
Federal 17-4 SE/NW Sec 17, T23N, R1W
API# 43-041-30035 Sevier County, Utah

4/22/2012 Spot in service unit, hooked up pump lines.

4/23/2012 RUSU, ND wellhead, NU BOP's. RU cable spoolers and pulled out of hole with ESP. PU & tripped in hole with bit and casing scraper to PBTD, RU pump lines and reverse circulated well clean, RD pump lines and laid down 10 joints. SWIFN

Note: Moderate to severe corrosion was found on the motor, seal section and instrument tubing. All corrosion was below the pump intake and appeared to be from Co2. There was no corrosion on any of the BHA above the pump intake. See failures in the photo tab.

Plan to pull out of hole with casing scraper / TIH with DFIT BHA / Swab well for rate prior to pumping DFIT

4/24/2012 Opened well, pulled out of hole with casing scraper, pick up and run in hole with DFIT BHA, set plug at 6355', set packer at 6230'. Pressure tested casing to 1000 psi. RU wireline unit and correlated plug and packer settings, RD and released wireline unit. SWIFN

Note: See DFIT BHA tab for details on the bottom hole assembly

Plan to pump DFIT

4/25/2012 Opened well, RU swab equipment and swabbed well as follows.

Swab runs - 7

Water cut - 20%

Average rate -151 bfpd

Average fluid level - 3750

Total fluid recovered - 34 bbls

Perf intervals open - 6292'-6350'

See 4-25 Swab report for details.

RD swab equipment, RU pump lines, opened bypass on packer, circulated 50 bbls of 4% KCL water, RD pump lines. RU Slickline unit and made 1.790" gauge ring run to confirm XN nipple depth, RIH with tandem pressure gauges and set off in the DFIT BHA, RIH with N test plug to 6220'. RU Halliburton pump equipment, pressure tested lines to 9500 psi. Pumped DFIT as follows

Event	Rate	Max pressure
Loaded hole with 3.7 bbls of 4% KCL	2 bpm	0 psi
Pumped 100 bbls 4% KCL	3.7 bpm	3625 psi
Slowed rate and continued pumping 4% KCL while landing N test plug	2 bpm	2800 psi

Landed plug and shut down pump. SWIFN

Note: There was not a notable breakdown during pumping.

Plan to leave well shut in for 24 hrs then pull out of hole with pressure gauges.

4/26/2012 Opened well, 6500 psi on tubing, bled off pressure and pulled out of hole with downhole pressure gauges. Rig crew travel home.

4/27/2012 Rig crew on days off

4/28/2012 Rig crew on days off

4/29/2012 Rig crew on days off

4/30/2012 Rig crew travel to location

Plan to swab 6292'-6310' & 6327'-6350' for post DFIT rate / Perforate 6550'-6560'

5/1/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 17
Water cut - 17%
Average rate -350 bfpd
Average fluid level - 4000
Total fluid recovered - 116 bbls
Perf intervals open - 6292'-6310' & 6327'-6350'
See 5-1 Swab report for details.
Note: The water cut does not represent the actual oil water cut from these perf intervals, there was still 20 bbls of water that had not been recovered after pumping the DFIT. The swab data was gathered only to compare the rates pre and post DFIT.
RD swab equipment, pulled out of hole with plug and packer. RU wireline and perforated as follows:
Perf interval - 6550'-6560'
Titan Part # EXP 3325-321T
.41 entry hole
25 gram charges
45.16" penetration
4" EXP gun loaded 6 spf on 60° phasing.
RD and released wireline unit, picked up and tripped in hole with plug, retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set plug at 6580', set packer at 6482'. SWIFN
Plan to swab perf interval 6550'-6560' for rate and clean up.

5/2/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 8
Water cut - 0%
Average rate -50 bfpd
Average fluid level - 4000
Total fluid recovered - 41 bbls
Perf intervals open - 6550'-6560'
See 5-2 Swab report for details.
SWIFN, Plan to acidize perf interval 6550'-6560' / Swab for rate and clean up.

5/3/2012

Opened well, 0 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf interval 6550' - 6560' as follows:

Detail	Bbls	Cumm	Max BPM	Max PSI
Pumped 26.34 bbls CF to fill tubing	26.34	26.34	4	0
Opened bypass on packer	~	~	~	~
Spotted 05.95 bbls 7 1/2% FE HCL	5.95	32.29	2	46
Spotted 11.90 bbls 7 1/2% FE HCL containing 50 buoyant balls	11.9	44.19	2	117
Spotted 05.95 bbls 7 1/2% FE HCL	5.81	50	2	117
Spotted 09.52 bbls 4% KCL with chemicals (CF)	9.59	59.59	2	117
Closed bypass on packer	~	~	~	~
Pumped CF	3.7	59.84		1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	3.7	63.54	0.6	1070

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.28	63.82	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	63.91	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	63.99	0.6	970
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	64.06	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.11	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.16	0.6	993
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.21	0.6	960
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.26	0.6	968
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.31	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.37	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.42	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.47	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.53	0.6	1006
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.58	0.6	974
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.63	0.6	1023
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.68	0.6	990
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.73	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.79	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	64.83	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.89	0.6	1025
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.94	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	65	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.04	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.1	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.14	0.6	972
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	65.22	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.27	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.33	0.6	975
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.38	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.44	0.6	1043
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.49	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.54	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.6	0.6	1017
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.65	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.7	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.75	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.81	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.86	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.91	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.97	0.6	1027
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.02	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.07	0.6	980
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.14	0.6	1092

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.2	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.26	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.33	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.4	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	66.48	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.55	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.62	0.6	1089
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.69	0.6	1086
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.76	0.6	1101
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.83	0.6	1065
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.89	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.96	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.03	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.1	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.23	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	67.28	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.35	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.41	0.6	1053
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.48	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.55	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	67.61	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.68	0.6	1092
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.75	0.6	1060
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.82	0.6	1068
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.88	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.94	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.01	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.07	0.6	1062
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.14	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.21	0.6	1054
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	68.25	0.6	873
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.31	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	68.41	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.48	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	68.56	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.63	0.6	1129
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.7	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.77	0.6	1061
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.83	0.6	1048
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.9	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.97	0.6	1064
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.04	0.6	1088

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.11	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.25	0.6	1112
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.31	0.6	1072
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.39	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.45	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.52	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.59	0.6	1084
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.67	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.74	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.81	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.88	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.94	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.02	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.09	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.16	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.24	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.31	0.6	1114
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.39	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.46	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.54	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	70.6	0.6	1083
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.68	0.6	1096
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.76	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.83	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.9	0.6	1102
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.98	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.05	0.6	1116
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.13	0.6	1106
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.21	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.28	0.6	1115
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.36	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.43	0.6	1120
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.51	0.6	1110
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.6	0.6	980
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.03	71.63	0.6	990
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.68	0.6	1084
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.04	71.72	0.6	987
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.06	71.78	0.6	1138
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.83	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.92	0.6	1315
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.07	0.6	1092

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.15	72.22	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.3	0.6	1094
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.37	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.44	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.52	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.58	0.6	1044
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.66	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.73	0.6	1037
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.79	0.6	1009
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.85	0.6	1047
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	72.94	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.01	0.6	1082
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.08	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.15	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.22	0.6	1066
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.29	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.36	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.43	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.5	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.57	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	73.65	0.6	1087
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	73.73	0.6	1098
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.8	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.87	0.6	1108
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	73.91	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	74.02	0.6	1077
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.1	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.19	74.29	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.37	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.46	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.55	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.63	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.72	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.8	0.6	1134
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	74.85	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.13	74.98	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.07	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.16	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.25	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	75.35	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.44	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.52	0.6	1099
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.6	0.6	1161

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	75.71	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.8	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.88	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.97	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.05	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.13	0.6	1136
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.2	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.27	0.6	1055
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.36	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.45	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.53	0.6	1138
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.61	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.69	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.78	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.87	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.95	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.04	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.13	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.21	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.3	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.39	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	77.47	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.56	0.6	1135
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.65	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.73	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.81	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.9	0.6	1159
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.09	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.17	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.34	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.43	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.52	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.61	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.7	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.8	0.6	1180
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.88	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.98	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.07	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.16	0.6	1183
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.34	0.6	1166

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	79.42	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.51	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.6	0.6	1140
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.69	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.78	0.6	1171
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.87	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.96	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.05	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	80.13	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.23	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.32	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.42	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.51	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.6	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.69	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.78	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.87	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.96	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.05	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.14	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	81.22	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	81.31	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.4	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.49	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.58	0.6	1143
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.67	0.6	1150
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.76	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.85	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.94	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.03	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.12	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.2	0.6	1154
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	82.3	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.39	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.48	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.57	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.66	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.75	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.83	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.92	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.01	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.1	0.6	1170
Shut down and waited for pressure to bleed off to 500 psi				
Pumped CF	0.13	83.23	0.6	1138

Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	83.33	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.09	83.42	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.26	83.68	0.6	1280
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	83.78	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.09	83.87	0.6	1195
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	83.97	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.07	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.17	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.27	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.11	84.38	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.48	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.58	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.68	0.6	1214
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.11	84.79	0.6	1223
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.89	0.6	1215
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	84.99	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	85.09	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	85.19	0.6	1193
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	85.29	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.1	85.39	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.11	85.5	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.1	85.6	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.8	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.9	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.1	0.6	1229
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.2	0.6	1209
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.3	0.6	1203
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.4	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.5	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.6	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.8	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	86.89	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.99	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.09	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.19	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	87.28	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.39	0.6	1225
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.49	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.6	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.7	0.6	1245

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.8	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.91	0.6	1249
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.14	88.05	0.6	1226
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.14	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.23	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.12	88.35	0.6	1252
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.44	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.54	0.6	1200
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.64	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.73	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.83	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.92	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.02	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.12	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.21	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.3	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.39	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.49	0.6	1149
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.58	0.6	1201
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.68	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.78	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	89.87	0.6	1186
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.96	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.07	0.6	1188
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.17	0.6	1233
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.27	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.37	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.46	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.56	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.67	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.77	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.86	0.6	1198
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.96	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.05	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	91.15	0.6	1213
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.24	0.6	1163
Shut down for 5,10,15				

Note: Displaced acid 1.49 bbls past the top perf, after the well sits for the night there should be approximately 6.49 bbls of water past the top perf depth.

Note: There were no signs of communication with the open perforations above this interval.

General details	Pressure
ISIP	Not available
5 Min	413 psi
10 Min	213 psi
15 Min	119 psi
Max Treating Pressure	1315 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	935 psi
Load to Recover	64.9 bbls

Note: See 5-3 Acid stim 10 second data tab for details

Plan to swab perf intervals 6550'-6560' for rate and clean up.

5/4/2012 Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 12

Water cut - 50%

Average rate -66 bfpd

Average fluid level - 5850

Total fluid recovered - 72 bbls

Perf intervals open - 6550'-6560'

See 5-4 Swab report for details.

Note: Water cut is not accurate due to the slow fluid entry.

Released packer and pulled out of hole with tubing and packer, RU wireline unit and perforated well as follows.

Perf interval - 6490'-6500' & 6517'-6537'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Latched onto plug and set at 6545', set packer at 6447'. SWIFN

Plan to swab perf intervals 6490'-6500' & 6517'-6537' for rate and clean up.

5/5/2012 Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 5%

Average rate -520 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-5 Swab report for details.

Plan to pump acid on perf intervals 6490'-6500' & 6517'-6537'

5/6/2012 Opened well, 30 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf intervals 6490'-6500' & 6517'-6537' as follows:

Detail	Bbls	Cumm	Max BPM	Max PSI
Pumped CF to fill tubing	0	0	0	0
Opened bypass on packer	~	~	~	~
Spotted 7 1/2% FE HCL	9.52	9.52	2	390
Spotted 7 1/2% FE HCL containing 150 buoyant balls	23.88	33.4	2	170
Closed bypass on packer	~	~	~	~
Pumped 7 1/2% FE HCL	13.43	46.83	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.68	47.51	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.69	48.2	0.5	2500

Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.72	48.92	0.5	2490
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.62	49.54	0.5	2491
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	21.96	71.5	0.4	2720
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped CF	26.5	98	0.7	2770

Note: There were no signs of communication with the open perforations above this interval.

General details	Pressure
ISIP	1930 psi
5 Min	374 psi
10 Min	217 psi
15 Min	145 psi
Max Treating Pressure	2770 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	2412 psi
Load to Recover	60.6 bbls

Note: See 5-6 Acid stim 1 second data tab for details

RD and released acid equipment, RU swab equipment and swabbed well as follows:

Swab runs - 15

Water cut - 0%

Average rate - 367 bfpd

Average fluid level - 4250

Total fluid recovered - 123 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-6 Swab report for details.

Plan to continue swabbing for 1/2 day / Pull tbg and pkr / Perforate 6252'-6266' / TIH with tbg & pkr

5/7/2012

Well flowed back 10 bbls of oil to the frac tank overnight, RU swab equipment and swabbed well as follows:

Swab runs - 31

Water cut - 3%

Average rate - 573 bfpd

Average fluid level - 4850

Total fluid recovered - 233 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-7 Swab report for details.

SWIFN

Plan to reset the plug / Pull tbg and pkr / Perf 6252'-6266' / TIH with tbg / Swab for rate and clean up.

5/8/2012

Opened well, 90 psi tubing, 0 psi casing. Released plug and packer, reset plug at 6281', pressure tested to 1000 psi, RU swab equipment and swabbed fluid level down to 2500'. RD swab equipment, released packer and pulled out of the hole with tubing and packer. RU wireline unit and perforated well as follows:

Perf interval - 6252'-6266'

Titan Part # EXP 3325-321T

.41 entry hole
25 gram charges
45.16" penetration
4" EXP gun loaded 6 spf on 60° phasing.
RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set packer at 6165', RU pump line and pressure tested packer to 1000 psi. RD pump lines, RU swab equipment and swabbed well as follows.
Swab runs - 14
Water cut - 55% and falling
Average rate - 780 bfpd
Average fluid level - 3750
Total fluid recovered - 135 bbls
Perf intervals open -6252'-6266'
See 5-8 Swab report for details.
SWIFN
Note: Corrosion was found in the tubing collars while tripping in the hole with tubing today, the corrosion was noticed at 1500' from surface. New tubing collars were installed from 1500' to the surface. There may be more collar corrosion below the 1500' depth that had not been noticed previously. Inspections below the 1500' level will be made during the next pipe trip. Also note that the tubing pins had corrosion as well. See tubing and collar corrosion photos in the photos tab.
Plan to continue swabbing for 1/2 day until the fluid cut stabilizes / move plug and packer / swab all intervals together for rate and cut.

5/9/2012 Opened well, 40 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 13
Water cut - 40%
Average rate - 722 bfpd
Average fluid level - 3600
Total fluid recovered - 123 bbls
Perf intervals open -6250'-6266'
See 5-9 Swab report for details.
RD swab equipment, released packer, RU swab equipment and made two runs to remove oil from tubing.
RD swab equipment, released plug and reset at 6572', set packer at 6185'. RU swab equipment and swabbed all perf intervals as follows:
Swab runs - 12
Water cut - 40%
Average rate - 833 bfpd
Average fluid level - 3450
Total fluid recovered - 121 bbls
Perf intervals open -6250'-6560'
See 5-9a Swab report for details.
SWIFN
Plan to release pkr and plug / pull out of hole with tubing changing corroded tubing collars as needed.

5/10/2012 Opened well, 30 psi tubing, 0 psi casing. Bled pressure off tubing, released packer and plug, pulled out

of the hole with tubing plug and packer. SWIFN

Note: Changed the remaining corroded tubing collars. All collars were changed from surface to 3000', the remaining tubing collars in the string had no signs of corrosion.

Plan to install ESP and turn well into production.

5/11/2012 Opened well, 0 psi. RU cable spoolers, picked up and run in hole with 6" centralizer, Centinel, motor, seal, pump, 2 3/8" x 2 7/8" XO, 10' x 2 3/8" sub, Y-tool, 2 3/8" x 2 7/8" XO, 6' x 2 7/8" sub, 1 joint 2 7/8" N-80 tbg, cup type SN and 191 joints N-80 tubing to surface. Made final splice on lower pig tail, landed well, ND BOP's NU wellhead. Turned well into production.

Note: Repaired cable splice that's aproximatly 1000' from surface.

This well is currently producing from the upper and lower Navajo

5/11/2012 07 Hour production, 045 bopd, 128 bwpd, 50 Hz, BHP 1352

5/12/2012 24 Hour production, 216 bopd, 283 bwpd, 50 Hz, BHP 1522

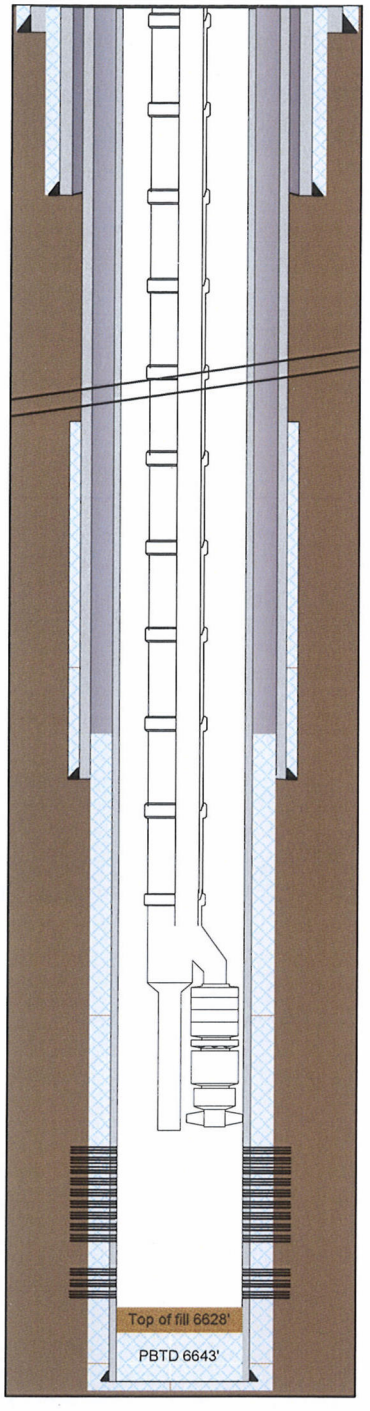
5/13/2012 24 Hour production, 267 bopd, 136 bwpd, 50 Hz, BHP 1594

24 Hour production, 308 bopd, 153 bwpd, 55 Hz, BHP 1342

Supervisor: *Tony E. Cook* Rig Operator: Robert Miller

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Ground Elevation: 5,736
KB Elevation: 5,753'



(Not to Scale)

Deviated Well
Surface: 1680' FNL 2249' FWL, SE NW, 17-23S-1W
Top of Pay (6191' MD): 2264' FSL, 2062' FEL, NW SE, 17-23S-1W
Total Depth (6908' MD): 2109' FSL, 1932' FEL, NW SE, 17-23S-1W

Conductor Casing (11/22/04)
Size: 20", 0.25" wall
Depth Landed: 121'
Cement Data: Cemented to surface with 640 sks Class "G"

Surface Casing (2/11/05)
Size/Wt/Grade: 13-3/8", 68#, J-55, STC, 8rd
Depth Landed: 2127' MD
Cement Data: 650 sks CBM Lite (10.5 ppg, 4.12 cf/sk), 470 sks Type V (15.6 ppg, 1.19 cf/sk), Top job w/ 25 sks Class "G"

Intermediate Casing (3/4/05)
Size/Wt/Grade: 9-5/8", 47#, HCP-110, LTC, 8rd
Depth Landed: 5823' MD
Cement Data: 470 sks 50:50 Poz (13.0 ppg, 1.71 cf/sk)

Production Casing (9/4/05)
Size/Wt/Grade: 7", 23#, HCP-110, LTC, 8rd
Properties: 8720 psi burst, 6.241" drift, 6.366" ID, 0.0393 Bbl/ft Capacity
Depth Landed: 6908' MD
Cement Data: 295 sks 50:50 Poz (14.35 ppg, 1.23 cf/sk)

Upper Navajo Perforations
6252' - 6266' MD (5979' - 5993' TVD), 14' 084 holes (5/08/12)
6292' - 6310' MD (6018' - 6035' TVD), 18' 180 holes (8/27/05)-(3/8/08)
6327' - 6350' MD (6051' - 6073' TVD), 23' 092 holes (8/27/05)
6360' - 6362' MD (6083' - 6084' TVD), 2' 008 holes (8/27/05)
6370' - 6382' MD (6092' - 6104' TVD), 12' 048 holes (8/27/05)
6386' - 6388' MD (6107' - 6109' TVD), 2' 008 holes (8/27/05)
6406' - 6409' MD (6126' - 6129' TVD), 3' 012 holes (8/27/05)
6411' - 6413' MD (6131' - 6133' TVD), 2' 008 holes (8/27/05)
6416' - 6419' MD (6136' - 6139' TVD), 3' 012 holes (8/27/05)

Lower Navajo Perforations
6490' - 6500' MD (6206' - 6216' TVD), 10' 060 holes (5/04/12)
6517' - 6537' MD (6232' - 6252' TVD), 20' 120 holes (5/04/12)
6550' - 6560' MD (6264' - 6254' TVD), 10' 060 holes (5/01/12)

Mid-Perf = 6406' MD (6126' TVD), 119' M (104' TV), 692 holes

TEC 5/14/12

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Tubing (05/11/12)

Centinel	6096' WLM (5831' TVD)
Pump intake	6081' WLM (5816' TVD)
Y-Tool Fish	6054' WLM (5790' TVD)
Seating Nipple	6015' WLM (5752' TVD)

PBTD

(08/26/05) Tagged fill @ 6643' WLM
(03/05/08) Tagged fill @ 6643' WLM
(04/23/12) Tagged fill @ 6628' WLM

Tubing Detail (3/19/08)

	17.00	KB
	-2.00	Landed above GL
191	6000.30	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	1.10	SN - 2-7/8", EUE, 8rd, 2.25" ID
1	30.68	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	6.30	Sub - 2-7/8", 6.5#, N-80, EUE, 8rd
1	0.77	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	2.54	Y-Tool, Weatherford - 1.053" drift instrument tube
1	10.02	Sub - 2-3/8", 4.7#, N-80, EUE, 8rd
1	0.78	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	13.78	Pump w/ Intake – Centrilift P8, Model 400PLSSD, 130 stage
1	6.11	Seal – Model FSB3 DB HL
1	8.16	Motor – Centrilift MSP, 45 Hp, 1495V/19A
1	4.10	Downhole pressure sensor, Centinel III
1	1.20	Centralizer 6" collapsible
	6100.83	EOT (6100.83' KB WLM)

Note: No check or drain valve in this well.
Blanking plug in Y-Tool has a 5/8" OD catch rod
Tubing capacity = 0.00579 Bbl/ft, Burst = 10570 psi, Joint Yield = 144960 lbs

Directional Data:

MD	TVD	Incl.	MD	TVD	Incl.
500	500	3.1	3500	3378	19.8
750	749	5.3	4000	3848	19.8
1000	997	12.1	4500	4322	19.3
1500	1485	10.9	5000	4793	20.1
1750	1731	13.8	5500	5262	19.7
2000	1966	21.7	6000	5738	15.9
2500	2426	20.1	6500	6216	17.2
3000	2901	16.1	6908	6610	12.2 E

TEC 5/14/12

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Wellhead Information

- Tubing head flange is 7-1/16", 5M with a 2-7/8" EUE 8rd top connection.
- Outer casing valve 13-3/8" x 9-5/8" annulus
- Inner casing valve 9-5/8" x 7" annulus

Stimulation

9/3//05: 6327' - 6419' w/ 5800 gal 7.5% HCl. ATR = 3.3 BPM, ATP = 3400 psi, ISDP = 2400 psi
6292' - 6310' w/ 2000 gal 7.5% HCl. ATR = 3.5 BPM, ATP = 2750 psi, ISDP = 2000 psi

3/11/08: 6292' - 6310' w/ 3100 lbs 20/40 mesh Econoprop with Sandwedge in Deltafrac 200 fluid, ATR = 25.3 BPM, ISDP = 5300 psi (after screen-out). Protechnics RA Sb-124 tracer in pad and IR-192 in sand stages.

5/3/12: 6550' - 6560' w/ 1000 gal 7.5% HCl. ATR = 0.6 BPM, ATP = 935 psi

5/6/12: 6490' - 6500' & 6517' - 6537' w/ 3000 gal 7.5% HCl ATR = 0.5 BPM, ATP = 2412 psi, ISIP = 1930 psi

Notes

Surface Location: Latitude = 38° 48' 19.4600", Longitude = -111° 56' 02.4750"
(7/21/05): Cement top at 5670' on CBL-CCL-GR
(1/30/08): Available Logs: DLL/MSFL, HRI, SDL/DSN, EMI, MRIL, CBL

TEC 5/14/12

RECEIVED

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JUL 2 0 2012

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Unit

8. Well Name and No.
Wolverine Federal 17-4

9. API Well No.
43-041-30035

10. Field and Pool, or Exploratory Area
Covenant Field

11. County or Parish, State
Sevier County, Utah

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

3a. Address
55 Campau NW, Grand Rapids, MI 49503

3b. Phone No. *(include area code)*
616-458-1150

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Surface: 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&M SENW
Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **Workover**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Wolverine completed a workover on the Wolverine Federal 17-4 on May 11, 2012. A DFIT was pumped in existing perforation intervals at 6292' – 6310' and 6327' – 6350' with 50 bbls of 4% KCl and analyzed for the design of potential fracture stimulation in the future. Perforations were added in the Navajo at 6490' – 6500', 6517' – 6537' and 6550' – 6560' and acidized with 4000 gallons of 7-1/2% FE HCL. A final perforation set was added at 6250'-6266' and the well was returned to production with a rate of 410 BOPD and 175 BWPD with a FBHP of 1200 psi. See attached WBD and Daily Reports for additional details.

RECEIVED

JUN 28 2012

Richfield BLM Field Office

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Matthew Rivers Title **Production Engineer**

Signature Date **06/27/2012**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

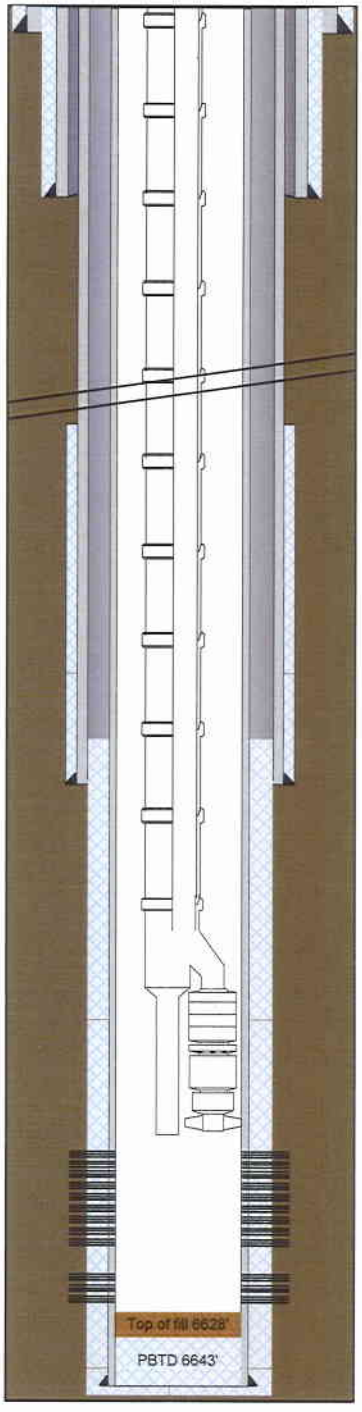
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

Accepted For Record Purposes

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Ground Elevation: 5,736
KB Elevation: 5,753'



(Not to Scale)

Deviated Well
Surface: 1680' FNL 2249' FWL, SE NW, 17-23S-1W
Top of Pay (6191' MD): 2264' FSL, 2062' FEL, NW SE, 17-23S-1W
Total Depth (6908' MD): 2109' FSL, 1932' FEL, NW SE, 17-23S-1W

Conductor Casing (11/22/04)
Size: 20", 0.25" wall
Depth Landed: 121'
Cement Data: Cemented to surface with 640 sks Class "G"

Surface Casing (2/11/05)
Size/Wt/Grade: 13-3/8", 68#, J-55, STC, 8rd
Depth Landed: 2127' MD
Cement Data: 650 sks CBM Lite (10.5 ppg, 4.12 cf/sk), 470 sks Type V (15.6 ppg, 1.19 cf/sk), Top job w/ 25 sks Class "G"

Intermediate Casing (3/4/05)
Size/Wt/Grade: 9-5/8", 47#, HCP-110, LTC, 8rd
Depth Landed: 5823' MD
Cement Data: 470 sks 50:50 Poz (13.0 ppg, 1.71 cf/sk)

Production Casing (9/4/05)
Size/Wt/Grade: 7", 23#, HCP-110, LTC, 8rd
Properties: 8720 psi burst, 6.241" drift, 6.366" ID, 0.0393 Bbl/ft Capacity
Depth Landed: 6908' MD
Cement Data: 295 sks 50:50 Poz (14.35 ppg, 1.23 cf/sk)

Upper Navajo Perforations
6252' - 6266' MD (5979' - 5993' TVD), 14' 084 holes (5/08/12)
6292' - 6310' MD (6018' - 6035' TVD), 18' 180 holes (8/27/05)-(3/8/08)
6327' - 6350' MD (6051' - 6073' TVD), 23' 092 holes (8/27/05)
6360' - 6362' MD (6083' - 6084' TVD), 2' 008 holes (8/27/05)
6370' - 6382' MD (6092' - 6104' TVD), 12' 048 holes (8/27/05)
6386' - 6388' MD (6107' - 6109' TVD), 2' 008 holes (8/27/05)
6406' - 6409' MD (6126' - 6129' TVD), 3' 012 holes (8/27/05)
6411' - 6413' MD (6131' - 6133' TVD), 2' 008 holes (8/27/05)
6416' - 6419' MD (6136' - 6139' TVD), 3' 012 holes (8/27/05)

Lower Navajo Perforations
6490' - 6500' MD (6206' - 6216' TVD), 10' 060 holes (5/04/12)
6517' - 6537' MD (6232' - 6252' TVD), 20' 120 holes (5/04/12)
6550' - 6560' MD (6264' - 6254' TVD), 10' 060 holes (5/01/12)

Mid-Perf = 6406' MD (6126' TVD), 119' M (104' TV), 692 holes

TEC 5/14/12

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Tubing (05/11/12)

Centinel	6096' WLM (5831' TVD)
Pump intake	6081' WLM (5816' TVD)
Y-Tool Fish	6054' WLM (5790' TVD)
Seating Nipple	6015' WLM (5752' TVD)

PBTD

(08/26/05) Tagged fill @ 6643' WLM
(03/05/08) Tagged fill @ 6643' WLM
(04/23/12) Tagged fill @ 6628' WLM

Tubing Detail (3/19/08)

	17.00	KB
	-2.00	Landed above GL
191	6000.30	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	1.10	SN - 2-7/8", EUE, 8rd, 2.25" ID
1	30.68	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	6.30	Sub - 2-7/8", 6.5#, N-80, EUE, 8rd
1	0.77	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	2.54	Y-Tool, Weatherford - 1.053" drift instrument tube
1	10.02	Sub - 2-3/8", 4.7#, N-80, EUE, 8rd
1	0.78	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	13.78	Pump w/ Intake – Centrilift P8, Model 400PLSSD, 130 stage
1	6.11	Seal – Model FSB3 DB HL
1	8.16	Motor – Centrilift MSP, 45 Hp, 1495V/19A
1	4.10	Downhole pressure sensor, Centinel III
1	1.20	Centralizer 6" collapsible
	6100.83	EOT (6100.83' KB WLM)

Note: No check or drain valve in this well.
Blanking plug in Y-Tool has a 5/8" OD catch rod
Tubing capacity = 0.00579 Bbl/ft, Burst = 10570 psi, Joint Yield = 144960 lbs

Directional Data:

MD	TVD	Incl.	MD	TVD	Incl.
500	500	3.1	3500	3378	19.8
750	749	5.3	4000	3848	19.8
1000	997	12.1	4500	4322	19.3
1500	1485	10.9	5000	4793	20.1
1750	1731	13.8	5500	5262	19.7
2000	1966	21.7	6000	5738	15.9
2500	2426	20.1	6500	6216	17.2
3000	2901	16.1	6908	6610	12.2 E

TEC 5/14/12

Wolverine Federal 17-4
API # 43-041-30035
Covenant Field
Section 17, T23S, R1W
Sevier County, Utah

Wellhead Information
- Tubing head flange is 7-1/16", 5M with a 2-7/8" EUE 8rd top connection.
- Outer casing valve 13-3/8" x 9-5/8" annulus
- Inner casing valve 9-5/8" x 7" annulus

Stimulation

9/3//05: 6327' - 6419' w/ 5800 gal 7.5% HCl. ATR = 3.3 BPM, ATP = 3400 psi, ISDP = 2400 psi
6292' - 6310' w/ 2000 gal 7.5% HCl. ATR = 3.5 BPM, ATP = 2750 psi, ISDP = 2000 psi

3/11/08: 6292' - 6310' w/ 3100 lbs 20/40 mesh Econoprop with Sandwedge in Deltafrac 200 fluid, ATR = 25.3 BPM, ISDP = 5300 psi (after screen-out). Protechnics RA Sb-124 tracer in pad and IR-192 in sand stages.

5/3/12: 6550' - 6560' w/ 1000 gal 7.5% HCl. ATR = 0.6 BPM, ATP = 935 psi

5/6/12: 6490' - 6500' & 6517' - 6537' w/ 3000 gal 7.5% HCl ATR = 0.5 BPM, ATP = 2412 psi, ISIP = 1930 psi

Notes

Surface Location: Latitude = 38° 48' 19.4600", Longitude = -111° 56' 02.4750"
(7/21/05): Cement top at 5670' on CBL-CCL-GR
(1/30/08): Available Logs: DLL/MSFL, HRI, SDL/DSN, EMI, MRIL, CBL

TEC 5/14/12

Covenant Field
Federal 17-4 SE/NW Sec 17, T23N, R1W
API# 43-041-30035 Sevier County, Utah

4/22/2012 Spot in service unit, hooked up pump lines.

4/23/2012 RUSU, ND wellhead, NU BOP's. RU cable spoolers and pulled out of hole with ESP. PU & tripped in hole with bit and casing scraper to PBTD, RU pump lines and reverse circulated well clean, RD pump lines and laid down 10 joints. SWIFN

Note: Moderate to severe corrosion was found on the motor, seal section and instrument tubing. All corrosion was below the pump intake and appeared to be from Co2. There was no corrosion on any of the BHA above the pump intake. See failures in the photo tab.

Plan to pull out of hole with casing scraper / TIH with DFIT BHA / Swab well for rate prior to pumping DFIT

4/24/2012 Opened well, pulled out of hole with casing scraper, pick up and run in hole with DFIT BHA, set plug at 6355', set packer at 6230'. Pressure tested casing to 1000 psi. RU wireline unit and correlated plug and packer settings, RD and released wireline unit. SWIFN

Note: See DFIT BHA tab for details on the bottom hole assembly

Plan to pump DFIT

4/25/2012 Opened well, RU swab equipment and swabbed well as follows.

Swab runs - 7

Water cut - 20%

Average rate -151 bfpd

Average fluid level - 3750

Total fluid recovered - 34 bbls

Perf intervals open - 6292'-6350'

See 4-25 Swab report for details.

RD swab equipment, RU pump lines, opened bypass on packer, circulated 50 bbls of 4% KCL water, RD pump lines. RU Slickline unit and made 1.790" gauge ring run to confirm XN nipple depth, RIH with tandem pressure gauges and set off in the DFIT BHA, RIH with N test plug to 6220'. RU Halliburton pump equipment, pressure tested lines to 9500 psi. Pumped DFIT as follows

Event	Rate	Max pressure
Loaded hole with 3.7 bbls of 4% KCL	2 bpm	0 psi
Pumped 100 bbls 4% KCL	3.7 bpm	3625 psi
Slowed rate and continued pumping 4% KCL while landing N test plug	2 bpm	2800 psi

Landed plug and shut down pump. SWIFN

Note: There was not a notable breakdown during pumping.

Plan to leave well shut in for 24 hrs then pull out of hole with pressure gauges.

4/26/2012 Opened well, 6500 psi on tubing, bled off pressure and pulled out of hole with downhole pressure gauges. Rig crew travel home.

4/27/2012 Rig crew on days off

4/28/2012 Rig crew on days off

4/29/2012 Rig crew on days off

4/30/2012 Rig crew travel to location

Plan to swab 6292'-6310' & 6327'-6350' for post DFIT rate / Perforate 6550'-6560'

5/1/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 17
Water cut - 17%
Average rate -350 bfpd
Average fluid level - 4000
Total fluid recovered - 116 bbls
Perf intervals open - 6292'-6310' & 6327'-6350'
See 5-1 Swab report for details.
Note: The water cut does not represent the actual oil water cut from these perf intervals, there was still 20 bbls of water that had not been recovered after pumping the DFIT. The swab data was gathered only to compare the rates pre and post DFIT.
RD swab equipment, pulled out of hole with plug and packer. RU wireline and perforated as follows:
Perf interval - 6550'-6560'
Titan Part # EXP 3325-321T
.41 entry hole
25 gram charges
45.16" penetration
4" EXP gun loaded 6 spf on 60° phasing.
RD and released wireline unit, picked up and tripped in hole with plug, retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set plug at 6580', set packer at 6482'. SWIFN
Plan to swab perf interval 6550'-6560' for rate and clean up.

5/2/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 8
Water cut - 0%
Average rate -50 bfpd
Average fluid level - 4000
Total fluid recovered - 41 bbls
Perf intervals open - 6550'-6560'
See 5-2 Swab report for details.
SWIFN, Plan to acidize perf interval 6550'-6560' / Swab for rate and clean up.

5/3/2012

Opened well, 0 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf interval 6550' - 6560' as follows:

Detail	Bbls	Cumm	Max BPM	Max PSI
Pumped 26.34 bbls CF to fill tubing	26.34	26.34	4	0
Opened bypass on packer	~	~	~	~
Spotted 05.95 bbls 7 1/2% FE HCL	5.95	32.29	2	46
Spotted 11.90 bbls 7 1/2% FE HCL containing 50 buoyant balls	11.9	44.19	2	117
Spotted 05.95 bbls 7 1/2% FE HCL	5.81	50	2	117
Spotted 09.52 bbls 4% KCL with chemicals (CF)	9.59	59.59	2	117
Closed bypass on packer	~	~	~	~
Pumped CF	3.7	59.84		1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	3.7	63.54	0.6	1070

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.28	63.82	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	63.91	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	63.99	0.6	970
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	64.06	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.11	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.16	0.6	993
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.21	0.6	960
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.26	0.6	968
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.31	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.37	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.42	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.47	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.53	0.6	1006
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.58	0.6	974
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.63	0.6	1023
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.68	0.6	990
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.73	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.79	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	64.83	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.89	0.6	1025
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.94	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	65	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.04	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.1	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.14	0.6	972
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	65.22	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.27	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.33	0.6	975
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.38	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.44	0.6	1043
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.49	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.54	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.6	0.6	1017
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.65	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.7	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.75	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.81	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.86	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.91	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.97	0.6	1027
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.02	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.07	0.6	980
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.14	0.6	1092

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.2	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.26	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.33	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.4	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	66.48	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.55	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.62	0.6	1089
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.69	0.6	1086
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.76	0.6	1101
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.83	0.6	1065
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.89	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.96	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.03	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.1	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.23	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	67.28	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.35	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.41	0.6	1053
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.48	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.55	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	67.61	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.68	0.6	1092
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.75	0.6	1060
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.82	0.6	1068
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.88	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.94	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.01	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.07	0.6	1062
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.14	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.21	0.6	1054
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	68.25	0.6	873
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.31	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	68.41	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.48	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	68.56	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.63	0.6	1129
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.7	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.77	0.6	1061
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.83	0.6	1048
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.9	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.97	0.6	1064
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.04	0.6	1088

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.11	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.25	0.6	1112
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.31	0.6	1072
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.39	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.45	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.52	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.59	0.6	1084
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.67	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.74	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.81	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.88	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.94	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.02	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.09	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.16	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.24	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.31	0.6	1114
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.39	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.46	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.54	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	70.6	0.6	1083
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.68	0.6	1096
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.76	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.83	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.9	0.6	1102
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.98	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.05	0.6	1116
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.13	0.6	1106
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.21	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.28	0.6	1115
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.36	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.43	0.6	1120
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.51	0.6	1110
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.6	0.6	980
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.03	71.63	0.6	990
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.68	0.6	1084
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.04	71.72	0.6	987
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.06	71.78	0.6	1138
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.83	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.92	0.6	1315
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.07	0.6	1092

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.15	72.22	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.3	0.6	1094
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.37	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.44	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.52	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.58	0.6	1044
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.66	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.73	0.6	1037
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.79	0.6	1009
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.85	0.6	1047
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	72.94	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.01	0.6	1082
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.08	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.15	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.22	0.6	1066
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.29	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.36	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.43	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.5	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.57	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	73.65	0.6	1087
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	73.73	0.6	1098
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.8	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.87	0.6	1108
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	73.91	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	74.02	0.6	1077
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.1	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.19	74.29	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.37	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.46	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.55	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.63	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.72	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.8	0.6	1134
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	74.85	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.13	74.98	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.07	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.16	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.25	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	75.35	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.44	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.52	0.6	1099
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.6	0.6	1161

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	75.71	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.8	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.88	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.97	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.05	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.13	0.6	1136
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.2	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.27	0.6	1055
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.36	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.45	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.53	0.6	1138
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.61	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.69	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.78	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.87	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.95	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.04	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.13	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.21	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.3	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.39	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	77.47	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.56	0.6	1135
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.65	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.73	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.81	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.9	0.6	1159
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.09	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.17	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.34	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.43	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.52	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.61	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.7	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.8	0.6	1180
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.88	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.98	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.07	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.16	0.6	1183
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.34	0.6	1166

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	79.42	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.51	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.6	0.6	1140
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.69	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.78	0.6	1171
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.87	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.96	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.05	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	80.13	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.23	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.32	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.42	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.51	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.6	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.69	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.78	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.87	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.96	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.05	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.14	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	81.22	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	81.31	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.4	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.49	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.58	0.6	1143
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.67	0.6	1150
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.76	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.85	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.94	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.03	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.12	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.2	0.6	1154
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	82.3	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.39	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.48	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.57	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.66	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.75	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.83	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.92	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.01	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.1	0.6	1170
Shut down and waited for pressure to bleed off to 500 psi				
Pumped CF	0.13	83.23	0.6	1138

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.33	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.42	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.26	83.68	0.6	1280
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.78	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.87	0.6	1195
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.97	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.07	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.17	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.27	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.38	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.48	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.58	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.68	0.6	1214
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.79	0.6	1223
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.89	0.6	1215
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.99	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.09	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.19	0.6	1193
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.29	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.39	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	85.5	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.1	85.6	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.8	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.9	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.1	0.6	1229
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.2	0.6	1209
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.3	0.6	1203
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.4	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.5	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.6	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.8	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	86.89	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.99	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.09	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.19	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	87.28	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.39	0.6	1225
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.49	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.6	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.7	0.6	1245

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.8	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.91	0.6	1249
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.14	88.05	0.6	1226
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.14	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.23	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.12	88.35	0.6	1252
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.44	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.54	0.6	1200
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.64	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.73	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.83	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.92	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.02	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.12	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.21	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.3	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.39	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.49	0.6	1149
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.58	0.6	1201
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.68	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.78	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	89.87	0.6	1186
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.96	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.07	0.6	1188
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.17	0.6	1233
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.27	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.37	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.46	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.56	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.67	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.77	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.86	0.6	1198
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.96	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.05	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	91.15	0.6	1213
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.24	0.6	1163
Shut down for 5,10,15				

Note: Displaced acid 1.49 bbls past the top perf, after the well sits for the night there should be approximately 6.49 bbls of water past the top perf depth.

Note: There were no signs of communication with the open perforations above this interval.

General details	Pressure
ISIP	Not available
5 Min	413 psi
10 Min	213 psi
15 Min	119 psi
Max Treating Pressure	1315 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	935 psi
Load to Recover	64.9 bbls

Note: See 5-3 Acid stim 10 second data tab for details

Plan to swab perf intervals 6550'-6560' for rate and clean up.

5/4/2012 Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 12

Water cut - 50%

Average rate -66 bfpd

Average fluid level - 5850

Total fluid recovered - 72 bbls

Perf intervals open - 6550'-6560'

See 5-4 Swab report for details.

Note: Water cut is not accurate due to the slow fluid entry.

Released packer and pulled out of hole with tubing and packer, RU wireline unit and perforated well as follows.

Perf interval - 6490'-6500' & 6517'-6537'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Latched onto plug and set at 6545', set packer at 6447'. SWIFN

Plan to swab perf intervals 6490'-6500' & 6517'-6537' for rate and clean up.

5/5/2012 Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 5%

Average rate -520 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-5 Swab report for details.

Plan to pump acid on perf intervals 6490'-6500' & 6517'-6537'

5/6/2012 Opened well, 30 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf intervals 6490'-6500' & 6517'-6537' as follows:

Detail	Bbls	Cumm	Max BPM	Max PSI
Pumped CF to fill tubing	0	0	0	0
Opened bypass on packer	~	~	~	~
Spotted 7 1/2% FE HCL	9.52	9.52	2	390
Spotted 7 1/2% FE HCL containing 150 buoyant balls	23.88	33.4	2	170
Closed bypass on packer	~	~	~	~
Pumped 7 1/2% FE HCL	13.43	46.83	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.68	47.51	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.69	48.2	0.5	2500

Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.72	48.92	0.5	2490
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.62	49.54	0.5	2491
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	21.96	71.5	0.4	2720
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped CF	26.5	98	0.7	2770

Note: There were no signs of communication with the open perforations above this interval.

General details	Pressure
ISIP	1930 psi
5 Min	374 psi
10 Min	217 psi
15 Min	145 psi
Max Treating Pressure	2770 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	2412 psi
Load to Recover	60.6 bbls

Note: See 5-6 Acid stim 1 second data tab for details

RD and released acid equipment, RU swab equipment and swabbed well as follows:

Swab runs - 15

Water cut - 0%

Average rate - 367 bfpd

Average fluid level - 4250

Total fluid recovered - 123 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-6 Swab report for details.

Plan to continue swabbing for 1/2 day / Pull tbg and pkr / Perforate 6252'-6266' / TIH with tbg & pkr

5/7/2012

Well flowed back 10 bbls of oil to the frac tank overnight, RU swab equipment and swabbed well as follows:

Swab runs - 31

Water cut - 3%

Average rate - 573 bfpd

Average fluid level - 4850

Total fluid recovered - 233 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-7 Swab report for details.

SWIFN

Plan to reset the plug / Pull tbg and pkr / Perf 6252'-6266' / TIH with tbg / Swab for rate and clean up.

5/8/2012

Opened well, 90 psi tubing, 0 psi casing. Released plug and packer, reset plug at 6281', pressure tested to 1000 psi, RU swab equipment and swabbed fluid level down to 2500'. RD swab equipment, released packer and pulled out of the hole with tubing and packer. RU wireline unit and perforated well as follows:

Perf interval - 6252'-6266'

Titan Part # EXP 3325-321T

.41 entry hole
25 gram charges
45.16" penetration
4" EXP gun loaded 6 spf on 60° phasing.
RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set packer at 6165', RU pump line and pressure tested packer to 1000 psi. RD pump lines, RU swab equipment and swabbed well as follows.
Swab runs - 14
Water cut - 55% and falling
Average rate - 780 bfpd
Average fluid level - 3750
Total fluid recovered - 135 bbls
Perf intervals open -6252'-6266'
See 5-8 Swab report for details.
SWIFN
Note: Corrosion was found in the tubing collars while tripping in the hole with tubing today, the corrosion was noticed at 1500' from surface. New tubing collars were installed from 1500' to the surface. There may be more collar corrosion below the 1500' depth that had not been noticed previously. Inspections below the 1500' level will be made during the next pipe trip. Also note that the tubing pins had corrosion as well. See tubing and collar corrosion photos in the photos tab.
Plan to continue swabbing for 1/2 day until the fluid cut stabilizes / move plug and packer / swab all intervals together for rate and cut.

5/9/2012 Opened well, 40 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:
Swab runs - 13
Water cut - 40%
Average rate - 722 bfpd
Average fluid level - 3600
Total fluid recovered - 123 bbls
Perf intervals open -6250'-6266'
See 5-9 Swab report for details.
RD swab equipment, released packer, RU swab equipment and made two runs to remove oil from tubing.
RD swab equipment, released plug and reset at 6572', set packer at 6185'. RU swab equipment and swabbed all perf intervals as follows:
Swab runs - 12
Water cut - 40%
Average rate - 833 bfpd
Average fluid level - 3450
Total fluid recovered - 121 bbls
Perf intervals open -6250'-6560'
See 5-9a Swab report for details.
SWIFN
Plan to release pkr and plug / pull out of hole with tubing changing corroded tubing collars as needed.

5/10/2012 Opened well, 30 psi tubing, 0 psi casing. Bled pressure off tubing, released packer and plug, pulled out

of the hole with tubing plug and packer. SWIFN

Note: Changed the remaining corroded tubing collars. All collars were changed from surface to 3000', the remaining tubing collars in the string had no signs of corrosion.

Plan to install ESP and turn well into production.

5/11/2012 Opened well, 0 psi. RU cable spoolers, picked up and run in hole with 6" centralizer, Centinel, motor, seal, pump, 2 3/8" x 2 7/8" XO, 10' x 2 3/8" sub, Y-tool, 2 3/8" x 2 7/8" XO, 6' x 2 7/8" sub, 1 joint 2 7/8" N-80 tbg, cup type SN and 191 joints N-80 tubing to surface. Made final splice on lower pig tail, landed well, ND BOP's NU wellhead. Turned well into production.

Note: Repaired cable splice that's aproximatly 1000' from surface.

This well is currently producing from the upper and lower Navajo

5/11/2012 07 Hour production, 045 bopd, 128 bwpd, 50 Hz, BHP 1352

5/12/2012 24 Hour production, 216 bopd, 283 bwpd, 50 Hz, BHP 1522

5/13/2012 24 Hour production, 267 bopd, 136 bwpd, 50 Hz, BHP 1594

24 Hour production, 308 bopd, 153 bwpd, 55 Hz, BHP 1342

Supervisor: *Tony E. Cook* Rig Operator: Robert Miller

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

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

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
UTU-73528

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:
WOLVERINE

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
Wolverine Fed 17-4

2. NAME OF OPERATOR:
Wolverine Gas & Oil Company of Utah, LLC

9. API NUMBER:
43041300350000

3. ADDRESS OF OPERATOR:
55 Campau Avenue NW #1 , Grand Rapids, MI, 49503-2616

PHONE NUMBER:
616-458-1150

9. FIELD and POOL or WILDCAT:
COVENANT

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
1680 FNL 2249 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SENW Section: 17 Township: 23S Range: 1W Meridian: S

COUNTY:
SEVIER

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: 8/29/2019	✓ 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.

Wolverine Gas and Oil Co. of Utah (a subsidiary of Wolverine Gas and Oil Corp.) seeks approval to workover Wolverine Federal 17-4 to: assess production rates from existing Navajo and White Throne perf intervals, look for opportunities to either stimulate/improve oil recovery or squeeze to reduce water rates, and then recomplete additional White Throne pay. Work would start by isolating and swab testing Navajo and White Throne perf sets in effort to identify either high oil cut intervals for possible stimulation work, or high water producing perfs where plugback or squeezing could reduce water handling expenses. And after existing perfs are addressed, additional White Throne perfs (between 6219' and 6235') will be added and stimulated before the well is returned to production. WF 17-4 currently makes about 45 BO and 250 BW per day as a commingled Navajo/White Throne producer.

Approved by the Utah Division of Oil, Gas and Mining

Date: July 15, 2019

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Ron Meredith	616 929-1932	Sr. Production Engineer
SIGNATURE		**DATE**
N/A		7/9/2019

RECEIVED: Jul. 09, 2019