Form 3160-3
(February 2005)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **UTU-73528**

6. If Indian, Allotee or Tribe Name **N/A**

7. If Unit or CA Agreement, Name and No. **Wolerine Federal Unit**

8. Lease Name and Well No. **Wolverine Federal 17-13**

9. API Well No. 43041-30052

1a. Type of work: ☑ DRILL ☐ REENTER

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

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

3a. Address **55 Campau, NW Grand Rapids, Michigan, 49503-2616**

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

10. Field and Pool, or Exploratory **Covenant Field Navajo**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **1636' FNL, 2452' FWL, SE/4 NW/4**
At proposed prod. zone **560' FNL, 1673' FEL, NW/4 NE/4**

11. Sec., T. R. M. or Blk. and Survey or Area **Section 17, T23S, R1W, SLB&M**

14. Distance in miles and direction from nearest town or post office* **3.5 miles southeast of Sigurd, Utah**

12. County or Parish **Sevier**

13. State **UT**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) **560**

16. No. of acres in lease **8236**

17. Spacing Unit dedicated to this well **40 acres**

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. **800' NE of WF 17-6**

19. Proposed Depth **6856' MD, 6600 TVD**

20. BLM/BIA Bond No. on file **BLM WY3329**

21. Elevations (Show whether DF, KDB, RT, GL, etc.) **5736' GL, 5762' KB**

22. Approximate date work will start* **01/15/2007**

23. Estimated duration **40 days**

## 24. Attachments

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

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

25. Signature — Name *(Printed/Typed)* **Edward A. Higuera** — Date **11/02/2007**

Title **Manager - Development**

Approved by *(Signature)* — Name *(Printed/Typed)* BRADLEY G. HILL — Date 12-17-07

Title — Office ENVIRONMENTAL MANAGER

Application approval 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.
Conditions of approval, if any, are attached.

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

*(Instructions on page 2)

**Federal Approval of this Action is Necessary**

Surf
419030X
4295415Y
38.805650
-111.932504

Bhl
419343X
4295738Y
38.808589
-111.928930

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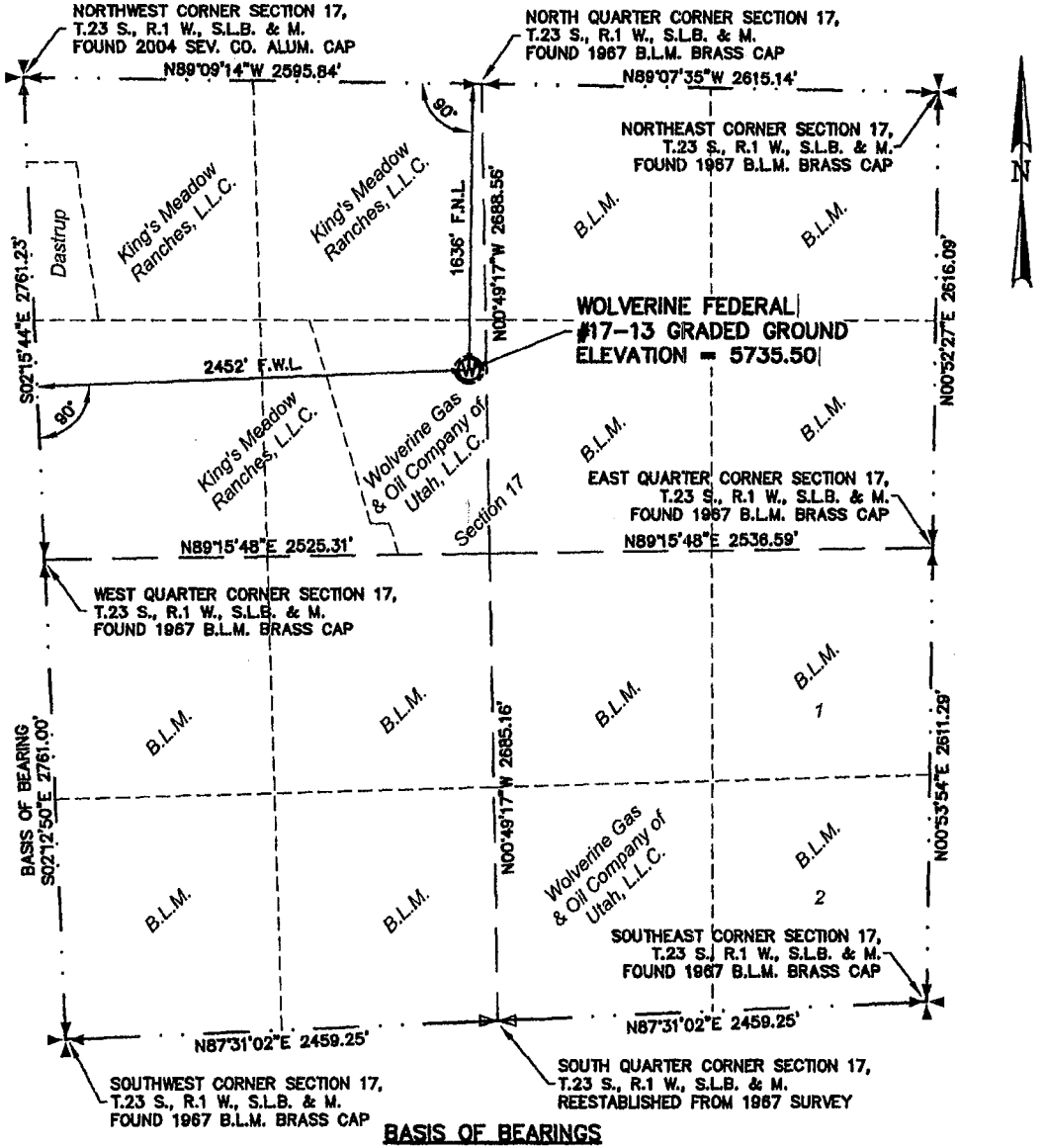
# Section 17, T.23 S., R.1 W., S.L.B. & M.




## BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°12'50"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°48'19.9626" (38.805545167) NAD 83
LONGITUDE: -111°55'59.9065" (-111.933307361) NAD 83

## PROJECT

**Wolverine Gas & Oil Company of Utah, L.L.C.**

WELL LOCATION, LOCATED AS SHOWN IN THE S.E. 1/4 OF THE N.W. 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
- (W) = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-13 LOCATION. LOCATED IN THE S.E. 1/4 OF THE N.W. 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M., SEVIER COUNTY, UTAH.

## BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK T-30 LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

1000' 500' 0' 1000'

SCALE

## 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.

PROFESSIONAL LAND SURVEYOR TREVOR ROY GADD No. 343639 STATE OF UTAH

10/27/07

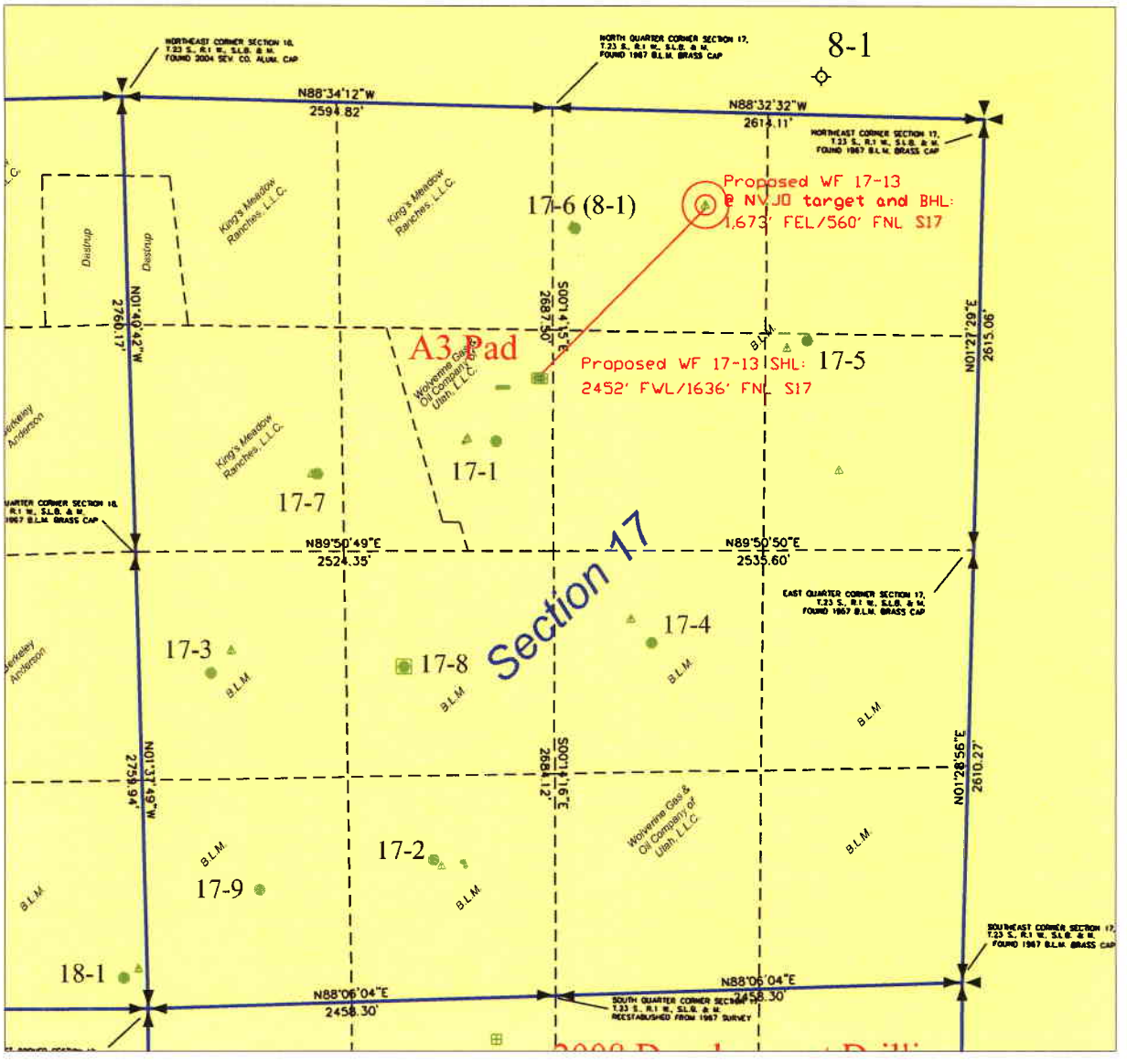
TREVOR R. GADD P.L.S. # 343639


**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, L.L.C.**

| DESIGNED | SURVEYED | CHECKED | DRAWN | PROJECT NO. | SHEET NO. |
|---|---|---|---|---|---|
| - | K.D.B. | T.R.G. | T.W.G. | 0703-200 | 1 |
| DATE 05/10/07 | | DWG.NAME WELL_LOC | SCALE 1"=1000' | | |



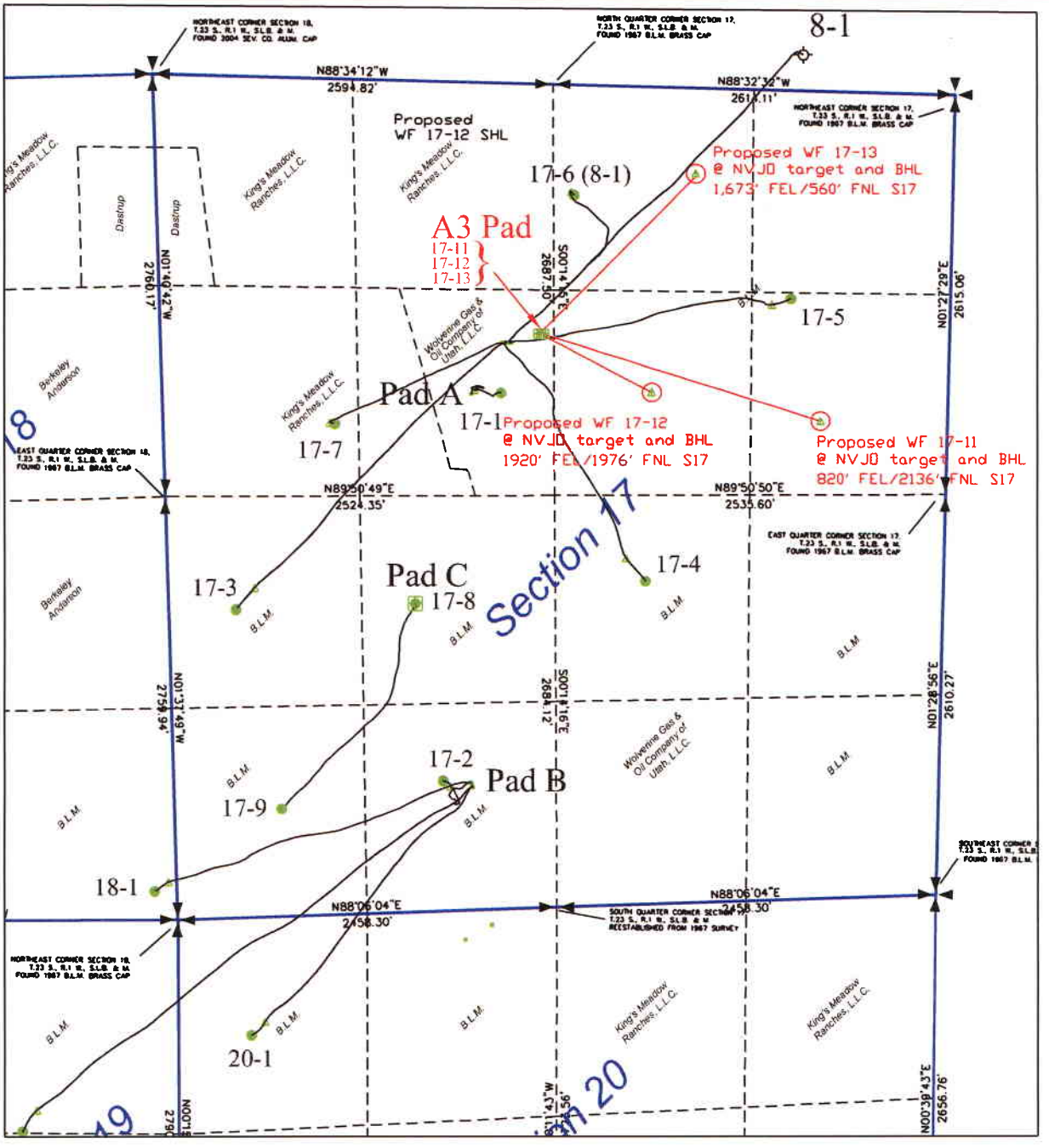

Proposed Wolverine Federal 17-13 Well Location

Covenant Field
A3 Pad Wells

Wolverine Federal 17-11
Wolverine Federal 17-12
Wolverine Federal 17-13

Wolverine Lease Position

| | |
|---|---|
| WOLVERINE | Wolverine Gas and Oil Corporation<br>*Energy Exploration in Partnership with the Environment*<br>One Riverfront Plaza<br>55 Campau N.W.<br>Grand Rapids, MI 49503-2616<br>(616) 458-1150 |
| Directional Drilling Application Plat<br>Sec. 17, T23S, R1W<br>Sevier County, UT | |
| SCALE: 1:12,000 | FNAME: covenant_field.dwg |
| DATE: 11/09/2007 | SHEET / REV |




# Covenant Field
## A3 Pad Wells

Wolverine Federal 17-11
Wolverine Federal 17-12
Wolverine Federal 17-13

**Wolverine Gas and Oil Corporation**
*Energy Exploration in Partnership with the Environment*
One Riverfront Plaza
55 Campau N.W.
Grand Rapids, MI 49503-2616
(616) 458-1150

A3 Pad Well Sites
Sec. 17, T23S, R1W
Sevier County, UT

| | | | |
|---|---|---|---|
| SCALE: 1" = 1000' | FNAME: covenant_field.dwg | | |
| DATE: 11/05/2007 | | SHEET | REV |

# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

## DRILLING PLAN

### Wolverine Federal 17-13
**SE/4 NW/4 Section 17, Township 23 South, Range 1 West, S.L.B & M.**
**Sevier County, Utah**

**Plan Summary:**

It is planned to drill this confidential development well as a directional bore hole due to surface topography constraints and in accordance with the enclosed directional drilling plan. The well will be drilled to a measured depth of 6856' (6600' TVD) to test the upper thrust of the Twin Creek and Navajo formations. Well path deviation caused by subsurface geologic irregularities is expected to be the primary drilling concern in this area. No abnormal pressure is anticipated.

The planned location is as follows:

| | |
|---|---|
| Surface Location: | 1636' FNL, 2452' FWL, Section 17, T23S, R1W, S.L.B. & M. |
| Bottom Hole Location @ Navajo 1 target | 560' FNL, 1673' FEL, Section 17, T23S, R1W, S.L.B. & M. |
| Bottom Hole Location @ total depth | 560' FNL, 1673' FEL, Section 17, T23S, R1W, S.L.B. & M. |

Conductor casing will be set at approximately 80 feet and cemented to surface. A 12-1/4" hole will be drilled vertically to approximately 1000' at which time 9-5/8" surface casing will be set and cemented to surface. An 8-3/4" hole will be drilled at approximately 22 degrees from vertical to approximately 5000' MD, then allowed to drop to vertical to penetrate the Twin Creek and Navajo formations to a well total depth of 6856' (6600' TVD). The well will be logged and 7" production casing will be set and cemented to 800' (9-5/8" csg shoe @ 1000').

Drilling activities at this well are expected to commence in January 2008.

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**Well Name:** **Wolverine Federal 17-13**

**Surface Location:** 1636' FNL, 2452' FWL
SE/4 NW/4 Section 17, T23S, R1W, S.L.B. & M.
Sevier County, Utah

**TD Bottom-Hole Location:** 560' FNL, 1673' FEL

**Elevations (est):** 5736' GL, 5762' KB

## I. Geology:

Tops of important geologic markers and anticipated water, oil, gas, and mineral content are as follows:

| Formation | TVD Interval (KB) | MD Interval (KB) | Contents | Pressure Gradient |
|---|---|---|---|---|
| Arapien | 26' – 5832' | 26' – 6088' | | |
| Twin Creek 1 | 5832' – 6162' | 6088' – 6418' | Oil & water | 0.46 psi/ft |
| Navajo 1 | 6162' –6600' | 6418' – 6856' | Oil & water | 0.46 psi/ft |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Total Depth | 6600' | 6856' | | |

## II. Well Control:

The contracted drilling rig has a 10M BOP system but conditions only require a 5M BOP system. BOPE will be in place and tested as a 5M system prior to drilling out the surface casing shoe. See attached schematic of BOPE.

A. The BOPE will, as a minimum, include the following:

Wellhead Equipment (5M Min.):

| BOPE Item | Flange Size and Rating |
|---|---|
| Annular Preventer | 13-5/8" 5M |
| Double Rams (5" Pipe - top, Blind - bottom) | 13-5/8" 10M |
| Drilling Spool w/ 2 side outlets (4" Choke Line, 4" Kill Line) | 13-5/8" 10M x 13-5/8" 10M |
| Single Ram (Pipe) | 13-5/8" 10M |
| DSA | 13-5/8" 10M x 11" – 5M |
| Casing Head (9-5/8" SOW w/ two 2-1/16" SSO's) | 11" 5M |

Auxiliary Equipment (5M Min.):

| BOPE Item |
|---|
| Choke Line with 2 valves (3" minimum) |
| Kill Line with 2 valves and one check valve (2" Minimum) |
| 2 Chokes with one remotely controlled at a location readily accessible to the driller |
| Upper and lower kelly cock valves with handles |
| Safety Valves to fit all drill string connections in use |
| Inside BOP or float sub |
| Pressure gauge on choke manifold |
| Fill-up line above the uppermost preventer |
| Wear bushing in casing head |

B. **Choke manifold** will be functionally equipped and sized at a minimum as shown on the attached diagram. All choke lines will be straight lines unless turns have tee blocks or are targeted with running tees, and all choke lines will be anchored. All valves (except chokes) in the kill line choke manifold and choke line will be full opening and allow straight through flow.

C. **System accumulator** will have sufficient capacity to open the hydraulically-controlled gate valve and close all rams plus the annular preventer (3 ram system will have added 50 percent safety factor to compensate for any fluid loss in the control system or preventers) and retain a minimum pressure of 200 psi above pre-charge on the closing manifold without use of the closing unit pumps. The fluid reservoir capacity shall be double the usable fluid volume of the accumulator system capacity and the fluid level of the reservoir shall be maintained at the manufacturer's recommendations. The accumulator will have two (2) independent power sources available to close the preventers. Nitrogen bottles may be one of those sources, and if so, will have charge maintained per manufacturer's specifications.

D. **Accumulator pre-charge pressure test** will be conducted prior to connecting the closing unit to the BOP stack and at least once every 6 months. The accumulator pressure will be corrected if the measured precharge pressure is found to be above or below the maximum or minimum specified limits. Only nitrogen gas will be used to precharge.

E. **Power for the closing unit pumps** will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure has decreased to the pre-set level.

F. **Accumulator pump capacity** will be such that, with the accumulator system isolated from service, the pumps will be capable of opening the hydraulically-operated gate valve (if so equipped), plus closing the annular preventer on the smallest size drill pipe to be used within 2 minutes, and retaining a minimum of 200 psi above the specified accumulator pre-charge pressure.

G. **Locking devices**, either manual (i.e., hand wheels) or automatic, will be installed on the ram type preventers. 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 shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative.

H. **Remote controls** will be readily accessible to the driller and will be capable of both opening and closing all preventers. Master controls shall be at the accumulator and shall be capable of opening and closing all preventers and the choke line valve.

I. **Well control equipment testing** will be performed using clear water when the equipment is initially installed, whenever any seal subject to test pressure is broken, following related repairs, and as a minimum, every 30-day interval. The tests will apply to all related well control equipment.

Ram type preventers and associated equipment will be isolated and tested to 5000 psi. The annular preventer will be tested to 2500 psi. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer, for all tests. A casing head valve will be open below the test plug during testing of the BOP stack. Valves will be tested from the working pressure side with all down-stream valves open. Kill line valves will be tested with the check valve held open or the ball removed.

Pipe and blind rams will be activated each trip, but not more than once a day. The annular preventers will be functionally operated at least weekly. A pit level drill will be conducted weekly for each crew. All BOPE drills and tests will be recorded in the IADC driller's log.

## III. Casing and Cementing:

A. Casing Program (all new casing):

| Hole Size | Casing Size | Weight | Grade | Connection | Coupling Diameter | Setting Depth |
|---|---|---|---|---|---|---|
| 30" | 24" | | Conductor | | | 80' GL |
| | | | | | | |
| 12.25" | 9.625" | 36.0 | J55 | STC | 10.625" | 1000' kb |
| 8.750" | 7.000" | 26.0 | HCL-80 | LTC | 7.656" | TD-4400'kb |
| | 7.000" | 23.0 | HCL-80 | LTC | 7.656" | 4400'- surf |

| | Surface | Intermediate | Production |
|---|---|---|---|
| Casing O. D. (in) | 9.625 | none | 7.0 |
| Casing Grade | J-55 | | HCL-80 |
| Weight of Pipe (lbs/ft) | 36.0 | | 23 & 26 |
| Connection | STC | | LTC |
| | | | |
| Top Setting Depth - MD (ft) | 0 | | 0 |
| Top Setting Depth - TVD (ft) | 0 | | 0 |
| Bottom Setting Depth - MD (ft) | 1000 | | 6856 |
| Bottom Setting Depth - TVD (ft) | 1000 | | 6600 |
| Maximum Mud Weight - Inside (ppg) | 9.2 | | 8.4 |
| Maximum Mud Weight - Outside (ppg) | 9.2 | | 10.5 |
| Design Cement Top - MD (ft) | 0 | | 800 |
| Design Cement Top - TVD (ft) | 0 | | 800 |
| | | | |
| Max. Hydrostatic Inside w/ Dry Outside (psi) | 478 | | 2883 |
| Casing Burst Rating (psi) | 3520 | | 6340 |
| **Burst Safety Factor (1.10 Minimum)** | **7.36** | | **2.2** |
| | | | |
| Max. Hydrostatic Outside w/ Dry Inside (psi) | 478 | | 3604 |
| Collapse Rating | 2020 | | 6830 |
| **Collapse Safety Factor (1.125 Minimum)** | **4.22** | | **1.9** |
| | | | |
| Casing Weight in Air (kips) | 36.0 | | 165.1 |
| Body Yield (kips) | 564.0 | | 532.0 |
| Joint Strength (kips) | 453.0 | | 435.0 |
| **Tension Safety Factor (1.80 Minimum)** | **12.58** | | **2.64** |

Casing with same or greater burst, collapse, and tension rating may be substituted for any of the planned casing sizes depending on availability and actual conditions.

B. Cementing Program

| Casing Size | Cement Slurry | Quantity (sks) | Density (ppg) | Yield ($ft^3$/sk) |
|---|---|---|---|---|
| 9.625" | Lead: CBM Lite | 125 | 10.5 | 4.12 |
| | Tail: Premium Plus | 175 | 15.6 | 1.19 |
| | | | | |
| 7.000" | Lead: Elastiseal™ N2 foamed | 435 | 10.0 | NA |
| | Tail: Elastiseal™ non-foamed | 175 | 14.35 | 1.45 |

Surface: 9-5/8" surface casing will be cemented from setting depth (1000' MD) to surface and topped out with premium cement if necessary. Hardware will include a guide shoe, float collar, top plug, and a minimum of one centralizer per joint on the bottom three (3) casing joints. Water or other preflush fluid pumped ahead of the slurry will separate cement from the drilling fluids.

Intermediate: none

Production: 7" production casing will be cemented in one stage from setting depth (6856') to 800' (at least 200' into the 9-5/8" casing) using a foamed cement lead and non-foamed tail across the producing interval. A minimum of 20 percent silica will be added to the cement slurry if bottom-hole temperature exceeds 230 °F. Slurry volume will be based on calipered hole size plus 20% excess. Hardware will include a guide shoe, float collar, top plug, and centralizers as needed across any pay zones. Water and preflush fluid pumped ahead of the slurry will separate cement from the drilling fluids.

Other: - The BLM will be notified at least twenty-four hours prior to running and cementing the surface and production casing strings.

- Actual cement slurries for all casing will be based on final service company recommendations.

- The size, weight, grade, type of thread, number of joints, and footage of all casing run will be recorded in the driller's log. The amount and type of all cement pumped will be recorded in the driller's log.

- Adequate time will be allowed before drilling out for the cement at the casing shoe to achieve a minimum 500-psi compressive strength.

- All casing strings will be tested to 1500 psi before drilling out and if pressure declines by more than 10 percent in 30 minutes, corrective action will be taken.

- Before drilling more than 20 feet of new hole below each casing string, a pressure integrity test of the casing shoe will be performed to a minimum of the mud weight equivalent anticipated to control the pore pressure to the next casing depth or at total depth of the well.



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## IV. Mud Program:

| Depth | Mud Weight (ppg) | Mud Type | Viscosity | Fluid Loss |
|---|---|---|---|---|
| 0 – 1000' | 8.4 – 9.2 | Fresh Water | 26 – 50 | N/C to 12 cc |
| 1000' – 6856' | 9.2 – 10.5 | Salt Mud | 36 – 50 | N/C to 8 cc |
| | | | | |

A. After mudding up, slow pump rates will be taken daily and recorded in the driller's log.

B. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume.

C. Abnormal pressures are not anticipated. In the event such pressures are to be anticipated, electronic/mechanical mud monitoring equipment will be in place and include as a minimum; pit volume totalizer (PVT); stroke counter; and flow sensor.

D. A mud test will be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

E. The 10M BOPE system is not required for conditions on this well and use of the trip tank is not anticipated.

F. Gas detecting equipment will be installed in the mud return system, and hydrocarbon gas shall be monitored for pore pressure changes. The presence of Hydrogen Sulfide gas is not expected.

G. The need to vent combustible or noncombustible gas is not expected. If needed, a flare system designed to gather and burn all gas will be available. The flare line discharge will be located more than 100 feet from the well head and it will be positioned downwind of the prevailing wind direction. The flare line will have straight lines unless turns are targeted with running tees and it will be anchored. The flare system will have an effective method for ignition.

H. Abnormal pressure is not expected. If abnormal pressure is to be anticipated, a mud-gas separator (gas buster) will be installed and operable beginning at a point at least 500 feet above any anticipated hydrocarbon zone of interest.

## V. Evaluation:

A. Mud Log: A mud logging unit will be in operation from a depth of approximately 1000 feet to TD. Samples will be caught, cleaned, bagged, and marked as required.

B. Drill Stem Tests: There is no DST planned.

C. Coring: There are no whole cores planned. Sidewall cores may be taken in conjunction with logging operations.

D. Wireline Logs: Wireline logs will be run as hole conditions allow from total depth to surface casing to assist in determining lithology and potential for hydrocarbon recovery. The logging tools will at a minimum survey resistivity, gamma radiation, and sonic velocity.

## VI. Expected Bottom-Hole Pressure and Abnormal Conditions:

A. Hydrogen Sulfide: Hydrogen Sulfide ($H_2S$) gas is not expected in the geologic formations to be penetrated by this well.

B. Pressure: No abnormally pressured zones are expected in this well. The pressure gradient for all potentially productive formations is expected to be approximately 0.46 psi/ft.

C. Temperature: Bottom-hole temperature at TD is expected to be approximately 190 °F.

end



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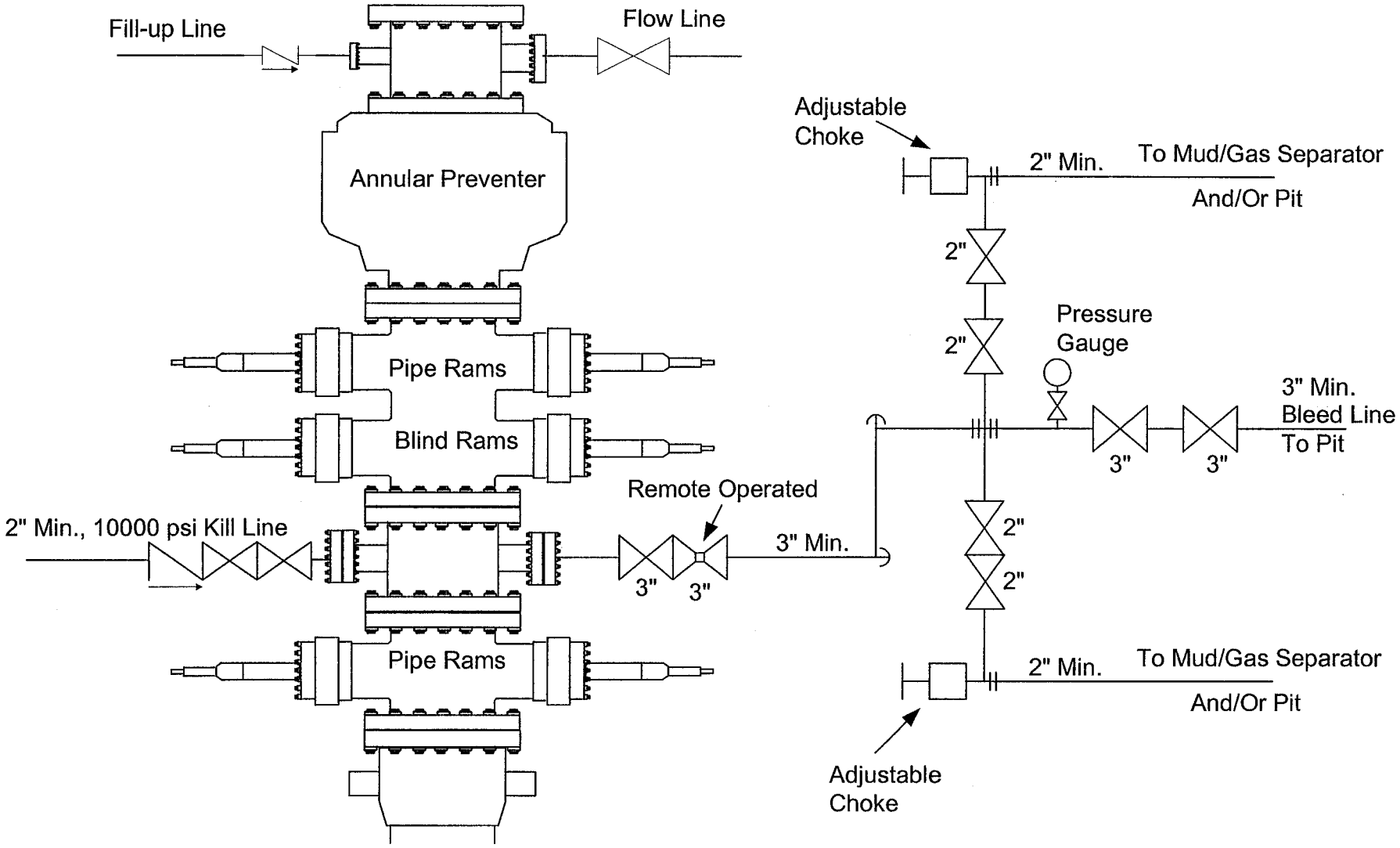
**Wolverine Gas and Oil Company of Utah, LLC**
**Covenant Field A3 Pad Well**
**BOPE Schematic**

(Not to Scale)



# WOLVERINE GAS & OIL COMPANY

| | | | |
|---|---|---|---|
| Location: | UTAH | Slot: | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Field: | SEVIER COUNTY | Well: | Wolverine Federal 17-13 |
| Facility: | SEC.17-T23S-R1W | Wellbore: | Wolverine Federal 17-13 PWB |

BAKER HUGHES INTEQ

## Well Profile Data

| Design Comment | MD (ft) | Inc (°) | Az (°) | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
|---|---|---|---|---|---|---|---|---|
| Tie On | 26.00 | 0.000 | 44.085 | 26.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| End of Tangent | 1100.00 | 0.000 | 44.085 | 1100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Build (S) | 2200.00 | 22.000 | 44.085 | 2173.17 | 149.84 | 145.13 | 2.00 | 208.60 |
| End of Tangent (S) | 4988.45 | 22.000 | 44.085 | 4758.57 | 900.16 | 871.87 | 0.00 | 1253.17 |
| Drop (S) | 6088.45 | 0.000 | 44.085 | 5831.74 | 1050.00 | 1017.00 | 2.00 | 1461.78 |
| End of Tangent | 6856.71 | 0.000 | 44.085 | 6600.00 | 1050.00 | 1017.00 | 0.00 | 1461.78 |

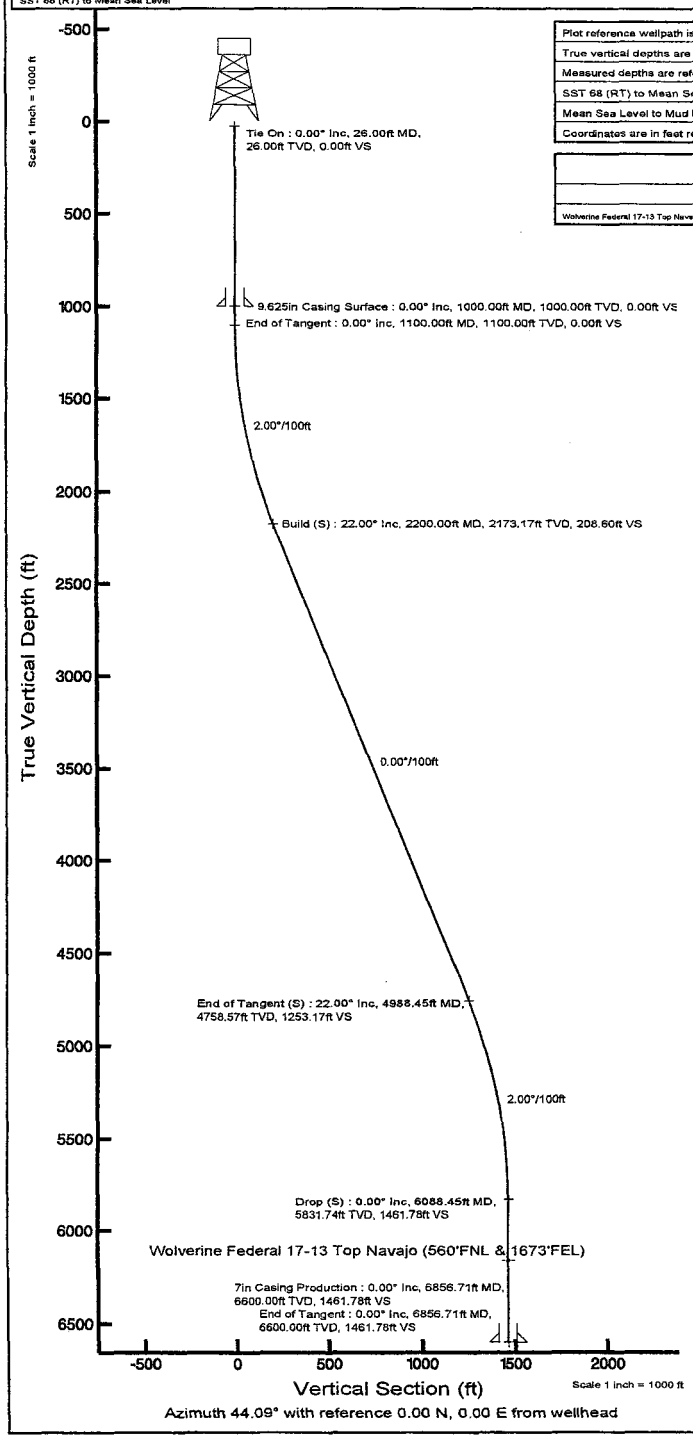
## Location Information

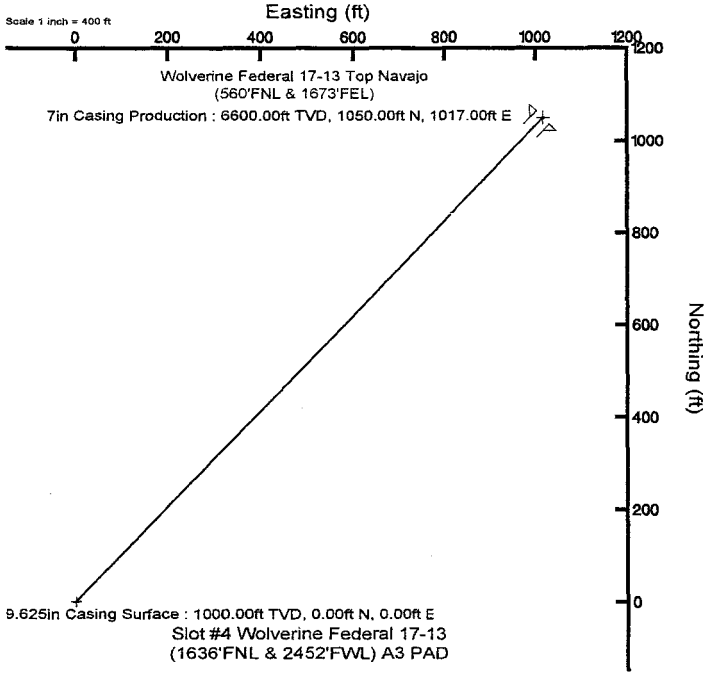
| Facility Name | | | Grid East (USft) | Grid North (USft) | Latitude | Longitude |
|---|---|---|---|---|---|---|
| SEC.17-T23S-R1W | | | 1516134.368 | 6732217.324 | 38° 48' 02.619"N | 111° 56' 09.781"W |
| **Slot** | **Local N (ft)** | **Local E (ft)** | **Grid East (USft)** | **Grid North (USft)** | **Latitude** | **Longitude** |
| Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD | 1754.65 | 781.67 | 1516824.628 | 6733958.245 | 38° 48' 19.983"N | 111° 55' 59.906"W |
| SST 68 (RT) to Mud line (Facility - SEC.17-T23S-R1W) | | | | | 5762ft | |
| Mean Sea Level to Mud line (Facility - SEC.17-T23S-R1W) | | | | | 0ft | |
| SST 68 (RT) to Mean Sea Level | | | | | 5762ft | |

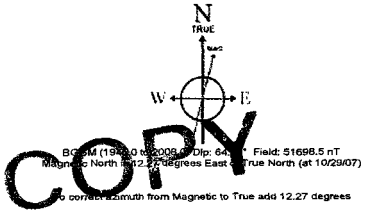
| | |
|---|---|
| Plot reference wellpath is Wolverine Federal 17-13 PWP | |
| True vertical depths are referenced to SST 68 (RT) | Grid System: NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet |
| Measured depths are referenced to SST 68 (RT) | North Reference: True north |
| SST 68 (RT) to Mean Sea Level: 5762 feet | Scale: True distance |
| Mean Sea Level to Mud line (Facility - SEC.17-T23S-R1W): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | Created by: cookdanm on 10/31/2007 |

## Targets

| Name | MD (ft) | TVD (ft) | Local N (ft) | Local E (ft) | Grid East (USft) | Grid North (USft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|
| Wolverine Federal 17-13 Top Navajo (560'FNL & 1673'FEL) | | 6162.00 | 1050.00 | 1017.00 | 1517946.76 | 6735913.37 | 38° 48' 30.341"N | 111° 55' 47.059"W |




BGGM (1990.0 to 2009.0) Dip: 64.[illegible]° Field: 51696.5 nT
Magnetic North is 12.27 degrees East of True North (at 10/29/07)
To correct azimuth from Magnetic to True add 12.27 degrees

COPY

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# Planned Wellpath Report

**Wolverine Federal 17-13 PWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 PWB** |
| Facility | **SEC.17-T23S-R1W** | | |

| REPORT SETUP INFORMATION | | | |
|---|---|---|---|
| Projection System | **NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet** | | |
| North Reference | **True** | Software System | **WellArchitect™ 1.2** |
| Scale | **1.00006** | User | **Doublina** |
| Wellbore last revised | **10/29/07** | Report Generated | **10/31/07 at 15:56:46** |
| | | Database/Source file | **Denver/_Wolverine_Federal_17-13_PWB.xml** |

| WELLPATH LOCATION | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|---|---|---|---|---|---|---|
| | **North [feet]** | **East [feet]** | **Easting [US feet]** | **Northing [US feet]** | **Latitude [°]** | **Longitude [°]** |
| Slot Location | 1754.65 | 781.67 | 1516924.63 | 6733968.25 | **38 48 19.963N** | **111 55 59.906W** |
| Facility Reference Pt | | | 1516134.37 | 6732217.32 | **38 48 02.619N** | **111 56 09.781W** |
| Field Reference Pt | | | 1516134.37 | 6732217.32 | **38 48 02.619N** | **111 56 09.781W** |

| WELLPATH DATUM | | | |
|---|---|---|---|
| Calculation method | **Minimum curvature** | SST 68 (RT) to Facility Vertical Datum | **5762.00 feet** |
| Horizontal Reference Pt | **Slot** | SST 68 (RT) to Mean Sea Level | **5762.00 feet** |
| Vertical Reference Pt | **SST 68 (RT)** | Facility Vertical Datum to Mud Line (Facility) | **0.00 feet** |
| MD Reference Pt | **SST 68 (RT)** | Section Origin | **N 0.00, E 0.00 ft** |
| Field Vertical Reference | **Mean Sea Level** | Section Azimuth | **44.09°** |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 PWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (77 stations) † = interpolated/extrapolated station**

| MD [feet] | Inclination [°] | Azimuth [°] | TVD [feet] | Vert Sect [feet] | North [feet] | East [feet] | DLS [°/100ft] | Design Comments | Path Comment |
|---|---|---|---|---|---|---|---|---|---|
| 0.00† | 0.000 | 44.085 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 26.00 | 0.000 | 44.085 | 26.00 | 0.00 | 0.00 | 0.00 | 0.00 | Tie On | |
| 126.00† | 0.000 | 0.000 | 126.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 226.00† | 0.000 | 0.000 | 226.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 326.00† | 0.000 | 0.000 | 326.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 426.00† | 0.000 | 0.000 | 426.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 526.00† | 0.000 | 0.000 | 526.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 626.00† | 0.000 | 0.000 | 626.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 726.00† | 0.000 | 0.000 | 726.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 826.00† | 0.000 | 0.000 | 826.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 926.00† | 0.000 | 0.000 | 926.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 1026.00† | 0.000 | 0.000 | 1026.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 1100.00 | 0.000 | 44.085 | 1100.00 | 0.00 | 0.00 | 0.00 | 0.00 | End of Tangent | |
| 1126.00† | 0.520 | 44.085 | 1126.00 | 0.12 | 0.08 | 0.08 | 2.00 | | |
| 1226.00† | 2.520 | 44.085 | 1225.96 | 2.77 | 1.99 | 1.93 | 2.00 | | |
| 1326.00† | 4.520 | 44.085 | 1325.77 | 8.91 | 6.40 | 6.20 | 2.00 | | |
| 1426.00† | 6.520 | 44.085 | 1425.30 | 18.53 | 13.31 | 12.89 | 2.00 | | |
| 1526.00† | 8.520 | 44.085 | 1524.43 | 31.62 | 22.71 | 22.00 | 2.00 | | |
| 1626.00† | 10.520 | 44.085 | 1623.05 | 48.15 | 34.59 | 33.50 | 2.00 | | |
| 1726.00† | 12.520 | 44.085 | 1721.03 | 68.12 | 48.93 | 47.40 | 2.00 | | |
| 1826.00† | 14.520 | 44.085 | 1818.25 | 91.50 | 65.73 | 63.66 | 2.00 | | |
| 1926.00† | 16.520 | 44.085 | 1914.60 | 118.26 | 84.94 | 82.27 | 2.00 | | |
| 2026.00† | 18.520 | 44.085 | 2009.96 | 148.36 | 106.57 | 103.22 | 2.00 | | |
| 2126.00† | 20.520 | 44.085 | 2104.21 | 181.77 | 130.57 | 126.46 | 2.00 | | |
| 2200.00 | 22.000 | 44.085 | 2173.17 | 208.60 | 149.84 | 145.13 | 2.00 | Build (S) | |
| 2226.00† | 22.000 | 44.085 | 2197.28 | 218.34 | 156.84 | 151.91 | 0.00 | | |
| 2326.00† | 22.000 | 44.085 | 2289.99 | 255.80 | 183.74 | 177.97 | 0.00 | | |
| 2426.00† | 22.000 | 44.085 | 2382.71 | 293.26 | 210.65 | 204.03 | 0.00 | | |
| 2526.00† | 22.000 | 44.085 | 2475.43 | 330.72 | 237.56 | 230.09 | 0.00 | | |
| 2626.00† | 22.000 | 44.085 | 2568.15 | 368.19 | 264.47 | 256.16 | 0.00 | | |
| 2726.00† | 22.000 | 44.085 | 2660.87 | 405.65 | 291.38 | 282.22 | 0.00 | | |
| 2826.00† | 22.000 | 44.085 | 2753.59 | 443.11 | 318.29 | 308.28 | 0.00 | | |
| 2926.00† | 22.000 | 44.085 | 2846.30 | 480.57 | 345.19 | 334.34 | 0.00 | | |
| 3026.00† | 22.000 | 44.085 | 2939.02 | 518.03 | 372.10 | 360.41 | 0.00 | | |
| 3126.00† | 22.000 | 44.085 | 3031.74 | 555.49 | 399.01 | 386.47 | 0.00 | | |
| 3226.00† | 22.000 | 44.085 | 3124.46 | 592.95 | 425.92 | 412.53 | 0.00 | | |
| 3326.00† | 22.000 | 44.085 | 3217.18 | 630.41 | 452.83 | 438.59 | 0.00 | | |
| 3426.00† | 22.000 | 44.085 | 3309.90 | 667.87 | 479.73 | 464.66 | 0.00 | | |
| 3526.00† | 22.000 | 44.085 | 3402.61 | 705.33 | 506.64 | 490.72 | 0.00 | | |
| 3626.00† | 22.000 | 44.085 | 3495.33 | 742.79 | 533.55 | 516.78 | 0.00 | | |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 PWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (77 stations) † = interpolated/extrapolated station**

| MD [feet] | Inclination [°] | Azimuth [°] | TVD [feet] | Vert Sect [feet] | North [feet] | East [feet] | DLS [°/100ft] | Design Comments | Path Comment |
|---|---|---|---|---|---|---|---|---|---|
| 3726.00† | 22.000 | 44.085 | 3588.05 | 780.25 | 560.46 | 542.84 | 0.00 | | |
| 3826.00† | 22.000 | 44.085 | 3680.77 | 817.71 | 587.37 | 568.91 | 0.00 | | |
| 3926.00† | 22.000 | 44.085 | 3773.49 | 855.17 | 614.28 | 594.97 | 0.00 | | |
| 4026.00† | 22.000 | 44.085 | 3866.21 | 892.63 | 641.18 | 621.03 | 0.00 | | |
| 4126.00† | 22.000 | 44.085 | 3958.92 | 930.10 | 668.09 | 647.09 | 0.00 | | |
| 4226.00† | 22.000 | 44.085 | 4051.64 | 967.56 | 695.00 | 673.16 | 0.00 | | |
| 4326.00† | 22.000 | 44.085 | 4144.36 | 1005.02 | 721.91 | 699.22 | 0.00 | | |
| 4426.00† | 22.000 | 44.085 | 4237.08 | 1042.48 | 748.82 | 725.28 | 0.00 | | |
| 4526.00† | 22.000 | 44.085 | 4329.80 | 1079.94 | 775.72 | 751.34 | 0.00 | | |
| 4626.00† | 22.000 | 44.085 | 4422.52 | 1117.40 | 802.63 | 777.41 | 0.00 | | |
| 4726.00† | 22.000 | 44.085 | 4515.24 | 1154.86 | 829.54 | 803.47 | 0.00 | | |
| 4826.00† | 22.000 | 44.085 | 4607.95 | 1192.32 | 856.45 | 829.53 | 0.00 | | |
| 4926.00† | 22.000 | 44.085 | 4700.67 | 1229.78 | 883.36 | 855.59 | 0.00 | | |
| 4988.45 | 22.000 | 44.085 | 4758.57 | 1253.17 | 900.16 | 871.87 | 0.00 | End of Tangent (S) | |
| 5026.00† | 21.249 | 44.085 | 4793.48 | 1267.01 | 910.10 | 881.50 | 2.00 | | |
| 5126.00† | 19.249 | 44.085 | 4887.30 | 1301.62 | 934.96 | 905.58 | 2.00 | | |
| 5226.00† | 17.249 | 44.085 | 4982.26 | 1332.93 | 957.45 | 927.36 | 2.00 | | |
| 5326.00† | 15.249 | 44.085 | 5078.26 | 1360.91 | 977.55 | 946.83 | 2.00 | | |
| 5426.00† | 13.249 | 44.085 | 5175.18 | 1385.53 | 995.23 | 963.95 | 2.00 | | |
| 5526.00† | 11.249 | 44.085 | 5272.90 | 1406.74 | 1010.47 | 978.71 | 2.00 | | |
| 5626.00† | 9.249 | 44.085 | 5371.30 | 1424.53 | 1023.25 | 991.09 | 2.00 | | |
| 5726.00† | 7.249 | 44.085 | 5470.26 | 1438.88 | 1033.55 | 1001.07 | 2.00 | | |
| 5826.00† | 5.249 | 44.085 | 5569.66 | 1449.76 | 1041.37 | 1008.64 | 2.00 | | |
| 5926.00† | 3.249 | 44.085 | 5669.38 | 1457.17 | 1046.69 | 1013.80 | 2.00 | | |
| 6026.00† | 1.249 | 44.085 | 5769.30 | 1461.10 | 1049.51 | 1016.53 | 2.00 | | |
| 6088.45 | 0.000 | 44.085 | 5831.74[1] | 1461.78 | 1050.00 | 1017.00 | 2.00 | Drop (S) | |
| 6088.71† | 0.000 | 44.085 | 5832.00 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | TOP TWIN CREEK |
| 6126.00† | 0.000 | 0.000 | 5869.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6226.00† | 0.000 | 0.000 | 5969.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6326.00† | 0.000 | 0.000 | 6069.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6418.71† | 0.000 | 44.085 | 6162.00 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | TOP NAVAJO |
| 6426.00† | 0.000 | 0.000 | 6169.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6526.00† | 0.000 | 0.000 | 6269.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6626.00† | 0.000 | 0.000 | 6369.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6726.00† | 0.000 | 0.000 | 6469.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6826.00† | 0.000 | 0.000 | 6569.29 | 1461.78 | 1050.00 | 1017.00 | 0.00 | | |
| 6856.71 | 0.000 | 44.085 | 6600.00 | 1461.78 | 1050.00 | 1017.00 | 0.00 | End of Tangent | |

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# Planned Wellpath Report

**Wolverine Federal 17-13 PWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 PWB** |
| Facility | **SEC.17-T23S-R1W** | | |

**HOLE & CASING SECTIONS**
**Ref Wellbore: Wolverine Federal 17-13 PWB Ref Wellpath: Wolverine Federal 17-13 PWP**

| String/Diameter | Start MD [feet] | End MD [feet] | Interval [feet] | Start TVD [feet] | End TVD [feet] | Start N/S [feet] | Start E/W [feet] | End N/S [feet] | End E/W [feet] |
|---|---|---|---|---|---|---|---|---|---|
| 12.25in Open Hole | 26.00 | 1000.00 | 974.00 | 26.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9.625in Casing Surface | 26.00 | 1000.00 | 974.00 | 26.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8.5in Open Hole | 1000.00 | 6856.71 | 5856.71 | 1000.00 | 6600.00 | 0.00 | 0.00 | 1050.00 | 1017.00 |
| 7in Casing Production | 26.00 | 6856.71 | 6830.71 | 26.00 | 6600.00 | 0.00 | 0.00 | 1050.00 | 1017.00 |

**TARGETS**

| Name | MD [feet] | TVD [feet] | North [feet] | East [feet] | Grid East [us survey feet] | Grid North [us survey feet] | Latitude [°] | Longitude [°] | Shape |
|---|---|---|---|---|---|---|---|---|---|
| **1) Wolverine Federal 17-13 Top Navajo (560'FNL & 1673'FEL)** | | 6162.00 | 1050.00 | 1017.00 | 1517946.76 | 6735013.37 | 38 48 30.341N | 111 55 47.059W | point |

**SURVEY PROGRAM Ref Wellbore: Wolverine Federal 17-13 PWB Ref Wellpath: Wolverine Federal 17-13 PWP**

| Start MD [feet] | End MD [feet] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---|---|---|---|---|
| 26.00 | 6856.71 | MTC (Collar, pre-2000) (Standard) | | Wolverine Federal 17-13 PWB |

**WORKSHEET**
**APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 11/09/2007

API NO. ASSIGNED: 43-041-30052

WELL NAME: WOLVERINE FED 17-13
OPERATOR: WOLVERINE GAS & OIL CO ( N1655 )
CONTACT: ED HIGUERA

PHONE NUMBER: 616-458-1150

PROPOSED LOCATION:
SENW 17 230S 010W
SURFACE: 1636 FNL 2452 FWL
BOTTOM: 0560 FNL 1673 FEL
COUNTY: SEVIER
LATITUDE: 38.80565 LONGITUDE: -111.9325
UTM SURF EASTINGS: 419030 NORTHINGS: 4295415
FIELD NAME: COVENANT ( 492 )

INSPECT LOCATN BY: / /

| Tech Review | Initials | Date |
|---|---|---|
| Engineering | | |
| Geology | | |
| Surface | | |

LEASE TYPE: 1 - Federal
LEASE NUMBER: UTU-73528
SURFACE OWNER: 4 - Fee

PROPOSED FORMATION: NAVA
COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

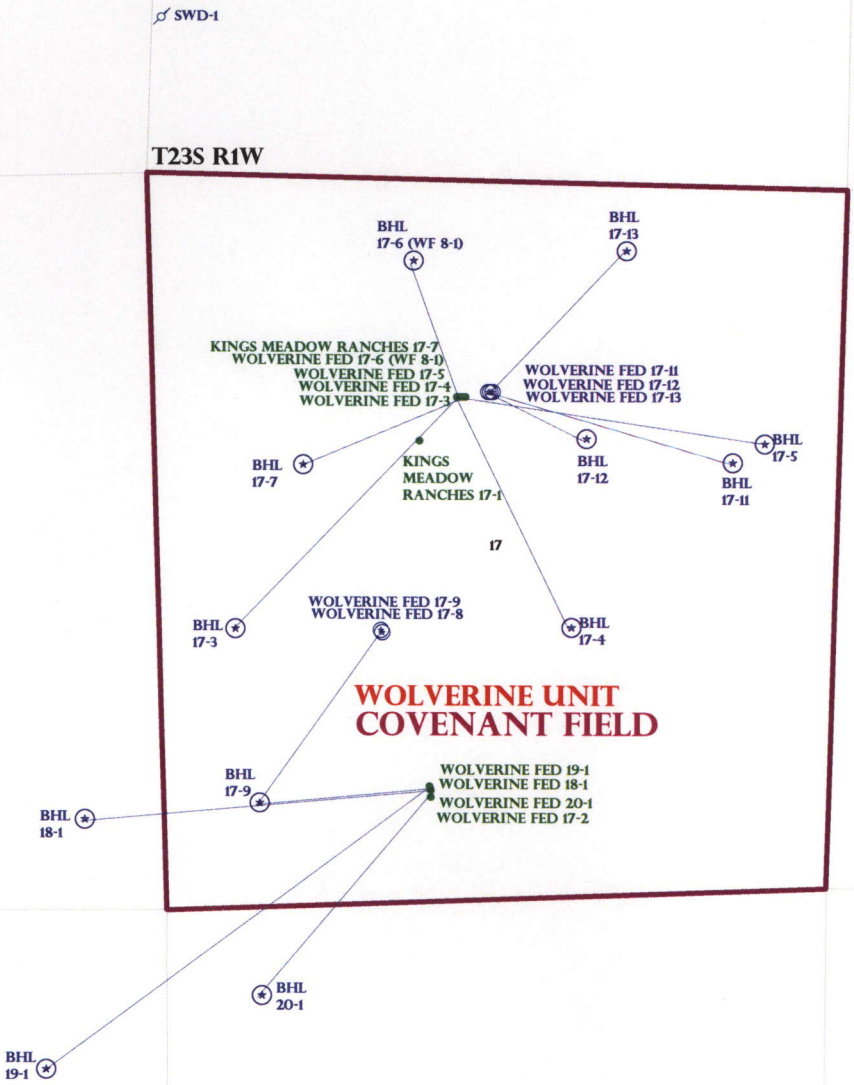
✓ Plat
✓ Bond: Fed[1] Ind[] Sta[] Fee[]
(No. WY3329 )
N Potash (Y/N)
N Oil Shale 190-5 (B) or 190-3 or 190-13
✓ Water Permit
(No. 63-2529 )
N RDCC Review (Y/N)
(Date: )
Y Fee Surf Agreement (Y/N)
Surf owner is Wolverine
NR Intent to Commingle (Y/N)

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 (12-10-07)

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




OPERATOR: WOLVERINE G&O CO (N1655)

SEC: 17 T.23S R. 1W

FIELD: COVENANT (492)

COUNTY: SEVIER

SPACING: R649-3-11 / DIRECTIONAL DRILLING

**Field Status**
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

**Unit Status**
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Wells Status**
- 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
- DRILLING

UTAH DNR OIL, GAS & MINING

N W E S

PREPARED BY: DIANA MASON
DATE: 30-NOVEMBER-2007

# Application for Permit to Drill
# Statement of Basis



| APD No | API WellNo | Status | Well Type | Surf Ownr | CBM |
|---|---|---|---|---|---|
| 617 | 43-041-30052-00-00 | | OW | P | No |

**Operator** WOLVERINE GAS & OIL CO UT **Surface Owner-APD**
**Well Name** WOLVERINE FED 17-13 **Unit**
**Field** UNDESIGNATED **Type of Work**
**Location** SENW 17 23S 1W S 1636 FNL 2452 FWL GPS Coord (UTM) 419030E 4295415N

**Geologic Statement of Basis**

The Federal Government owns the mineral leases for the proposed well. The BLM will be the agency responsible for evaluating and approving the proposed casing, cementing and drilling programs.

Brad Hill 12/18/2007
**APD Evaluator** **Date / Time**

**Surface Statement of Basis**

Based on pit ranking criteria the reserve pit will be lined with a synthetic pit liner, 12 mil. minimum. Drainages and runoff will be diverted around and away from proposed well-pad.

Mark Jones 12/10/2007
**Onsite Evaluator** **Date / Time**

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

| Category | Condition |
|---|---|
| Pits | A synthetic liner with a minimum thickness of 12 mils shall be properly installed and maintained in the reserve pit. |
| Surface | Drainages adjacent to the proposed pad shall be diverted around the location. |

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** WOLVERINE GAS & OIL CO UT
**Well Name** WOLVERINE FED 17-13
**API Number** 43-041-30052-0 **APD No** 617 **Field/Unit** UNDESIGNATED
**Location: 1/4,1/4** SENW **Sec** 17 **Tw** 23S **Rng** 1W 1636 FNL 2452 FWL
**GPS Coord (UTM)** **Surface Owner**

**Participants**

No pre-site inspection conducted @ time of pre-site report. Wolverine owned surface (existing A-2 pad extension). .8 of acre is on BLM at east side of new proposed construction. Will look at location as soon as possible.

**Regional/Local Setting & Topography**

Southeast of Sigurd town along Highway 24. Rolling hills.

**Surface Use Plan**

**Current Surface Use**

Existing Well Pad

**New Road**

| Miles | Well Pad | | Src Const Material | Surface Formation |
|---|---|---|---|---|
| 0 | **Width** 280 | **Length** 350 | Onsite | |

**Ancillary Facilities**

Well-pad will be constructed on .9 acres of Wolverine owned surface and .8 acres of BLM owned surface. Stan Anderson (BLM) has looked at federal surface. BLM currently working on federal permits.

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetland** Y

drainage at north side of proposed pad.

**Flora / Fauna**

virtually no flora, fauna would include rodents, fowl, some small game, and an occasional deer.

**Soil Type and Characteristics**

clay

**Erosion Issues** Y

erosive upon disturbance

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diverson Required** Y

all drainages will be diverted around and away from pad.

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** N **Paleo Potental Observed?** N **Cultural Survey Run?** Y **Cultural Resources?** N

**Reserve Pit**

| Site-Specific Factors | | Site Ranking |
|---|---|---|
| **Distance to Groundwater (feet)** | >200 | 0 |
| **Distance to Surface Water (feet)** | >1000 | 0 |
| **Dist. Nearest Municipal Well (ft)** | >5280 | 0 |
| **Distance to Other Wells (feet)** | <300 | 20 |
| **Native Soil Type** | Low permeability | 0 |
| **Fluid Type** | TDS>10000 | 15 |
| **Drill Cuttings** | Salt or Detrimental | 10 |
| **Annual Precipitation (inches)** | 10 to 20 | 5 |
| **Affected Populations** | <10 | 0 |
| **Presence Nearby Utility Conduits** | Not Present | 0 |
| | **Final Score** | 50 1 **Sensitivity Level** |

**Characteristics / Requirements**

Dugout Earthen (200x140x12) irregularly shaped lined pit.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 12 **Pit Underlayment Required?** N

**Other Observations / Comments**

Location is being called Pad A-3 by Wolverine. In actuality is an extension of the A-2 pad. Extension to the east. A-3 will partially utilize the existing A-2, east of existing 17-5 drill point, which is on Wolverine owned private surface. The far east portion of the new construction for A-3 will be on federally owned BLM surface, on which will only exist a portion of the well-pad, all drill points are on Wolverine surface. Stan Andersen (BLM) has conducted a pre-site for this and BLM is working on permits for these wells. All three new proposed wells (17-11, 17-12, 17-13) drill points are on private surface (Wolverine) and are directionally drilled holes into federal leases. Access on existing on private (Wolverine). Verbal to construct on private surface given by M. Jones (UDOGM) to E. Peterson (Wolv) via email on 12/10/2007. BLM notes this is deer winter range, however an exception will be granted at the request of Wolverine. All of excavated excess volumes from pad and pit construction will be stored on private (Wolverine) owned surface, for future reclamation.

| Mark Jones | 12/10/2007 |
|---|---|
| **Evaluator** | **Date / Time** |

**WOLVERINE OPERATING COMPANY**
**of Utah, LLC**
*Energy Exploration in Partnership with the Environment*

November 1, 2007

RECEIVED
NOV 09 2007
DIV. OF OIL, GAS & MINING

Mr. Gil Hunt
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: Applications for Permits to Drill - Wolverine Gas and Oil Company of Utah, LLC
**Wolverine Federal 17-11, Wolverine Federal 17-12, and Wolverine Federal 17-13**
**Covenant Field, A3 Pad, SE/4 SW/4, Section 17, T23S, R1W, SLB&M**
**Sevier County, Utah**

Dear Mr. Hunt:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) hereby submits two copies of a BLM *Application for Permit to Drill* (APD) for each of the three referenced wells. These three wells are planned to be drilled from the same pad, referred to as A3 Pad in the Covenant Field. Included with these APDs is the following supplemental information:

- R649-3-2 Exception Plat for the Wolverine Federal 17-13;
- Surface Use Plan of Operations including Operator Certification;
- Survey plats for each well;
- Drilling Plan with BOPE Diagram and Directional Plan for each well;
- Location Layout, Pad Cross-Sections, and Area Map for a well on the A3 Pad;
- Vicinity Map showing Land Administration.

Kings Meadow Ranches, LLC (User Number 63-2529) will be the source for water during drilling and completion operations on this proposed well. The surface to be disturbed at the planned drill site is partially owned by Wolverine and partially administered by the Bureau of Land Management.

The proposed Wolverine Federal 17-13 well is located within 460' of a drilling unit boundary, so a request for exception to spacing (R649-3-2) is hereby requested for the well based on geology and restrictive topography. Wolverine is the only owner and operator within 460' of the proposed well location.

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

Please accept this letter as Wolverine's written request for confidential treatment of all information contained in and pertaining to this application.

Thank you very much for your timely consideration of this application. Please feel free to contact myself or Ed Higuera of this office if you have any questions or need additional information.

Sincerely,

Ellis M. Peterson
Senior Production Engineer
Wolverine Gas and Oil

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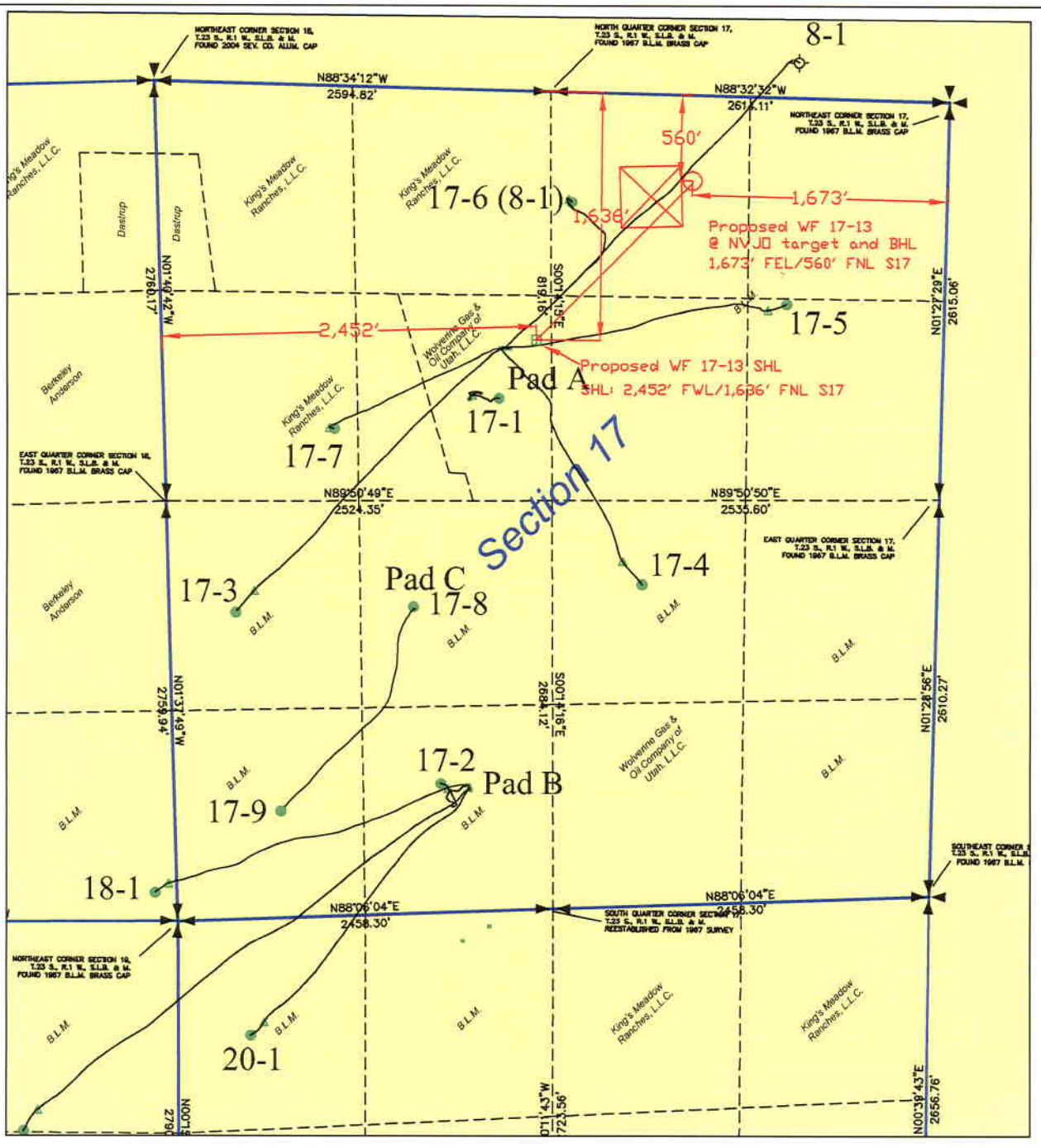


# Exception Location and Ownership Plat

Wolverine Lease

400'

400'

R649-3.2 target window

Wolverine Gas and Oil Corporation
*Energy Exploration in Partnership with the Environment*
One Riverfront Plaza
55 Campau N.W.
Grand Rapids, MI 49503-2616
(616) 458-1150

Proposed WF 17-13 Well Location
Sec. 17, T23S, R1W
Sevier County, UT

| | | | |
|---|---|---|---|
| SCALE: 1" = 1000' | FNAME: covenant_field.dwg | | |
| DATE: 10/23/2007 | | SHEET | REV |

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# SURFACE USE PLAN OF OPERATIONS

**Attachment** *to Application for Permit to Drill*

**Name of Operator:** Wolverine Gas and Oil Company of Utah, LLC
**Address:** One Riverfront Plaza, 55 Campau NW
Grand Rapids, Michigan, 49503-2616

**Well Location:** -Below three wells drilled from one drill pad (A3 Pad)

## Wolverine Federal 17-11

1635' FNL & 2484' FWL, (being in SE/4 NW/4)
Section 17, T23S, R1W, SLB&M
Sevier County, Utah

## Wolverine Federal 17-12

1635' FNL & 2468' FWL, (being in SE/4 NW/4)
Section 17, T23S, R1W, SLB&M
Sevier County, Utah

## Wolverine Federal 17-13

1636' FNL & 2452' FWL, (being in SE/4 NW/4)
Section 17, T23S, R1W, SLB&M
Sevier County, Utah

**Access Road Location:** Across fee land owned by Wolverine: extension of previously constructed access to A2 Pad.

**State surface use is not required for construction and drilling of the referenced wells. Wolverine is the surface owner of the major portion of the drill pad. The pad will need to encroach a maximum distance of 132 feet onto BLM land, comprising an area of about 1 acre. Federal surface use is being requested with the associated Application for Permit to Drill (APD) through the BLM – Richfield Field Office.**

**The dirt contractor will be provided with an approved copy of the surface use plan of operations and conditions of approval before initiating construction.**

***Existing Roads:***
The vicinity maps attached to the APDs show the proposed well pad location and its proximity to the town of Sigurd, Utah. From Sigurd, travel south on SR 24 approximately 3.4 miles to the existing driveway that accesses Wolverine's property and facilities on the east side of highway. Follow existing access road across A2 Pad to proposed A3 Pad.

***Access Roads to be Constructed and Reconstructed:***
A construction haul road will be built from the northwest corner of the pad to a staging area to the west, on Wolverine's property, to lessen the congestion of equipment around facilities on the adjacent A2 Pad. No roads will be constructed on BLM land.

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***Location of Existing Wells:***
All wells located within a one-mile radius of the proposed wells are listed below:

| Well | Type | Surface Location * | Bottom Hole Location * |
|---|---|---|---|
| KMR 17-1 | Producer-oil | SE4NW4 Section 17 | SE4NW4 Section 17 |
| WF 17-2 | Producer-oil | SE4SW4 Section 17 | SE4SW4 Section 17 |
| WF 17-3 | Producer-oil | SE4NW4 Section 17 | SW4NW4 Section 17 |
| WF 17-4 | Producer-oil | SE4NW4 Section 17 | NW4SE4 Section 17 |
| WF 17-5 | Producer-oil | SE4NW4 Section 17 | SE4NE4 Section 17 |
| WF 17-6 | Producer-oil | SE4NW4 Section 17 | NW4NE4 Section 17 |
| KMR 17-7 | Producer-oil | SE4NW4 Section 17 | NW4SW4 Section 17 |
| WF 17-8 | Completing-oil | NE4SW4 Section 17 | NE4SW4 Section 17 |
| WF 17-9 | Completing-oil | NE4SW4 Section 17 | SW4SW4 Section 17 |
| WF 18-1 | Producer-oil | SE4SW4 Section 17 | SE4SE4 Section 18 |
| WF 19-1 | Producer-oil | SE4SW4 Section 17 | NE4NE4 Section 19 |
| WF 20-1 | Producer-oil | SE4SW4 Section 17 | NW4NW4 Section 20 |
| WF 8-1 | Dry Hole-plugged | SE4NW4 Section 17 | SE4SE4 Section 8 |
| SWD-1 | Disposal-active | SW4SW4 Section 8 | SW4SW4 Section 8 |
| Water well | Culinary water supply | SW4NE4 Section 20 | SW4NE4 Section 20 |

*All wells are located in T23S-R1W

***Location of Existing and/or Proposed Facilities if Well is Productive:***
*(a) On well pad* – No production facilities are planned for the proposed well pad. A temporary testing facility may be constructed on this location and if so it will be surrounded by a dike of sufficient capacity to contain the storage capacity of the largest tank. All loading lines and valves will be placed inside the berm surrounding the tank battery location.
*(b) Off well pad* – Produced oil and fluids from the proposed wells will be transported by underground pipelines across Wolverine land to the existing treater facility to the south of the A1 Pad, also on Wolverine land.

***Location and Type of Water Supply (Rivers, Creeks, Lakes, Ponds and Wells):***
The Operator intends to lease water rights from Kings Meadow Ranches, LLC (Water Right #63-2529), which was the supply for drilling the other Covenant Field wells. Source of water is Kings Meadow Reservoir. Water will be piped to the reserve pit from the nearest irrigation riser, as directed by Kings Meadow Ranches. Should additional water sources be pursued they will be properly permitted through the State of Utah – Division of Water Rights. The BLM will be notified of any changes in water supply.

***Construction Materials:***
Natural earth materials used for fill on the well pad will be taken from cuts made in the perimeter of the pad. Imported granular borrow from an approved source will be applied to the surface of the well pad.

***Methods for Handling Waste Disposal:***
The reserve pit will be used for the disposal of waste mud and drill cuttings. All borehole fluids and salts will be contained in the reserve pit. It has been located in cut material and will be lined with 12 mil minimum thickness plastic nylon reinforced liner material. The liner will overlay a felt liner pad only if sharp rock edges result from excavation. The pit liner will overlap the top of the pit walls and be covered with dirt and/or rocks to hold it in place. No trash, scrap pipe, etc. that could puncture the liner will be disposed of in the pit. Pit walls will be sloped no greater than 2:1. A minimum 2-foot freeboard will be maintained in the pit at all times during the drilling and completion operations. After evaporation of fluids, back-fill of sub-soil and compaction to prevent settling will occur within 90 days of cessation of pit use. If necessary, any remaining fluids will be pumped out of the pit and transported off site.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completion of the well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completion of the well.

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Wastewater will not be discharged on the surface at this site and the drilling of the wells will not require a wastewater management plan.

Produced fluids from the wells other than water will be stored in a test tank until such time as hookup to production facilities can be made. Any spills of oil, gas, salt water or other fluids will be cleaned up and removed.

All rubbish and debris will be kept in containers on the well site, and will be hauled to an approved disposal site upon completion of drilling operations and as needed during such operations. There will be no chemical disposal of any type.

Self-contained, portable toilets will be used for human waste, and the waste will be disposed at an approved human waste disposal facility. Sanitation will comply with local and state regulations.

***Ancillary Facilities:***
No ancillary facilities are anticipated.

***Well Site Layout:***
The Location Layout Drawings attached to the APD show the proposed wells' surface locations in relation to the pad layout, which includes location of the reserve pit and access road onto the pad, turnaround areas, parking areas, office facilities, soil material stockpiles, and the orientation of the rig with respect to the pad and other facilities. Pad Section Sheets in said attachment show cuts and fills required for construction, and their relationship to topography. As detailed above under Methods for Handling Waste Disposal, the reserve pit will be lined and appropriate measures as described above will be taken to prevent leakage. The pit will be fenced on three sides during drilling operations and then the fourth side will be immediately fenced when the rig is moved off location.

The pad design is consistent with BLM specifications.

A pre-construction meeting with responsible company representative and contractors will be conducted at the project site prior to commencement of surface-disturbing activities. The pad will be construction-staked prior to this meeting.

All surface disturbing activities will be supervised by a qualified, responsible company representative who is aware of the terms and conditions of the APD and specifications in the approved plans.

All cut and fill slopes will be such that stability can be maintained for the life of the activity.

Diversion ditches will be constructed as shown around the well pad to prevent surface waters from entering the well site area. The site surface will be graded to drain away from the pit to avoid pit spillage during large storm events.

Because no topsoil is evident in the new-construction area of the well pad, no provisions have been made for separate stockpiling of soils. Cut from the BLM portion of the pad will be stockpiled off the southwest corner of the pad or carried down the construction haul road to a temporary stockpile in the construction staging area as shown on the Area Map for the proposed wells.

***Plans for Reclamation of the Surface:***
Interim Reclamation: In the event production is achieved the Operator will perform interim reclamation of the site. Interim reclamation will consist of reclamation of the reserve pit and reclamation of that portion of the well pad not needed for ongoing operations. After evaporation of fluids, the pit will be back-filled with sub-soil and/or rock and compacted to prevent settling. The pit area will be surfaced with granular borrow to render it a usable part of the well pad. All portions of the pad no longer necessary for well workover, testing or treating will be contoured to match the surrounding terrain to the best extent practicable, and seeded as prescribed by the BLM.
Final Reclamation: At such time that all production ceases from the proposed wells and the wells have been plugged and abandoned, the Operator will perform final reclamation of the site. Final reclamation of the BLM portion of the pad will consist of replacing spoil into the cut area in an amount sufficient to establish a 3:1 slope, or less, and blending same with undisturbed land to establish a natural-looking contour. All disturbed land will be seeded per BLM requirements.

During the life of the project and until the site is released from liability for reclamation, the project will be inspected

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at least annually for noxious weeds. If invasive noxious weeds are found, the weeds will be treated to eliminate further reproduction, and treatment shall continue until the weeds have been eradicated. If noxious weeds are found, the BLM will be notified of their occurrence.

***Surface Ownership:***
The surface of the westerly ¾ of the proposed A3 Pad is owned by Wolverine Gas and Oil Corporation. The easterly ¼ is owned by the BLM.

***Other Information:***
Western Land Services will conduct a Class III archeological survey and will submit same under separate cover to the appropriate agencies.

Western Land Services is preparing a CX for the proposed A3 Pad that will be submitted under separate cover.

No stream alteration or drainage crossings are involved that require additional State or Federal approval.

All permanent structures constructed or installed will be painted to match the Covenant Facilities, which is painted non-reflective Carlsbad Cavern Tan, unless otherwise directed by the AO. All facilities will be painted within six months of installation. Facilities required to comply with Occupational Safety and Health Act (OSHA) shall be excluded.

## Operator Certification

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

Executed this 1 day of November, 2007.

Signature: Edward Higuera

Position Title: Manager—Development

Address: Wolverine Gas and Oil Company of Utah, LLC
One Riverfront Plaza, 55 Campau, NW
Grand Rapids, Michigan, 49503-2616

Telephone: 616-458-1150

Field representative (if not above signatory):
Paul Spiering

Address: 1140 N Centennial Park Drive
Richfield, Utah 84701

Telephone: 435-896-1943

*Agents not directly employed by the operator must submit a letter from the operator authorizing that agent to act or file this application on their behalf.*

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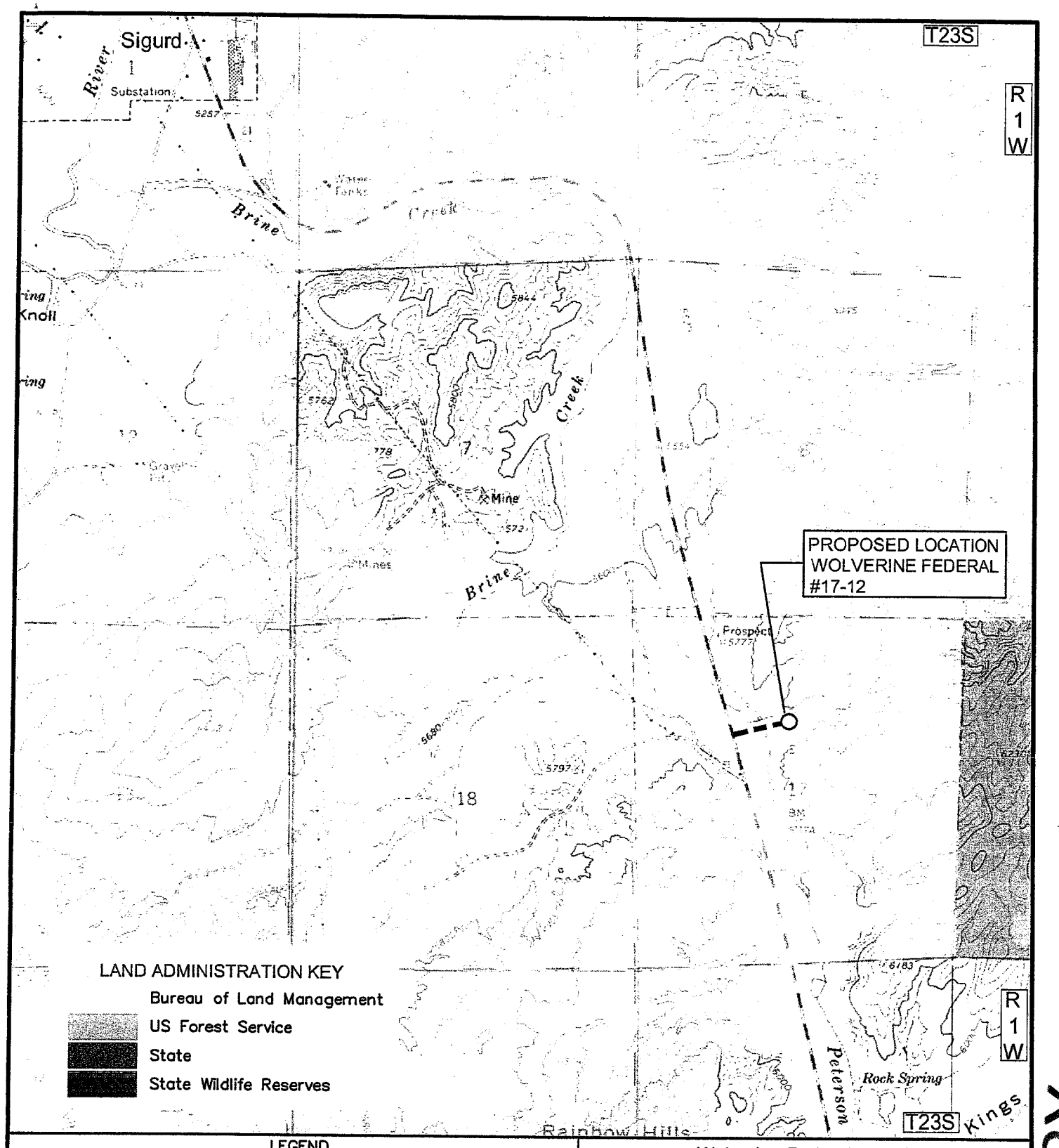


**LEGEND**

- PROPOSED LOCATION
- EXISTING PRIVATE ROAD
- NEW ROADWAY
- EXISTING COUNTY ROAD NEEDING UPGRADE

Wolverine Federal #17-12
Section 17, T.23 S., R.1 W., S.L.B. & M.
2468' F.W.L. 1635' F.N.L.


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

SCALE: 1:2000

| | | | |
|---|---|---|---|
| Wolverine Federal 17-12 | | | FIGURE: |
| Vicinity Map | | | |
| Wolverine Gas & Oil Company of Utah, LLC | | | |
| DRAWN: B.L. 10-07 | PEN TBL: _1sindrd-hp2500.ctb | PROJECT: 0703-200 | SHEET: |
| CHECK: D.R. 10-07 | FILE: VICINITY | LAST UPDATE: 10/27/2007 | 17-12 |


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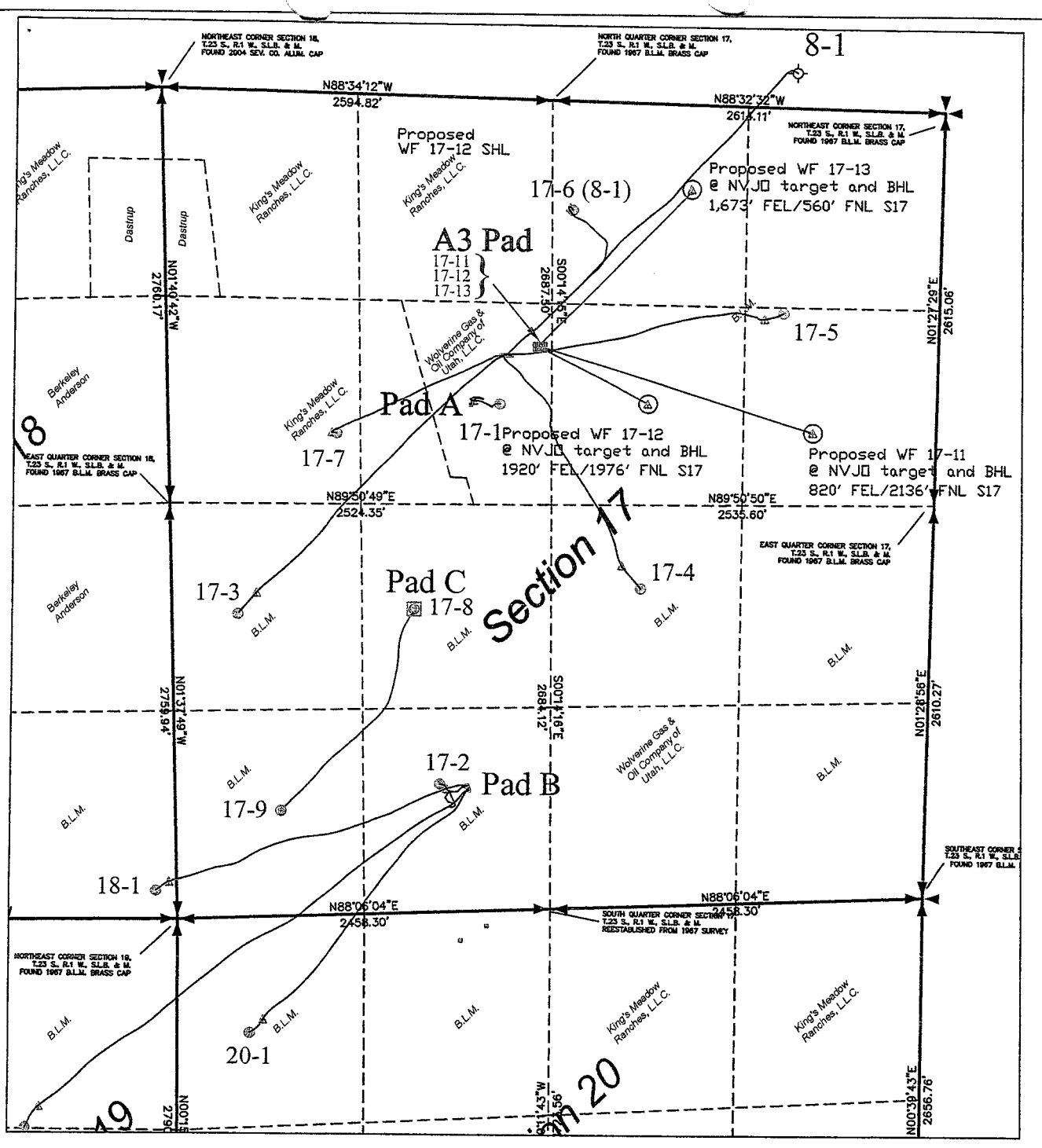


# Covenant Field
## A3 Pad Wells

Wolverine Federal 17-11
Wolverine Federal 17-12
Wolverine Federal 17-13

WOLVERINE

Wolverine Gas and Oil Corporation
*Energy Exploration in Partnership with the Environment*
One Riverfront Plaza
55 Campau N.W.
Grand Rapids, MI 49503-2616
(616) 458-1150

A3 Pad Well Sites
Sec. 17, T23S, R1W
Sevier County, UT

| | | | |
|---|---|---|---|
| SCALE: 1" = 1000' | FNAME: covenant_field.dwg | | |
| DATE: 11/05/2007 | | SHEET | REV |

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NOTES:

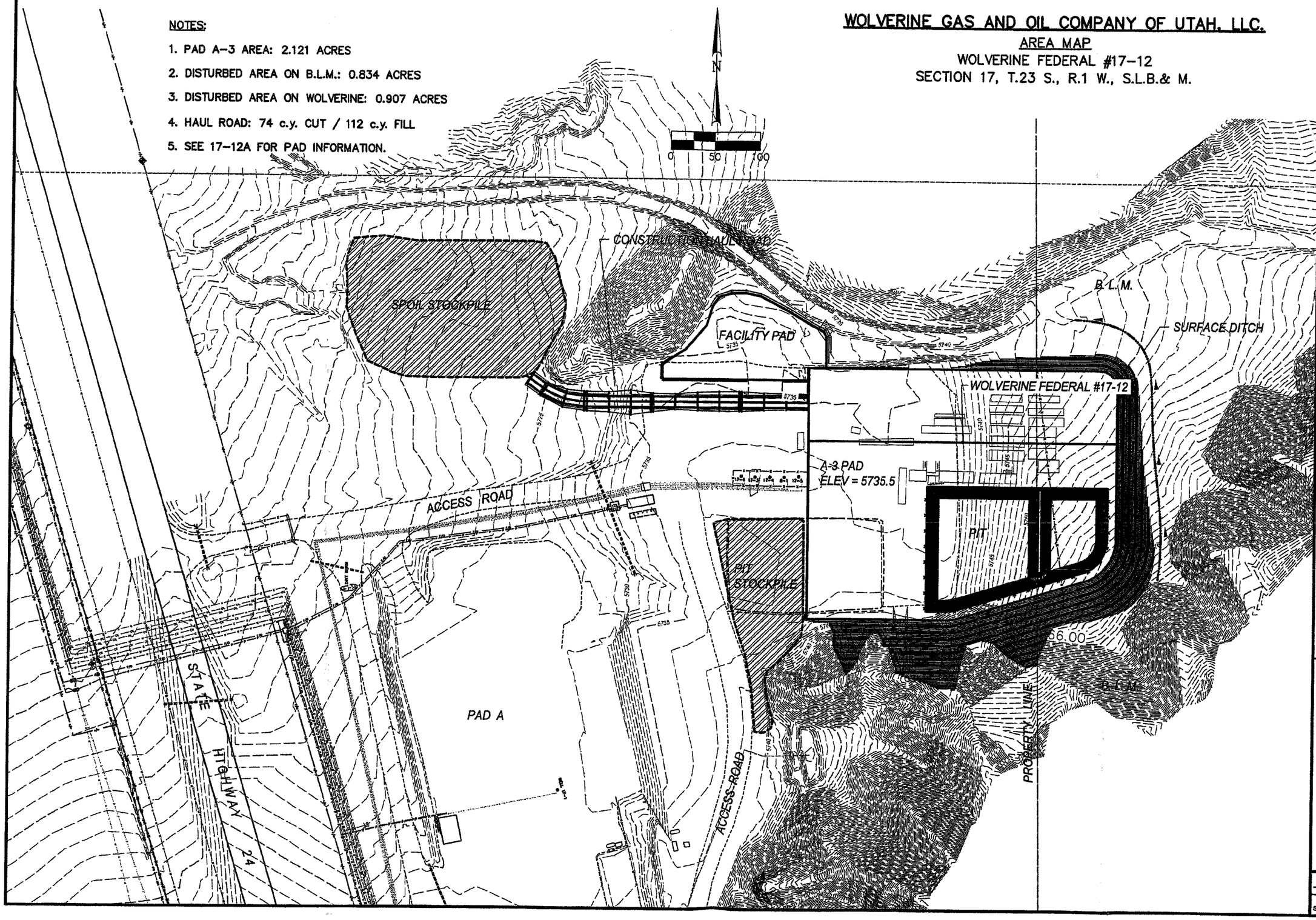
1. PAD A-3 AREA: 2.121 ACRES
2. DISTURBED AREA ON B.L.M.: 0.834 ACRES
3. DISTURBED AREA ON WOLVERINE: 0.907 ACRES
4. HAUL ROAD: 74 c.y. CUT / 112 c.y. FILL
5. SEE 17-12A FOR PAD INFORMATION.

# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC.

## AREA MAP

WOLVERINE FEDERAL #17-12

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




| NO. | DATE | DESIGN REV. BY | MAPS CORR. BY | PARCELS REQUEST BY | REMARKS |
|---|---|---|---|---|---|
| | | | | | ORIGINAL SUBMISSION FOR AUTHORIZATION |

REVISIONS

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DWG NAME: A-3_3D

SHT SET: ####

DWG CREATED: 10/09/2007

PEN TBL: tatsch4-2000.ctb

LAST UPDATE: 10/27/2007

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

| | | | |
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| DESIGN: | . | CHECK: | . |
| DRAWN: | B.L. | CHECK: | D.R. |
| QUANT: | . | CHECK: | . |

REVIEW

DATE: 10-07

BY: .

APPROVAL RECOMM.: DATE PROJECT DESIGN ENGINEER

APPROVED: DATE

Wolverine Gas & Oil Co. of Utah LLC

AREA MAP FOR

WOLVERINE FEDERAL #17-12

PROJECT NUMBER: 0703-200

SEVIER COUNTY

SHEET NO. 17-12B

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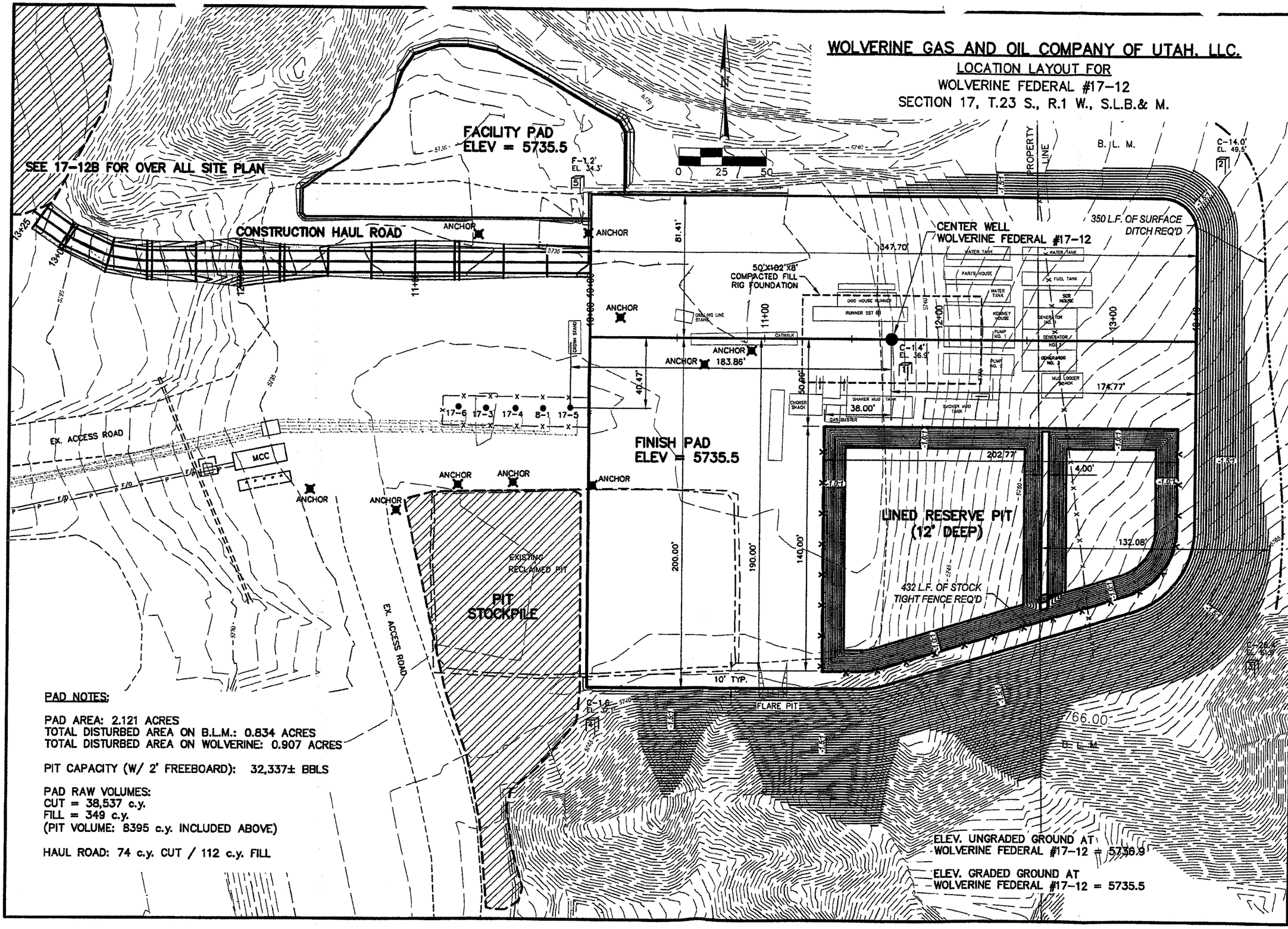
# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC.

## LOCATION LAYOUT FOR
## WOLVERINE FEDERAL #17-12
## SECTION 17, T.23 S., R.1 W., S.L.B.& M.




**PAD NOTES:**

PAD AREA: 2.121 ACRES
TOTAL DISTURBED AREA ON B.L.M.: 0.834 ACRES
TOTAL DISTURBED AREA ON WOLVERINE: 0.907 ACRES

PIT CAPACITY (W/ 2' FREEBOARD): 32,337± BBLS

PAD RAW VOLUMES:
CUT = 38,537 c.y.
FILL = 349 c.y.
(PIT VOLUME: 8395 c.y. INCLUDED ABOVE)

HAUL ROAD: 74 c.y. CUT / 112 c.y. FILL

| NO. | DATE | DESIGN REV. BY | DRAWN REV. BY | CORR. BY | APPROVED | REQUEST BY | REMARKS |
|---|---|---|---|---|---|---|---|
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REVISIONS

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SHT SET: ####
DWG CREATED: 10/09/2007
PEN TBL: fcchcb4-b2000.ctb
LAST UPDATE: 10/27/2007

REVIEW
DATE: 10-07
BY:


Jones & DeMille Engineering
1628 South 100 West - Richfield, Utah 84701
Phone (435) 896-2286 Fax (435) 896-2288
www.jonesanddemille.com


DESIGN: CHECK:
DRAWN: B.L. 10-07 CHECK: D.R. 10-07
QUANT: CHECK:

APPROVAL RECOMM. DATE PROJECT DESIGN ENGINEER
APPROVED: DATE

Wolverine Gas & Oil Co. of Utah LLC
LOCATION LAYOUT FOR
WOLVERINE FEDERAL #17-12
PROJECT NUMBER: 0703-200

SEVIER COUNTY

SHEET NO. 17-12A

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# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC.

## PAD SECTIONS FOR
## WOLVERINE FEDERAL #17-12
## SECTION 17, T.23 S., R.1 W., S.L.B.& M.

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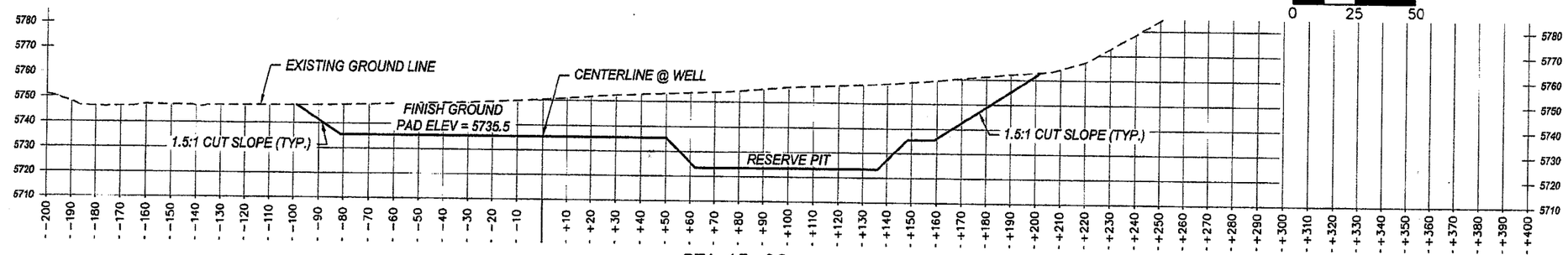


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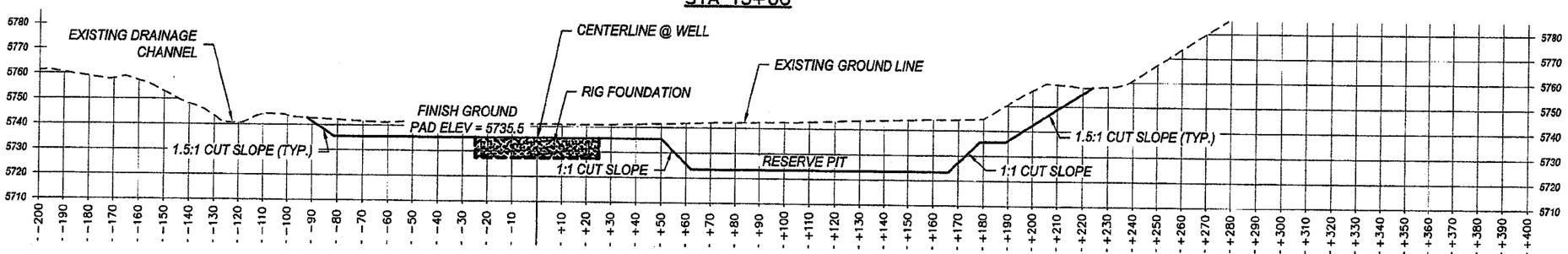


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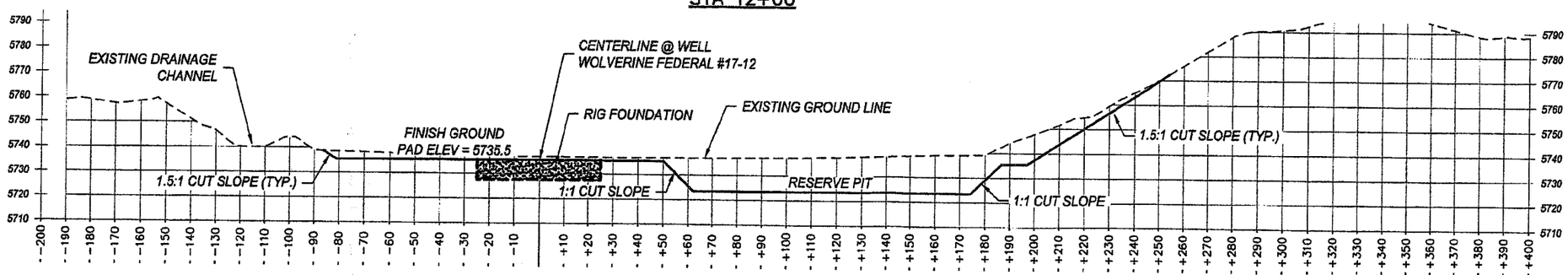


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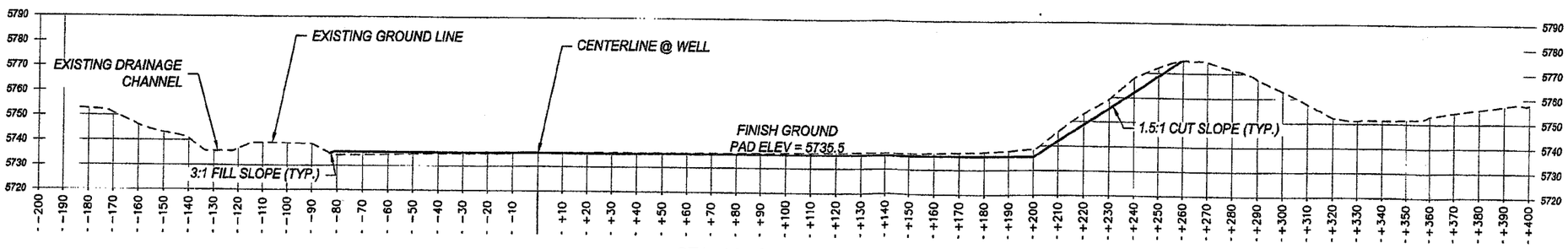


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| NO. | DATE | DESIGN REV. BY | MAPS CORR. BY | PARCELS AFFECTED | REQUEST BY | REMARKS |
|---|---|---|---|---|---|---|
| | | ORIGINAL SUBMISSION FOR AUTHORIZATION | | | | |

REVISIONS

DWG CREATED: 10/09/2007 LAST UPDATE: 10/27/2007
DWG NAME: A3_3D
SHT SET: ####
PEN TBL: ##ed-2800.ctb
SCALE: 1:50

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www.jonesandmille.com

| | | | |
|---|---|---|---|
| DESIGN: | | CHECK: | |
| DRAWN: | B.L. 10-07 | CHECK: | D.R. 10-07 |
| QUANT: | | CHECK: | |

REVIEW
DATE:
BY:

PROJECT DESIGN ENGINEER
APPROVAL RECOMM: DATE
APPROVED: DATE

Wolverine Gas & Oil Co. of Utah LLC
PAD SECTIONS FOR
WOLVERINE FEDERAL #17-12
PROJECT NUMBER: 0703-200

SEVIER
COUNTY

SHEET NO. 17-12C

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# WOLVERINE GAS AND OIL COMPANY
## OF UTAH, LLC

*Energy Exploration in Partnership with the Environment*

November 19, 2007

Mr. Gil Hunt
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: Application for Directional Drilling - Wolverine Gas and Oil Company of Utah, LLC
**Wolverine Federal 17-13**
**Covenant Field, SE/4 ~~SW~~/4, Section 17, T23S, R1W, SLB&M**
**Sevier County, Utah** NW

Dear Mr. Hunt:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) previously submitted copies of a BLM *Application for Permit to Drill* (APD) for the referenced well. The well is one of three wells to be drilled from the same pad, referred to as A3 Pad in the Covenant Field. This letter with the accompanying plat is intended to serve as an application for directionally drilling the Wolverine Federal 17-13 per R649-3-11. Wolverine is the owner of all oil and gas within 460 feet from all points along the intended wellbore.

| | |
|---|---|
| Operator: | Wolverine Gas and Oil Company of Utah, LLC<br>One Riverfront Plaza<br>55 Campau, N.W.<br>Grand Rapids, MI 49503-2616 |
| Well: | Wolverine Federal 17-13 |
| Field: | Covenant |
| Reservoir: | Navajo |
| County: | Sevier |
| Reason: | Inaccessible terrain and to minimize surface impact. |

Please accept this letter as Wolverine's written request for confidential treatment of all information contained in and pertaining to this application.

RECEIVED
NOV 20 2007
DIV. OF OIL, GAS & MINING

**WOLVERINE GAS AND OIL COMPANY**
**OF UTAH, LLC**
*Energy Exploration in Partnership with the Environment*

Thank you very much for your timely consideration of this application. Please feel free to contact myself or Ed Higuera of this office if you have any questions or need additional information.

Sincerely,

Ellis M. Peterson
Senior Production Engineer
Wolverine Gas and Oil

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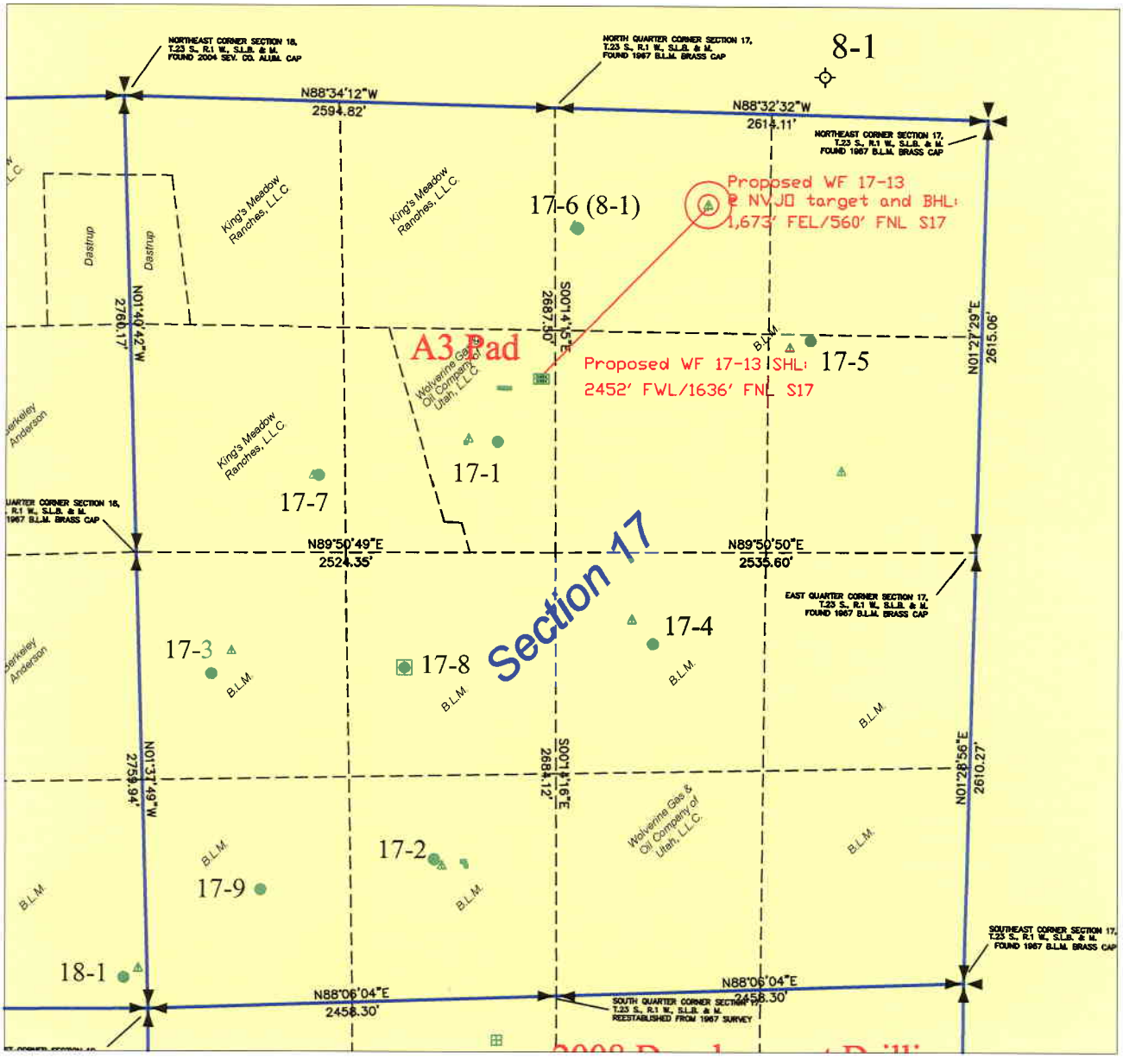
DIV. OF OIL, GAS & MINING

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




Proposed Wolverine Federal 17-13 Well Location

Covenant Field
A3 Pad Wells

Wolverine Federal 17-11
Wolverine Federal 17-12
Wolverine Federal 17-13

Wolverine Lease Position

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DIV. OF OIL, GAS & MINING

| | |
|---|---|
| WOLVERINE | Wolverine Gas and Oil Corporation<br>*Energy Exploration in Partnership with the Environment*<br>One Riverfront Plaza<br>55 Campau N.W.<br>Grand Rapids, MI 49503-2616<br>(616) 458-1150 |
| | Directional Drilling Application Plat<br>Sec. 17, T23S, R1W<br>Sevier County, UT |
| SCALE: 1:12,000 | FNAME: covenant_field.dwg |
| DATE: 11/09/2007 | SHEET / REV |

# 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)**

November 30, 2007

Memorandum

To: Field Office Manger, Richfield Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2007 Plan of Development Wolverine Unit
Sanpete and 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 2007 within the Wolverine Unit, Sevier County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ Navajo) | | |
| 43-041-30050 | Wolverine Fed 17-11 | Sec 17 T23S R01W 1635 FNL 2484 FWL<br>BHL Sec 17 T23S R01W 2136 FNL 0820 FEL |
| 43-041-30051 | Wolverine Fed 17-12 | Sec 17 T23S R01W 1635 FNL 2468 FWL<br>BHL Sec 17 T23S R01W 1976 FNL 1920 FEL |
| 43-041-30052 | Wolverine Fed 17-13 | Sec 17 T23S R01W 1636 FNL 2452 FWL<br>BHL Sec 17 T23S R01W 0560 FNL 1673 FEL |

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:11-30-07

# State of Utah
**DEPARTMENT OF NATURAL RESOURCES**

**MICHAEL R. STYLER**
*Executive Director*

**Division of Oil Gas and Mining**

**JOHN R. BAZA**
*Division Director*

**JON M. HUNTSMAN, JR.**
*Governor*

**GARY R. HERBERT**
*Lieutenant Governor*


December 17, 2007

Wolverine Gas and Oil Company of Utah, LLC
55 Campau, NW
Grand Rapids, MI 49503-2616

Re: Wolverine Federal 17-13 Well, Surface Location 1636' FNL, 2452' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 560' FNL, 1673' FEL, NW NE, 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 43-041-30052.

Sincerely,

Gil Hunt
Associate Director

pab
Enclosures

cc: Sevier County Assessor
Bureau of Land Management, Utah State Office


**1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801**
**telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 •** *www.ogm.utah.gov*


UTAH DNR OIL, GAS & MINING

**Operator:** Wolverine Gas and Oil Company of Utah, LLC
**Well Name & Number** Wolverine Federal 17-13
**API Number:** 43-041-30052
**Lease:** UTU-73528

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Surface Location:** | SE NW | **Sec.** | 17 | **T.** | 23 South | **R.** | 1 West |
| **Bottom Location:** | NW NE | **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 Dustin Doucet at (801) 538-5281 (801) 733-0983 home

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.

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
**NA**

7. If Unit or CA/Agreement, Name and/or No.
**Wolverine Federal Unit**

8. Well Name and No.
**Wolverine Federal 17-13**

9. API Well No.
**43-041-30052**

10. Field and Pool, or Exploratory Area
**Covenant Field Navajo**

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, Michigan 49503-2616**

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

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
**1636' FNL, 2452' FWL (SE/4 NW/4), Section 17, T23S, R1W, 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 |
| | ☑ 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 original APD for this well was approved for 9-5/8", 36#, J-55 surface casing in a 12-1/4" diameter hole to a depth of 1000 feet. Wolverine Gas and Oil Company of Utah, LLC now plans to set 13-3/8". 68#, J-55 surface casing in a 17-1/2" hole to a depth of 1000 feet. Cement volumes will be adjusted as necessary to cement the casing to surface and place high strength cement at the suraface casing shoe.**

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

RECEIVED
MAR 10 2008
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Ellis Peterson**

Title **Sr. Production Engineer**

Signature

Date **03/07/2008**

**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)*

**WOLVERINE GAS AND OIL COMPANY**
**OF UTAH, LLC**
*Energy Exploration in Partnership with the Environment*

June 6, 2008

Mr. Gil Hunt
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: Wolverine Federal 17-13
API no. 43-041-30052
1636' FNL, 2452' FWL, (SE/4 NW/4),
Section 17, T. 23 South, R. 1 West, SLB&M,
Sevier County, Utah

Dear Mr. Hunt:

Enclosed herewith is a copy of a BLM Sundry notice with attachments requesting approval to move the bottom-hole location (BHL) for the subject well. Surface casing has been pre-set for this well and drilling operations are anticipated to resume later this month.

The proposed new BHL is more than 200' from the center of the 40-acre drilling unit, so a request for exception to spacing (R649-3-2) is hereby requested based on restrictive topography and desired reservoir structural penetration. Wolverine is the only owner and operator within 460' of the proposed well location.

Because this well will be directionally drilled, this letter with the accompanying plat also serves as application for directionally drilling the well to the new location per R649-3-11. Wolverine is the owner of all oil and gas within 460 feet from all points along the intended wellbore for the well. Information relating to R649-3-11 is as follows:

Operator: Wolverine Gas and Oil Company of Utah, LLC

Address: One Riverfront Plaza
55 Campau, N.W.
Grand Rapids, MI 49503-2616

Well: Wolverine Federal 17-13

Field: Covenant

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JUN 09 2008
DIV. OF OIL, GAS & MINING

Reservoir: Navajo

County: Sevier

Reason: Restrictive topography and to minimize surface impact

Wolverine Operating Company of Utah, LLC respectfully requests approval this request. Please accept this letter as Wolverine's written request for confidential treatment of all information relating to this application and the proposed well.

Sincerely,

Ellis M. Peterson – Senior Production Engineer
Wolverine Operating Company of Utah, LLC

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
**NA**

7. If Unit or CA/Agreement, Name and/or No.
**Wolverine Federal Unit**

8. Well Name and No.
**Wolverine Federal 17-13**

9. API Well No.
**43-041-30052**

10. Field and Pool, or Exploratory Area
**Covenant Field Navajo** 492

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, Michigan 49503-2616**

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

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
**1636' FNL, 2452' FWL (SE/4 NW/4), Section 17, T23S, R1W, 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 |
| | ☑ 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 original APD for this well was approved for drilling a directional hole to a bottom-hole location (BHL) at 560' FNL and 1673' FEL in Section 17, T23S, R1W. Wolverine Gas and Oil Company of Utah, LLC now plans to drill the well to a proposed BHL of 1064' FNL and 1373' FEL in Section 17, T23S, R1W. The surface location for the well was not changed and 13-3/8" surface casing has already been pre-set and cemented at a depth of 1953 feet. The directional and drilling plans have been modified for the new BHL and proposed changes to the approved APD are also tabulated on the attached document. No modifications to the Surface Use Plan will result from the planned changes to the drilling plan.**

**Attachments: Changes to Original Drilling Plan, Drilling Plan, Directional Plan**

BHL 419430X 38.807198
4295583Y -111.927916

COPY SENT TO OPERATOR
Date: 6·19·2008
Initials: KS

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Ellis Peterson**
Title **Sr. Production Engineer**
Signature Ellis Peterson
Date **06/06/2008**

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by BRADLEY G. HILL
Title ENVIRONMENTAL MANAGER
Date 06-18-08
Office

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.

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)*

***Federal Approval of this Action is Necessary***

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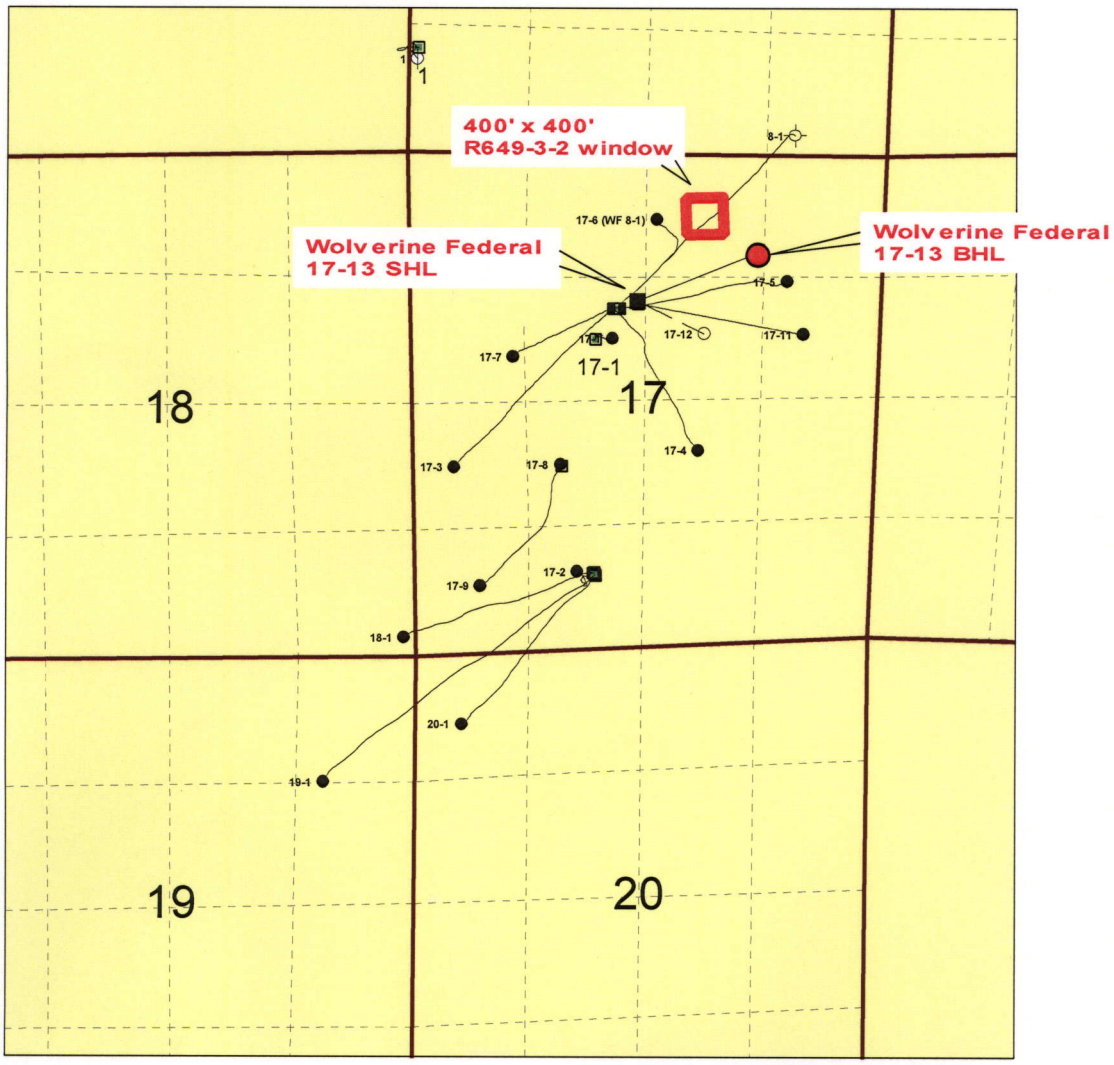



# Wolverine Federal 17-13 Well Location

SHL: 1636' FNL, 2452' FWL, SE/4 NW/4, Sec. 17, T23S, R1W, Sevier Co., UT

BHL: 1064' FNL, 1373 FEL, NW/4 NE/4, Sec. 17, T23S, R1W, Sevier Co., UT

Wolverine Lease

Existing Well

Proposed BHL

SHL

0.2500 0 0.2500 0.5000 0.7500 mi

1 inch = 2000 feet

WOLVERINE

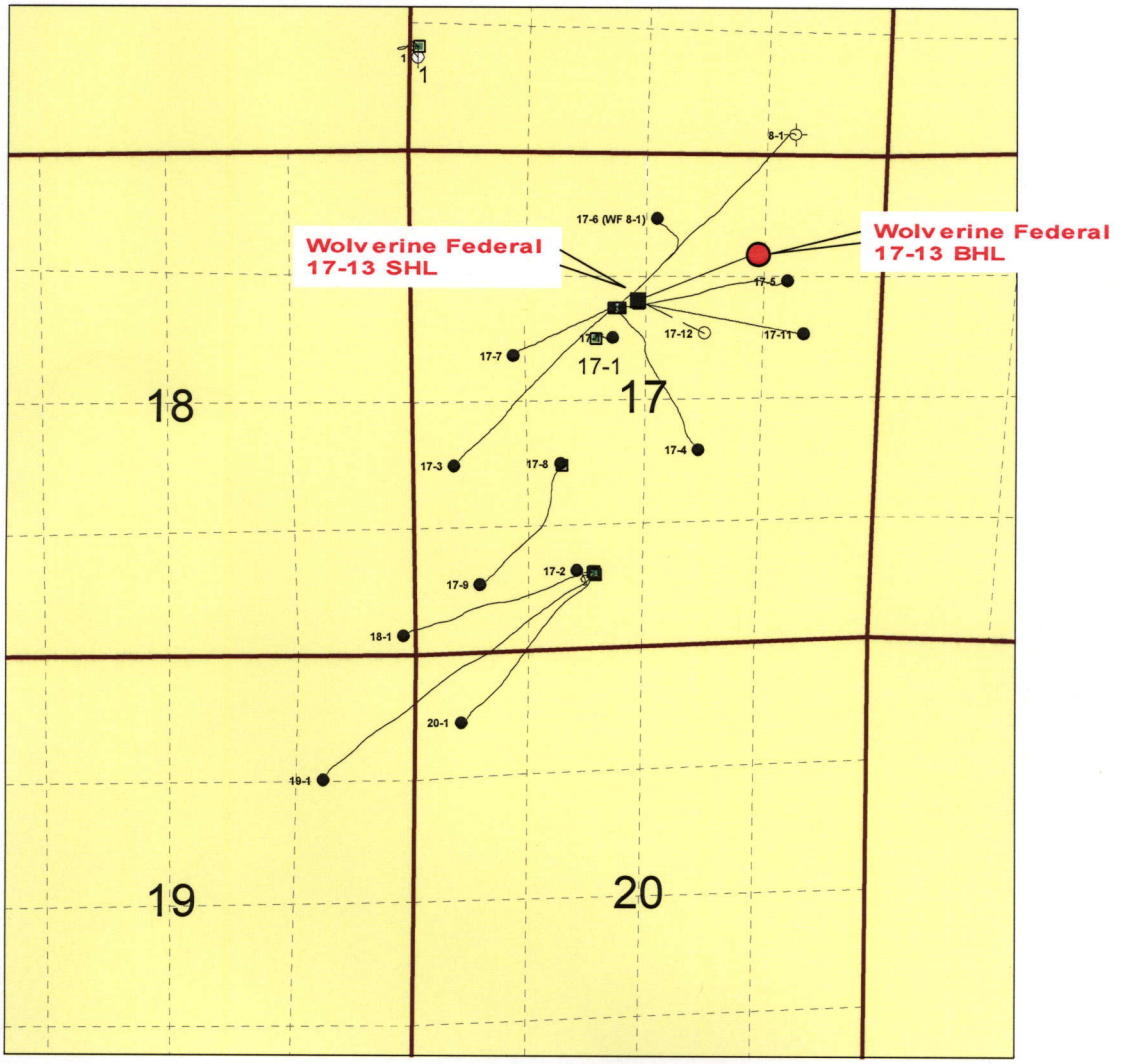
**WOLVERINE GAS & OIL Company of Utah, LLC**
**(Operator)**
*Energy Exploration in Partnership with the Environment*

ONE RIVERFRONT PLAZA
55 CAMPAU, N.W.
GRAND RAPIDS, MI 49503-2616
(616) 458-1150

Exception Location and Ownership Plat (R649-3-2)

**Date:** 6/4/2008

**Map gmp: mjl wf 17-13 well location**




# Wolverine Federal 17-13 Well Location

SHL: 1636' FNL, 2452' FWL, SE/4 NW/4, Sec. 17, T23S, R1W, Sevier Co., UT

BHL: 1064' FNL, 1373 FEL, NW/4 NE/4, Sec. 17, T23S, R1W, Sevier Co., UT

Wolverine Lease

Existing Well

Proposed BHL

SHL

0.2500 0 0.2500 0.5000 0.7500 mi

1 inch = 2000 feet

| | |
|---|---|
| WOLVERINE | **WOLVERINE GAS & OIL Company of Utah, LLC**<br>**(Operator)**<br>*Energy Exploration in Partnership with the Environment*<br>ONE RIVERFRONT PLAZA<br>55 CAMPAU, N.W.<br>GRAND RAPIDS, MI 49503-2616<br>(616) 458-1150 |
| Directional Drilling Application Plat (R649-3-11) | |
| **Date:** 6/4/2008 | **Map gmp: mjl wf 17-13 well location** |

# Attachment to Sundry Notice – Changes to Original Drilling Plan

## Wolverine Gas and Oil Company of Utah, LLC

**Drilling Plan revisions for the:** **Wolverine Federal 17-13**
**API No. 43-041-30052**
**SE/4 NW/4 Sec. 17, T23S, R1W, SLB&M**
**Sevier County, Utah**

| | Revised Drilling Plan | Original APD |
|---|---|---|
| **Location of Well:** | | |
| At Surface: | 1636' FNL, 2452' FWL | 1636' FNL, 2452' FWL |
| At Navajo Top: | 1064' FNL, 1373' FEL | 560' FNL, 1673' FEL |
| At TD: | 1064' FNL, 1373' FEL | 560' FNL, 1673' FEL |
| **Total Depth:** | 6862' MD, 6600' TVD | 6856' MD, 6600' TVD |
| **Elevations:** | 5736' GL, 5762' KB | 5736' GL, 5762' KB |

**Geology:**

| Formation | TVD Interval (KB) | MD Interval (KB) |
|---|---|---|
| Arapien | 26' – 5702' | 26' – 5964' |
| Twin Creek 1 | 5702' – 6032' | 5964' – 6294' |
| Navajo 1 | 6032' – 6600' | 6294' – 6862' |
| | | |
| | | |
| | | |
| Total Depth | 6600' | 6862' |

| Formation | TVD Interval (KB) | MD Interval (KB) |
|---|---|---|
| Arapien | 26' – 5832' | 26' – 6088' |
| Twin Creek 1 | 5832' – 6162' | 6088' – 6418' |
| Navajo 1 | 6162' – 6600' | 6418' – 6856' |
| | | |
| | | |
| | | |
| Total Depth | 6600' | 6856' |

## Revised Drilling Plan

## Original APD

**Well Control:** No changes from original drilling plan.

**Casing Program:**

| Hole Size | Casing Size, Grade, Weight | Depth Interval |
|---|---|---|
| 30" | 20", conductor | 0 – 150' |
| 17.50" | 13-3/8", J-55, 68.0# | 0 – 1953' |
| 8.750" | 7", HCL-80, 23.0 & 26.0# | 0 – 6862' |

| Hole Size | Casing Size, Grade, Weight | Depth Interval |
|---|---|---|
| 30" | 20", conductor | 0 – 150' |
| 12.25" | 9-5/8", J-55, 36.0# | 0 – 1000' |
| 8.750" | 7", HCL-80, 23.0 & 26.0# | 0 – 6856' |

Note: See casing design factors in updated drilling program.

**Cementing Program:**

| Casing | Cement Quantity, Type, Yield, and Slurry Weight |
|---|---|
| 13-3/8" | 400 sks, CBM Lite, 4.12 $ft^3$/sk, 10.5 ppg<br>450 sks, Premium Plus, 1.19 $ft^3$/sk, 15.6 ppg |
| 7" | 120 sks, CBM Light, 4.29 $ft^3$/sk, 10.5 ppg<br>300 sks, Class "G", 1.29 $ft^3$/sk, 15.8 ppg<br>150 sks, 50/50 Poz, 1.26 $ft^3$/sk, 14.4 ppg |

| Casing | Cement Quantity, Type, Yield, and Slurry Weight |
|---|---|
| 9-5/8" | 125 sks, CBM Lite, 4.12 $ft^3$/sk, 10.5 ppg<br>175 sks, Premium Plus, 1.19 $ft^3$/sk, 15.6 ppg |
| 7" | 435 sks, Foamed Elastiseal, 2.08 $ft^3$/sk, 10.0 ppg<br>175 sks, Elastiseal, 1.45 $ft^3$/sk, 14.35 ppg |

Note: Revised 7" to be cemented in two stages with Stage 1 being 50/50 Poz cement.

**Mud Program:**

| Depth | Mud Weight (ppg) | Mud Type |
|---|---|---|
| 0 – 1953' | 8.4 – 9.2 | Fresh Water |
| 1953' – 6862' | 9.2 – 10.5 | Salt Mud |
| | | |

| Depth | Mud Weight (ppg) | Mud Type |
|---|---|---|
| 0 – 1000' | 8.4 – 9.2 | Fresh Water |
| 1000' – 6856' | 9.2 – 10.5 | Salt Mud |
| | | |

| | Revised Drilling Plan | Original APD |
|---|---|---|
| **Evaluation:** | | |
| Mud Logging: | 1953' to TD | 1000' to TD |
| Drill Stem Tests: | None | None |
| Coring: | None | None |
| Wireline Logs: | TD to 1953' | TD to 1000' |
| **Expected Bottom-Hole Conditions:** | | |
| Hydrogen Sulfide: | None expected | None expected |
| Pressure: | No abnormal pressures (0.46 psi/ft) | No abnormal pressures (0.464 psi/ft) |
| Temperature: | BHT at TD of 190 °F | BHT at TD of 190 °F |
| **Surface Use Plan:** | No changes from original plan. | |

# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

## DRILLING PLAN

### Wolverine Federal 17-13
**SE/4 NW/4 Section 17, Township 23 South, Range 1 West, S.L.B & M.**
**Sevier County, Utah**

**Plan Summary:**

It is planned to drill this confidential development well as a directional bore hole due to surface topography constraints and in accordance with the enclosed directional drilling plan. The well will be drilled to a measured depth of 6862' (6600' TVD) to test the upper thrust of the Twin Creek and Navajo formations. Well path deviation caused by subsurface geologic irregularities is expected to be the primary drilling concern in this area. No abnormal pressure is anticipated.

The planned location is as follows:

| | |
|---|---|
| Surface Location: | 1636' FNL, 2452' FWL, Section 17, T23S, R1W, S.L.B. & M. |
| Bottom Hole Location @ Navajo 1 target | 1064' FNL, 1373' FEL, Section 17, T23S, R1W, S.L.B. & M. |
| Bottom Hole Location @ total depth | 1064' FNL, 1373' FEL, Section 17, T23S, R1W, S.L.B. & M. |

Conductor casing was set at 100 feet and cemented to surface. A 17-/12" hole was drilled to 1953' and 13-3/8" surface casing has been set and cemented to surface. An 8-3/4" hole will now be drilled at approximately 23 degrees from vertical to approximately 4500' MD, and then allowed to drop to vertical to penetrate the Twin Creek and Navajo formations to a well total depth of 6862' (6600' TVD). The well will be logged and 7" production casing will be set and cemented to 1750' (13-3/8" csg shoe @ 1953').

Drilling activities at this well commenced in February 2008.

**Well Name:** **Wolverine Federal 17-13**

**Surface Location:** 1636' FNL, 2452' FWL
SE/4 NW/4 Section 17, T23S, R1W, S.L.B. & M.
Sevier County, Utah

**TD Bottom-Hole Location:** 560' FNL, 1673' FEL

**Elevations:** 5736' GL, 5762' KB

## I. Geology:

Tops of important geologic markers and anticipated water, oil, gas, and mineral content are as follows:

| Formation | TVD Interval (KB) | MD Interval (KB) | Contents | Pressure Gradient |
|---|---|---|---|---|
| Arapien | 26' – 5702' | 26' – 5964' | | |
| Twin Creek 1 | 5702' – 6032' | 5964' – 6294' | Oil & water | 0.46 psi/ft |
| Navajo 1 | 6032' –6600' | 6294' – 6862' | Oil & water | 0.46 psi/ft |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Total Depth | 6600' | 6862' | | |

## II. Well Control:

The contracted drilling rig has a 10M BOP system but conditions only require a 5M BOP system. BOPE will be in place and tested as a 5M system prior to drilling out the surface casing shoe. See attached schematic of BOPE.

A. The BOPE will, as a minimum, include the following:

Wellhead Equipment (5M Min.):

| BOPE Item | Flange Size and Rating |
|---|---|
| Annular Preventer | 13-5/8" 5M |
| Double Rams (5" Pipe - top, Blind - bottom) | 13-5/8" 10M |
| Drilling Spool w/ 2 side outlets (4" Choke Line, 4" Kill Line) | 13-5/8" 10M x 13-5/8" 10M |
| Single Ram (Pipe) | 13-5/8" 10M |
| DSA | 13-5/8" 10M x 11" – 5M |
| Casing Head (9-5/8" SOW w/ two 2-1/16" SSO's) | 13-5/8" – 5M |

Auxiliary Equipment (5M Min.):

| BOPE Item |
|---|
| Choke Line with 2 valves (3" minimum) |
| Kill Line with 2 valves and one check valve (2" Minimum) |
| 2 Chokes with one remotely controlled at a location readily accessible to the driller |
| Upper and lower kelly cock valves with handles |
| Safety Valves to fit all drill string connections in use |
| Inside BOP or float sub |
| Pressure gauge on choke manifold |
| Fill-up line above the uppermost preventer |
| Wear bushing in casing head |

B. **Choke manifold** will be functionally equipped and sized at a minimum as shown on the attached diagram. All choke lines will be straight lines unless turns have tee blocks or are targeted with running tees, and all choke lines will be anchored. All valves (except chokes) in the kill line choke manifold and choke line will be full opening and allow straight through flow.

C. **System accumulator** will have sufficient capacity to open the hydraulically-controlled gate valve and close all rams plus the annular preventer (3 ram system will have added 50 percent safety factor to compensate for any fluid loss in the control system or preventers) and retain a minimum pressure of 200 psi above pre-charge on the closing manifold without use of the closing unit pumps. The fluid reservoir capacity shall be double the usable fluid volume of the accumulator system capacity and the fluid level of the reservoir shall be maintained at the manufacturer's recommendations. The accumulator will have two (2) independent power sources available to close the preventers. Nitrogen bottles may be one of those sources, and if so, will have charge maintained per manufacturer's specifications.

D. **Accumulator pre-charge pressure test** will be conducted prior to connecting the closing unit to the BOP stack and at least once every 6 months. The accumulator pressure will be corrected if the measured precharge pressure is found to be above or below the maximum or minimum specified limits. Only nitrogen gas will be used to precharge.

E. **Power for the closing unit pumps** will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure has decreased to the pre-set level.

F. **Accumulator pump capacity** will be such that, with the accumulator system isolated from service, the pumps will be capable of opening the hydraulically-operated gate valve (if so equipped), plus closing the annular preventer on the smallest size drill pipe to be used within 2 minutes, and retaining a minimum of 200 psi above the specified accumulator pre-charge pressure.

G. **Locking devices**, either manual (i.e., hand wheels) or automatic, will be installed on the ram type preventers. 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 shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative.

H. **Remote controls** will be readily accessible to the driller and will be capable of both opening and closing all preventers. Master controls shall be at the accumulator and shall be capable of opening and closing all preventers and the choke line valve.

I. **Well control equipment testing** will be performed using clear water when the equipment is initially installed, whenever any seal subject to test pressure is broken, following related repairs, and as a minimum, every 30-day interval. The tests will apply to all related well control equipment.

Ram type preventers and associated equipment will be isolated and tested to 5000 psi. The annular preventer will be tested to 2500 psi. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer, for all tests. A casing head valve will be open below the test plug during testing of the BOP stack. Valves will be tested from the working pressure side with all down-stream valves open. Kill line valves will be tested with the check valve held open or the ball removed.

Pipe and blind rams will be activated each trip, but not more than once a day. The annular preventers will be functionally operated at least weekly. A pit level drill will be conducted weekly for each crew. All BOPE drills and tests will be recorded in the IADC driller's log.

## III. Casing and Cementing:

A. Casing Program (all new casing):

| Hole Size | Casing Size | Weight | Grade | Connection | Coupling Diameter | Setting Depth |
|---|---|---|---|---|---|---|
| 30" | 24" | | Conductor | | | 100' GL |
| | | | | | | |
| 17.50" | 13.375" | 68.0 | J55 | STC | 14.375" | 1953' kb |
| 8.750" | 7.000" | 26.0 | HCL-80 | LTC | 7.656" | TD-4400'kb |
| | 7.000" | 23.0 | HCL-80 | LTC | 7.656" | 4400'- surf |

| | Surface | Intermediate | Production |
|---|---|---|---|
| Casing O. D. (in) | 13.375 | none | 7.0 |
| Casing Grade | J-55 | | HCL-80 |
| Weight of Pipe (lbs/ft) | 68.0 | | 23 & 26 |
| Connection | BTC | | LTC |
| | | | |
| Top Setting Depth - MD (ft) | 0 | | 0 |
| Top Setting Depth - TVD (ft) | 0 | | 0 |
| Bottom Setting Depth - MD (ft) | 1953 | | 6862 |
| Bottom Setting Depth - TVD (ft) | 1926 | | 6600 |
| Maximum Mud Weight - Inside (ppg) | 9.2 | | 9.0 |
| Maximum Mud Weight - Outside (ppg) | 9.2 | | 10.5 |
| Design Cement Top - MD (ft) | 0 | | 1750 |
| Design Cement Top - TVD (ft) | 0 | | 1735 |
| | | | |
| Max. Hydrostatic Inside w/ Dry Outside (psi) | 921 | | 3088 |
| Casing Burst Rating (psi) | 3450 | | 6340 |
| **Burst Safety Factor (1.10 Minimum)** | **3.75** | | **2.0** |
| | | | |
| Max. Hydrostatic Outside w/ Dry Inside (psi) | 921 | | 3604 |
| Collapse Rating | 1950 | | 6830 |
| **Collapse Safety Factor (1.125 Minimum)** | **2.12** | | **1.9** |
| | | | |
| Casing Weight in Air (kips) | 133 | | 166 |
| Body Yield (kips) | 1069 | | 532 |
| Joint Strength (kips) | 1140 | | 435 |
| **Tension Safety Factor (1.80 Minimum)** | **8.04** | | **2.62** |

Casing with same or greater burst, collapse, and tension rating may be substituted for any of the planned casing sizes depending on availability and actual conditions.

# WOLVERINE GAS & OIL COMPANY

Location: UTAH  Slot: Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD
Field: SEVIER COUNTY  Well: Wolverine Federal 17-13
Facility: SEC.17-T23S-R1W  Wellbore: Wolverine Federal 17-13 PWB

BAKER HUGHES INTEQ

# SST 68

## Well Profile Data

| Design Comment | MD (ft) | Inc (°) | Az (°) | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
|---|---|---|---|---|---|---|---|---|
| Tie On | 1825.00 | 19.700 | 40.360 | 1806.34 | 104.51 | 107.26 | 3.07 | 139.04 |
| End of Tangent | 1945.00 | 19.700 | 40.360 | 1919.32 | 135.34 | 133.46 | 0.00 | 175.02 |
| End of Build | 2145.00 | 23.000 | 40.360 | 2105.56 | 190.81 | 180.60 | 1.65 | 239.78 |
| End of 3D Arc (S) | 3020.19 | 23.000 | 77.887 | 2915.47 | 357.86 | 459.98 | 1.65 | 561.78 |
| End of Tangent (S) | 4525.58 | 23.000 | 77.887 | 4301.19 | 481.29 | 1035.09 | 0.00 | 1140.44 |
| Drop (S) | 5919.52 | 0.000 | 77.887 | 5657.99 | 539.21 | 1304.99 | 1.65 | 1412.00 |
| End of Tangent | 6861.52 | 0.000 | 77.887 | 6600.00 | 539.21 | 1304.99 | 0.00 | 1412.00 |

## Location Information

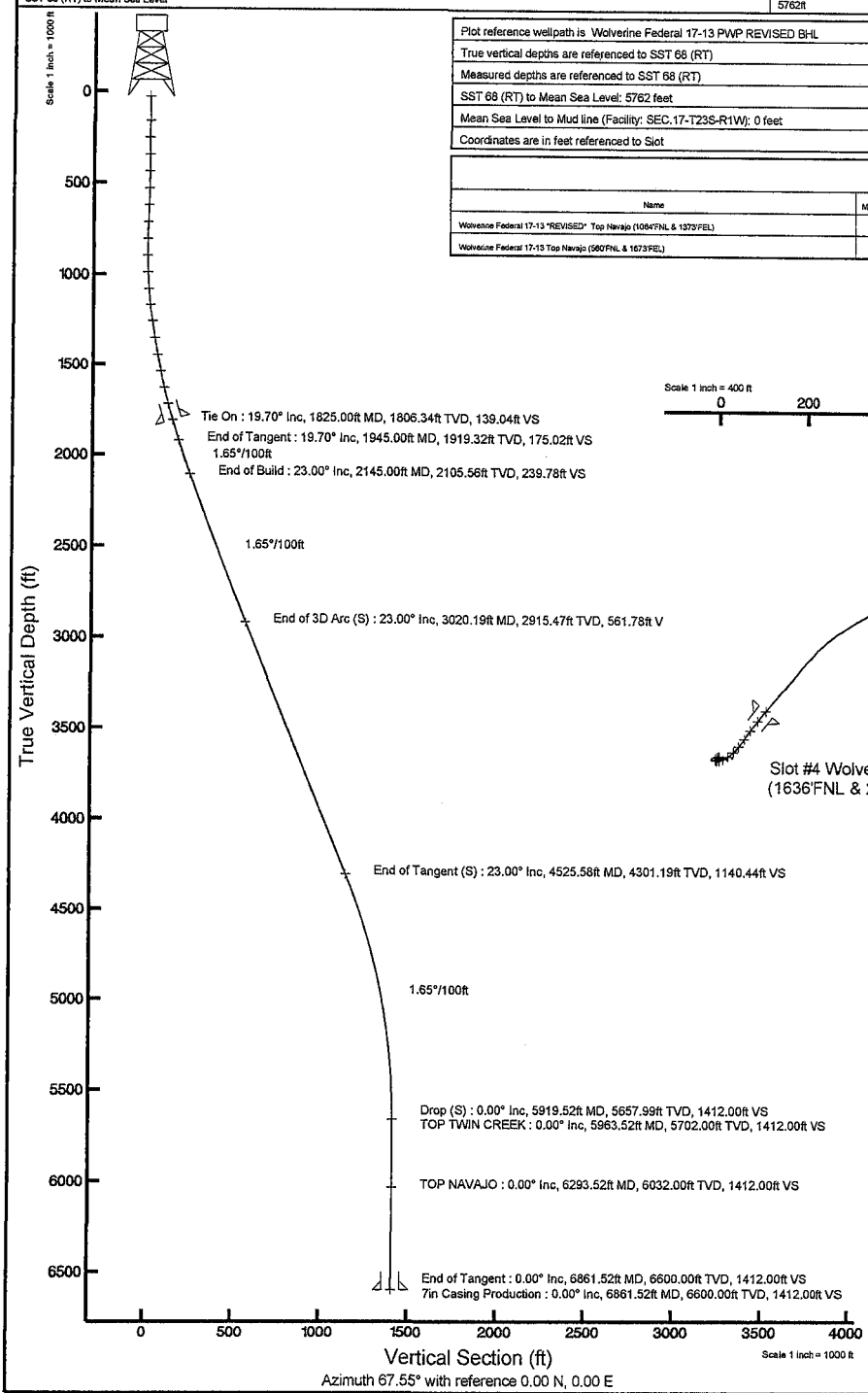
| Facility Name | | | Grid East (USft) | Grid North (USft) | Latitude | Longitude |
|---|---|---|---|---|---|---|
| SEC.17-T23S-R1W | | | 1516134.368 | 6732217.324 | 38°48'02.619"N | 111°56'09.781"W |
| Slot | Local N (ft) | Local E (ft) | Grid East (USft) | Grid North (USft) | Latitude | Longitude |
| Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD | 1754.65 | 781.67 | 1516924.628 | 6733968.245 | 38°48'19.963"N | 111°55'59.906"W |

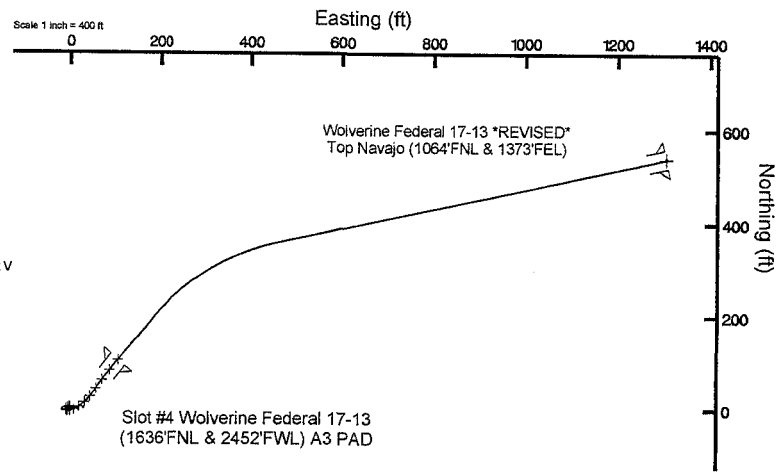
| | |
|---|---|
| SST 68 (RT) to Mud line (Facility: SEC.17-T23S-R1W) | 5762ft |
| Mean Sea Level to Mud line (Facility: SEC.17-T23S-R1W) | 0ft |
| SST 68 (RT) to Mean Sea Level | 5762ft |

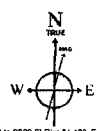
| | |
|---|---|
| Plot reference wellpath is Wolverine Federal 17-13 PWP REVISED BHL | |
| True vertical depths are referenced to SST 68 (RT) | Grid System: NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet |
| Measured depths are referenced to SST 68 (RT) | North Reference: True north |
| SST 68 (RT) to Mean Sea Level: 5762 feet | Scale: True distance |
| Mean Sea Level to Mud line (Facility: SEC.17-T23S-R1W): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | *Created by: doublina on 6/5/2008* |

## Targets

| Name | MD (ft) | TVD (ft) | Local N (ft) | Local E (ft) | Grid East (USft) | Grid North (USft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|
| Wolverine Federal 17-13 *REVISED* Top Navajo (1064'FNL & 1373'FEL) | | 5702.00 | 539.21 | 1304.99 | 1518232.29 | 6734501.16 | 38°48'25.292"N | 111°55'43.421"W |
| Wolverine Federal 17-13 Top Navajo (560'FNL & 1673'FEL) | | 8162.00 | 1050.00 | 1017.00 | 1517946.76 | 6735013.37 | 38°48'30.341"N | 111°55'47.059"W |




BGGM (1945.0 to 2009.0) Dip: 64.46° Field: 51649.4 nT
Magnetic North is 12.23 degrees East of True North (at 3/4/2008)

To correct azimuth from Magnetic to True add 12.23 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 12.23 = 102.23

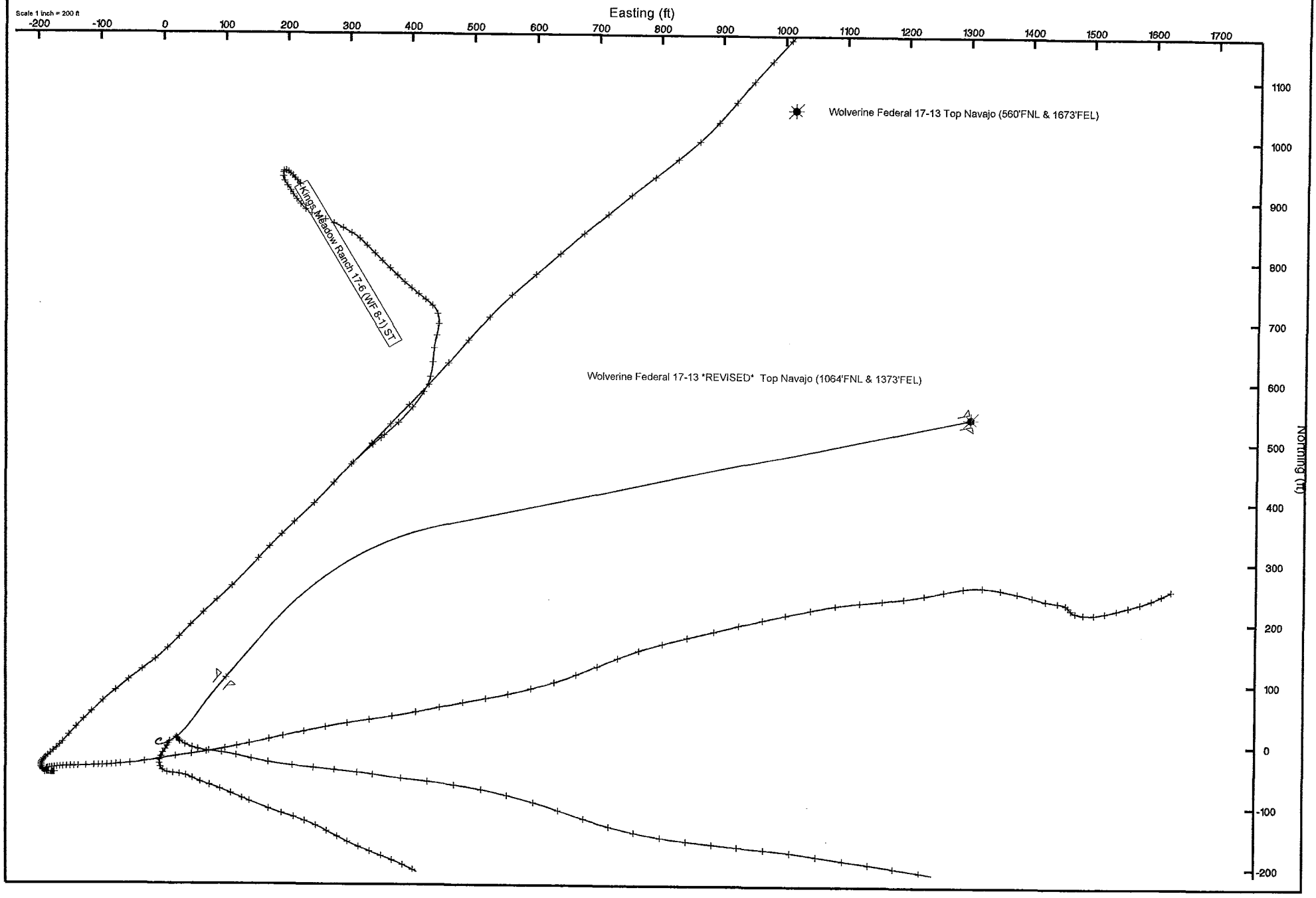
# WOLVERINE GAS & OIL COMPANY

Location: UTAH
Field: SEVIER COUNTY
Facility: SEC.17-T23S-R1W

Slot: Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD
Well: Wolverine Federal 17-13
Wellbore: Wolverine Federal 17-13 PWB

BAKER HUGHES INTEQ

| | |
|---|---|
| Plot reference wellpath is Wolverine Federal 17-13 PWP REVISED BHL | |
| True vertical depths are referenced to SST 68 (RT) | Grid System: NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet |
| Measured depths are referenced to SST 68 (RT) | North Reference: True north |
| SST 68 (RT) to Mean Sea Level: 5762 feet | Scale: True distance |
| Mean Sea Level to Mud line (Facility: SEC.17-T23S-R1W): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | Created by: dovblina on 6/5/2006 |



# Planned Wellpath Report

**Wolverine Federal 17-13 PWP REVISED BHL**



BAKER HUGHES INTEQ

## REFERENCE WELLPATH IDENTIFICATION

| | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 PWB** |
| Facility | **SEC.17-T23S-R1W** | | |

## REPORT SETUP INFORMATION

| | | | |
|---|---|---|---|
| Projection System | **NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet** | Software System | **WellArchitect® 2.0** |
| North Reference | **True** | User | **Doublina** |
| Scale | **1.00006** | Report Generated | **6/5/2008 at 1:33:36 PM** |
| Convergence at slot | **0.28° West** | Database/Source file | **Denver/_Wolverine_Federal_17-13_PWB.xml** |

## WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|---|---|---|---|---|---|---|
| | **North[ft]** | **East[ft]** | **Easting[USft]** | **Northing[USft]** | **Latitude** | **Longitude** |
| Slot Location | 1754.65 | 781.67 | 1516924.63 | 6733968.25 | **38°48'19.963"N** | **111°55'59.906"W** |
| Facility Reference Pt | | | 1516134.37 | 6732217.32 | **38°48'02.619"N** | **111°56'09.781"W** |
| Field Reference Pt | | | 1516134.37 | 6732217.32 | **38°48'02.619"N** | **111°56'09.781"W** |

## WELLPATH DATUM

| | | | |
|---|---|---|---|
| Calculation method | **Minimum curvature** | SST 68 (RT) to Facility Vertical Datum | **5762.00ft** |
| Horizontal Reference Pt | **Slot** | SST 68 (RT) to Mean Sea Level | **5762.00ft** |
| Vertical Reference Pt | **SST 68 (RT)** | Facility Vertical Datum to Mud Line (Facility) | **0.00ft** |
| MD Reference Pt | **SST 68 (RT)** | Section Origin | **N 0.00, E 0.00 ft** |
| Field Vertical Reference | **Mean Sea Level** | Section Azimuth | **67.55°** |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP REVISED BHL**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 PWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (79 stations) † = interpolated/extrapolated station**

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | DLS [°/100ft] | Comments |
|---|---|---|---|---|---|---|---|---|
| 0.00† | 0.000 | 51.960 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 26.00 | 0.000 | 51.960 | 26.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 160.00 | 0.450 | 51.960 | 160.00 | 0.51 | 0.32 | 0.41 | 0.34 | |
| 251.00 | 1.250 | 61.800 | 250.99 | 1.84 | 1.01 | 1.57 | 0.89 | |
| 346.00 | 0.890 | 12.230 | 345.97 | 3.29 | 2.22 | 2.64 | 1.01 | |
| 438.00 | 1.070 | 301.210 | 437.96 | 3.19 | 3.37 | 2.06 | 1.25 | |
| 529.00 | 1.700 | 251.640 | 528.94 | 1.34 | 3.38 | 0.05 | 1.42 | |
| 622.00 | 2.410 | 241.450 | 621.88 | -1.98 | 2.01 | -2.98 | 0.86 | |
| 713.00 | 2.050 | 218.600 | 712.81 | -5.31 | -0.17 | -5.67 | 1.05 | |
| 805.00 | 1.520 | 187.310 | 804.77 | -7.36 | -2.67 | -6.86 | 1.18 | |
| 896.00 | 1.340 | 141.250 | 895.74 | -7.66 | -4.70 | -6.34 | 1.24 | |
| 987.00 | 2.590 | 102.230 | 986.69 | -5.67 | -5.96 | -3.67 | 1.94 | |
| 1080.00 | 4.480 | 79.380 | 1079.51 | -0.38 | -5.74 | 1.96 | 2.50 | |
| 1170.00 | 7.210 | 68.130 | 1169.04 | 8.71 | -2.98 | 10.65 | 3.28 | |
| 1260.00 | 8.620 | 56.180 | 1258.19 | 20.97 | 2.87 | 21.50 | 2.40 | |
| 1357.00 | 9.850 | 47.740 | 1353.93 | 35.90 | 12.50 | 33.68 | 1.88 | |
| 1450.00 | 12.130 | 39.650 | 1445.23 | 52.02 | 25.38 | 45.81 | 2.95 | |
| 1544.00 | 13.890 | 35.780 | 1536.81 | 70.35 | 42.13 | 58.71 | 2.09 | |
| 1637.00 | 15.390 | 36.140 | 1626.79 | 90.37 | 61.16 | 72.51 | 1.62 | |
| 1732.00 | 16.880 | 38.950 | 1718.05 | 113.24 | 82.07 | 88.62 | 1.77 | |
| 1825.00 | 19.700 | 40.360 | 1806.34 | 139.04 | 104.51 | 107.26 | 3.07 | Tie On |
| 1925.00† | 19.700 | 40.360 | 1900.49 | 169.03 | 130.20 | 129.09 | 0.00 | |
| 1945.00 | 19.700 | 40.360 | 1919.32 | 175.02 | 135.34 | 133.46 | 0.00 | End of Tangent |
| 2025.00† | 21.020 | 40.360 | 1994.32 | 199.78 | 156.55 | 151.48 | 1.65 | |
| 2125.00† | 22.670 | 40.360 | 2087.13 | 232.88 | 184.90 | 175.58 | 1.65 | |
| 2145.00 | 23.000 | 40.360 | 2105.56 | 239.78 | 190.81 | 180.60 | 1.65 | End of Build |
| 2225.00† | 22.639 | 43.634 | 2179.31 | 267.76 | 213.87 | 201.35 | 1.65 | |
| 2325.00† | 22.285 | 47.853 | 2271.73 | 303.21 | 240.52 | 228.69 | 1.65 | |
| 2425.00† | 22.042 | 52.180 | 2364.34 | 339.15 | 264.75 | 257.57 | 1.65 | |
| 2525.00† | 21.916 | 56.577 | 2457.08 | 375.57 | 286.54 | 287.97 | 1.65 | |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP REVISED BHL**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 PWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (79 stations) † = interpolated/extrapolated station**

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | DLS [°/100ft] | Comments |
|---|---|---|---|---|---|---|---|---|
| 2625.00† | 21.907 | 60.999 | 2549.86 | 412.43 | 305.86 | 319.87 | 1.65 | |
| 2725.00† | 22.016 | 65.403 | 2642.61 | 449.69 | 322.71 | 353.23 | 1.65 | |
| 2825.00† | 22.241 | 69.743 | 2735.25 | 487.34 | 337.07 | 388.03 | 1.65 | |
| 2925.00† | 22.578 | 73.981 | 2827.71 | 525.33 | 348.92 | 424.23 | 1.65 | |
| 3020.19 | 23.000 | 77.887 | 2915.47 | 561.78 | 357.86 | 459.98 | 1.65 | End of 3D Arc (S) |
| 3025.00† | 23.000 | 77.887 | 2919.90 | 563.63 | 358.26 | 461.82 | 0.00 | |
| 3125.00† | 23.000 | 77.887 | 3011.95 | 602.07 | 366.46 | 500.02 | 0.00 | |
| 3225.00† | 23.000 | 77.887 | 3104.00 | 640.51 | 374.65 | 538.23 | 0.00 | |
| 3325.00† | 23.000 | 77.887 | 3196.05 | 678.95 | 382.85 | 576.43 | 0.00 | |
| 3425.00† | 23.000 | 77.887 | 3288.10 | 717.39 | 391.05 | 614.63 | 0.00 | |
| 3525.00† | 23.000 | 77.887 | 3380.15 | 755.83 | 399.25 | 652.84 | 0.00 | |
| 3625.00† | 23.000 | 77.887 | 3472.20 | 794.26 | 407.45 | 691.04 | 0.00 | |
| 3725.00† | 23.000 | 77.887 | 3564.25 | 832.70 | 415.65 | 729.24 | 0.00 | |
| 3825.00† | 23.000 | 77.887 | 3656.30 | 871.14 | 423.85 | 767.45 | 0.00 | |
| 3925.00† | 23.000 | 77.887 | 3748.36 | 909.58 | 432.05 | 805.65 | 0.00 | |
| 4025.00† | 23.000 | 77.887 | 3840.41 | 948.02 | 440.25 | 843.85 | 0.00 | |
| 4125.00† | 23.000 | 77.887 | 3932.46 | 986.46 | 448.44 | 882.06 | 0.00 | |
| 4225.00† | 23.000 | 77.887 | 4024.51 | 1024.90 | 456.64 | 920.26 | 0.00 | |
| 4325.00† | 23.000 | 77.887 | 4116.56 | 1063.34 | 464.84 | 958.46 | 0.00 | |
| 4425.00† | 23.000 | 77.887 | 4208.61 | 1101.78 | 473.04 | 996.67 | 0.00 | |
| 4525.00† | 23.000 | 77.887 | 4300.66 | 1140.21 | 481.24 | 1034.87 | 0.00 | |
| 4525.58 | 23.000 | 77.887 | 4301.19 | 1140.44 | 481.29 | 1035.09 | 0.00 | End of Tangent (S) |
| 4625.00† | 21.359 | 77.887 | 4393.25 | 1177.36 | 489.16 | 1071.79 | 1.65 | |
| 4725.00† | 19.709 | 77.887 | 4486.90 | 1211.87 | 496.52 | 1106.08 | 1.65 | |
| 4825.00† | 18.059 | 77.887 | 4581.51 | 1243.71 | 503.31 | 1137.73 | 1.65 | |
| 4925.00† | 16.409 | 77.887 | 4677.02 | 1272.85 | 509.53 | 1166.69 | 1.65 | |
| 5025.00† | 14.759 | 77.887 | 4773.34 | 1299.28 | 515.17 | 1192.96 | 1.65 | |
| 5125.00† | 13.109 | 77.887 | 4870.39 | 1322.97 | 520.22 | 1216.51 | 1.65 | |
| 5225.00† | 11.459 | 77.887 | 4968.10 | 1343.90 | 524.69 | 1237.31 | 1.65 | |
| 5325.00† | 9.809 | 77.887 | 5066.38 | 1362.06 | 528.56 | 1255.35 | 1.65 | |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP REVISED BHL**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 PWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (79 stations) † = interpolated/extrapolated station**

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | DLS [°/100ft] | Comments |
|---|---|---|---|---|---|---|---|---|
| 5425.00† | 8.159 | 77.887 | 5165.15 | 1377.42 | 531.83 | 1270.62 | 1.65 | |
| 5525.00† | 6.509 | 77.887 | 5264.32 | 1389.98 | 534.51 | 1283.10 | 1.65 | |
| 5625.00† | 4.859 | 77.887 | 5363.83 | 1399.72 | 536.59 | 1292.78 | 1.65 | |
| 5725.00† | 3.209 | 77.887 | 5463.58 | 1406.64 | 538.07 | 1299.66 | 1.65 | |
| 5825.00† | 1.559 | 77.887 | 5563.49 | 1410.73 | 538.94 | 1303.73 | 1.65 | |
| 5919.52 | 0.000 | 77.887 | 5657.99[1] | 1412.00 | 539.21 | 1304.99 | 1.65 | Drop (S) |
| 5925.00† | 0.000 | 77.887 | 5663.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 5963.52† | 0.000 | 77.887 | 5702.00 | 1412.00 | 539.21 | 1304.99 | 0.00 | TOP TWIN CREEK |
| 6025.00† | 0.000 | 77.887 | 5763.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6125.00† | 0.000 | 77.887 | 5863.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6225.00† | 0.000 | 77.887 | 5963.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6293.52† | 0.000 | 77.887 | 6032.00 | 1412.00 | 539.21 | 1304.99 | 0.00 | TOP NAVAJO |
| 6325.00† | 0.000 | 77.887 | 6063.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6425.00† | 0.000 | 77.887 | 6163.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6525.00† | 0.000 | 77.887 | 6263.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6625.00† | 0.000 | 77.887 | 6363.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6725.00† | 0.000 | 77.887 | 6463.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6825.00† | 0.000 | 77.887 | 6563.48 | 1412.00 | 539.21 | 1304.99 | 0.00 | |
| 6861.52 | 0.000 | 77.887 | 6600.00 | 1412.00 | 539.21 | 1304.99 | 0.00 | End of Tangent |

**HOLE & CASING SECTIONS**

**Ref Wellbore: Wolverine Federal 17-13 PWB Ref Wellpath: Wolverine Federal 17-13 PWP REVISED BHL**

| String/Diameter | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
|---|---|---|---|---|---|---|---|---|---|
| 17.5in Open Hole | 0.00 | 1825.00 | 1825.00 | 0.00 | 1806.34 | 0.00 | 0.00 | 104.51 | 107.26 |
| 13.375in Casing Surface | 26.00 | 1825.00 | 1799.00 | 26.00 | 1806.34 | 0.00 | 0.00 | 104.51 | 107.26 |
| 8.75in Open Hole | 1825.00 | 6861.65 | 5036.65 | 1806.34 | NA | 104.51 | 107.26 | NA | NA |
| 7in Casing Production | 0.00 | 6861.52 | 6861.52 | 0.00 | 6600.00 | 0.00 | 0.00 | 539.21 | 1304.99 |

# Planned Wellpath Report

**Wolverine Federal 17-13 PWP REVISED BHL**



BAKER HUGHES INTEQ

## REFERENCE WELLPATH IDENTIFICATION

| | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 PWB** |
| Facility | **SEC.17-T23S-R1W** | | |

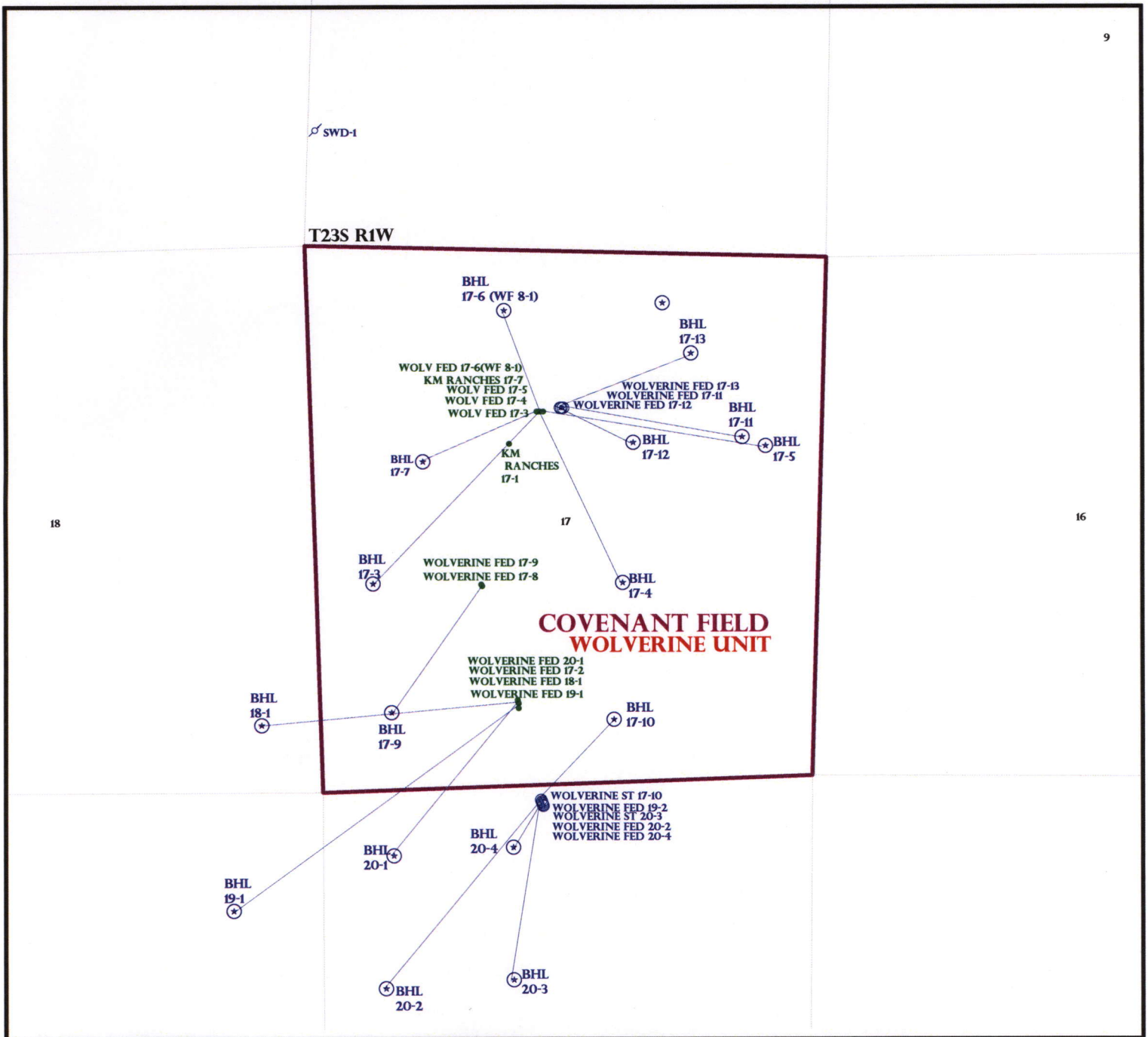
## TARGETS

| Name | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|---|
| **1) Wolverine Federal 17-13 *REVISED* Top Navajo (1064'FNL & 1373'FEL)** | | 5702.00 | 539.21 | 1304.99 | 1518232.29 | 6734501.16 | 38°48'25.292"N | 111°55'43.421"W | point |
| **Wolverine Federal 17-13 Top Navajo (560'FNL & 1673'FEL)** | | 6162.00 | 1050.00 | 1017.00 | 1517946.76 | 6735013.37 | 38°48'30.341"N | 111°55'47.059"W | point |

## SURVEY PROGRAM

**Ref Wellbore: Wolverine Federal 17-13 PWB  Ref Wellpath: Wolverine Federal 17-13 PWP REVISED BHL**

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---|---|---|---|---|
| 26.00 | 1825.00 | MTC (Collar, post-2000) (Standard) | | Wolverine Federal 17-13 AWB |
| 1825.00 | 6861.52 | NaviTrak (Standard) | | Wolverine Federal 17-13 PWB |




OPERATOR: WOLVERINE G&O (N1655)

SEC: 17 T.23S R. 1W

FIELD: COVENANT (492)

COUNTY: SEVIER

SPACING: R649-3-11 / DIRECTIONAL DRILLING

**Field Status**
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

**Unit Status**
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Wells Status**
- 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
- DRILLING

UTAH DNR OIL, GAS & MINING

N W E S

PREPARED BY: DIANA MASON

DATE: 18-JUNE-2008

# NOTICE OF LATE REPORTING
## DRILLING & COMPLETION INFORMATION

Utah Oil and Gas Conservation General Rule R649-3-6 states that,

➤ Operators shall submit monthly status reports for each drilling well (including wells where drilling operations have been suspended).

Utah Oil and Gas Conservation General Rule R649-3-21 states that,

➤ A well is considered completed when the well has been adequately worked to be capable of producing oil or gas or when well testing as required by the division is concluded.

➤ Within 30 days after the completion or plugging of a well, the following shall be filed:

- Form 8, Well Completion or Recompletion Report and Log
- A copy of electric and radioactivity logs, if run
- A copy of drillstem test reports,
- A copy of formation water analyses, porosity, permeability or fluid saturation determinations
- A copy of core analyses, and lithologic logs or sample descriptions if compiled
- A copy of directional, deviation, and/or measurement-while-drilling survey for each horizontal well

Failure to submit reports in a timely manner will result in the issuance of a Notice of Violation by the Division of Oil, Gas and Mining, and may result in the Division pursuing enforcement action as outlined in Rule R649-10, Administrative Procedures, and Section 40-6-11 of the Utah Code.

---

As of the mailing of this notice, the division has not received the required reports for

Operator: WOLVERNE GAS & OIL CO  Today's Date: 06/27/2008

| Well: | | | | API Number: | Drilling Commenced: |
|---|---|---|---|---|---|
| WOLVERINE FED 17-12 | | | | 4304130051 | 02/07/2008 |
| WOLVERINE FED 17-13 | 23S | 1W | 17 | 4304130052 | 02/07/2008 |

☐ List Attached

To avoid compliance action, required reports should be mailed within 7 business days to:

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

If you have questions or concerns regarding this matter, please contact Rachel Medina at (801) 538-5260.

cc: Well File
Compliance File

CONFIDENTIAL

FORM 9

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

# 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: UTU-73528

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Wolverine Federal 17-13

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

9. API NUMBER: 4304130052

3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616 PHONE NUMBER: (616) 458-1150

10. FIELD AND POOL, OR WILDCAT: Covenant Field, Navajo

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1636' FNL, 2452' FWL COUNTY: Sevier

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W S 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: | ☐ 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: Status Report |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

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

CONTINUED CONFIDENTIAL STATUS REQUESTED

The Wolverine Federal 17-13 is one of three wells being drilled from a single drilling pad. After surface casing was run and cemented, drilling operations on this well were suspended on 4/18/08. Drilling operations resumed on 7/6/08 and the current depth as of 7/10/08 is 4496'.

NAME (PLEASE PRINT) Ellis M. Peterson TITLE Sr. Production Engineer

SIGNATURE DATE 7/11/2008

(This space for State use only)

RECEIVED
JUL 14 2008
DIV. OF OIL, GAS & MINING

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

**EXACT Engineering, Inc.** www.exactengineering.com
20 East Fifth St., Suite 310, Tulsa, OK 74103 (918) 599-9400 • (918) 599-9401 (fax)

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

July 15, 2008

CONFIDENTIAL

Mr. Al McKee
Bureau of Land Management
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

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

Re: Drilling Update #1 - **Wolverine Federal 17-13 (Covenant Field)**
Sec 17 T23S R01W
Sevier Co, UT
API# 43-041-30052

Gentlemen,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please note that 20 inch conductor casing was set and cemented at 100' below ground level on Feb 7, 2008. Drilling of the 17-1/2" hole began on April 13, 2008 and total depth of 1953 feet, for this hole section, was reached on April 17. 13-3/8" casing was run to total depth and cemented to surface in one stage. Operations were suspended on April 18 while offset wells on this pad were drilled. Operations resumed on July 5, 2008 and the present depth is 6358 feet. Total depth of 6850 feet is expected. The daily drilling reports for this time period are attached.

We respectfully request that the enclosed information remain confidential.

Sincerely,

Steven R. Hash

Steven R. Hash, P.E.

RECEIVED
JUL 16 2008
DIV. OF OIL, GAS & MINING

Enclosures

copy without enclosures via email to:
Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph
EXACT Engineering, Inc. well file

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/14/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 16 | Trip out | 6,358 | 164 | 17.50 | 9.37 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/08-730a | 6254 | 10.4 | 41 | 18 | 7 | 5/8 | 5.0 | 2 | 3.00 | TR | 10.0 | 200,000 | 2,900 | 330,000 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 4 | 8.750 | Reed | R30AMPHD | 537 | WD4637 | 1-16X2-18 | 4496 | 6194 | 1698 | 52.00 | 32.65 | Y | 120-0 | 18-35 | 3.0 | 5 | WT | A | 2-E | 1/8" | | Torque |
| 5 | 5 | 8.750 | Reed | TD62APDH | 627 | M49689 | 3X22 | 6194 | 6358 | 164 | 17.50 | 9.37 | N | 50-0 | 25-30 | 2.0 | 4 | WT | A | 2/E | In | | P Rate |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 100 | 354 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | | 0 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 100 | 354 | 174 | 174 | 1000 | 0 |

## SLOW PUMP PSI

| DEPTH | 6322 | | |
|---|---|---|---|
| SPM | 50 | | |
| 1 | 170 | | |
| 2 | 170 | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | 6 | LENGTH | O.D. | I.D. |
|---|---|---|---|---|
| Bit | | 1.00 | 8.500 | |
| Bit sub | | 3.30 | 6.500 | 2.38 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 5"-Sprial HWDP=24jts | | 732.41 | 5" | |
| Jars | | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | | 181.39 | 5" | |
| | TOTAL | 950.70 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 157,000 | 40 | 222,000 | 132,000 | 0 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/14 |
| Last BOP Drill | 7/12 |
| Last Operate Pipe Rams | 7/13 |
| Last Operate Blind Rams | 7/14 |
| Last Operate Annular | 7/12 |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 2:00 | 2.00 | Trip into 6074' |
| 2:00 | 3:30 | 1.50 | Wash & ream from 6074' to 6194'-no fill |
| 3:30 | 21:00 | 17.50 | Drill from 6194' to 6358' |
| 21:00 | 21:30 | 0.50 | Circ. Hole clean-get bottoms up sample |
| 21:30 | 0:00 | 2.50 | Trip out |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | Well took 53 bbls over last 24 hours. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 6358' @ 0600 hour wash to bottom @ 6322' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/13/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 15 | Trip in | 6,194 | 154 | 6.50 | 23.69 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/08-730a | 6180 | 10.4 | 41 | 16 | 10 | 6/8 | 8.0 | 2 | 3.00 | TR | 9.0 | 200,000 | 2,900 | 330,000 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 4 | 8.750 | Reed | R30AMPHI | 537 | WD4637 | 1-16X2-18 | 4496 | 6194 | 1698 | 52.00 | 32.65 | Y | 120-0 | 18-35 | 3.0 | 5 | WT | A | 2-E | 1/8" | | Torque |
| 5 | 5 | 8.750 | Reed | TD62APDH | 627 | M49689 | 3X22 | 6194 | | 0 | 0.00 | #DIV/0! | N | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2820 | 190 |

## SLOW PUMP PSI

| DEPTH | 5096 |
|---|---|
| SPM | 50 |
| 1 | 455 |
| 2 | 470 |
| 3 | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | 6 | LENGTH | O.D. | I.D. |
|---|---|---|---|---|
| Bit | | 1.00 | 8.500 | |
| Bit sub | | 3.30 | 6.500 | 2.38 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 5"-Sprial HWDP=24jts | | 732.41 | 5" | |
| Jars | | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | | 181.39 | 5" | |
| | TOTAL | 950.70 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/13 |
| Last BOP Drill | 7/12 |
| Last Operate Pipe Rams | 7/13 |
| Last Operate Blind Rams | 7/12 |
| Last Operate Annular | 7/12 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 157,000 | 40 | 222,000 | 132,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 6:30 | 6.50 | Drill & survey from 6040' to 6180' -- |
| 6:30 | 8:00 | 1.50 | Mix & pump 25#/bbl Lcm--fiber plug & cedar fiber regain circ. 85-90%--reduce pump to 175 gal/min. |
| 8:00 | 10:30 | 2.50 | Drill from 6180' to 6194'--2' @ a time work string lost 50% returns--regain circ. 90-95%--real sticky @ 6194' |
| 10:30 | 13:30 | 3.00 | Circ.-build volume--mixing Lcm 8-9#/bbl. threw out mud system have 100% returns--real sticky & high torque @ 6 |
| 13:30 | 17:00 | 3.50 | Trip out to check bit & lay down TruTrak |
| 17:00 | 18:00 | 1.00 | Lay down TruTrak--MWD--Fiter sub--Float sub |
| 18:00 | 18:30 | 0.50 | Work blind rams--service rig--top drive |
| 18:30 | 20:00 | 1.50 | Make up bit-bit sub-trip into 1950' --fill pipe--pressured up--pluged float or bit |
| 20:00 | 22:30 | 2.50 | Trip out--float pluged with Lcm--unplug same |
| 22:30 | 0:00 | 1.50 | Trip in |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | At 6180' drilled into fracture stalled TruTrak lost 85% returns mix 25#/bbl Lcm sweeps to regain circ. Took 113 bb |
| 0:00 | | | Total of 176 bbls over last 24 hours |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 6216' Drilling @ 0600 hour. |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/12/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 14 | Drilling | 6,040 | 814 | 23.00 | 35.39 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/08-730a | 5520 | 10.4 | 40 | 10 | 10 | 5/7 | 38.0 | 3 | 3.00 | TR | 10.3 | 200,000 | 2,900 | 330,000 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 5.0 | 3 | VT-B | INT | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3x15 | 1978 | 4496 | 2518 | 68.50 | 36.76 | Y | 120-0 | 25-35 | 4.0 | 5 | WT | a | 2 | In | | P.Rate |
| 4 | 4 | 8.750 | Reed | R30AMPHD | 537 | WD4637 | 1-16x2-18 | 4496 | | 1544 | 45.50 | 33.93 | Y | 120-0 | 25-35 | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2820 | 190 |

## SLOW PUMP PSI

| DEPTH | 5096 | | |
|---|---|---|---|
| SPM | 50 | | |
| 1 | 455 | | |
| 2 | 470 | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | 5 | LENGTH | O.D. | I.D. |
|---|---|---|---|---|
| Bit | | 1.00 | 8.500 | |
| TruTrak | | 31.03 | 6.875 | |
| MWD/DAS#1 | | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | | 31.37 | 6.375 | 2.50 |
| | | | | |
| 5"-Sprial HWDP=24jts | | 732.41 | 5" | |
| Jars | | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | | 181.39 | 5" | |
| | TOTAL | 1,050.10 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/12 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/10 |
| Last Operate Annular | 7/12 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 157,000 | 40 | 222,000 | 132,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 1:00 | 1.00 | Drill & survey from 5226' to 5250' |
| 1:00 | 1:30 | 0.50 | Bop drill-work annular |
| 1:30 | 5:00 | 3.50 | Drill & survey from 5250' to 5338' |
| 5:00 | 5:30 | 0.50 | Repair #1 pump |
| 5:30 | 0:00 | 18.50 | Drill & survey from 5338' to 6040' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 6180' Mixing fiber seal pill have lost 75-80% returns--just happened @ 0700 hour |
| 0:00 | | | Will pump 25#/bbl @ reduced rate untill we regain circ. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/12/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 13 | Drilling | 5,226 | 730 | 22.50 | 32.44 | Navajo | 6,856 |

**MUD DATA**

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/08-730a | 4721 | 10.4 | 40 | 13 | 10 | 5/7 | 26.4 | 2 | 3.00 | TR | 10.3 | 200,000 | 2,900 | 330,000 | 0% |

**BIT DATA**

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 5.0 | 3 | VT-B | INT | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3x15 | 1978 | 4496 | 2518 | 68.50 | 36.76 | Y | 120-0 | 25-35 | 4.0 | 5 | WT | a | 2 | In | | P.Rate |
| 4 | 4 | 8.750 | Reed | R30AMPHD | 537 | WD4637 | 1-16x2-18 | 4496 | | 730 | 22.50 | 32.44 | Y | 120-0 | 25-35 | | | | | | | | |

**HYDRAULICS**

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2800 | 165 |

**SLOW PUMP PSI**

| DEPTH | 5096 |
|---|---|
| SPM | 50 |
| 1 | 455 |
| 2 | 470 |
| 3 | |

**DRILL STRING**

| BOTTOM HOLE ASSEMBLY# 5 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| Bit | 1.00 | 8.500 | |
| TruTrak | 31.03 | 6.875 | |
| MWD/DAS#1 | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | 31.37 | 6.375 | 2.50 |
| | | | |
| 5"-Sprial HWDP=24jts | 732.41 | 5" | |
| Jars | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | 181.39 | 5" | |
| TOTAL | 1,050.10 | | |

**TUBULARS INVENTORY**

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

**GENERAL INFO**

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/11 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/10 |
| Last Operate Annular | 7/6 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 148,000 | 40 | 190,000 | 130,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

**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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 0:30 | 0.50 | Wash to bottom no fill = 4496' |
| 0:30 | 6:00 | 5.50 | Drill & survey from 4496' to 4686' |
| 6:00 | 6:30 | 0.50 | Service rig-top drive-change liner & swab # 1 pump |
| 6:30 | 12:30 | 6.00 | Drill & survey from 4686' to 4874' |
| 12:30 | 13:00 | 0.50 | Change liner & swab # 2 pump |
| 13:00 | 0:00 | 11.00 | Drill & survey from 4874' to 5226' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 5390' Drilling ahead @ 0700 hour |
| 0:00 | | | |
| 0:00 | | | This am have had to back off weight on bit to help VertiTrak get closer to line |
| 0:00 | | | Formation trying to push it hard to the North East and build angle at the same time. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/10/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 12 | Wash to bottom | 4,496 | 556 | 18.00 | 30.89 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/08-730a | 4165 | 10.4 | 42 | 15 | 12 | 7/11 | 16.0 | 1 | 3.00 | TR | 10.4 | 200,000 | 2,890 | 330,000 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 . or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 5.0 | 3 | VT-B | NT | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3x15 | 1978 | 4496 | 2518 | 68.50 | 36.76 | Y | 120-0 | 25-35 | 4.0 | 5 | WT | a | 2 | In | | P.Rate |
| 4 | 4 | 8.750 | Reed | R30AMPHD | 537 | WD4637 | 1-16x2-18 | 4496 | | 0 | 0.00 | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2725 | 180 |

## SLOW PUMP PSI

| DEPTH | 3786' | 3786' |
|---|---|---|
| SPM | 50 | 60 |
| 1 | 400 | |
| 2 | | 500 |
| 3 | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 5 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| Bit | 1.00 | 8.500 | |
| TruTrak | 31.03 | 6.875 | |
| MWD/DAS#1 | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | 31.37 | 6.375 | 2.50 |
| | | | |
| 5"-Sprial HWDP=24jts | 732.41 | 5" | |
| Jars | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | 181.39 | 5" | |
| TOTAL | 1,050.10 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/10 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/7 |
| Last Operate Annular | 7/6 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 140,000 | 40 | 170,000 | 130,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 14:00 | 14.00 | Drill & survey from 3940' to 4405' |
| 14:00 | 14:30 | 0.50 | Service rig-top drive--change middle liner & swab #2 pump |
| 14:30 | 18:30 | 4.00 | Drill & survey from 4405' to 4496' |
| 18:30 | 19:30 | 1.00 | Circ. 60 bbl 10.4 wt. 93 vis sweep around |
| 19:30 | 21:30 | 2.00 | Trip out |
| 21:30 | 22:00 | 0.50 | Work blind rams-change bits |
| 22:00 | 23:30 | 1.50 | Trip into 4406' |
| 23:30 | 0:00 | 0.50 | Wash to bottom |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 4748" Drilling ahead @ 0800 hour. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/09/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 11 | Drilling | 3,940 | 800 | 23.00 | 34.78 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| /9/08-730an | 3473 | 10.4 | 40 | 13 | 14 | 7/11 | 16.0 | 1 | 3.00 | TR | 10.0 | 200,000 | 2,890 | 330,000 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 5.0 | 3 | VT-B | NT | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3x15 | 1978 | | 1962 | 50.50 | 38.85 | Y | 120-0 | 25-35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2650 | 195 |

## SLOW PUMP PSI

| DEPTH | 3786' | 3786' |
|---|---|---|
| SPM | 50 | 60 |
| 1 | 400 | |
| 2 | | 500 |
| 3 | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 4 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| Bit | 1.00 | 8.500 | |
| TruTrak | 31.03 | 6.875 | |
| MWD/DAS#1 | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | 31.37 | 6.375 | 2.50 |
| | | | |
| 5"-Sprial HWDP=24jts | 732.41 | 5" | |
| Jars | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | 181.39 | 5" | |
| TOTAL | 1,050.10 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/9 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/7 |
| Last Operate Annular | 7/6 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 135,000 | 40 | 158,000 | 120,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 7:00 | 7.00 | Drill & survey from 3140' to 3379' |
| 7:00 | 7:30 | 0.50 | Service rig-top drive--change swab bow wheel side #2 pump |
| 7:30 | 9:00 | 1.50 | Drill & survey from 3379' to 3474' |
| 9:00 | 9:30 | 0.50 | Down link VertiTrak |
| 9:30 | 0:00 | 14.50 | Drill & survey from 3474' to 3940' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 4100' Drilling ahead @ 0530 hour |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/08/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 10 | Drilling | 3,140 | 1,000 | 22.50 | 44.44 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| /8/08-730an | 2423 | 9.4 | 40 | 12 | 17 | 8/11 | NC | 1 | 1.00 | TR | 10.1 | 115,000 | 950 | 189,750 | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 3.0 | 3 | WT | A | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3x15 | 1978 | | 1162 | 27.50 | 42.25 | Y | 120-0 | 25-35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 80 | 283 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 160 | 566 | 262 | 262 | 2425 | 225 |

## SLOW PUMP PSI

| DEPTH | 3010' | 3010' |
|---|---|---|
| SPM | 50 | 60 |
| 1 | 300 | |
| 2 | | 480 |
| 3 | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | 4 | LENGTH | O.D. | I.D. |
|---|---|---|---|---|
| Bit | | 1.00 | 8.500 | |
| TruTrak | | 31.03 | 6.875 | |
| MWD/DAS#1 | | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | | 31.37 | 6.375 | 2.50 |
| | | | | |
| 5"-Sprial HWDP=24jts | | 732.41 | 5" | |
| Jars | | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | | 181.39 | 5" | |
| TOTAL | | 1,050.10 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/8 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/7 |
| Last Operate Annular | 7/6 |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 117,000 | 40 | 138,000 | 100,000 | 0 | 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 6:00 | 6.00 | Drill & survey from 2140' to 2342' |
| 6:00 | 6:30 | 0.50 | Service rig-top drive |
| 6:30 | 19:00 | 12.50 | Drill & survey from 2342' to 3010' |
| 19:00 | 20:00 | 1.00 | Work on # 1 pump-change middel liner & swab |
| 20:00 | 0:00 | 4.00 | Drill & survey from 3010' to 3140' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 3315' Drilling @ 0530 hour |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/07/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 9 | Drilling | 2,140 | 180 | 8.00 | 22.50 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| /8/08-730an | 1953 | 9.2 | 46 | 11 | 21 | 9/12 | NC | 1 | 2.00 | TR | 10.0 | 83,000 | 880 | | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | 1978 | 25 | 3.00 | 8.33 | N | 50-0 | 25 | 3.0 | 3 | WT | A | 2 | In | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3X11 | 1978 | | 162 | 5.00 | 32.40 | Y | 120-0 | 25-30 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 105 | 372 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 105 | 372 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 210 | 743 | | | 1375 | 0 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 4 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| Bit | 1.00 | 8.500 | |
| TruTrak | 31.03 | 6.875 | |
| MWD/DAS#1 | 31.37 | 6.375 | 2.50 |
| Float sub-filter sub | 8.93 | 6 3/8-6 3/4 | 15/16=2 1 |
| NMDC | 31.37 | 6.375 | 2.50 |
| | | | |
| 5"-Sprial HWDP=24jts | 732.41 | 5" | |
| Jars | 32.60 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | 181.39 | 5" | |
| TOTAL | 1,050.10 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 100 | 40 | 130 | 85 | 0 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/7 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/7 |
| Last Operate Annular | 7/6 |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 3:00 | 3.00 | Drill from 1960' to 1971'--test formation equv. To 10.6 mud--drill from 1971' to 1975' |
| 3:00 | 3:30 | 0.50 | Circ. Hole clean |
| 3:30 | 5:00 | 1.50 | Trip out |
| 5:00 | 8:00 | 3.00 | Pickup directional tools test same |
| 8:00 | 10:30 | 2.50 | Trip in |
| 10:30 | 12:30 | 2.00 | Attemt to link up TruTrak no go |
| 12:30 | 14:30 | 2.00 | Trip out |
| 14:30 | 17:00 | 2.50 | Retest TruTrak no go--change out same--change out jets--tested good |
| 17:00 | 19:00 | 2.00 | Trip in |
| 19:00 | 0:00 | 5.00 | Drill & survey from 1975' to 2140' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 2335' Drilling @ 0600 hour |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/06/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 8 | Drilling | 1,960 | 7 | 1.00 | 7.00 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| /6/08-730ar | 1953 | 9.2 | 51 | 15 | 34 | 14/19 | 7.8 | 1 | 2.00 | | 10.0 | 83,000 | 880 | | 0% |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| 2 | 2 | 12.250 | Reed | M4249PHD | 537 | RerunLD646 | 3X24 | 1953 | | 7 | 1.00 | 7.00 | N | 50-0 | 25 | | | | | | | | Bha |
| 3 | 3 | 8.750 | Reed | R30AMPHD | 537 | WD4636 | 3X11 | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 105 | 372 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.54 | 105 | 372 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 210 | 743 | | | 1375 | 0 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | 3 | LENGTH | O.D. | I.D. |
|---|---|---|---|---|
| Bit | | 1.50 | 12.250 | |
| Bit sub | | 2.80 | 8" | 3" |
| X-Over sub | | 3.10 | 6.5"x8" | 2 3/8" |
| | | | | |
| | | | | |
| | | | | |
| 5"-Sprial HWDP=24jts | | 732.20 | 5" | |
| Jars | | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=6jts | | 181.39 | 5" | |
| | TOTAL | 952.93 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 107 | 40 | 115 | 100 | 885 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@195 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | 7/6 |
| Next BOP Test | 8/5 |
| Last Safety Meeting | 7/6 |
| Last BOP Drill | 7/6 |
| Last Operate Pipe Rams | 7/6 |
| Last Operate Blind Rams | 7/6 |
| Last Operate Annular | 7/6 |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 12:00 | 12.00 | Rig up-nippel up--extend koomey lines |
| 12:00 | 17:30 | 5.50 | Test-blind rams-both sets of pipe rams-choke manafold-choke line-super choke-hcr valve-manual choke line valv |
| 17:30 | | | Both kill line valves-check valve-dart valve-floor saftey valve-upper & lower valves on top drive |
| 0:00 | | | Held 250 psi for 5 min. each & 5000 psi 10 min each all held good |
| 0:00 | | | Tested Annular 5 min.@ 250 psi. & 10 min. @ 2500 psi held good |
| 0:00 | 17:30 | | Tested 13 3/8" casing 1000 psi. for 30 min held good |
| 17:30 | 20:30 | 3.00 | Make up Bha #3 & trip in tagged cement @ 1898' |
| 20:30 | 23:00 | 2.50 | Drill cement- float collar-cement-float collar=1898' to1953' |
| 23:00 | 0:00 | 1.00 | Drill from 1953' to 1960' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 1979' Drilling @ 0300 hour-will circ. Till 0330 hour then trip out pickup dir, tools-trip in-drill 8 3/4" hole. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

*Engineering and Supervision*

# EXACT Engineering, Inc.

*(918) 599-9400 office*

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

## DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 07/05/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 7 | Skid rig | 1,953 | 0 | 0.00 | #DIV/0! | Navajo | 6,856 |

### MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/15/09:00 | 1953 | 9.3 | 41 | 4 | 31 | 14/29 | | | 7.00 | | 10.0 | 950 | 140 | | |

### BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

### HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 2150 | 200 |

### SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

### DRILL STRING

| BOTTOM HOLE ASSEMBLY# 2 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| 1-17 1/2" bit | | | |
| Bit sub | | | |
| | | | |
| | | | |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,197.88 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 107 | 40 | 115 | 100 | 1,200 |

### TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@20( | | | (7.0@6856) |

### GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | 7/5 |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

### 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 18:00 | 18.00 | Rig Suspended |
| 18:00 | 0:00 | 6.00 | Skid rig--center over hole |
| 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 | | | |
| 0:00 | | | 1953' Nippel up Bop @ 0800 hour |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/18/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | Rodger Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 6 | Rig suspended back to WF 17-11@ 1300 | 1,953 | 0 | 0.00 | #DIV/0! | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/15/09:00 | 1953 | 9.3 | 41 | 4 | 31 | 14/29 | | | 7.00 | | 10.0 | 950 | 140 | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 2150 | 200 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 2 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| 1-17 1/2" bit | | | |
| Bit sub | | | |
| | | | |
| | | | |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,197.88 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 107 | 40 | 115 | 100 | 1,200 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | 4/18 |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 3:00 | 3.00 | Cement 13 3/8" casing-circ 80 bbls cement to pit-cement did not fall stayed at ground level |
| 3:00 | 8:00 | 5.00 | Wait on cement-rig down flow line-prepair to skid rig |
| 8:00 | 10:00 | 2.00 | Cut off conductor- 13 3/8" casing ground level |
| 10:00 | 13:00 | 3.00 | Skid rig back to WF 17-11 |
| 13:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | Rig suspended @ 1300 hour back to WF 17-11 |
| 0:00 | | | Fuel on hand 6955 gallons @ 1300 hour 4/18/2008 |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 13.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/17/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | DL Naylor-R Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 5 | Circ. 13 3/8" casing | 1,953 | 51 | 4.50 | 11.33 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/15/09:00 | 1953 | 9.3 | 41 | 4 | 31 | 14/29 | | | 7.00 | | 10.0 | 950 | 140 | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | 1953 | 1829 | 97.00 | 18.86 | Y | 0.56 | 10/35 | 8.0 | 8 | VTB | A | 8 | In | | Torque |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 2150 | 200 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 2 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| 1-17 1/2" bit | | | |
| Bit sub | | | |
| | | | |
| | | | |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,197.88 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 107 | 40 | 115 | 100 | 1,200 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | | |
|---|---|---|
| Co Man | 435-979-2202 | |
| Mudlogger | 435-979-6005 | |
| Toolpusher | 435-979-0544 | |
| Last BOP Test | | |
| Next BOP Test | | |
| Last Safety Meeting | | 4/17 |
| Last BOP Drill | | |
| Last Operate Pipe Rams | | |
| Last Operate Blind Rams | | |
| Last Operate Annular | | |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 4:30 | 4.50 | Drill & survey 1902' to 1953' |
| 4:30 | 6:00 | 1.50 | Circ. High vis sweep |
| 6:00 | 8:30 | 2.50 | Trip out |
| 8:30 | 10:00 | 1.50 | Lay down directoinal tools |
| 10:00 | 11:30 | 1.50 | Make up bit sub trip in hole |
| 11:30 | 13:30 | 2.00 | Circ. High vis sweep-Clean hole |
| 13:30 | 15:00 | 1.50 | Trip out |
| 15:00 | 17:00 | 2.00 | Rig up to run casing |
| 17:00 | 22:00 | 5.00 | Run 45 jts.13-3/8" casing-landed @1953' |
| 22:00 | 0:00 | 2.00 | Circ. Casing had 2' fill-rig up to cement same |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 1953' WOC. Done cementing -good circ.-80 bbls cement to resereve pit.-cement did not fall @ 0430 hour. |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

*Engineering and Supervision*

# EXACT Engineering, Inc.

*(918) 599-9400 office*

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

## DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/16/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | DL Naylor-R Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 4 | Drilling | 1,902 | 382 | 23.50 | 16.26 | Navajo | 6,856 |

### MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/15/09:00 | 1212 | 9.0 | 38 | 8 | 28 | 11/26 | | | 4.75 | | 10.5 | 950 | 110 | | |

### BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | | 1775' | 92.50 | #VALUE! | Y | 0.56 | 10/35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

### HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 2150 | 200 |

### SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

### DRILL STRING

| BOTTOM HOLE ASSEMBLY# 1 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| M1XL MUD MOTOR@1.50 | 36.95 | 9.500 | |
| NON MAG PONY C | 9.80 | 8.125 | 3.00 |
| MWD&NON MAG DC. | 64.43 | 7.625 | 3.00 |
| Shocksub-x-over | 16.18 | 8.188 | 4.63 |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,325.24 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 105 | 40 | 115 | 100 | 1,200 |

### TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

### GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | 4/16 |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

### 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 14:00 | 14.00 | Drill & survey 1520' to 1749' |
| 14:00 | 14:30 | 0.50 | Sevice rig-top drive |
| 14:30 | 0:00 | 9.50 | Drill & survey 1749' to 1902' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 1953' TD Trip out @0700 hour |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/15/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | 4/13/08 | 43-041-30052 | DL Naylor-R Rebsom |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 3 | Drilling | 1,520 | 430 | 23.50 | 18.30 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/15/09:00 | 1212 | 9.0 | 38 | 8 | 28 | 11/26 | | | 4.75 | | 10.5 | 950 | 110 | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | | 1393 | 69.00 | 20.19 | Y | 0.56 | 10/35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 2150 | 200 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 1 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| M1XL MUD MOTOR@1.50 | 36.95 | 9.500 | |
| NON MAG PONY C | 9.80 | 8.125 | 3.00 |
| MWD&NON MAG DC. | 64.43 | 7.625 | 3.00 |
| Shocksub-x-over | 16.18 | 8.188 | 4.63 |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,325.24 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2IF | | YB/oth | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | 4/15 |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | 40 | 90 | 65 | 1,200 | 5,736 | 26 | 5762 | (13.375@20 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 21:00 | 21.00 | Drill & survey 1090' to 1452' |
| 21:00 | 21:30 | 0.50 | Sevice rig-top drive-work on # 2 pump |
| 21:30 | 0:00 | 2.50 | Drill & survey 1452' TO 1520' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | 1655' Drilling @ 0530 hour |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/14/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | | 43-041-30052 | DL Naylor |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 2 | Drilling | 1,090 | 271 | 24.00 | 11.29 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/14/09:00 | 950 | 9.0 | 41 | 8 | 31 | 12/21 | | | 4.75 | | 10.5 | 950 | 110 | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | | 963 | 45.50 | 21.16 | Y | 0.56 | 10/35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
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## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 1500 | 200 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 1 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| M1XL MUD MOTOR@1.50 | 36.95 | 9.500 | |
| NON MAG PONY C | 9.80 | 8.125 | 3.00 |
| MWD&NON MAG DC. | 64.43 | 7.625 | 3.00 |
| Shocksub-x-over | 16.18 | 8.188 | 4.63 |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,325.24 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 75 | 40 | 90 | 65 | 1,200 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 0:00 | 24.00 | Drill & survey 819 to 1090 |
| 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 | | | |
| 0:00 | | | This 7 am drilling @ 1205' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

*Engineering and Supervision*

# EXACT Engineering, Inc.

*(918) 599-9400 office*

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/13/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | | 43-041-30052 | DL Naylor |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 1 | Drilling | 819 | 692 | 21.50 | 32.19 | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/13/08:30 | 315 | 8.9 | 38 | 9 | 19 | 10/16 | | | 4.00 | | 9.4 | 950 | 120 | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17.500 | Russian | WLS515 | 517 | 3301007 | 1.8440 | 127 | | 692 | 21.50 | 32.19 | Y | 0.56 | 10/35 | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
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## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | 110 | 448 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | 110 | 326 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 220 | 773 | 74 | 83 | 1500 | 200 |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# 1 | LENGTH | O.D. | I.D. |
|---|---|---|---|
| M1XL MUD MOTOR@1.50D | 36.95 | 9.500 | |
| NON MAG PONY C | 9.80 | 8.125 | 3.00 |
| MWD&NON MAG DC. | 64.43 | 7.625 | 3.00 |
| Shocksub-x-over | 16.18 | 8.188 | 4.63 |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 3.29 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,325.24 | | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE |
|---|---|---|---|---|
| 63 | 35 | 65 | 60 | 1,200 |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 2:00 | 2.00 | PU BHA #1 |
| 2:00 | 16:30 | 14.50 | Drill & survey 127 to 593 |
| 16:30 | 17:00 | 0.50 | Rig service |
| 17:00 | 0:00 | 7.00 | Drill & survey 593 to 819 |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | This 7 am drilling @ 922' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 24.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator:** Wolverine Gas & Oil Co of Utah, LLC

# DAILY DRILLING REPORT

**24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 04/12/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | | 43-041-30052 | DL Naylor |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| | Rig up prepare to drill | 126 | 0 | 0.00 | #DIV/0! | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
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## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 4.07 | | 0 | | | | |
| 2 | Nat'l 10P130 | 5.5 | 10 | 2.96 | | 0 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 0 | 0 | | | | |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | LENGTH | O.D. | I.D. |
|---|---|---|---|
| M1XL MUD MOTOR@1.50 | 35.94 | 9.500 | |
| NON MAG PONY C | 9.80 | 8.125 | 3.00 |
| MWD&NON MAG DC. | 63.03 | 7.625 | 3.00 |
| Filter s.shocksub-x-over | 20.75 | 8.188 | 4.63 |
| 6 5/8" HWDP =6jts. | 187.81 | 6.625 | 3.19 |
| X-Over | 1.47 | 6.750 | 3.00 |
| 5"-Sprial HWDP=24jts | 732.20 | 5" | 2.75 |
| Jars | 31.94 | 6.500 | 3.00 |
| 5"-Sprial HWDP=8jts | 242.64 | 5" | |
| TOTAL | 1,325.58 | | |

## TUBULARS INVENTORY

| TYPE | SIZE | #/FT | GRADE | CONN | QUAN | COND | SOURCE |
|---|---|---|---|---|---|---|---|
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | 548 | WB | SST |
| DP | 5.000 | 19.50 | S-135 | 4-1/2XH | | YB/othr | WGO |
| DP | 5.000 | | | | | | |
| DC | 10.000 | | | | | | |
| DC | 8.000 | | | | | | |
| SHWDP | 6.625 | | | | | | |
| SHWDP | 5.000 | | | | | | |
| CSG | 13.375 | 68.00 | J55 | BTC | 52 | NEW | B&L |
| CSG | | | | | | | |
| CSG | | | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

| STRING WT. | BHA WT. | PU WT. | SO WT. | ROT. TORQUE | GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 5,736 | 26 | 5762 | (13.375@200 | | | (7.0@6856) |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 12:00 | 0:00 | 12.00 | Skid rig to WF 17-13, construct flowline weld conductor, finish RU after skid. |
| 0:00 | | | 11220 gal. fuel in rig tank @ start of WF 17-13 |
| 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 | | | This am drilling @ 315' |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| 0:00 | | | |
| Daily Total | | 12.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

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

**Operator: Wolverine Gas & Oil Co of Utah, LLC** **DAILY DRILLING REPORT** **24 hrs - midnight to midnight**

| DATE | WELL | CONTRACTOR | COUNTY, STATE | SPUD DATE | API# | SUPERVISOR |
|---|---|---|---|---|---|---|
| 02/07/08 | Wolverine Federal 17-13 | SST #68 | Sevier, UT | | 43-041-30052 | DL Naylor |

| DAYS F/ SPUD | PRESENT OPERATIONS @ 2400 Hour | TOTAL DEPTH | PROGRESS | DRILLING TIME | ROP | TD FORMATION | AUTH. DEPTH |
|---|---|---|---|---|---|---|---|
| 0 | Set conductor | | 0 | 0.00 | #DIV/0! | Navajo | 6,856 |

## MUD DATA

| DATE/TIME | DEPTH | WT | VIS | PV | YP | GELS | FILTRATE | CAKE/32 | SOLIDS | SAND | PH | CHLORIDES | CALCIUM | SALT | LCM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

## BIT DATA

| BIT RUN | BIT NO | SIZE | MFG. | TYPE | IADC CODE | SERIAL NO. | JETS 1/32 or TFA | IN | OUT | FOOTAGE | HOURS | ROP | MTR Y/N | RPM RT+MTR | WOB | DULL GRADING IR | OR | DC | LOC | B/S | G/16 | OC | REASON PLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |
| | | | | | | | | | | | | #DIV/0! | | | | | | | | | | | |

## HYDRAULICS

| PUMP NO. | MANUFACTURER | LINER | STROKE LENGTH | GAL / STK 95% | SPM | GPM | AV DP | AV DC | PUMP PRESS. | MOTOR DIFF PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Nat'l 10P130 | 6.5 | 10 | 3.3 | | 0 | | | | |
| 2 | Nat'l 10P130 | 6.0 | 10 | 3.3 | | 0 | | | | |
| 3 | | | | | | 0 | | | | |
| | | | | | 0 | 0 | | | | |

## SLOW PUMP PSI

| DEPTH | | | |
|---|---|---|---|
| SPM | | | |
| 1 | | | |
| 2 | | | |
| 3 | | | |

## DRILL STRING

| BOTTOM HOLE ASSEMBLY# | LENGTH | O.D. | I.D. |
|---|---|---|---|
| | | | |
| TOTAL | 0.00 | | |

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

## GEOLOGIC

CONFIDENTIAL REPORT

| GRD. ELEVATION | GL TO KB | KB ELEVATION | SURF CSG | INT CASING 1 | INT CASING 2 | PROD CSG |
|---|---|---|---|---|---|---|
| | 26 | | | | | |

## GENERAL INFO

| RIG INFO | |
|---|---|
| Co Man | 435-979-2202 |
| Mudlogger | 435-979-6005 |
| Toolpusher | 435-979-0544 |
| Last BOP Test | |
| Next BOP Test | |
| Last Safety Meeting | |
| Last BOP Drill | |
| Last Operate Pipe Rams | |
| Last Operate Blind Rams | |
| Last Operate Annular | |

## 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 | TO | HRS | LAST 24 HOURS: |
|---|---|---|---|
| 0:00 | 0:00 | | MIRU Martin's Rathole; dig 100 ft of 30" hole, dry; run 100' of 20" as conductor casing, cement with 10yds redi-mi |
| 0:00 | | | Reported 2/7/2008 spud to UDOGM; filed form 6 Entity Action |
| 0:00 | | | Location and lined reserve pit by Brown Bros as Covenant Field pad A3 |
| 0:00 | | | Off report pending rig move in |
| 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 | | | |
| 0:00 | | | |
| Daily Total | | 0.00 | |

**SEE COST DETAIL PAGE UNDER SEPARATE COVER FOR ESTIMATED DRY HOLE COSTS**

CONFIDENTIAL

FORM 9

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

# 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: UTU-73528

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER _____

8. WELL NAME and NUMBER: Wolverine Federal 17-13

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

9. API NUMBER: 4304130052

3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616 PHONE NUMBER: (616) 458-1150

10. FIELD AND POOL, OR WILDCAT: Covenant Field, Navajo

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1636' FNL, 2452' FWL COUNTY: Sevier

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W S 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: _____ | ☐ 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: Status Report |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

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

CONTINUED CONFIDENTIAL STATUS REQUESTED

The Wolverine Federal 17-13 is one of three drilled from a single drilling pad. Drilling operations were completed on 7/21/08 and completion operations are expected to be initiated in September 2008 after the Wolverine Federal 17-12 has been completed.

NAME (PLEASE PRINT) Ellis M. Peterson TITLE Sr. Production Engineer

SIGNATURE Ellis M. Peterson DATE 7/31/2008

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FORM 9

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

5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-73528

# SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

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.

7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER _____

8. WELL NAME and NUMBER: Wolverine Federal 17-13

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

9. API NUMBER: 4304130052

3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616 PHONE NUMBER: (616) 458-1150

10. FIELD AND POOL, OR WILDCAT: Covenant Field, Navajo

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1636' FNL, 2452' FWL COUNTY: Sevier

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W S 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: _____ | ☐ 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: Status Report |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

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

CONTINUED CONFIDENTIAL STATUS REQUESTED

The Wolverine Federal 17-13 is one of three drilled from a single drilling pad. Drilling operations were completed on 7/21/08 and completion operations are expected to be initiated in late September 2008 after the Wolverine Federal 17-12 has been completed.

NAME (PLEASE PRINT) Ellis M. Peterson TITLE Sr. Production Engineer

SIGNATURE Ellis M. Peterson DATE 8/29/2008

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**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: UTU-73528
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit
8. WELL NAME and NUMBER: Wolverine Federal 17-13
9. API NUMBER: 4304130052
10. FIELD AND POOL, OR WILDCAT: Covenant Field, Navajo

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

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 49503-2616 PHONE NUMBER: (616) 458-1150

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 1636' FNL, 2452' FWL COUNTY: Sevier
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W S 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: | ☐ 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: Status Report |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

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

CONTINUED CONFIDENTIAL STATUS REQUESTED

The Wolverine Federal 17-13 is one of three wells drilled from a single drilling pad. Drilling operations were completed on 7/21/08 and completion operations began on 9/7/2008. A CBL was run from 6720' to 1330' and the Navajo Formation was perforated at 6317' - 6328' and 6295' - 6306' with 6 SPF. The perforated interval is currently being production tested. Additional Navajo intervals will be completed when other ongoing work on the drilling pad is finished.

NAME (PLEASE PRINT) Ellis M. Peterson TITLE Sr. Production Engineer

SIGNATURE Ellis M. Peterson DATE 9/26/2008

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# WOLVERINE GAS AND OIL CORPORATION

*Energy Exploration in Partnership with the Environment*

December 12, 2008

Mr. Gil Hunt
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: Reporting Forms - Wolverine Gas and Oil Company of Utah, LLC
**Wolverine Federal 17-13** (BLM Completion Report)

Dear Mr. Hunt:

Wolverine Gas and Oil Company of Utah, LLC respectfully submits the enclosed copy of the BLM Completion Report for the Wolverine Federal 17-13 along with copies of materials required to be submitted with that Completion Report.

Also enclosed in a separate envelope are the mudlog and directional materials missing from our completion data for the Wolverine Federal 17-12, submitted on December 1, 2008. I'm sorry for any inconvenience this may have caused.

Please accept this letter as Wolverine's written request for confidential treatment of all information pertaining to these wells.

Sincerely,

Helene Bardolph
Engineering/Geophysics/Geology Tech
Wolverine Gas and Oil

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

Form 3160-4
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

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

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. **UTU-73528**

1a. Type of Well ☑ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion: ☑ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr, .
Other

6. If Indian, Allottee or Tribe Name **N.A.**

7. Unit or CA Agreement Name and No. **Wolverine Federal Unit**

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

8. Lease Name and Well No. **Wolverine Federal 17-13**

3. Address **55 Campau NW, Grand Rapids, MI 49503**

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

9. AFI Well No. **4304130052**

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

At surface **1636' FNL, 2452' FWL, Sec. 17, T23S, R1W**

At top prod. interval reported below **1037' FNL, 1358' FEL, Sec. 17, T23S, R1W**
1073 fnl 1371 fel

At total depth ~~**1040' FNL, 1359' FEL**~~, **Sec. 17, T23S, R1W** Per HSM review

10. Field and Pool, or Exploratory **Covenant Field, Navajo**

11. Sec., T., R., M., on Block and Survey or Area **17, T23S, R1W, SENW, SLB&M**

12. County or Parish **Sevier**

13. State **UT**

14. Date Spudded **02/07/2008**

15. Date T.D. Reached **07/15/2008**

16. Date Completed **11/22/2008** ☐ D & A ☑ Ready to Prod.

17. Elevations (DF, RKB, RT, GL)* **5762' KB, 5736' GL**

18. Total Depth: MD **6902'** TVD **6632'**

19. Plug Back T.D.: MD **6786'** TVD **6516'**

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
**DLL/MSFL/GR, SDL/DSN/GR, XRM/BCS, CBL/GR/CCL** BVP mud, VDL

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

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

| Hole Size | Size/Grade | Wt. (#/ft.) | Top (MD) | Bottom (MD) | Stage Cementer Depth | No. of Sks. & Type of Cement | Slurry Vol. (BBL) | Cement Top* | Amount Pulled |
|---|---|---|---|---|---|---|---|---|---|
| 30.0" | 20" | 0.25 wall | Surface | 126 | | redi-mix | 48 | Surface | |
| 17.5" | 13.375 J | 68.0 | Surface | 1953 | | 370 VariCem | 285 | Surf. (CIRC) | |
| " | " | " | | | | 470 Prem G | 100 | | |
| 8.75" | 7" HCL | 26.0 | Surface | 6900 | 6168 | 185 50:50 poz | 42 | | |
| " | " | " | | | | 300 VariCem | 189 | 1700 (CBL) | |
| " | " | " | | | | 500 Prem G | 117 | 6168 (CIRC) | |

24. Tubing Record

| Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) |
|---|---|---|---|---|---|---|---|---|
| 2 7/8 | 6195 | | | | | | | |

25. Producing Intervals

| Formation | Top | Bottom |
|---|---|---|
| A) Navajo | 6264 | 6328 |
| B) | | |
| C) | | |
| D) | | |

26. Perforation Record

| Perforated Interval | Size | No. Holes | Perf. Status |
|---|---|---|---|
| 6264-6277, 6282-6287, | 0.40" | 108 | Open - Producing |
| 6295-6306, 6317-6328 | 0.40" | 132 | Open - Producing |

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

| Depth Interval | Amount and Type of Material |
|---|---|
| | |

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28. Production - Interval A

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| 11/22/2008 | 12/06/2008 | 24 | → | 903 | Tr | 539 | 40 | | ESP |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas/Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | 903 | Tr | 539 | | Producing Oil Well |

28a. Production - Interval B

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | | |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas/Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

**(See instructions and spaces for additional data on page 2)*

COPY

28b. Production - Interval C

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

28c. Production - Interval D

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

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

**Vented**

30. Summary of Porous Zones (Include Aquifers):

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

31. Formation (Log) Markers

| Formation | Top | Bottom | Descriptions, Contents, etc. | Name | Top Meas. Depth |
|---|---|---|---|---|---|
| **Navajo 1** | **6190** | | **Oil and Water** | **Arapien**<br>**Twin Creek 1**<br>**Navajo 1** | **Surface**<br>**6035**<br>**6190** |

32. Additional remarks (include plugging procedure):

33. Indicate which itmes have been attached by placing a check in the appropriate boxes:

- [x] Electrical/Mechanical Logs (1 full set req'd.)
- [x] Geologic Report
- [ ] DST Report
- [x] Directional Survey
- [ ] Sundry Notice for plugging and cement verification
- [ ] Core Analysis
- [ ] Other:

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

Name *(please print)* **Ellis Peterson** Title **Sr. Production Engineer**

Signature Date **12/12/2008**

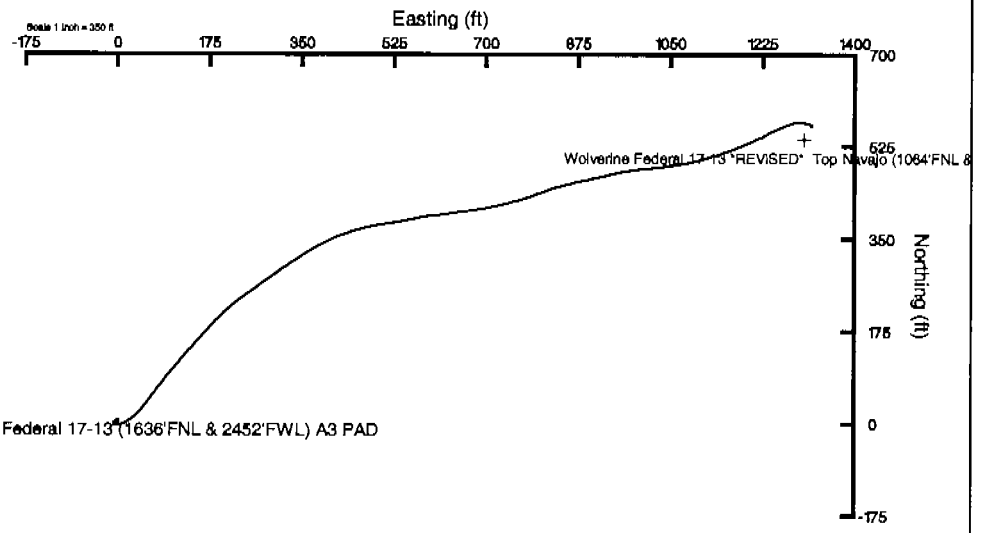
Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

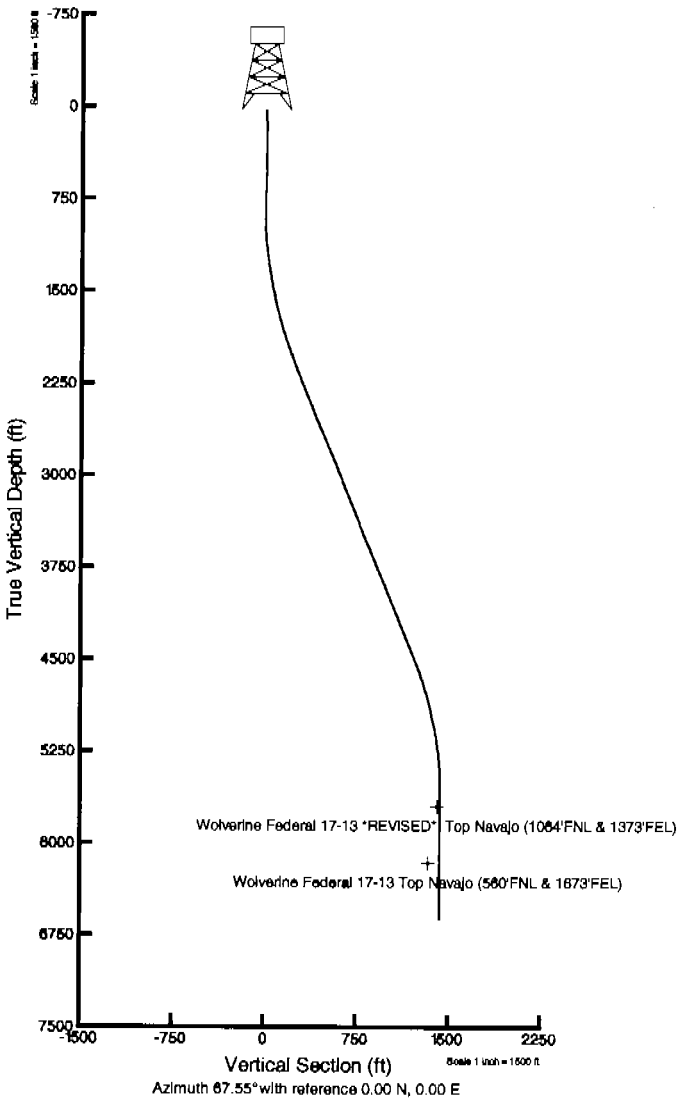
# WOLVERINE GAS & OIL COMPANY

| | | | |
|---|---|---|---|
| Location: | UTAH | Slot: | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Field: | SEVIER COUNTY | Well: | Wolverine Federal 17-13 |
| Facility: | SEC.17-T23S-R1W | Wellbore: | Wolverine Federal 17-13 AWB |

BAKER HUGHES
INTEQ

| | |
|---|---|
| Plot reference wellpath is Wolverine Federal 17-13 AWP | |
| True vertical depths are referenced to 6687.00 (RT) | Grid System: NAD83 / Lambert Utah State Plane, Central Zone (4602), US feet |
| Measured depths are referenced to 6687.00 (RT) | North Reference: True north |
| 6687.00 (RT) to Mean Sea Level: 6700 feet | Scale: True distance |
| Mean Sea Level to Mud line (Facility: SEC.17-T23S-R1W): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | Created by: rebenrow on 18/Jul/2008 |




Azimuth 67.55° with reference 0.00 N, 0.00 E

# Actual Wellpath Report

**Wolverine Federal 17-13 AWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 AWB** |
| Facility | **SEC.17-T23S-R1W** | | |

| REPORT SETUP INFORMATION | | | |
|---|---|---|---|
| Projection System | **NAD83 / Lambert Utah State Planes, Central Zone (4302), US feet** | Software System | **WellArchitect® 2.0** |
| North Reference | **True** | User | **Roberonw** |
| Scale | **1.00006** | Report Generated | **15/Jul/2008 at 23:16** |
| Convergence at slot | **0.28° West** | Database/Source file | **WellArchitectDB/Wolverine_Federal_17-13_AWB.xml** |

| WELLPATH LOCATION | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|---|---|---|---|---|---|---|
| | **North[ft]** | **East[ft]** | **Easting[USft]** | **Northing[USft]** | **Latitude** | **Longitude** |
| Slot Location | 1754.65 | 781.67 | 1516924.63 | 6733968.25 | **38°48'19.963"N** | **111°55'59.906"W** |
| Facility Reference Pt | | | 1516134.37 | 6732217.32 | **38°48'02.619"N** | **111°56'09.781"W** |
| Field Reference Pt | | | 1516134.37 | 6732217.32 | **38°48'02.619"N** | **111°56'09.781"W** |

| WELLPATH DATUM | | | |
|---|---|---|---|
| Calculation method | **Minimum curvature** | SST 68 (RT) to Facility Vertical Datum | **5762.00ft** |
| Horizontal Reference Pt | **Slot** | SST 68 (RT) to Mean Sea Level | **5762.00ft** |
| Vertical Reference Pt | **SST 68 (RT)** | Facility Vertical Datum to Mud Line (Facility) | **0.00ft** |
| MD Reference Pt | **SST 68 (RT)** | Section Origin | **N 0.00, E 0.00 ft** |
| Field Vertical Reference | **Mean Sea Level** | Section Azimuth | **67.55°** |

# Actual Wellpath Report

**Wolverine Federal 17-13 AWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 AWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (75 stations) † = interpolated/extrapolated station**

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | DLS [°/100ft] |
|---|---|---|---|---|---|---|---|
| 0.00† | 0.000 | 51.960 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26.00 | 0.000 | 51.960 | 26.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 160.00 | 0.450 | 51.960 | 160.00 | 0.51 | 0.32 | 0.41 | 0.34 |
| 251.00 | 1.250 | 61.800 | 250.99 | 1.84 | 1.01 | 1.57 | 0.89 |
| **346.00** | **0.890** | **12.230** | **345.97** | **3.29** | **2.22** | **2.64** | **1.01** |
| 438.00 | 1.070 | 301.210 | 437.96 | 3.19 | 3.37 | 2.06 | 1.25 |
| 529.00 | 1.700 | 251.640 | 528.94 | 1.34 | 3.38 | 0.05 | 1.42 |
| 622.00 | 2.410 | 241.450 | 621.88 | -1.98 | 2.01 | -2.98 | 0.86 |
| 713.00 | 2.050 | 218.600 | 712.81 | -5.31 | -0.17 | -5.67 | 1.05 |
| **805.00** | **1.520** | **187.310** | **804.77** | **-7.36** | **-2.67** | **-6.86** | **1.18** |
| 896.00 | 1.340 | 141.250 | 895.74 | -7.66 | -4.70 | -6.34 | 1.24 |
| 987.00 | 2.590 | 102.230 | 986.69 | -5.67 | -5.96 | -3.67 | 1.94 |
| 1080.00 | 4.480 | 79.380 | 1079.51 | -0.38 | -5.74 | 1.96 | 2.50 |
| 1170.00 | 7.210 | 68.130 | 1169.04 | 8.71 | -2.98 | 10.65 | 3.28 |
| **1260.00** | **8.620** | **56.180** | **1258.19** | **20.97** | **2.87** | **21.50** | **2.40** |
| 1357.00 | 9.850 | 47.740 | 1353.93 | 35.90 | 12.50 | 33.68 | 1.88 |
| 1450.00 | 12.130 | 39.650 | 1445.23 | 52.02 | 25.38 | 45.81 | 2.95 |
| 1544.00 | 13.890 | 35.780 | 1536.81 | 70.35 | 42.13 | 58.71 | 2.09 |
| 1637.00 | 15.390 | 36.140 | 1626.79 | 90.37 | 61.16 | 72.51 | 1.62 |
| **1732.00** | **16.880** | **38.950** | **1718.05** | **113.24** | **82.07** | **88.62** | **1.77** |
| 1825.00 | 19.700 | 40.360 | 1806.34 | 139.04 | 104.51 | 107.26 | 3.07 |
| 2049.00 | 22.620 | 42.460 | 2015.22 | 211.65 | 165.08 | 160.80 | 1.35 |
| 2142.00 | 23.040 | 42.820 | 2100.93 | 244.38 | 191.62 | 185.25 | 0.48 |
| 2235.00 | 22.510 | 48.440 | 2186.69 | 277.74 | 216.78 | 210.94 | 2.41 |
| **2328.00** | **22.600** | **54.070** | **2272.59** | **311.94** | **239.08** | **238.73** | **2.32** |
| 2423.00 | 22.510 | 54.070 | 2360.32 | 347.38 | 260.46 | 268.24 | 0.09 |
| 2517.00 | 22.600 | 54.420 | 2447.13 | 382.46 | 281.53 | 297.50 | 0.17 |
| 2609.00 | 22.510 | 55.470 | 2532.09 | 416.90 | 301.80 | 326.38 | 0.45 |
| 2704.00 | 23.830 | 57.230 | 2619.43 | 453.56 | 322.50 | 357.50 | 1.57 |
| **2799.00** | **23.130** | **63.210** | **2706.58** | **491.06** | **341.30** | **390.30** | **2.61** |
| 2894.00 | 22.600 | 69.530 | 2794.12 | 527.91 | 356.09 | 424.07 | 2.64 |
| 2986.00 | 22.420 | 74.110 | 2879.12 | 563.01 | 367.08 | 457.50 | 1.92 |
| 3078.00 | 22.600 | 79.030 | 2964.12 | 597.77 | 375.25 | 491.73 | 2.06 |
| 3168.00 | 22.340 | 81.490 | 3047.29 | 631.32 | 381.07 | 525.63 | 1.08 |
| **3261.00** | **22.420** | **77.620** | **3133.29** | **665.93** | **387.49** | **560.43** | **1.59** |
| 3355.00 | 22.420 | 82.540 | 3220.19 | 700.90 | 393.66 | 595.72 | 2.00 |
| 3447.00 | 22.510 | 82.540 | 3305.21 | 734.86 | 398.22 | 630.58 | 0.10 |
| 3541.00 | 22.160 | 83.250 | 3392.16 | 769.31 | 402.64 | 666.02 | 0.47 |
| 3633.00 | 22.770 | 78.320 | 3477.18 | 803.50 | 408.29 | 700.69 | 2.15 |
| **3724.00** | **22.700** | **76.210** | **3561.11** | **838.16** | **416.04** | **734.99** | **0.90** |
| 3817.00 | 22.600 | 72.350 | 3646.95 | 873.71 | 425.73 | 769.45 | 1.60 |
| 3909.00 | 22.600 | 69.180 | 3731.89 | 909.00 | 437.38 | 802.82 | 1.32 |
| 4004.00 | 22.420 | 73.750 | 3819.65 | 945.26 | 448.94 | 837.28 | 1.85 |
| 4097.00 | 22.340 | 77.620 | 3905.65 | 980.30 | 457.69 | 871.57 | 1.59 |
| **4191.00** | **22.770** | **77.620** | **3992.46** | **1015.80** | **465.42** | **906.79** | **0.46** |

# Actual Wellpath Report

**Wolverine Federal 17-13 AWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | WOLVERINE GAS & OIL COMPANY | Slot | Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD |
| Area | UTAH | Well | Wolverine Federal 17-13 |
| Field | SEVIER COUNTY | Wellbore | Wolverine Federal 17-13 AWB |
| Facility | SEC.17-T23S-R1W | | |

**WELLPATH DATA (75 stations) † = interpolated/extrapolated station**

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | DLS [°/100ft] |
|---|---|---|---|---|---|---|---|
| 4285.00 | 22.510 | 76.920 | 4079.22 | 1051.46 | 473.39 | 942.08 | 0.40 |
| 4380.00 | 22.770 | 82.190 | 4166.91 | 1087.19 | 480.01 | 978.01 | 2.15 |
| 4474.00 | 22.600 | 84.300 | 4253.64 | 1122.09 | 484.27 | 1014.01 | 0.88 |
| 4569.00 | 22.510 | 82.890 | 4341.37 | 1157.11 | 488.33 | 1050.21 | 0.58 |
| **4662.00** | **22.510** | **77.970** | **4427.30** | **1191.79** | **494.25** | **1085.29** | **2.02** |
| 4757.00 | 22.510 | 72.700 | 4515.07 | 1227.79 | 503.45 | 1120.45 | 2.12 |
| 4848.00 | 20.220 | 70.590 | 4599.81 | 1260.84 | 513.86 | 1151.91 | 2.65 |
| 4942.00 | 17.850 | 67.070 | 4688.67 | 1291.48 | 524.87 | 1180.51 | 2.80 |
| 5036.00 | 16.270 | 68.130 | 4778.53 | 1319.05 | 535.39 | 1206.00 | 1.71 |
| **5128.00** | **13.720** | **61.100** | **4867.39** | **1342.79** | **545.46** | **1227.52** | **3.40** |
| 5221.00 | 13.100 | 64.960 | 4957.86 | 1364.27 | 555.25 | 1246.72 | 1.17 |
| 5315.00 | 12.490 | 68.830 | 5049.53 | 1385.08 | 563.43 | 1265.85 | 1.12 |
| 5410.00 | 8.620 | 69.530 | 5142.90 | 1402.47 | 569.64 | 1282.11 | 4.08 |
| 5505.00 | 8.880 | 93.790 | 5236.83 | 1416.17 | 571.64 | 1296.10 | 3.87 |
| **5600.00** | **6.860** | **105.750** | **5330.93** | **1427.20** | **569.62** | **1308.88** | **2.73** |
| 5695.00 | 3.840 | 109.960 | 5425.51 | 1434.01 | 566.99 | 1317.33 | 3.20 |
| 5788.00 | 0.360 | 197.860 | 5518.44 | 1436.12 | 565.65 | 1320.17 | 4.13 |
| 5883.00 | 0.270 | 294.890 | 5613.44 | 1435.78 | 565.46 | 1319.87 | 0.50 |
| 5977.00 | 0.090 | 348.320 | 5707.44 | 1435.64 | 565.62 | 1319.66 | 0.24 |
| **6072.00** | **0.270** | **50.550** | **5802.44** | **1435.87** | **565.84** | **1319.81** | **0.25** |
| 6165.00 | 0.180 | 196.450 | 5895.44 | 1435.99 | 565.84 | 1319.94 | 0.46 |
| 6332.00 | 0.350 | 196.000 | 6062.44 | 1435.51 | 565.10 | 1319.73 | 0.10 |
| 6388.00 | 0.180 | 196.000 | 6118.44 | 1435.35 | 564.85 | 1319.66 | 0.30 |
| 6482.00 | 0.180 | 196.000 | 6212.43 | 1435.16 | 564.56 | 1319.58 | 0.00 |
| **6577.00** | **0.180** | **196.000** | **6307.43** | **1434.98** | **564.28** | **1319.49** | **0.00** |
| 6671.00 | 0.440 | 196.000 | 6401.43 | 1434.66 | 563.79 | 1319.35 | 0.28 |
| 6764.00 | 0.180 | 196.000 | 6494.43 | 1434.35 | 563.30 | 1319.21 | 0.28 |
| 6859.00 | 0.440 | 196.000 | 6589.43 | 1434.03 | 562.81 | 1319.07 | 0.27 |
| 6869.00 | 0.090 | 196.000 | 6599.43 | 1434.00 | 562.77 | 1319.06 | 3.50 |
| **6895.00†** | **0.044** | **196.000** | **6625.43** | **1433.98** | **562.74** | **1319.05** | **0.18** |

# Actual Wellpath Report

**Wolverine Federal 17-13 AWP**



BAKER HUGHES INTEQ

| REFERENCE WELLPATH IDENTIFICATION | | | |
|---|---|---|---|
| Operator | **WOLVERINE GAS & OIL COMPANY** | Slot | **Slot #4 Wolverine Federal 17-13 (1636'FNL & 2452'FWL) A3 PAD** |
| Area | **UTAH** | Well | **Wolverine Federal 17-13** |
| Field | **SEVIER COUNTY** | Wellbore | **Wolverine Federal 17-13 AWB** |
| Facility | **SEC.17-T23S-R1W** | | |

**TARGETS**

| Name | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|---|
| **Wolverine Federal 17-13 *REVISED* Top Navajo (1064'FNL & 1373'FEL)** | | 5702.00 | 539.21 | 1304.99 | 1518232.29 | 6734501.16 | 38°48'25.292"N | 111°55'43.421"W | point |
| **Wolverine Federal 17-13 Top Navajo (560'FNL & 1673'FEL)** | | 6162.00 | 1050.00 | 1017.00 | 1517946.76 | 6735013.37 | 38°48'30.341"N | 111°55'47.059"W | point |

**WELLPATH COMPOSITION** **Ref Wellbore: Wolverine Federal 17-13 AWB** **Ref Wellpath: Wolverine Federal 17-13 AWP**

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---|---|---|---|---|
| 26.00 | 1825.00 | MTC (Collar, post-2000) (Standard) | 1918 17 1/2" Surface BHI MWD | Wolverine Federal 17-13 AWB |
| 1825.00 | 6869.00 | VertiTrak | 4438 3/4" hole TruTrak 2049' - | Wolverine Federal 17-13 AWB |
| 6869.00 | 6895.00 | Blind Drilling (std) | Projection to bit | Wolverine Federal 17-13 AWB |