

WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

March 4, 2005

Ms. Diana Whitney
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Re: Application for Permit to Drill
Proposed Saltwater Disposal SWD-1
SW/SW Section 8 T23S-R1W,
Sevier County, UT

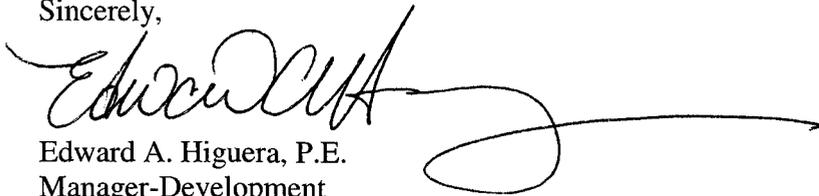
Dear Ms. Whitney:

Wolverine Gas & Oil Company of Utah, LLC is submitting two sets of the completed Application for Permit to Drill for its proposed saltwater disposal well located in Section 8 T23S-R1W, Sevier County, UT. In addition to Form 3, we have enclosed UIC Form 1 and the required supplementary information.

We have considered wells in this area to be "wildcat", so we are requesting this information to be held confidential.

If you have any questions, please do not hesitate to call me at 616.458.1150.

Sincerely,


Edward A. Higuera, P.E.
Manager-Development

C: Shawn Burd, Steve Hash, Don Anderson w/encl.

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DIV. OF OIL, GAS & MINING

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

1. TYPE OF WORK: DRILL REENTER DEEPEN

2. TYPE OF WELL: OIL GAS OTHER SWD SINGLE ZONE MULTIPLE ZONE

3. NAME OF OPERATOR: Wolverine Gas & Oil Company of Utah, LLC

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

5. MINERAL LEASE NO: n/a FEE 6. SURFACE: Fee

7. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a

8. UNIT or CA AGREEMENT NAME: n/a Wolverine

9. WELL NAME and NUMBER: SWD-1

10. FIELD AND POOL, OR WILDCAT: Exploratory

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W

12. COUNTY: Sevier 13. STATE: UTAH

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: approximately three (3) miles South of Sigurd

15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): approximately 300'

16. NUMBER OF ACRES IN LEASE: n/a

17. NUMBER OF ACRES ASSIGNED TO THIS WELL: n/a

18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): approximately 3,634'

19. PROPOSED DEPTH: 9,500

20. BOND DESCRIPTION: Individual well 19-10755-6

21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 5,594' (ungraded)

22. APPROXIMATE DATE WORK WILL START: 5/1/2005

23. ESTIMATED DURATION: 45 days

24. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
30"	20" X42 .25 wall	120	Conductor cmt to surf
17-1/2"	13-3/8" J55 BTC 68 ppf	2,000	lead:LW 600sx, 1.97, 12.8/tail:G 300sx, 1.15, 15.8
12-1/4"	9-5/8" N80 LTC 47 ppf	6,800	lead:type5,460sx,3.83 11.0/tail:Poz, 850sx,1.27 14.35
8-1/2"	7" N80 LTC* 23 ppf	9,500	Poz, 600sx, 1.27, 14.35
inj tbg	3-1/2" L80 EJE 9.3 ppf	8,100	none

25. ATTACHMENTS

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

- WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER

- COMPLETE DRILLING PLAN
- FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

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DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Edward A. HIGUERA TITLE Managers - Development

SIGNATURE [Signature] DATE 3-04-05

(This space for State use only)

API NUMBER ASSIGNED: 43-041-30039

APPROVAL:

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

UIC FORM 1

APPLICATION FOR INJECTION WELL

Name of Operator Wolverine Gas & Oil Company of Utah, LLC				Utah Account Number N	Well Name and Number SWD-1
Address of Operator 55 Campau NW			CITY Grand Rapids	STATE MI	ZIP 49503
Location of Well Footage : 30' FWL & 1140' FSL				County : Servier	
QQ, Section, Township, Range: SWSW 8 23S 1W				State : UTAH	
					Field or Unit Name Exploratory
					Lease Designation and Number

Is this application for expansion of an existing project? Yes No

Will the proposed well be used for:

Enhanced Recovery?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Disposal?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Storage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Is this application for a new well to be drilled? Yes No

If this application is for an existing well, has a casing test been performed? Yes No
Date of test: _____

Proposed injection interval: from 6,370 to 9,500

Proposed maximum injection: rate 10,000 bpd pressure 4,000 psig

Proposed injection zone contains oil , gas , and / or fresh water within 1/2 mile of the well.

List of attachments: Survey Plat, Drilling Plan, Pressure Control System Schematic, Standard Lab Analysis of fluid to be injected; and Affidavit

**ATTACH ADDITIONAL INFORMATION AS REQUIRED BY CURRENT
UTAH OIL AND GAS CONSERVATION GENERAL RULES**

I hereby certify that this report is true and complete to the best of my knowledge.

Name (Please Print) EDUARDO A. HIGUERA Title Manager - Development

Signature *Eduardo A. Higuera* Date 03-04-05

RECEIVED

MAR 0 / 2005

DIV. OF OIL, GAS & MINING

*Proposed Saltwater Disposal Well: SWD-1
Section 8 T23S-R1W, Servier County, Utah*

Applicant/Operator: Wolverine Gas & Oil Company of Utah, LLC
55 Campau NW, Grand Rapids, MI 49503
Ph: (616) 458-1150
Fax: (616) 458-0869
Contact: Ed Higuera, Manager-Development

RE: Request for Approval of the Application for Permit to Drill
Proposed Saltwater Disposal Well SWD-1
Section 8 T23S-R1W, Servier County, Utah

Required Information for Application for Permit to Drill:

- 1) A properly completed UIC Form 1 precedes this page.
- 2) A plat showing the location of the proposed injection well is included as Attachment 1. In Attachment 1, we have also provided a map showing the location of the proposed well with one-half mile radius circle around the proposed well and the surface owners and operators of producing leases in the half-mile radius.
- 3) Copies of electrical, radioactive and cement bond logs will not available for the proposed disposal well until it is drilled and completed. There are no oil wells within one-half mile of the proposed disposal wells. Copies of openhole logs have already been submitted to UDOGM for the Kings Meadow Ranch 17-1 and the Wolverine Federal 17-2, which are located approximately 3634' and 3810', respectively, southeast of the proposed disposal well. When the proposed disposal well is drilled and logged, copies of these logs will be submitted to UDOGM.
- 4) A description of the proposed casing program for the disposal well is included in the *Drilling & Completion Prognosis*, which is included in Attachment 2. In this *Drilling & Completion Prognosis*, anticipated formation tops are listed and a preliminary completion program. The actual perforation will be selected after the openhole logs have been acquired and evaluated. As indicated in the completion outline, we anticipate perforating sections of the Navajo formation until the desired injectivity has been obtained.
- 5) Produced formation water from the offset producing wells, which are currently producing from the Navajo sandstone formation, will be injected into this proposed disposal well. A standard laboratory analysis of this produced water is included as the last page of the *Drilling & Completion Prognosis* (see Attachment 2). The anticipated initial volume to be injected in this well is 300 to 1000 BWPD. We anticipate water volumes to increase as more wells are drilled, and from normal water increases as the field is depleted.

- 6) The proposed average and maximum injection pressure will depend on the rock properties. There is no actual data for frac gradient in this area. We intend to conduct a step-rate injection test as part of the completion procedure to determine the frac gradient and the appropriate maximum allowable surface injection pressure. Assuming a frac gradient of 0.85 psi/ft for hard rock, and using a frac gradient of 0.80 psi/ft as a safety factor, we have estimated a surface injection pressure of 2440 psi (for 5000 BWPD at 6371' interval) to a maximum of 4123 psi (at 10,000 BWPD) at interval of 9100'). A completion discussion is presented in page 10 of the *Drilling & Completion Prognosis* (see Attachment 2).
- 7) Geological information is presented on page 3 of the *Drilling & Completion Prognosis* (see Attachment 2). The Arapien Shale extends from near surface to approximately 6400 feet at this proposed location and is regionally extensive. The Arapien Shale consists of shale, and large salt and gypsum sections and would be considered a confining layer to the Twin Creek and Navajo formation. Below the Navajo is the Chinlee formation, which consists of red silt shale and would be considered the confining layer below the Navajo formation. We are not aware of any geologic structure that may affect conveyance of injected fluids out of the target formations.

According to hydrogeologist Jack Rogers with Lasr-Geo Consulting, who was retained to evaluate this area, there are no culinary aquifers in the Twin Creek or Navajo Sandstone, because these formations are too deep or lack water quality. Mr. Rogers indicates his research has not identified any aquifers or potential aquifers in the Arapien Shale. Mr. Roger's evaluation is presented in Attachment 3.

- 8) There are no wells within the one-half mile radius of the proposed well that penetrate the proposed injection zone. The closest producing well is the Kings Meadow Ranch 17-1 and the Wolverine Federal 17-2 (see map in Attachment 1). Both of these wells are new. Because these wells are outside the one-half mile radius, we have not providing copies of well bore diagrams. However, information on casing strings for these wells has been submitted previously to UDOGM.
- 9) Surface owners and operators within the half-mile radius of the proposed well are shown on the map in Attachment 1. A copy of the Application for Permit to Drill, indicating that the entire supporting documentation is available for review, has been submitted to the owners. An affidavit certifying that a copy of the application has been made available to each owner is included in Attachment 4.

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING & COMPLETION PROGNOSIS

Covenant SWD #1
SW SW SEC 8-T23S-R1W
SEVIER CO., UTAH

BRIEF DRILLING PLAN

Drill a 9500' vertical well to the Lower Navajo 2 formation, to be used by the Operator for produced water disposal from Covenant Field wells. The surface location is owned by Wolverine and is known as the Central Production Facility (CPF) site, located in Sections 7 and 8, T23S – R01W, Sevier Co, UT. Deviation is the primary drilling concern in this area and directional tools will be employed to maintain a reasonably vertical wellbore. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized.

20" conductor casing will be cemented to surface at approximately 120 ft BGL. 13-3/8" surface csg will be set & cemented to surface in a 17-1/2" hole at +/- 2000'. A 12-1/4" hole will then be drilled to +/- 6400' and 9-5/8" protective casing will be set from surface to TD & cemented back into the 13-3/8" csg. An 8-1/2" hole will then be drilled to +/- 9500'. 7" long string casing will then be run from TD back to surface & cemented to approximately 400' into the 9-5/8" protective casing.

EMERGENCY NUMBERS

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

Utah Division of Oil, Gas and Mining

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

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 6371'	Surf – 6371'	sh,siltstone,salt,evaporates		
TwinCreek 1	6371' - 6740'	6371' - 6740'	Carbonates *		
Navajo 1	6740' - 8722'	6740' - 8722'	Sandstone w/ minor shale *		
TwinCreek 2	8722' - 9037'	8722' - 9037'	Carbonates *		
Navajo 2	9037' - 9500'	9037' - 9500'	Sandstone w/ minor shale *		
Total Depth	9500'	9500'			

* denotes potential injection interval

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad
 120'x 80' x 10' Reserve Pit with a 12 mil synthetic liner
 96" diameter tin horn cellar, 10' deep.
 Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 2000'

Drill a 17-1/2" hole with a PDC/TCI bit, mud motor & MWD equipment to approximately 2000' using salt mud system from prior wells (make hole to fit 13-3/8" casing). Loss circulation could be a problem in this interval and, if such occurs, begin pumping LCM sweeps. If loss circulation cannot be healed with ± 25 ppb LCM, consider dry drilling (no returns). Maintain a near vertical hole.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top

- 20" 2M x 20" SOW flange
- 20" 2M x 20" 2M mud cross w/ (2) 7-1/16" 2M side outlets
 - one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit
 - one outlet (blank)
- 20" 2M Rotating Head
- 20" 2M flanged btm drilling nipple w/ fillup line
- Upper kelly cock valves with handles available
- Safety valves and subs to fit all drill string connections in use
- Inside BOP or float sub available

Testing Procedure:

Rotating Head & HCR Valve

The rotating head and HCR valve will be function tested upon initial installation, at weekly intervals and following any repairs. All BOP drills will be recorded in the IADC driller's log.

MUD PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>FLUID LOSS</u>
0 -2000'	9.7 – 10.3	Salt mud	40-55	20cc or less

Note: Sweep hole every 100 – 200 feet or as needed for hole cleaning. Maintain maximum flowrates for hole cleaning. Use salt gel and FlowZan polymer to maintain properties. Reduce fluid loss with Anco-Phalt and/or Gilsonite for lubricity if desired.

CASING PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0 - 2000'	13-3/8"	2000'	68#	J-55	BT&C	

Casing Running Sequence:

guide shoe

1 jt of 13-3/8" 68# J55 BT&C

Float collar

Balance of 13-3/8" 68# J55 BT&C

Centralizers as reqd.

RU cement co., hold safety meeting, test lines, cement 13-3/8" casing per cement company recommendation and the cementing guide below. Displace with fresh water or mud if used.

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

600 sx lite weight
1% calcium chloride
0.25 lb/sx flocele

Mixed at: 12.8 ppg
Yield: 1.97 ft³/sx

Tail: 300 sx Premium G
1% calcium chloride
0.25 lb/sx flocele

Mixed at: 15.8 ppg
Yield: 1.15 ft³/sx

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

WOC A TOTAL OF 24 HOURS:

Blowout Preventer

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

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

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

Accumulator:

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

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

Choke Manifold Equipment, Valves and Remote Controls

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

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

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

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller.

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

MUD PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>FLUID LOSS</u>
2000' – 6400'	9.9 – 10.4	Salt Mud	36 - 50	NC

Maintain a salt mud system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

CASING PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' – TD'	9-5/8"	6400'	47#	N-80 *	LT&C	
				* = due to availability and price HCP-110 will be used		

Rig up casing tools and run 9-5/8" protective casing as follows:

Float shoe, 2 joints of 9-5/8" 47.0# HCP-110 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# HCP-110

CEMENT PROGRAM FOR PROTECTIVE CASING

460 sx Type 5 High-Fill	Weight:	11.0 ppg
	Yield:	3.83 ft ³ /sx
850 sx 50:50 POZ	Weight:	14.35 ppg
	Yield:	1.27 ft ³ /sx

TOC at surface; Calculate cement volume based on gauge hole plus 30% excess.
Displace with mud. Land 9-5/8" csg with casing mandrel. Lay down landing joint.
Clean pits and prepare for next hole section.

PRODUCTION HOLE: 6400 to 9500'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform an integrity test to 10.5 ppg mud weight equivalent.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Same as Protective String above due to utilization of Multi-Bowl Casing Head Assembly – Land 9-5/8" through BOPE with casing mandrel, release, test & proceed to drilling production hole section – Nipple down & nipple up NOT required – all BOPE remains intact – normal periodic pressure testing remains on schedule

MUD PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>pH</u>	<u>FLUID LOSS</u>
6400' - 9500'	8.7 – 9.5	LC Polymer	34-50	9.0-10.0	10cc or Less

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs.

Mudlogger: From 2000' to total depth.

Electric Logs:

<u>Tool</u>	<u>PCP to TD</u>
Dual Laterolog/GR/Caliper (DLL) (DIL if fresh mud system)	Yes
Micro Spherically Focused Log (MFSL)	No
CNL/LithoDensity/GR/Caliper (CNL/LD/GR/CAL)	Yes
Micro Imaging Dipmeter/GR	Yes

DST: none planned

Cores: none planned

CASING PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' - TD'	7"	9500'	23#	HCP-110	LT&C	

Rig up casing tools and run 7" production casing as follows:

Float shoe, 2 joints of 7" 23# HCP-110 LT&C casing, Float collar, Centralizers as reqd.
Run balance of 7" 23# HCP-110.

CEMENT PROGRAM FOR PRODUCTION CASING

600 sx (50:50) POZ Premium	Weight:	14.35 ppg
2 % Bentonite	Yield:	1.27 ft ³ /sx
Friction reducer, salt & flocele		

TOC at \pm 6000 ft in 9-5/8" csg

Calculate cement volume based on log caliper +/- 25%. Displace cement w/water.

Hang 85-90% casing weight in slips, ND, cut off, install B section. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about April 1, 2005

Drilling operations are anticipated to begin on or about May 1, 2005

BRIEF COMPLETION PLAN

Complete the subject new well as a saltwater disposal well in either of the Navajo sandstones and/or the Twin Creek limestones depending upon the injectivity capacity achieved and the disposal volume desired.

Design Criteria:

1. Maximum Injection Rate – 10,000 BWPD (7 bpm @ 100% run time)
2. Maximum Injection Pressure – 4100 psi

3. Average Injection Rate – 5000 BWPD (3.5 bpm @ 100% run time)
4. Average Injection Pressure – 3200 psi

5. Fluid to be injected – formation saltwater separated from offset producing wells presently producing from Navajo sandstone formations will be injected. It is likely that during the life of this saltwater disposal well that other formation water, such as that from the Twin Creek lime, may be introduced. (see attached compositional analysis of Navajo produced water) Produced saltwater will be re-injected into a similar formation from which it is being produced so compatibility of waters should not be an issue.

6. Quantity to be injected – estimate for mid-year 2005 is 1000 bwpd from approximately 10 wells. It is anticipated that water production from offset producers will increase over time due to natural production tendencies. Additional wells may also increase this volume up to the maximum injection capacity of the well, estimated at 10,000 BWPD.

7. Fracture Pressure – presently there is no actual data from which the fracture pressure of the target formations can be determined. Therefore an assumed frac gradient of 0.85 psi/ft for hard rock is used. An injection gradient of 0.80 psi/ft is chosen to remain below fracture pressure. The gradient of produced fluid (8.5 ppg) is 0.442 psi/ft. Therefore a gradient of $[0.80\text{psi/ft} - 0.442\text{psi/ft}]$ 0.358 psi/ft is potentially available for injection at the formation face. The actual surface pressure will depend upon the actual depth of the injection zone. Pipe friction pressure of 9 ppg brine water through 3-1/2" bare tbg is 25 psi/1000' at 3.5 bpm rate (5000 bwpd) and 95 psi/1000' at 7 bpm rate (10,000 bwpd). Therefore surface injection pressure may vary from a minimum of 2440 psi (5000 bwpd if injected into an upper interval @ 6371') to a maximum of 4123 psi (10,000 bwpd if injected into a lower interval @ 9100'). A step-rate injection test will be conducted to determine the actual frac gradient and therefore the appropriate maximum allowable surface injection pressure.

Completion Procedure:

1. Clean location and install rig anchors and test. MIRU DDDD WSU with pipe racks, catwalk, steel tank, triplex pump & lines, 5M hydraulic dbl ram BOPE (2-7/8" top & CSO rams btm w/ 3-1/2" rams extra) w/ stripper head. Move in (3) frac tanks and fill with field produced water for treatment flush.
2. Move in 2-7/8" 6.5ppf N80 work string. Install BOPE and test. PU 6-1/4" bit, 7" 23ppf csg scraper, xo, 2.25" SN and tbg and TIH to TD. Drop SV and PT tbg to 4500 psi. Retrieve SV with sandline. Tighten BOPE & test csg to 4500 psi. Pickle tbg & csg with 500 gal 7-1/2% HCL and solvent blend. Reverse to pit. POOH & LD bit & scraper.
3. RU WLU, run CBL-CCL log from TD to TOC and CCL log to surface. Perforate Navajo 2 select intervals (to be determined) @ 6 jpf . RDWL
4. Pick up 7" x 2-7/8" Arrowset 1X pkr with SN & RBP on 2-7/8" tbg. TIH and straddle select intervals, acidizing perforations in groups via tbg with 15% HCL, flushing with produced fluid. After treating several intervals, commingle all and swab to clean up.
5. Perform a step-rate injection test with field produced water at 2,4,6 & 8 bpm via tbg and plot vs. pressure.
6. Continue opening Navajo 2 and Navajo 1 porosity intervals as above. Breakdown, cleanup and perform injection tests in groups until sufficient disposal capacity is obtained. POOH & LD 2-7/8" workstring.
7. Pick up a 7" x 2-7/8" Arrowset nickel coated retrievable production packer with (1) "X" and (1) "XN" stainless steel profile nipples (id 2.31) and WLEG below spaced with 3-1/2" tbg subs. Run a stainless steel on-off tool with 2.31 "X" profile on top of packer and 2.31 "X" profile (1) jt up. RIH on 3-1/2" 9.3ppf L80 EUE internally coated tbg (Tuboscope TK-15). Set pkr within 50 ft of top of injection interval assumed near 9100'. Load annulus with pkr fluid and pressure test pkr seat to 2000 psi. ND BOPE and install internally coated 5M tree.
8. Hook well up for injection and notify authorities for MIT. Initiate injection maintaining surface injection pressure below 4100 psi. Monitor & report daily rates and pressures.
9. Job complete

end

FEB. 2.2005 12:10PM OILAB INC

NO.780 P.1/4

Environmental Services
Petroleum Laboratory
Gas Engineering
www.oilab.com

5120 N. Santa Fe
Oklahoma City, OK 73118
Ph. (405) 528-TEST(8378)
Fax (405) 962-1870



LABORATORY REPORT NUMBER 93601
02/02/2005
WATER ANALYSIS

WOLVERINE GAS & OIL CO.
SEVIER CO/UTAH

COMPANY: EXACT ENGINEERING, INC.
LEASE: KMR 17-1
LOCATION: SEVIER CO/UTAH

DATE SAMPLED: 1/21/2005
DATE ANALYZED: 1/31/2005
SAMPLED BY: WOLVERINE
RECEIVED FROM: WOLVERINE GAS & OIL

COLOR (BEFORE FILTRATION): LIGHT BROWN
COLOR (AFTER FILTRATION): COLORLESS

*****CHEMICAL CHARACTERISTICS*****

	mg/L
CALCIUM	425
MAGNESIUM	40.8
SODIUM	10,080
POTASSIUM	220
BARIUM	TRACE
IRON	12
SILICA	46
BICARBONATE*	518
CARBONATE**	0
HYDROXIDE	0
SULFATE	3,000
CHLORIDE	14,100
*(AS CaCO3)	425
** (AS CaCO3)	0

TOTAL HARDNESS (AS CaCO3) 1,240
P ALKALINITY (AS CaCO3) 0
M ALKALINITY (AS CaCO3) 425
SPEC. GRAVITY @ 87 °F 1.0208

RESISTIVITY @ 77°F 0.261
TOTAL DISSOLVED SOLIDS 28,400
pH VALUE 6.45


CERTIFIED BY: SURESH JOSHI
CHEMIST/ANALYST

FAX: 918-599-9401 STEVEN HASH

Hydrogeological Evaluation for Proposed Saltwater Disposal Well SWD-1
By Jack Rogers
Lasr-Geo Consulting
PO Box 1103
Castle Dale, UT 84513
March 1, 2005

The proposed injection well is to be drilled 9,500 feet into the lower Navajo Sandstone. Formations above this unit are the Arapien Shale, and the Twin Creek Limestone. Outcrops of the Navajo Sandstone and the Twin Creek Limestone are present in the Sigurd area. There are no culinary aquifers in the Navajo Sandstone or the Twin Creek Limestone. These formations are too deep and are not tapped for water production purposed. These formations lie below the Arapien Shale which is a thick (estimated to be between 3,000 and 5,000 feet thick) salt and gypsum bearing shale. There are also no aquifers or potential aquifers in the Arapien shale. The water quality due to the dissolution of gypsum and halite produce saline water high in total dissolved solids (TDS). Two wells, both shallow 21 feet in depth and the other 32 feet in depth (Lambert and others, 1995), drilled into the Arapien Shale show the results of water that has a flow path encountering the shale (see Piper Diagram). Because of the abundance of highly soluble minerals (halite NaCl and gypsum CaSO₄) water from this formation is of very low quality. Clays within the formation act as aquicludes and prevent water mixing associated with other aquifers. South of the proposed drilling location, Tertiary age volcanic rocks lie against the Arapien Shale contact and the edge of the Sanpete-Sevier Valley anticline. Many springs crop out in these volcanic rocks. Water from this aquifer is of pristine quality with the water have a TDS value of less than 500 mg/L. See the Peterson Creek analysis and analyses of springs and wells from Kings Meadow. Because of the clay content in the Arapien Shale and the aquiclude properties associated with the shale, water from the disposal well will not effect the Tertiary volcanic aquifer.

PC-1 Peterson Creek

- BC-Well Brine Creek Well (Lambert and others, 1995)
- GD-Well Well near Glendale (Lambert and others,1995)
- Sigurd well Sigurd Town Well in Kings Meadow
- Dastrup1 Flowing well in Kings Meadow
- Dastrup2 Same

Affidavit

I certify that a copy of the Application for Permit to Drill (Form 3) has been sent by US Mail or hand-delivered to the following producers or owners located within one-half mile of the proposed saltwater disposal well SWD-1, SW/SW Section 8 T23S-R1W, Servier County, Utah.

Kings Meadow Ranches, Inc.
C/o Mack T. Dastrup
PO Box 570125
Sigurd, Utah 84657

Ronald L. & Virginia Dastrup
PO Box 570133
Sigurd, Utah 84657

Berkley Anderson
PO Box 300523
Glenwood, Utah 84730

Wolverine Gas & Oil Company of Utah, LLC (surface owner of proposed location)
One Riverfront Plaza
55 Campau NW
Grand Rapids, MI 49503

By: _____

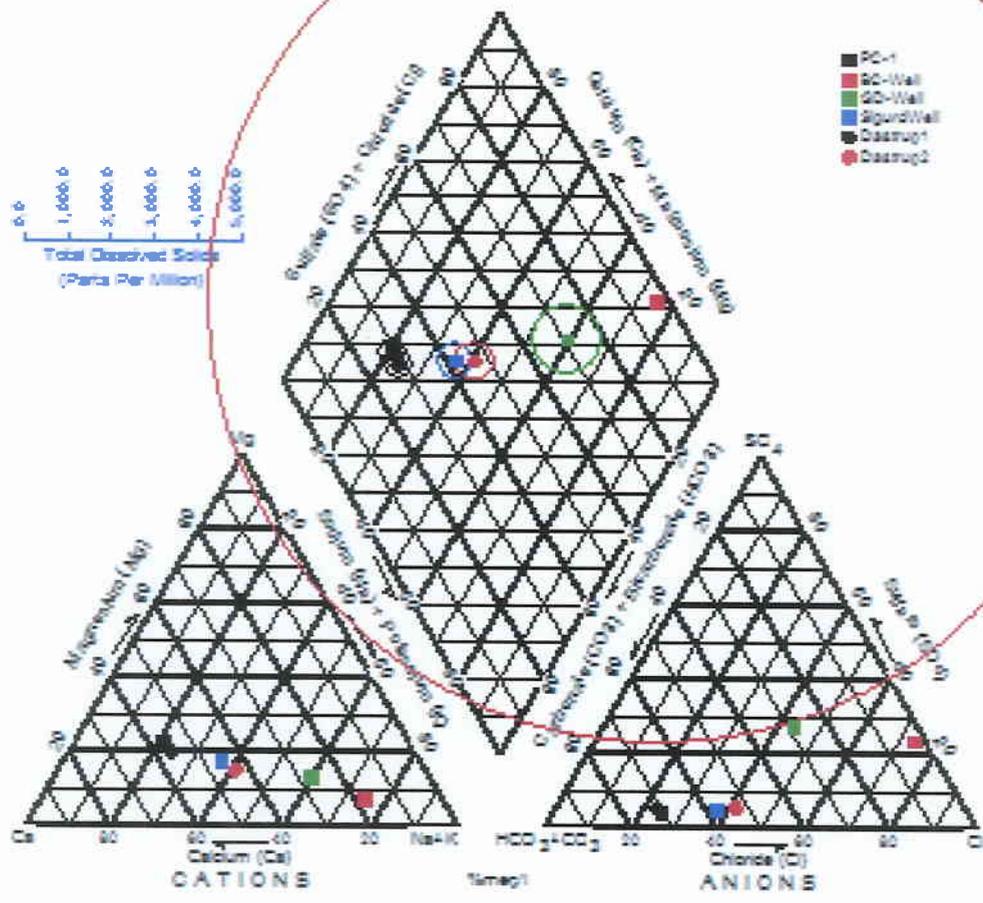


Edward A. Higuera

Title: _____

Manager-Development

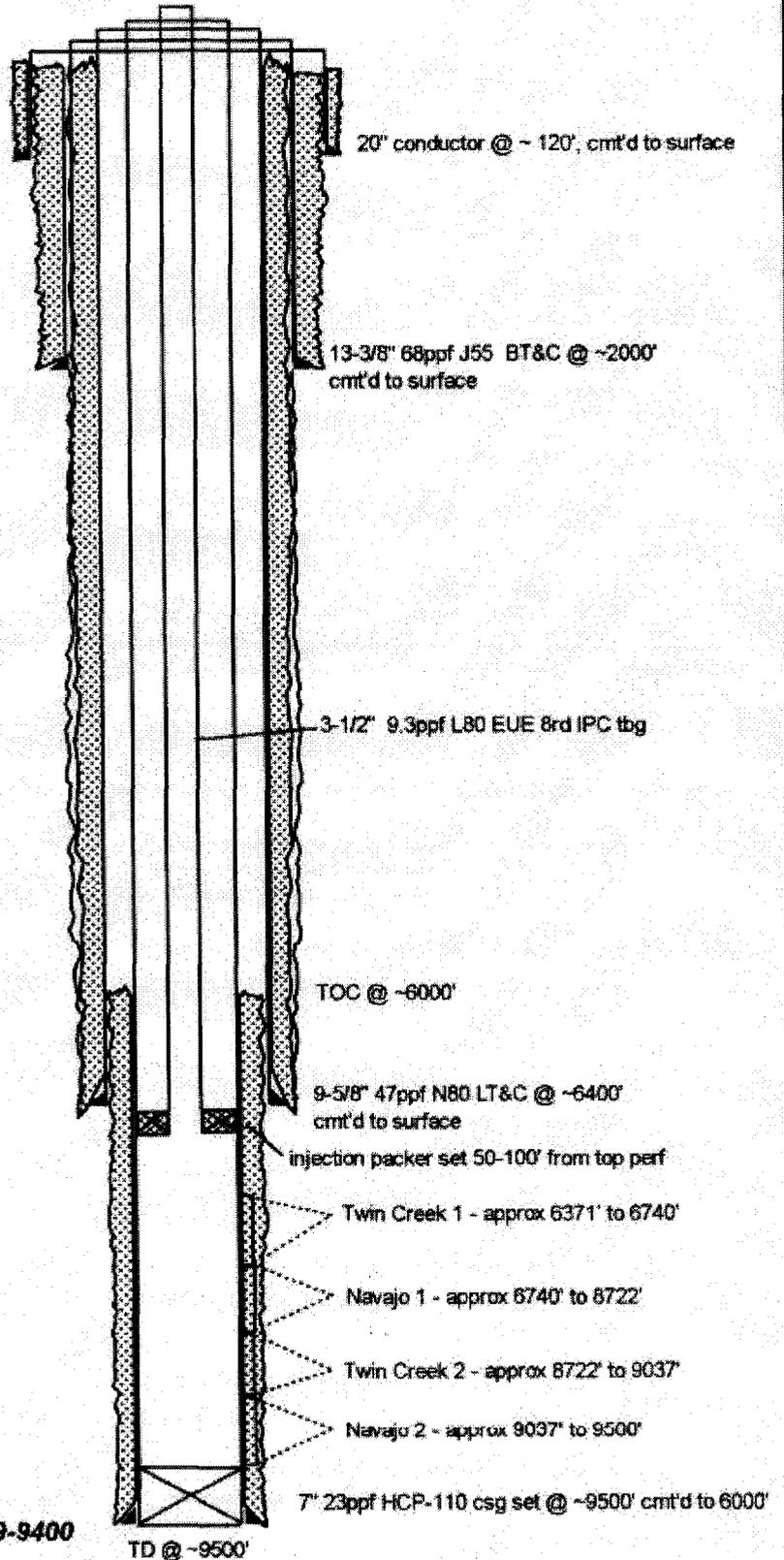
Water Quality of Peterson and Brine Creek



Wolverine Gas and Oil Co. of Utah, LLC

Wellbore Diagram

Covenant SWD #1 (proposed)
SW/4 SW/4 Sec 08 T23S - R01W
Sevier County, UT



EXACT Engineering, Inc., Tulsa, OK (918) 599-9400

filename> wbd-covenant swd #1.prz

drawn by SRHash, 03/02/05

PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by:
 EXACT Engineering, Inc
 Tulsa, OK (918) 599-9400

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Covenant SWD #1

5M BOP Stack --- to be utilized while drilling holes for production casing thru Twin Creek & Navajo intervals

Max. anticipated surface pressure 3000 psi

Annular B.O.P. 13-5/8" - 5M WP

B.O.P. 5" pipe Rams 13-5/8" - 5M W.P.
 (Pipe/Blind)

Check Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

B.O.P. blind Rams 13-5/8" - 5M W.P.
 (Pipe/Blind)

Valve 3-1/16" 5M WP

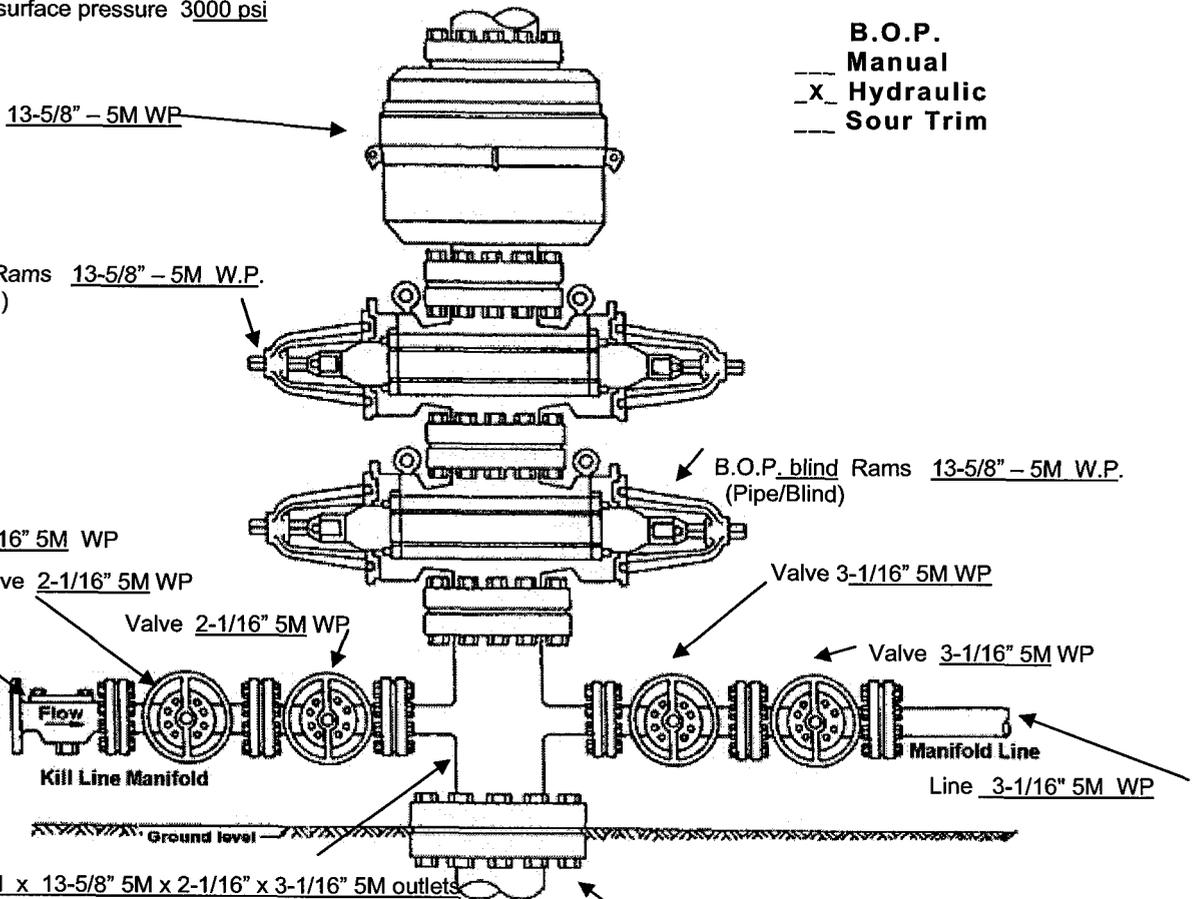
Valve 3-1/16" 5M WP

Manifold Line
 Line 3-1/16" 5M WP

Spool 13-5/8" 5M x 13-5/8" 5M x 2-1/16" x 3-1/16" 5M outlets

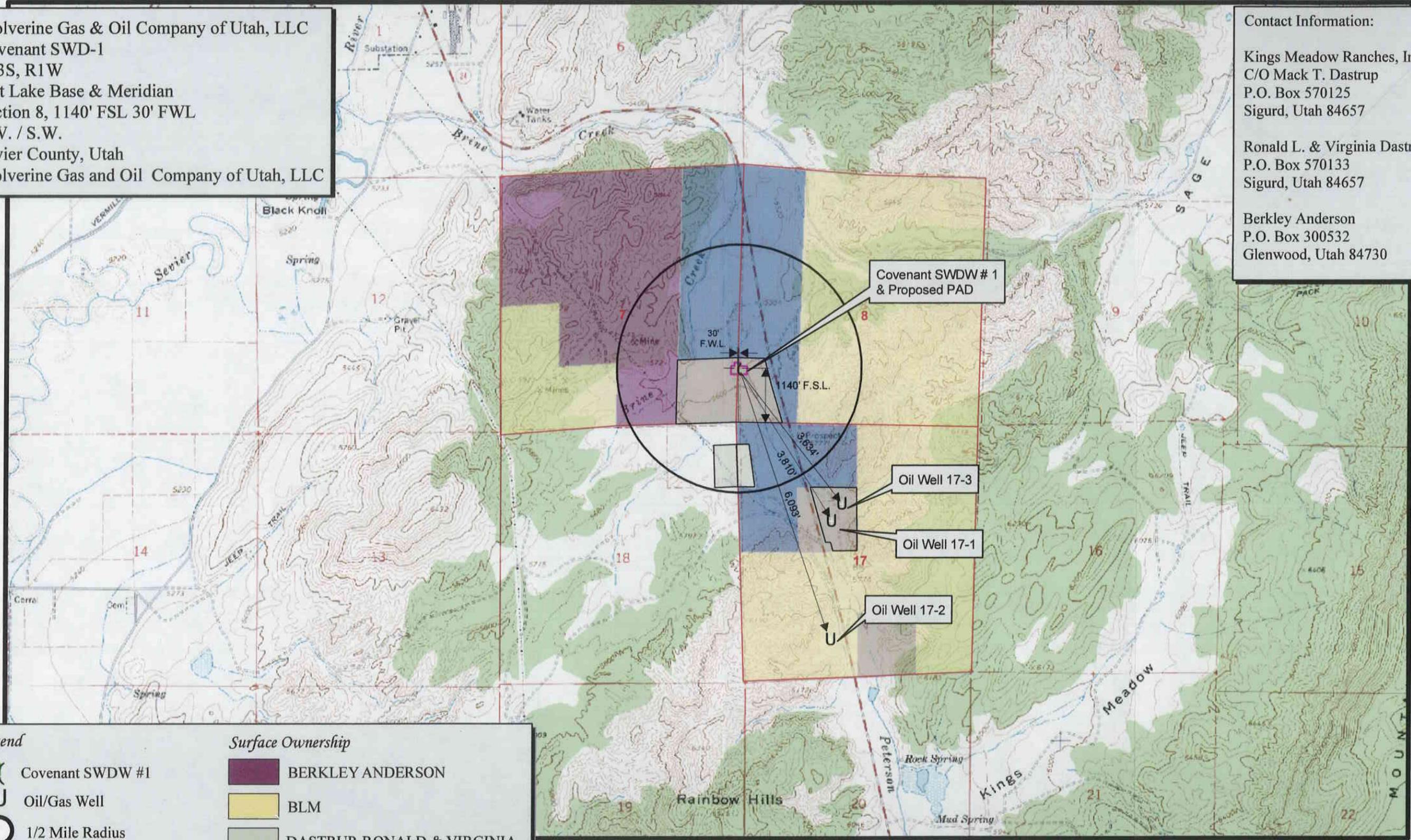
Wellhead 13-5/8" 5M x 13-5/8" 5M spacer spool w/ 13-5/8" 5M x 13-3/8" SOW csg head

B.O.P.
 --- **Manual**
 Hydraulic
 --- **Sour Trim**

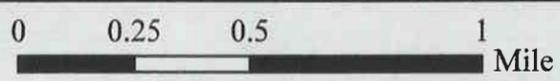


Wolverine Gas & Oil Company of Utah, LLC
 Covenant SWD-1
 T23S, R1W
 Salt Lake Base & Meridian
 Section 8, 1140' FSL 30' FWL
 S.W. / S.W.
 Sevier County, Utah
 Wolverine Gas and Oil Company of Utah, LLC

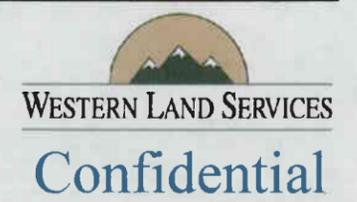
Contact Information:
 Kings Meadow Ranches, Inc.
 C/O Mack T. Dastrup
 P.O. Box 570125
 Sigurd, Utah 84657
 Ronald L. & Virginia Dastrup
 P.O. Box 570133
 Sigurd, Utah 84657
 Berkley Anderson
 P.O. Box 300532
 Glenwood, Utah 84730



Legend		Surface Ownership	
	Covenant SWD #1		BERKLEY ANDERSON
	Oil/Gas Well		BLM
	1/2 Mile Radius		DASTRUP, RONALD & VIRGINIA
	Proposed Pad		KINGS MEADOW RANCHES, INC.
			Wolverine Gas & Oil, LLC.



GCS - NAD 83
 Projection: Lambert Conformal Conic
 Units: Feet
 Source: Jones & DeMille Engineering
 Date: 01/14/2005



**WORKSHEET
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 03/07/2005

API NO. ASSIGNED: 43-041-30039

WELL NAME: SWD-1
 OPERATOR: WOLVERINE GAS & OIL CO (N1655)
 CONTACT: EDWARD HIGUERA

PHONE NUMBER: 616-458-1150

PROPOSED LOCATION:

SWSW 08 230S 010W
 SURFACE: 1140 FSL 0030 FWL
 BOTTOM: 1140 FSL 0030 FWL
 SEVIER
 COVENANT (492)

INSPECT LOCATN BY: / /		
Tech Review	Initials	Date
Engineering	DREN	8/25/05
Geology		
Surface		

LEASE TYPE: 4 - Fee
 LEASE NUMBER: FEE
 SURFACE OWNER: 4 - Fee
 PROPOSED FORMATION: NAVA
 COALBED METHANE WELL? NO

LATITUDE: 38.81331
 LONGITUDE: -111.9412

RECEIVED AND/OR REVIEWED:

- Plat
- Bond: Fed[] Ind[] Sta[] Fee[]
(No. 19107598)
- Potash (Y/N)
- Oil Shale 190-5 (B) or 190-3 or 190-13
- Water Permit
(No. 63-2529)
- RDCC Review (Y/N)
(Date: _____)
- Fee Surf Agreement (Y/N)
Wolverine is the surface owner

LOCATION AND SITING:

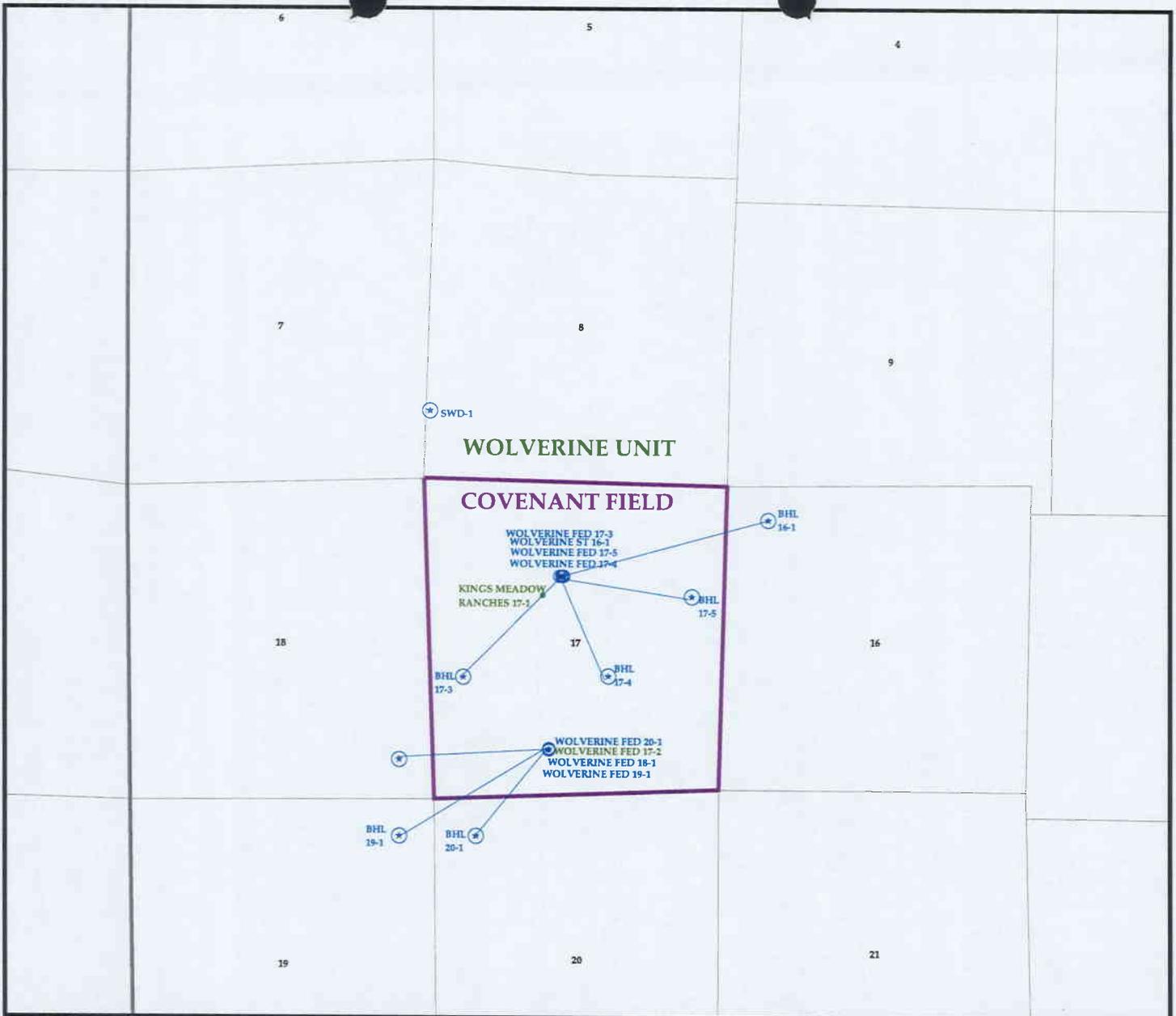
- R649-2-3.
- Unit WOLVERINE
- R649-3-2. General
Siting: 460 From Qtr/Qtr & 920' Between Wells
- R649-3-3. Exception
- Drilling Unit
Board Cause No: _____
Eff Date: _____
Siting: _____
- R649-3-11. Directional Drill

COMMENTS:

Needs Permit (07-19-05)

STIPULATIONS:

- 1- Spacing Strip
- 2- Surface Csg Cont Strip
- 3- STATEMENT OF BASIS



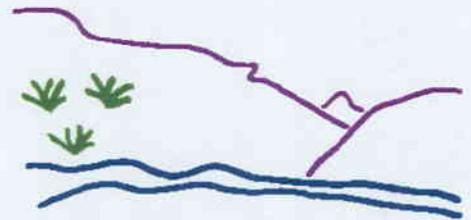
OPERATOR- WOLVERINE G&O CO (N1655)

SEC. 8 T.23S R.1W

FIELD: COVENANT (492)

COUNTY: SEVIER

SPACING: R649-3-3 / EXCEPTION LOCATION



Utah Oil Gas and Mining

Wells

- ⚡ GAS INJECTION
- ⊛ GAS STORAGE
- × LOCATION ABANDONED
- ⊕ NEW LOCATION
- ⊖ PLUGGED & ABANDONED
- * PRODUCING GAS
- PRODUCING OIL
- ⊛ SHUT-IN GAS
- ⊛ SHUT-IN OIL
- × TEMP. ABANDONED
- TEST WELL
- △ WATER INJECTION
- ⚡ WATER SUPPLY
- ⚡ WATER DISPOSAL

Units.shp

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

Fields.shp

- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED



PREPARED BY: DIANA WHITNEY
DATE: 10-MARCH-2005

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

OPERATOR: Wolverine Gas and Oil Company
WELL NAME & NUMBER: SWD-1
API NUMBER: 43-041-30039
LOCATION: 1/4,1/4 SWSW Sec: 8 TWP: 23 S RNG: 1 W 30 FWL 1140 FSL

Geology/Ground Water:

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

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

At this location it is unlikely that any high quality ground water resource will be encountered in the Navajo, at that depth, in any strata drilled below the Navajo or at all. The proposed casing, cementing and drilling fluid program should be sufficient to control and isolate the poor quality ground waters expected to be encountered in a well at this location. A surface water right, a point-to-point water right and an underground water right are found within a mile. The underground water right is for a 100' to 300' deep well (also operated by this Operator) about 700' west of this location.

Reviewer: Christopher J. Kierst **Date:** July 28, 2005

Surface:

Proposed location is ~3 miles south of Sigurd, in Sevier County, Utah. Staked location lies on farm ground purchased by Wolverine Gas and Oil. Access to this well will be along existing UDOT maintained roads and newly built roads built on Wolverine surface. Drainage in the area is primarily to the northwest. Up-graded drainages have been built to handle storm drainage on the central processing facility, which includes the SWD-1 well site. Dry washes are common on the outer lying regions of the property. Pad and pit layout/construction, drill-point location, drainage and spill containment/control measures, overall disposal water design plan and facilities, and potential risks and consequences of building a pad and pit prior to receiving an approved permit from The Division were part of the discussion during the inspection. Charles Irons (Wolverine), Darrin Robinson (Jones & Demille), Donald Auer and Bruce Bonebrake (DWR) were in attendance. SITLA and Sevier County were also invited but chose not to attend. Sevier County was invited but chose not to attend this on-site evaluation.

Reviewer: Mark L. Jones **Date:** July 22, 2005

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

OPERATOR: Wolverine Gas and Oil Company

WELL NAME & NUMBER: SWD-1

API NUMBER: 43-041-30039

LEASE: Fee FIELD/UNIT: _____

LOCATION: 1/4,1/4 SWSW Sec: 8 TWP: 23S RNG: 1W 30 FWL 1140 FSL

LEGAL WELL SITING: _____ F SEC. LINE; _____ F 1/4,1/4 LINE; _____ F ANOTHER WELL.

GPS COORD (UTM): X= 418289 E; Y= 4296268 N SURFACE OWNER: Wolverine.

PARTICIPANTS

M. Jones (DOGM), Charles Irons (Wolverine), Darrin Robinson (Jones & Demille), Donald Auer and Bruce Bonebrake (DWR). Sevier County was also invited but chose not to attend.

REGIONAL/LOCAL SETTING & TOPOGRAPHY

Proposed location is ~3 miles south of Sigurd, in Sevier County, Utah. Staked location lies on farm ground purchased by Wolverine Gas and Oil. Access to this well will be along existing UDOT maintained roads and newly built roads built on Wolverine surface. Drainage in the area is primarily to the northwest. Up-graded drainages have been built to handle storm drainage on the central processing facility, which includes the SWD-1 well site. Dry washes are common on the outer lying regions of the property.

SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE: 176' x 352' w/ 60' x 145' x 10' (excluded) pit. The pit has been redesigned and enlarged to the NW, this expansion is ~55' x 75'. A small berm will be constructed to split the pit in two; this will allow the liquids to separate from the solids. Paperwork will be submitted to DOGM Salt Lake office showing this change.

LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS: 6 proposed, producing, and/or PA wells are within a 1-mile radius of the above proposed well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: On location and along approved right-of-ways.

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

ANCILLARY FACILITIES: None anticipated.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OR CONCERNS? (EXPLAIN): None that I can see.

WASTE MANAGEMENT PLAN:

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

ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: Up-graded drainages have been built to handle storm drainage on the central processing facility, which includes the SWD-1 well site. Dry washes are common on the outer lying regions of the property.

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

SOIL TYPE AND CHARACTERISTICS: Clay.

SURFACE FORMATION & CHARACTERISTICS:

EROSION/SEDIMENTATION/STABILITY: Erosive upon disturbance.

PALEONTOLOGICAL POTENTIAL: None observed.

RESERVE PIT

CHARACTERISTICS: Dugout earthen, 60'x220'x10' (total pit construction w/ addition in NW corner), exterior to the location boundaries.

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

SURFACE RESTORATION/RECLAMATION PLAN

As per Wolverine.

SURFACE AGREEMENT: As per Wolverine.

CULTURAL RESOURCES/ARCHAEOLOGY: None requested.

OTHER OBSERVATIONS/COMMENTS

Pad and reserve pit were constructed prior to pre-site inspection. Potential risks and consequences of building a pad and pit prior to receiving an approved permit from The Division were part of the discussion during the inspection.

ATTACHMENTS

Photos of this location were taken and placed on file.

Mark L. Jones
DOGM REPRESENTATIVE

July 19, 2005 / 12:00 pm
DATE/TIME

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

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

Final Score 47 (Level I Sensitivity)

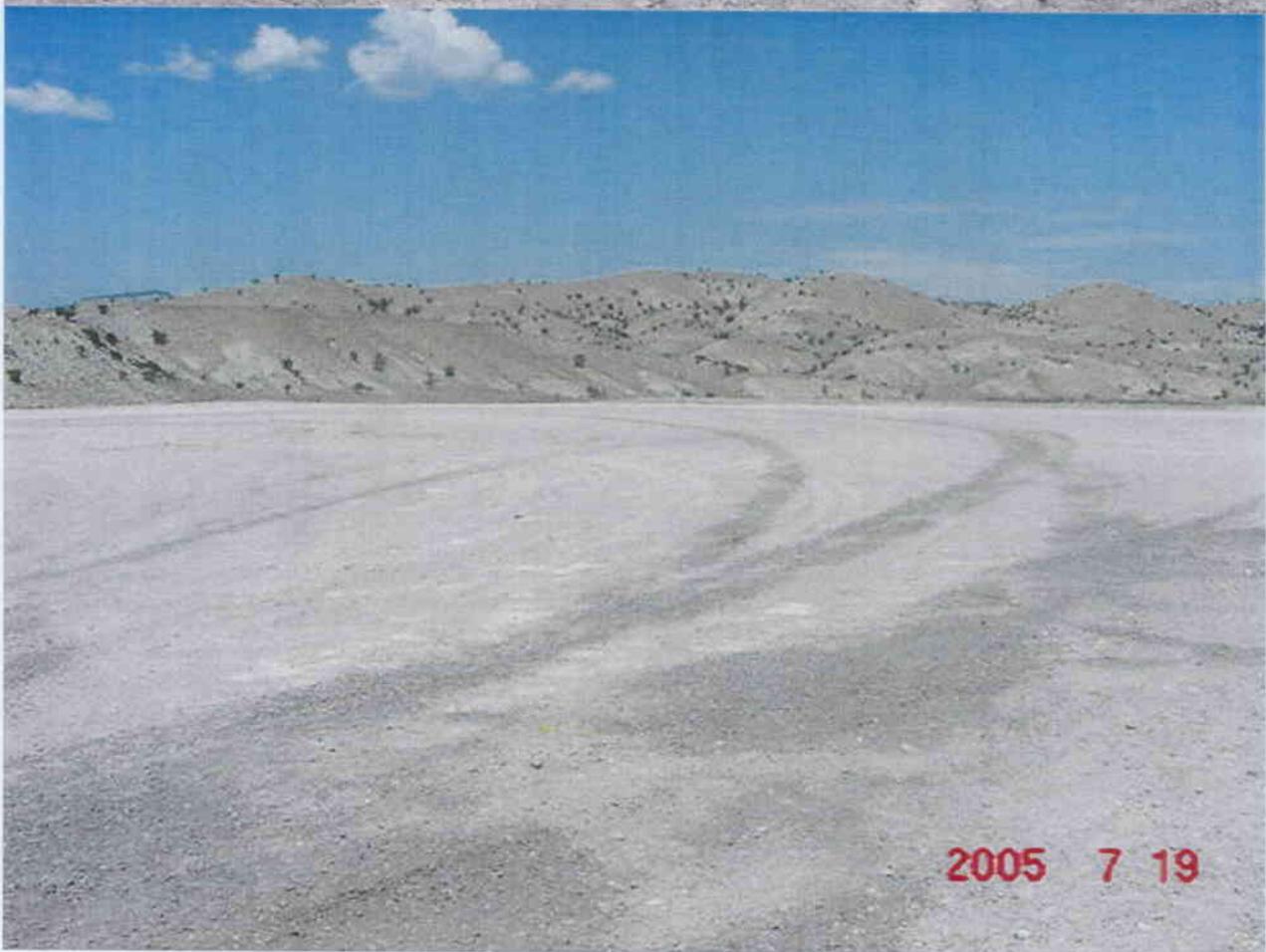
Sensitivity Level I = 20 or more; total containment is required, consider criteria for excluding pit use.

Sensitivity Level II = 15-19; lining is discretionary.

Sensitivity Level III = below 15; no specific lining is required.

Conditions of Approval/Application for Permit to Drill:

1. Receive approved permit prior to additional construction of reserve pit.
2. A synthetic liner with a minimum thickness of 12 mils shall be properly installed and maintained in the reserve pit.

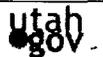




2005 7 19



2005 7 19



State Online Services

Agency List

Business.utah.gov

Search Utah.gov

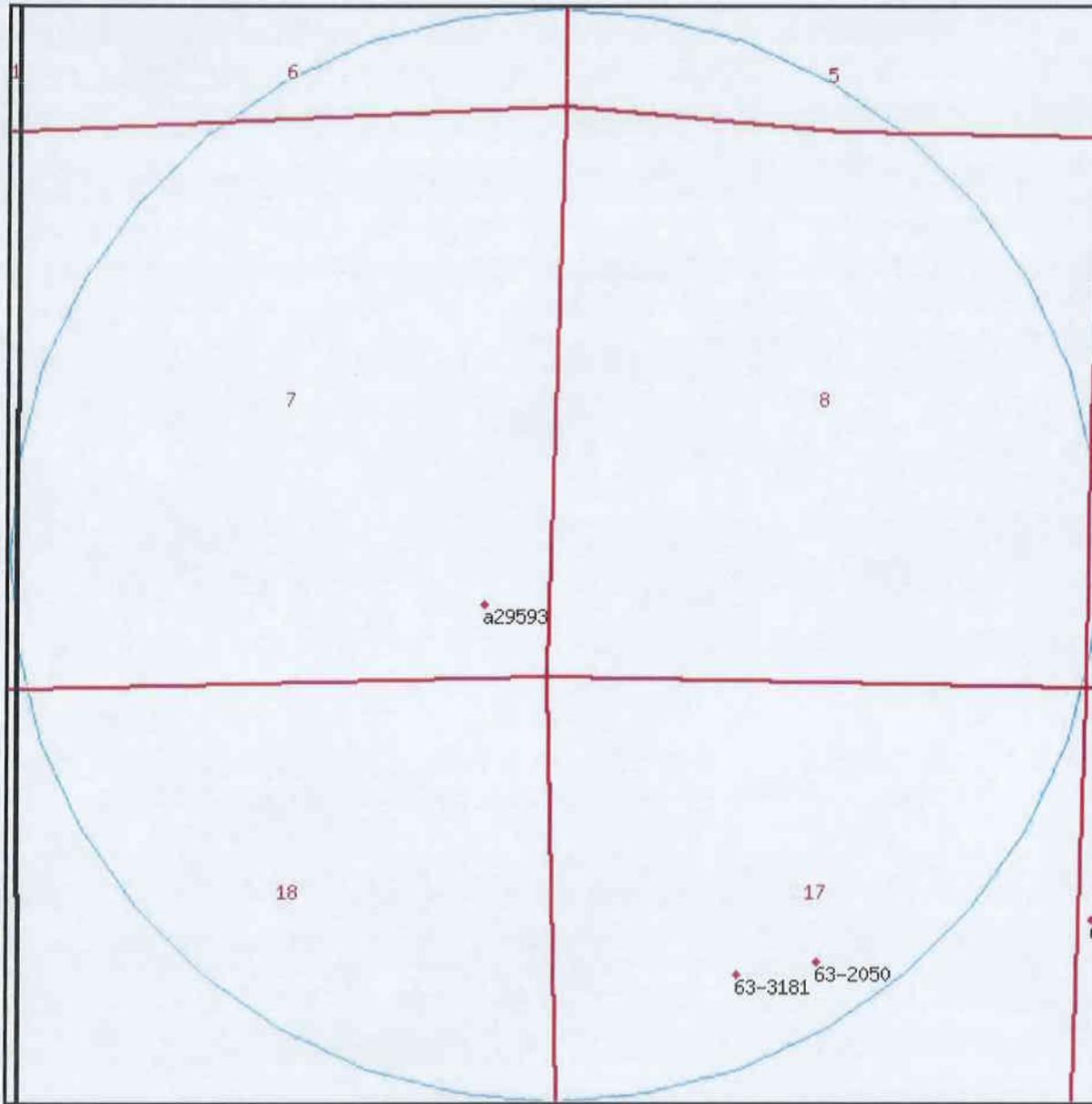


UTAH DIVISION OF WATER RIGHTS

WRPLAT Program Output Listing

Version: 2004.12.30.00 Rundate: 07/28/2005 02:46 PM

Radius search of 5280 feet from a point N1140 E30 from the SW corner, section 08, Township 23S, Range 1W, SL b&m
Criteria:wrtypes=W,C,E podtypes=all status=U,A,P usetypes=all



Water Rights

WR Number	Diversion Type/Location	Well Log	Status	Priority	Uses	CFS	ACFT	Owner Name
63-2050	Point to Point 0 0 17 23S 1W SL		P	19030000	OS	0.010	0.000	RICHFIELD DISTRICT USA BUREAU OF LAND MANAGEMENT 150 EAST 900 NORTH
63-3180	Surface S2900 E1800 NW 17 23S 1W SL		P	18700000	I	3.160	0.000	G. W. NEBEKER SIGURD UT 84657
63-3181	Surface S2900 E1800 NW 17 23S 1W SL		P	18700000	DS	0.010	0.000	G. W. NEBEKER SIGURD UT 84657
63-319	Underground N330 E100 W4 16 23S 1W SL		P	19560121	S	0.015	0.000	A. BRYANT AND J. LLEWELLYN YOUNG RICHFIELD UT 84701
a29593	Underground N660 W660 SE 07 23S 1W SL		A	20041130	IO	0.002	1.000	WOLVERINE GAS AND OIL CORPORATION ONE RIVER FRONT PLAZA

[Natural Resources](#) | [Contact](#) | [Disclaimer](#) | [Privacy Policy](#) | [Accessibility Policy](#)



State Online Services

Agency List

Business.utah.gov

Search Utah.gov



UTAH DIVISION OF WATER RIGHTS

Select Related Information

(WARNING: Water Rights makes NO claims as to the accuracy of this data.)

CHANGE: a29593 WATER RIGHT: 63-4378 CERT. NO.: AMENDATORY? No
 BASE WATER RIGHTS: 63-4378
 RIGHT EVIDENCED BY: a26985(63-4378)
 CHANGES: Point of Diversion [X], Place of Use [X], Nature of Use [X], Reservoir Storage [].

NAME: Wolverine Gas and Oil Corporation
 ADDR: One River Front Plaza
 55 Compac Northwest
 Grand Rapids, MI 49503-2616
 INTEREST: 100% REMARKS:

FILED: 11/30/2004 | PRIORITY: 11/30/2004 | ADV BEGAN: 12/15/2004 | ADV ENDED: 12/22/2004 | NEWSPAPER:
 ProtestEnd:01/11/2005 | PROTESTED: [No] | HEARNG HLD: | SE ACTION: [Approved] | ActionDate:0
 EXTENSION: | ELEC/PROOF:[] | ELEC/PROOF: | CERT/WUC: | LAP, ETC:
 RENOVATE: | RECON REQ: | TYPE: []

Status: Approved

 *******H E R E T O F O R E*******

 *******H E R E A*******

FLOW: 0.0015 cfs OR 1.0 acre-feet	FLOW: 0.0015 cfs OR 1.0 acre-fe
SOURCE: Underground (well)	SOURCE: Underground Water Well
COUNTY: Sevier	COUNTY: Sevier COM DESC: 2 mi

| POINT(S) OF DIVERSION -----> | CHANGED AS FOLLOWS: (Click Locati

Point Underground:
 (1) N 350 ft E 2280 ft from SW cor, Sec 26, T 24S, R 3W, SLBM
 Diameter: 6 ins. Depth: 100 to 300 ft.
 COMMENT:

UNDERGROUND: (Click Link for PLAT
 (1) N 660 ft W 660 ft from SE
 Diameter: ins. Depth:
 COMMENT:

PLACE OF USE ----->

```

                --NW¼--  --NE¼--  --SW¼--  --SE¼--
                |N N S S| |N N S S| |N N S S| |N N S S|
                |W E W E| |W E W E| |W E W E| |W E W E|
  Sec 26 T 24S R 3W SLBM * : : : ** : : : ** : : : X** : : : *
  
```

CHANGED as follows:

```

                --NW
                |N N
                |W E
  Sec 07 T 23S R 1W SLBM * : :
  Sec 08 T 23S R 1W SLBM * : :
  
```

NATURE OF USE ----->

SUPPLEMENTAL to Other Water Rights: No

IRR: 0.1600 acs Sol/Sup: 0.1600 acs USED 04/01 - 10/31

STK: 2 Cattle or Equivalent USED 01/01 - 12/31

DOM: 1 Family USED 01/01 - 12/31

CHANGED as follows:

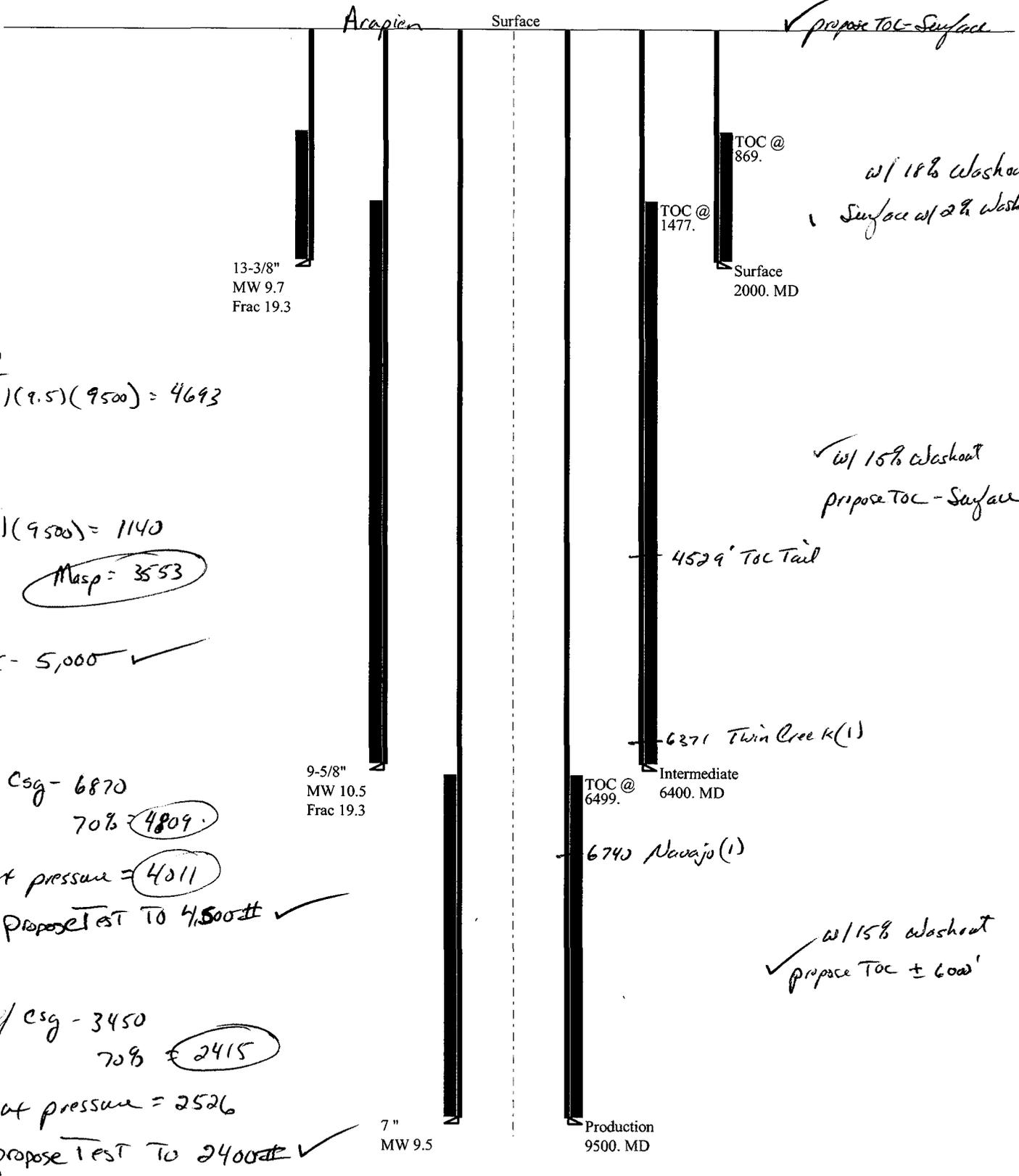
SUPPLEMENTAL to Other Water Right

IRR: 0.0340 acs Sol/Sup:

OTH: COMMERCIAL: two restr
 domestic water for workers i

 *****END OF DATA*****

08-05 Wolverine SWD- Casing Schematic



BHP
 $(.052)(9.5)(9500) = 4693$

G_{max}
 $(.12)(9500) = 1140$
Masp = 3553

BOPE - 5,000 ✓

Int csg - 6870
 70% = 4809

Mat pressure = 4011
 propose TEST TO 4,500# ✓

Surf csg - 3450
 70% = 2415

Mat pressure = 2526
 propose TEST TO 2400# ✓

✓ Adequate DWD 8/25/05

✓ propose TOC - Surface
 w/ 18% washout
 Surface w/ 2% washout

✓ w/ 15% washout
 propose TOC - Surface

✓ w/ 15% washout
 propose TOC ± 6000'

Well name:

08-05 Wolverine SWD-1

Operator: **Wolverine Gas & Oil**

String type: Surface

Project ID:

43-041-30039

Location: Sevier County

Design parameters:

Collapse

Mud weight: 9.700 ppg
Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 103 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 350 ft

Cement top: 869 ft

Burst

Max anticipated surface pressure: 1,744 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 1,984 psi

No backup mud specified.

Tension:

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

Tension is based on buoyed weight.
Neutral point: 1,712 ft

Completion type is subs
Non-directional string.

Re subsequent strings:

Next setting depth: 6,400 ft
Next mud weight: 10,500 ppg
Next setting BHP: 3,491 psi
Fracture mud wt: 19,250 ppg
Fracture depth: 1,982 ft
Injection pressure 1,982 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	2000	13.375	68.00	J-55	Buttress	2000	2000	12.29	270.1
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	1008	1945	1.930	1984	3450	1.74	116	1069	9.19 B

Prepared by: Clinton Dworshak
Utah Div. of Oil & Mining

Phone: 801-538-5280
FAX: 801-359-3940

Date: August 22, 2005
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2000 ft, a mud weight of 9.7 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	08-05 Wolverine SWD-1	
Operator:	Wolverine Gas & Oil	Project ID:
String type:	Intermediate	43-041-30039
Location:	Sevier County	

Design parameters:

Collapse
 Mud weight: 10.500 ppg
 Design is based on evacuated pipe.

Burst
 Max anticipated surface pressure: 3,139 psi
 Internal gradient: 0.120 psi/ft
 Calculated BHP: 3,907 psi
 No backup mud specified.

Minimum design factors:

Collapse:
 Design factor: 1.125

Burst:
 Design factor: 1.00

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

Tension is based on buoyed weight.
 Neutral point: 5,392 ft

Environment:

H2S considered? No
 Surface temperature: 75 °F
 Bottom hole temperature: 165 °F
 Temperature gradient: 1.40 °F/100ft
 Minimum section length: 1,500 ft
 Cement top: 1,477 ft

Completion type is subs
 Non-directional string.

Re subsequent strings:

Next setting depth: 8,405 ft
 Next mud weight: 9.500 ppg
 Next setting BHP: 4,148 psi
 Fracture mud wt: 19.250 ppg
 Fracture depth: 5,588 ft
 Injection pressure: 5,588 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	6400	9.625	47.00	N-80	LT&C	6400	6400	8.625	603.2

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	3491	4754	1.362	3907	6870	1.76	253	905	3.57 J

Prepared by: Clinton Dworshak
 Utah Div. of Oil & Mining

Phone: 801-538-5280
 FAX: 801-359-3940

Date: August 22, 2005
 Salt Lake City, Utah

Remarks:
 Collapse is based on a vertical depth of 6400 ft, a mud weight of 10.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kernler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	08-05 Wolverine SWD-1	
Operator:	Wolverine Gas & Oil	Project ID:
String type:	Production	43-041-30039
Location:	Sevier County	

Design parameters:

Collapse

Mud weight: 9.500 ppg
 Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
 Surface temperature: 75 °F
 Bottom hole temperature: 208 °F
 Temperature gradient: 1.40 °F/100ft
 Minimum section length: 1,500 ft

Cement top: 6,499 ft

Burst

Max anticipated surface pressure: 3,548 psi
 Internal gradient: 0.120 psi/ft
 Calculated BHP 4,688 psi

No backup mud specified.

Tension:

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

Tension is based on buoyed weight.
 Neutral point: 8,143 ft

Completion type is subs
 Non-directional string.

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	9500	7	23.00	S-95	LT&C	9500	9500	6.25	439.1
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	4688	5646	1.204	4688	7530	1.61	187	512	2.73 J

Prepared by: Clinton Dworshak
 Utah Div. of Oil & Mining

Phone: 801-538-5280
 FAX: 801-359-3940

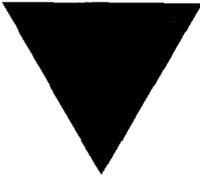
Date: August 22, 2005
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 9500 ft, a mud weight of 9.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

July 26, 2005

Ms. Diana Whitney
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Re: Application for Permit to Drill
Proposed Saltwater Disposal SWD-1
SW/SW Section 8 T23S-R1W,
Servier County, UT

Dear Ms. Whitney:

The purpose of this letter is to supplement our previous APD submitted on the proposed SWD-1, and provide the revised well location layout map and cross-section. The change reflected in this drawing is the modification to the reserve pit which has been enlarged.

If you have any questions, please do not hesitate to call me at 616.458.1150.

Sincerely,



Edward A. Higuera, P.E.
Manager-Development

c: Mark Jones, w/attachments

RECEIVED

JUL 28 2005

DIV. OF OIL, GAS & MINING

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

FORM 3

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL				5. MINERAL LEASE NO: n/a	6. SURFACE: Fee
1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>				7. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a	
B. TYPE OF WELL: OIL <input type="checkbox"/> GAS <input type="checkbox"/> OTHER SWD _____ SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>				8. UNIT or CA AGREEMENT NAME: n/a	
2. NAME OF OPERATOR: Wolverine Gas & Oil Company of Utah, LLC				9. WELL NAME and NUMBER: SWD-1	
3. ADDRESS OF OPERATOR: 55 Campau NW _____ Grand Rapids _____ MI _____ 49503			PHONE NUMBER: (616) 458-1150	10. FIELD AND POOL, OR WILDCAT: Exploratory	
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 30' FWL & 1,140' FSL; T23S - R1W; Section 8 AT PROPOSED PRODUCING ZONE: SAME				11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: approximately three (3) miles South of Sigurd				12. COUNTY: Sevier	13. STATE: UTAH
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) approximately 300'		16. NUMBER OF ACRES IN LEASE: n/a		17. NUMBER OF ACRES ASSIGNED TO THIS WELL: n/a	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET) approximately 3,634'		19. PROPOSED DEPTH: 9,500		20. BOND DESCRIPTION: Individual well 19-10755-6	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 5,594' (ungraded)		22. APPROXIMATE DATE WORK WILL START: 5/1/2005		23. ESTIMATED DURATION: 45 days	

24. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT			SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT		
30"	20"	X42	.25 wall	120	Conductor cmt to surf		
17-1/2"	13-3/8"	J55 BTC	68 ppf	2,000	lead:LW 600sx, 1.97,	12.8/tail: 300sx, 1.15,	15.8
12-1/4"	9-5/8"	N80 LTC	47 ppf	6,800	lead:type5,460sx,3.83	11.0/tail:Poz,	850sx,1.27 14.35
8-1/2"	7"	N80 LTC*	23 ppf	9,500	Poz, 600sx, 1.27,	14.35	
inj tbg	3-1/2"	L80 EUE	9.3 ppf	8,100	none		

25. **ATTACHMENTS**

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

<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER	<input type="checkbox"/> COMPLETE DRILLING PLAN
<input type="checkbox"/> EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER	<input type="checkbox"/> FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) EDUARDO A. HIGUERA TITLE Manager - Development

SIGNATURE *Eduardo A. Higuera* DATE 7-26-05

(This space for State use only)

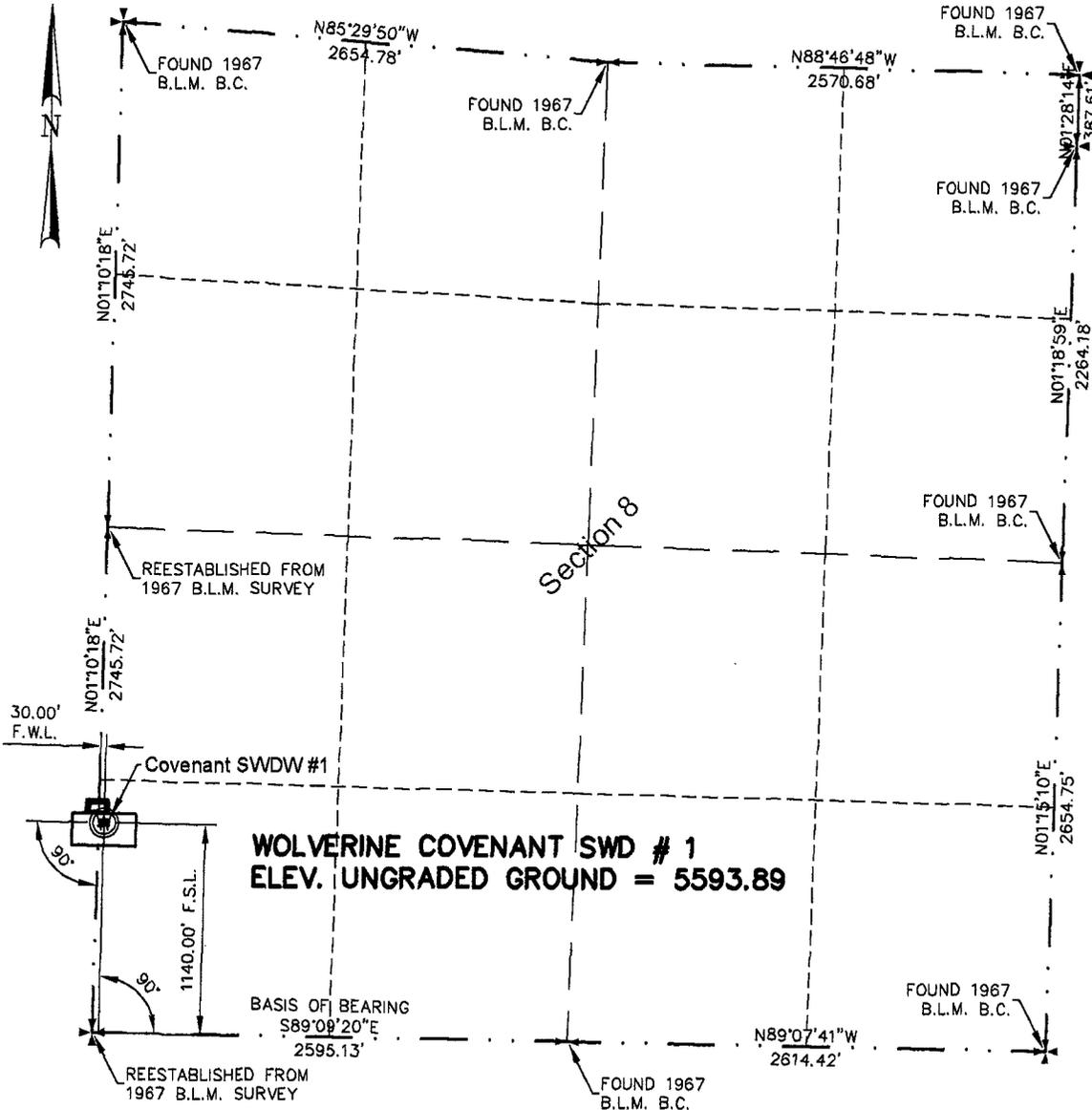
API NUMBER ASSIGNED: 43-041-30032

APPROVAL:

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JUL 28 2005

DIV. OF OIL, GAS & MINING

Section 8, T.23 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS $S89^{\circ}09'20''E$ BETWEEN THE SOUTHWEST CORNER AND THE SOUTH QUARTER CORNER OF SECTION 8, T.23 S., R.1 W., S.L.B. & M.

LATITUDE: $38^{\circ}48'47.2098'' = (38.81311383)$
 LONGITUDE: $-111^{\circ}56'30.0007'' = (-111.94166686)$

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SW 1/4 OF THE SW 1/4 OF SECTION 8, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

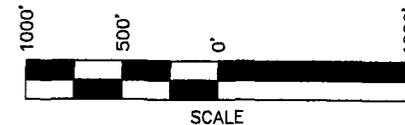
LEGEND

- \oplus = SECTION CORNERS LOCATED
- \ominus = QUARTER SECTION CORNERS LOCATED
- \odot = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE COVENANT SWD#1 LOCATION LOCATED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 8, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

BASIS OF ELEVATION

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



CERTIFICATE

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

2/28/05
DATE

RYAN W. SAVAGE, C.L.S. 3188343

RYAN SAVAGE

Jones & DeMille Engineering
 1535 South 100 West, Richfield, Utah 84701
 Phone: (435) 898-8286
 Fax: (435) 898-8288
 www.jonesanddemille.com

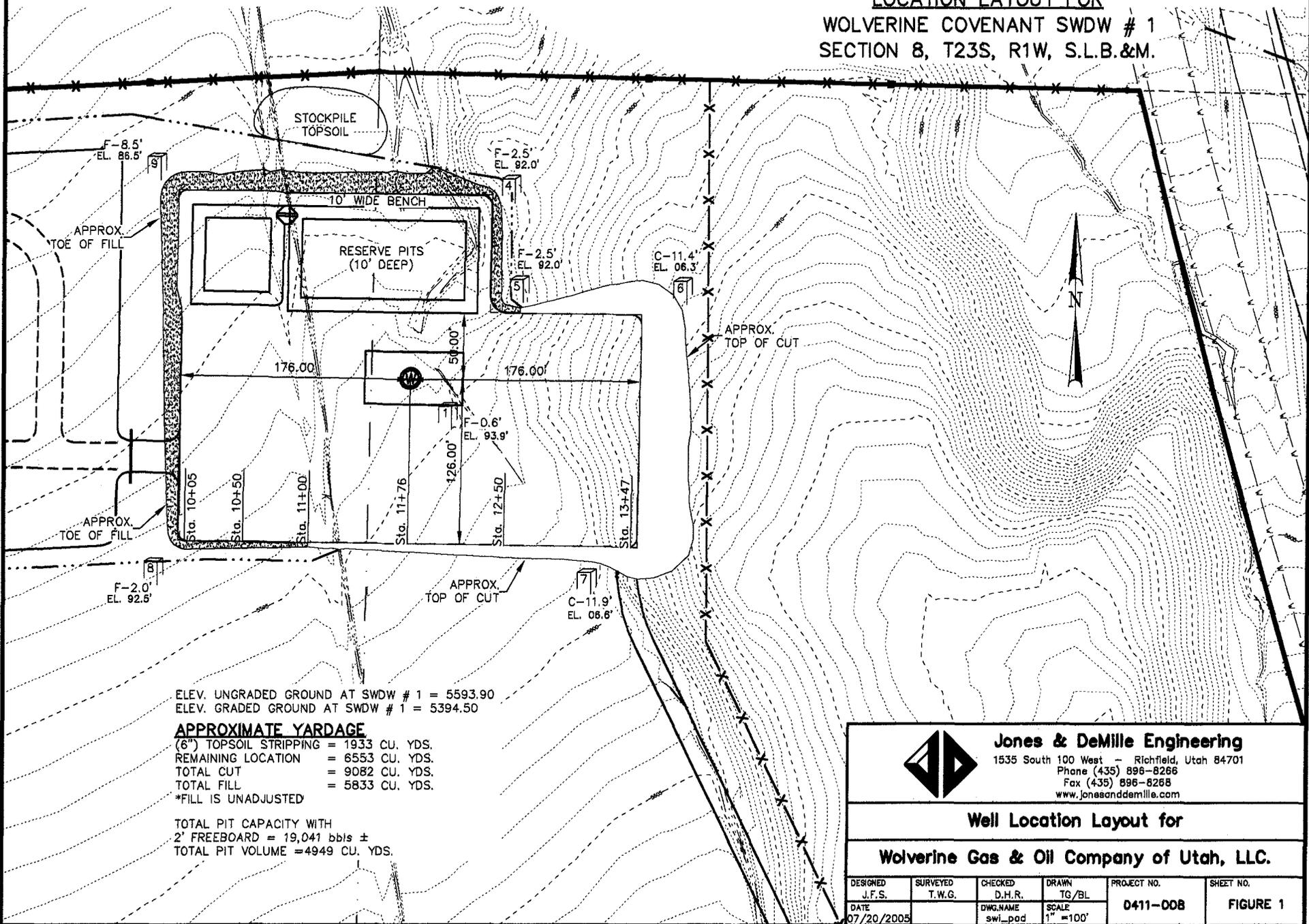
Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED T.W.G.	CHECKED R.W.S.	DRAWN T.R.G.	PROJECT NO.	SHEET NO.
DATE Feb. 2005		DWG.NAME Wells	SCALE 1" = 1000'	0411-008	1

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

LOCATION LAYOUT FOR WOLVERINE COVENANT SWDW # 1 SECTION 8, T23S, R1W, S.L.B.&M.



ELEV. UNGRADED GROUND AT SWDW # 1 = 5593.90
ELEV. GRADED GROUND AT SWDW # 1 = 5394.50

APPROXIMATE YARDAGE

(6") TOPSOIL STRIPPING = 1933 CU. YDS.
REMAINING LOCATION = 6553 CU. YDS.
TOTAL CUT = 9082 CU. YDS.
TOTAL FILL = 5833 CU. YDS.
*FILL IS UNADJUSTED

TOTAL PIT CAPACITY WITH
2' FREEBOARD = 19,041 bbls ±
TOTAL PIT VOLUME = 4949 CU. YDS.



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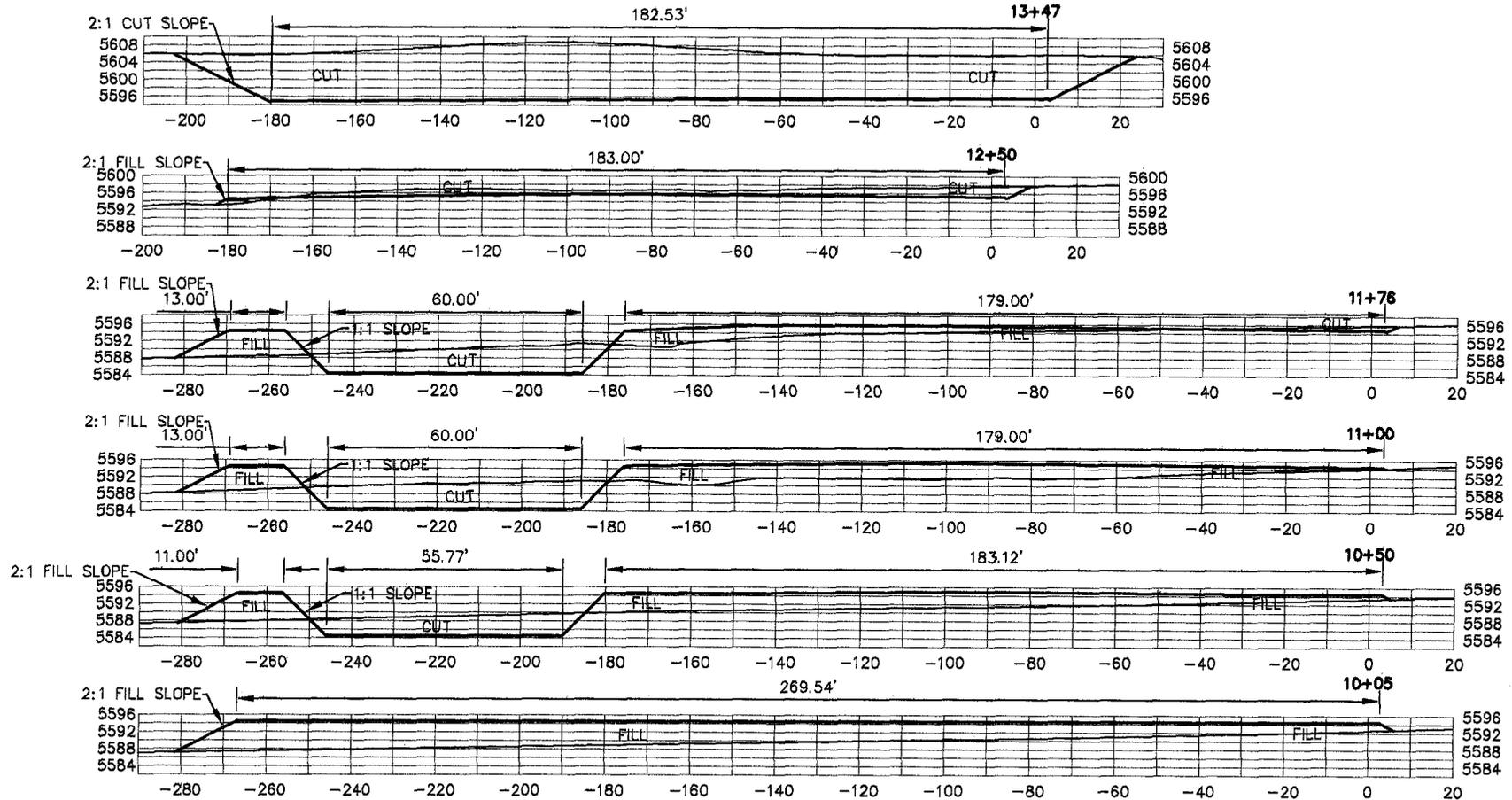
Well Location Layout for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
J.F.S.	T.W.G.	D.H.R.	TG/BL	0411-008	FIGURE 1
DATE	DWG.NAME	SCALE			
07/20/2005	swi_pod	1" = 100'			

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

TYPICAL CROSS SECTIONS FOR WOLVERINE COVENANT SWDW # 1 SECTION 8, T23S, R1W, S.L.B.&M.

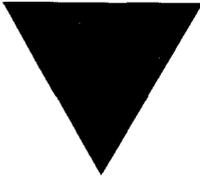


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 Fax (435) 896-8268
 www.jonesanddemille.com

Typical Cross Sections for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	D.H.R.	TG/BL	D411-008	FIGURE 1
DATE		DWG.NAME	SCALE		
07/20/2005		swi_pad	1" = 40'		



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

July 11, 2005

Ms. Diana Whitney
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, UT 84114-5801

Re: Application for Permit to Drill
Proposed Saltwater Disposal SWD-1
SW/SW Section 8 T23S-R1W,
Servier County, UT

Dear Ms. Whitney:

The purpose of this letter is to supplement our previous APD submitted on the proposed SWD-1, and provide the information requested by Mark Jones. Specifically, this submittal includes: revised location map; well location plat; well location layout; and cut and fill cross sections.

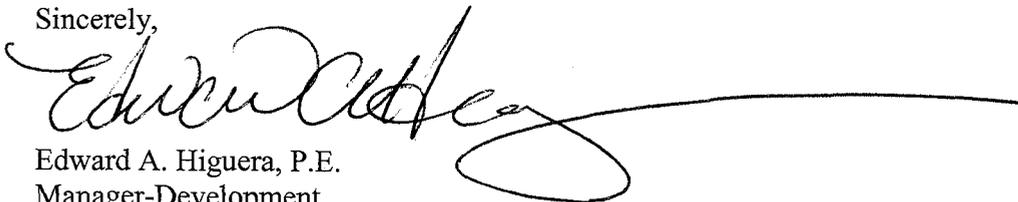
Wolverine Gas & Oil Corporation is the owner of the surface property and has a mineral lease with Kings Meadow Ranches, the owner of the minerals for the location of the proposed saltwater disposal well, SWD-1.

We will obtain our fresh water used for drilling from Kings Meadow Ranches, as has been the practice for the other wells drilled in this area, and which is in accordance with an agreement we have with Kings Meadow Ranches.

The onsite visit can be coordinated with Charlie Irons (435-896-1943).

If you have any questions, please do not hesitate to call me at 616.458.1150.

Sincerely,



Edward A. Higuera, P.E.
Manager-Development

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AUG 03 2005

c: Mark Jones, w/attachments, via fax 435-613-1152

DIV. OF OIL, GAS & MINING

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

FORM 3

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL		5. MINERAL LEASE NO: n/a	6. SURFACE: Fee
1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>		7. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a	
B. TYPE OF WELL: OIL <input type="checkbox"/> GAS <input type="checkbox"/> OTHER <u>Injection</u> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		8. UNIT or CA AGREEMENT NAME: n/a	
2. NAME OF OPERATOR: Wolverine Gas & Oil Company of Utah, LLC		9. WELL NAME and NUMBER: Covenant SWD #1	
3. ADDRESS OF OPERATOR: One Riverfront Plaza CITY Grand Rapids STATE MI ZIP 49503		PHONE NUMBER: (616) 458-1150	10. FIELD AND POOL, OR WILDCAT: Exploratory
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 30' FWL & 1,140' FSL; T23S - R1W; Section 8 AT PROPOSED PRODUCING ZONE: SAME		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: LEASE 8 23S 1W S Sw, SW	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: approximately three (3) miles South of Sigurd		12. COUNTY: Sevier	13. STATE: UTAH
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) approximately 300'	16. NUMBER OF ACRES IN LEASE: n/a	17. NUMBER OF ACRES ASSIGNED TO THIS WELL: n/a	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET) approximately 3,634'	19. PROPOSED DEPTH: 9,500	20. BOND DESCRIPTION: Individual well 19-10755-6	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): UNGR - 5,594'	22. APPROXIMATE DATE WORK WILL START: 5/1/2005	23. ESTIMATED DURATION: 45 days	

24. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
30"	20" X42 .25 wall	120	Conductor cmt to surf
17-1/2"	13-3/8" J55 BTC 68 ppf	2,000	lead:LW 600sx, 1.97, 12.8/tail: 300sx, 1.15, 15.8
12-1/4"	9-5/8" N80 LTC 47 ppf	6,800	lead:type5,460sx,3.83 11.0/tail:Poz, 850sx,1.27 14.35
8-1/2"	7" P110 LTC 23 ppf	9,500	Poz, 600sx, 1.27, 14.35
inj tbg	3-1/2" L80 EUE 9.3 ppf	8,100	none

25. **ATTACHMENTS**

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

<input checked="" type="checkbox"/> WELL PLAN OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER	<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN
<input type="checkbox"/> EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER	<input type="checkbox"/> FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Edward A. Higuera TITLE Manager-Development

SIGNATURE *Edward A. Higuera* DATE 7/11/2005

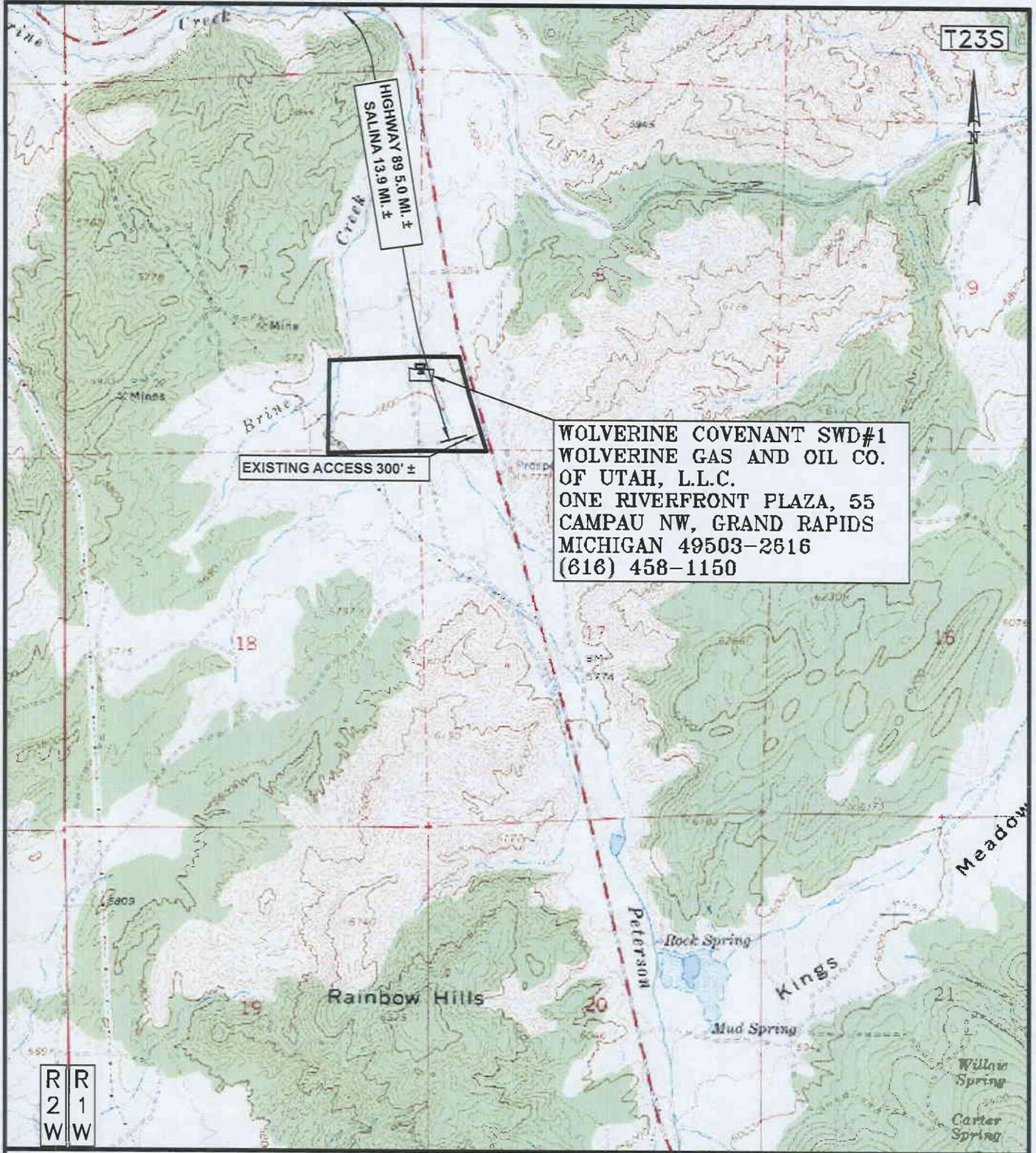
(This space for State use only)

API NUMBER ASSIGNED: 43-041-30039

Approved by the
Utah Division of
Oil, Gas and Mining

RECEIVED
AUG 03 2005

Date: 11-14-05 DIV. OF OIL, GAS & MINING



LEGEND

- EXISTING ROAD
- - - - - EXISTING ACCESS ROAD

Wolverine Covenant SWDW # 1
 Section 8, T.23 S., R.1 W., S.L.B. & M.
 1140' FSL 30' FWL



Jones & DeMille Engineering

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

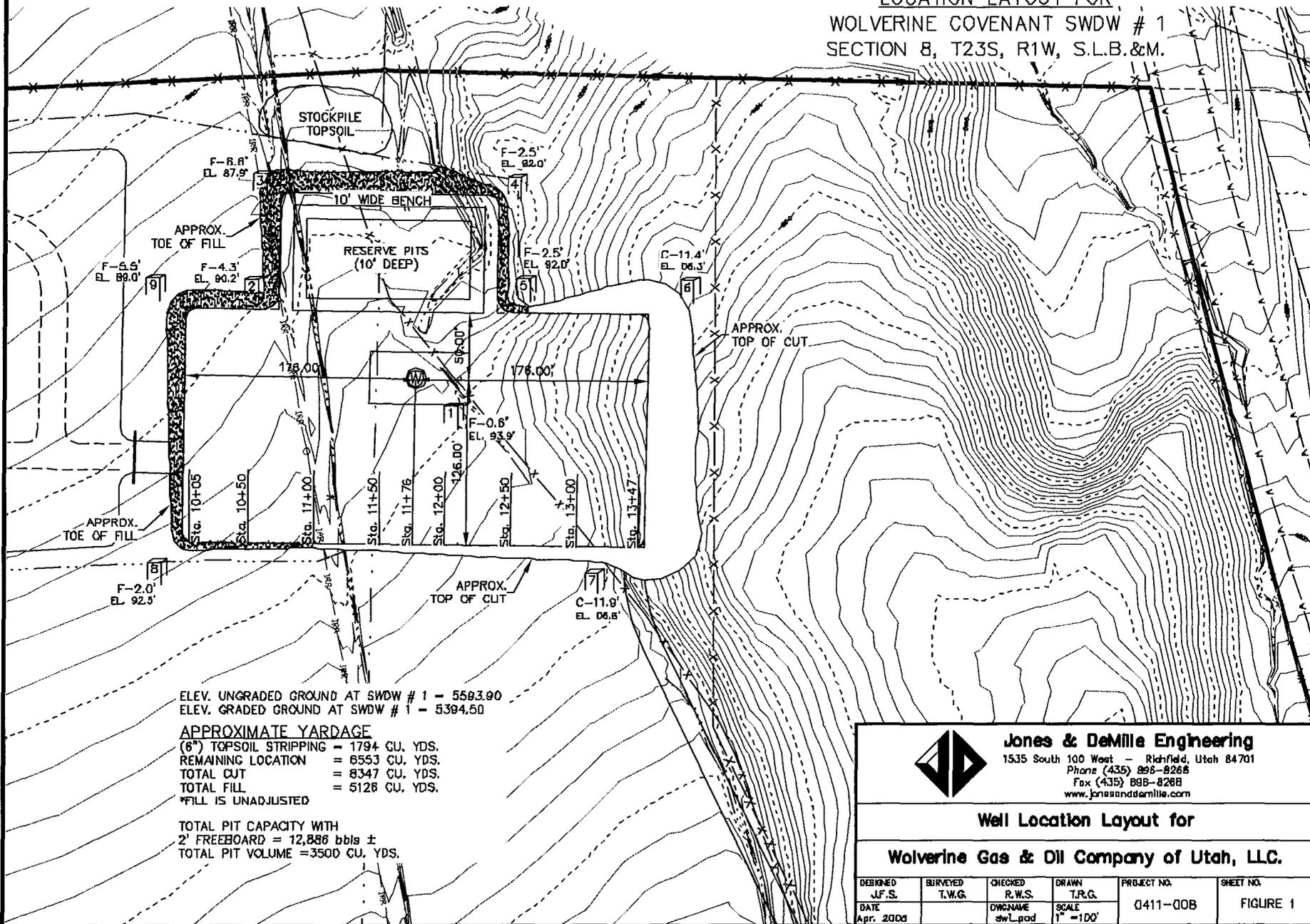
Wolverine Gas and Oil Co.
 Wolverine Covenant SWD#1

Location Map

SCALE: 1" = 2000'	ENG.:	PROJ.# 0411-008
DATE: Dec. 2004	DWG.BY: T.R.G.	DWG.NAME: Walls

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

LOCATION LAYOUT FOR
WOLVERINE COVENANT SWDW # 1
SECTION 8, T23S, R1W, S.L.B.&M.



ELEV. UNGRADED GROUND AT SWDW # 1 - 5593.90
ELEV. GRADED GROUND AT SWDW # 1 - 5394.50

APPROXIMATE YARDAGE
 (6") TOPSOIL STRIPPING = 1794 CU. YDS.
 REMAINING LOCATION = 6553 CU. YDS.
 TOTAL CUT = 8347 CU. YDS.
 TOTAL FILL = 5128 CU. YDS.
 *FILL IS UNADJUSTED

TOTAL PIT CAPACITY WITH
 2' FREEBOARD = 12,888 bbls ±
 TOTAL PIT VOLUME = 3500 CU. YDS.



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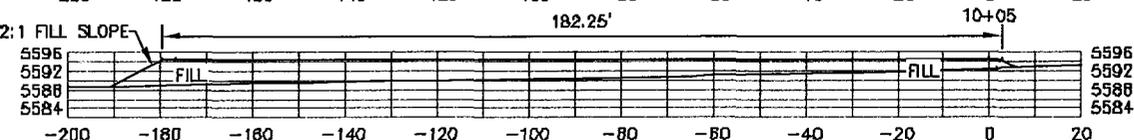
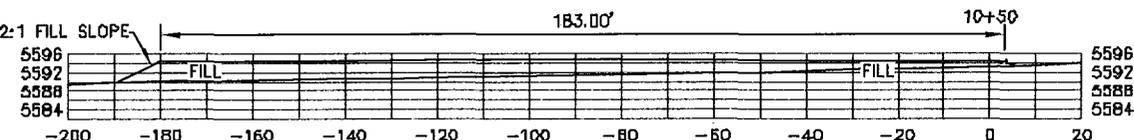
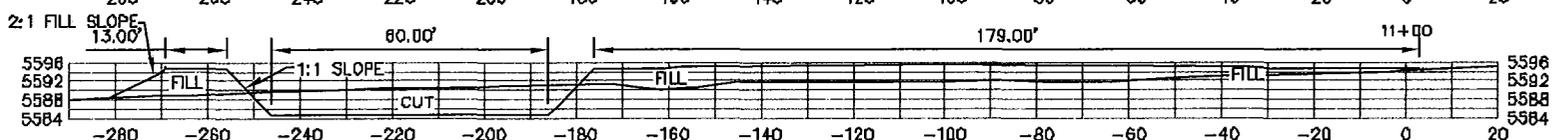
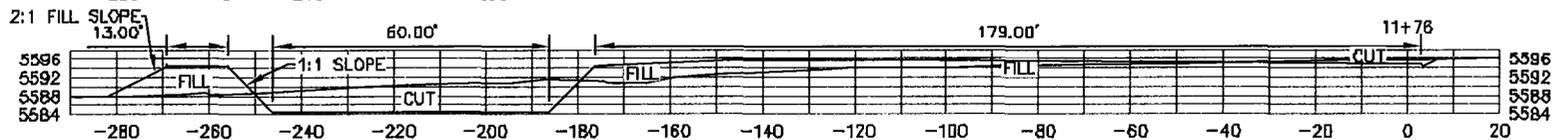
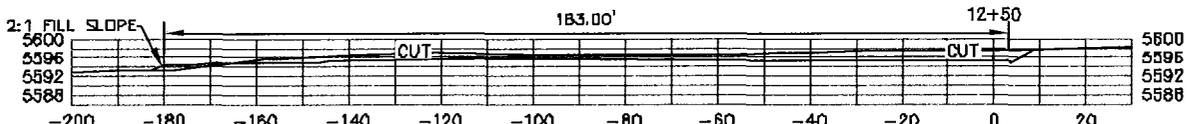
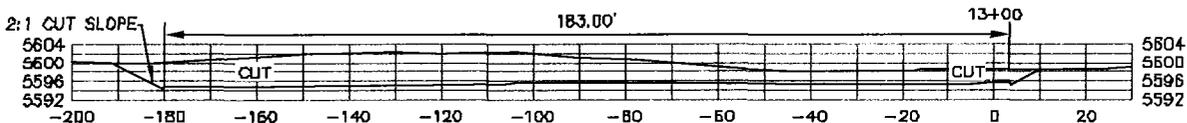
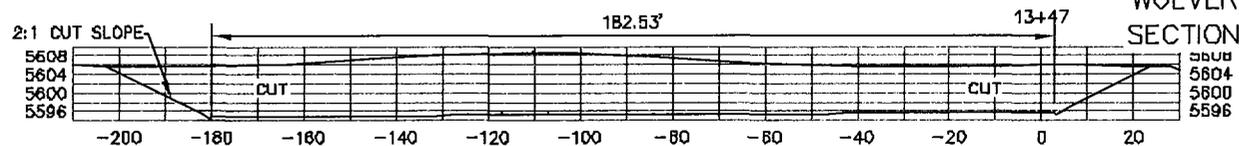
Well Location Layout for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED J.F.S.	SURVEYED T.W.G.	CHECKED R.W.S.	DRAWN T.R.G.	PROJECT NO. 0411-00B	SHEET NO. FIGURE 1
DATE Apr. 2004	DWGNAME swLpad	SCALE 1" = 100'			

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

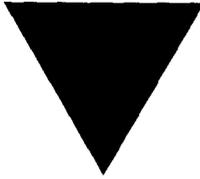
TYPICAL CROSS SECTIONS FOR WOLVERINE COVENANT SWDW # 1 SECTION 8, T23S, R1W, S.L.B.&M.



Jones & DeMille Engineering
1535 South 100 West - Richfield, Utah 84701
Phone (435) 898-8266
Fax (435) 898-8288
www.jonesanddemille.com

Typical Cross Sections for Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED T.W.G.	CHECKED R.W.S.	DRAWN T.R.G.	PROJECT NO. 0411-00B	SHEET NO. FIGURE 1
DATE Apr. 2009		DWGNAME swL.pod	SCALE 1" = 40'		



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

November 11, 2005

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

Re: Covenant SWD-1, Covenant Field, Sevier County, UT

Dear Ms. Whitney:

Here is the additional information you requested regarding the APD for the Covenant SWD-1. Specifically, you indicated you needed information on the water permit and exception location letter.

Water for this well will come from Kings Meadow Ranches, as has been the case for the previous wells drilled in the Covenant field. Attached with this letter is a copy of the *Temporary Change of Water*, which grants us permission to use Kings Meadow Ranches' water for drilling operation.

Wolverine is also requesting permission for an exception location for this disposal well. The location of this well has been selected using our current understanding of the structure, so the bottom hole location will intercept the structure below the water/oil contact and sufficiently away from the producers, so as not to adversely impact our producing wells. As it turns out, this desired location on the structure will result in a BHL at an exception location. We also selected this surface location so it is within the boundaries of the production facility property to take advantage of our existing land, and to eliminate the need to build another location. The location will allow us to have shorter disposal lines from our facility, which will provide us operational advantages and safety. To position the location within the approved site would require us to directionally drill to the southeast (see attached diagram), and this would result in the well bore being closer to the producing wells (assuming we kick to the location in Section 8), which we feel would not be an acceptable position, and would increase costs to drill the well. The location of the bottom hole is surrounded by Wolverine-controlled leases (see attached map), so there are no offset operators.

If you have any questions, please contact me directly.

Sincerely,

Edward A. Higuera
Manager-Development

Encl.

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DIV. OF OIL, GAS & MINING

APPLICATION FOR TEMPORARY CHANGE OF WATER

DIVISION OF WATER RIGHTS cc. by _____
MAY 26 2005 Fee Paid \$ _____
Receipt # _____
BENCHFIELD AREA Microfilmed _____
Roll # _____

STATE OF UTAH

For the purpose of obtaining permission to make a temporary change of water in the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of Section 73-3-3 Utah Code Annotated 1953, as amended.

*WATER RIGHT NO. _____ *APPLICATION NO. t _____

Changes are proposed in (check those applicable)

point of diversion. place of use. nature of use. period of use.

1. OWNER INFORMATION

Name: Kings Meadow Ranches, LLC *Interest: _____ %
Address: P.O. Box 570125
City: Sigurd, Utah 84657 State: _____ Zip Code: _____

2. *PRIORITY OF CHANGE: _____ *FILING DATE: _____

3. RIGHT EVIDENCED BY: A portion 63-2529

Prior Approved Temporary Change Applications for this right: _____

***** HERETOFORE *****

4. QUANTITY OF WATER: _____ cfs and/or 6.5 ac-ft.

5. SOURCE: Kings Meadow Creek

6. COUNTY: Sevier

7. POINT(S) OF DIVERSION: S 1,011', E 1,711' from NW corner of Section 28-T23S-R1W

Description of Diverting Works: Kings Meadow Creek

8. POINT(S) OF REDIVERSION

The water has been rediverted from _____ at a point: _____

Description of Diverting Works: _____

9. POINT(S) OF RETURN

The amount of water consumed is _____ cfs or _____ ac-ft.

The amount of water returned is _____ cfs or _____ ac-ft.

The water has been returned to the natural stream/source at a point(s): _____

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DIV. OF OIL, GAS & MINING

*These items are to be completed by the Division of Water Rights.

10. NATURE AND PERIOD OF USE

Irrigation: From 04/01 to 10/31
Stockwatering: From 01/01 to 12/31
Domestic: From 01/01 to 12/31
Municipal: From to
Mining: From to
Power: From to
Other: From to

11. PURPOSE AND EXTENT OF USE

Irrigation: 2.16 acres. Sole supply of acres.
Stockwatering (number and kind):
Domestic: Families and/or Persons.
Municipal (name):
Mining: Mining District in the Mine.
Ores mined:
Power: Plant name: Type: Capacity:
Other (describe):

12. PLACE OF USE

Legal description of place of use by 40 acre tract(s): Section 20-T23S-R1W, SE 1/4

13. STORAGE

Reservoir Name: Storage Period: from to
Capacity: ac-ft. Inundated Area: acres.
Height of dam: feet.
Legal description of inundated area by 40 tract(s):

***** THE FOLLOWING CHANGES ARE PROPOSED *****

14. QUANTITY OF WATER: cfs and/or 6.5 ac-ft.
15. SOURCE: Kings Meadow Creek
Balance of the water will be abandoned: , or will be used as heretofore:
16. COUNTY: Sevier
17. POINT(S) OF DIVERSION: N 869', E 1,901' from SW corner of Section 17-T23S-R1W

Description of Diverting Works:
*COMMON DESCRIPTION:

18. POINT(S) OF REDIVERSION

The water will be rediverted from at a point:
Description of Diverting Works:

19. POINT(S) OF RETURN

The amount of water to be consumed is cfs or ac-ft.
The amount of water to be returned is cfs or ac-ft.
The water will be returned to the natural stream/source at a point(s):

20. NATURE AND PERIOD OF USE

Irrigation: From ___/___/___ to ___/___/___
Stockwatering: From ___/___/___ to ___/___/___
Domestic: From ___/___/___ to ___/___/___
Municipal: From ___/___/___ to ___/___/___
Mining: From ___/___/___ to ___/___/___
Power: From ___/___/___ to ___/___/___
Other: From 05 / 30 / 05 to 05 / 30 / 06

21. PURPOSE AND EXTENT OF USE

Irrigation: _____ acres. Sole supply of _____ acres.
Stockwatering (number and kind): _____
Domestic: _____ Families and/or _____ Persons.
Municipal (name): _____
Mining: _____ Mining District at the _____ Mine.
Ores mined: _____
Power: Plant name: _____ Type: _____ Capacity: _____
Other (describe): Use water for oil well drilling

22. PLACE OF USE

Legal description of place of use by 40 acre tract(s):
SE 1/4 SW 1/4 Section 17-T23S-R1W

25. STORAGE

Reservoir Name: _____ Storage Period: from _____ to _____
Capacity: _____ ac-ft. Inundated Area: _____ acres.
Height of dam: _____ feet.
Legal description of inundated area by 40 tract(s): _____

24. EXPLANATORY

The following is set forth to define more clearly the full purpose of this application. Include any supplemental water rights used for the same purpose. (Use additional pages of same size if necessary):

Mack T. Dastrup 435-896-5206 Kenneth A. Dastrup 435-896-8759
P.O. Box 570125 P.O. Box 570056
Sigurd, Utah 84657 Sigurd, Utah 84657

The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

Mack T. Dastrup
Signature of Applicant(s)

Kenneth A. Dastrup



WOLVERINE GAS & OIL CORPORATION
Energy Exploration in Partnership with the Environment
 ONE RIVERFRONT PLAZA
 35 CAMPBELL, N.W.
 GRAND RAPIDS, MI 49503-2816
 (616) 458-1150

Wolverine Covenant SWD #1
 Section 8, T23S, R1W
 Sevier County, Utah

Scale: 1:12000
 1"=1000'

Date: 11 November, 2005 Data Source:

West cor. Sec. 8
 REESTABLISHED FROM
 1967 B.L.M. SURVEY

Section 7

Wolverine
 Covenant SWD #1
 30 FWL/1140 FSL
 Sec. 8, T23S, R1W

SOUTHWEST CORNER SECTION 8,
 T.23 S., R.1 W., S.L.B. & M.
 FOUND 2004 SEV. CO. ALUM. CAP

T.23 S., R.1 W., S.L.B. & M.
 FOUND 1967 B.L.M. BRASS CAP

S88°30'53"W
 2598.33'

S89°09'20"E
 2595.13'

SOUTH QUARTER CORNER SECTION 8,
 T.23 S., R.1 W., S.L.B. & M.
 FOUND 1967 B.L.M. BRASS CAP

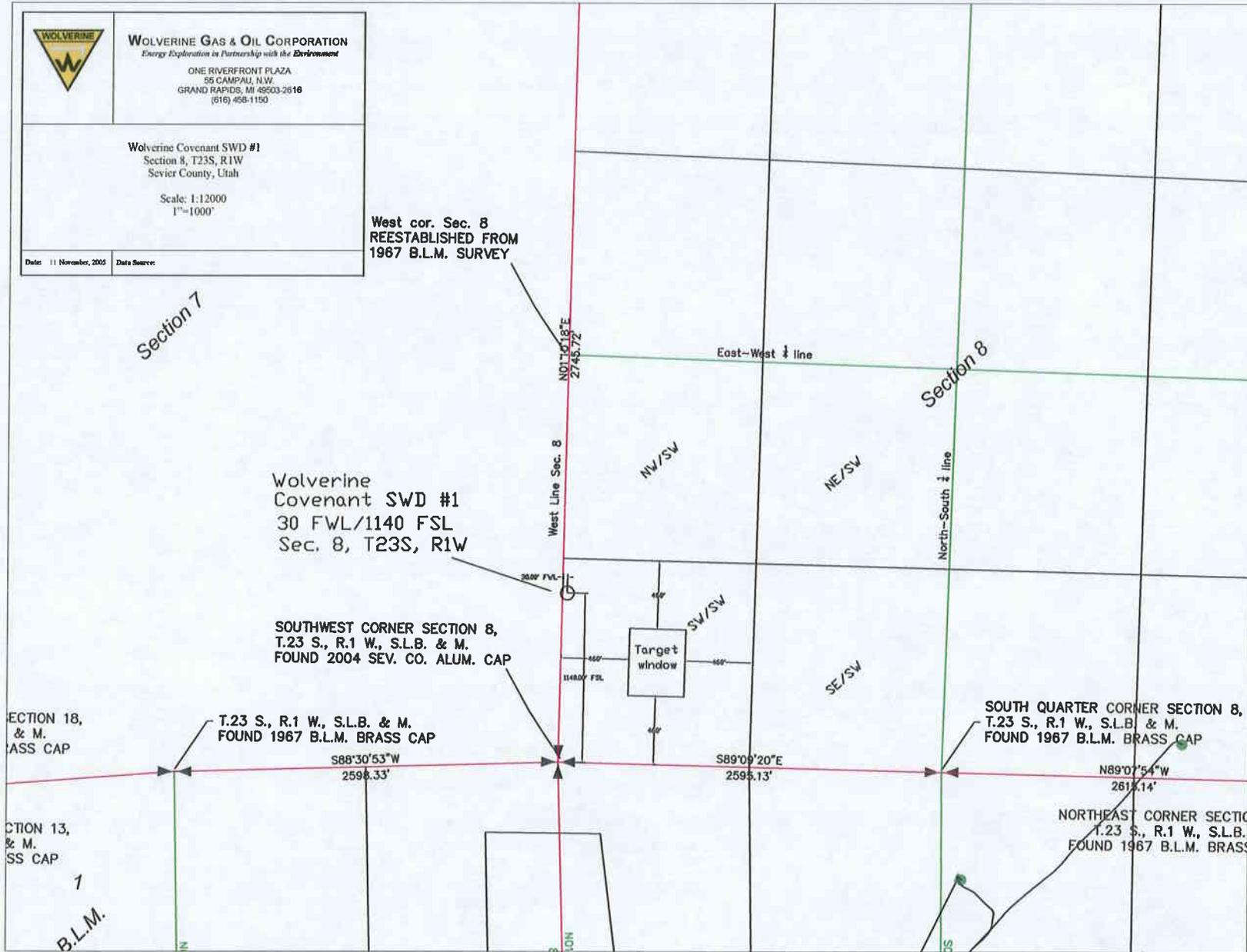
N89°07'54"W
 2614.14'

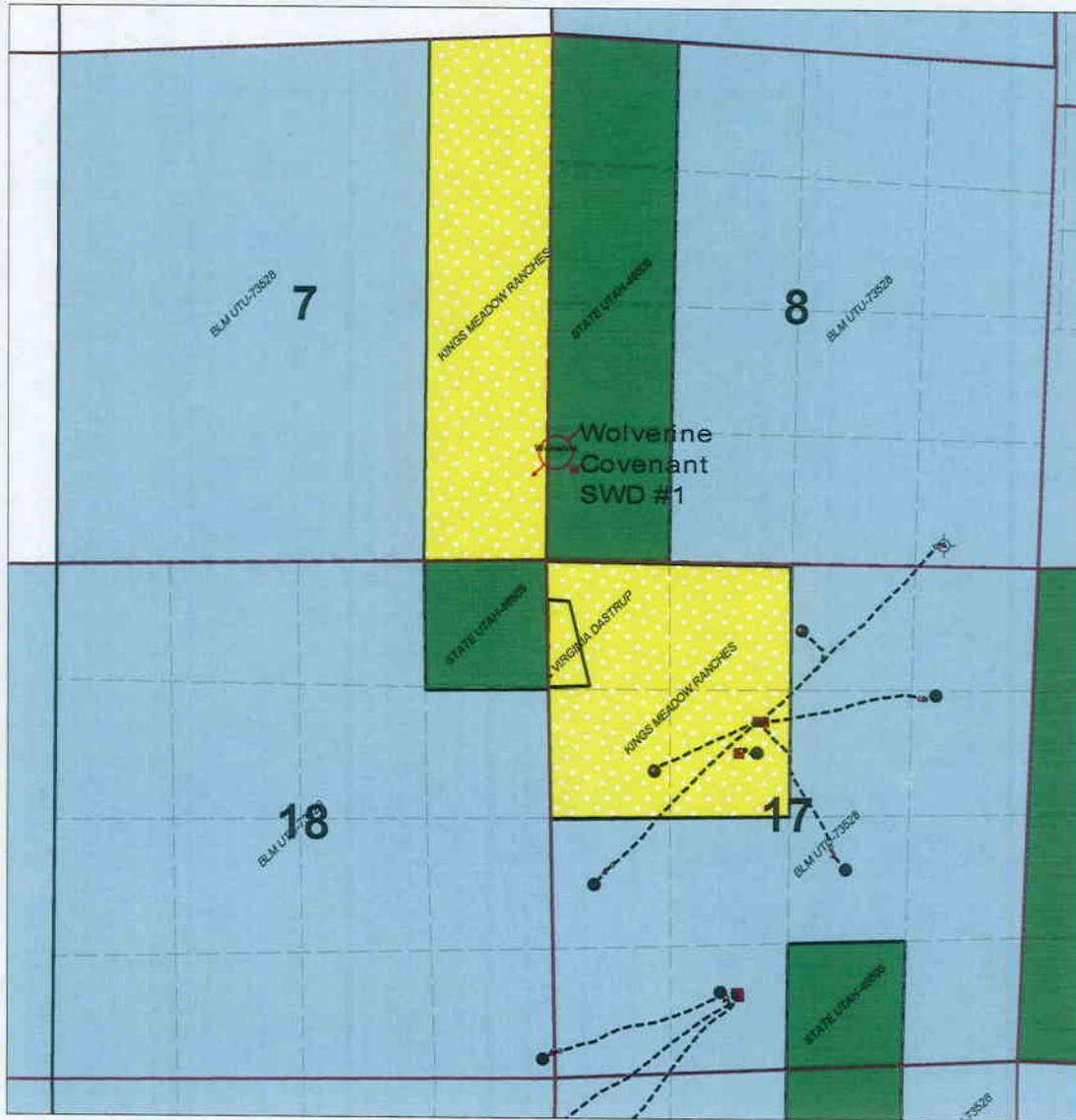
NORTHEAST CORNER SECTION 8,
 T.23 S., R.1 W., S.L.B. & M.
 FOUND 1967 B.L.M. BRASS CAP

SECTION 18,
 & M.
 ASS CAP

SECTION 13,
 & M.
 SS CAP

7
 B.L.M.





1:24000



1 inch = 2000 feet

Wolverine Minerals
under Lease

-  WGO Fee Leases
-  WGO State Leases
-  WGO Federal leases

	<p>Wolverine Gas & Oil Company of Utah, LLC (Operator) <i>Energy Exploration in Partnership with the Environment</i></p> <p>ONE RIVERFRONT PLAZA 55 CAMPAU, N.W. GRAND RAPIDS, MI 49503-2616 (616) 458-1150</p>
<p>Lease Position for the Covenant Field T23S-R1W Sevier County, UT</p>	
<p>Date: 9 November, 2005</p>	<p>gmp: covenant leases</p>



State of Utah

**Department of
Natural Resources**

MICHAEL R. STYLER
Executive Director

**Division of
Oil, Gas & Mining**

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

November 14, 2005

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

Re: Covenant SWD-1 Well, 1140' FSL, 30' FWL, SW SW, Sec. 8, 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.

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby 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 43-041-30039.

Sincerely,

Gil Hunt
Associate Director

pab
Enclosures

cc: Sevier County Assessor

Operator: Wolverine Gas & Oil Company of Utah, LLC
Well Name & Number Covenant SWD-1
API Number: 43-041-30039
Lease: Fee

Location: SW SW Sec. 8 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

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

- 24 hours prior to cementing or testing casing
- 24 hours prior to testing blowout prevention equipment
- 24 hours prior to spudding the well
- within 24 hours of any emergency changes made to the approved drilling program
- prior to commencing operations to plug and abandon the well

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

- Dan Jarvis at (801) 538-5338
- Carol Daniels at (801) 538-5284 (spud)

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

5. Surface casing shall be cemented to the surface.

6. 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.

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DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: WOLVERINE GAS & OIL CO OF UT

Well Name: SWD-1

Api No: 43-041-30039 Lease Type: FEE

Section 08 Township 23S Range 01W County SEVIER

Drilling Contractor PETE MARTIN'S RIG # BUCKET

SPUDDED:

Date 12/17/05

Time _____

How DRY

Drilling will Commence: _____

Reported by STEVE HASH

Telephone # 1-918-599-9801

Date 12/20/2005 Signed CHD

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

FORM 6

ENTITY ACTION FORM

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

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130039	Covenant SWD-1		SWSW	8	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
A	99999	15120	12/17/2005		12/29/05		
Comments: saltwater disposal well; conductor csg set 12/17/05 NAVA-WD							

CONFIDENTIAL

K

Well 2

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

Well 3

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

ACTION CODES:

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

Steven R. Hash - EXACT Engineering Inc

Name (Please Print)

Steven R. Hash

Signature

Engrg Consultant for WGOU

12/29/2005

Title

Date

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DEC 29 2005

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

AMENDED REPORT [] FORM 8
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL [] GAS WELL [] DRY [] OTHER SWD

b. TYPE OF WORK: NEW WELL [x] HORIZ. LATS. [] DEEP-EN [] RE-ENTRY [] DIFF. RESVR. [] 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 PHONE NUMBER: (616) 458-1150

4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 30' FWL & 1140' FSL, Sec 8, T23S, R01W AT TOP PRODUCING INTERVAL REPORTED BELOW: 40' FEL & 1093' FSL, Sec 7, T23S, R01W AT TOTAL DEPTH:

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit

8. WELL NAME and NUMBER: Covenant SWD 1

9. API NUMBER: 4304130039

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S

12. COUNTY: Sevier 13. STATE: UTAH

14. DATE SPUNDED: 1/3/2006 15. DATE T.D. REACHED: 2/26/2006 16. DATE COMPLETED: 3/19/2006 ABANDONED [] READY TO PRODUCE [] 17. ELEVATIONS (DF, RKB, RT, GL): 5607 KB, 5590 GL

18. TOTAL DEPTH: MD 10,153 TVD 10,112 19. PLUG BACK T.D.: MD 10,153 TVD 10,112 20. IF MULTIPLE COMPLETIONS, HOW MANY? * 21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each): HRI/DLL/MSFL, SD/DSN/GR, BCS, DML, CBL 23. WAS WELL CORED? NO [x] YES [] (Submit analysis) WAS DST RUN? NO [x] YES [] (Submit report) DIRECTIONAL SURVEY? NO [x] YES [x] (Submit copy)

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

Table with 10 columns: HOLE SIZE, SIZE/GRADE, WEIGHT (#ft.), TOP (MD), BOTTOM (MD), STAGE CEMENTER DEPTH, CEMENT TYPE & NO. OF SACKS, SLURRY VOLUME (BBL), CEMENT TOP **, AMOUNT PULLED. Rows include 30, 17.5, 12.25, 8.5 inch hole sizes.

25. TUBING RECORD

Table with 10 columns: SIZE, DEPTH SET (MD), PACKER SET (MD), SIZE, DEPTH SET (MD), PACKER SET (MD), SIZE, DEPTH SET (MD), PACKER SET (MD). Row: 2 7/8", 9,493, 9,485.

26. PRODUCING INTERVALS

Table with 5 columns: FORMATION NAME, TOP (MD), BOTTOM (MD), TOP (TVD), BOTTOM (TVD). Row (A) Navajo: 9,566, 10,153, 9,526, 10,112.

27. PERFORATION RECORD

Table with 9 columns: INTERVAL (Top/Bot - MD), SIZE, NO. HOLES, PERFORATION STATUS. Rows (A) through (D).

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

Table with 2 columns: DEPTH INTERVAL, AMOUNT AND TYPE OF MATERIAL.

29. ENCLOSED ATTACHMENTS:

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

30. WELL STATUS: SI

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31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

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

INTERVAL B (As shown in Item #26)

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

INTERVAL C (As shown in Item #26)

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

INTERVAL D (As shown in Item #26)

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

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

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
Navajo	8,825		Sandstone, water	Arapien Twin Creek Navajo	0 8,410 8,825

35. ADDITIONAL REMARKS (include plugging procedure)

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

NAME (PLEASE PRINT) Ellis M. Peterson

TITLE Sr. Production Engineer

SIGNATURE 

DATE 4/25/2006

This report must be submitted within 30 days of

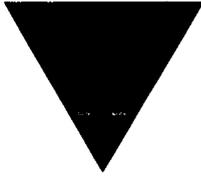
- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon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

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

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

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340
Fax: 801-359-3940



WOLVERINE OPERATING COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

February 12, 2007

Ms. Carol Daniels
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: Well Completion Reports (Form 8)
Wolverine Cedar Ridge 18-1 (4303930032)
Covenant SWD 1 (4304130039)

Dear Ms. Daniels:

Enclosed please find Well Completion Reports for the two referenced wells. Logs, Directional Survey, Geologic Report, and a Sundry Notice for plugging verification are included for the Wolverine Cedar Ridge 18-1 well. These materials were previously submitted in April 2006 for the Covenant SWD 1.

If you have any questions or need additional information, please feel free to contact me at your convenience.

Sincerely,

Ellis M. Peterson – Senior Production Engineer

RECEIVED
FEB 15 2007
DIV. OF OIL, GAS & MINING

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: ML-46605
			6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N.A.
			7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Salt Water Disposal</u>			8. WELL NAME and NUMBER: Covenant SWD 1
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC			9. API NUMBER: 4304130039
3. ADDRESS OF OPERATOR: 55 Campau NW		CITY Grand Rapids STATE MI ZIP 49503-2616	PHONE NUMBER: (616) 548-1150
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140' FSL, 30' FWL			COUNTY: Sevier
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S			STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>Inject water from another source</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

Wolverine Gas and Oil Company currently injects water produced from the Covenant Field upper thrust sheet Navajo (Navajo1) into the lower thrust sheet Navajo (Navajo2) per UIC approval (UIC-321.1) for the Covenant SWD-1 well. It is requested that the UIC permit be amended to allow water produced at Covenant Field from the lower thrust sheet Twin Creek (Twin Creek2) to be mixed with the Navajo1 water and injected into the Covenant SWD-1 well.

The water produced from the Twin Creek2 has virtually the same composition as the Navajo 2 water, which is to be expected because and the two reservoirs appear to be a common water source at Covenant. A scaling tendency analysis for the Twin Creek2 and Navajo1 water indicates the two waters are very similar and favorably compatible. Copies of recently acquired water analyses for Navajo2, Twin Creek2, and Navajo1, and a copy of the Navajo1-Twin Creek2 mix scaling tendency analysis are all attached.

Attachments: Water analysis for Navajo1 water currently being injected, analysis for water from the Twin Creek2 at Wolverine Federal 17-8, analysis for water from the Navajo2 at Wolverine Federal 17-8, analysis for water from the Navajo2 at Wolverine Federal 17-9, and scaling tendency analysis for mixed Twin Creek2 and Navajo1 water.

NAME (PLEASE PRINT) <u>Ellis M. Peterson</u>	TITLE <u>Senior Production Engineer</u>
SIGNATURE	DATE <u>4/7/2008</u>

(This space for State use only)

**Approved by the
Utah Division of
Oil, Gas and Mining**

COPY SENT TO OPERATOR

Date: 4-14-2008

Initials: KS

RECEIVED

APR 09 2008

DIV. OF OIL, GAS & MINING

Date: 04-10-08
By:

West Coast Region
 5125 Boylan Street
 Bakersfield, CA 83308
 (661) 325-4138
 Lab Team Leader - Sheila Hernandez
 (432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	WOLVERINE OIL & GAS COMPANY	Sales RDT:	31703
Region:	WESTERN REGION	Account Manager:	NICK VALDEZ (435) 828-1722
Area:	VERNAL, UT	Sample #:	390273
Lease/Platform:	COVENANT FIELD	Analysis ID #:	77778
Entity (or well #):	SWD	Analysis Cost:	\$80.00
Formation:	UNKNOWN <i>Navajo 1 Produced Water</i>		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 390273 @ 75 °F					
Sampling Date:	11/30/07	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	12/05/07	Chloride:	12933.0	364.79	Sodium:	8678.8	377.51
Analyst:	SHEILA HERNANDEZ	Bicarbonate:	380.0	6.23	Magnesium:	74.0	6.09
TDS (mg/l or g/m3):	24391.3	Carbonate:	0.0	0.	Calcium:	390.0	19.46
Density (g/cm3, tonne/m3):	1.018	Sulfate:	1759.0	36.62	Strontium:	17.0	0.39
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.1	0.
Carbon Dioxide:		Borate:			Iron:	11.0	0.4
Oxygen:		Silicate:			Potassium:	148.0	3.78
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		7.18	Copper:		
		pH used in Calculation:		7.18	Lead:		
					Manganese:	0.400	0.01
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
°F	psi											psi
80	0	0.18	6.50	-0.64	0.00	-0.70	0.00	-0.25	0.00	0.65	0.00	0.26
100	0	0.29	10.95	-0.66	0.00	-0.66	0.00	-0.25	0.00	0.49	0.00	0.34
120	0	0.40	16.76	-0.67	0.00	-0.59	0.00	-0.23	0.00	0.35	0.00	0.45
140	0	0.51	22.92	-0.68	0.00	-0.50	0.00	-0.21	0.00	0.24	0.00	0.57

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.
 Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.
 Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

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Water Analysis Report by Baker Petrolite

Company:	WOLVERINE OIL & GAS COMPANY	Sales RDT:	31719
Region:	WESTERN REGION	Account Manager:	ADOLPH CORONA (970) 210-2124
Area:	VERNAL, UT	Sample #:	409966
Lease/Platform:	TWIN CREEK UNIT <i>Covenant Field</i>	Analysis ID #:	80481
Entity (or well #):	WF 17-8	Analysis Cost:	\$80.00
Formation:	UNKNOWN <i>Twin Creek 2</i>		
Sample Point:	7996'-8008'/8050'-8070'/8088'-8108'		

Summary		Analysis of Sample 409966 @ 75 °F					
Sampling Date:	03/18/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	03/27/08	Chloride:	14770.0	416.61	Sodium:	9979.4	434.08
Analyst:	LISA HAMILTON	Bicarbonate:	429.0	7.03	Magnesium:	39.0	3.21
TDS (mg/l or g/m3):	27654.8	Carbonate:	0.0	0.	Calcium:	410.0	20.46
Density (g/cm3, tonne/m3):	1.022	Sulfate:	1857.0	38.66	Strontium:	16.0	0.37
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.1	0.
Carbon Dioxide:		Borate:			Iron:	23.0	0.83
Oxygen:		Silicate:			Potassium:	131.0	3.35
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		6.47	Copper:		
		pH used in Calculation:		6.47	Lead:		
					Manganese:	0.250	0.01
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
°F	psi											psi
80	0	-0.47	0.00	-0.64	0.00	-0.69	0.00	-0.29	0.00	0.64	0.00	1.45
100	0	-0.35	0.00	-0.66	0.00	-0.65	0.00	-0.29	0.00	0.48	0.00	1.88
120	0	-0.22	0.00	-0.67	0.00	-0.59	0.00	-0.28	0.00	0.34	0.00	2.33
140	0	-0.08	0.00	-0.68	0.00	-0.50	0.00	-0.26	0.00	0.22	0.00	2.8

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.
 Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.
 Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

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Water Analysis Report by Baker Petrolite

Company:	WOLVERINE OIL & GAS COMPANY	Sales RDT:	31719
Region:	WESTERN REGION	Account Manager:	ADOLPH CORONA (970) 210-2124
Area:	VERNAL, UT	Sample #:	409965
Lease/Platform:	UPPER NAVAJO "2" UNIT <i>Covenant Field</i>	Analysis ID #:	80482
Entity (or well #):	WF 17-8	Analysis Cost:	\$80.00
Formation:	UNKNOWN <i>Navajo 2</i>		
Sample Point:	8210' - 8220'		

Summary		Analysis of Sample 409965 @ 75 °F					
Sampling Date:	02/08/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	03/27/08	Chloride:	14674.0	413.9	Sodium:	9853.4	428.6
Analyst:	LISA HAMILTON	Bicarbonate:	431.0	7.06	Magnesium:	33.0	2.71
TDS (mg/l or g/m3):	27140	Carbonate:	0.0	0.	Calcium:	355.0	17.71
Density (g/cm3, tonne/m3):	1.021	Sulfate:	1604.0	33.4	Strontium:	14.0	0.32
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.1	0.
Carbon Dioxide:		Borate:			Iron:	48.0	1.73
Oxygen:		Silicate:			Potassium:	126.0	3.22
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		6.96	Copper:		
		pH used in Calculation:		6.96	Lead:		
					Manganese:	1.500	0.05
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
80	0	-0.03	0.00	-0.75	0.00	-0.81	0.00	-0.39	0.00	0.59	0.00	0.47
100	0	0.08	4.09	-0.77	0.00	-0.77	0.00	-0.39	0.00	0.43	0.00	0.62
120	0	0.20	10.92	-0.79	0.00	-0.70	0.00	-0.38	0.00	0.29	0.00	0.79
140	0	0.33	18.77	-0.79	0.00	-0.61	0.00	-0.36	0.00	0.17	0.00	0.98

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.
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 Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

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Water Analysis Report by Baker Petrolite

Company:	WOLVERINE OIL & GAS COMPANY	Sales RDT:	31719
Region:	WESTERN REGION	Account Manager:	ADOLPH CORONA (970) 210-2124
Area:	VERNAL, UT	Sample #:	409967
Lease/Platform:	NAVAJO "2" UNIT <i>Covenant Field</i>	Analysis ID #:	80480
Entity (or well #):	WF 17-9	Analysis Cost:	\$80.00
Formation:	UNKNOWN <i>Navajo 2</i>		
Sample Point:	8761' - 8767'		

Summary		Analysis of Sample 409967 @ 75 °F					
Sampling Date:	12/09/07	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	03/27/08	Chloride:	14575.0	411.11	Sodium:	9719.7	422.78
Analyst:	LISA HAMILTON	Bicarbonate:	327.0	5.36	Magnesium:	37.0	3.04
TDS (mg/l or g/m3):	26969.3	Carbonate:	0.0	0.	Calcium:	398.0	19.86
Density (g/cm3, tonne/m3):	1.021	Sulfate:	1694.0	35.27	Strontium:	16.0	0.37
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.1	0.
Carbon Dioxide:		Borate:			Iron:	45.0	1.63
Oxygen:		Silicate:			Potassium:	155.0	3.96
Comments:		Hydrogen Sulfide:			Aluminum:		
		pH at time of sampling:			Chromium:		
		pH at time of analysis:		6.79	Copper:		
		pH used in Calculation:		6.79	Lead:		
					Manganese:	2.500	0.09
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ *2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
°F	psi											psi
80	0	-0.28	0.00	-0.68	0.00	-0.74	0.00	-0.31	0.00	0.61	0.00	0.53
100	0	-0.15	0.00	-0.70	0.00	-0.69	0.00	-0.31	0.00	0.45	0.00	0.69
120	0	-0.03	0.00	-0.71	0.00	-0.63	0.00	-0.30	0.00	0.31	0.00	0.87
140	0	0.11	5.12	-0.72	0.00	-0.54	0.00	-0.28	0.00	0.19	0.00	1.06

- Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.
- Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.
- Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Individual Water Analyses

Summary of Mixing Waters		
Sample Number	390273	409966
Company	WOLVERINE OIL & GAS COMPANY	WOLVERINE OIL & GAS COMPANY
Lease	COVENANT FIELD	TWIN CREEK UNIT
Well Sample Location	SWD WELLHEAD	WF 17-8 7996'-8008'/8050'-8070'/8088'-8108'
Anions (mg/L)		
Chloride	12,933	14,770
Bicarbonate	380	429
Sulfate	1,759	1,857
Cations (mg/L)		
Sodium	8,679	9,979
Magnesium	74.0	39.0
Calcium	390	410
Strontium	17.0	16.0
Barium	0.10	0.10
Iron	11.0	23.0
Potassium	148	131
Manganese	0.40	0.25
Anion/Cation Ratio	1.00	1.00
TDS (mg/L)	24,391	27,655
Density (g/cm)	1.02	1.02
Sampling Date	11/30/07	3/18/08
Account Manager	ADOLPH CORONA	ADOLPH CORONA
Analyst	SHEILA HERNANDEZ	LISA HAMILTON
Analysis Date	12/5/07	3/27/08
pH at time of analysis	7.18	6.47
pH used in Calculations	7.18	6.47

Mixed Water Analysis Report

Mixes at 150°F and 0 psi

Mixes of 390273 and 409966.		Predictions of Saturation Index and Amount of Scale in lb/1000bbl										CO ₂ Fugacity psi
		Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		
390273	409966	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
100%		0.56	26.4	-0.67		-0.44		-0.20		0.19	0.02	0.64
90%	10%	0.45	23.3	-0.67		-0.45		-0.20		0.19	0.02	0.86
80%	20%	0.36	20.2	-0.67		-0.45		-0.21		0.19	0.02	1.09
70%	30%	0.29	17.3	-0.68		-0.45		-0.21		0.18	0.02	1.32
60%	40%	0.23	14.6	-0.68		-0.45		-0.22		0.18	0.02	1.56
50%	50%	0.18	11.9	-0.68		-0.45		-0.22		0.18	0.02	1.81
40%	60%	0.13	9.3	-0.68		-0.45		-0.23		0.18	0.02	2.05
30%	70%	0.09	6.8	-0.68		-0.45		-0.23		0.18	0.02	2.30
20%	80%	0.06	4.4	-0.68		-0.45		-0.24		0.17	0.02	2.55
10%	90%	0.03	2.1	-0.68		-0.45		-0.24		0.17	0.02	2.79
	100%	-0.00		-0.68		-0.45		-0.24		0.17	0.02	3.04

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

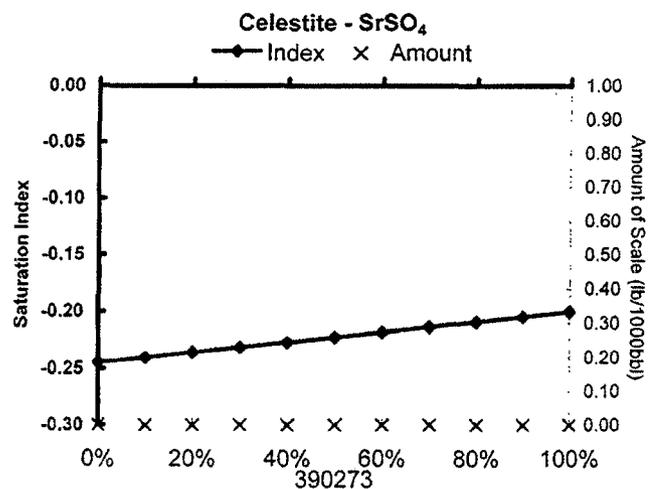
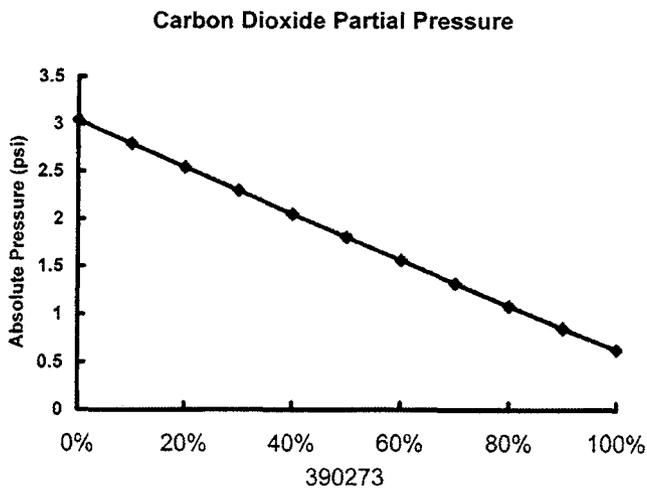
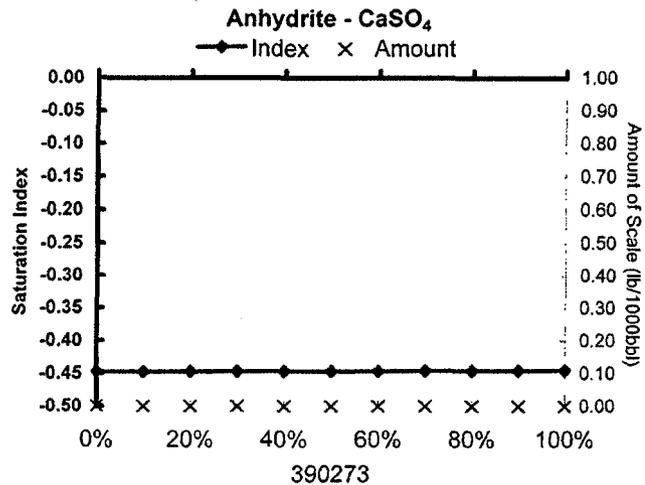
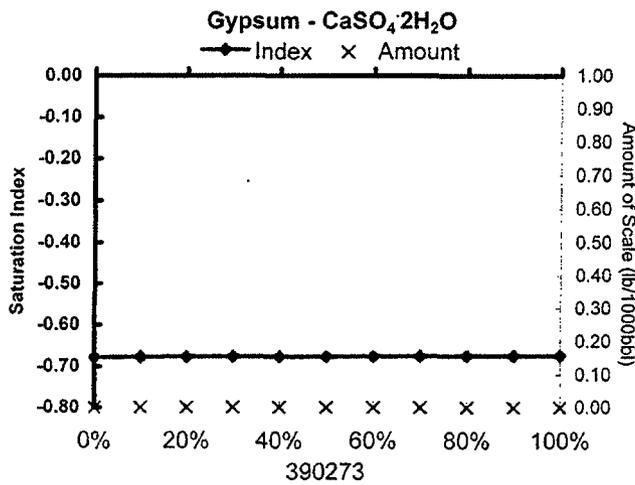
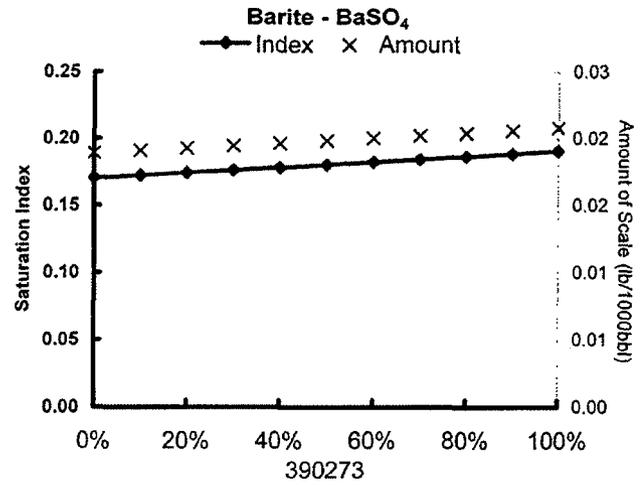
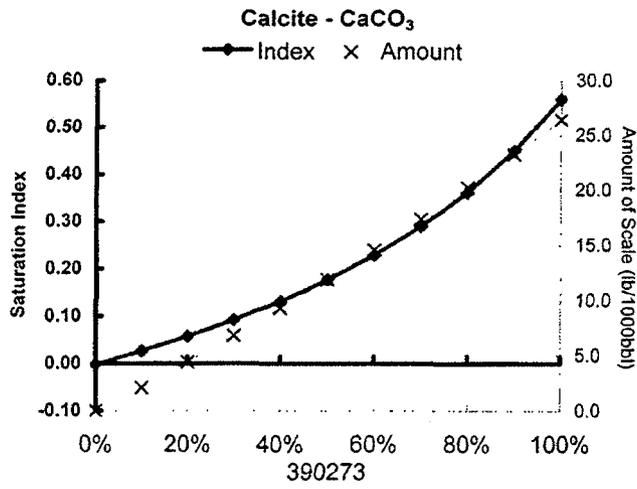
The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem.

The CO₂ fugacity is calculated. Under usual conditions it is essentially the same as the CO₂ partial pressure.

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Mixes of 390273 and 409966 at 150°F and 0 psi
Baker Petrolite



Mixed Water Analysis Report

Mixes at 200°F and 0 psi

Mixes of 390273 and 409966.		Predictions of Saturation Index and Amount of Scale in lb/1000bbl										CO ₂ Fugacity psi
		Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		
390273	409966	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
100%		0.84	45.4	-0.64		-0.13		-0.12		0.02	0.00	1.06
90%	10%	0.76	43.5	-0.65		-0.13		-0.12		0.02	0.00	1.34
80%	20%	0.69	41.8	-0.65		-0.13		-0.13		0.01	0.00	1.63
70%	30%	0.63	40.2	-0.65		-0.13		-0.13		0.01	0.00	1.93
60%	40%	0.58	38.7	-0.65		-0.13		-0.14		0.01	0.00	2.24
50%	50%	0.54	37.2	-0.65		-0.14		-0.14		0.00	0.00	2.56
40%	60%	0.50	35.8	-0.65		-0.14		-0.14		0.00	0.00	2.88
30%	70%	0.46	34.4	-0.65		-0.14		-0.15		-0.00		3.20
20%	80%	0.43	33.2	-0.65		-0.14		-0.15		-0.00		3.53
10%	90%	0.40	31.9	-0.65		-0.14		-0.16		-0.01		3.85
	100%	0.38	30.8	-0.65		-0.14		-0.16		-0.01		4.18

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

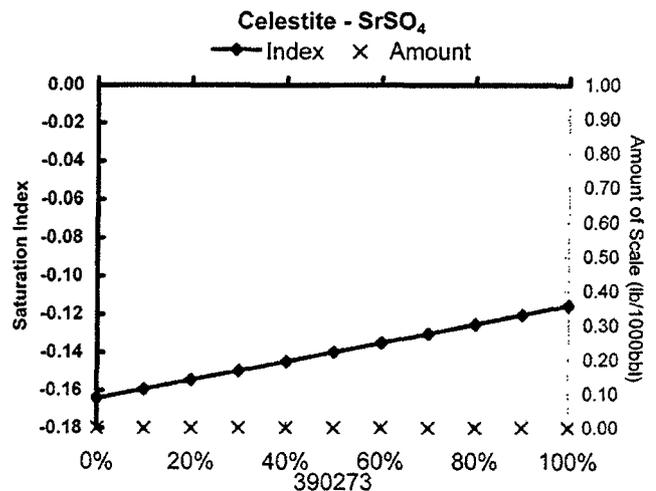
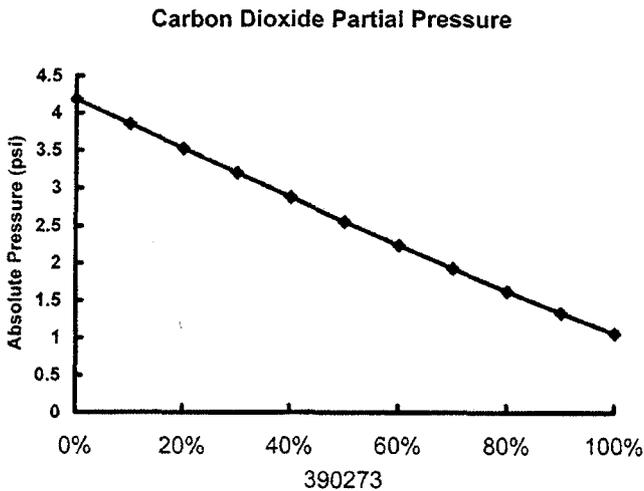
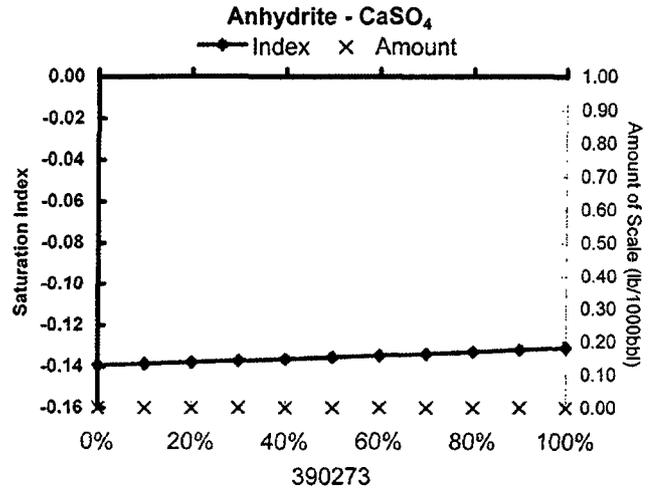
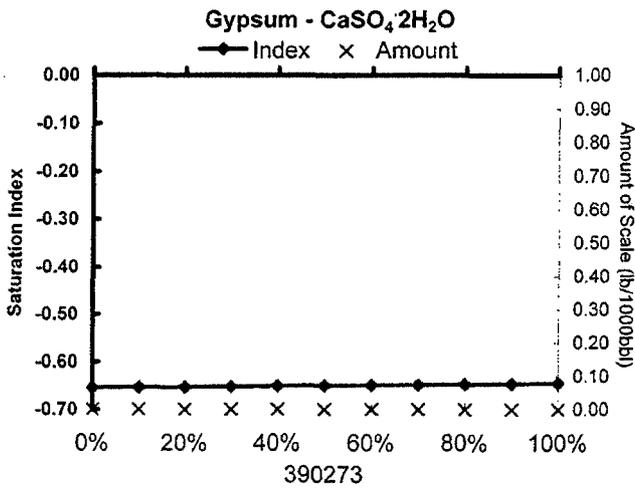
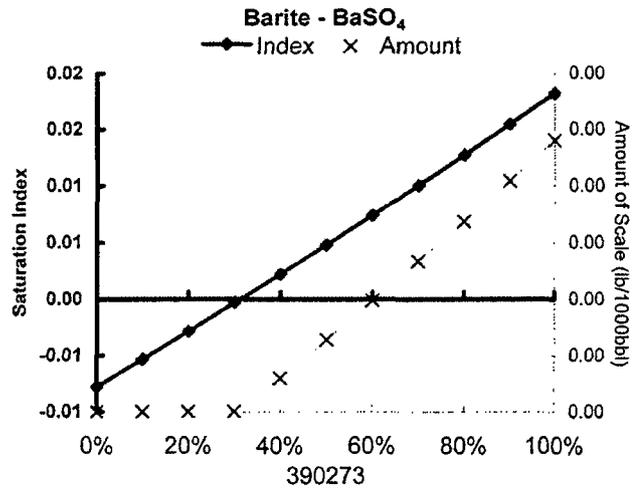
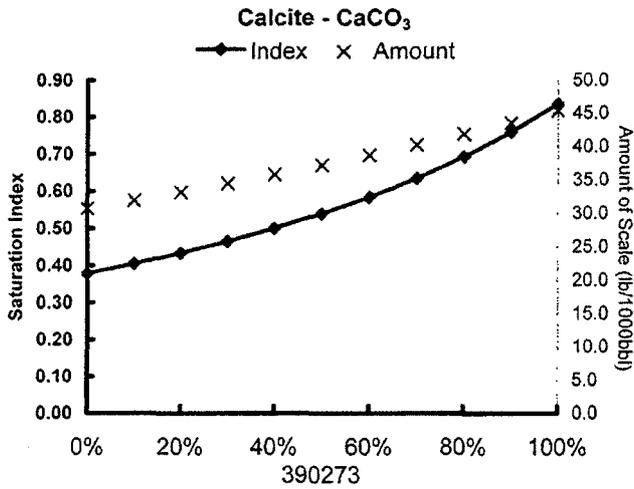
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The CO₂ fugacity is calculated. Under usual conditions it is essentially the same as the CO₂ partial pressure.

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Mixes of 390273 and 409966 at 200°F and 0 psi
Baker Petrolite



Mixed Water Analysis Report

Mixes at 250°F and 15 psi

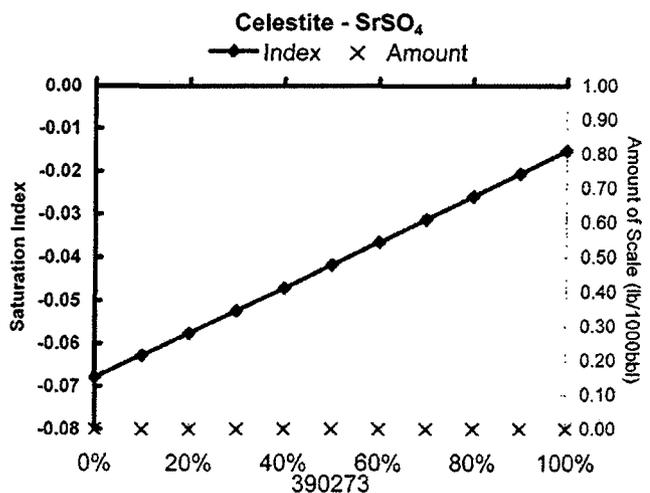
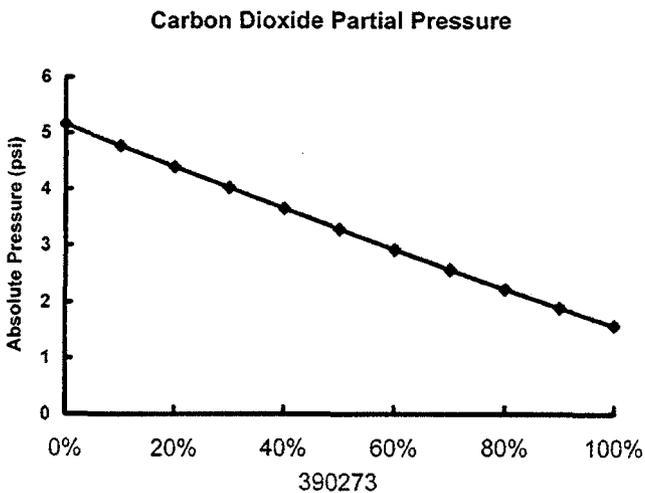
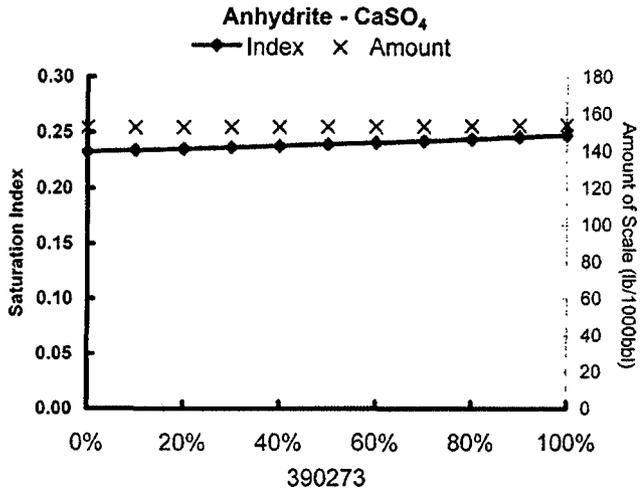
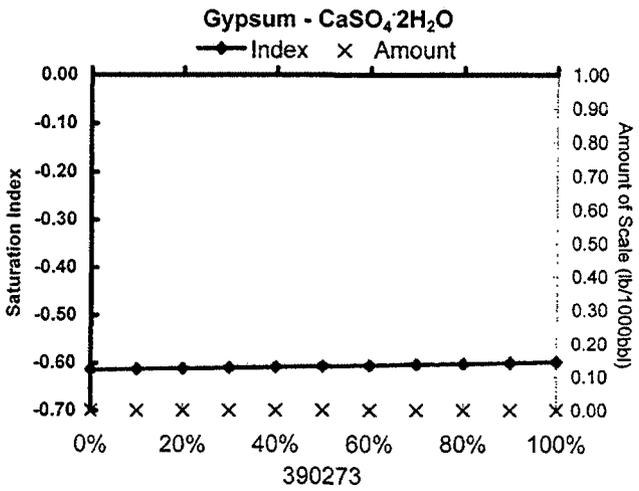
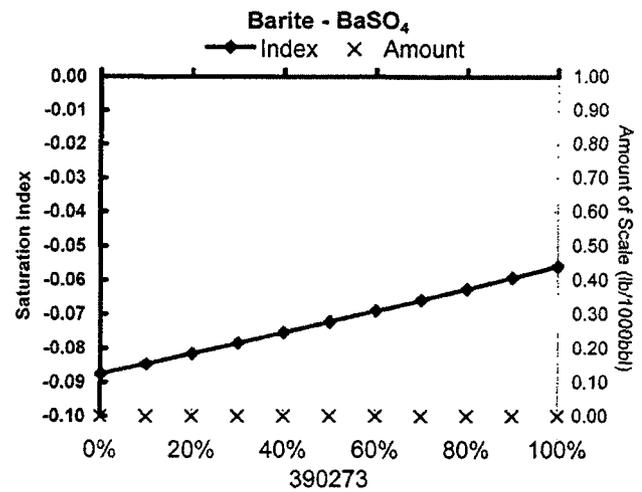
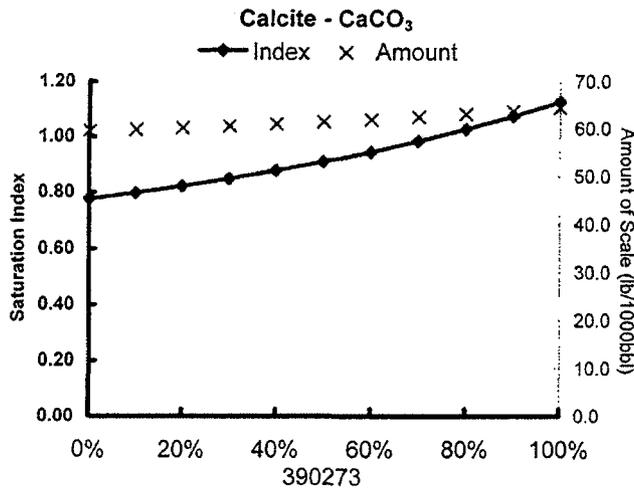
Mixes of 390273 and 409966.		Predictions of Saturation Index and Amount of Scale in lb/1000bbl										CO ₂ Fugacity psi
		Calcite CaCO ₃		Gypsum CaSO ₄ •2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		
390273	409966	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
100%		1.13	64.4	-0.60		0.25	154	-0.02		-0.06		1.58
90%	10%	1.07	63.7	-0.60		0.25	154	-0.02		-0.06		1.89
80%	20%	1.03	63.1	-0.60		0.24	154	-0.03		-0.06		2.23
70%	30%	0.98	62.5	-0.60		0.24	153	-0.03		-0.07		2.57
60%	40%	0.94	61.9	-0.61		0.24	153	-0.04		-0.07		2.92
50%	50%	0.91	61.4	-0.61		0.24	153	-0.04		-0.07		3.28
40%	60%	0.88	61.0	-0.61		0.24	153	-0.05		-0.08		3.65
30%	70%	0.85	60.5	-0.61		0.24	153	-0.05		-0.08		4.02
20%	80%	0.82	60.1	-0.61		0.24	153	-0.06		-0.08		4.40
10%	90%	0.80	59.8	-0.61		0.23	153	-0.06		-0.08		4.77
	100%	0.78	59.5	-0.61		0.23	153	-0.07		-0.09		5.15

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem.

The CO₂ fugacity is calculated. Under usual conditions it is essentially the same as the CO₂ partial pressure.

Disclaimer of Liability: Baker Petrolite Corporation and its affiliates (BPC) disclaim all warranties or representations express or implied, including any implied warranties of merchantability or fitness for a particular purpose or to the accuracy, correctness or completeness of such information herein or that reliance on such information will accomplish any particular result. All such information is furnished "as is" and by using such information the user is assuming all liabilities for the use or reliance on such information. BPC SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSSES FROM ANY CAUSE WHATSOEVER INCLUDING BUT NOT LIMITED TO ITS NEGLIGENCE.



Water Analysis Report



Baker Petrolite

WOLVERINE OIL & GAS COMPANY
COVENANT FIELD
SWD
WELLHEAD

Account Manager
ADOLPH CORONA

<i>Summary of Entered Data</i>				<i>Sample 390273 @ 75°F</i>			
Sampling Date	11/30/07	Anions	<i>mg/l</i>	<i>meq/l</i>	Cations	<i>mg/l</i>	<i>meq/l</i>
Analysis Date	12/5/07	Chloride	12,933	365	Sodium	8,679	378
Analyst	SHEILA HERNANDEZ	Bicarbonate	380	6.23	Magnesium	74.0	6.09
		Carbonate	0.00	0.00	Calcium	390	19.5
TDS (mg/l or g/m ³)	24,391	Sulfate	1,759	36.6	Strontium	17.0	0.39
Density (g/cm ³ or tonne/m ³)	1.0180	Phosphate	N/A	N/A	Barium	0.10	0.00
Anion/Cation Ratio	1.00	Borate	N/A	N/A	Iron	11.0	0.39
		Silicate	N/A	N/A	Potassium	148	3.79
					Aluminum	N/A	N/A
					Chromium	N/A	N/A
					Copper	N/A	N/A
					Lead	N/A	N/A
		pH at time of sampling			Manganese	0.40	0.01
		pH at time of analysis		7.18	Nickel	N/A	N/A
		pH used in Calculations		7.18			

Specific ion interactions calculated for ions in bold faced type; other ions contribute to ionic strength.

<i>Conditions</i>		<i>Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl</i>										
<i>Temp.</i>	<i>Gauge Press.</i>	<i>Calcite</i>		<i>Gypsum</i>		<i>Anhydrite</i>		<i>Celestite</i>		<i>Barite</i>		<i>CO₂</i>
		<i>CaCO₃</i>		<i>CaSO₄·2H₂O</i>		<i>CaSO₄</i>		<i>SrSO₄</i>		<i>BaSO₄</i>		
<i>°F</i>	<i>psi</i>	<i>Index</i>	<i>Amount</i>	<i>Index</i>	<i>Amount</i>	<i>Index</i>	<i>Amount</i>	<i>Index</i>	<i>Amount</i>	<i>Index</i>	<i>Amount</i>	<i>Fugacity</i>
150	0.0	0.56	26.4	-0.67		-0.45		-0.20		0.19	0.02	0.64
200	0.0	0.84	45.4	-0.64		-0.13		-0.12		0.02	0.00	1.06
250	15.1	1.13	64.5	-0.60		0.25	154	-0.02		-0.06		1.58
300	52.3	1.44	80.3	-0.55		0.66	311	0.08	2.14	-0.05		2.09

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem.

The CO₂ fugacity is reported. Under usual conditions it is essentially the same as the CO₂ partial pressure.

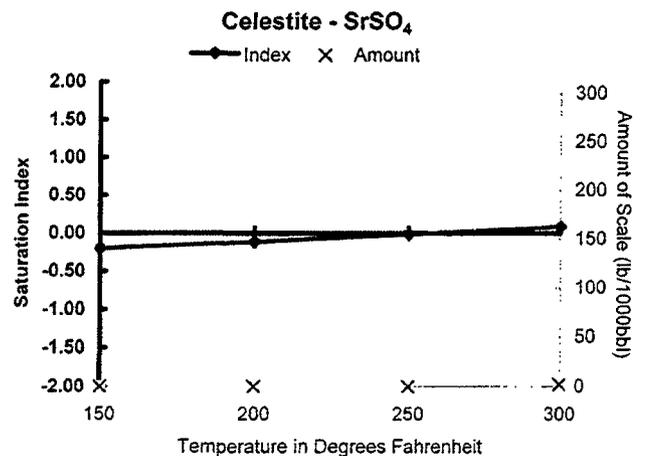
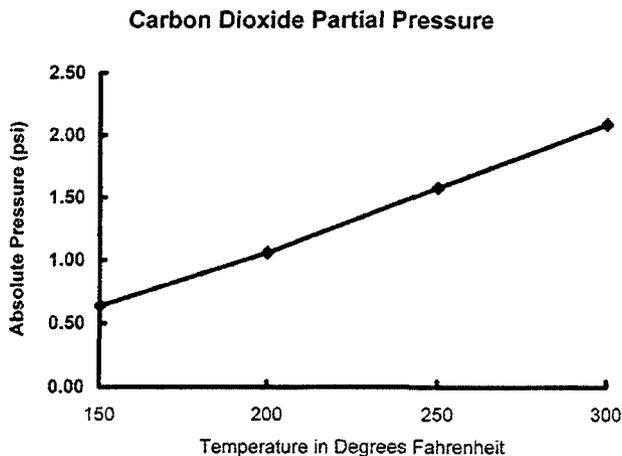
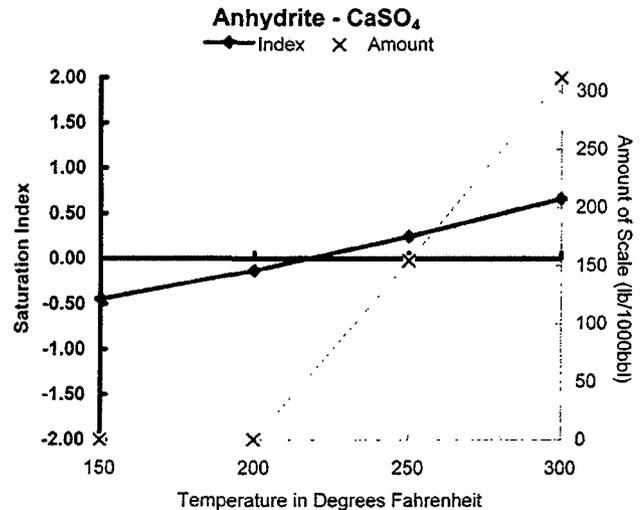
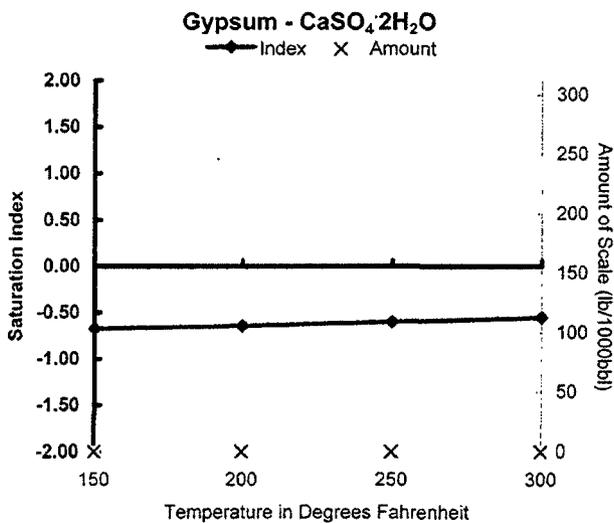
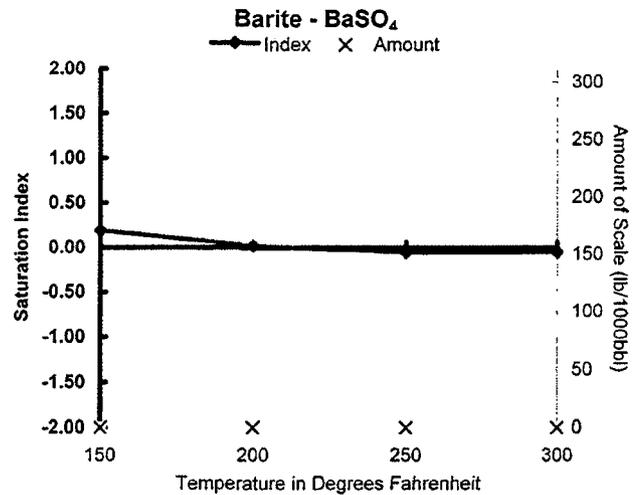
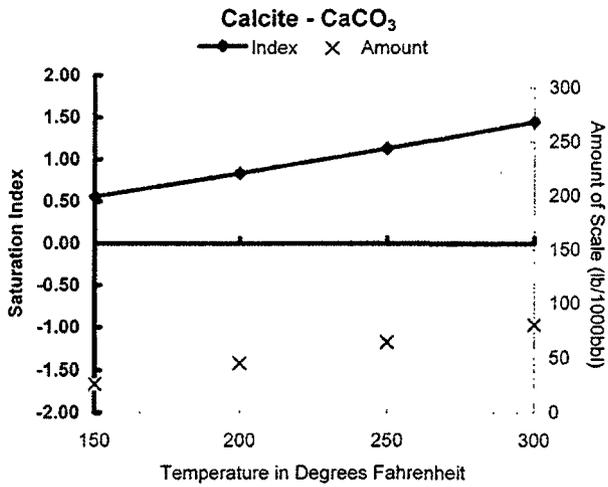


Scale Predictions

Analysis: **BAKER**
ROCHE

Baker Petrolite
Temperature 150°F from WOLVERINE OIL & GAS COMPANY, COVENANT FIELD, SWD, WELLHEAD,
Dec/5/07

Baker Petrolite



Water Analysis Report



Baker Petrolite

WOLVERINE OIL & GAS COMPANY
TWIN CREEK UNIT
WF 17-8
7996'-8008'/8050'-8070'/8088'-8108'

Account Manager
ADOLPH CORONA

Summary of Entered Data			Sample 409966 @ 75°F				
Sampling Date	3/18/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date	3/27/08	Chloride	14,770	417	Sodium	9,979	434
Analyst	LISA HAMILTON	Bicarbonate	429	7.03	Magnesium	39.0	3.21
		Carbonate	0.00	0.00	Calcium	410	20.5
TDS (mg/l or g/m ³)	27,655	Sulfate	1,857	38.7	Strontium	16.0	0.37
Density (g/cm ³ or tonne/m ³)	1.0220	Phosphate	N/A	N/A	Barium	0.10	0.00
Anion/Cation Ratio	1.00	Borate	N/A	N/A	Iron	23.0	0.82
		Silicate	N/A	N/A	Potassium	131	3.35
					Aluminum	N/A	N/A
					Chromium	N/A	N/A
					Copper	N/A	N/A
					Lead	N/A	N/A
		pH at time of sampling			Manganese	0.25	0.01
		pH at time of analysis		6.47	Nickel	N/A	N/A
		pH used in Calculations		6.47			

Specific ion interactions calculated for ions in bold faced type; other ions contribute to ionic strength.

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Fugacity psi
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
150	0.0	-0.00		-0.68		-0.45		-0.24		0.17	0.02	3.04
200	0.0	0.38	30.8	-0.65		-0.14		-0.16		-0.01		4.18
250	15.1	0.78	59.5	-0.61		0.23	153	-0.07		-0.09		5.15
300	52.3	1.18	82.2	-0.57		0.64	319	0.03	0.69	-0.09		5.86

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem.

The CO₂ fugacity is reported. Under usual conditions it is essentially the same as the CO₂ partial pressure.

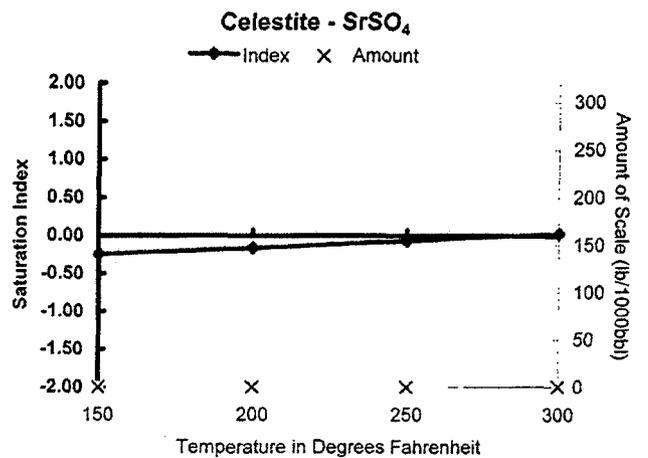
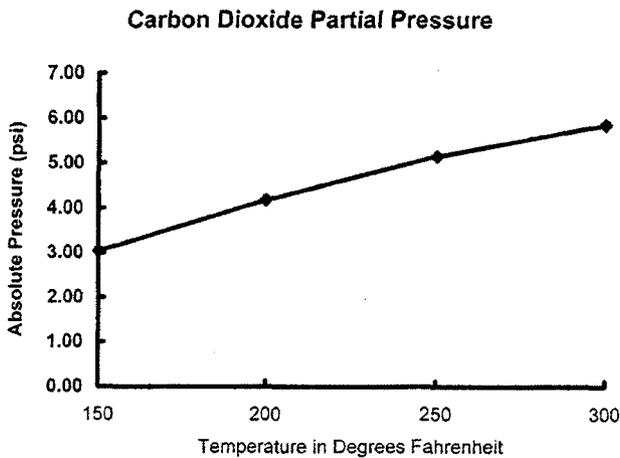
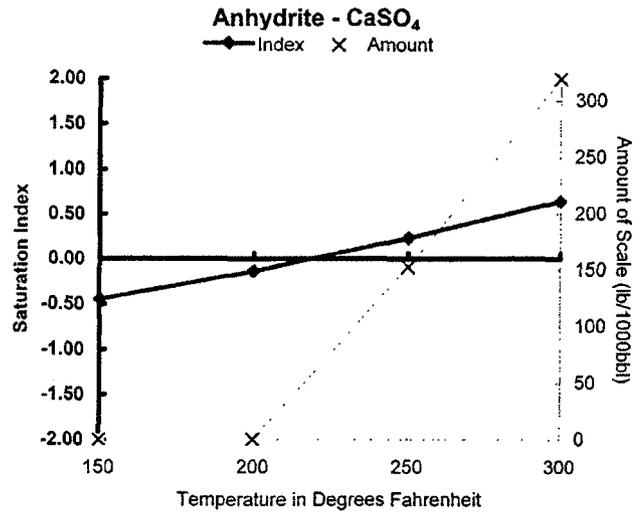
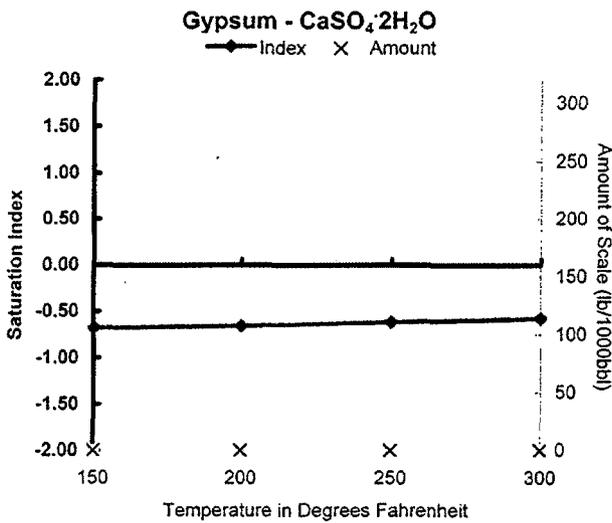
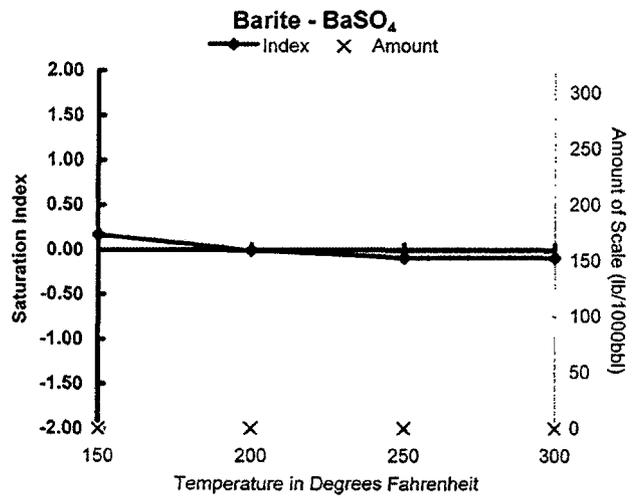
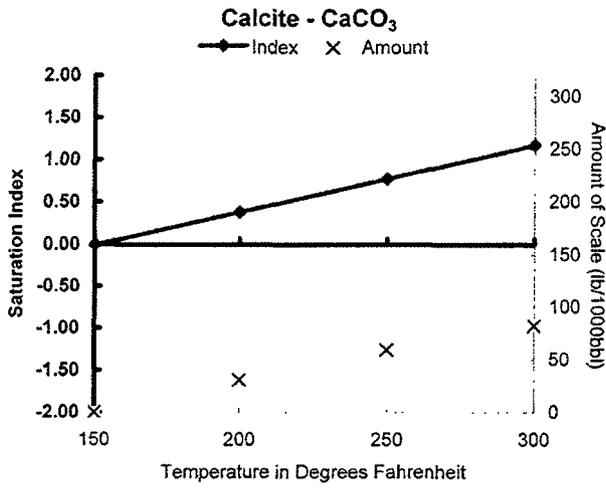


Scale Predictions

Analysis: ~~WOLVERINE~~

Baker Petrolite
Temperature 150-300°F from WOLVERINE OIL & GAS COMPANY, TWIN CREEK UNIT, WF 17-8, 7996'-8008'/8050'-8070'/8088'-8108', Mar/27/08

Baker Petrolite



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

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N.A.
		7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Salt Water Disposal</u>	8. WELL NAME and NUMBER: Covenant SWD 1	
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC		9. API NUMBER: 4304130039
3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616	PHONE NUMBER: (616) 548-1150	10. FIELD AND POOL, OR WILDCAT: Wildcat
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140' FSL, 30' FWL COUNTY: Sevier		STATE: UTAH
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S		

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>8/1/2009</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input checked="" type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

Permission is hereby requested to replace the 2-7/8" tubing currently in the Covenant SWD 1 well (Permit UIC-321.1) with fiberglass lined 4-1/2", 11.6#, N-80, LT&C steel pipe. The new tubing will be landed in a packer at a depth of approximately 8775 feet which is 50 feet above the top of the approved injection interval in the well. After the tubing is replaced, a mechanical integrity test will be conducted by pressuring the casing-tubing annulus to ~~no less than 1500 psi and monitoring~~ as directed by a UDOGM inspector ~~or as needed to assure that the pressure decreases no more than 2% over a fifteen-minute period.~~

**Approved by the
Utah Division of
Oil, Gas and Mining**

Date: 07-16-09
By: [Signature]

COPY SENT TO OPERATOR

Date: 7.28.2009
Initials: KS

NAME (PLEASE PRINT) <u>Ellis M. Peterson</u>	TITLE <u>Senior Production Engineer</u>
SIGNATURE <u>[Signature]</u>	DATE <u>6/15/2009</u>

RECEIVED

(This space for State use only)

JUN 17 2009

DIV. OF OIL, GAS & MINING

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.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Water Disposal</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N.A.
3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616		7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140' FSL, 30' FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S		8. WELL NAME and NUMBER: Covenant SWD 1
COUNTY: Sevier		9. API NUMBER: 4304130039
STATE: UTAH		10. FIELD AND POOL, OR WILDCAT: Wildcat

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: <u>7/10/2009</u>	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>Increase MA surface injection pressure</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

Surface injection pressure was temporarily increased to 1500 psi on 07/10/2009 at the Covenant SWD 1 well in order to inject the necessary daily volumes. The higher surface injection pressure will be in effect until the injection tubing in the well is replaced with larger diameter pipe during August, 2009. Injection pressures and injection volumes will be monitored to assure that the maximum allowable injection interval pressure of 4853 psi is not exceeded per the stipulated condition of approval for permit UIC-321.1.

**Approved by the
Utah Division of
Oil, Gas and Mining**

Date: 07-16-09
By: [Signature] DRD

COPY SENT TO OPERATOR

Date: 7-28-2009
Initials: KS

NAME (PLEASE PRINT) <u>Ellis M. Peterson</u>	TITLE <u>Senior Production Engineer</u>
SIGNATURE <u>[Signature]</u>	DATE <u>7/10/2009</u>

(This space for State use only)

RECEIVED

JUL 16 2009

DIV. OF OIL, GAS & MINING

Sundry Notice Narrative for Increasing MASIP

Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD 1, API # 4304130039
June 15, 2009

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS.

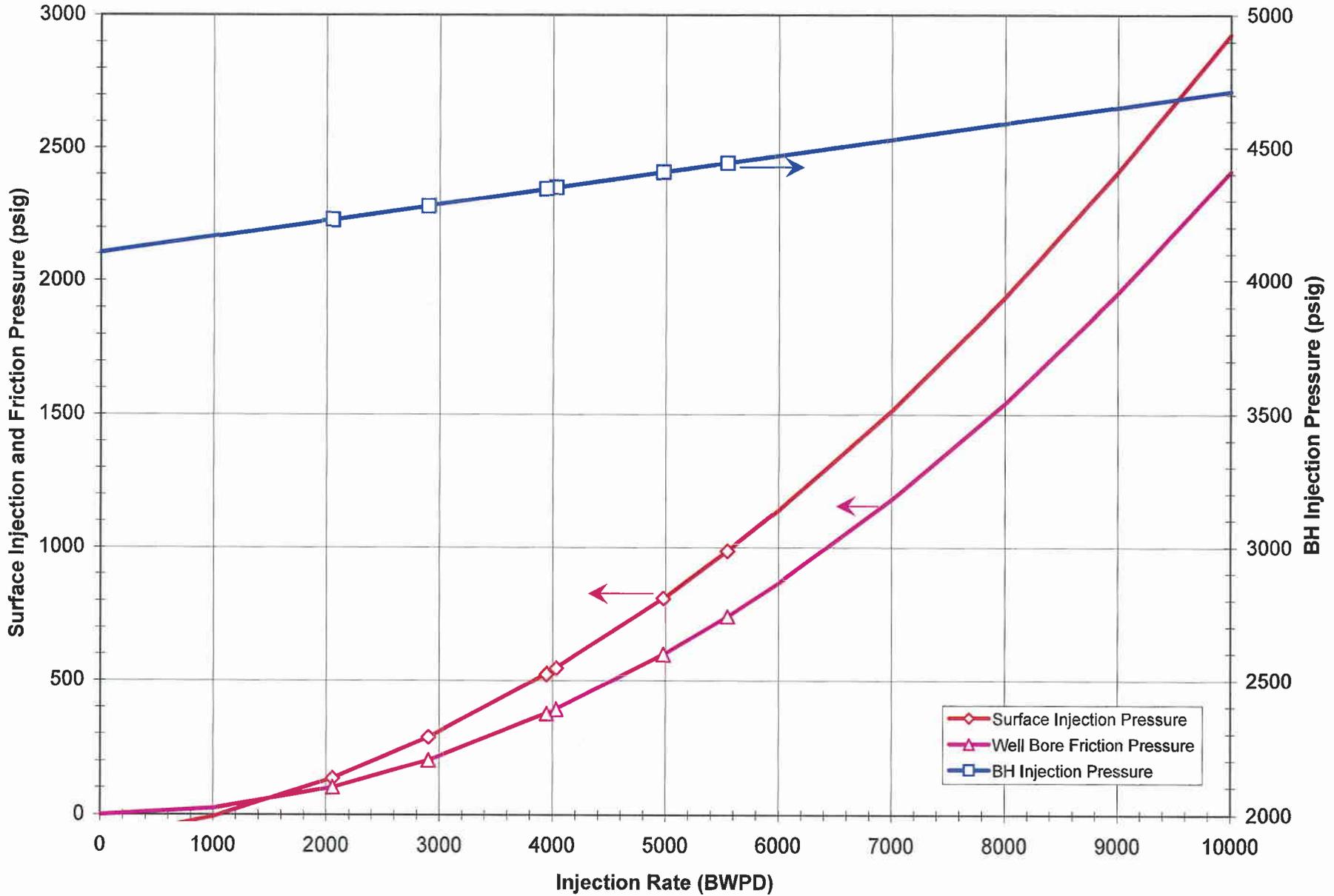
Wolverine Gas and Oil Company currently injects approximately 5600 BWPD into the Covenant SWD 1 well at a surface injection pressure of 1000 psig as required per the UIC permit (UIC-321.1). The stipulations of approval for this permit allow a maximum allowable injection interval pressure (MAIIP) of 4853 psig with a corresponding maximum allowable surface injection pressure (MASIP) of 1033 psia. To stay below the MASIP, approximately 1000 BWPD that could be injected is currently being diverted to the Covenant evaporation pit.

The permitted MASIP appears to correspond to the limiting MAIIP based on the assumption of static conditions. During injection, a pressure loss caused by fluid friction reduces the difference between MASIP and MAIIP, and the difference further decreases with increasing injection rates. Limiting MASIP to 1030 psi when injecting current volumes limits the MAIIP to a value less than the 4853 psig allowed under the condition of approval for the permit.

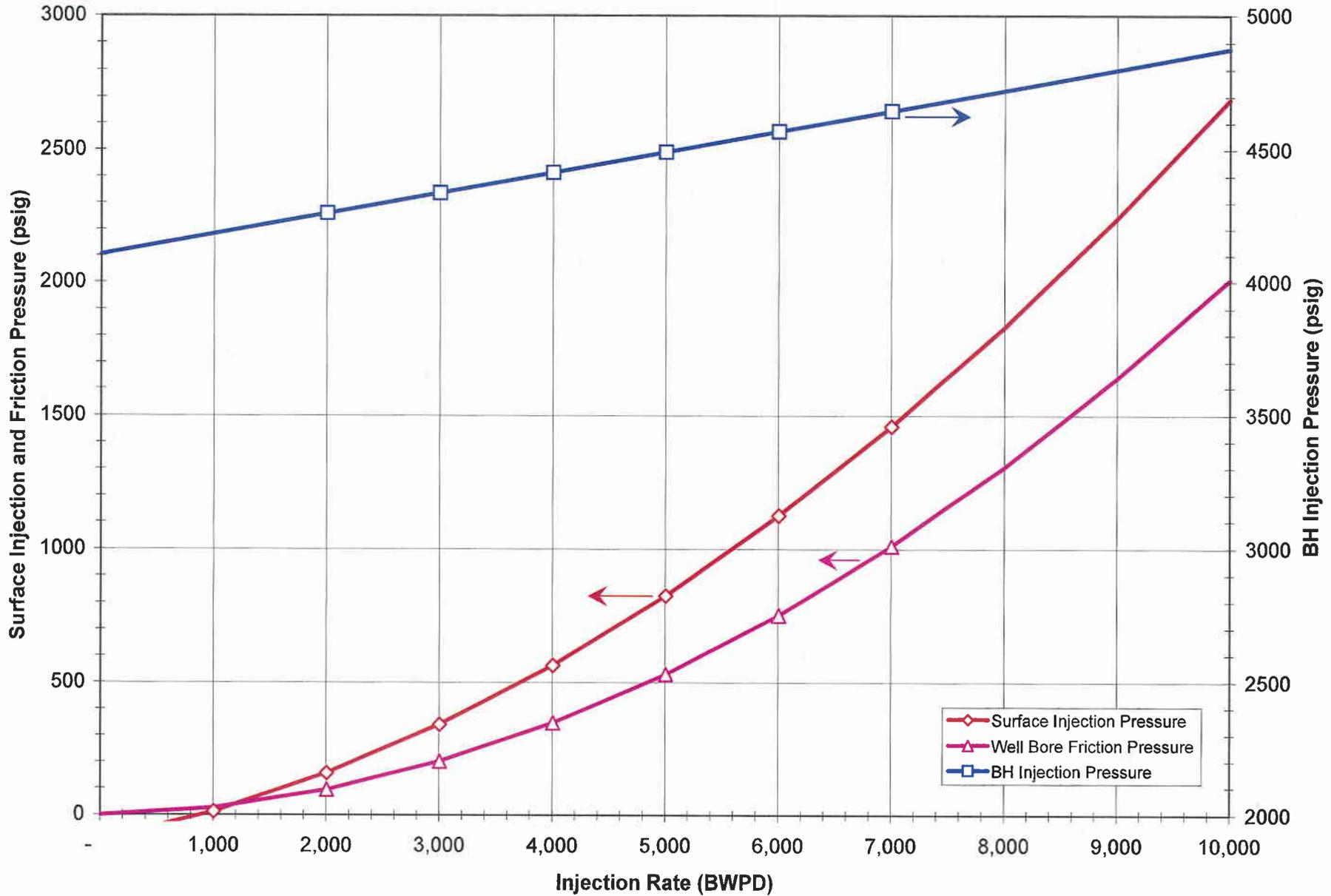
Field data for the subject well was obtained and the instantaneous shut-in pressure (ISIP) was 0 psig, indicating that the current surface injection pressure is primarily due to friction pressure loss. Surface injection pressures were recorded at varying injection rates and that data was analyzed to determine the relationship of injection rate, surface injection pressure, and interval injection pressure for this well. The analysis results were also confirmed using a correlation method (Fanning) for calculating friction pressure drop. Results for both analyses indicates that the MAIIP of 4853 psig will not be exceeded under current mechanical and formation conditions unless surface injection pressure exceeds 2200 psi at a corresponding injection rate exceeding 9000 BWPD. Plots of the pressure-rate data from results of both the field measured and correlation data are included herewith.

Based on these findings, it is requested that the MASIP be temporarily increased to a value of 1500 psi (the approximate maximum capability of current injection pumps) until larger injection tubing is installed. Installation of the larger injection tubing is planned to occur before September, 2009. This increased MASIP will allow injection of all Covenant produced water without exceeding the MAIIP.

Covenant SWD-1
6/10/09 Injection Data Fit
9526' TVD Reference Depth



Covenant SWD-1
Fanning Equation Calculated
9526' TVD Reference Depth



Dustin Doucet - parameters

From: "Ellis Peterson" <epeterson@wolvgas.com>
To: <dustindoucet@utah.gov>
Date: 6/30/2009 2:49 PM
Subject: parameters

Water Injection Well BHP Fanning, Incompressible Fluid Tubing/Casing Configuration

Well: Covenant SWD-1
Field: Covenant
Date: 5/26/2009

Conditions:

Fluid Viscosity = 0.60 cp
Fluid Density = 8.49 lbs/gal
Tubing ID = 2.441 in
Casing ID = 6.366 in
Tubing Depth-Measured = 9493 ft
Tubing Depth-True Vertical = 9453 ft
Reference Depth-Measured = 9566 ft
Reference Depth-True Vertical = 9526 ft
Pipe Roughness = 0.000650 in (0.00065 per Cullinder & Smith)

*Ellis Peterson
Senior Production Engineer
Wolverine Gas and Oil Company
Office: (616) 458-1150 Ext. 1132
Cell: (616) 490-1954*

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

Energy Exploration in Partnership with the Environment

July 10, 2009

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

Re: Sundry Notice - Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD 1, 43-041-30039

Dear Mr. Hunt:

Wolverine Gas and Oil Company of Utah, LLC respectfully submits the enclosed Sundry Notice (Form 9) in duplicate for the referenced well.

Sincerely,

Ellis M. Peterson
Senior Production Engineer
Wolverine Gas and Oil

RECEIVED
JUL 16 2009
DIV. OF OIL, GAS & MINING

INJECTION WELL - PRESSURE TEST

Well Name: <u>Covenant SWD-1</u>	API Number: <u>43041-30039</u>
Qtr/Qtr: <u>SESE</u>	Section: <u>8</u>
Township: <u>23S</u>	Range: <u>1W</u>
Company Name: <u>Wolverine Gas and Oil Co.</u>	
Lease: State _____	Fee <u>X</u>
Federal _____	Indian _____
Inspector: <u>Mark Jones</u>	Date: <u>10-5-2009</u>

Initial Conditions:

Tubing - Rate: 6300 BBL/DAY Pressure: 220 psi
 Casing/Tubing Annulus - Pressure: 0 psi

Conditions During Test:

Time (Minutes)	Annulus Pressure	Tubing Pressure
0 12:50pm	<u>1560 #</u>	<u>200 #</u>
5	_____	_____
10	_____	_____
15 1:05pm	<u>1560 #</u>	<u>210 #</u>
20	_____	_____
25	_____	_____
30 1:20 pm	<u>1560 #</u>	<u>210 #</u>

Results: Pass/Fail

Conditions After Test:

Tubing Pressure: 210 psiCasing/Tubing Annulus Pressure: 1560 psi

COMMENTS: Injecting @ TOI. Location being used for storage
of workover rig equipment and Frac tanks and casing.
Need to talk to Tony Cook (Wolverine) about bleeding backside off.
Chad White & Jeremy Tepples
 Operator Representative



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil Gas and Mining

JOHN R. BAZA
Division Director

UNDERGROUND INJECTION CONTROL PERMIT

Cause No. UIC-321.1

Operator: Wolverine Gas and Oil Company of Utah, LLC

Wells: Covenant SWD #1

Location: Section 8, Township 23 South, Range 1 West (SLBM), Sevier County, Utah

API No.: 43-041-30039

Well Type: Salt Water Disposal Well

Stipulations of Permit Approval

1. Maximum Allowable Injection Interval Injection Pressure: 4,853 psig
2. Corresponding Maximum Allowable Surface Injection Pressure: 1,033 psia
3. Corresponding Injection Rate: Limited by pressure.
4. Injection Interval: Selective perforations in the Navajo Sandstone.
5. A Step Rate Test is required when the Maximum Allowable Injection Interval Injection Pressure is attained. The well is unlikely to reach this limit because the current reservoir charging injection pressure is extremely low and insensitive to increases in injection rate.

Approved by:

 6-28-07

Gil Hunt

Date

Associate Director



TRANSACTION REPORT

P. 01

JUN-28-2007 THU 11:18 AM

FOR: OIL, GAS & MINING

801 359 3940

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
JUN-28	11:17 AM	16164580869	1' 02"	2	SEND	OK	676	
TOTAL :						1M 2S	PAGES:	2



JON M. HUNTSMAN, JR.
Governor

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Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

UTAH DIVISION OF OIL, GAS AND MINING FACSIMILE COVER SHEET

DATE: 6/28/07

FAX#: (616) 458-0869

ATTN: Helene Bardolph or Ellis Peterson

COMPANY: Wolverine Gas & Oil Company of Utah

NUMBER OF PAGES (INCLUDING THIS ONE): 2

FROM: Christopher Kierst

If you do not receive all of the pages, or if they are illegible, please call (801) 538-5340.
We are sending from a sharp facsimile machine. Our telecopier number is (801) 359-3940.

MESSAGES: Included please find the final Class II UIC Permit ^{a copy of} for



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

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We are sending from a sharp facsimile machine. Our telecopier number is (801) 359-3940.

MESSAGES: Included please find ^{a copy of} the final Class II UIC Permit for the Covenant SWD #1 salt water disposal well.

Important: This message is intended for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return this original message to us at the above address via regular postal service. Thank you.



UIC INJECTION PERMIT APPLICATION ANALYSIS FORM
WELL NAME: SWD #1
API #: 4304130039

R649-5-2. Requirements For Class II Injection Wells Including Water Disposal, Storage And Enhanced Recovery Wells.	Completed Items, Needed Items, & Comments
1. Injection wells shall be completed, equipped, operated, and maintained in a manner that will prevent pollution and damage to any USDW, or other resources and will confine injected fluids to the interval approved.	1. O.K.
2. The application for an injection well shall include a properly completed UIC Form 1 and the following:	2. O.K.
2.1. A plat showing the location of the injection well, all abandoned or active wells within a one-half mile radius of the proposed well, and the surface owner and the operator of any lands or producing leases, respectively, within a one-half mile radius of the proposed injection well.	2.1 The previously submitted plat is incomplete for mineral ownership. The newly submitted plat is incomplete for surface ownership. In consultation with Brad Hill, we elected to consider that both maps, taken collectively and provided that the earlier received map is not obsolete, satisfy the plat requirement. Ellis Peterson of Wolverine said that the map was not obsolete in phone conversation on 5/25/06.
2.2. Copies of electrical or radioactive logs, including gamma ray logs, for the proposed well run prior to the installation of casing and indicating resistivity, spontaneous potential, caliper, and porosity.	2.2 O.K.
2.3. A copy of a cement bond or comparable log run for the proposed injection well after casing was set and cemented.	2.3 O.K.
2.4. Copies of logs already on file with the division should be referenced, but need not be refiled.	2.4 None on file before now.
2.5. A description of the casing or proposed casing program of the injection well and of the proposed method for testing the casing before use of the well.	2.5 O.K. Completion procedures call for MIT prior to injection.
2.6. A statement as to the type of fluid to be used for injection, its source and estimated amounts to be injected daily.	2.6 O.K.
2.7. Standard laboratory analyses of (1) the fluid to be injected, (2) the fluid in the formation into which the fluid is being injected, and (3) the compatibility of the fluids.	2.7 O.K. Compatibility not applicable for this case of reinjection.
2.8. The proposed average and maximum injection pressures.	2.8 O.K.
2.9. Evidence and data to support a finding that the proposed injection well will not initiate fractures through the overlying strata or a confining interval that could enable the injected fluid or formation fluid to enter the fresh water strata.	2.9 Step rate test (SRT) will be performed when the injection pressure attains the level of the final Permit Maximum Allowable Surface Injection Pressure.
2.10. Appropriate geological data on the injection interval and confining beds, and nearby Underground Sources of Drinking Water, including the geologic name, lithologic description, thickness, depth, water quality, and lateral extent; also information relative to geologic structure near the proposed well which may effect the conveyance and/or storage of the injected fluids.	2.10 O.K.
2.11. A review of the mechanical condition of each well within a one-half mile radius of the proposed injection well to assure that no conduit exists that could enable fluids to migrate up or down the wellbore and enter improper intervals.	2.11 No well bores within the 1/2 mile Area of Review.
2.12. An affidavit certifying that a copy of the application has been provided to all operators, owners and surface owners within a one-half mile radius of the proposed injection well.	2.12 O.K.
2.13. Any other additional information that the board or division may determine is necessary to adequately review the application.	2.13 O.K.

OTHER COMMENTS AND OBSERVATIONS:

Reviewed by: Christopher J. Kierst Date: 6/28/07

DIVISION OF OIL, GAS AND MINING
UNDERGROUND INJECTION CONTROL PROGRAM

PERMIT STATEMENT OF BASIS

Applicant: Wolverine Gas & Oil Company of Utah **Well:** SWD #1

Location: T23S, R1W, S8, Sevier Co., UT **API:** 4304130039

Ownership Issues:

The well is located on Fee surface and mineral estates. An affidavit of notification of operators, owners and surface owners within a half-mile radius has been provided.

Well Integrity:

Description of the Casings and Cement:

CASING PROGRAM

<u>String Type</u>	<u>Hole Size</u>	<u>Depth</u>	<u>Feet</u>	<u>Casing Diameter</u>	<u>Weight</u>	<u>Grade</u>	<u>Connection Type</u>
Conductor	30"	120'	-	20"			-
Surface	17 1/2"	2,000'	-	13 3/8"	68#	J-55	-
Intermediate	12 1/4"	8,506'	-	9 5/8"	47#	P-110	-
Production	8 1/2"	9,566'	-	7"	23#	P-110	-

CEMENT PROGRAM

<u>String Type</u>	<u>DV Depth</u>	<u>Stage Lead/Tail</u>	<u>Cement Bottom</u>	<u>Cement Top</u>	<u>Number Sacks</u>	<u>Cement Type</u>	<u>Cement Yield</u>	<u>Cement Weight</u>
Conductor	-	-	-	Surface	650	G		
Surface	-	Lead	-	Surface	670	Cbm Lt	-	-
		Tail	-		600	V	-	-
Intermediate	-	Lead	-	Surface	1,590	HiFill V	-	-
		Tail	-	-	680	50/50	-	-
Production	-	-	-	7,394'	480	50/50	-	-

The Cement Bond Log (3/10/2006) was not run with the casing under pressure so it is not presently known what bond index would be if it was run under pressure. In any case, however, the log indicated a sufficient column above the injection zone to

be acceptable. The transit time curve was very erratic but this was interpreted to be cycle skipping. The casing was acceptably cemented to the bottom of the 7" casing. Below this the open hole was perforated to TD. This should be adequate to prevent any upward or downward migration of fluid between the 7-inch casing and the borehole.

The 7-inch production casing was perforated in the Navajo Sandstone. Currently open perforations extend from 8,825' to 10,153' TD in the Navajo Sandstone and the operator seeks a permit to inject field produced water into that same interval.

Ground Water Protection:

It is unlikely that quality ground water will be encountered in this well. The conductor, surface and intermediate casings have all been set and cemented to surface and will adequately protect the shallow alluvial sediments and any possible aquifer.

The Navajo Sandstone provides the source of produced water that will be injected into this well. An analysis of produced waters from nearby Covenant Field producing wells indicates Total Dissolved Solids (TDS) levels ranging from 22,900 to 24,940 milligrams per liter (mg/L). The Operator was unable to obtain a sample of the connate water from the proposed injection zone in the subject well but has provided samples of the field produced waters from other wells. The Division will accept these as representative of both the field produced waters and the connate water in the injection zone in the subject well and waive the requirement of an analysis for scaling tendency. The Navajo Sandstone is generally unexposed and too deep to be a USDW in this area as well as too saline. Injection into this Formation should not diminish the quality of any potential high quality ground water.

No Step Rate Test will be performed on this well until the injection pressure is sufficient to encroach on the permitted injection zone injection pressure of 4,854 psig, which corresponds to a fracture gradient of 0.55 per foot. The operator had originally requested a 10,000 BPD maximum injection rate with a maximum injection pressure of 7,030 psig.

Several reports, which have been prepared by Tesseract Corporation and Stim-Lab for produced water disposal well operators in the Carbon and Emery County coalbed methane play, document that fracture propagation occurs in a downward direction in the proposed Navajo Sandstone injection zone. Several impermeable Carmel Formation anhydrite beds that are overlying confine the Navajo Sandstone injection interval in that play. They form a structurally plastic seal, which attenuates the upward propagation of fractures, forming the upper bounding beds of the injection zone. The step rate test indicates that the operators can safely inject the Navajo Sandstone without causing a breach in the anhydrite confining beds. It is extrapolated that Arapien Formation evaporites, which are considerably thicker, will serve in the same fashion for injection into the subject well despite its being on the west side of the Wasatch Plateau about 54 miles distant to the southwest.

After reviewing the application and documentation submitted by Wolverine Gas and Oil Company of Utah, LLC, I find that the injection of Navajo Sandstone produced waters into the proposed Navajo Sandstone injection zones at the SWD #1 location is unlikely to result in any significant diminution of the quality of any attainable quality groundwater resource in the vicinity of the subject well. It is therefore to be concluded that no long term negative surficial or ground water impacts are anticipated resultant of the proposed injection operation. Saline Navajo Sandstone produced waters will be safely sequestered in deeply buried, extensive and geologically-sealed aquifers containing ground water which is essentially identical to the injectate, both of which are higher in Total Dissolved Solids than USDW

standards.

Oil/Gas & Other Mineral Resources Protection:

The Navajo Sandstone oil production zone is protected by being in an entirely different superjacent overthrust thrust plate that is not encountered in the subject well. The producing plate presents a repeat section of the Jurassic strata, below the Arapien Formation, as well as some Triassic strata, in the field production wells. There is a remote possibility that a mineral mining operator might elect to pursue gypsum in the surficially exposed Arapien Formation (it is thousands of feet thick). There are no other known potentially producible mineral or hydrocarbon zones that were observed in the well. The injection zone is isolated by a sufficient interval (125') of >80% bonded cement in the Twin Creek Limestone immediately above the Navajo Sandstone to prevent upward migration of injectate.

The well records of the Division of Oil, Gas and Mining, and State Water Rights, document that there are currently no other existing wells within the half mile Area of Review (AoR) of the proposed disposal well.

Bonding:

Wolverine Gas and Oil Company of Utah, LLC, has a \$120,000 surety blanket bond (B001849) in place, which ensures plugging of this well.

Actions Taken and Further Approvals Needed:

Notice of this application was published in the Salt Lake Tribune, The Richfield Reaper and the Salina Sun. In addition, copies of the notice were provided to the EPA, BLM (Richfield, UT and Utah State Office in Salt Lake City), Sevier County

Planning, and the Operator. The notice stated the proposed interval for injection to be selective zones in the Navajo Sandstone.

A properly designed and constructed injection well, combined with periodic mechanical integrity tests, poses no threat to fresh or useable groundwater supplies. The operator has provided proof of initial mechanical integrity so a permit is warranted and should be issued. The Division staff recommends approval of this application contingent upon no additional or unforeseen information being presented which is relevant to this analysis or modifies the data presented herein.

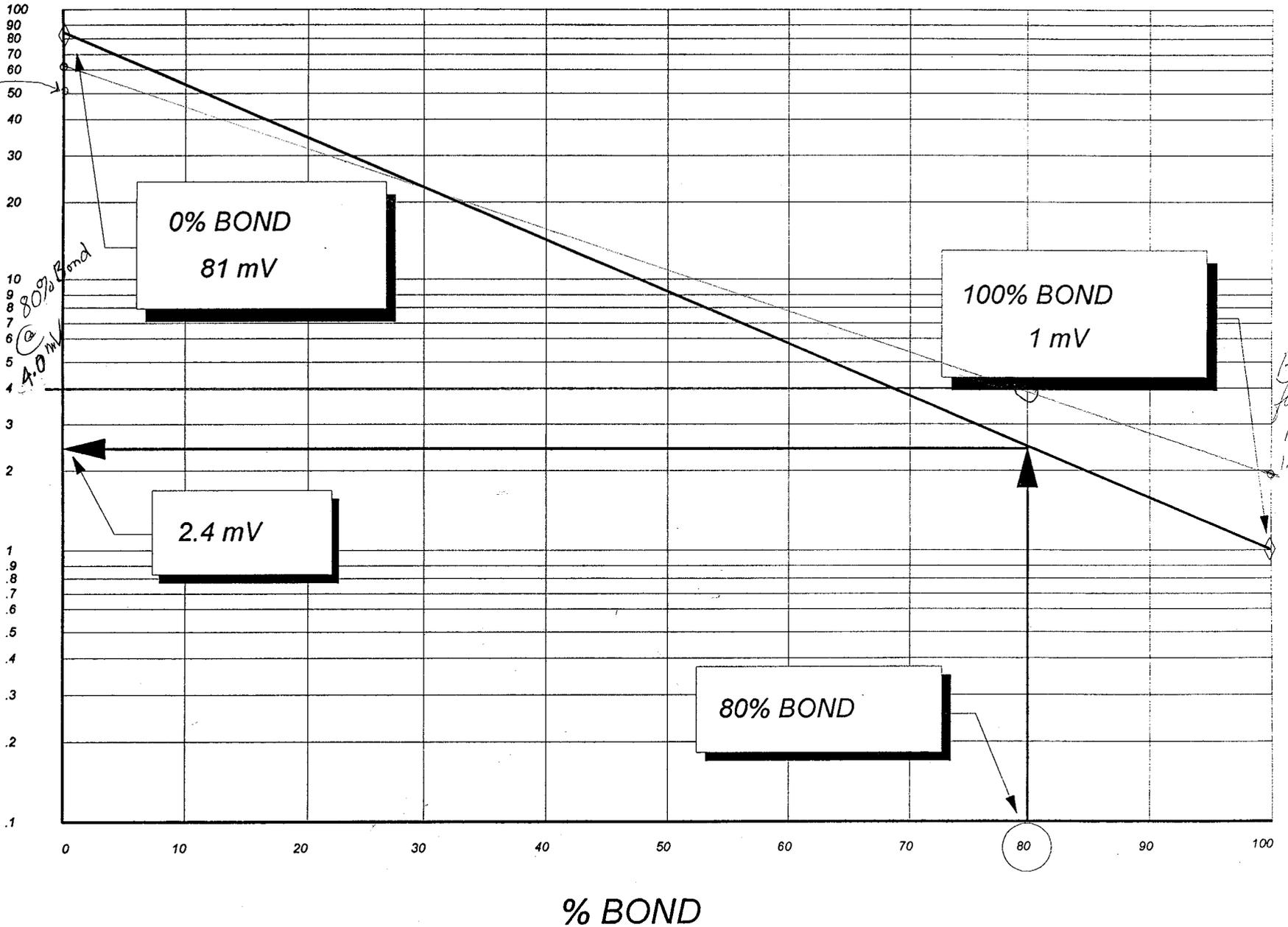
Reviewer(s): Christopher J. Kierst

Date: June 27, 2007

Bond Index Evaluation Wolverine G+O of UT Covenant SWD-1 4304130039

Free Pipe
7" 23#
82 mV

AMPLITUDE (mV)



Best Case
for log
100% Bond
1.9 to 2.0

Cumulative 125' of 80% bond index bond in 415' of Twin Creek above T/injection interval (20 different 80% bond segments). Assumes No eccentricity issues w/ transit time and no microannulus issues w/ log.



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

Energy Exploration in Partnership with the Environment

December 19, 2006

Mr. Christopher J. Kierst
State of Utah
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: UIC Application - Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD-1
1140' FSL, 30' FWL, SW/4 SW/4, Section 8, T23S, R1W, S.L.B.&M,
Sevier County, Utah

Dear Mr. Kierst:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) hereby submits a Sundry Notice in duplicate requesting postponement of conducting a step-rate test on the subject well. A condition of approval for temporary injection is that this test be conducted before January 7, 2007. Injection into this well commenced October 1, 2006 and the well is taking desired injection volumes with virtually no surface injection pressure. It is requested that injection be continued on a temporary basis until the well has been injecting for approximately one year. This delay is to allow the injection formation pressure to increase so meaningful information can result from the step-rate test.

Thank you for consideration of this request. Please feel free to contact me at 616-458-1150 (Ext. 1132) if you have any questions or need additional information.

Sincerely,

Ellis M. Peterson, PE

RECEIVED

DEC 22 2006

DIV. OF OIL, GAS & MINING

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

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS			5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605
			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 <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL OTHER <u>Salt Water Disposal</u>	2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC		8. WELL NAME and NUMBER: Covenant SWD 1
3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503-2616	PHONE NUMBER: (616) 548-1150	9. API NUMBER: 4304130039	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140' FSL, 30' FWL		10. FIELD AND POOL, OR WILDCAT: Wildcat	
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S		COUNTY: Sevier STATE: UTAH	

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>10/1/2007</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>Delay SRT on SWD well</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

As a condition of approval for temporary injection at the Covenant SWD 1 well, a step-rate test is required prior to January 7, 2006 to establish the maximum allowable surface injection pressure. It is hereby requested that the step-rate test not be required until October 1, 2007, and that continued temporary injection be allowed until that time.

Injection into this well commenced on October 1, 2006 and the current injection rate is approximately 1600 BWPD at a surface injection pressure less than 10 psig. The low injection pressure indicates that the injection formation pressure has not increased significantly and therefore, a step-rate test at this time is not expected to yield interpretive information and would be wasteful.

There are no USDW in this area and the expected injection conditions do not endanger the integrity of the horizons confining the injection interval. Therefore, delay of this test does not pose any risk to USDW.

NAME (PLEASE PRINT) <u>Ellis M. Peterson</u>	TITLE <u>Senior Production Engineer</u>
SIGNATURE	DATE <u>12/20/2006</u>

(This space for State use only)

RECEIVED
DEC 22 2006

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

FORM 9

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QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S		COUNTY: Sevier
		STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
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NAME (PLEASE PRINT) <u>Ellis M. Peterson</u>	TITLE <u>Senior Production Engineer</u>
SIGNATURE	DATE <u>12/20/2006</u>

(This space for State use only)



State of Utah

**Department of
Natural Resources**

MICHAEL R. STYLER
Executive Director

**Division of
Oil, Gas & Mining**

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

July 14, 2006

Ellis Peterson
Wolverine Gas and Oil Company of Utah
One Riverfront Plaza
55 Campau, N.W.
Grand Rapids, MI 49503-2616

Re: Covenant SWD # 1, Section 8, Township 23 South, Range 1 West,
Sevier County, Utah

Dear Mr. Peterson:

Pursuant to Utah Admin. Code R649-5-3-3, the Division of Oil, Gas and Mining (the "Division") issues its administrative approval for conversion of the referenced well to a Class II salt water disposal well. Accordingly, the following stipulations shall apply for full compliance with this approval:

1. Compliance with all applicable requirements for the operation, maintenance and reporting for Underground Injection Control ("UIC") Class II injection wells pursuant to Utah Admin. Code R649-1 et seq.
2. Conformance with all conditions and requirements of the complete application submitted by Wolverine Gas and Oil Company of Utah.
3. Temporary injection is permitted within a Maximum Allowable Surface Pressure of 4,854 psia into selective zones in the Navajo Sandstone.
4. Conduct a step rate test within 6 months (on or before January 7, 2007) to establish the maximum allowable surface injection pressure and submission of a copy to the Division. A final permit will be issued upon receipt of an acceptable step rate test.

If you have any questions regarding this approval or the necessary requirements, please contact Christopher Kierst at (801) 538-5337 at this office.

Sincerely,

Gil Hunt
Associate Director

CK:mf

cc: Dan Jackson, Environmental Protection Agency
Michael Jackson, BLM Richfield Office
Sevier County Planning

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

IN THE MATTER OF THE	:	
APPLICATION OF WOLVERINE GAS	:	NOTICE OF AGENCY ACTION
AND OIL COMPANY OF UTAH FOR	:	
ADMINISTRATIVE APPROVAL OF THE	:	CAUSE NO. UIC 321.1
SWD #1 WELL LOCATED IN SECTION	:	
8, TOWNSHIP 23 SOUTH, RANGE 1	:	
WEST, SEVIER COUNTY, UTAH, AS A	:	
CLASS II INJECTION WELL	:	

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider the application of Wolverine Gas and Oil Company of Utah for administrative approval of the SWD #1 well, located in Section 8, Township 23 South, Range 1 West, Sevier County, Utah, for conversion to a Class II injection well. The adjudicative proceeding will be conducted informally according to Utah Admin.Rule R649-10, Administrative Procedures.

Selective zones in the Navajo Formation will be used for water injection. The maximum requested injection pressure and rate will be determined based on fracture gradient information submitted by Wolverine Gas and Oil Company of Utah.

Any person desiring to object to the proposed application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. The Division's Presiding Officer for this proceeding is Gil Hunt, Associate Director at PO Box 145801, Salt Lake City, Utah 84114-5801, phone number (801) 538-5340. If such a protest or notice of intervention is received, a hearing will be scheduled in accordance with the aforementioned administrative procedure rule. Protestants and/or interveners should be prepared to demonstrate at the hearing how this matter affects their interests.

Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING



Gil Hunt
Associate Director

28th 15 days later

BEFORE THE DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH
NOTICE OF AGENCY ACTION
CAUSE NO. UIC 321.1

IN THE MATTER OF THE APPLICATION OF WOLVERINE
GAS AND OIL COMPANY OF UTAH FOR ADMINISTRATIVE
APPROVAL OF THE SWD #1 WELL LOCATED IN
SECTION 8, TOWNSHIP 23 SOUTH, RANGE 1 WEST,
SEVIER COUNTY, UTAH, AS A CLASS II INJECTION WELL

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN
THE ABOVE ENTITLED MATTER.

Notice is hereby given that the Division of Oil, Gas and Mining (the "Division") is commencing an informal adjudicative proceeding to consider the application of Wolverine Gas and Oil Company of Utah for administrative approval of the SWD #1 well, located in Section 8, Township 23 South, Range 1 West, Sevier County, Utah, for conversion to a Class II injection well. The adjudicative proceeding will be conducted informally according to Utah Admin. Rule R649-10, Administrative Procedures.

Selective zones in the Navajo Formation will be used for water injection. The maximum requested injection pressure and rate will be determined based on fracture gradient information submitted by Wolverine Gas and Oil Company of Utah.

Any person desiring to object to the proposed application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. The Division's Presiding Officer for this proceeding is Gil Hunt, Associate Director at PO Box 145801, Salt Lake City, Utah 84114-5801, phone number (801) 538-5340. If such a protest or notice of intervention is received, a hearing will be scheduled in accordance with the aforementioned administrative procedure rule. Protestants and/or interveners should be prepared to demonstrate at the hearing how this matter affects their interests.

Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING

Gil Hunt
Associate Director

82031GC5

ss.
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every Wednesday at

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[Signature]
Notary Public

vier, County, Utah
er 18, 2006

DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH
CAUSE NO. UIC 321.1
IN THE MATTER OF THE APPLICATION OF WOLVERINE GAS AND OIL COMPANY OF UTAH FOR ADMINISTRATIVE APPROVAL OF THE SWD #1 WELL LOCATED IN SECTION 8, TOWNSHIP 23 SOUTH, RANGE 1 WEST, SEVIER COUNTY, UTAH, AS A CLASS II INJECTION WELL

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Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING
Gil Hunt
Associate Director
Published in The Richfield
Reaper June 14, 2006. UPAXLP

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

MATTER OF THE
APPLICATION OF WOLVERINE GAS
AND OIL COMPANY OF UTAH FOR
ADMINISTRATIVE APPROVAL OF THE
SWD #1 WELL LOCATED IN SECTION
8, TOWNSHIP 23 SOUTH, RANGE 1
WEST, SEVIER COUNTY, UTAH, AS A
CLASS II INJECTION WELL

NOTICE OF AGENCY ACTION

CAUSE NO. UIC 321.1

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Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING

Gil Hunt
Associate Director

COUNTY OF SEVIER

STATE OF UTAH

I, Troy or Lora Fielding, owners of MOE News, publisher of the Salina Sun, a newspaper of general circulation published weekly in Redmond, Sevier County, Utah, do solemnly swear that the

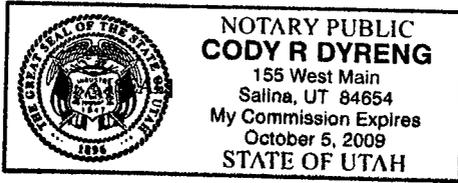
Legal Notice: Application of Wolverine Gas and Oil Company

as per clipping attached, was published once a week for one successive week(s) in the regular and entire issue of said newspaper commencing with the issue dated June 14, 2006 and ending with the issue dated June 14, 2006.

Subscribed and sworn to before me this 14 day of June 2006.

Lora Fielding
Troy or Lora Fielding

Cody R. Dyreng
Notary Public signature



Notary public residing at Salina, Utah

My Commission will expire 10/5/09

AFFIDAVIT OF PUBLICATION

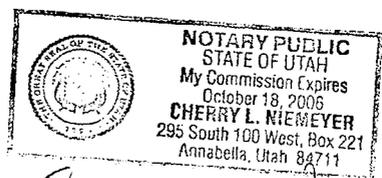
County of Sevier, State of Utah, ss.

I, TERESA WATERS, being first duly sworn, depose and say I am the Legal Secretary of THE RICHFIELD REAPER, a weekly paper having a bonafide circulation of more than 200 subscribers in the State of Utah, published every Wednesday at Richfield, Sevier County, Utah.

That the notice APPLICATION OF WOLVERINE GAS a copy of which is attached hereto, was published in said paper for 1 consecutive issues, the first publication having been made in the issue of the 14 day of JUNE 2006 and the last publication in the issue of the 14 day of JUNE 2006, that the said notice was published in the regular and entire issue of every number of said paper during the period of times and publication, and that the same was published in the newspaper proper and not in a supplement.

Teresa Waters

Subscribed and sworn to before me this 14 day of JUNE, 2006



Cherry L. Niemeyer
Notary Public

My Residence is Annabella, Sevier, County, Utah
My Commission Expires October 18, 2006

6155

NOTICE OF AGENCY ACTION
APPLICATION OF WOLVERINE GAS BEFORE THE DIVISION OF OIL, GAS AND MINING DEPARTMENT OF NATURAL RESOURCES STATE OF UTAH CAUSE NO. UIC 321.1 IN THE MATTER OF THE APPLICATION OF WOLVERINE GAS AND OIL COMPANY OF UTAH FOR ADMINISTRATIVE APPROVAL OF THE SWD #1 WELL LOCATED IN SECTION 8, TOWNSHIP 23 SOUTH, RANGE 1 WEST, SEVIER COUNTY, UTAH, AS A CLASS II INJECTION WELL

THE STATE OF UTAH TO ALL PERSONS INTERESTED IN THE ABOVE ENTITLED MATTER.

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Any person desiring to object to the proposed application or otherwise intervene in the proceeding, must file a written protest or notice of intervention with the Division within fifteen days following publication of this notice. The Division's Presiding Officer for this proceeding is Gil Hunt, Associate Director at PO Box 145801, Salt Lake City, Utah 84114-5801, phone number (801) 538-5340.

If such a protest or notice of intervention is received, a hearing will be scheduled in accordance with the aforementioned administrative procedure rule. Protestants and/or interveners should be prepared to demonstrate at the hearing how this matter affects their interests.

Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING
Gil Hunt
Associate Director
Published in The Richfield Reaper June 14, 2006. UPAXLP

AFFIDAVIT OF PUBLICATION

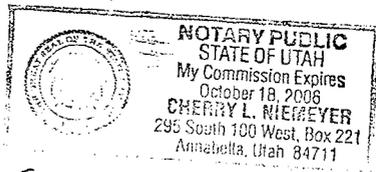
County of Sevier, State of Utah, ss.

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That the notice NOTICE OF AGENCY ACTION a copy of which is attached hereto, was published in said paper for 1 consecutive issues, the first publication having been made in the issue of the 14 day of JUNE 2006 and the last publication in the issue of the 14 day of JUNE 2006, that the said notice was published in the regular and entire issue of every number of said paper during the period of times and publication, and that the same was published in the newspaper proper and not in a supplement.

Teresa Waters

Subscribed and sworn to before me this 14 day of JUNE, 2006



Cherry L. Niemeyer
Notary Public

My Residence is Annabella, Sevier, County, Utah
My Commission Expires October 18, 2006

PUBLIC NOTICE

BEFORE THE DIVISION OF OIL, GAS AND MINING DEPARTMENT OF NATURAL RESOURCES STATE OF UTAH NOTICE OF AGENCY ACTION IN THE MATTER OF THE APPLICATION OF WOLVERINE GAS AND OIL COMPANY OF UTAH FOR ADMINISTRATIVE APPROVAL OF THE CAUSE NO. UIC 321.1 SWD #1 WELL LOCATED IN SECTION 8, TOWNSHIP 23 SOUTH, RANGE 1 WEST, SEVIER COUNTY, UTAH, AS A CLASS II INJECTION WELL.

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Dated this 6 day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS &
MINING
Gil Hunt
Associate Director
Published in The Richfield
Reaper June 14, 2006. UPAXLP

6/16/06

The Richfield Reaper

65 WEST CENTER • P.O. BOX 730
PHONE (435) 896-5476 • RICHFIELD, UTAH 84701

62 → 621

OLD YEAR

Invoice No.

LG6160

Invoice Date

13 Jun 2006

Cust. P.O. No.

PLEASE SPECIFY THIS NUMBER
WITH YOUR REMITTANCE

Customer Account No.

16497

Ref. No.

Salesman

R-OFFICE

DIV OF OIL, GAS, & MINING
STE 1210 P.O BOX 145801
SALT LAKE CITY
UT 84114

THIS IS YOUR INVOICE - WE DO NOT ITEMIZE AGAIN.

Accounts are due and payable 10th of month following date of invoice. A finance charge of 1½% per month, 18% per annum, will be charged on the unpaid balance 30 days or more past due. Customer agrees to pay a reasonable attorney's fee and other costs of collection after default and referral to an attorney.

LEGAL ADVERTISING IN THE RICHFIELD REAPER

PUB DATE	ADVERTISING CAPTIONED	INCHES	RATE	AMOUNT
06-14-06	NOTICE OF AGENCY ACTION RATE REFLECTS DBL. WIDTH COLS.	9.5	5.40	51.30

2827/REC/NUAD601G/GE06/6131

ADJUSTMENTS

SUB TOTAL 51.30

AFO1

TOTAL 51.30

The Richfield Reaper

65 WEST CENTER • P.O. BOX 730
PHONE (435) 896-5476 • RICHFIELD, UTAH 84701

Invoice No. **LG6155**
Invoice Date **13 Jun 2006**
Cust. P.O. No.
Ref. No.
Salesman **R-OFFICE**

PLEASE SPECIFY THIS NUMBER
WITH YOUR REMITTANCE

Customer Account No. **16497**

DIV OF OIL, GAS, & MINING
STE 1210 P.O BOX 145801
SALT LAKE CITY
UT 84114

THIS IS YOUR INVOICE - WE DO NOT ITEMIZE AGAIN.

Accounts are due and payable 10th of month following date of invoice. A finance charge of **1½%** per month, **18%** per annum, will be charged on the unpaid balance 30 days or more past due. Customer agrees to pay a reasonable attorney's fee and other costs of collection after default and referral to an attorney.

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<u>PUB DATE</u>	<u>ADVERTISING CAPTIONED</u>	<u>INCHES</u>	<u>RATE</u>	<u>AMOUNT</u>
06-14-06	APPLICATION OF WOLVERINE RATE REFLECTS DBL. WIDTH COLS.	9.75	5.40	52.65

ADJUSTMENTS

SUB TOTAL 52.65

AF01

TOTAL 52.65

The Richfield Reaper

65 WEST CENTER • P.O. BOX 730
PHONE (435) 896-5476 • RICHFIELD, UTAH 84701

RECEIVED

JUN 30 2006

DIV. OF OIL, GAS & MINING

STATEMENT

DATE 06/30/06 PAGE 1

PLEASE SPECIFY THIS NUMBER
WITH YOUR REMITTANCE
16497

Customer Account No.

OLD YEAR

DIV OF OIL, GAS, & MINING
STE 1210 P. O BOX 145801
SALT LAKE CITY
UT 84114

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TO ASSURE PROPER CREDIT - RETURN TOP PORTION WITH REMITTANCE

Date	Reference	Description	Amount		
06/13/06	LG6155	LEGAL ADVERTISING	52.65		
06/13/06	LG6160	LEGAL ADVERTISING	51.30		
<i>2827/REC/NUA0601G/GED6/6131</i>					
90-Over	60-90 Days	30-60 Days	Current	Credits	Total Due
0.00	0.00	0.00	103.95	0.00	\$103.95

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

IN THE MATTER OF THE
APPLICATION OF WOLVERINE GAS
AND OIL COMPANY OF UTAH FOR
ADMINISTRATIVE APPROVAL OF THE
SWD #1 WELL LOCATED IN SECTION
8, TOWNSHIP 23 SOUTH, RANGE 1
WEST, SEVIER COUNTY, UTAH, AS A
CLASS II INJECTION WELL

NOTICE OF AGENCY ACTION

CAUSE NO. UIC 321.1

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Dated this 6th day of June, 2006.

STATE OF UTAH
DIVISION OF OIL, GAS & MINING

Gil Hunt

AFFIDAVIT OF PUBLICATION

COUNTY OF SEVIER

STATE OF UTAH

I, Troy or Lora Fielding, owners of MOE News, publisher of the Safina Sun, a newspaper of general circulation published weekly in Redmond, Sevier County, Utah, do solemnly swear that the

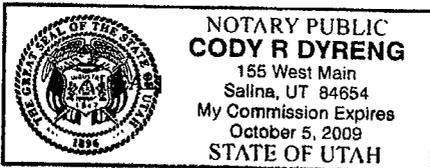
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as per clipping attached, was published once a week for one successive week(s) in the regular and entire issue of said newspaper commencing with the issue dated June 14, 2006 and ending with the issue dated June 14, 2006.

Subscribed and sworn to before me this 14 day of June 2006.

Lora Fielding
Troy or Lora Fielding

Cody R. Dyreng
Notary Public signature



Notary public residing at Salina Utah
My Commission will expire 10/5/09

Covenant SWD #1 UIC Application Proof

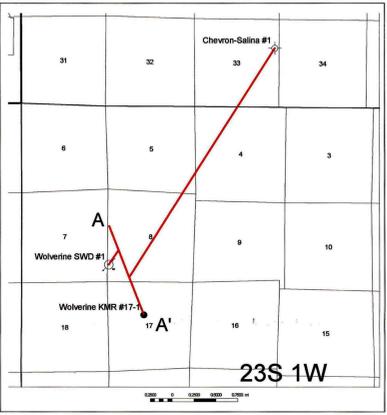
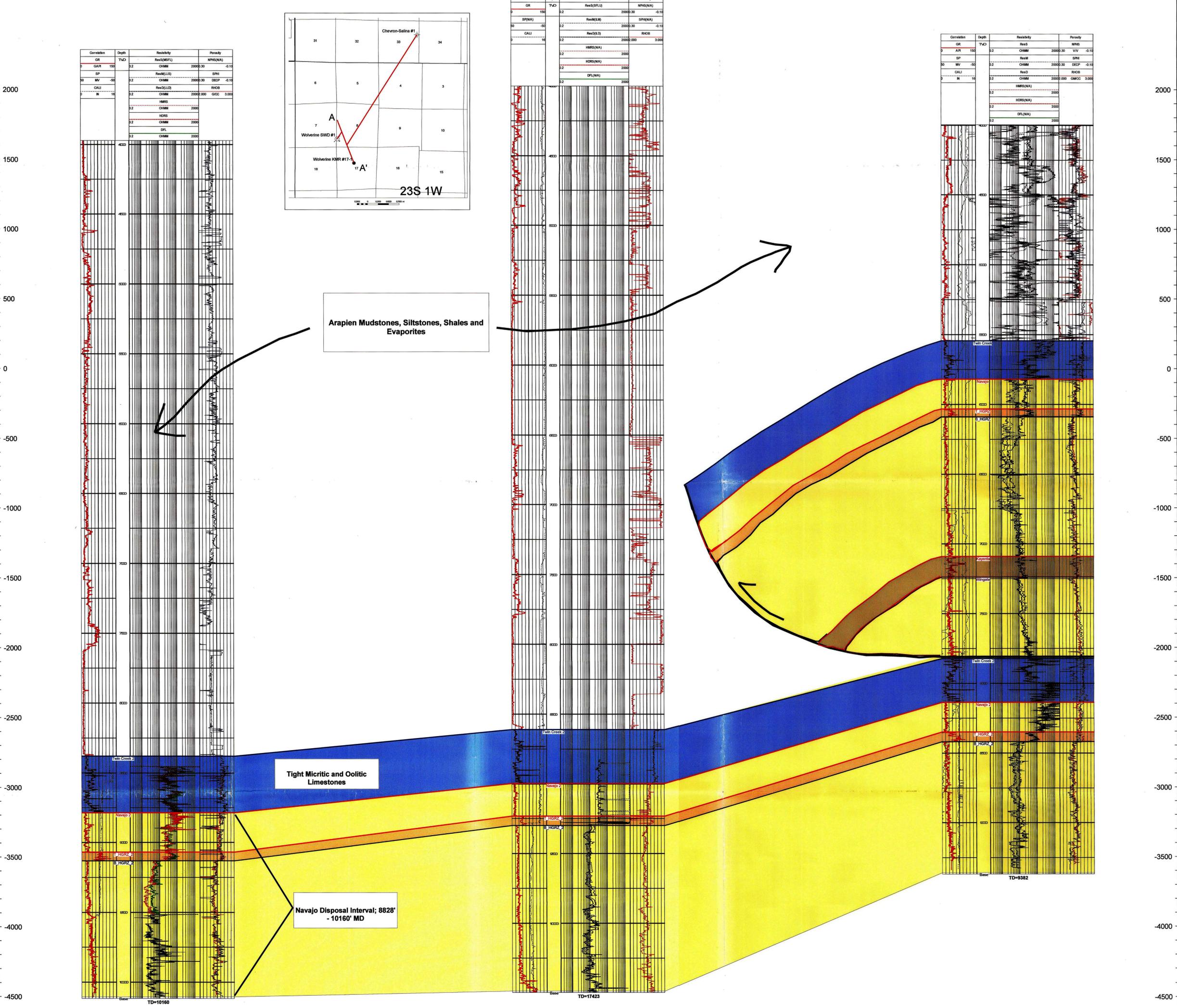
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 APR 28 2008
 DIV OF OIL, GAS & MINING

43041300390000
 Wolverine Gas and Oil
 Wolverine Covenant SWD #1
 30 Fw#1140 fsl
 TWP: 23 S - Range: 1 W - Sec. 8

43041300200000
 CHEVRON USA
 SALINA UT #1
 1187 FwL 618 FSL
 TWP: 22 S - Range: 1 W - Sec. 33

43041300300000
 Wolverine Gas & Oil
 Kings Meadow Ranches 17-1
 2040 FwL2000 FwL
 TWP: 23 S - Range: 1 W - Sec. 17

A'



Arapien Mudstones, Siltstones, Shales and Evaporites

Tight Micritic and Oolitic Limestones

Navajo Disposal Interval; 8828' - 10160' MD

Correlation	Depth	Resistivity	Porosity
GR	TVD	Res(S/DLS)	NPS(N/A)
GR	150	0.2	2000.30
SP(N/A)		Res(M/L/S)	SP(N/A)
SP	-50	0.2	2000.30
CALL		Res(D/L/S)	RHOB
N	16	0.2	2000.000
		CHMM	GCC
		2000	3.000
		HMS(N/A)	
		2000	
		HRS(N/A)	
		2000	
		DFL(N/A)	
		2000	

Correlation	Depth	Resistivity	Porosity
GR	TVD	ResS	NPS
GR	150	0.2	2000.30
AR		CHMM	V/V
AR	-10	0.2	2000.30
SP		ResM	SPN
SP	-50	0.2	2000.30
CALL		ResD	RHOB
N	16	0.2	2000.000
		CHMM	GMCC
		2000	3.000
		HMS(N/A)	
		2000	
		HRS(N/A)	
		2000	
		DFL(N/A)	
		2000	

TD=9382

TD=10160

TD=17423



Weatherford[®]

Final Surveys

COPY

RECEIVED

APR 28 2006

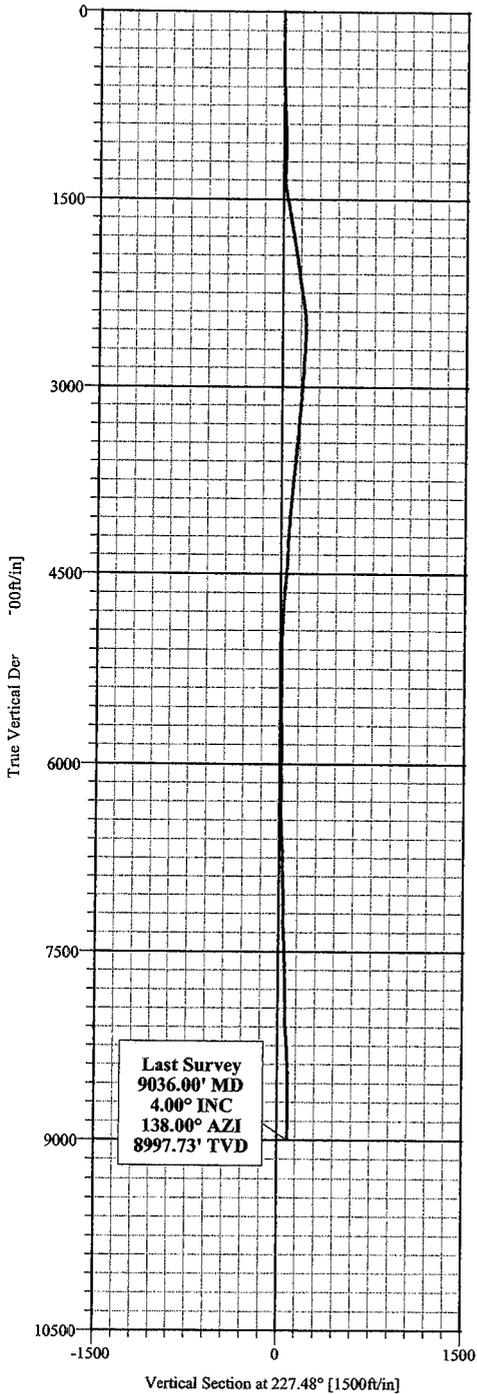
DIV. OF OIL, GAS & MINING



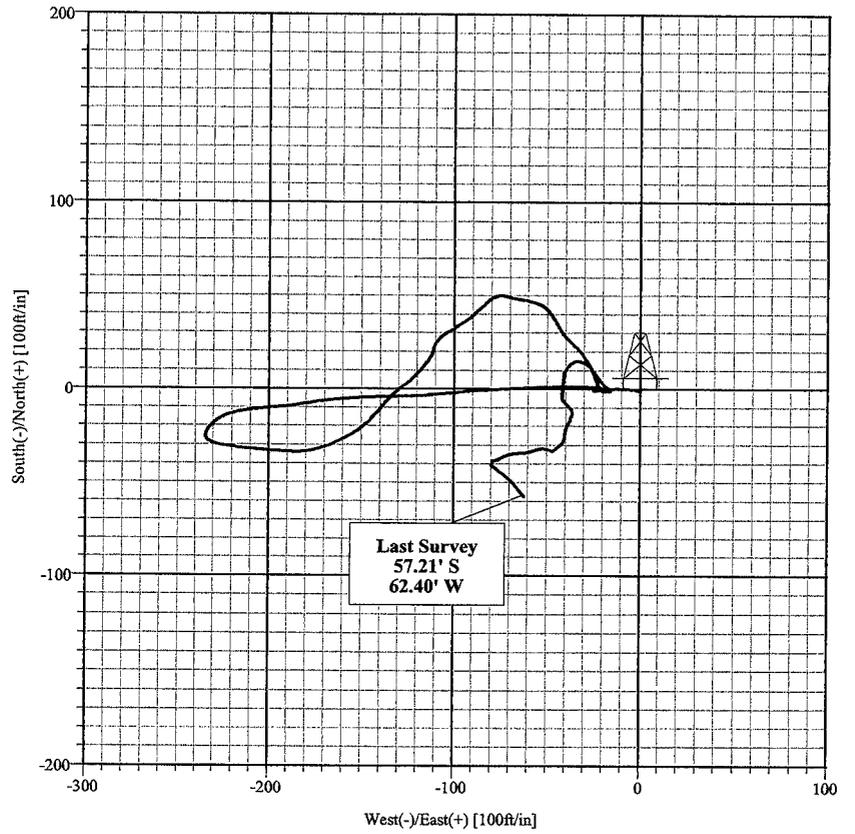
Wolverine Gas & Oil
Salt Water Disposal Well-1
Sevier County, Utah
April 6, 2006



Section View



Plan View



Weatherford International Survey Report

Company: Wolverine Gas & Oil Co of Utah	Date: 4/6/2006	Time: 15:18:13	Page: 1
Field: Sevier, Utah	Co-ordinate(NE) Reference: Well: Salt Water Disposal Well-1		
Site: Salt Water Disposal Well	Vertical (TVD) Reference: SITE 0.0		
Well: Salt Water Disposal Well-1	Section (VS) Reference: Well (0.00N,0.00E,227.48Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Field: Sevier, Utah	
Map System: US State Plane Coordinate System 1983	Map Zone: Utah, Central Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005

Site: Salt Water Disposal Well			
Site Position:	Northing:	ft	Latitude:
From: Local Only	Easting:	ft	Longitude:
Position Uncertainty: 0.00 ft			North Reference: True
Ground Level: 0.00 ft			Grid Convergence: deg

Well: Salt Water Disposal Well-1		Slot Name:	
Well Position:	+N/-S	ft	Northing:
	+E/-W	ft	Easting :
Position Uncertainty: 0.00 ft			Latitude:
			Longitude:

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE	Height	0.00 ft	Tie-on Depth: 0.00 ft
Magnetic Data: 4/6/2006			Above System Datum: Mean Sea Level
Field Strength: 0 nT			Declination: 0.00 deg
Vertical Section:	Depth From (TVD)	+N/-S	Mag Dip Angle: 0.00 deg
	ft	ft	+E/-W
			Direction
			deg
	0.00	0.00	0.00
			227.48

Survey: Survey #1	Start Date: 4/6/2006
Company: Weatherford International	Engineer: Scott Wallace
Tool: MWD;MWD - Standard	Tied-to: From Surface

Survey: Survey #1										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD
146.00	0.30	201.40	146.00	-0.36	-0.14	0.34	0.21	0.21	0.00	MWD
237.00	0.30	178.00	237.00	-0.82	-0.22	0.71	0.13	0.00	-25.71	MWD
330.00	0.30	283.70	330.00	-1.00	-0.45	1.01	0.51	0.00	113.66	MWD
422.00	0.40	260.30	422.00	-1.00	-1.00	1.41	0.19	0.11	-25.43	MWD
514.00	0.30	338.70	513.99	-0.83	-1.40	1.59	0.49	-0.11	85.22	MWD
604.00	2.30	279.10	603.97	-0.32	-3.27	2.63	2.40	2.22	-66.22	MWD
694.00	4.10	274.00	693.82	0.19	-8.26	5.96	2.02	2.00	-5.67	MWD
781.00	5.20	268.60	780.54	0.31	-15.31	11.07	1.36	1.26	-6.21	MWD
875.00	2.60	262.20	874.31	-0.09	-21.68	16.04	2.80	-2.77	-6.81	MWD
970.00	0.90	245.00	969.26	-0.69	-24.49	18.52	1.85	-1.79	-18.11	MWD
1065.00	0.40	29.00	1064.26	-0.72	-25.01	18.92	1.31	-0.53	151.58	MWD
1159.00	1.00	80.30	1158.25	-0.29	-24.04	17.92	0.86	0.64	54.57	MWD
1253.00	1.80	77.70	1252.23	0.16	-21.79	15.95	0.85	0.85	-2.77	MWD
1348.00	1.50	289.10	1347.21	0.88	-21.50	15.25	3.35	-0.32	-156.42	MWD
1443.00	13.40	270.70	1441.24	1.43	-33.73	23.90	12.62	12.53	-19.37	MWD
1537.00	15.80	267.30	1532.20	0.96	-57.41	41.67	2.71	2.55	-3.62	MWD
1632.00	13.50	266.80	1624.11	-0.27	-81.40	60.18	2.42	-2.42	-0.53	MWD
1726.00	11.90	263.00	1715.81	-2.06	-101.98	76.56	1.92	-1.70	-4.04	MWD
1821.00	11.60	268.00	1808.82	-3.59	-121.25	91.80	1.12	-0.32	5.26	MWD
1915.00	11.10	268.20	1900.98	-4.21	-139.74	105.84	0.53	-0.53	0.21	MWD
1944.00	10.60	267.50	1929.46	-4.41	-145.19	110.00	1.78	-1.72	-2.41	MWD
2039.00	11.20	265.60	2022.75	-5.50	-163.12	123.95	0.74	0.63	-2.00	MWD
2134.00	10.30	259.40	2116.08	-7.77	-180.67	138.42	1.54	-0.95	-6.53	MWD

Weatherford International Survey Report

Company: Wolverine Gas & Oil Co of Utah	Date: 4/6/2006	Time: 15:18:13	Page: 2
Field: Sevier, Utah	Co-ordinate(NE) Reference:	Well: Salt Water Disposal Well-1	
Site: Salt Water Disposal Well	Vertical (TVD) Reference:	SITE 0.0	
Well: Salt Water Disposal Well-1	Section (VS) Reference:	Well (0.00N,0.00E,227.48Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Survey #1

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2228.00	11.30	266.50	2208.42	-9.88	-198.12	152.71	1.77	1.06	7.55	MWD
2323.00	10.10	259.80	2301.77	-11.92	-215.61	166.98	1.82	-1.26	-7.05	MWD
2417.00	7.50	232.70	2394.70	-17.10	-228.61	180.06	5.13	-2.77	-28.83	MWD
2512.00	3.90	193.70	2489.24	-24.00	-234.31	188.93	5.36	-3.79	-41.05	MWD
2606.00	4.80	110.70	2583.05	-28.50	-231.39	189.82	6.17	0.96	-88.30	MWD
2701.00	5.40	98.20	2677.67	-30.54	-223.24	185.19	1.33	0.63	-13.16	MWD
2795.00	5.60	96.80	2771.24	-31.72	-214.31	179.40	0.26	0.21	-1.49	MWD
2890.00	5.20	93.00	2865.82	-32.49	-205.41	173.36	0.56	-0.42	-4.00	MWD
2985.00	5.30	94.20	2960.42	-33.04	-196.73	167.34	0.16	0.11	1.26	MWD
3079.00	5.60	93.50	3054.00	-33.64	-187.83	161.18	0.33	0.32	-0.74	MWD
3174.00	5.30	80.50	3148.57	-33.20	-178.87	154.28	1.33	-0.32	-13.68	MWD
3268.00	5.30	70.50	3242.17	-31.03	-170.50	146.64	0.98	0.00	-10.64	MWD
3363.00	5.40	64.80	3336.76	-27.66	-162.32	138.34	0.57	0.11	-6.00	MWD
3457.00	6.10	58.90	3430.29	-23.20	-154.04	129.22	0.97	0.74	-6.28	MWD
3552.00	4.80	44.30	3524.86	-17.75	-146.94	120.30	1.99	-1.37	-15.37	MWD
3646.00	5.50	40.40	3618.48	-11.50	-141.27	111.90	0.83	0.74	-4.15	MWD
3741.00	6.20	44.30	3712.98	-4.36	-134.74	102.26	0.85	0.74	4.11	MWD
3835.00	5.20	53.10	3806.52	1.83	-127.79	92.96	1.41	-1.06	9.36	MWD
3929.00	5.40	45.90	3900.12	7.46	-121.21	84.30	0.74	0.21	-7.66	MWD
4024.00	5.00	39.90	3994.73	13.75	-115.34	75.72	0.71	-0.42	-6.32	MWD
4119.00	4.00	16.00	4089.44	20.11	-111.77	68.79	2.21	-1.05	-25.16	MWD
4213.00	2.40	27.80	4183.29	25.01	-109.95	64.14	1.83	-1.70	12.55	MWD
4308.00	2.90	55.00	4278.20	28.14	-107.05	59.89	1.41	0.53	28.63	MWD
4402.00	4.00	58.90	4372.02	31.20	-102.30	54.32	1.20	1.17	4.15	MWD
4497.00	4.70	56.80	4466.75	35.04	-96.20	47.23	0.76	0.74	-2.21	MWD
4591.00	5.60	48.30	4560.37	40.20	-89.56	38.84	1.25	0.96	-9.04	MWD
4686.00	4.30	47.60	4655.01	45.69	-83.46	30.65	1.37	-1.37	-0.74	MWD
4780.00	3.70	62.90	4748.79	49.45	-78.16	24.20	1.30	-0.64	16.28	MWD
4875.00	4.50	109.70	4843.57	49.59	-71.92	19.50	3.51	0.84	49.26	MWD
4969.00	5.00	96.30	4937.25	47.89	-64.38	15.09	1.29	0.53	-14.26	MWD
5064.00	5.70	107.00	5031.84	46.06	-55.75	9.97	1.28	0.74	11.26	MWD
5158.00	5.70	144.80	5125.40	40.88	-48.60	8.19	3.92	0.00	40.21	MWD
5253.00	3.20	154.50	5220.11	34.63	-44.73	9.57	2.74	-2.63	10.21	MWD
5347.00	3.60	142.50	5313.95	29.92	-41.81	10.60	0.87	0.43	-12.77	MWD
5440.00	4.00	129.70	5406.74	25.53	-37.53	10.41	1.01	0.43	-13.76	MWD
5535.00	4.00	140.40	5501.51	20.86	-32.87	10.13	0.78	0.00	11.26	MWD
5629.00	4.10	146.90	5595.28	15.52	-28.95	10.85	0.50	0.11	6.91	MWD
5723.00	4.30	156.40	5689.03	9.48	-25.70	12.54	0.77	0.21	10.11	MWD
5818.00	4.30	163.30	5783.76	2.80	-23.25	15.25	0.54	0.00	7.26	MWD
5912.00	3.30	103.70	5877.59	-1.21	-19.61	15.28	4.12	-1.06	-63.40	MWD
6007.00	1.10	34.30	5972.52	-1.11	-16.44	12.87	3.25	-2.32	-73.05	MWD
6101.00	1.60	303.00	6066.50	0.35	-17.03	12.32	2.09	0.53	-97.13	MWD
6196.00	2.20	306.50	6161.45	2.16	-19.61	13.00	0.64	0.63	3.68	MWD
6290.00	2.70	329.00	6255.37	5.13	-22.20	12.90	1.14	0.53	23.94	MWD
6385.00	4.00	325.90	6350.20	9.79	-25.21	11.97	1.38	1.37	-3.26	MWD
6479.00	3.80	295.50	6444.00	13.85	-29.86	12.65	2.18	-0.21	-32.34	MWD
6574.00	2.70	258.20	6538.85	14.75	-34.89	15.75	2.45	-1.16	-39.26	MWD
6668.00	3.10	221.80	6632.74	12.40	-38.75	20.19	1.97	0.43	-38.72	MWD
6762.00	1.80	202.10	6726.65	9.13	-41.00	24.05	1.63	-1.38	-20.96	MWD
6857.00	1.90	181.00	6821.60	6.18	-41.59	26.48	0.72	0.11	-22.21	MWD
6951.00	2.90	183.10	6915.52	2.24	-41.75	29.26	1.07	1.06	2.23	MWD
7046.00	3.30	187.00	7010.38	-2.87	-42.21	33.05	0.48	0.42	4.11	MWD
7140.00	2.60	126.40	7104.28	-6.82	-40.82	34.70	3.23	-0.74	-64.47	MWD

Weatherford International Survey Report

Company: Wolverine Gas & Oil Co of Utah	Date: 4/6/2006	Time: 15:18:13	Page: 3
Field: Sevier, Utah	Co-ordinate(NE) Reference:	Well: Salt Water Disposal Well-1	
Site: Salt Water Disposal Well	Vertical (TVD) Reference:	SITE 0.0	
Well: Salt Water Disposal Well-1	Section (VS) Reference:	Well (0.00N,0.00E,227.48Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: Survey #1

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7235.00	2.90	142.40	7199.17	-10.00	-37.62	34.49	0.86	0.32	16.84	MWD
7329.00	2.40	197.90	7293.08	-13.76	-36.78	36.41	2.67	-0.53	59.04	MWD
7423.00	3.50	207.90	7386.96	-18.17	-38.73	40.82	1.29	1.17	10.64	MWD
7518.00	2.20	192.60	7481.84	-22.51	-40.48	45.05	1.57	-1.37	-16.11	MWD
7612.00	1.60	175.60	7575.79	-25.58	-40.77	47.34	0.87	-0.64	-18.09	MWD
7707.00	2.40	221.10	7670.73	-28.40	-41.98	50.14	1.80	0.84	47.89	MWD
7802.00	2.80	227.60	7765.64	-31.47	-45.00	54.43	0.52	0.42	6.84	MWD
7896.00	0.70	268.90	7859.59	-33.03	-47.27	57.16	2.47	-2.23	43.94	MWD
7991.00	1.40	300.20	7954.57	-32.45	-48.85	57.94	0.93	0.74	32.95	MWD
8085.00	2.60	271.00	8048.52	-31.84	-51.98	59.83	1.64	1.28	-31.06	MWD
8180.00	4.80	251.40	8143.32	-33.07	-57.90	65.03	2.64	2.32	-20.63	MWD
8276.00	4.10	270.30	8239.03	-34.33	-65.14	71.21	1.68	-0.73	19.69	MWD
8371.00	3.20	252.60	8333.84	-35.11	-71.07	76.11	1.51	-0.95	-18.63	MWD
8467.00	3.10	237.60	8429.70	-37.30	-75.81	81.09	0.86	-0.10	-15.62	MWD
8542.00	3.20	272.40	8504.59	-38.30	-79.62	84.57	2.51	0.13	46.40	MWD
8650.00	3.50	131.60	8612.52	-40.36	-80.17	86.37	5.84	0.28	-130.37	MWD
8746.00	3.70	124.10	8708.33	-44.04	-75.41	85.35	0.53	0.21	-7.81	MWD
8841.00	3.50	132.20	8803.14	-47.71	-70.72	84.37	0.57	-0.21	8.53	MWD
8940.00	3.70	142.40	8901.95	-52.27	-66.54	84.37	0.68	0.20	10.30	MWD
9036.00	4.00	138.00	8997.73	-57.21	-62.40	84.66	0.44	0.31	-4.58	MWD



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

April 27, 2006

Mr. Christopher J. Kierst
State of Utah
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: UIC Application - Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD-1
1140' FSL, 30' FWL, SW/4 SW/4, Section 8, T23S, R1W, S.L.B.& M,
Sevier County, Utah

Dear Mr. Kierst:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) submitted an *Application for Injection Well* (UIC Form 1) and supporting documents with an *Application for Permit to Drill (APD)* for the subject well in March, 2004. This well has been drilled and completed in preparation for water disposal. It is hereby requested that the attached information be accepted and considered to support approval for UIC Class II injection.

An updated UIC Form 1 is being submitted to reflect the actual conditions encountered in the well. In addition, documents to supplement and clarify both the new and original submission are included with this updated application. A completion notice and copies of well logs are also enclosed in this package for your use and in compliance with rule R649-8-9.

Please accept this letter as Wolverine's written request for confidential treatment of all information contained with this submission and pertaining to this subject well.

Thank you very much for your timely consideration of this application. Please feel free to contact me or Ellis Peterson of this office at 616-458-1150 if you have any questions or need additional information.

Sincerely,

Edward Higurera, Manager - Development

cc: Michael Jackson, BLM-Richfield

RECEIVED

APR 28 2006

DIV. OF OIL, GAS & MINING

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

UIC FORM 1

APPLICATION FOR INJECTION WELL

Name of Operator Wolverine Gas and Oil Company of Utah, LLC				Utah Account Number N	Well Name and Number Covenant SWD-1
Address of Operator 55 Campau NW			CITY Grand Rapids STATE MI ZIP 49503-2616	Phone Number (616) 548-1150	API Number 4304130039
Location of Well Footage : 1140' FSL, 30' FWL County : Sevier					Field or Unit Name Covenant Field
QQ, Section, Township, Range: SWSW 8 23S 1W State : UTAH					Lease Designation and Number

Is this application for expansion of an existing project? Yes No

Will the proposed well be used for:

Enhanced Recovery?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Disposal?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Storage?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Is this application for a new well to be drilled? Yes No

If this application is for an existing well, has a casing test been performed? Yes No
Date of test: _____

Proposed injection interval: from 8,825 to 10,153

Proposed maximum injection: rate 10,000 bpd pressure 7,030 psig *at 8825' MD*

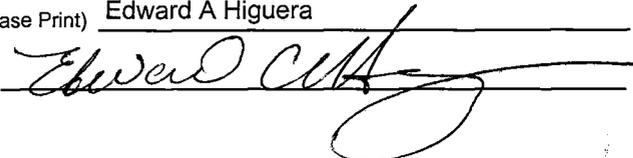
Proposed injection zone contains oil , gas , and / or fresh water within 1/2 mile of the well.

List of attachments: Mineral Ownership Plat, Well Bore Schematic, Affidavit of Notice, Geologic Cross-Section, Estimation of Fracture Initiation Pressure, BHP Tables, Water TDS Analyses

**ATTACH ADDITIONAL INFORMATION AS REQUIRED BY CURRENT
UTAH OIL AND GAS CONSERVATION GENERAL RULES**

I hereby certify that this report is true and complete to the best of my knowledge.

Name (Please Print) Edward A Higuera Title Manager - Development

Signature  Date 4/25/2006

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APR 28 2006

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DIV. OF OIL, GAS & MINING

Affidavit of Notification

This affidavit is provided to satisfy the requirements under Rule 649-5-2.2.12 for the Wolverine Oil and Gas of Utah, LLC application for a UIC Class II permit for the Covenant SWD-1.

I hereby certify that a copy of the *Application* has been provided to all operators, owners, and surface owners within a one-half mile radius of the proposed injection well (Covenant SWD-1).

By: 
Edward A. Higuera

Title: Manager-Development, Wolverine Gas and Oil

Subscribed and sworn to me this 27th day of April, 2006, a Notary Public in and for Kent County, Michigan.


Evelyn Telgen, Notary Public

My commission expires September 13, 2011.

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Wolverine Gas and Oil of Utah, LLC
Covenant SWD-1 Application

Rule 649-5-2.2.12 Notification Mailing List

Kings Meadow Ranches, Inc.
c/o/ Mack T. Dastrup
P.O. Box 570125
Sigurd, Utah 84657

Ronald L. and Virginia Dastrup
P.O. Box 570133
Sigurd, Utah 84657

Berkley Anderson
P.O. Box 300532
Glenwood, Utah 84732

Michael Jackson
Bureau of Land Management
Richfield Field Office
150 East 900 North
Richfield, Utah 84701

LaVonne Garrison
Utah Trust Lands
675 East 500 South, Suite 500
Salt Lake City, UT 84102

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Application for UIC Class II Injection Well Required Information

Applicant/Operator: Wolverine Gas & Oil of Utah, LLC
55 Campau NW
Grand Rapids, MI 49503-2616
Ph: (616) 458-1150
Contact: Ed Higuera, Manager-Development

Proposed Salt Water Disposal Well: Covenant SWD-1
Covenant Field
SW/4 SW/4, Section 8, T23S, R1W, SLB&M
Sevier County, Utah

Requirements for Class II Injection Well for Water Disposal (R649-5-2):

1. A properly completed UIC Form 1 precedes this page. It provides actual post-drilling information about the well replacing the pre-drilling estimates of the original application. Value stated for proposed maximum injection pressure is at top of injection interval and not at wellhead.
2. A plat showing the location of the injection well, a one-half mile radius around the well, and mineral ownership is included as Attachment 1. Wolverine Gas & Oil of Utah, LLC is operator for all leased minerals in the vicinity of the well and they also own the surface at the well site. A map showing all surface owners in the area was submitted with the original application for this project.
3. Copies of all electrical, radioactive, and cement bond logs are included with the accompanying completion notice for the well.
4. A wellbore schematic is provided as Attachment 2. The well has 13-3/8" surface casing set at 2000 feet and cemented to surface, 9-5/8" intermediate casing is set at 8506 feet and cemented to surface, and 7" production casing is set at 9566 feet to surface with a cement top behind casing at 7394'. The Navajo Formation top is at 8825 feet and extends below the total well depth of 10,153 feet. It is requested that the entire penetrated Navajo section be approved as the injection interval. Plans are to initially inject only into the open-hole completed section below casing, but eventually the Navajo behind casing will be perforated up to 8825 feet. Currently a packer is set at 9485 feet with 2-7/8" tubing. Eventually the 2-7/8" tubing will be replaced with 3-1/2" tubing and after the entire Navajo is opened, the packer will be set at approximately 8750 feet.
5. Water produced in association with oil production at the Covenant Field will be injected at the subject well. The source of this water is the Navajo Formation. Total dissolved solids in Navajo produced water ranged from 22,900 to 24,940 mg/l in testing completed in late 2005 (Attachment 3). Initially 1000 BWPD will be injected in the well but anticipated injection volumes could eventually be as high as 10,000 BWPD as water cuts and rates increase in the field. Formation and injected water incompatibility is not expected with water produced from the Navajo being reinjected back into the Navajo Formation. If Navajo production is established from other Wolverine Gas and Oil operated wells in the area, it is anticipated that produced water from those wells will also be injected in this well as long as the injection waters are compatible.
6. The Navajo Formation injection interval at a depth of 8825 to 10153 feet is predominately fine grained eolian sandstone. It is bound on bottom by the Kayenta Formation and on top by the Twin Creek Formation. The Kayenta is a fluvial mix of interbedded shale, sandstones, and siltstones.

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Application for UIC Class II Injection Well Required Information

Kayenta was not penetrated in this well but has a thickness of 156 feet in the Wolverine KMR 17-1. The Twin Creek is a marine deposit of limey, argillaceous shale and firm, hard, sometimes anhydritic, micritic limestone. It overlies the Navajo Formation in this well at a depth of 8410 to 8825 feet. The Arapien Formation extends from the Twin Creek Formation to surface. The Arapien consists of interbedded silts, sands, shale, and limey mudstones with evaporites in the lower section of the stratigraphic column. There are no known moderately saline water aquifers in the Arapien or Twin Creek. The geologic cross-section included with this document illustrates the wide lateral extent of the Navajo and overlying strata.

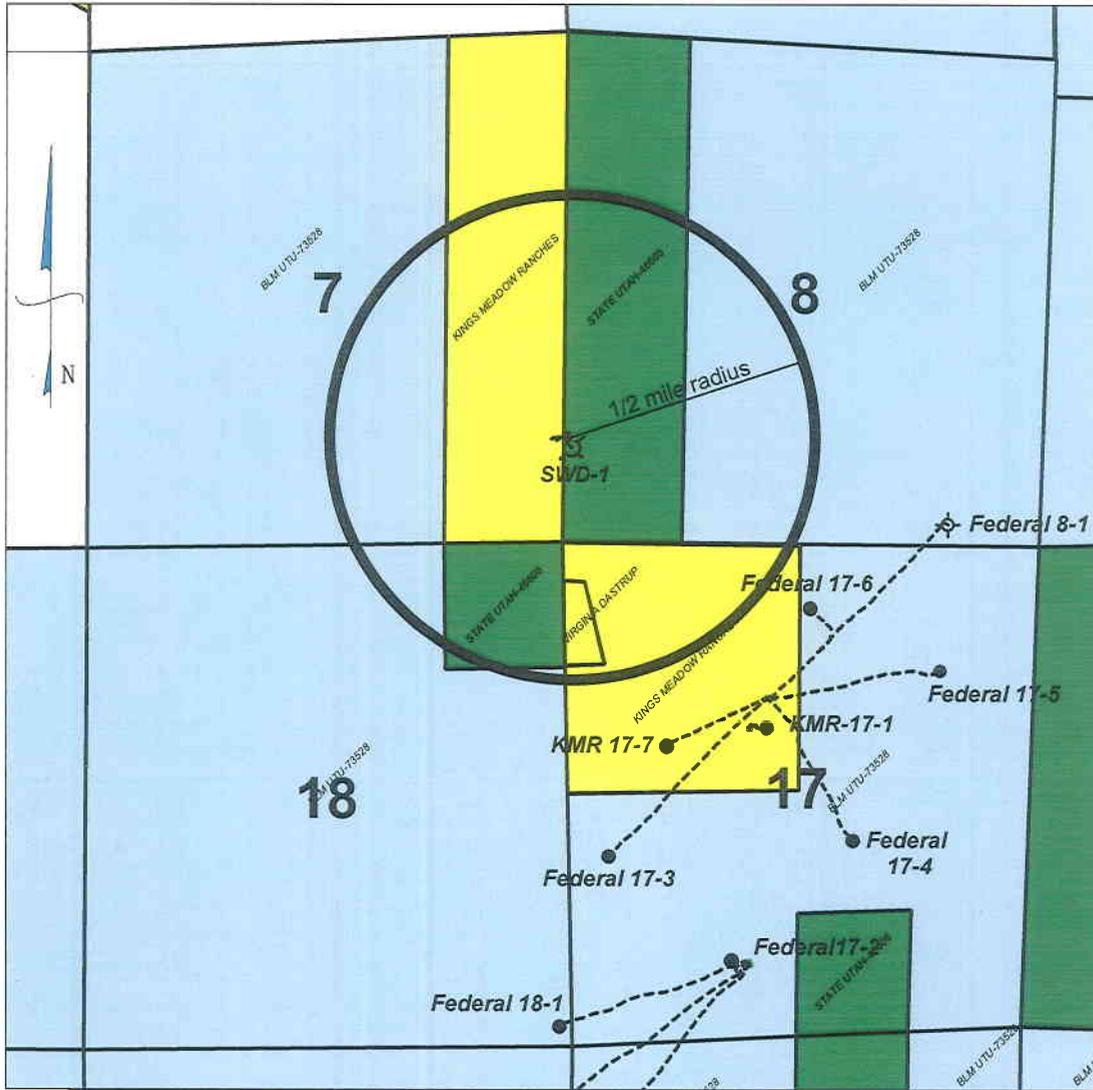
7. Injectivity measurements made during completion operations on this well indicate that initial injection volumes will be taken with little or no wellhead pressure. The eventual surface injection pressure is expected to approach 3800 psig. It is requested that the Maximum Allowed Injection Pressure (MAIP) be based on a fracture gradient of 0.80 psi/ft or 7030 psi at a measured depth of 8825 feet (8788' TVD). The MAIP at surface that corresponds to a fracture initiation pressure at injection depth will vary proportionately to tubular friction pressure which varies primarily with tubular size and injection rate. At injection rates approaching 10,000 BWPD (7 BPM) down 3-1/2" tubing, the bottom-hole injection pressure will not exceed a 0.80 psi/ft fracture gradient until the surface injection pressure exceeds 3813 psia. It is therefore requested that the MAIP for this well be 3800 psig. Calculated values of tubular friction pressure and surface pressures that correspond to a pressure of 7030 psia at the depth of the Navajo top are shown for 2-7/8" and 3-1/2" tubing on Attachment 4.

There is no known data available to quantify a fracture gradient for the Navajo or Twin Creek Formations in this area. However, fracture pressure of the Navajo is not relevant for this well because: 1) the Navajo injection zone is not oil productive and fracturing within the zone will not jeopardize any correlative rights or have adverse consequences; 2) there are no moderately saline aquifers at risk; and 3) even if a fracture were to extend through the Navajo and Twin Creek, it could never extend through the overlying, elastic (high Poisson's Ratio) evaporites in the Arapien so all injection would remain confined. An estimated fracture gradient for the upper confining Twin Creek Formation is 0.89 psi/ft. The recommended MAIP basis of 0.80 psi/ft provides a safety margin for the 0.89 psi/ft estimation that is based on rock mechanical data and calculations shown on Exhibit 5.

8. There is no water, abandoned, planned, or producing well within a one-half mile radius of this well.
9. Surface owners within a one-half mile radius of this well were notified when the original drilling proposal for this well was submitted. A plat detailing surface ownership and contact information for the surface owners was included with the original application for this project. A copy of this updated application information material has also been sent to these same surface owners and an affidavit stating so is attached. Exhibit 1 shows mineral lease ownership surrounding this well. Wolverine Oil and Gas Company of Utah, LLC is operator for all mineral leases within a half-mile radius of this well.

Aquifer Exemption

The Navajo Formation contains total dissolved solids exceeding 10,000 mg/l and therefore does not qualify as an Underground Source of Drinking Water (USDW).



1 inch = 2000 feet
 660 0 660 1320 1980 ft

1/2 Mile Radius

MINERAL OWNERSHIP

- Wolverine Gas and Oil - State Lease
- Wolverine Gas and Oil - Federal Lease
- Wolverine Gas and Oil - Fee Lease

No map of surface ownership included. We will use the surface ownership map presented with the earlier permit package if it isn't obsolete. CLK 5/27/06



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

Wolverine Covenant SWD-1
 1140' FSL/30' FWL
 Section 8, T23S, R1W
 Sevier County, Utah

Date: 19 April, 2006 gmp: ml swd lease

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Attachment 1



Covenant SWD-1
API# 43-041-30039
Covenant Field
Section 8, T23S, R1W
Sevier County, Utah

(Not to Scale)

Ground Elevation: 5,590'
KB Elevation: 5,607'

Well Location

Surface: 1140' FSL, 30' FWL, SW SW 8-23S-1W
Top of Pay (8827' MD): 1093' FSL, 40' FEL, SE SE 7-23S-1W

Conductor Casing (12/17/05)

Size: 20", 0.375" wall
Depth Landed: 120' GL
Cement Data: Cemented to surface with 650 sks G

Surface Casing (1/09/06)

Size/Wt/Grade: 13-3/8", 68#, J-55, BT&C
Depth Landed: 2000' MD
Cement Data: 670 sks CBM Light, 600 sks Type V
Cemented to surface

Intermediate Casing (2/02/06)

9-5/8", 47#, HCP-110, LT&C, 8rd
Depth Landed: 8506' MD
Cement Data: 1590 sks Hifill V, 11.0 ppg, 3.81 cf/sk
680 sks 50:50 Poz:G, 14.4 ppg, 1.23 cf/sk
Cemented to surface

Production Casing (2/16/06)

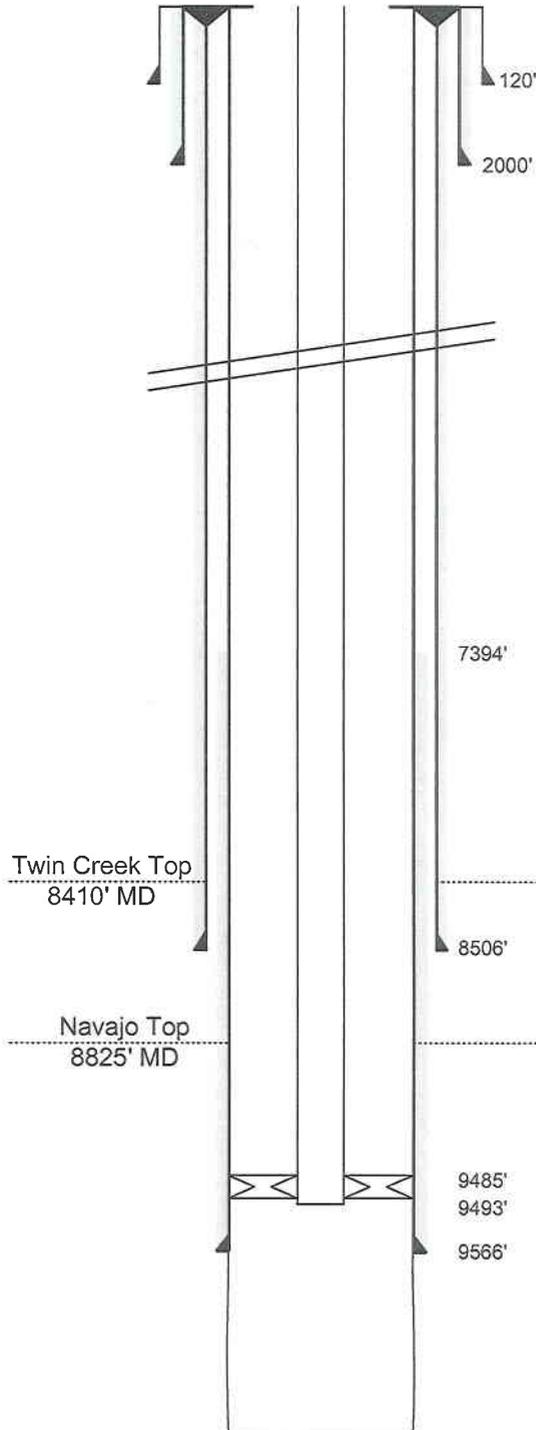
Size/Wt/Grade: 7", 23#, NSP-110, LT&C, 8rd
Properties: 8720 psi burst, 6.241" drift, 6.366" ID, 0.03937 Bbl/ft Capacity
Depth Landed: 9566' MD
Cement Data: 480 sks 50:50 Poz:G, 14.3 ppg, 1.26 cf/sk
Top of cement @ 7394' MD (CBL)

Tubing (3/19/06)

2-7/8" 6.5# L-80 EUE 8rd tubing to 9493' MD (9453' TVD) w/ 2.25" ID seating nipple @ 9484' MD (9444' TVD) and Arrowset 1X packer w/ wireline re-entry guide @ 9485' MD

Navajo Perforations (Open-Hole)

9566' - 10153' MD (9526' - 10112' TVD), open-hole



TD = 10153' MD (10112' TVD)

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COVER PAGE

ANALYTICAL REPORT FOR
 PSI-Petroleum Systems International, Inc.
 Phone(801) 322-2915 Fax(801) 322-2916
 E-mail: jc-chao@petroleumsystems.com

Form COVER-V1.4
 12090512254449
 Page 1



DCL Report Group...: 05C-0229-01

Date Printed.....: 09-DEC-05 12:25

Project Protocol #: P058G001
 Client Ref Number.: Not Provided
 Release Number.....: Not Provided

PSI-Petroleum Systems International, Inc.
 Attention: Jiun-Chi 'JC' Chao, Ph.D.
 576 East South Temple
 Salt Lake City, UT 84102

Analysis Method(s): 160.1

<u>Client Sample Name</u>	<u>Laboratory Sample Name</u>	<u>Date Sampled</u>	<u>Date Received</u>
Method Blank	BL-238215-1	NA	NA
LCS	QC-238215-1	NA	NA
UP0098W 17-1	05C02009	10-NOV-05	11-NOV-05
UP0099W 17-2	05C02010	10-NOV-05	11-NOV-05
UP0100W 17-5	05C02011	10-NOV-05	11-NOV-05
UP0100W 17-5	05C02011MD	10-NOV-05	11-NOV-05

*Covenant Field
 Produced Water Samples
 KMR17-1, WF 17-2, and WF 17-5 Wells*

AMENDED

Rosemary H. Hanks
 Analyst: Rosemary H. Hanks
 12/09/05
 Date

Sarah C. Campbell
 Reviewer: Sarah C. Campbell
 12/09/05
 Date

960 West LeVoy Drive / Salt Lake City, Utah 84123-2547
 Phone (801) 266-7700 Web Page: www.datachem.com
 FAX (801) 268-9992 E-mail: lab@datachem.com

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FORM H (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63H-V1.4
12090512254449
Page 2

SAMPLE GROUP COMMENTS



G05EB014

DCL Report Group...: 05C-0229-01
Date Printed.....: 09-DEC-05 12:25

Client Name...: PSI-Petroleum Systems

Release Number....: Not Provided

General Information

The DCL QC Database maintains all numerical figures which are input from the pertinent data source. These data have not been rounded to significant figures nor have they been moisture corrected. Reports generated from the system, however, list data which have been rounded to the number of significant figures requested by the client or deemed appropriate for the method. This may create minor discrepancies between data which appear on the QC Summary Forms (Forms B-G) and those that would be calculated from rounded analytical results. Additionally, if a moisture correction is performed, differences will be observed between the QC data and the surrogate data reported on Form A (or other report forms) and corresponding data reported on QC Summary Forms. In these cases, the Form A will indicate the "Report Basis" as well as the moisture value used for making the correction.

DataChem Laboratories, Inc. is accredited by the State of Utah, Bureau of Laboratory Improvement under NELAP for specific fields of testing as documented in its current scope of accreditation (ID# DATA1) which is available by request or on the internet at <http://hlunix.hl.state.ut.us/els/labimp/labcertification/labsutahcert.mdb>. The quality systems implemented in the laboratory apply to all methods performed by DataChem regardless of this current scope of accreditation which does not include performance based methods, modified methods and methods applied to matrices not listed in the methods.

Report generation options: X

Result Symbol Definitions

- ND - Not Detected above the MDL (LLD or MDC for radiochemistry).
- ** - No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

- U - Not Detected above the MDL (LLD or MDC for radiochemistry).
- B - For organic analyses the qualifier indicates that this analyte was found in the method blank. For inorganic analyses the qualifier signifies the value is between the MDL and PQL.
- J - For organic analyses the qualifier indicates that the value is between the MDL and the PQL. It is also used for indicating an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.

QC Flag Symbol Definitions

- * - Parameter outside of specified QC limits.

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FORM A (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63A-V1.4
12090512254449
Page 3

SAMPLE ANALYSIS DATA SHEET



Date Printed.....: 09-DEC-05 12:25
Client Name.....: PSI-Petroleum Systems
Client Ref Number....: Not Provided
Sampling Site.....: Not Provided
Release Number.....: Not Provided
Date Received.....: 11-NOV-05 00:00

Client Sample Name: UF0098W|17-1 *KMR17-1*
DCL Sample Name....: 05C02009
DCL Report Group...: 05C-0229-01
Matrix.....: WATER
Date Sampled.....: 10-NOV-05 14:45
Reporting Units...: mg/L
Report Basis.....: As Received Dried

DCL Preparation Group: Not Applicable
Date Prepared.....: Not Applicable
Preparation Method....: Not Applicable
Aliquot Weight/Volume: 5 mL
Net Weight/Volume....: Not Required

DCL Analysis Group: G05BJ02R
Analysis Method....: 160.1
Instrument Type...: PF
Instrument ID.....: GRAVIMETRIC
Column Type.....: Not Applicable

Analytical Results

Analyte	Date Analyzed	MDL	Result	Comment	Qual.	Dilution	CRDL
Total Dissolved Solids	15-NOV-05 00:00	17.5	24,740				40.

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FORM A (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63A-V1.4
12090512254449
Page 4

SAMPLE ANALYSIS DATA SHEET



Date Printed.....: 09-DEC-05 12:25

Client Sample Name: UP0099W17-2 *WF17-2*
DCL Sample Name...: 05C02010
DCL Report Group...: 05C-0229-01

Client Name.....: PSI-Petroleum Systems
Client Ref Number.....: Not Provided
Sampling Site.....: Not Provided
Release Number.....: Not Provided

Matrix.....: WATER
Date Sampled.....: 10-NOV-05 14:45
Reporting Units...: mg/L
Report Basis.....: As Received Dried

Date Received.....: 11-NOV-05 00:00

DCL Preparation Group: Not Applicable
Date Prepared.....: Not Applicable
Preparation Method...: Not Applicable
Aliquot Weight/Volume: 5 mL
Net Weight/Volume.....: Not Required

DCL Analysis Group: G05BJ02R
Analysis Method...: 160.1
Instrument Type...: FP
Instrument ID.....: GRAVIMETRIC
Column Type.....: Not Applicable

Analytical Results

Analyte	Date Analyzed	MDL	Result	Comment	Qual.	Dilution	CRDL
Total Dissolved Solids	15-NOV-05 00:00	17.5	22,900				40.

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FORM A (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63A-V1.4
12090512254449
Page 5

SAMPLE ANALYSIS DATA SHEET



Date Printed.....: 09-DEC-05 12:25

Client Sample Name: UF0100W|17-5 *WF17-5*

Client Name.....: PSI-Petroleum Systems

DCL Sample Name...: 05C02011

Client Ref Number....: Not Provided

DCL Report Group...: 05C-0229-01

Sampling Site.....: Not Provided

Matrix.....: WATER

Release Number.....: Not Provided

Date Sampled.....: 10-NOV-05 14:45

Date Received.....: 11-NOV-05 00:00

Reporting Units...: mg/L

Report Basis.....: As Received Dried

DCL Preparation Group: Not Applicable

DCL Analysis Group: G05BJ02R

Date Prepared.....: Not Applicable

Analysis Method...: 160.1

Preparation Method...: Not Applicable

Instrument Type...: PF

Aliquot Weight/Volume: 5 mL

Instrument ID.....: GRAVIMETRIC

Net Weight/Volume....: Not Required

Column Type.....: Not Applicable

Analytical Results

Analyte	Date Analyzed	MDL	Result	Comment	Qual.	Dilution	CRDL
Total Dissolved Solids	15-NOV-05 00:00	17.5	24,940				40.

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**Water Injection Well BHP
Fanning, Incompressible Fluid
Tubing/Casing Configuration**

Well: Covenant SWD-1
Field: Covenant
Date: 4/27/2006

Conditions:

Fluid Viscosity = 0.60 cp
 Fluid Density = 8.51 lbs/gal
 Tubing ID = 2.992 in
 Casing ID = 6.366 in
 Tubing Depth-Measured = 8750 ft
 Tubing Depth-True Vertical = 8713 ft
 Reference Depth-Measured = 8825 ft
 Reference Depth-True Vertical = 8788 ft
 Pipe Roughness = 0.000650 in (0.00065 per Cullinder & Smith)

Results:

Injection Rate (BPM)	Surface Pressure (psia)	Injection Rate (BPD)	Friction Loss (psia)	Ref. Depth Pressure (psia)
0.00	3150	-	0	7030
0.50	3155	720	5	7030
1.00	3168	1,440	18	7030
1.50	3187	2,160	37	7030
2.00	3213	2,880	63	7030
2.50	3246	3,600	96	7030
3.00	3285	4,320	135	7030
3.50	3330	5,040	180	7030
4.00	3382	5,760	232	7030
4.50	3440	6,480	290	7030
5.00	3504	7,200	354	7030
5.50	3574	7,920	424	7030
6.00	3651	8,640	501	7030
6.50	3734	9,360	584	7030
6.94	3813	10,000	663	7030
7.00	3823	10,080	673	7030

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Water Injection Well BHP
Fanning, Incompressible Fluid
Tubing/Casing Configuration

Well: Covenant SWD-1
Field: Covenant
Date: 4/27/2006

Conditions:

Fluid Viscosity = 0.60 cp
 Fluid Density = 8.51 lbs/gal
 Tubing ID = 2.441 in
 Casing ID = 6.366 in
 Tubing Depth-Measured = 8750 ft
 Tubing Depth-True Vertical = 8713 ft
 Reference Depth-Measured = 8825 ft
 Reference Depth-True Vertical = 8788 ft
 Pipe Roughness = 0.000650 in (0.00065 per Cullinder & Smith)

Results:

Injection Rate (BPM)	Surface Pressure (psia)	Injection Rate (BPD)	Friction Loss (psia)	Ref. Depth Pressure (psia)
0.00	3150	-	0	7030
0.50	3164	720	14	7030
1.00	3198	1,440	48	7030
1.50	3251	2,160	101	7030
2.00	3323	2,880	173	7030
2.50	3414	3,600	264	7030
3.00	3522	4,320	372	7030
3.50	3648	5,040	498	7030
4.00	3793	5,760	643	7030
4.50	3955	6,480	805	7030
5.00	4136	7,200	986	7030
5.50	4334	7,920	1184	7030
6.00	4550	8,640	1400	7030
6.50	4784	9,360	1634	7030
6.94	5007	10,000	1857	7030
7.00	5036	10,080	1886	7030

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Estimation of Minimum Fracture Initiation Pressure Rock Mechanical Data

(Per R. D. Barree course materials and winGOHFER documentation)

Well: Covenant SWD-1
Field: Covenant
Formation: Twin Creek

Formation Information:

Depth = 8788 feet
Sonic Velocity = 65.0 μ sec
Fluid Gradient = 0.420 psi/ft
Overburden Gradient = 1.00 psi/ft
Matrix = Limestone

$$P_{wi} = \left(\frac{2\nu}{1-\nu} \right) \times (P_{ob} - \alpha_v \times P_p) + T_n + \alpha_h \times P_p$$

$$P_{wi} = \underline{7821} = \text{Fracture Initiation Pressure (psi)}$$

$$\text{Fracture Gradient} = \underline{0.890} \text{ (psi/foot)}$$

$$\nu = 0.296 = \text{Poisson's Ratio (Barre Correlation Estimate)}$$

$$P_{ob} = 8788 = \text{Overburden Pressure (psi)}$$

$$P_p = 3691 = \text{Pore Pressure}$$

$$\alpha_v = 0.75 = \text{Vertical Biot's constant (0.75 - 0.95 typical)}$$

$$\alpha_h = 0.75 = \text{Horizontal Biot's constant (0.75 - 0.95 typical)}$$

$$T_n = 0 = \text{Rock Tensile Strength (psi)}$$

Assumptions: No tectonic forces and equal horizontal stresses

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WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

April 27, 2006

LaVonne Garrison
Utah Trust Lands
675 East 500 South, Suite 500
Salt Lake City, UT 84102

Dear Ms. Garrison:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) has drilled a water disposal well in the Covenant Field named the Covenant SWD-1. We are working with the Utah Department of Natural Resources, Division of Oil, Gas and Mining (UDOGM) to finalize permitting so water produced in the Covenant Field can be injected for disposal. One of the application requirements for the necessary UIC Class II Permit is that Wolverine makes a copy of the application available to all owners within a half-mile radius of the well. Please accept this letter and the accompanying materials as fulfillment of this requirement.

This notification is for your information only and you are not required to do anything related to this application. The subject well has been drilled and all facilities associated with the disposal project are to be located on Wolverine owned or operated lands.

If you have any questions, please feel free to call me at 616.458.1150 or you can call the UDOGM at 801.538.5340.

Sincerely,



Edward Higurera, Manager - Development

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

UIC FORM 1

APPLICATION FOR INJECTION WELL

Name of Operator Wolverine Gas & Oil Company of Utah, LLC				Utah Account Number N	Well Name and Number SWD-1
Address of Operator 55 Campau NW			CITY Grand Rapids STATE MI ZIP 49503	Phone Number (616) 458-1150	API Number 4304130039
Location of Well Footage : 30' FWL & 1140' FSL				County : Sauvier	Field or Unit Name Exploratory
QQ, Section, Township, Range: SWSW 8 23S 1W				State : UTAH	Lease Designation and Number

Is this application for expansion of an existing project? Yes No

Will the proposed well be used for:

Enhanced Recovery?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Disposal?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Storage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Is this application for a new well to be drilled? Yes No

If this application is for an existing well, has a casing test been performed? Yes No
Date of test: _____

*APD Apprd.
15 da. notice
Drilling*

Proposed injection interval: from 6,370 to 9,500

Proposed maximum injection: rate 10,000 bpd pressure 4,000 psig

*as modified by
SRTD*

Proposed injection zone contains oil , gas , and / or fresh water within 1/2 mile of the well.

List of attachments: Survey Plat, Drilling Plan, Pressure Control System Schematic, Standard Lab Analysis of fluid to be injected; and Affidavit

ATTACH ADDITIONAL INFORMATION AS REQUIRED BY CURRENT UTAH OIL AND GAS CONSERVATION GENERAL RULES

I hereby certify that this report is true and complete to the best of my knowledge.

Name (Please Print) Edward A. HIGUERA Title Manager - Development
Signature *Edward A. Higuera* Date 03-04-05

Affidavit

I certify that a copy of the Application for Permit to Drill (Form 3) has been sent by US Mail or hand-delivered to the following producers or owners located within one-half mile of the proposed saltwater disposal well SWD-1, SW/SW Section 8 T23S-R1W, Sevier County, Utah.

Kings Meadow Ranches, Inc.
C/o Mack T. Dastrup
PO Box 570125
Sigurd, Utah 84657

Ronald L. & Virginia Dastrup
PO Box 570133
Sigurd, Utah 84657

Berkley Anderson
PO Box 300523
Glenwood, Utah 84730

Wolverine Gas & Oil Company of Utah, LLC (surface owner of proposed location)
One Riverfront Plaza
55 Campau NW
Grand Rapids, MI 49503

By: _____


Edward A. Higuera

Title: _____

Manager-Development

*This needs to be stamped by
a notary and also use correct
language as per
AGAG-5-2-2.12*

**Proposed Saltwater Disposal Well: SWD-1
Section 8 T23S-R1W, Servier County, Utah**

Applicant/Operator: Wolverine Gas & Oil Company of Utah, LLC
55 Campau NW, Grand Rapids, MI 49503
Ph: (616) 458-1150
Fax: (616) 458-0869
Contact: Ed Higuera, Manager-Development

RE: Request for Approval of the Application for Permit to Drill
Proposed Saltwater Disposal Well SWD-1
Section 8 T23S-R1W, Servier County, Utah

Required Information for Application for Permit to Drill:

- 1) A properly completed UIC Form 1 precedes this page.
- 2) A plat showing the location of the proposed injection well is included as Attachment 1. In Attachment 1, we have also provided a map showing the location of the proposed well with one-half mile radius circle around the proposed well and the surface owners and operators of producing leases in the half-mile radius.
- 3) Copies of electrical, radioactive and cement bond logs will not available for the proposed disposal well until it is drilled and completed. There are no oil wells within one-half mile of the proposed disposal wells. Copies of openhole logs have already been submitted to UDOGM for the Kings Meadow Ranch 17-1 and the Wolverine Federal 17-2, which are located approximately 3634' and 3810', respectively, southeast of the proposed disposal well. When the proposed disposal well is drilled and logged, copies of these logs will be submitted to UDOGM.
- 4) A description of the proposed casing program for the disposal well is included in the *Drilling & Completion Prognosis*, which is included in Attachment 2. In this *Drilling & Completion Prognosis*, anticipated formation tops are listed and a preliminary completion program. The actual perforation will be selected after the openhole logs have been acquired and evaluated. As indicated in the completion outline, we anticipate perforating sections of the Navajo formation until the desired injectivity has been obtained.
- 5) Produced formation water from the offset producing wells, which are currently producing from the Navajo sandstone formation, will be injected into this proposed disposal well. A standard laboratory analysis of this produced water is included as the last page of the *Drilling & Completion Prognosis* (see Attachment 2). The anticipated initial volume to be injected in this well is 300 to 1000 BWPD. We anticipate water volumes to increase as more wells are drilled, and from normal water increases as the field is depleted.

Need mineral
ownership
on plat
Pataki/Elan

Drill well
first!

Proposed
Completion
Procedures
Call for MIT
in item #8

UIC Form 1
Call for
10,000 bpd @
4,000 psi @

- 6) The proposed average and maximum injection pressure will depend on the rock properties. There is no actual data for frac gradient in this area. We intend to conduct a step-rate injection test as part of the completion procedure to determine the frac gradient and the appropriate maximum allowable surface injection pressure. Assuming a frac gradient of 0.85 psi/ft for hard rock, and using a frac gradient of 0.80 psi/ft as a safety factor, we have estimated a surface injection pressure of 2440 psi (for 5000 BWPD at 6371' interval) to a maximum of 4123 psi (at 10,000 BWPD) at interval of 9100'). A completion discussion is presented in page 10 of the *Drilling & Completion Prognosis* (see Attachment 2).
- 7) Geological information is presented on page 3 of the *Drilling & Completion Prognosis* (see Attachment 2). The Arapien Shale extends from near surface to approximately 6400 feet at this proposed location and is regionally extensive. The Arapien Shale consists of shale, and large salt and gypsum sections and would be considered a confining layer to the Twin Creek and Navajo formation. Below the Navajo is the Chinlee formation, which consists of red silt shale and would be considered the confining layer below the Navajo formation. We are not aware of any geologic structure that may affect conveyance of injected fluids out of the target formations.

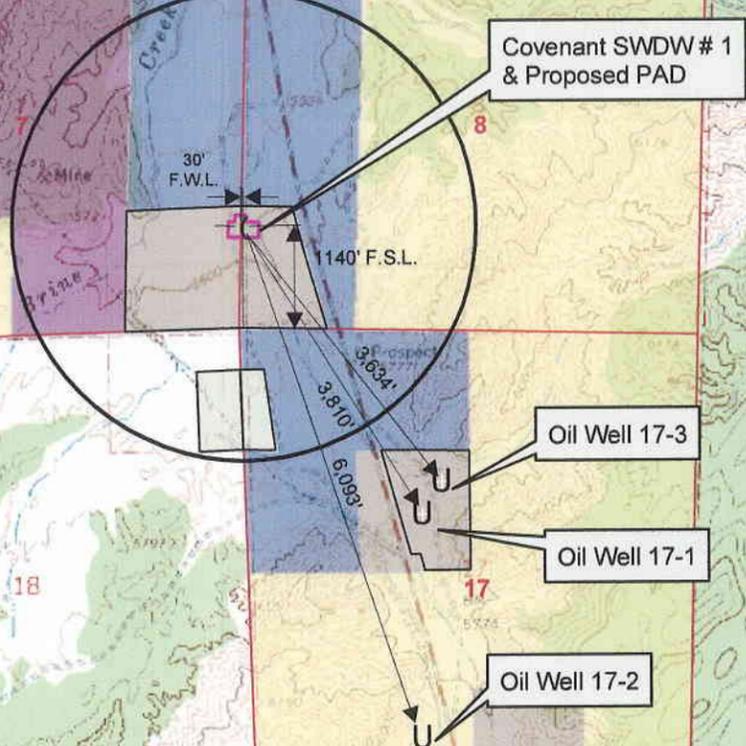
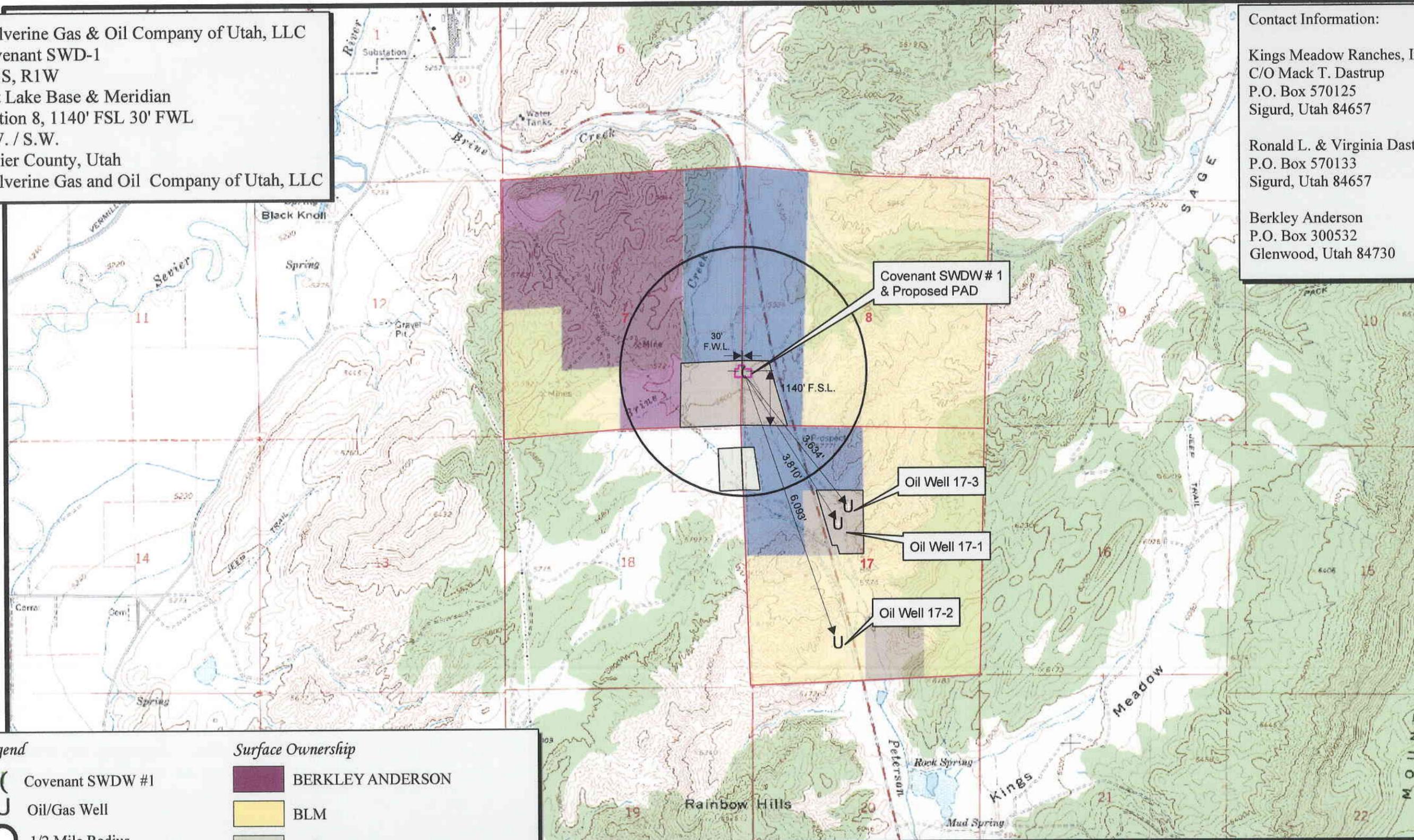
According to hydrogeologist Jack Rogers with Lasr-Geo Consulting, who was retained to evaluate this area, there are no culinary aquifers in the Twin Creek or Navajo Sandstone, because these formations are too deep or lack water quality. Mr. Rogers indicates his research has not identified any aquifers or potential aquifers in the Arapien Shale. Mr. Roger's evaluation is presented in Attachment 3.

- 8) There are no wells within the one-half mile radius of the proposed well that penetrate the proposed injection zone. The closest producing well is the Kings Meadow Ranch 17-1 and the Wolverine Federal 17-2 (see map in Attachment 1). Both of these wells are new. Because these wells are outside the one-half mile radius, we have not providing copies of well bore diagrams. However, information on casing strings for these wells has been submitted previously to UDOGM.
- 9) Surface owners and operators within the half-mile radius of the proposed well are shown on the map in Attachment 1. A copy of the Application for Permit to Drill, indicating that the entire supporting documentation is available for review, has been submitted to the owners. An affidavit certifying that a copy of the application has been made available to each owner is included in Attachment 4.

*Long page
not correct.
Fatal flaw*

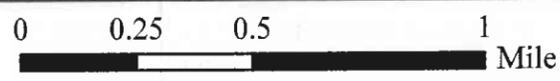
Wolverine Gas & Oil Company of Utah, LLC
 Covenant SWD-1
 T23S, R1W
 Salt Lake Base & Meridian
 Section 8, 1140' FSL 30' FWL
 S.W. / S.W.
 Sevier County, Utah
 Wolverine Gas and Oil Company of Utah, LLC

Contact Information:
 Kings Meadow Ranches, Inc.
 C/O Mack T. Dastrup
 P.O. Box 570125
 Sigurd, Utah 84657
 Ronald L. & Virginia Dastrup
 P.O. Box 570133
 Sigurd, Utah 84657
 Berkley Anderson
 P.O. Box 300532
 Glenwood, Utah 84730



Legend

Covenant SWDW #1	Surface Ownership BERKLEY ANDERSON
Oil/Gas Well	BLM
1/2 Mile Radius	DASTRUP, RONALD & VIRGINIA
Proposed Pad	KINGS MEADOW RANCHES, INC.
	Wolverine Gas & Oil, LLC.



GCS - NAD 83
 Projection: Lambert Conformal Conic
 Units: Feet
 Source: Jones & DeMille Engineering
 Date: 01/14/2005



The proposed injection well is to be drilled 9,500 feet into the lower Navajo Sandstone. Formations above this unit are the Arapien Shale, and the Twin Creek Limestone. Outcrops of the Navajo Sandstone and the Twin Creek Limestone are present in the Sigurd area. There are no culinary aquifers in the Navajo Sandstone or the Twin Creek Limestone. These formations are too deep and are not tapped for water production purposed. These formations lie below the Arapien Shale which is a thick (estimated to be between 3,000 and 5,000 feet thick) salt and gypsum bearing shale. There are also no aquifers or potential aquifers in the Arapien shale. The water quality due to the dissolution of gypsum and halite produce saline water high in total dissolved solids (TDS). Two wells, both shallow 21 feet in depth and the other 32 feet in depth (Lambert and others, 1995), drilled into the Arapien Shale show the results of water that has a flow path encountering the shale (see Piper Diagram). Because of the abundance of highly soluble minerals (halite NaCl and gypsum CaSO₄) water from this formation is of very low quality. Clays within the formation act as aquicludes and prevent water mixing associated with other aquifers. South of the proposed drilling location, Tertiary age volcanic rocks lie against the Arapien Shale contact and the edge of the Sanpete-Sevier Valley anticline. Many springs crop out in these volcanic rocks. Water from this aquifer is of pristine quality with the water have a TDS value of less than 500 mg/L. See the Peterson Creek analysis and analyses of springs and wells from Kings Meadow. Because of the clay content in the Arapien Shale and the aquiclude properties associated with the shale, water from the disposal well will not effect the Tertiary volcanic aquifer.

PC-1 Peterson Creek

- | | |
|-------------|--|
| BC-Well | Brine Creek Well (Lambert and others, 1995) |
| GD-Well | Well near Glendale (Lambert and others,1995) |
| Sigurd well | Sigurd Town Well in Kings Meadow |
| Dastrup1 | Flowing well in Kings Meadow |
| Dastrup2 | Same |

BRIEF COMPLETION PLAN

Complete the subject new well as a saltwater disposal well in either of the Navajo sandstones and/or the Twin Creek limestones depending upon the injectivity capacity achieved and the disposal volume desired.

Design Criteria:

1. Maximum Injection Rate – 10,000 BWPd (7 bpm @ 100% run time)
2. Maximum Injection Pressure – 4100 psi

3. Average Injection Rate – 5000 BWPd (3.5 bpm @ 100% run time)
4. Average Injection Pressure – 3200 psi

5. Fluid to be injected – formation saltwater separated from offset producing wells presently producing from Navajo sandstone formations will be injected. It is likely that during the life of this saltwater disposal well that other formation water, such as that from the Twin Creek lime, may be introduced. (see attached compositional analysis of Navajo produced water) Produced saltwater will be re-injected into a similar formation from which it is being produced so compatibility of waters should not be an issue.

6. Quantity to be injected – estimate for mid-year 2005 is 1000 bwpd from approximately 10 wells. It is anticipated that water production from offset producers will increase over time due to natural production tendencies. Additional wells may also increase this volume up to the maximum injection capacity of the well, estimated at 10,000 BWPd.

7. Fracture Pressure – presently there is no actual data from which the fracture pressure of the target formations can be determined. Therefore an assumed frac gradient of 0.85 psi/ft for hard rock is used. An injection gradient of 0.80 psi/ft is chosen to remain below fracture pressure. The gradient of produced fluid (8.5 ppg) is 0.442 psi/ft. Therefore a gradient of [0.80psi/ft – 0.442psi/ft] 0.358 psi/ft is potentially available for injection at the formation face. The actual surface pressure will depend upon the actual depth of the injection zone. Pipe friction pressure of 9 ppg brine water through 3-1/2" bare tbg is 25 psi/1000' at 3.5 bpm rate (5000 bwpd) and 95 psi/1000' at 7 bpm rate (10,000 bwpd). Therefore surface injection pressure may vary from a minimum of 2440 psi (5000 bwpd if injected into an upper interval @ 6371') to a maximum of 4123 psi (10,000 bwpd if injected into a lower interval @ 9100'). A step-rate injection test will be conducted to determine the actual frac gradient and therefore the appropriate maximum allowable surface injection pressure.

*Navajo Prod. #22
= 28,400 TDS*

Completion Procedure:

1. Clean location and install rig anchors and test. MIRU DDDD WSU with pipe racks, catwalk, steel tank, triplex pump & lines, 5M hydraulic dbl ram BOPE (2-7/8" top & CSO rams btm w/ 3-1/2" rams extra) w/ stripper head. Move in (3) frac tanks and fill with field produced water for treatment flush.
2. Move in 2-7/8" 6.5ppf N80 work string. Install BOPE and test. PU 6-1/4" bit, 7" 23ppf csg scraper, xo, 2.25" SN and tbg and TIH to TD. Drop SV and PT tbg to 4500 psi. Retrieve SV with sandline. Tighten BOPE & test csg to 4500 psi. Pickle tbg & csg with 500 gal 7-1/2% HCL and solvent blend. Reverse to pit. POOH & LD bit & scraper.
3. RU WLU, run CBL-CCL log from TD to TOC and CCL log to surface. Perforate Navajo 2 select intervals (to be determined) @ 6 jpf . RDWL
4. Pick up 7" x 2-7/8" Arrowset 1X pkr with SN & RBP on 2-7/8" tbg. TIH and straddle select intervals, acidizing perforations in groups via tbg with 15% HCL, flushing with produced fluid. After treating several intervals, commingle all and swab to clean up.
5. Perform a step-rate injection test with field produced water at 2,4,6 & 8 bpm via tbg and plot vs. pressure.
6. Continue opening Navajo 2 and Navajo 1 porosity intervals as above. Breakdown, cleanup and perform injection tests in groups until sufficient disposal capacity is obtained. POOH & LD 2-7/8" workstring.
7. Pick up a 7" x 2-7/8" Arrowset nickel coated retrievable production packer with (1) "X" and (1) "XN" stainless steel profile nipples (id 2.31) and WLEG below spaced with 3-1/2" tbg subs. Run a stainless steel on-off tool with 2.31 "X" profile on top of packer and 2.31 "X" profile (1) jt up. RIH on 3-1/2" 9.3ppf L80 EUE internally coated tbg (Tuboscope TK-15). Set pkr within 50 ft of top of injection interval assumed near 9100'. Load annulus with pkr fluid and pressure test pkr seat to 2000 psi. ND BOPE and install internally coated 5M tree.
8. Hook well up for injection and notify authorities for MIT. Initiate injection maintaining surface injection pressure below 4100 psi. Monitor & report daily rates and pressures.
9. Job complete

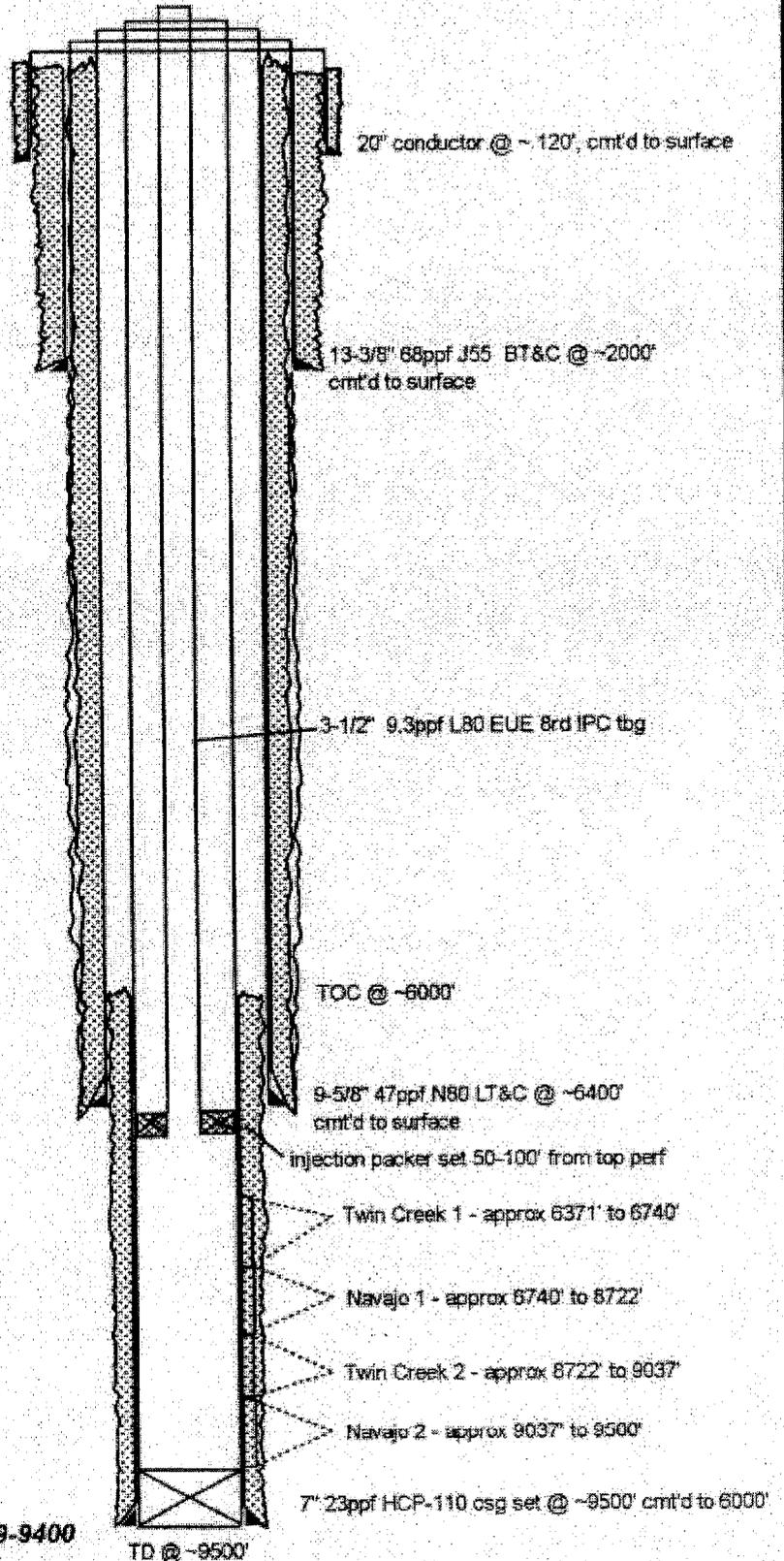
end

Wolverine Gas and Oil Co. of Utah, LLC

Wellbore Diagram

Cond 30" hole
Surf 17 1/2" hole
Int. 1 12 1/4" hole
Int. 2 8 1/2" hole

Covenant SWD #1 (proposed)
SW/4 SW/4 Sec 08 T23S - R01W
Sevier County, UT



EXACT Engineering, Inc., Tulsa, OK (918) 599-9400

filename> wbd-covenant swd #1.prz

drawn by SPHash, 03/02/05

FEB. 2.2005 12:10PM OILAB INC

NO.780 P.1/4

Environmental Services
Petroleum Laboratory
Gas Engineering
www.oilab.com

5120 N. Santa Fe
Oklahoma City, OK 73118
Ph. (405) 528-TEST(8378)
Fax (405) 962-1870



LABORATORY REPORT NUMBER 93601

02/02/2005

WATER ANALYSIS

WOLVERINE GAS & OIL CO.
SEVIER CO/UTAH

COMPANY: EXACT ENGINEERING, INC.
LEASE: KMR 17-1
LOCATION: SEVIER CO/UTAH

DATE SAMPLED: 1/21/2005
DATE ANALYZED: 1/31/2005
SAMPLED BY: WOLVERINE
RECEIVED FROM: WOLVERINE GAS & OIL

COLOR (BEFORE FILTRATION): LIGHT BROWN
COLOR (AFTER FILTRATION): COLORLESS

*****CHEMICAL CHARACTERISTICS*****

	mg/L
CALCIUM	428
MAGNESIUM	40.8
SODIUM	10,080
POTASSIUM	220
BARIUM	TRACE
IRON	12
SILICA	48
BICARBONATE*	518
CARBONATE**	0
HYDROXIDE	0
SULFATE	3,000
CHLORIDE	14,100
*(AS CaCO ₃)	425
** (AS CaCO ₃)	0

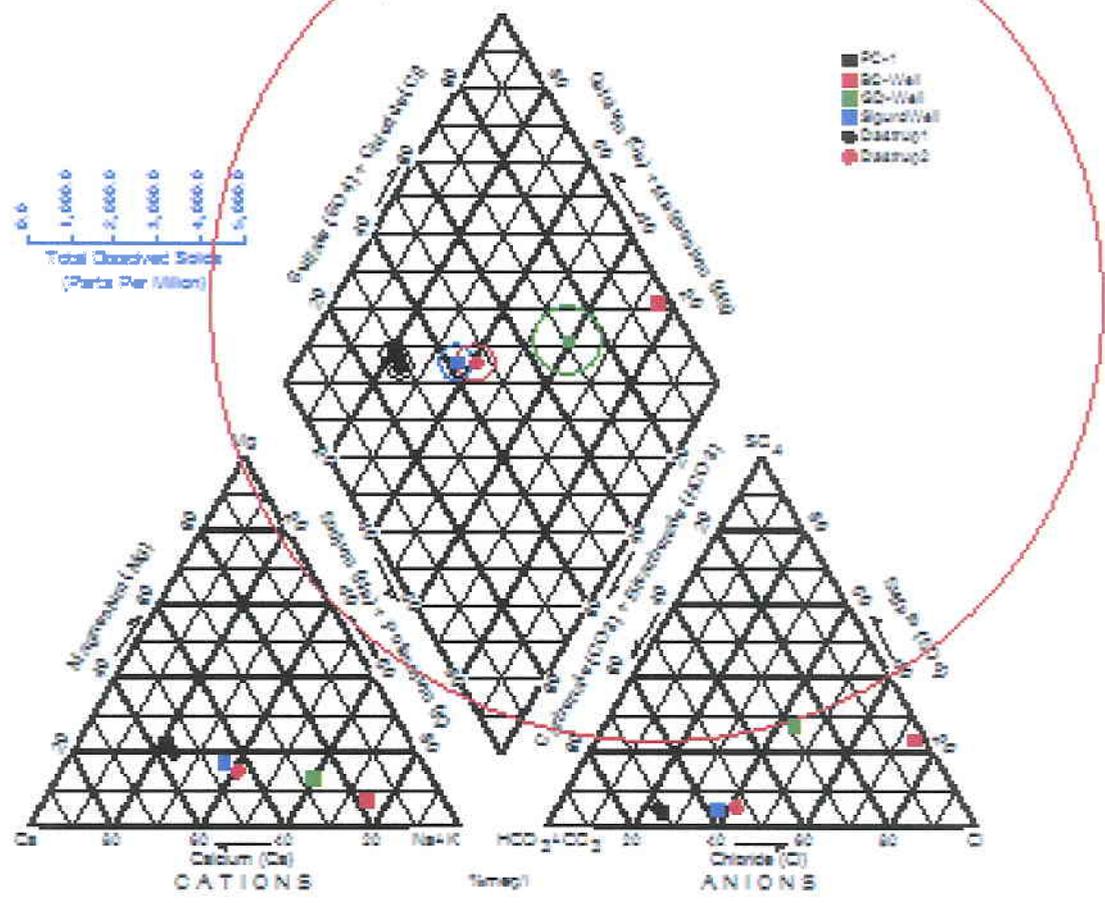
TOTAL HARDNESS (AS CaCO₃) 1,240
P ALKALINITY (AS CaCO₃) 0
M ALKALINITY (AS CaCO₃) 425
SPEC. GRAVITY @ 67 °F 1.0208

RESISTIVITY @ 77°F 0.281
TOTAL DISSOLVED SOLIDS 28,400
pH VALUE 6.45


CERTIFIED BY: SURESH JOSHI
CHEMIST/ANALYST

FAX: 918-599-9401 STEVEN HASH

Water Quality of Peterson and Brine Creek



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.

1. TYPE OF WELL: OIL WELL GAS WELL OTHER Drilling well - SWD

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 49203 PHONE NUMBER: (616) 458-1150

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: na

7. UNIT OF CO AGREEMENT NAME: Wolverine

8. WELL NAME and NUMBER: Covenant SWD-1

9. API NUMBER: 4304130039

10. FIELD AND POOL, OR WILDCAT: Exploratory Area

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 30' FWL & 1140' FSL COUNTY: Sevier

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>2/16/2006</u>	<input type="checkbox"/> ACIDIZE	<input checked="" type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: <u>2/16/2006</u>	<input checked="" type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

Present well status Feb 16, 2006: running 7" casing at 9565'.

Based on developing geologic conditions that differ from pre-drill projections, the subject well will need to be drilled below its presently permitted depth of 9500'.

Prospective Navajo 1 sand, anticipated at a depth of 6740', was not encountered; therefore 9-5/8" protective casing was set at 8506' & cemented to surface as drilling continued. The Navajo 2 sand top was drilled at 8820' continuing down to 9565', present TD. The well was logged and 7" casing is being run. It is desired to open additional Navajo 2 sand interval, for potential saltwater disposal below the present 7" casing, thus, the borehole will be deepened, potentially to 11,000'.

An approved TD of 11,000' is requested. Once total depth has been reached the well will be logged, casing will not be run but the well subsequently completed as open-hole (6-1/8") below 7" casing.

xc: BLM

COPY SENT TO OPERATOR
Date: 2-24-06
Initials: CTD

NAME (PLEASE PRINT) Steven R. Hash - EXACT Engineering, Inc TITLE Consulting Engineer for Wolverine Gas & Oil

SIGNATURE Steven R. Hash (918) 599-9801 DATE 2/16/2006

(This space for State use only)

RECEIVED
FEB 17 2006

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 2/17/06
BY: D. Stuedem

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	7. UNIT or CA AGREEMENT NAME: WOLVERINE
1. TYPE OF WELL Water Disposal Well	8. WELL NAME and NUMBER: SWD-1
2. NAME OF OPERATOR: WOLVERINE GAS & OIL COMPANY OF UTAH, LLC	9. API NUMBER: 43041300390000
3. ADDRESS OF OPERATOR: One Riverfront Plaza 55 Campau NW, Grand Rapids, MI, 49503	PHONE NUMBER: 616 458-1150 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140 FSL 0030 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSW Section: 08 Township: 23.0S Range: 01.0W Meridian: S	9. FIELD and POOL or WILDCAT: UNDESIGNATED
	COUNTY: SEVIER
	STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 2/1/2012	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input checked="" type="checkbox"/> OTHER	OTHER: <input type="text" value="Increase MA injection pressu"/>

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

Wolverine Gas and Oil Company of Utah, LLC is requesting an increase in the maximum allowable interval injection pressure (MAIIP) to 5906 psi from the currently established MAIIP of 4853 psi. See additional attachments for UIC form 1, Sundry Justification, BHP data and Water Analysis. *****Maximum surface injection pressure will be restricted to 1530 psi---Brad Hill 02/09/2012*****

Approved by the Utah Division of Oil, Gas and Mining
Date: February 09, 2012
By:

NAME (PLEASE PRINT) Helene Bardolph	PHONE NUMBER 616 458-1150	TITLE Engineering Administrative Assistant
SIGNATURE N/A	DATE 2/1/2012	

HALLIBURTON

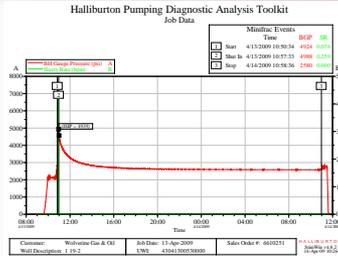
DFIT Analysis from Down-Hole Shut-in

WF 19-2, Navajo 1, 7410' -7428' MD (6324' -6342' TVD)

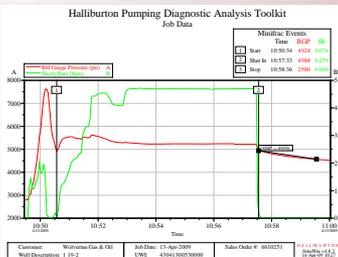
Wolverine Gas & Oil



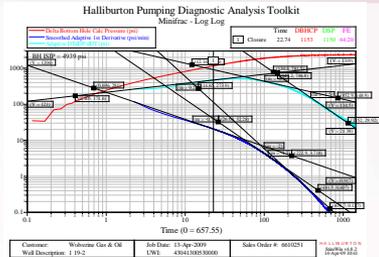
Treatment Plot (Pressure fall-off)



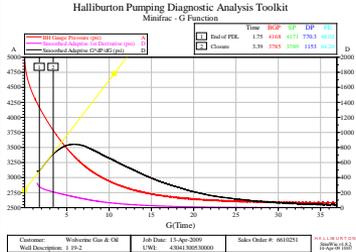
Treatment Plot (Pump-in)



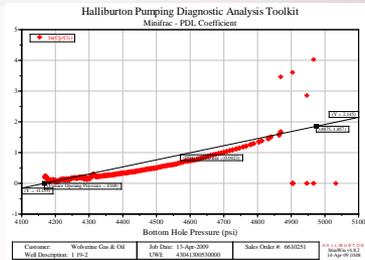
Log-Log Plot



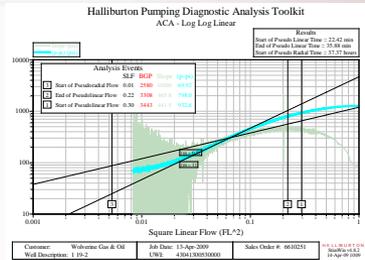
G-function Derivative Analysis Plot



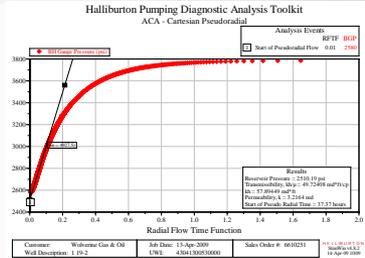
PDL Coefficient Plot



ACA – Log-Log Linear Plot



ACA – Cartesian Pseudoradial Plot



DFIT Summary

- Closure was observed at approximately 23 minutes after shut-in
- BH-ISIP = 4,939 psi; FG = 0.78 psi/ft
- Leakoff type = PDL; PDL Coefficient ~ 0.002 1/psi (**Moderate**)
- Fissure Opening Pressure was ~ 4,168 psi BH; This gives us a FOP DeltaP of 382 psi.
- Closure Pressure = 3,785 psi: Closure Gradient = 0.599 psi/ft
- Pore Pressure ~ 2,510 psi; Pore Pressure Gradient ~ 0.397 psi/ft
- Estimated KgH ~ 57.89 md*ft (assuming a Net Height of 18 ft, estimated Perm ~ 3.2 md)
- Process Zone Stress = 1,153 psi (**Moderate PZS**)



DFIT Analysis

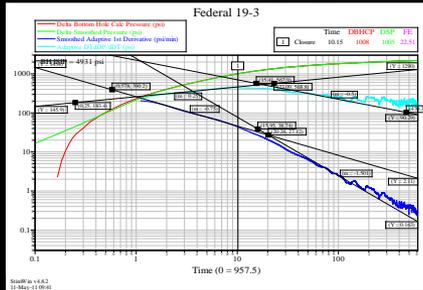
Federal 19-3

Upper Navajo; Perforations @ 6994-7000 TMD ft
(6254-to-6260 TVD ft)

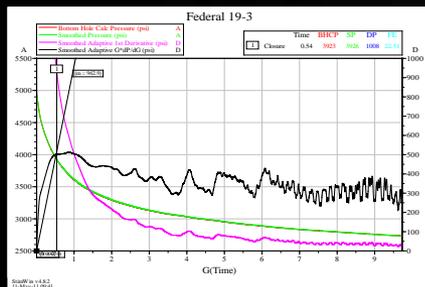
Wolverine Gas & Oil

Denver Technical Solutions Team, Halliburton

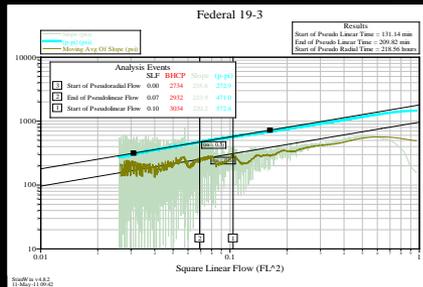
Log-Log Plot (SPE 107877)



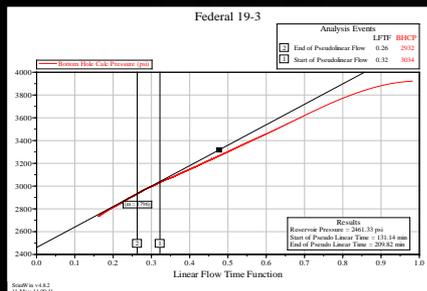
G-function Derivative Analysis Plot



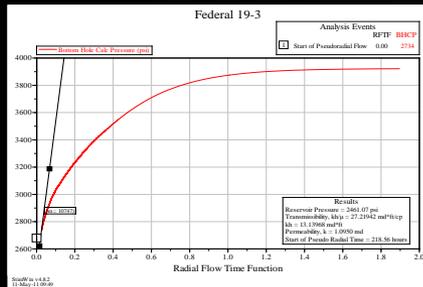
After-Closure Log-Log Diagnostic Analysis Plot



After-Closure Cartesian Pseudolinear Flow Plot



After-Closure Cartesian Pseudoradial Flow Plot



Summary

- Acid was required to breakdown the zone for the DFIT. As a result, gauges were not run and the pressure was monitored on surface. This accounts for slightly more erratic shut-in data.
- BH-ISIP = 4931 psi; FG = 0.79 psi/ft (based on a TVD of 6257 ft)
- Pressure dependent type leakoff was observed during shut-in.
 - G-time to closure = 0.54
- Hydraulic fracture closure was observed during shut-in. It was estimated to be 3923 psi. Closure Gradient ~ 0.63 psi/ft.
- Moderate Process Zone Stress (PZS) was observed from the DFIT (1008 psi, 0.16 psi/ft).
- After-closure pseudolinear flow was observed during shut-in. Pore pressure was determined from after-closure pseudolinear flow analysis.
- Pore Pressure ~ 2461 psi (0.38 psi/ft)
- After-closure pseudoradial flow was NOT observed during shut-in. Thus, only an UPPER LIMIT for Kh could be provided
- **Kh < 13.14** md-ft (based on an estimated oil viscosity of 0.48 cp at 195 deg F and 2461 psi)
 - Keep in mind that this is an upper limit value. From the Before-Closure Analysis we get a kh value of 3.94 md-ft, which is probably closure to the true value.

DFIT Analysis

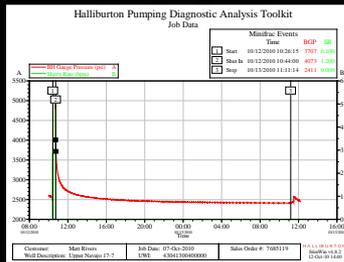
KMR 17-7

Upper Navajo; Perforations @ 6,258-to-6,270 TMD ft
(6,100-to-6,112 TVD ft)

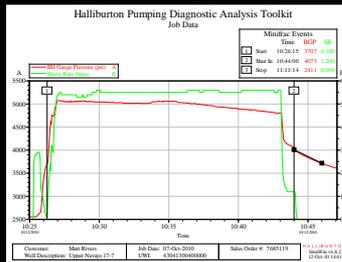
Wolverine Gas & Oil

Denver Technical Solutions Team, Halliburton

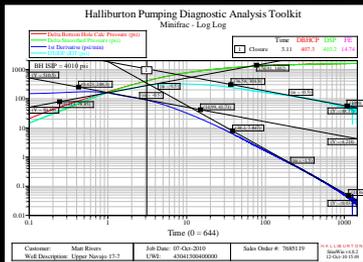
Treatment Plot



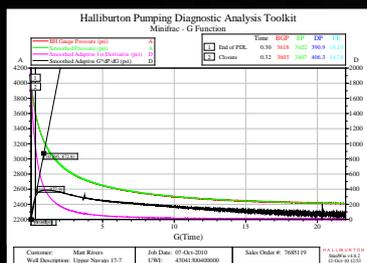
Treatment Plot – Zoomed in



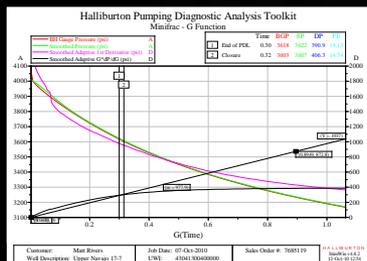
Log-Log Plot (SPE 107877)



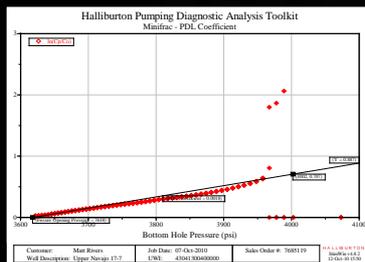
G-function Derivative Analysis Plot



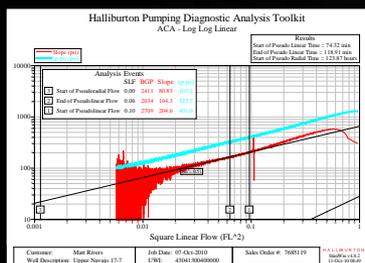
G-function Derivative Analysis Plot – Zoomed in



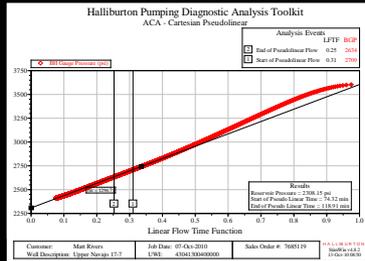
PDL Co-efficient Plot



After-Closure Log-Log Diagnostic Analysis Plot



After-Closure Cartesian Pseudolinear Flow Plot



Summary

- The zone was shut-in and the gauges recorded good pressure falloff for approximately ~24 hours.
- BH-ISIP = 4,010 psi; FG = 0.66 psi/ft (based on a TVD of 6,106 ft)
- Pressure dependent type leakoff was observed during shut-in.
 - G-time to closure = 0.32
 - Fissure opening pressure was estimated to be 3,618 psi
 - PDL coefficient: 0.0018 1/psi **(The PDL value is below the critical value and should not pose a problem)**
- Hydraulic fracture closure was observed during shut-in. It was estimated to be 3,603 psi. Closure Gradient ~ 0.59 psi/ft.
- Low Process Zone Stress (PZS) was observed from the DFIT (~ 407 psi).
- After-closure pseudolinear flow was observed during shut-in. Pore pressure was determined from after-closure pseudolinear flow analysis.
- Pore Pressure ~ 2,308 psi (0.38 psi/ft)
- After-closure pseudoradial flow was NOT observed during shut-in. Thus, only an UPPER LIMIT for Kh could be provided
- **Kh < 36.40883** md-ft (based on an estimated water viscosity of 0.348 cp at 185 deg F and 2,308 psi)
 - Keep in mind that this is an upper limit value. From the Before-Closure Analysis we get a kh value of 23.9016 md-ft, which is probably closure to the true value.
- Based on GOHFER Post Job Pressure Match the DFIT contacted 36 ft of Gross Reservoir with 23 ft of Net Pay

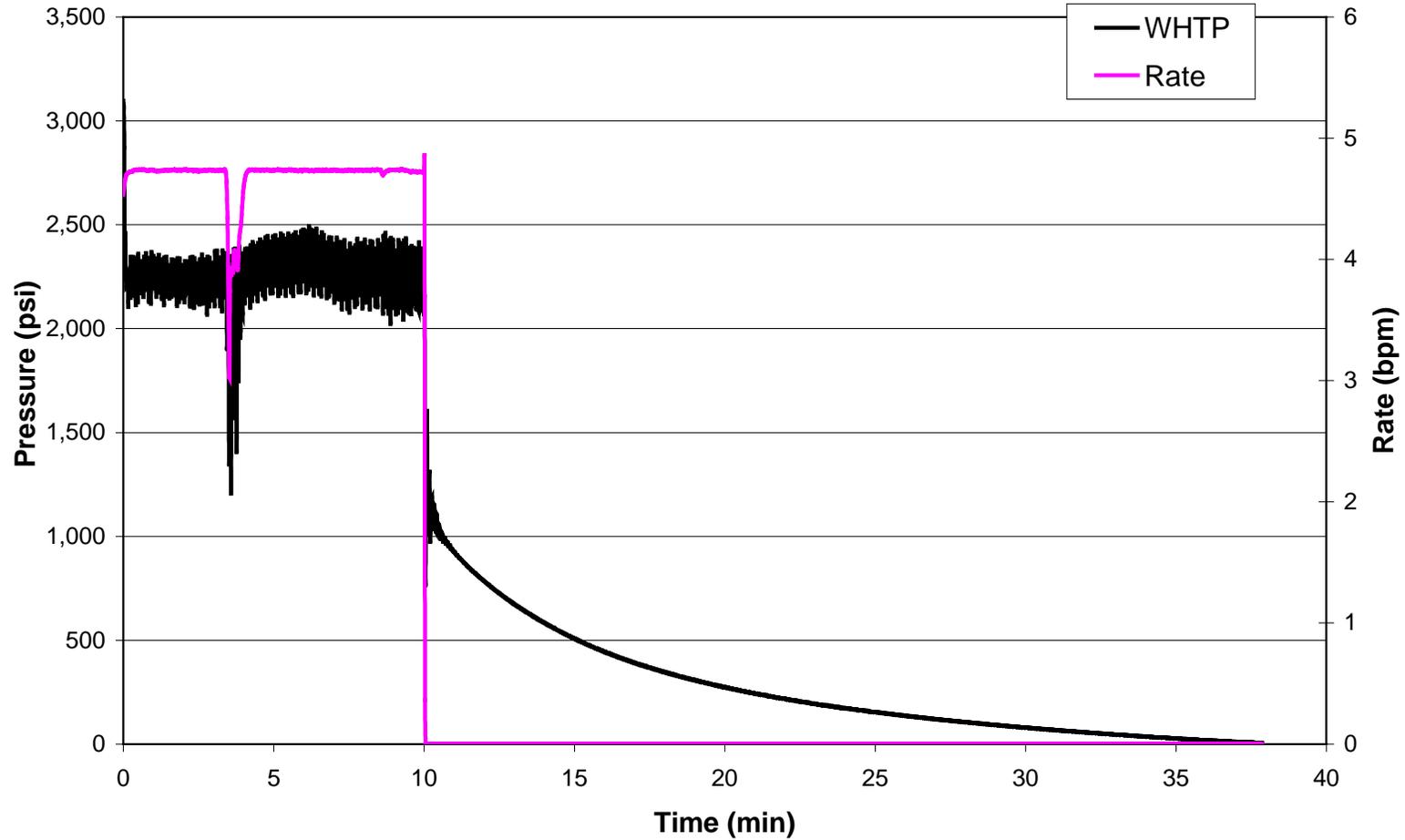


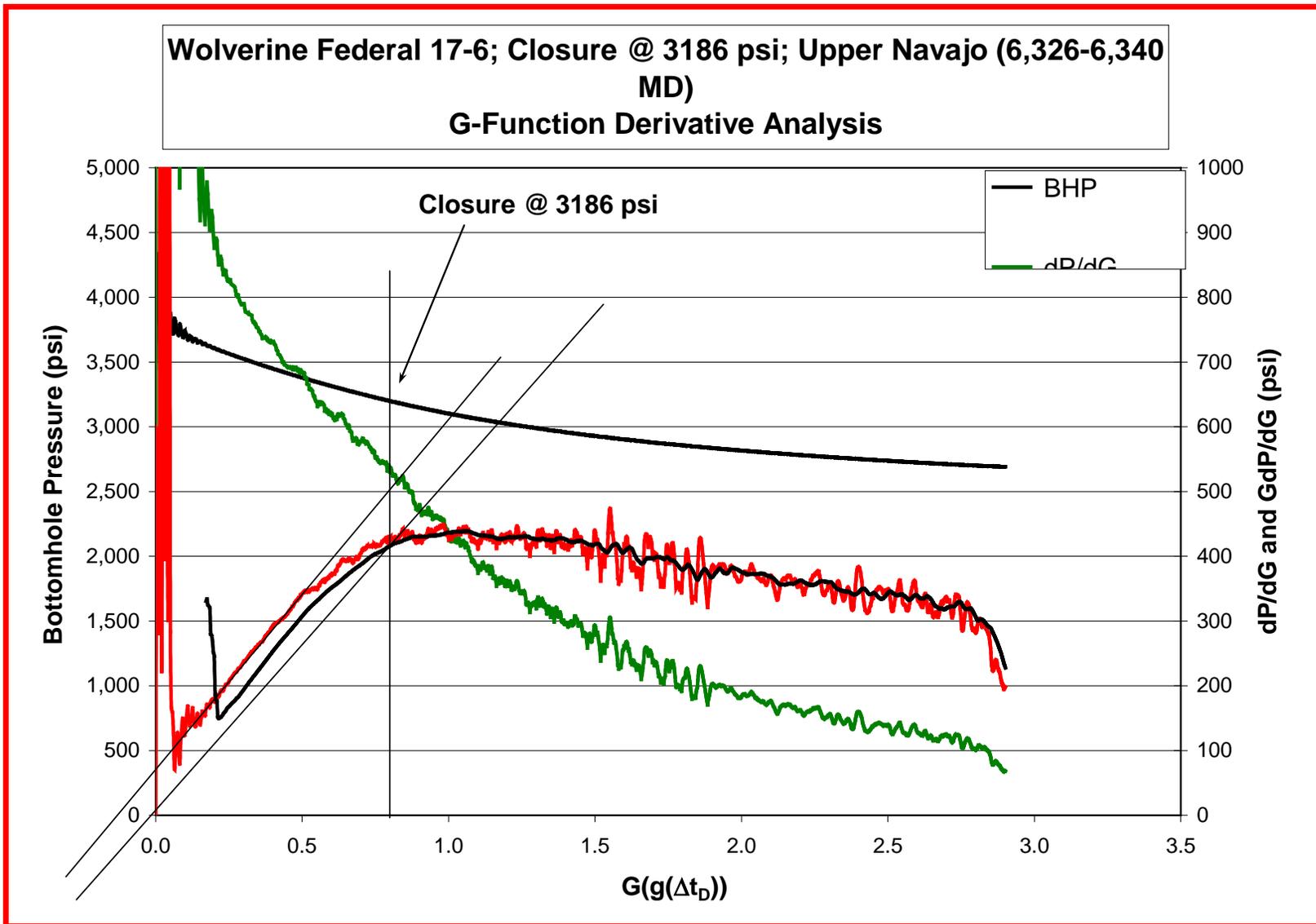
Wolverine
Wolverine Federal 17-6
Upper Navajo
1/23/2008

Diagnostic Fracture Injection Test (DFIT) Analysis

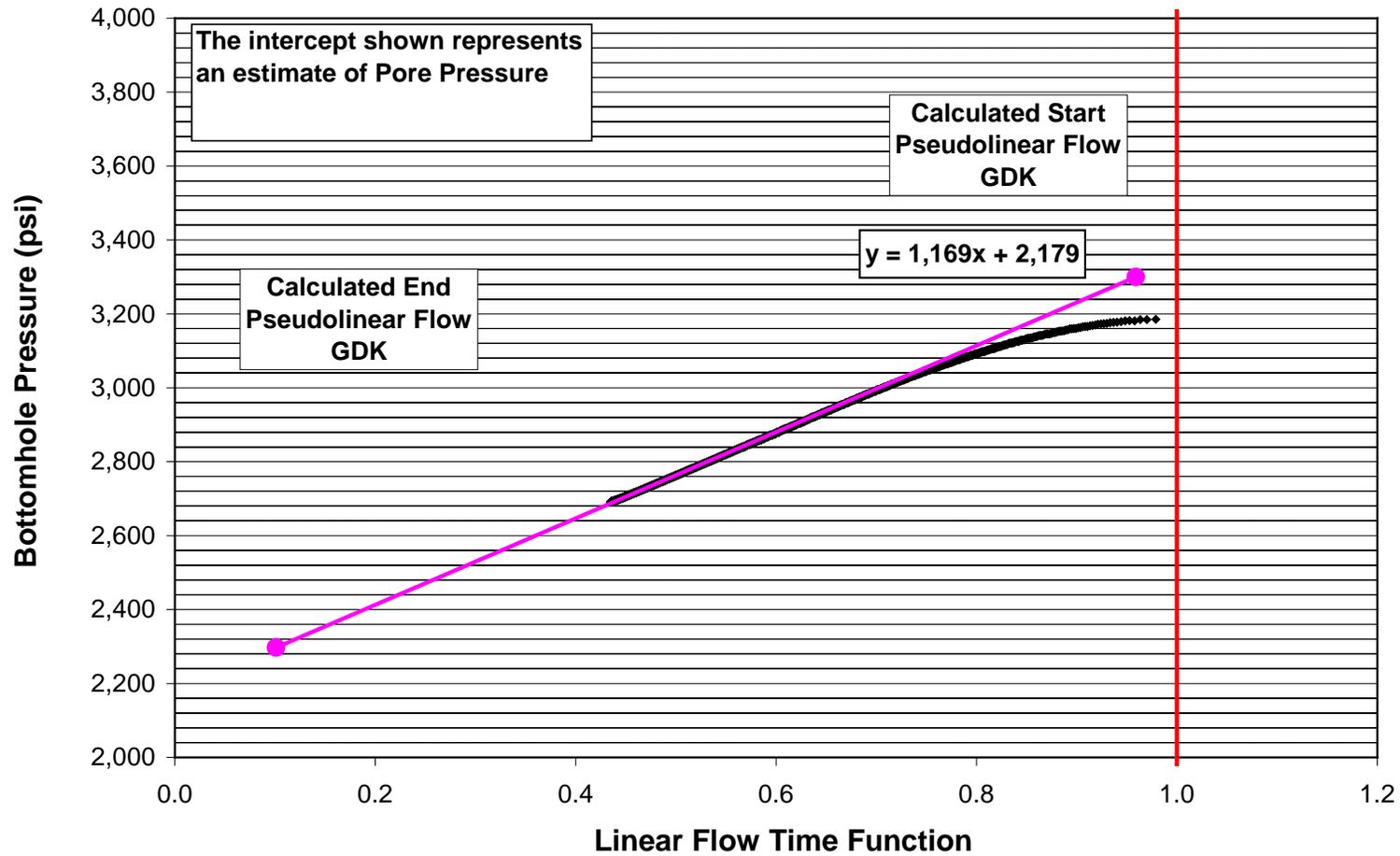
Top Perf	Bottom Perf	BHTP psi	Frac Grad psi/ft	Closure Press, psi	Closure Grad psi/ft	Pore Press psi	Pore Press Grad psi/ft	Kh md-ft	Ave Perm md	Leakoff Type	Comments
6,118	6,132	3795	0.62	3186	0.52	2179	0.36	495.776	61.972	Pressure Dependent Leakoff	Because surface pressure gauges were used and the well went on a vacuum shortly after shut-in, the available data for this analysis is quite short and therefore only represents one possible closure point for this zone.

**Wolverine Federal 17-6; ISIP=1113 psi; Upper Navajo (6,326-6,340 MD)
Treatment Chart**





**Wolverine Federal 17-6; Pore Press. = 2,179 psi; Upper Navajo (6,326-6,340 MD)
After-Closure Pseudolinear Flow Analysis**

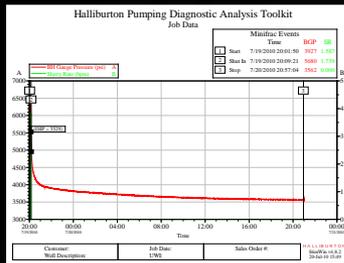


DFIT Analysis

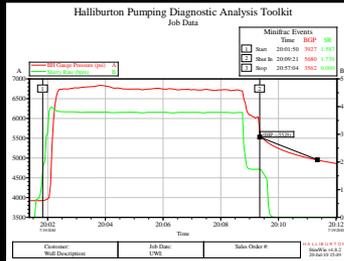
Arapien Valley 24-1; Providence Field
Upper Navajo; Perforations @ 9,019-to-9,020 TMD ft (9,018-
to-9,019 TVD ft)
Wolverine Gas & Oil Co.

Denver Technical Solutions Team, Halliburton

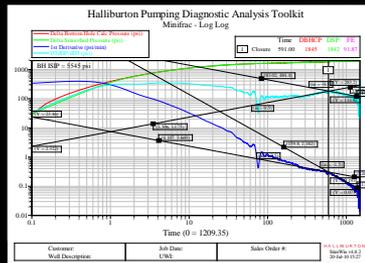
Treatment Plot



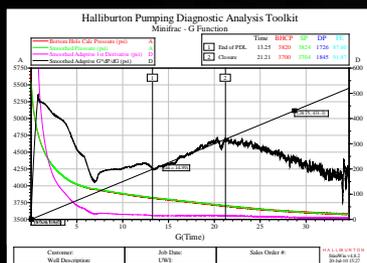
Treatment Plot



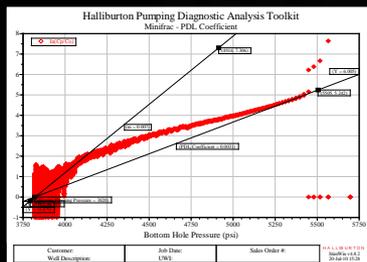
Log-Log Plot (SPE 107877)



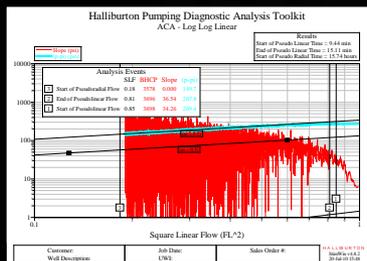
G-function Derivative Analysis Plot



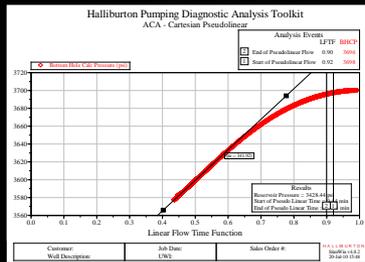
PDL Co-efficient Plot



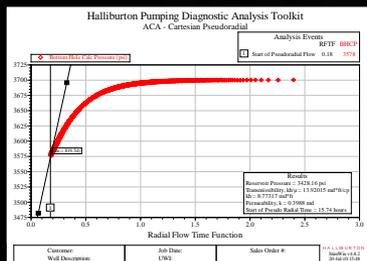
After-Closure Log-Log Diagnostic Analysis Plot



After-Closure Cartesian Pseudolinear Flow Plot



After-Closure Cartesian Pseudoradial Flow Plot



Summary

- The zone was shut-in and the gauges recorded good pressure falloff for approximately ~25 hours.
- BH-ISIP = 5,545 psi; FG = 0.62 psi/ft (based on a TVD of 9,000 ft)
- Pressure dependent type leakoff was observed during shut-in.
 - G-time to closure = 21.21
 - Fissure opening pressure was estimated to be 3,820 psi
 - PDL coefficient: 0.0031-to-0.007 1/psi (**High to Very High PDL**)
- Hydraulic fracture closure was observed during shut-in. It was estimated to be 3,700 psi. Closure Gradient ~ 0.41 psi/ft.
- High Process Zone Stress (PZS) was observed from the DFIT (~ 1,845 psi).
- After-closure pseudolinear flow was observed during shut-in. Pore pressure was determined from after-closure pseudolinear flow analysis.
- Pore Pressure ~ 3,428 psi (0.38 psi/ft)
- After-closure pseudoradial flow was NOT observed during shut-in. Thus, only an UPPER LIMIT for Kh could be provided
- **Kh < 8.77317** md-ft (based on an estimated water viscosity of 0.343 cp at 197 deg F and 3,428 psi)

MEMO TO FILE

DATE: 2/9/2012

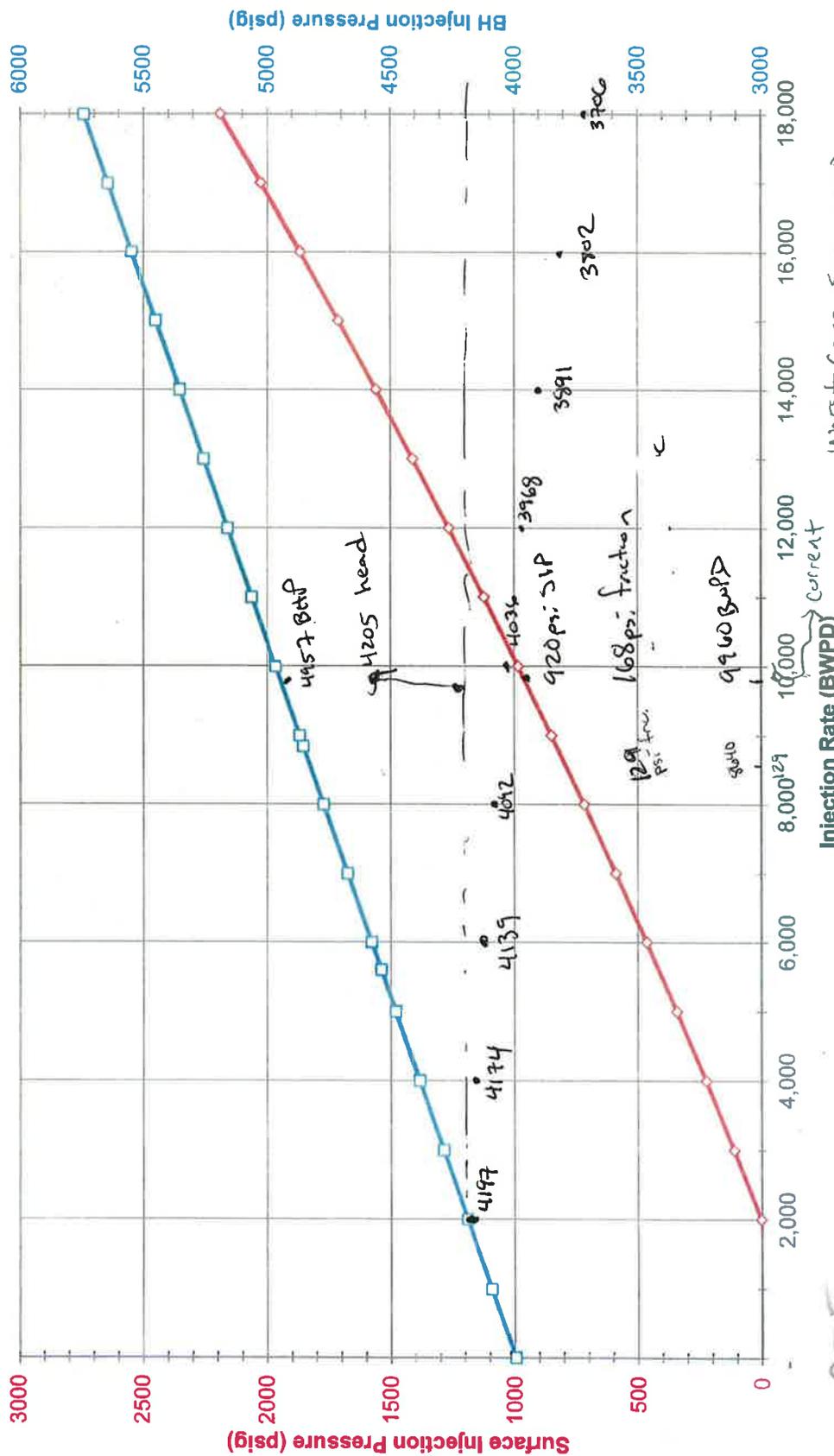
FROM: DUSTIN DOUCET, PETROLEUM ENGINEER 

RE: REVIEW OF THE COVENANT SWD-1 REQUEST FOR CHANGE OF MAXIMUM ALLOWABLE SURFACE INJECTION PRESSURE (MASIP)

Based on the submitted request and DFIT analysis provided, I recommend that a MASIP be set at 1530 psi. I confirmed the lowest fracture gradient in the area is 0.62 psi/ft based off of analogous DFIT analysis of 5 wells completed in the Navajo formation. A 0.62 fracture gradient at the depth of injection in the subject well (9526 TVD) is 5906 psi. The hydraulic head of the injected fluid averages approximately 4205 psi. This allows a MASIP of 1701 psi before fracturing of the formation could be initiated. A 10% safety factor (170 psi) is recommended to ensure no fractures will be initiated. This reduces the potential fracture initiation pressure from 1700 psi to the recommended approval MASIP of 1530 psi.

ATTACHMENT

Covenant SWD-1
4-1/2" FG Lined Tubing
9526' TVD Reference Depth



Worst Case Scenario

4205 psi head
0.62 F@ 9526' = 5906 psi
MASIP = 5906 psi - 4205 psi = 1701 psi

Injection Rate (BWPD) Current

DFIT
Frac
Gnd

Arapien Valley 24-1 → 0.62 ✓
Wolv. Fed 17-6 → 0.62 ✓
Wolv Fed 17-7 → 0.66 ✓
Wolv Fed 19-2 → 0.78 ✓
Wolv Fed 19-3 → 0.79 ✓

February 1, 2012

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

Re: Sundry Notice - Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD-1 (Request for revision of MAIIP)

Dear Mr. Miller:

Wolverine Gas and Oil Company of Utah, LLC respectfully submits the enclosed Sundry Notice (Form 9) along with a UIC Form 1 for the Covenant SWD-1 located in the Covenant Field. Also enclosed is a copy a narrative supporting the request to increase the permitted pressure limit, BHP data, and a water analysis of the produced water currently injected into the well.

Please accept this letter as Wolverine's written request for confidential treatment of all information pertaining to this well. Feel free to contact me if you have any questions or concerns regarding this information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Matt Rivers".

Matt Rivers
mrivers@wolvgas.com
Production Engineer
Wolverine Gas and Oil Corp.
616-458-1150

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.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Water Disposal</u>			5. LEASE DESIGNATION AND SERIAL NUMBER: ML-46605
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC			6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
3. ADDRESS OF OPERATOR: 55 Campau NW CITY Grand Rapids STATE MI ZIP 49503		PHONE NUMBER: (616) 458-1159	7. UNIT or CA AGREEMENT NAME: Wolverine Federal Unit
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1140' FSL, 30' FWL			8. WELL NAME and NUMBER: Covenant SWD-1
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 8 23S 1W S			9. API NUMBER: 4304130039
COUNTY: Sevier			10. FIELD AND POOL, OR WILDCAT: Covenant
STATE: UTAH			

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>2/1/2012</u>	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION (START/RESUME) <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	<input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUT-OFF <input checked="" type="checkbox"/> OTHER: <u>Increase MA injection pressure</u>
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____			

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

Wolverine Gas and Oil Company of Utah, LLC is requesting an increase in the maximum allowable interval injection pressure (MAIIP) to 5906 psi from the currently established MAIIP of 4853 psi.

See additional attachments for UIC form 1, Sundry Justification, BHP data, and Water Analysis.

NAME (PLEASE PRINT) <u>Matthew Rivers</u>	TITLE <u>Production Engineer</u>
SIGNATURE	DATE <u>2/1/2012</u>

(This space for State use only)

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

UIC FORM 1

APPLICATION FOR INJECTION WELL

Name of Operator Wolverine Gas & Oil Company of Utah, LLC				Utah Account Number N	Well Name and Number Covenant SWD-1
Address of Operator 55 Campau NW			CITY Grand Rapids	STATE MI	ZIP 49503
Location of Well Footage : 1140' FSL, 30' FWL				County : Sevier	Field or Unit Name Covenant Field
QQ, Section, Township, Range: SWSW 8 23S 1W				State : UTAH	Lease Designation and Number

Is this application for expansion of an existing project? Yes No

Will the proposed well be used for:

Enhanced Recovery?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Disposal?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Storage?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Is this application for a new well to be drilled? Yes No

If this application is for an existing well, has a casing test been performed? Yes No
Date of test: 9/15/2009

Proposed injection interval: from 9,566 to 10,153

Proposed maximum injection: rate 18,000 bpd pressure 2,075 psig

Proposed injection zone contains oil , gas , and / or fresh water within 1/2 mile of the well.

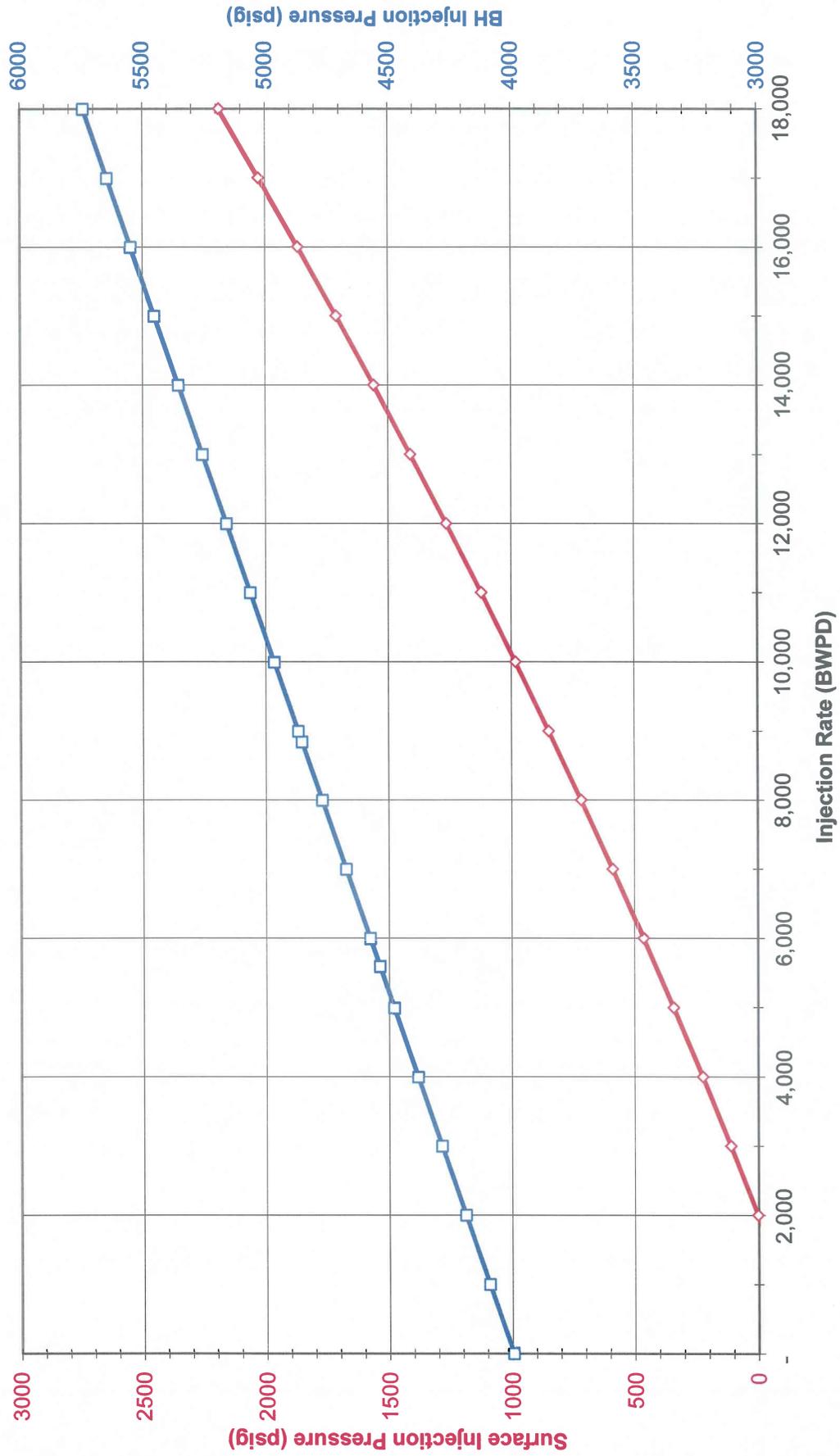
List of attachments: Cover letter, Notice of Intent Sundry, Justification, BHP Chart, WBD, and Injection Water Analysis.

**ATTACH ADDITIONAL INFORMATION AS REQUIRED BY CURRENT
UTAH OIL AND GAS CONSERVATION GENERAL RULES**

I hereby certify that this report is true and complete to the best of my knowledge.

Name (Please Print) Matthew Rivers Title Production Engineer
Signature  Date 2/1/2012

**Covenant SWD-1
4-1/2" FG Lined Tubing
9526' TVD Reference Depth**



Sundry Notice Justification to Increase MAIIP

Wolverine Gas and Oil Company of Utah, LLC
Covenant SWD-1, API # 4304130039
February 1, 2012

The purpose of this request is to increase the maximum allowable interval injection pressure (MAIIP) currently established by the UIC Permit for the Covenant SWD-1 well. This requested increase to the MAIIP is based on actual frac gradient data that was obtained subsequent to issuance of the permit, which relied on an arbitrarily assumed frac gradient of 0.51 psi/ft to calculate permitted pressure limit.

Wolverine Gas and Oil Company currently injects approximately 9960 BWPB into the Covenant SWD 1 well with a surface injection pressure of 920 psi. Per the UIC permit, the maximum allowable injection interval pressure (MAIIP) is 4853 psig which corresponds to maximum allowable surface injection pressure (MASIP) of 1033 psi with the current 4.5" coated injection string. The injection interval is the Navajo 2 at a depth of 9526' TVD. Field projections show that current Covenant water production will continue to increase from existing wells. Additionally, the newly drilled Wolverine State 20-5 is undergoing completion operations and preliminary indications are this well will further increase Covenant water production immediately. This increasing water production and the corresponding pressure resulting from the higher injection rates will eventually lead to curtailing production so as not exceed the current permitted MAIIP.

The corresponding bottom-hole pressure gradient based on the current MAIIP is 0.51 psi/ft, which was established in 2006 with limited understanding of the fracture gradient in the Navajo sandstone. At that time, the only wells completed in the area were the Kings Meadow Ranches 17-1 and Wolverine Federal 17-2. Wolverine has since acquired Differential Fracture Injection Tests (DFIT) in the Navajo at Covenant and Providence Fields for five wells which were used towards fracture stimulation designs. Below is a table with the determined fracture gradients from the corresponding tests.

Well Name	Frac Gradient (psi/ft)	Average Porosity %	Perf Depth TVD	Date Injected	Field Name
Arapien Valley 24-1	0.62	0.1029	8998'	7/19/2010	Providence
Wolverine Federal 17-6	0.62	0.0968	6118'	1/15/2009	Covenant
Wolverine Federal 17-7	0.66	0.0856	6106'	10/7/2010	Covenant
Wolverine Federal 19-2	0.78	0.0415	6324'	4/13/2009	Covenant
Wolverine Federal 19-3	0.79	0.0646	6254'	5/11/2011	Covenant

The DFIT's were typically conducted using a bottom-hole pressure gauge and placed 100' – 200' above the perforation interval. 25 - 100 barrels of completion fluid were injected into the formation at a constant rate of 4-6 BPM and a bottom-hole initial shut-in pressure was recorded to determine the fracture gradient. In the table, DFIT results for the selected wells show fracture gradients ranging from 0.62 – 0.79 psi/ft with corresponding average log porosities included. There is general agreement with the calculated frac gradients except for the 19-2 and 19-3 which show a higher frac gradient, but this may be related to the lower reservoir quality as represented by the lower porosity. The SWD-1 has an average porosity of 0.0874 over the 586' open-hole interval, so it is expected to have a similar frac gradient as the WF 17-7 (frac gradient of 0.66 psi/ft).

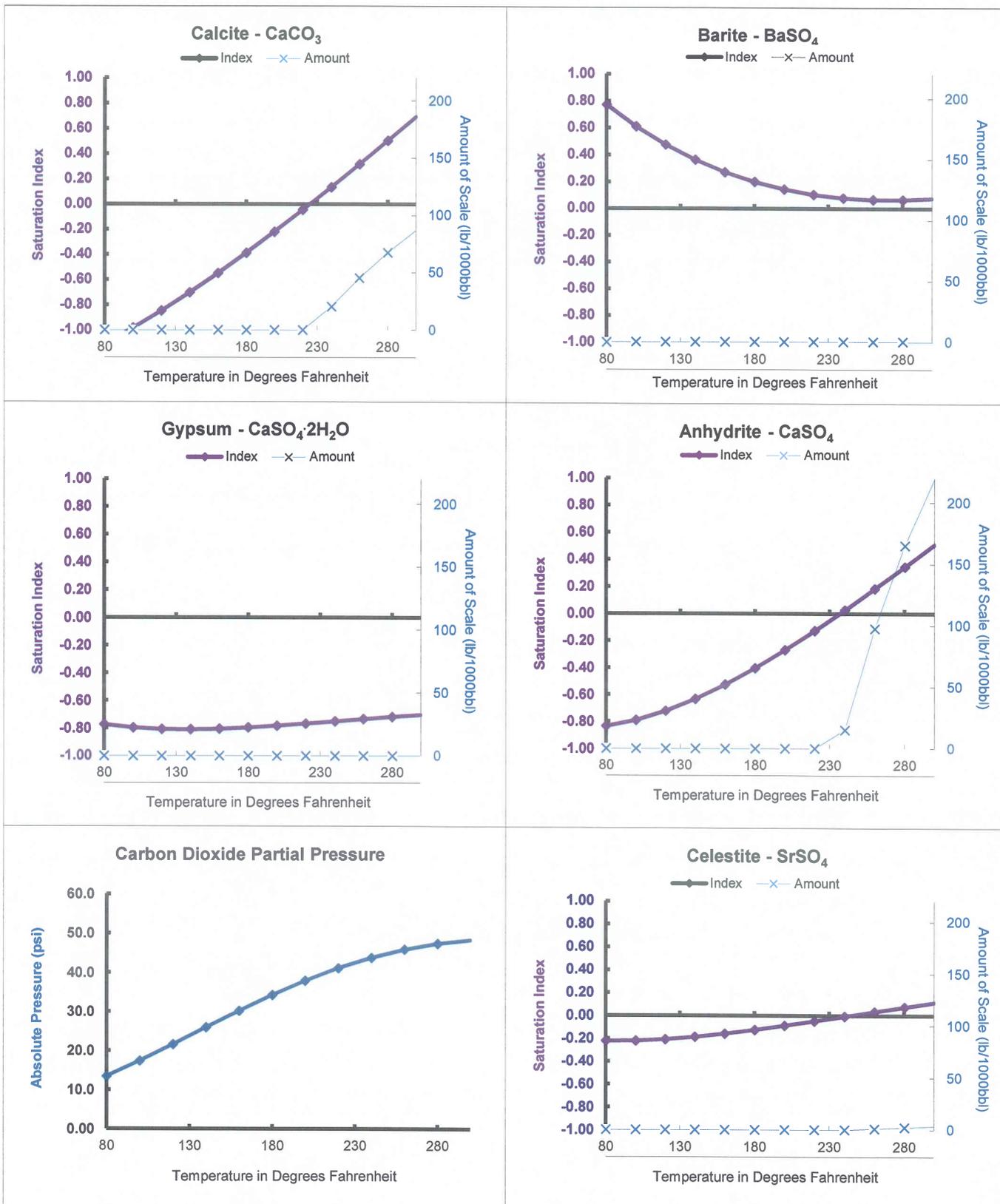
Based on this frac gradient, Wolverine is requesting an increase in MAIIP to 5906 psi, which is based on the calculated frac gradient from the Covenant Navajo (0.62 psi/ft). This gradient also correlates to the data obtained from the Providence Field. Based on a frac gradient of 0.62 psi/ft, the proposed MASIP would be 2100 psi with the existing 4.5" injection string (assumes a rate of 18,000 BWPB for friction calculations).



Scale Predictions

For Sample 59954WOL @ 75°F from WOLVERINE , COVENANT , SWD-1 , WELLHEAD , Jan/9/12

Baker Petrolite



43-041-30039



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
<http://www.blm.gov/ut/st/en.html>

IN REPLY REFER TO:
3160
UTU80800X
(UT922100)

JUN 26 2012

SWD-1
235 IW 8

RECEIVED
JUN 28 2012
DIV. OF OIL, GAS & MINING

Mr. Richard Moritz
One Riverfront Plaza
55 Campau, N.W.
Grand Rapids, MI 49503-2616

Re: Automatic Contraction
Wolverine Unit
Sanpete & Sevier Counties, Utah

Dear Mr. Moritz:

Your letter of June 20, 2012, describes the lands automatically eliminated effective March 16, 2012, from the Wolverine Unit Area, Sanpete & Sevier Counties, Utah, pursuant to Section 2(e) of the unit agreement and requests our concurrence. The lands you have described contain 68,062.645 acres, more or less, and contain all legal subdivisions, no parts of which are in the 7th Revision of the Navajo Participating Area "A" and the Initial Navajo 1 Formation - Carbon Sequestration a/k/a Providence Participating Area. As a result of the automatic elimination, the unit is reduced to 2,080.92 acres.

The following Federal Leases are entirely eliminated from the unit area.

- | | | | |
|-----------|-----------|-----------|-----------|
| UTU 73155 | UTU 74851 | UTU 78183 | UTU 82687 |
| UTU 73157 | UTU 74852 | UTU 80587 | UTU 82690 |
| UTU 73158 | UTU 74853 | UTU 80906 | UTU 80951 |
| UTU 73160 | UTU 74854 | UTU 80908 | |
| UTU 73529 | UTU 76453 | UTU 80909 | |
| UTU 73530 | UTU 76454 | UTU 80910 | |
| UTU 74370 | UTU 76455 | UTU 80911 | |
| UTU 74850 | UTU 76456 | UTU 80955 | |

The following Federal Leases are partially eliminated from the unit area.

- | | | |
|-----------|-----------|-----------|
| UTU 73156 | UTU 73528 | UTU 80907 |
|-----------|-----------|-----------|