



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
UTAH GEOLOGICAL SURVEY

Michael O. Leavitt  
Governor

Kathleen Clarke  
Executive Director

M. Lee Allison  
State Geologist

1594 West North Temple, Suite 3110

PO Box 146100

Salt Lake City, Utah 84114-6100

801-537-3300

801-537-3400 (Fax)

<http://www.ugs.state.ut.us>

December 28, 1998

Dr. Dennis Nielson  
Energy & Geoscience Institute  
University of Utah  
423 Wakara Way  
Salt Lake City, Utah 84108-1210

Dear Dennis:

The Utah Geological Survey is supportive of your efforts to core both Great Salt Lake and Bear Lake with the proposed lake drilling rig. We will make our Sample Library facilities available to you and your colleagues to lay out, examine, process, and store (short or long term) any or all of the core or other samples you collect.

The UGS Sample Library moved into a new building in October, 1998. It boasts a 60% increase in storage capacity, layout and examination areas, a classroom, and sample preparation lab. We have a full time sample librarian and additional warehouse workers and geotechs to assist in core handling as needed.

We look forward to working with you on this project.

Sincerely,

M. Lee Allison  
Director

Post-it® Fax Note	7671	Date	12/28/98	# of pages	1
To	Dennis Nielson	From	Lee Allison		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #	585-3540	Fax #	537-3400		

Karl Kayfe

## DOSECC, Inc.

Drilling, Observation and Sampling of the Earth's Continental Crust

Dr. Dennis L. Nielson  
Executive Director  
801-585-6855  
801-585-9687

423 Wakara Way, Suite 300  
Salt Lake City, Utah 84108

March 8, 2000

Mr. Arthur W. DuFault  
Director  
Division of Forestry, Fire and State Lands  
P.O. Box 146703  
Salt Lake City, UT 84114-5703

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DIVISION OF  
OIL, GAS AND MINING

Dear Mr. DuFault:

This letter is an application to perform drilling operations in the Great Salt Lake. The purpose for this drilling is to collect continuous core samples that will be analyzed to determine the paleo-climate history of the lake as well as to evaluate the history of fault movement along the East Great Salt Lake fault. The drilling will be funded by the U. S. National Science Foundation and the U. S. Geological Survey. The Principal Investigators of the project and their home institutions are as follows:

Dr. Kerry Kelts, University of Minnesota  
Dr. Andrew Cohen, University of Arizona  
Dr. David A. Dinter, University of Utah  
Dr. Owen Davis, University of Arizona  
Dr. Jack Oviatt, Kansas State University  
Dr. Walter E. Dean, U. S. Geological Survey  
Dr. Roy Johnson, University of Arizona

DOSECC, Inc will serve as the operator for this project. DOSECC is a non-profit corporation established in 1984 to aid the scientific community in the collection of subsurface samples. DOSECC has served as the operator on a number of scientific holes, most recently the Hawaii Scientific Drilling Program that was drilled on the Island of Hawaii and collected continuous core to a depth of 10,201 feet.

### Drilling Equipment and Methods

The holes will be drilled using the GLAD800 drilling system. This system is being developed specifically for continuous core drilling in modern lakes through a joint venture between

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1A. Type of Work: DRILL  DEEPEN   
B. Type of Well: OIL  GAS  OTHER: Scientific SINGLE ZONE  MULTIPLE ZONE

2. Name of Operator: DOSECC, Inc.

3. Address and Telephone Number: 423 Wakara Way, Suite 300, SLC, UT 84108 (801)585-9687

4. Location of Well (Footages)  
At Surface: 41° 05' 0.01" N 112° 41' 43.87" W  
At Proposed Producing Zone:

14. Distance in miles and direction from nearest town or post office: 22.5 miles NNE of Delle

5. Lease Designation and Serial Number:  
6. If Indian, Allottee or Tribe Name:  
7. Unit Agreement Name:  
8. Farm or Lease Name:  
9. Well Number: GSL-4B  
10. Field and Pool, or Wildcat:  
11. Qtr/Qtr, Section, Township, Range, Meridian:  
12. County: Box Elder  
13. State: UTAH

15. Distance to nearest property or lease line (feet): N/A  
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): 2044m  
19. Proposed Depth: 700 m (2297')  
20. Rotary or cable tools: Hydraulic Piston Core

21. Elevations (show whether DF, RT, GR, etc.): Lake Level (approx. 4200')  
22. Approximate date work will start: August 15, 2000

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
6"	6"		30'	None
4.5"	4.5"		TD	None

DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

The general drilling plan is as follows:

1. Sample with HWT hydraulic piston core to a nominal depth of 10 m. The depth will be determined by the presence of a competent lithologic unit that will be capable of supporting a riser pipe.
2. Wash in riser pipe over HWT and tie back to the barge. Riser pipe has a diameter of 6 inches.
3. Sample using appropriate coring techniques to the designed depth.
4. Pull out HWT. Pull out riser.

24. Name & Signature: Dennis L. Nielson *D. Nielson* Title: Executive Director Date: 3/8/00

(This space for State use only)  
API Number Assigned:  
Approved by the Utah Division of Oil, Gas and Mining  
Date: 5/12/00  
By: *[Signature]*

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## **Decision Process for Proposals on GSL**

DFFSL will be the keeper of the CMP and will be the formal point of contact for proposals on sovereign land. Before making formal contact with DFFSL proponents are encouraged to contact other divisions and agencies regarding how the proposal may affect them.

A "new" proposal is a proposed land use that is either new for GSL or of such size that, in DFFSL's judgement, there is potential for significant adverse effects. DFFSL will determine if a proposal is a new proposal for which a presentation to the GSL Board of Directors (Board) is required. The Board includes DNR's division directors and executive management. For land uses that are not new proposals, DFFSL will accept an application or refer the proponent to the appropriate DNR division for routine application processing.

The Board will convene and hear presentations on new proposals by proponents. Since some detail of a proposal likely will not be available when a presentation is made, and because a proposal likely will not have undergone environmental review at the time a presentation is made, the Board will only approve or reject the proposal in concept. If a proposal is approved in concept, the proponent will be referred to the appropriate division which will process an application through standard procedures. If a proposal is rejected in concept, it is not necessarily the end of the line for a proposal. A proponent may still file an application and await final action by a division. In either case, the final action by a division is subject to appeal through administrative processes.

### **The Great Salt Lake Technical Team (GSLTT)**

Section 65A-10-8-(11) provides that the division shall:

"Retain and encourage the continued activity of the Great Salt Lake Technical Team."

GSLTT members, because of their knowledge of the lake and their agencies' responsibilities and experience with lake problems and programs, provide valuable technical information that augment and enhance The Comprehensive Management Plan. This group is a forum for the interchange of information, studies, research, ideas and programs that affect the activities and natural systems of Great Salt Lake. Working as a team, the members review issues, examine alternatives and make recommendations through consensus. Each state division involved in the lake's management is asked to provide representation for the Technical Team. Each of the five counties involved with the lake is also asked to have a representative. Other interests and groups will serve by invitation as members to provide information.

The activities and reports of GSLTT will be presented to the Department of Natural Resources Directors (CMP Board of directors) after review and analysis by staff from Forestry, Fire and State Lands. The GSLTT will be self governing with staff support from the Department as requested and will be asked to convene for conduct of business at least two times per year.

DOSECC and the International Continental Drilling Program in Potsdam, Germany. The system consists of a modified Christensen LC1500 coring rig mounted on a modular barge. The system is shown schematically in Figure 1 and specifications are outlined in Table 1. Drilling methods will be determined by lithology and hole conditions and will be based on techniques used in the Ocean Drilling Program. Techniques available will be push coring, hydraulic piston coring (HPC), diamond coring, and rotary drilling. The hole will be drilled to 4.5 inch diameter (HWT size).

The general drilling plan is as follows:

1. Sample with HWT hydraulic piston core to a nominal depth of 10 m. The depth will be determined by the presence of a competent lithologic unit that will be capable of supporting a riser pipe.
2. Wash in riser pipe over HWT and tie back to the barge. Riser pipe has a diameter of 6 inches.
3. Sample using appropriate coring techniques to the designed depth.
4. Pull out HWT. Pull out riser.

Core samples will be retrieved in plastic liners in nominal 3 m lengths. These will be cut into 1.5 m lengths and capped. The samples will be transported to shore for analysis.

Circulation of drilling fluid is not required for the push coring and HPC activities. The advance of the diamond coring bit or rotary drilling assembly will require fluid circulation. During these operations, lake water without additives will be used as the drilling fluid and will be discharged through the riser at the lake bottom.

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### Hole Locations and Depths

The hole locations are shown in Figure 2 and described in the following table.

Hole	Depth	Location
GSL00-1A	164 ft. (50 m)	41° 5' 38" N 112° 21' 53" W
GSL00-1B	164 ft. (50 m)	41° 5' 38" N 112° 21' 53" W
GSL00-2A	164 ft. (50 m)	41° 5' 44" N 112° 21' 41" W
GSL00-2B	164 ft. (50 m)	41° 5' 44" N 112° 21' 41" W
GSL00-3A	164 ft. (50 m)	40° 53' 49" N 112° 14' 46" W
GSL00-3B	164 ft. (50 m)	40° 53' 49" N 112° 14' 46" W
GSL00-4A	656 ft. (200 m)	41° 05' 00" N 112° 41' 43" W
GSL00-4B	2297 ft. (700 m)	41° 05' 00" N 112° 41' 43" W

### GSL00-1A and B

These holes are located to sample the footwall block of the East Great Salt Lake fault. The

proposed location is shown on the seismic section of Figure 3. Holes A and B will be located less than 30 feet from one another. They are designed with different sample intervals so that no sediment will be lost between core runs. The sampling will determine the age and recurrence intervals on the East Great Salt Lake fault.

#### GSL00-2A and B

These holes are located near the GSL-1 holes and will be drilled on the hanging wall of the East Great Salt Lake fault. Again, the holes will be drilled close to one another in order to provide a continuous sample of the sedimentary section. The holes are also shown on the seismic section (Fig. 3).

#### GSL00-3A and B

These holes are located on the hanging wall of the Great Salt Lake fault and are shown in the seismic section on Fig. 4. In this area, the fault is associated with a scarp that demonstrates more than 3 meters of offset. The GSL00-3 holes are located within the 1 mile from the 4193 foot contour that is an exclusion zone for oil and gas development. However, this particular location is necessary to sample important stratigraphic units that will allow determination of the age and recurrence intervals of this part of the fault.

#### GSL00-4A and B

Holes GSL00-4A and B are located 6,707 feet ENE of the Amoco No. 1 State of Utah "0" that was spud on April 15, 1980. Amoco #1 reached T.D. at a depth of 2450 feet (747 m) on 22 April 1980. The Amoco reports on the drilling of this hole and subsequent analysis are attached to this letter. Amoco reports that no hydrocarbons were encountered in the drilling or subsequent tests. GSL00-4A will be drilled to a depth of 656 feet. GSL00-4B will be located within 30 feet of 4A and will be drilled to an estimated depth of 2,297 feet.

Figure 5 shows the locations of holes 4A and 4B at the intersection of Amoco seismic lines 21 and 18. Figure 6 displays the section for line 18 and Figure 7 shows line 21. Marked on both of these sections is the approximate distribution of the Bishop and Huckleberry Ridge tuffs.

#### **Geophysical Logging**

Contingent on hole conditions, we intend to run a geophysical logging program that will consist of gamma ray and temperature logs. In GSL00-4B density and (possibly) neutron logs will also be run through the drill pipe. If possible, sonic, borehole-compensated density, and resistivity logs will be run in open hole beneath the drill pipe before complete retrieval of the drill pipe and borehole collapse.

## **Potential Hazards and Mitigation**

### **Blow Out**

The shallow (50 m) holes for this program are all sited along seismic lines and have been located to avoid the presence of natural gas. The GSL00-4 holes will essentially twin an existing oil test that did not encounter hydrocarbons. We conclude that the potential for blow out is extremely low.

### **Spills**

Lakes throughout the world are environmentally sensitive and the GLAD800 system is designed to minimize the potential for contamination from spilled fuel and lubricants. Solid decking with sides has been installed under fuel, motor and hydraulic tanks. All drilling operations will be performed through a moonpool where any spills will be confined by the barge. During drilling operations, the barge will be surrounded by a containment boom that will limit the dispersion of any accidental spills.

### **Storms**

No drilling operations will be conducted during storms. We have chosen a time of year that is normally only effected by thunderstorms of relatively short duration. At the discretion of the on-board supervisor, depending on storm severity, our procedure will be as follows:

1. Drilling operations will be stopped and drill rods removed from the well, but riser left in place.
2. Riser also removed.
3. Crews evacuated to crew boat.

### **Plug and Abandon**

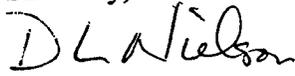
Following completion of drilling, the drill rods and riser will be removed. Due to the unconsolidated nature of the formation, it is anticipated that the hole will fill with sediments upon the retrieval of the HWT rods and riser pipe.

### **Sample Disposition**

Core samples will be initially sent to the Utah Geological Survey Sample Library where space has been provided for an initial characterization (see attached letter from M. Lee Allison). Here the cores will be prepared for shipping to the Limnological Research Center at the University of Minnesota where the detailed analysis will be performed.

Please contact me if you require additional information concerning this application

Sincerely,

A handwritten signature in cursive script that reads "DL Nielson". The letters are dark and fluidly connected.

Dennis L. Nielson  
Executive Director

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Figure 1  
General Configuration of  
GLAD800 Rig and Barge

Barge Length: Keel: 18.3 m (60 ft), Deck 20.4 m (67 ft)  
Barge Height: 2.6 m (8.5 ft)  
Barge Width: 7.3 m (24 ft)  
Derrick Height: 9.8 m (32 ft)  
Rig/Barge Displacement 130,000 lb.  
Water in Lower Compartments 240,000 lb.

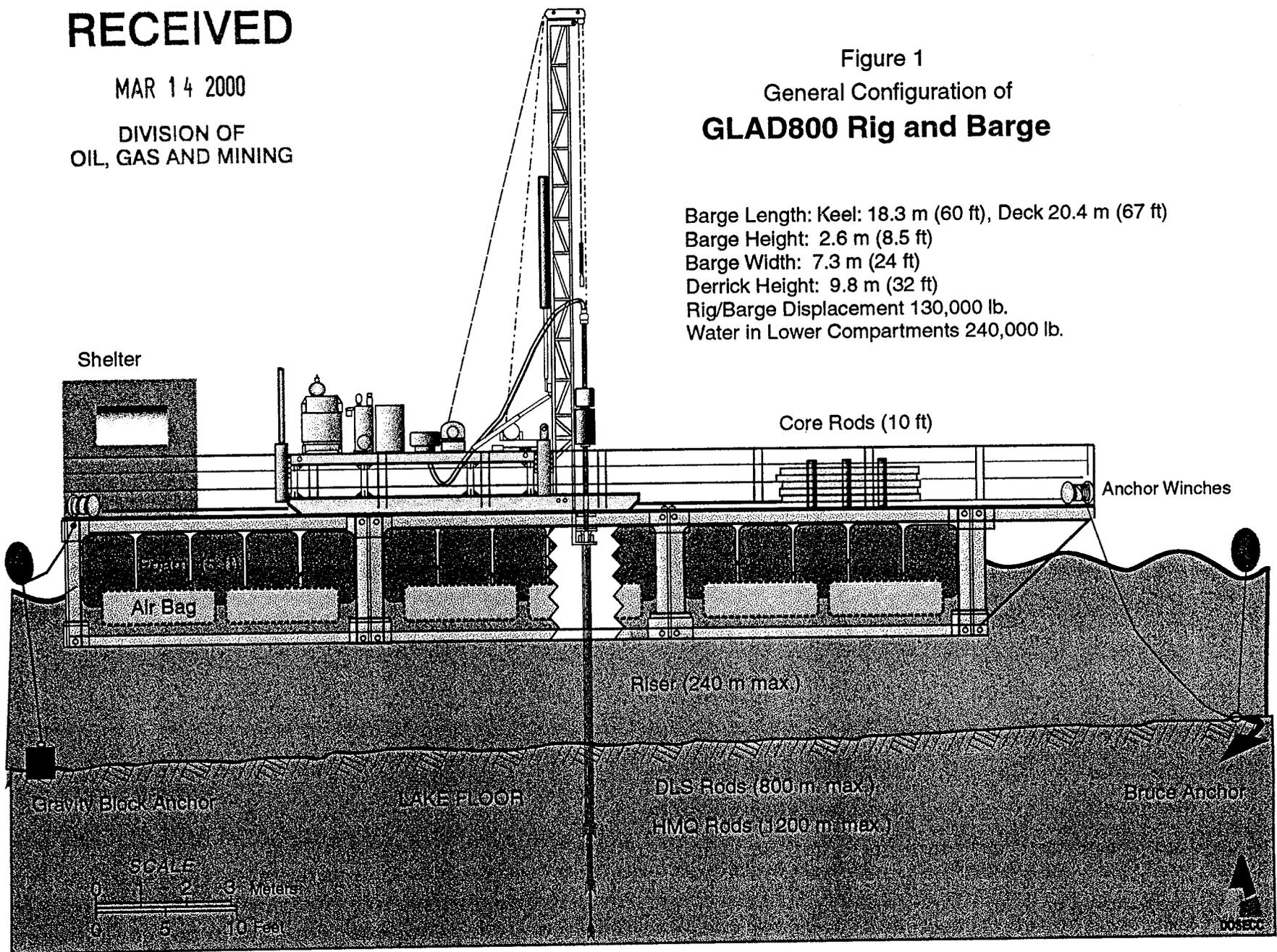


Table 1

# SPECIFICATIONS FOR DRILLING RIG ON GLAD800

## Depth Capacity Coring (Wireline or Conventional)

HMQ Wireline 4590 ft (1350 m)  
 DLS Wireline 2830 ft (800 m)

## Hoisting Capacity

### Main

Capacity: Single Line-Bare Drum 17,500 lb (7955 kg)  
 Double Line-Bare Drum 35,000 lb (15,900 kg)  
 Line Speeds: Bare Drum 132 ft/min (40 m/min)  
 Cable Size: 110 ft (33.6 m) X 5/8 in (15.9 mm)

### Wireline

Capacity: Single Line-Bare Drum 2,500 lb (1,136 kg)  
 Single Line-Full Drum 840 lb (382 kg)  
 Line Speeds: Bare Drum 390 ft/min (119 m/min)  
 Full Drum 1,260 ft/min (984 m/min)  
 Cable Size: 4000 ft (975 m) X 3/8 in

## Feed System

Feed Travel: 11.5 ft (3.5m)  
 Feed Speeds: Fast and Slow with Variable control  
 Thrust: 15,000 lb (6800 kg)  
 Pull: 30,000 lb (13,600 kg)

## Power Unit

Mfg: 1 - Cummins  
 Power: 175 hp (196 KW)  
 RPM: 1,800  
 Engine Type: 6 cyl. Diesel Turbocharged/after cooled c/w clutch  
 Cooling: Water

## Hydraulic System

Primary Pump: 3,500 psi - 45.6 gpm (24.3 MPa - 173 lpm)  
 Secondary Pump: 1,500 psi - 12.5 gpm (10.3 MPa - 47.3 lpm)  
 Auxiliary Pump: 3,000 psi - 13.4 gpm (20.8 MPa - 50.7 lpm)

## Drillhead and Spindle Speeds

Power: Hydraulic Motor - Variable speed/reversible  
 Final Drive: HV Chain drive in oil bath - 2.5 ratio  
 Spindle: 4-5/8 in (117 mm)  
 Spindle Speeds:

Gear	Ratio	Speed (rpm)	Torque, ft lb (nm)
1st	6.63:1	130-195	3,2232-2,218 (4,382-3,007)
2nd	3.17:1	270-410	1,545-1,060 (2,095-1,437)
3rd	1.72:1	500-756	839-575 (1,138-780)
4th	1.00:1	867-1,300	468-335 (662-454)

Speed Control: Manual Control from Operator's Station  
 Hinged Head: Swing Away

## Chuck Assembly

Type: Hydraulic Open, Spring Closed  
 Maximum Inside Diameter: 4-5/8 in (117 mm)  
 Holding Capacity: 40,000 lb (18,181 kg)

## Weight

Rig Weight: 14,000 lb (6,363 kg)  
 Recommended Truck GVW: 32,000 lbs (14,545 kg)

## Standard Equipment

Dump Mast  
 Derrick in Two Sections  
 Wireline Speed Control  
 Foot Clamp 4-5/8 in (117 mm)  
 Hydraulic Slide Control Panel  
 Hydraulic Rod Centralizer  
 Hydraulic Oil Reservoir Fill Pump and Filtration  
 Additional Fuel Filter and Water Separator  
 Four Hydraulic Jacks 24 in Stroke

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## Mud Pump Hydraulic Driven - Standard Equipment

Type: FMC L11 22D  
 Max Flow: 72 gpm (272 lpm)  
 Max. Pressure: 1000 psi (7 MPa)

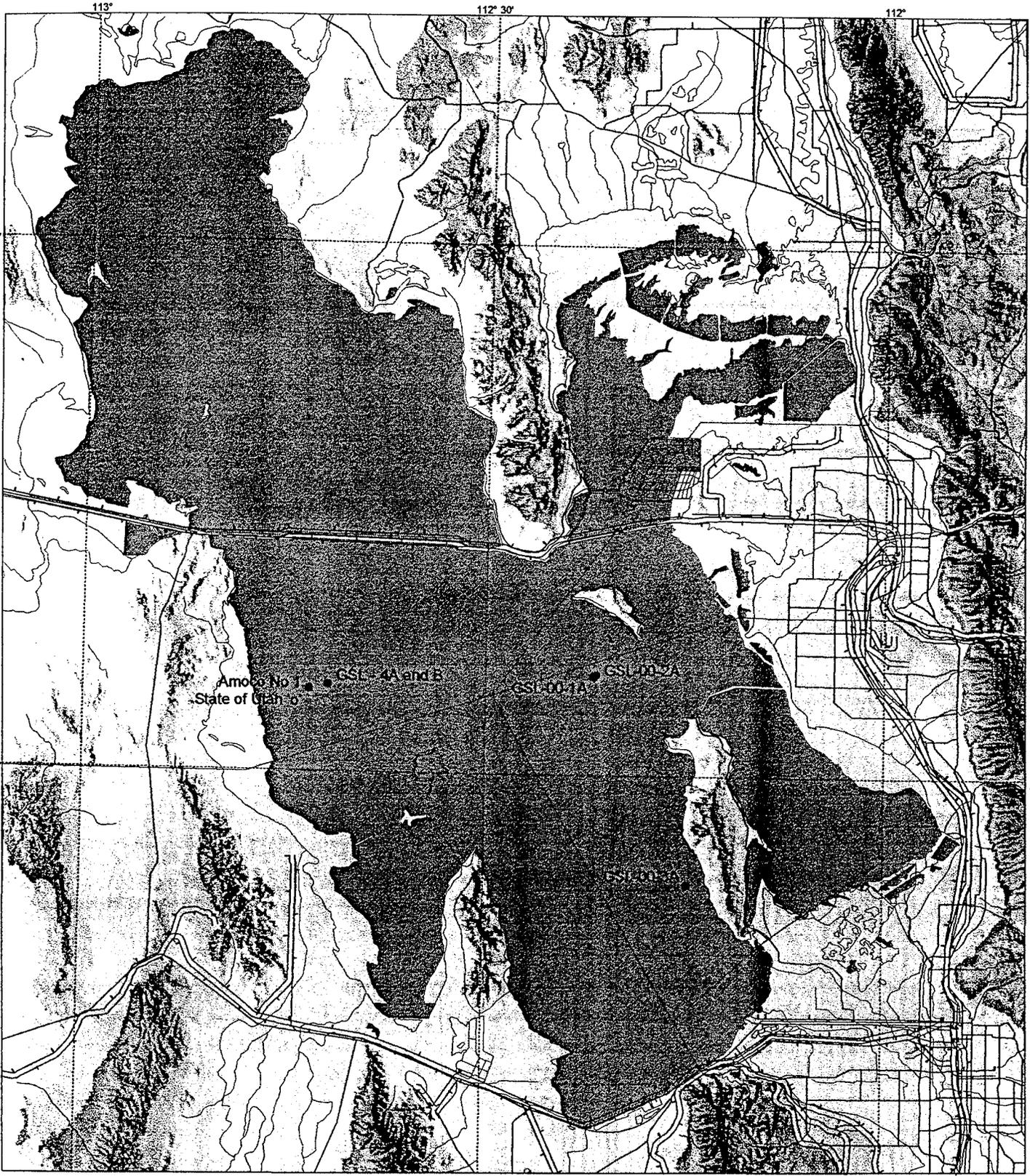
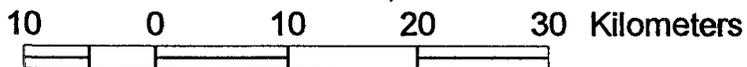


Figure 2 Location of Drill Sites.



1:575,000



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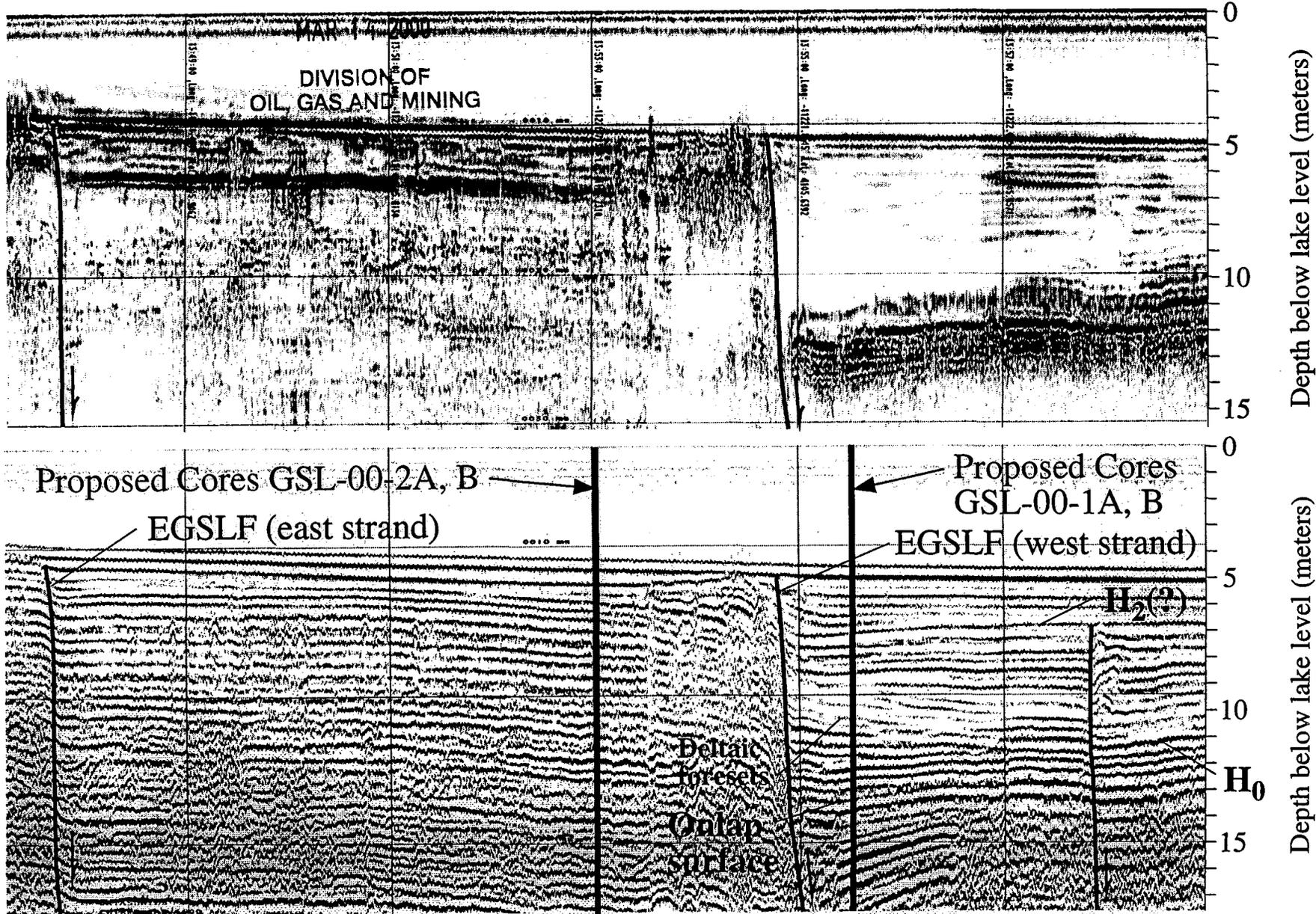
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Figure 3

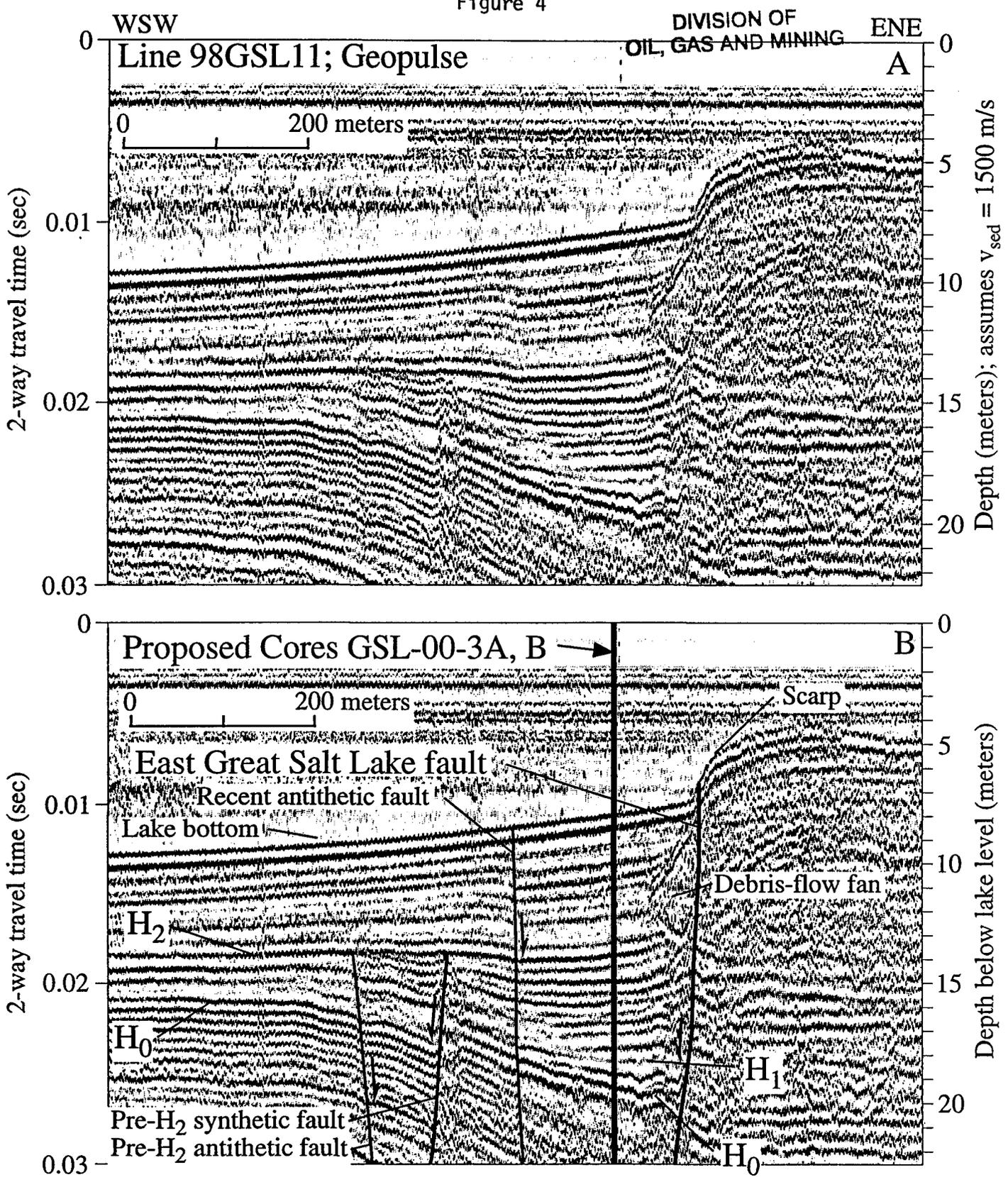
SW



Proposed Cores GSL-00-01A, B and GSL-00-02A, B in hanging wall and footwall, respectively, of East Great Salt Lake fault (EGSLF) southwest of Fremont Island, Line 98GSL36 (Dinter and Pechmann, 1999). A - Chirp profile. B - Interpreted Geopulse profile showing EGSLF, disconformity  $H_0$  (top of Bonneville deposits?), pre- $H_0$  onlap surface, angular unconformity  $H_2$ , and deltic foresets.

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Figure 4



**Proposed Cores GSL-00-3A, B** in hanging wall of East Great Salt Lake fault (EGSLF) west of Antelope Island, Geopulse Line 98GSL11 (Dinter and Pechmann, 1999). Vertical exaggeration = 27:1. A - Uninterpreted profile. B - Interpreted profile showing EGSLF and subsidiary normal faults in hanging wall, disconformity H<sub>0</sub> (probable top of Lake Bonneville deposits), angular unconformity H<sub>1</sub> (onlap surface), erosional angular unconformity H<sub>2</sub>, and middle Holocene debris-flow fan.

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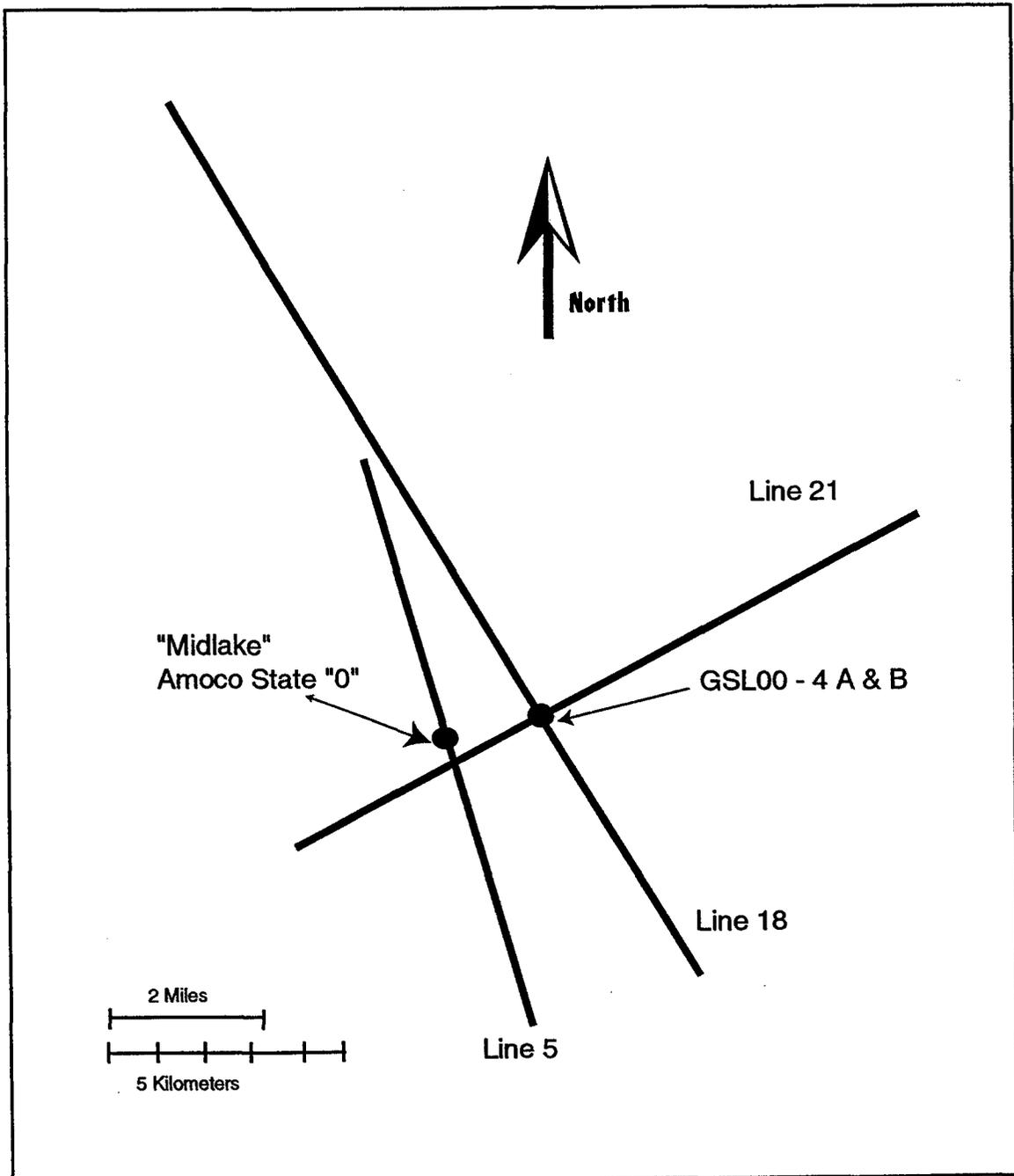


Figure 5. Location of GSL00-4A and B in relation to Amoco No. 1 State of Utah "0"

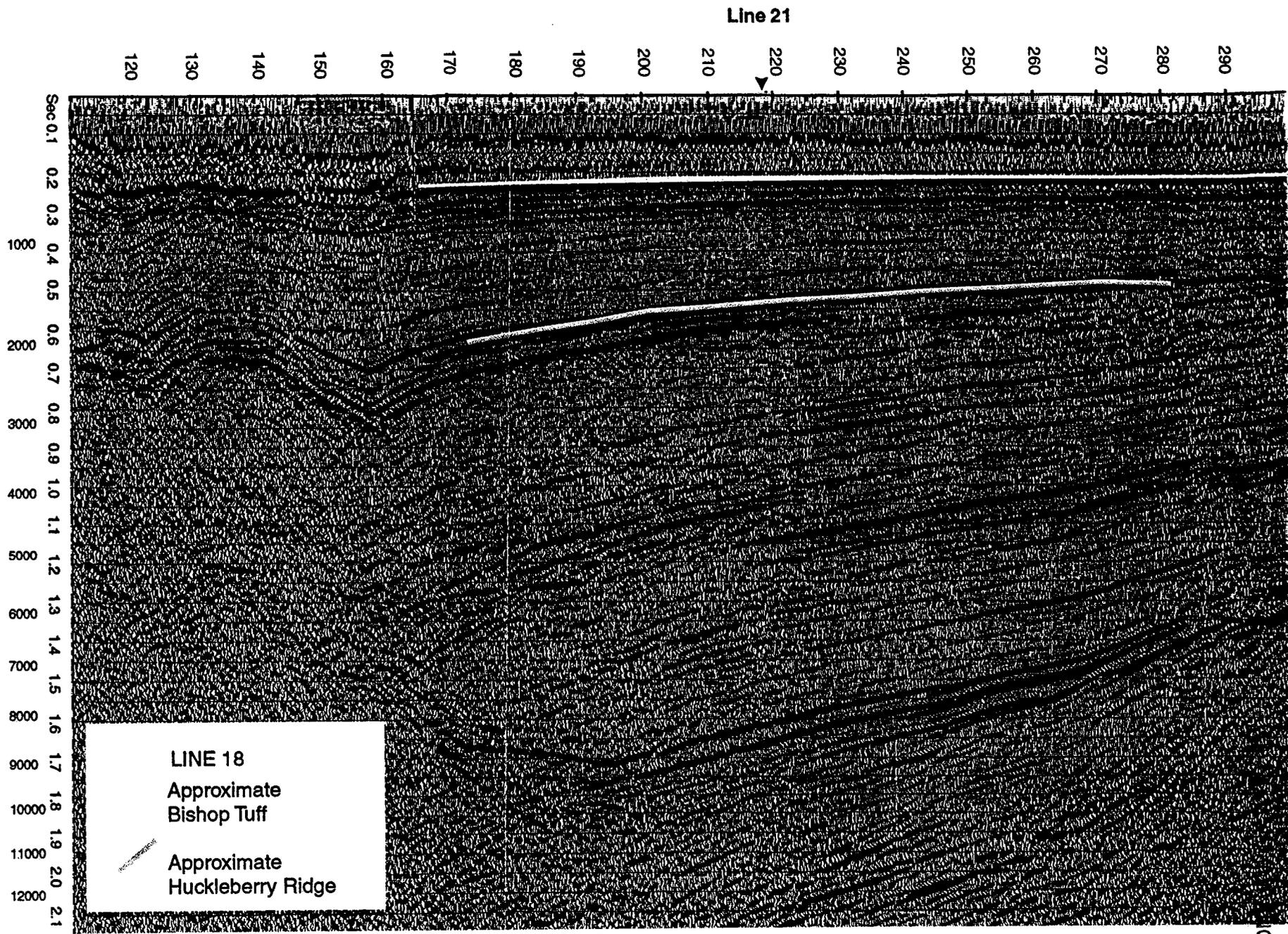


Figure 6 Line 18 showing Bishop Tuff and Huckleberry Ridge approximate horizons.

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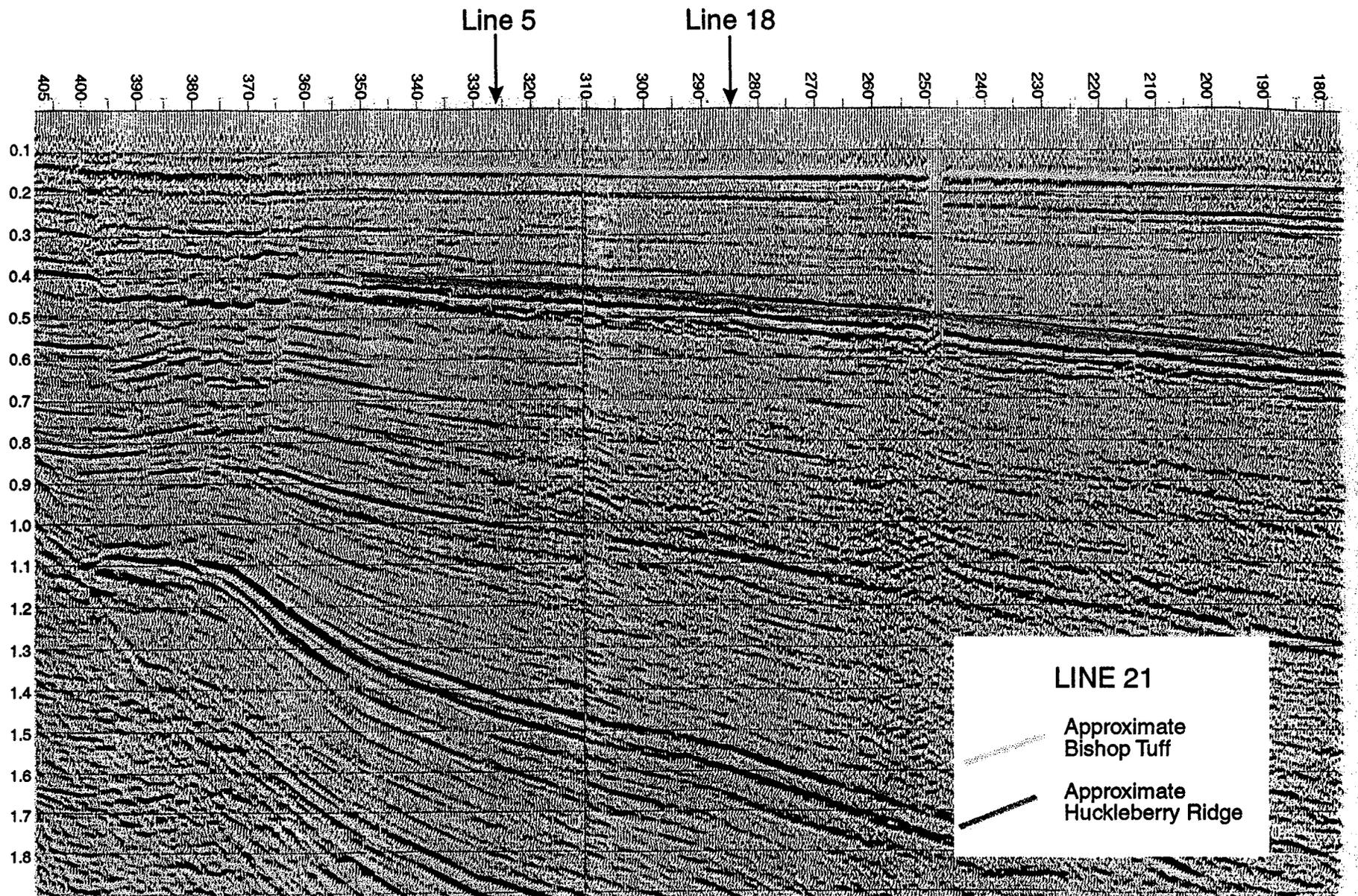


Figure 7 Line 21 showing Bishop Tuff and Huckleberry Ridge approximate horizons.

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**AMOCO Reports  
and Analyses**

MIDLAKE

AMOCO PRODUCTION COMPANY  
Tulsa, Oklahoma  
May 27, 1980

8014SART0096

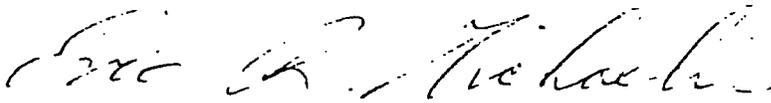
CONFIDENTIAL - TIGHT HOLE

FILE: Technical Service 5296WR

TO: M. Zimmerman, Denver Region

SUBJECT: Ben-Tol and Routine Water Analysis, Amoco No. 1 State of Utah  
"O", Section 14-4N-8W, DST (1378-1420') Basalt, Box Elder Co.,  
Utah (Requested by TSWO, Trushenski/Schmidt, 5-6-80)

The absence of Ben-Tol shows indicates that the formation water is not  
in contact with nearby oil that contains sufficient concentrations of  
benzene or toluene to contribute detectable amounts to associated water.



Eric R. Michaelis

GWS:sdg

cc: Paul Flint  
J. M. Rakowski  
S. P. Trushenski**RECEIVED**

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AMOCO Production Company

**RESEARCH CENTER  
WATER ANALYSIS**

T.S. or File No. 5296WR  
 Lab. No. W-3,717-B  
 Field No. \_\_\_\_\_  
 API Well No. 43-003-3001

**LOCATION SAMPLED:** Region Denver Division Western District Salt Lake  
 Operator (Plant) Amoco Well No. 1 Lease State of Utah "0"  
 State (Province) Utah County (Parish) Box Elder  
 Twp. 4N Rng. 8W Sec. 14 Quarter (Lsd.) \_\_\_\_\_ Other (Meridian) SLBM  
 Wildcat (  ) Field Well (  ) Field name \_\_\_\_\_  
 Sample collected from DST Date 4-22-80 Sample collected by L. Wells  
 Interval sampled 1378' to 1420' Interval name Basalt (Tertiary basalt)  
 Recovery 1255' MCSW

Form 97 transmitted by S.P. Trushenski Date \_\_\_\_\_ Authorized by \_\_\_\_\_

**ORGANIC CONSTITUENTS in mg/l**

	BOTTOM	MIDDLE	TOP	MUD
Benzene	0	0	0	0
Toluene	0	0	0	0
HC Gases	*	*	*	*
*Absent				

**DESCRIPTION OF SAMPLE**

Sample used for detailed analyses Bottom  
 Date received 5-5-80  
 Condition as received Good - 4/5 full  
 Color Yellowish  
 Odor Indefinite  
 Suspended solids Iron Oxide  
 Bottom sediment Iron Oxide  
 Oil or Fluorescence No visible oil or fluorescence

**QUALITY OF SAMPLE**

	BOTTOM	MIDDLE	TOP
Chloride on mg/l	79,800	79,800	72,000

**COMMENTS:**

Mudpit: 500 mg/l Cl<sup>-</sup>.  
 The good recovery of water, the increase in Cl<sup>-</sup> concentrations from the top to the bottom of the recovery (DM was 500 mg/l Cl<sup>-</sup>), and the chemical composition indicate that the bottom sample is formation water.

**CONVENTIONAL MAJOR ION ANALYSIS**

	Major ions mg/l	% of Total Major ions	Reaction Value meq/l	% of Total Reaction Value
<b>CATIONS</b>				
Sodium Na <sup>+</sup>	49,551	35.55	2,155.48	45.1
Calcium Ca <sup>++</sup>	1,840	1.32	91.82	1.92
Magnesium Mg <sup>++</sup>	1,680	1.21	138.10	2.87
Potassium K <sup>+</sup>				
Chloride Cl <sup>-</sup>	79,800	57.25	2,250.36	47.1
<b>ANIONS</b>				
Bicarbonate HCO <sub>3</sub> <sup>-</sup>	117	.08	1.92	.04
Sulfate SO <sub>4</sub> <sup>-</sup>	6,400	4.59	133.12	2.76
Carbonate CO <sub>3</sub> <sup>-</sup>	0	0	0	0
<b>TOTAL</b>	<b>139,388</b>			

Total solids by evaporation 140,080 mg/l  
 NaCl resistivity equivalent (Dunlap) 137,697 mg/l  
 Resistivity 7.4 ohm-cmeters at 1.096  
 pH 7.4 Specific gravity \_\_\_\_\_ at \_\_\_\_\_  
 Ryznar stability index (2pHs-pH) \_\_\_\_\_ at \_\_\_\_\_

**OTHER IONS AND DISSOLVED SOLIDS**

CATIONS	mg/l	ANIONS	mg/l	OTHERS	mg
Lithium	13	Bromide	<1.0		
		Iodide	<1.0		

**REMARKS AND CONCLUSIONS:**

The absence of Ben-Tol shows and gaseous hydrocarbons in the water samples indicates that the formation water is not in contact with nearby petroleum that contains these constituents in sufficient amounts to dissolved detectable concentrations to associated water.

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CC: \_\_\_\_\_  
 \_\_\_\_\_  
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Analyst G.W. Schmidt Date 5-27-80

Watts Laboratory

STATE of Utah '0'

(MIDLAKE STATE UNIT  
# 1 )

Box Elder County, Utah

CNWSW Sec. 14 - T4N - R8W

API #: 43-003-30012-00

SPUD : 4-16-80

TD : REVISED 2500' (1700' THRU  
BASALT) 3-27-80

RIG. PHONE: 801-534-2008

LAT: 41° 04' 43.680" N  
LONG: 112° 43' 8.724" W

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MIDLAKE (ST. OF UT 'O')

TITE HOLE - FRONTIER

- 4/14 RIG RELEASED @ 1200 ON  
4/11/80 FROM 'BRIDGE' (ST.  
OF UT 'L'). SPOT 400 SACKS  
@ 120'.  
MOVED TO MIDLAKE (ST. OF  
UT 'O') LOCATION. WOW.  
TENSION ANCHOR LINES TODAY.
- 4/15 NO REPORT
- 4/16 TD 510'; CIRC TO CEMENT  
510'/24 hrs; 93'/hr while  $\phi$   
8.5, 45, p<sup>H</sup> 11, WOB 9-15k,  
RPM 120, PP 300.  
BIT #1 17 1/2 OSC  
DRIVE 20" CONDUCTOR TO 244'  
below KB  
CEMENT 13 3/8" CASING  
CASING SHOE @ 476'  
Samples:  
CLYSTN, lt qy, sft, calc, sl,  
SANDY. TR. qyp, bte, & fossil  
hash.

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

MIDLAKE (ST. OF UT. '0)

TITE HOLE - FRONTIER

4-17-80 : TD 510'  $\phi$  cement  
 8.5, 45, p<sup>+</sup> 11  
 BIT #2 x 3A 12 1/4  
 WOB 15K, rpm 35, pp 600  
 Cement w/ 600 sacks class G  
 TAG cement @ 380'  
 FLOAT SET @ 434'  
 shoe @ 476'  
 96' OF cement in hole.  
 Mudlogger on location  
 Schlumberger notified.  
 Wca: 40', calm.

4-18-80 : TD 1398 wo schlumber.  
 888'/24 hrs BIT #2 12 1/4 x 3A  
 Drilling RATE  
 510 - 1388' 1 min/ft  
 1388 - 1398 4-8 min/ft  
 9.0, 35, 15.6, p<sup>+</sup> 10, 5% solids  
 Cl<sup>-</sup> 6000 ppm, Ca<sup>++</sup> 40 ppm  
 NO SHOW  
 NO BGG  
 LITH: 510-1388' ss, lt gy-tan,  
 vf-fg, prly consol, abund bent,  
 bent clay, scat mica.  
 1388-1398' Basalt, Dk gry  
 ABUND olivine & frac qtz.

RECEIVED

MAR 14 2000

DIVISION OF  
 OIL, GAS AND MINING

# MIDLAKE (ST. OF UT. CO<sup>2</sup>)

## TITE HOLE - FRONTIER

4/19 TD 1398 GIH TO CLEAN  
& CONDITION  
RAN LOGS - DUAL IND,  
BHC SONIC, CNL-FDC, &  
DIPMETER.  
CASING CREW ON SITE.

4/20 TD 1398. Casing & cement  
ING.

4/21 TD 1398. TEST BOP'S  
WILL DRILL OUT BEFORE  
NOON 9<sup>5</sup>/<sub>8</sub>"  
SET ~~1378~~ @ 1377  
Wpa: WIND 15-20 MPH,  
1.5-2.0' waves

11:00 AM  
CORRECTION: ~~1378~~ SET @ 1377'  
9<sup>5</sup>/<sub>8</sub>"

Suppl / TD 1420' Circ. BOTS UP  
2:00 PM / DRILLED 32' LITH: BASALT  
RUST-GREEN, 10% dear to  
milky quartz, calcite filling  
NO SHOW. NO GAS. Some  
frac prod. - 4.2 MIN / ft  
GOING IN w/ DST tools -  
will open tool in AM.

### RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

## MIDLAKE (ST. OF UT. '0')

LITE HOLE - FRONTIER4/22 TO 1420' RUN DST #1  
(INT. 1378-1420')Ø 22' / 24 hrs BIT # 3  
8.5, 35, 18, 2% solids, 2500 ppm120 ppm Ca<sup>++</sup>.

WOB 10-15K, RPM 70, PP 1000

LITH:

Basalt, clr, rust - blk - dk grn.

Qtz phenocrysts, milky; calc

filled fract. NO SHOW, NOODOR, NO QTS.DST #1: Report 1255' SW  
from top of pipe. NO SHOW  
ON TOP. Mud: 2500 ppm Cl<sup>-</sup>More information on next of  
recovery shortly

DST #1 1378-1420 Packer @ 1363'

TIMES 15-60-60-20

1" blow to 10" blow in 9 min: 15/16 CHOKE

REC: 1255' SW: TOP, sli cloudy, SW

70,000 ppm; middle, SW, mud cut,

75,000 ppm; bottom, SW, clr-cldy,

80,000 ppm.

Sample Chamber: 2400 cc @ 80,000

ppm SW. NO SHOW; NO ODOR

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

MIDLAKE (ST. OF UT CO)

TITE-HOLE - FRONTIER

4/22 CONT DST #1 Pressures

IHP	645	MUD Wght:
IFP	184-623	9#
ISI	639	BHT:
FFP	623-639	92° F
FST	639	
FH	622	

4/23 TO 2450' Schlumb. on loc.  
 1030' / 24 hrs ; 34 sec / ft.  
 Ø OUT OF BASALT @ 1445'  
 TOTAL 57' BASALT  
 B.9, 44, 15.6, p#11, CI 5500, Ca#80  
 WOR 15-30K, rpm 90, pp 1100  
 DEV @ 2016 - 2°  
 BGG - 7U NO KICKS

NO SHOWS - NO DB

LITH: Claystn, lt qtz - tan  
 w/ MINOR SLTSTN E SS  
 sli BENT. TACKY. Varying  
 amounts ANG fg basalt  
 frags. Considerable Qtz,  
 ANG TO SUB FND MIXED w/  
 clays.

Prepare to RUN logs. BHGM en  
 ROUTE to SITE. DST samples to Tube  
 Wea: Rain, windy w 20.

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

MIDDLEBURY (ST. OF VT. '03)

TITE - HOLE - FRONTIER

4/24 TD 2450 Running Temp Log  
Attempt to run BHGM  
NOTIFY TO P & A.  
TEMP 51°. calm.

4/25 CUTTING 9<sup>5</sup>/<sub>8</sub>' casing  
@ cement. Prepare to  
WT 13<sup>7</sup>/<sub>8</sub> ; 20".  
Prepare to P & A. should  
be off site by 4/26 AM.

4/26 - Move to Sandbar  
ST. OF VT 'N'.

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

## 4/16 Procedure For Midlake

## Basalt TESTING:

- Drill TO TOP OF BASALT (prob. + 10-15') may be rubble zone ON TOP OF BASALT.
- Log well - set 9<sup>5/8</sup>
- Drill OUT OF CEMENT plus 30' of BASALT
- Set PACKER IN PIPE & TEST
- Drill REST OF BASALT

IF WATER, drill basalt and P & A.

IF NO SHOW, drill basalt and P & A.

IF SHOW, drill rest of basalt, analyze logs, pick o/w contract, decide to test and/or pump.

- No Core

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

4/20 Lewis Wells out @ Mid-lake.

4/21 Make sure that a temperature recording device is on DST and/or Logging run #2.

4/21 11:00AM - Lew Wells called  
to correct depth @ which  
9 5/8" pipe (12 3/8") was set:  
1377' instead of 1398'  
REVISE amount of Basalt  
to drill after cementing  
1420' instead of 1430';  
32' OF BASALT

RECEIVED

MAR 14 2000

DIVISION OF  
OIL, GAS AND MINING

# PRESSURE LOG

RECEIVED

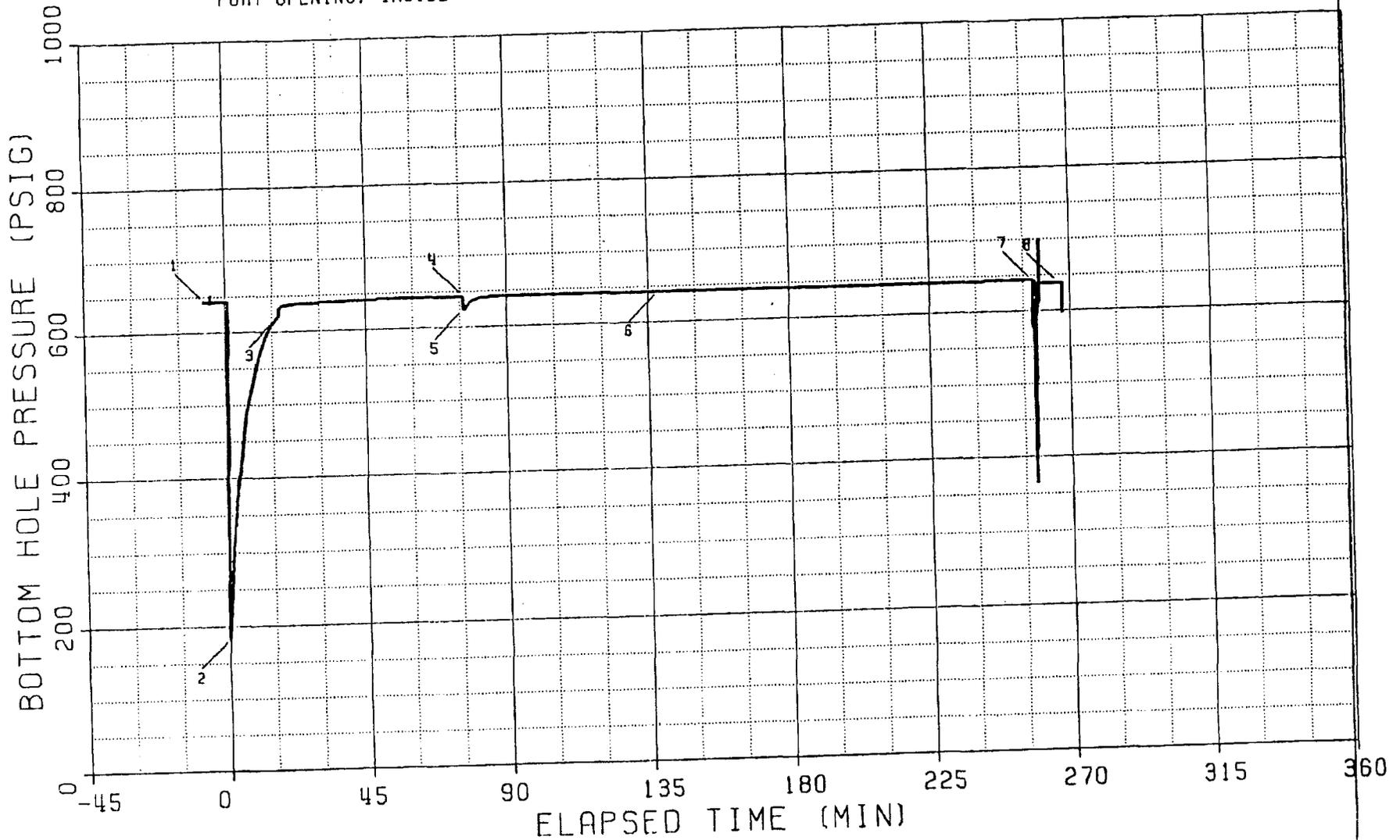
FIELD REPORT NO. 25354D

MAR 14 2000

INSTRUMENT:

DIVISION OF  
OIL, GAS AND MINING

NUMBER: J-1257  
CAPACITY: 1600 PSI  
DEPTH: 1375 FT  
PORT OPENING: INSIDE



018

GEOSCENCES

520 621 2672

16:05

02/29/00

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

**APPLICATION FOR PERMIT TO DRILL OR DEEPEN**

1A. Type of Work: DRILL  DEEPEN

B. Type of Well: OIL  GAS  OTHER: Scientific SINGLE ZONE  MULTIPLE ZONE

2. Name of Operator: DOSECC, Inc.

3. Address and Telephone Number: 423 Wakara Way, Suite 300, SLC, UT 84108 (801)585-9687

4. Location of Well (Footages)  
At Surface: 41° 05' 0.01" N 112° 41' 43.87" W  
At Proposed Producing Zone: 41.0835 112.6906  
-142009.14 494919.14  
397990.96

5. Lease Designation and Serial Number:  
6. If Indian, Allottee or Tribe Name:  
7. Unit Agreement Name:  
8. Farm or Lease Name:  
9. Well Number: GSL-4A  
10. Field and Pool, or Wildcat:  
11. Qtr/Qtr, Section, Township, Range, Meridian:  
12. County: Box Elder  
13. State: UTAH

14. Distance in miles and direction from nearest town or post office: 22.5 miles NNE of Delle

15. Distance to nearest property or lease line (feet): N/A  
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): 2044m  
19. Proposed Depth: 200 m (656')  
20. Rotary or cable tools: Hydraulic Piston Core

21. Elevations (show whether DF, RT, GR, etc.): Lake Level (approx. 4200')  
22. Approximate date work will start: August 15, 2000

**23. PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
6"	6"		30'	None
4.5"	4.5"		TD	None

DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

The general drilling plan is as follows:

1. Sample with HWT hydraulic piston core to a nominal depth of 10 m. The depth will be determined by the presence of a competent lithologic unit that will be capable of supporting a riser pipe.
2. Wash in riser pipe over HWT and tie back to the barge. Riser pipe has a diameter of 6 inches.
3. Sample using appropriate coring techniques to the designed depth.
4. Pull out HWT. Pull out riser.

24. Name & Signature: Dennis L. Nielson Title: Executive Director Date: 3/8/00

(This space for State use only)  
API Number Assigned: 43-003-30049

Approved by the  
Utah Division of  
Oil, Gas and Mining  
Date: 5/17/00  
By: [Signature]

**RECEIVED**  
MAR 14 2000  
DIVISION OF  
OIL, GAS AND MINING

**WORKSHEET  
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 03/14/2000

API NO. ASSIGNED: 43-003-30049
--------------------------------

WELL NAME: GSL-4A & 4B (CORE TEST)  
 OPERATOR: DOSECC INC ( N8275 )  
 CONTACT: DENNIS NIELSON

PHONE NUMBER: 801-585-9687

PROPOSED LOCATION:  
 SWNE 13 040N 080W  
 SURFACE: 1393 FNL 1643 FEL  
 BOTTOM: 1393 FNL 1643 FEL  
 BOX ELDER  
 WILDCAT ( 1 )

INSPECT LOCATN BY: / /		
Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: 3 \* For Records Purposes Only.  
 LEASE NUMBER: N/A  
 SURFACE OWNER: 3 - State

PROPOSED FORMATION: LKBDS

RECEIVED AND/OR REVIEWED:

Plat *x maps*

Bond: Fed[] Ind[] Sta[] Fee[]  
 (No. \_\_\_\_\_ )

Potash (Y/N)

Oil Shale (Y/N) \*190 - 5 (B)

Water Permit  
 (No. \_\_\_\_\_ )

RDCC Review (Y/N)  
 (Date: 05/11/2000 )

Fee Surf Agreement (Y/N)

LOCATION AND SITING:

\_\_\_\_ R649-2-3. Unit \_\_\_\_\_

\_\_\_\_ R649-3-2. General  
 Siting: \_\_\_\_\_

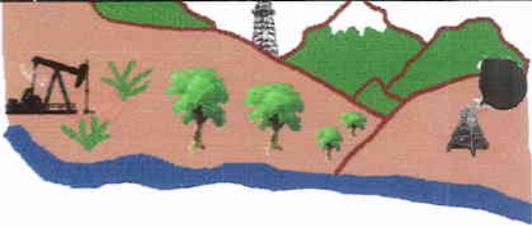
\_\_\_\_ R649-3-3. Exception

\_\_\_\_ Drilling Unit  
 Board Cause No: \_\_\_\_\_  
 Eff Date: \_\_\_\_\_  
 Siting: \_\_\_\_\_

\_\_\_\_ R649-3-11. Directional Drill

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

STIPULATIONS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Utah Oil Gas and Mining

Serving the Industry, Protecting the Environment

OPERATOR: DOSECC INC.. (N)

FIELD: WILDCAT TEST WELL (001)

SEC. 13 T 4 N, R 8 W

COUNTY: BOX ELDER TYPE: TEST WELL

## Box Elder County

11

12

7

14

13

16

20

24

19

GSL-4A & 4B

T4N R8W

PREPARED  
DATE: 13-Mar-2000

# ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)

6/06/00

**PRODUCER**

RED A. MORETON & CO.  
 P. O. Box 58139  
 Salt Lake City UT 84158-0139  
 (801) 531-1234

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

**COMPANIES AFFORDING COVERAGE**

- COMPANY  
**A** Gen Star Indemnity
- COMPANY  
**B**
- COMPANY  
**C**
- COMPANY  
**D**

**INSURED**

DOSECC, INC.  
 Attn: Dennis Nielson  
 423 Wakara Way #300  
 Salt Lake City, UT 84108

**COVERAGES**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOT WITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	<b>GENERAL LIABILITY</b>	1Y6358795	6/25/99	6/25/00	GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG \$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
	<b>\$7,500 Ded Per</b>				FIRE DAMAGE (Any one fire) \$ 50,000
	<b>Claim</b>				MED EXP (Any one person) \$
	<b>AUTOMOBILE LIABILITY</b>				COMBINED SINGLE LIMIT \$
	<input type="checkbox"/> ANY AUTO				BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<b>GARAGE LIABILITY</b>				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
	<b>EXCESS LIABILITY</b>				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>				WC STATUTORY LIMITS OTH-ER \$
	THE PROPRIETOR/PARTNERS/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				EL EACH ACCIDENT \$
					EL DISEASE-POLICY LIMIT \$
					EL DISEASE-EA EMPLOYEE \$
	<b>OTHER</b>				

**DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS**

**Verification of Insurance**

**CERTIFICATE HOLDER**

Department of Natural Resources  
 1594 West North Temple #3710  
 Salt Lake City, UT 84116

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

790035 JA

*Utah!*

**KARL KAPPE**

Division of Forestry, Fire and State Lands  
1594 West North Temple, Suite 3520  
Box 145703  
Salt Lake City, UT 84114-5703  
801-538-5555



March 15, 2000

API NUMBER	SECTION	TOWNSHIP	RANGE	WELL NAME	WELL STAT	FEET_N_S	DIR_N_S	FEET_E_W	DIR_E_W	UTM_EAST	UTM_NORTH	COMPANY
TS01711190	16.00	31.00	16.00	STRAT TEST #4	DRL	850.00	FNL	1,750.00	FEL	573,473.00	4,215,661.00	ALTEX OIL COMPANY
TS01721190	2.00	31.00	16.00	STRAT TEST #3	DRL	750.00	FSL	660.00	FEL	575,842.00	4,217,900.00	ALTEX OIL COMPANY
	31.00	14.00 <i>N</i>	6.00 <i>E</i>	BL-1A & BL-1B	DRL	1,252.00	FNL	490.00	FEL	474,706.33	4,640,170.40	DOSECC INC.
	12.00	4.00 <i>N</i>	5.00 <i>W</i>	GSL-1A & 1B	DRL	1,140.00	FSL	2,029.00	FEL	385,873.30	4,549,388.80	DOSECC INC.
	12.00	4.00 <i>N</i>	5.00 <i>W</i>	GSL-2A & 2B	DRL	1,467.00	FSL	1,483.00	FEL	386,042.90	4,549,489.45	DOSECC INC.
	24.00	2.00 <i>N</i>	4.00 <i>W</i>	GSL-3A & 3B	DRL	2,083.00	FSL	601.00	FEL	395,455.05	4,527,242.17	DOSECC INC.
	13.00	4.00 <i>N</i>	8.00 <i>W</i>	GSL-4A & 4B	DRL	1,393.00	FNL	1,643.00	FEL	357,990.86	4,549,191.40	DOSECC INC.

**From:** Michael Hebertson  
**To:** Brad Hill, Gil Hunt, Lisha Cordova  
**Date:** Wed, Mar 15, 2000 12:10 PM  
**Subject:** Core drilling in Bear Lake and Great Salt Lake

On March 14, 2000 I met with Karl Kappe of State Lands and Forestry to discuss the nature of the proposed coring in the Great Salt Lake, and Bear Lake. He asked if we would want to permit the holes, and I indicated that our main interest would be to see that the holes were assigned an API Number, and that some record of their existence was known. I also indicated that we might be interested in the barge construction to see how pollutants might be obtained but that was about all.

I have since also spoken with Dennis Nielson and found that they intend to take two cores at each location, and that the holes may be offset as much as 10-15 feet. however I do not see any need to permit each individual hole and thereby have 10 permits out there. since all the drilling will be done in lake bed sediments (LKBDS) which will no doubt slough in afterwards there will be little trace if any of the activity once it is completed. I told Dennis that our interest in the project was only for the information which people might come to us for once the information is made public.

Karl, has agreed that he will take the project to the GSL management board and file with the RDCC folks to notice the project and work through the approval process.

K. Michael Hebertson

Mail to:  
RDCC Coordinator  
116 State Capitol  
Salt Lake City, Utah 84114

1. ADMINISTERING STATE AGENCY  
OIL, GAS AND MINING  
1594 West North Temple, Suite 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801
2. STATE APPLICATION IDENTIFIER NUMBER:  
(assigned by State Clearinghouse)
3. APPROXIMATE DATE PROJECT WILL START:  
August - September, 2000

4. AREAWIDE CLEARING HOUSE(S) RECEIVING STATE ACTIONS:  
(to be sent out by agency in block 1)  
Wasatch Front Regional Council AOG  
Bear River AOG

5. TYPE OF ACTION:  Lease  Permit  License  Land Acquisition  
 Land Sale  Land Exchange  Other \_\_\_\_\_

6. TITLE OF PROPOSED ACTION:  
Application for Permit to Drill

7. DESCRIPTION:  
DOSECC, Inc. proposes to drill core holes in the Great Salt Lake known as **GSL-1A, GSL-1B, GSL-2A, GSL-2B, GSL-3A, GSL-3B, GSL-4A and GSL-4B** for scientific core samples. Staging for this drilling will be on Antelope Island State Park Marina. Data will be proprietary for six months, then public. This action is being presented to RDCC for consideration of resource issues affecting state interests. The Division of Oil, Gas and Mining is the primary administrative agency in this action and must issue approval before operations commence. Division of Forestry, Fire and State Lands will issue a right of entry for this operation.

8. LAND AFFECTED (site location map required) (indicate county)  
41° 5' 38" N 112° 21' 53" W, Section 12, Township 4 North, Range 5 West, Davis County, Utah  
41° 5' 44" N 112° 21' 41" W, Section 12, Township 4 North, Range 5 West, Davis County, Utah  
40° 53' 49" N 112° 14' 46" W, Section 24, Township 2 North, Range 4 West, Davis County, Utah  
41° 05' 0.01" N 112° 41' 43.87" W, Section 13, Township 4 North, Range 8 West, Box Elder County, Utah

9. HAS THE LOCAL GOVERNMENT(S) BEEN CONTACTED?  
No

10. POSSIBLE SIGNIFICANT IMPACTS LIKELY TO OCCUR:  
Minor impact is anticipated because of the shallow drilling depths and limited time needed for drilling. Proposed depth of hole is a maximum of 50m (164'), except Box Elder which will be 200m (656') and 700m (2,297').

11. NAME AND PHONE NUMBER OF DISTRICT REPRESENTATIVE FROM YOUR AGENCY NEAR PROJECT SITE, IF APPLICABLE: Mike Hebertson (DOGM) 538-5333

12. FOR FURTHER INFORMATION, CONTACT:  
Gil Hunt (DOGM) 538-5297  
Karl Kappe (Forestry, Fire & State Lands) 538-5495

13. SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL:

  
John R. Baza  
Associate Director  
PHONE: 538-5334

DATE: March 31, 2000

**From:** Pam Grubaugh-Littig  
**To:** Wright, Carolyn  
**Date:** Friday, March 31, 2000 4:39:33 PM  
**Subject:** Fwd: DOSECC (revised)

Carolyn, here is the application for RDCC review for drilling on the Great Salt Lake and at Bear Lake. We are requesting a 45 day comment period for this action. Dennis Nielson, DOSECC, will give a presentation at the April 11 to apprise RDCC of this requested action. DOGM is the lead agency. On the notice it states who can be called...but if you are unable to contact any of them, please call me. Thank you.

**CC:** Baza, John, Braxton, Lowell, Ed Storey, Hunt, G...

May 5, 2000

TO: Dave Morrow, Deputy Director

FROM: Garth Taylor, Park Manager, Antelope Island

SUBJECT: Drilling Projects

On April 10<sup>th</sup> John Sullivan and myself met with David Dinter, Marshall Pardey, and Dennis Nielson all associated with the DOSECC, Inc. project. They are planning several drilling sites in Great Salt Lake during August 2000. The meeting revolved around how Antelope Island could assist them in setting the drilling rig and transport of personnel to and from the sites during said time. A similar project was completed a couple of years ago and computerized data retrieved help detail faults in the lake. The previous project lasted two weeks. Impacts to park operation were minimal, utilizing one boat and one ranger.

As the meeting progressed park management concerns were: 1) dates of the project (specific dates in marina and on the lake); 2) times (times during the day for transport); and 3) search and rescue (for medical or inclement weather). They indicated it would take three days to fabricate barge in marina. Start on a Monday and launch before weekend. Once out on the lake the barge will be anchored in said sites for drilling. Personnel transport would entail morning and evening times, probably on 12 hour shifts. S & R for emergencies could be monitored by cell and Davis dispatch.

As this project started to come together last year, Dave Dinter made contact with the park for an idea on costs for park boat utilization. At that time I indicated state park fee schedule of \$400 per day. Again, before a meeting set in Minneapolis Dave contacted me in late March to reassure our previous \$400 price. Until the actual meeting mentioned above I was unclear of the size and scope of the project. This will be a major commitment for Antelope Island to assist this project. With the park being understaffed and time of year I mentioned DWR as a possible partner. The Great Salt Lake Ecosystem project, managed by Clay Perschon, could possibly assist with transport. It is my understanding they have contacted Clay.

I don't foresee an impact to our marina because of limited space. There is ample room

for them to setup a crane and place the barge in the marina north of the current boat ramp. Towing and setting the large barge could be another story. Depending on displacement, weight and size the park's 27' Boston Whaler could have it's hands full. Another possible alterative could be GSL's 30' boat. Transport of personnel is still the great unknown. I asked for a detailed outline of times and dates for the project. The project duration is scheduled to last the entire month of August. I have not yet received this information. I did not commit to anything because there were so many unanswered details. After I receive their proposed schedule we would again meet and further negociate details.

I have no specific comments on drilling in GSL that would be a DFFSL issue.

CC: Jim Harland, Region Manger, Northwest Region

13. UT000324-030

Trust Lands Administration/Kane, Iron  
Counties: Cedar City Industrial Exchange  
(Sec. 16, T39S, R9W). Comments due  
4/17/00.

14. UT000403-010

*4-5-2000 Carolyn Wright - RDCC  
Notified of correction.  
5-15-2000 Correction's brought  
up in RDCC meeting - no official  
change made to agenda. JC*

Division of Oil, Gas and Mining/Davis & Box Elder  
County: Application for Permit to Drill -  
proposal to drill core holes in the Great Salt  
Lake (Sec. 12, T4N, R5W; Sec. 13, T4 N,  
R8W). Comments due 5/11/00. & Sec. 24, 24, 4W - Davis

15. UT000403-020

Division of Oil, Gas and Mining/Rich  
County: Application for Permit to Drill -  
proposal to drill core holes in Bear Lake  
(Sec. 31, T14N, R6E). Comments due  
5/11/00.

B. Federal

16. UT000324-050

USDA/Forest Service/DOI/BLM/Sanpete  
County: Manti La Sal National Forest/Price  
Field Office - Flat Canyon Coal Lease Track  
UTU-77114 Notice of Intent to Prepare an  
Environmental Impact Statement. Federal  
Register Notice dated 3/17/00, page 14523.  
Comments due 4/11/00.

17. UT000327-010

DOI/BLM/Uintah County: Vernal Field  
Office - Proposed Power Site Revocation  
(UTU-76946). Comments due 4/20/00.

18. UT000330-020

USDA/Forest Service - Uintah National  
Forest: Contamination of North Fork of  
American Fork River of heavy metals being  
release at mine and mill sites. Comments  
due 4/23/00.

19. UT000330-030

USDA/Forest Service - Fishlake National  
Forest: Integrated pest management -  
noxious weeds - scoping. Comments due  
4/21/00.

**From:** Garth Taylor  
**To:** Dave MORROW, Jamie Dalton, Wes Johnson  
**Date:** 5/8/00 12:12PM  
**Subject:** Re: Drilling Projects at Bear Lake/Antelope Island

This info is in response from your previous request, my comments on the drilling project. Please see attached! And call if you need further information.

Wes, I guess you are coordinating the division response, once Eldon sends his in.....? Talk with Dave for appropriate persons to receive.

GT

>>> Dave MORROW 04/27 3:35 PM >>>  
Dear Eldon, Garth,

Previously I sent you both a memo on the drilling projects in your respective marinas . I know Eldon was not able to attend the information meetings, and voice his concerns. I'm not sure if Garth was able to voice any concerns at the RDCC meeting. The 45-day comment period will end May 26.

I would like you to draft your comments and send your draft to Kathy so we can develop a coordinated division response to the Division of Oil, Gas and Mining. **Please have your comments to Kathy no later than May 19, 2000.** Please be as specific as you possibly can with alternative dates, drilling sites or other concerns you may have. If you have any questions, please call.  
Thanks, Dave

**CC:** Clay Perschon, Karl Kappe



# State of Utah

GOVERNOR'S OFFICE OF PLANNING AND BUDGET  
Resource Development Coordinating Committee



Michael O. Leavitt  
Governor

Brad T. Barber  
State Planning Coordinator

James L. Dykmann  
Committee Chairman

John A. Harja  
Executive Director

116 State Capitol Building  
Salt Lake City, Utah 84114  
(801) 538-1027  
Fax: (801) 538-1547

May 19, 2000

RECEIVED

MAY 23 2000

DIVISION OF  
OIL, GAS AND MINING

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

SUBJECT: Application for Permit to Drill - proposal to drill core holes in the Great Salt Lake  
State Identification Number: UT000403-010

Dear Mr. Hunt:

The Resource Development Coordinating Committee (RDCC), representing the State of Utah, has reviewed this proposal. The Division of Wildlife Resources comments:

The Great Salt Lake Management Plan and Rule R657-15 prohibit travel by boat within one mile of Hat Island. This restriction protects colonial nesting waterbirds from being disturbed there. The applicant should be advised of this restriction. There are other islands in the lake that are used for nesting by birds. These areas should also be avoided by at least one mile, even though the rule doesn't require it. Based upon the drilling locations provided, such islands might be encountered in west Carrington Bay. There are extensive shallows in this portion of the lake, and there is a possibility of running aground within one mile or more of islands.

After the drilling is completed, the opening of the drill hole should be tamped full of mud or other lake bottom materials to prevent contaminants that may be in the sediments from mixing with lake water.

The UDWR is conducting research with live birds held in pens at the Antelope Island Marina. If boats are staging from this marina, UDWR would like to meet with the applicant to ensure that our experiments aren't compromised.

When boats are traveling around the lake, they should avoid driving through large flocks of birds on the water. It is unlawful to rally or harass wildlife. Gulls, eared grebes, and phalaropes are the birds most likely to be encountered.

Provisions should be made to haul litter back to shore, as well as to ensure that there is no disposal of hardware in the lake. Provisions for fuel spills are also appropriate.

Brine shrimp harvesting season legally opens on 1 October 2000. Although UDWR has the option of delaying the opening, the drilling project should be completed prior to the opening date.

Gil Hunt

Proposal to drill core holes in the Great Salt Lake

2

There is a possibility that UDWR could gain some understanding of brine shrimp and lake algae by being able to examine fresh sediments as they are removed from the lake. We would like to discuss this possibility with the applicant.

If you have any questions please call W. Clay Perschon, Great Salt Lake Project Leader, at our Salt Lake City Office (801-538-4809).

The Committee appreciates the opportunity to review this proposal. Please direct any other written questions regarding this correspondence to the Utah State Clearinghouse at the above address or call Carolyn Wright at (801) 538-1535 or John Harja at (801) 538-1559.

Sincerely,

A handwritten signature in black ink, appearing to read "John A. Barber", is written over the typed name "Brad T. Barber".

Brad T. Barber  
State Planning Coordinator

BTB/ar



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
Governor

Kathleen Clarke  
Executive Director

Lowell P. Braxton  
Division Director

1594 West North Temple, Suite 1210  
PO Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

June 7, 2000

DOSECC, Inc.  
423 Wakara Way, Suite 300  
Salt Lake City, UT 84108

Re: GSL Core Hole #4A and 4B, 1393' FNL, 1643' FEL, SW NE Section 13, T. 4 North,  
R. 8 West, Box Elder County, Utah

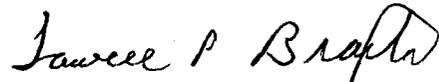
Gentlemen:

Pursuant to the authorities of the Great Salt Lake Board of Directors, the Utah Division of Wildlife Resources, the Utah Division of Oil, Gas and Mining, the Utah Division of Parks and Recreation and the Utah Division of Forestry, Fire and State Lands, and subject to the enclosed Conditions of Approval, approval to drill the referenced test hole for geotechnical soil core sampling is granted.

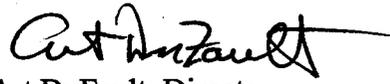
This approval will expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this test hole is 43-003-30049.

Sincerely,

  
John F. Kimball, Jr., Director  
Utah Division of Wildlife Resources

  
Lowell P. Braxton, Director  
Utah Division of Oil, Gas & Mining

  
Courtland C. Nelson, Director  
Utah Division of Parks & Recreation

  
Art DuFault, Director,  
Utah Division of Forestry, Fire & State Lands

er  
Enclosures

cc: Box Elder County Assessor

**Operator:** DOSECC, Inc.

**Hole Name & Number:** GSL #4A & 4B

**API Number:** 43-003-30049

**Location:** SW NE      Sec. 13      T. 4 North      R. 8 West

### Conditions of Approval

1. The operator is generally required to comply 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. 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
  - Robert Krueger at (801) 538-5274 (plugging)
  - Carol Daniels at (801) 538-5284 (spud)
3. All required reports, forms and submittals will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to the 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. The operator shall comply with the State of Utah Antiquities Act which forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during operations, the operator is required to immediately suspend all operations and inform the Division of Forestry, Fire and State Lands and the Division of State History of the discovery of such remains.
  5. The operator is required to comply with the requirements of Great Salt Lake Management Plan and Rule R657-15 prohibiting boat travel within one mile of Hat Island and other islands such as those in west Carrington Bay that are used for nesting by birds.
    - Contact W. Clay Perschon, Great Salt Lake Project Leader (801) 538-4809

Page two

DOSECC, Inc. Conditions of Approval 4

June 7, 2000

6. The operator is required to meet with Utah Division of Wildlife Resources (UDWR) regarding travel near Antelope Island so the experiments being conducted with live birds held in pens will not be compromised. The operator shall also meet with UDWR regarding examination of some of the fresh sediments removed from the lake for brine shrimp and lake algae studies.
  - Contact W. Clay Perschon, Great Salt Lake Project Leader (801) 538-4809
7. The operator will ensure boats will avoid driving through large flocks of birds on the water. It is unlawful to rally or harass wildlife.
8. The operator will make provisions to haul litter back to shore and ensure there is no disposal of hardware or fuel spills in the lake.
9. Upon completion of drilling, the operator shall plug the hole(s) by mixing a heavy bentonite slurry and placing it in the hole(s) to fill the hole(s) from bottom to top which will prevent contaminants from mixing with lake water.
10. The drilling project should be completed prior to October 1, 2000, which begins the brine shrimp harvesting season.
11. The operator will contact the Antelope Island State Park Manager regarding a special use permit for use of the marina. Any other special requirements of drilling operations and use of state park facilities will be coordinated through the respective park manager.
12. The operator will comply with standard navigational and boating safety requirements as specified by the respective state park manager.
13. The operator shall maintain general liability insurance in an aggregate amount of \$2,000,000 for the duration of drilling operations as evidenced by the certificate of Liability dated June 6, 2000, delivered to the Department of Natural Resources. Additionally, such liability insurance shall be renewed as necessary in order to maintain the validity of this approval.

Division of Oil, Gas and Mining  
**PHONE CONVERSATION DOCUMENTATION FORM**

Route original/copy to:

Well File GSL-4A & 4B  
(Loc.) Sec 13 Twp 4N Rng .8W  
(API No.) 43-003-30049

Suspense  
(Return Date) \_\_\_\_\_  
(To-Initials) \_\_\_\_\_  
 Other  
\_\_\_\_\_  
\_\_\_\_\_

1. Date ~~& Phone Call~~: 8-30-2000 Time: 11:00

2. DOGM Employee (name) L. CORDOVA ( Initiated Call)  
Talked to:  
Name GIL HUNT/ADMIN. ( Initiated Call) - Phone No. (\_\_\_\_\_) \_\_\_\_\_  
of (Company/Organization) DOGM

3. Topic of Conversation: \*LOCATION CHANGE FROM BOX ELDER COUNTY TO ~~DAVIS~~ WEBER  
COUNTY.

4. Highlights of Conversation: \_\_\_\_\_  
LA ORIGINAL LOCATION AND RE-PERMIT NEW LOCATION. (SEE ~~43-011-30003~~)

43-057-30002