



FAGIN EXPLORATION COMPANY

SUITE 4380 ■ CITY CENTER 4 ■ 1801 CALIFORNIA ■ DENVER, CO 80202 ■ (303) 293-2703

February 27, 1984

Manager, Branch Fluid Minerals
Bureau Land Management
Moab, Utah 84532

RECEIVED
MAR 14 1984

Re: Application to drill Federal 21-4
NW NW Sec 21 T30S R Z4 E

**DIVISION OF
OIL, GAS & MINING**

Gentlemen:

Additional information required for permitting the subject well is submitted below.

1. Surface formation: Navajo
2. Geologic markers:

Chinle	660
Shinarump	1130
Moenkopi	1205
Hermosa	3240
Ismay	5065
Paradox Salt	5380
Pinkerton Trail	7880
Molas	8030
Mississippian	8050
Ouray	8500
Elbert	8580
3. Oil bearing formation is expected at 8050 feet
4. Casing Program: Surface: 8 5/8 32 lb/ft 0-1000'
New-Grade K
Production: 5 1/2" 15.5 & 17 lb/f 0-8600'
New-K & L

The surface casing will be pressure tested to the maximum capacity of the rig pump which is 2000 psi.

5. Blowout Equipment:
3000 psi double ram preventer and annular preventer will be used. Before drilling surface casing cement they will be pressure tested to 2000 psi and checked daily thereafter.
6. Circulating Medium: 0-5000' Fresh water mud
5000'-8600' Brine system with water loss control
The mud weight starting at 5000 feet will not be less than 9.1 to 9.4 lbs/gal. Starting at 5000 feet mud viscosity will be maintained at 32-35 secs and water loss will not be allowed to exceed 10 c.c.

7. Auxiliary Equipment:
 1. Kelly Cock
 2. Drill pipe float at bit
 3. Full opening floor stabbing valve
8. Evaluation Program:

It is anticipated that the Mississippian will be cored and drill stem tested if warranted. Logs contemplated are a DILL, GR, BHC-Sonic, and FDC-CNL. Logging intervals will be determined after reaching total depth.
9. Potential Hazards:

No abnormal pressures or temperatures should be encountered. It is possible that hydrogen sulphide will be present in the Mississippian. Therefore all drilling and auxiliary personnel will be instructed on protective action. In addition there will be H2S detection equipment installed and air masks and resuscitators available. A supplemental contingency plan is to follow.
10. Starting Date:

Anticipated starting date is April, 1, 1984. Operations are expected to continue for approximately 50 days.

Sincerely:

Joe L. Fusselman
Joe L. Fusselman
Agent

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER
 SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 Fagin Exploration Company

3. ADDRESS OF OPERATOR
 1801 California Street #4380 - Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
 At surface
 685' FWL 1051' FNL Sec. 21 T30S R24E
 At proposed prod. zone
 Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE
 Moab, Utah 20 miles north of location

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)
 685'

16. NO. OF ACRES IN LEASE
 1760

17. NO. OF ACRES ASSIGNED TO THIS WELL
 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
 N/A

19. PROPOSED DEPTH
 8600'

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 5929' Grd

22. APPROX. DATE WORK WILL START*
 April 1, 1984

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/2	8 5/8"	32 lb	1000'	Cement to surface
7 7/8	5 1/2"	15.5 and 17 lb	8600'	350 sx

1. Drill to TD of 8600' (Elbert)✓
2. Run 5 1/2" production casing if any commercial production encountered.
3. If dry hole P & A as instructed by BLM.
4. Well will be drilled with a fresh water base chemically controlled to ✓500 feet above the Paradox Salt at which time it will be converted to a brine base system. Mud weight will be designed for well control.
5. Well control equipment will include 3000 psi working pressure double ram and annular preventor hydraulically actuated. Equipment and surface casing will be pressure tested before drilling surface casing cement and checked daily.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

DATE: 4/11/84
BY: [Signature]

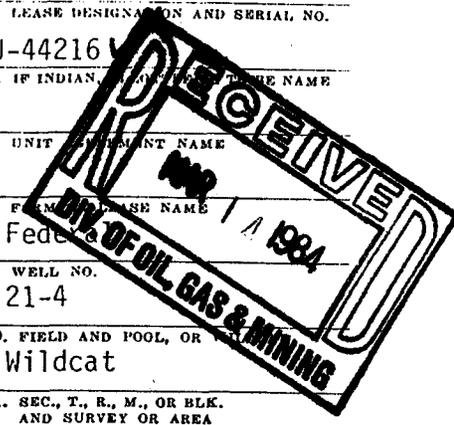
IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths and blowout preventer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

24. SIGNED: [Signature] David K. Fagin TITLE: President DATE: 3/29/84
 (This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

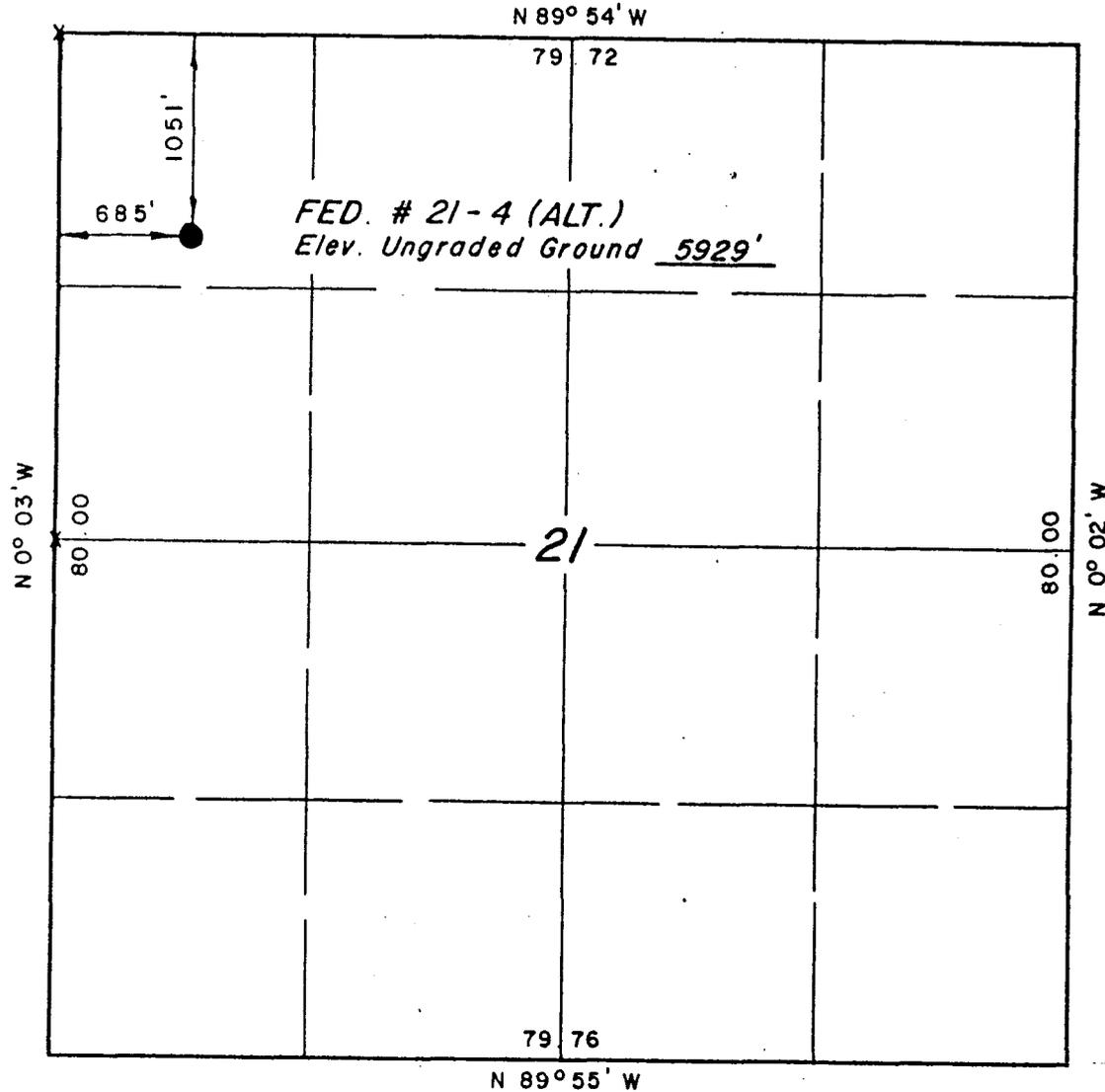


NW 1/4 NW 1/4
Elbert

T 30 S, R 24 E, S.L.B. & M.

PROJECT
FAGIN EXPLORATION

Well location, *FED. # 21-4 (ALT.)*,
located as shown in the NW 1/4
NW 1/4 Section 21, T 30 S, R 24 E,
S.L.B. & M San Juan County, Utah.



X = Section Corners Located



CERTIFICATE

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

Gene Stans. T

REGISTERED LAND SURVEYOR
REGISTRATION NO 3154
STATE OF UTAH

REVISED 3/6/84

UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q - 85 SOUTH - 200 EAST
VERNAL, UTAH - 84078

SCALE 1" = 1000'	DATE 3-1-84
PARTY G.S. D.K. B.F.W.	REFERENCES GLO Plat
WEATHER Fair	FILE FAGIN EXPLORATION

FAGIN EXPLORATION
Co.
17

TRACT #37
16

TRACT #8

CASE
Closed
Expired

Lisbon Unit

U 44216
OGLse

43-66-0064
O/C

U09179
OGLse

#22
U010984
OGLse

FAGIN EXPL.
Co.

Fagin
Exp. Co.
TRACT #34

Location
Fed 21-4
~~Sandstone~~
Fagin Exp Co
TRACT #5
21

TRACT #10
SLO70449
OGLse

FAGIN EXPL.
Co.

U25022 ApIn

U015595

U45448
OGLse

U5292

U44216
OGLse

U43521 25'

U25022
ApIn

38
U017796
WD Pooled

Sim ApIn
U 47873
OGLse

American Hunter
Expln. Co.

TRACT #24

U48365
OGLse

U089106 25'

TRACT #25

U48878
OGLse

TRACT #13
U14032A
OGLse

TRACT #14 C
U14032
OGLse

TRACT #31

TRACT #30
U130710
OGLse

TRACT #15 D
U14032
OGLse

U24624
OGLse

TRACT #16 G
U14032
OGLse

TRACT #11
U130967
OGLse

TRACT #12
U14032
OGLse

TRACT #29

U27516
OGLse

TRACT #39

32

43-66-0064
O/C

TRACT #17
U24007
OGLse

TRACT #32
U30126
OGLse

#26
U48876
OGLse

U4
OGL

H₂S Contingency Plan
Fagin Exploration Company - Federal #21-4
Southwest Lisbon Prospect
San Juan County, Utah

I. EMERGENCY TELEPHONE NUMBERS:

1. Ambulance:

- a) Moab - 801-259-7403
- b) Monticello - 801-587-2245 (closest hospital)

2. Hospital:

- a) Moab: Allen Memorial Hospital - 801-259-7191
- b) Monticello: San Juan County Hospital - 801-587-2245

3. Doctors:

- a) Moab: Dr. Paul Mayberry, M.D.- Office 801-259-7121
Residence 801-259-5351
- b) Monticello: Dr. Carroll Goon, Gen. Surg. - Office 801-587-2282
Dr. Jerrold Smith, Gen. Surg. & G.P. - Office 801-587-2522

4. Helicopter Services:

- a) Arrowhead Helicopters, Inc. - Moab - 801-259-5956

5. Veterinarian:

- a) Moab: Spanish Valley Veterinary Clinic - 801-259-5216
Emergency - 801-259-5773

6. Utah State Highway Patrol:

- a) Moab, Utah - 801-259-5441
- b) Monticello, Utah - 801-587-2662

7. County Sheriff:

- a) Moab, Utah - 801-259-8115 (Grand County)
- b) Monticello, Utah - 801-587-2237 (San Juan County)

8. Utah State National Guard:

- a) Provo, Utah - 801-373-0160

9. Civil Defense Agency:

a) Spanish Fork, Utah - 801-798-3834

10. Fire Department:

a) Moab, Utah - 801-259-5551

b) Monticello, Utah - 801-587-2500

c) State Fire Warden, Monticello (John Baker) - 801-587-2705

II. GOVERNMENT AGENCIES - TELEPHONE NUMBERS:

1. Bureau of Land Management:

a) Salt Lake City, Utah - 801-524-4590

b) Moab, Utah - 801-259-6111

c) Monticello, Utah - 801-587-2201

2. Environmental Protection Agency:

a) Denver, CO - 24 hour Emergency Spill - 303-837-3880

- Air and Waste Management Division - 303-837-2407

3. Utah State, Dept. of Environmental Quality:

a) Salt Lake City, Utah - 801-523-6121

4. Utah State Dept. of Wildlife Resources:

a) Price, Utah - 801-637-3310

b) Guy Wallace, Monticello, Utah - 801-587-2643

5. Utah State, Div. of Oil, Gas, & Mining:

a) Salt Lake City, Utah - 801-533-5771

III. COMPANY & CONTRACTOR - TELEPHONE NUMBERS:

1. Fagin Exploration Company Personnel

a) David K. Fagin, President - Office 303-293-2703

- Residence 303-694-9651

b) Charles F. Johnson, Exploration Manager - Residence 303-771-1358

c) Joe Fusselman, Consultant - Residence 303-781-8381

d) Wayne Bauders, Geologist - Residence 303-989-5466

e) Drilling supervision - Gordon Engineering - Grand Junction

John Gordon - Office 303-245-1958

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2. Drilling Contractor:
 - a) Drilling Superintendent - Not Available
 - b) Toolpusher - Not Available
 - c) Toolpusher - Not Available
 - d) Rig Telephone - Not Available

 3. Mud and Chemicals Company:
 - a) District Manager - Not Available
 - b) Mud Engineer - Not Available
 - c) Mud Engineer - Not Available
 - d) Warehouse - Not Available

 4. JBCO Oilfield Construction:
 - a) Moab, Utah - 801-259-5316
Earth-moving equipment, dozers, backhoes, trucks, floats, etc.

 5. Crowley Construction:
 - a) Moab, Utah - 801-587-2377 or 801-587-2738
Earth-moving equipment, dozers, backhoes, trucks, floats, etc.

 6. La Sal Trucking, Inc.:
 - a) Moab, Utah - 801-259-7147
Liquid transport, semi - and bobtail rigs

 7. Halliburton Services:
 - a) Farmington, New Mexico - 505-325-3575
 - b) Cortez, Colorado - 303-565-6521
High pressure pumping equipment and cementing services.

 8. Dowell Division:
 - a) Grand Junction, CO - 303-241-0550
High pressure pumping equipment and cementing services

 9. Safety International, Inc.:
 - a) Cortez, CO 303-565-7455
 - b) Denver, CO 303-973-8700
H₂S safety specialists with all necessary safety equipment available on rental or lease basis, including monitors, breathing equipment, signs,

flags, first-aid equipment, personnel training, on-site supervision, etc.

10. Moore Engineering and Sales:

a) Englewood, CO - 303-789-1009

Oil spill clean-up and containment equipment

11. Dalgarno:

a) Moab, Utah - 801-259-5973

Heavy hauling of all types of material, both liquid and dry bulk material.
Transportation of any type of equipment

12. W.R. Hall Transportation:

a) Grand Junction, CO - 303-243-3210

Heavy hauling of all types of material. Transportation of any type of equipment.

A 100ppm concentration is not dangerous and can be worked in safely for a limited amount of time. A 500ppm concentration is dangerous and can be fatal. A 500ppm concentration is unsafe and fresh-air breathing equipment must be used in this environment. Under potential flow and wind conditions of a serious blowout, it is anticipated that concentrations of greater than 500ppm would not occur outside of a radius of $\frac{1}{4}$ mile from the wellsite and concentrations of greater than 100ppm would not occur outside of a radius of $\frac{1}{2}$ mile from the wellsite.

There are no permanent residents within a $\frac{1}{2}$ mile radius of the proposed location. In the event of an emergency, the access road will be barricaded.

There will be signs posted at the road entrance and along the access road to the wellsite warning of potential H₂S danger. If an emergency situation occurs, the county sheriff will be asked to barricade the road at a distance of approximately $\frac{1}{2}$ mile from the location. All public access to the area would then be eliminated during the time of the emergency. (See attached map for location of barricades)

In the event that it is necessary to abandon the location entirely, escape from the location can be accomplished along the access road or by means of an exit path. The exit path will go towards the prevailing wind and will be well marked with flags. All personnel will be familiar with the path and will have a working knowledge of the terrain in the area. (See attached location layout and map)

Two briefing areas will be set up and maintained on location. (See attached location layout) The briefing areas will be equipped with eight fresh-air units, first-aid equipment, lifelines, and instructions for emergencies. Flags will be located at each briefing area and at the end of the catwalk.

H₂S detectors will be placed at the drilling nipple, the shale shaker, in the cellar, and on the rig floor. The detectors will be connected to audio and visual alarms on the rig floor and in the trailer house. The detectors will be set at a 100ppm concentration alarm level.

Operations will begin in April, 1984 and should be completed by the end of June. Thus, changing weather conditions should not present a problem or cause a change in the contingency plans.

Access to the location will be restricted and all personnel of the drilling contractor and Fagin Exploration Company representatives will be adequately trained in H₂S safety, the use of emergency equipment, and first-aid, as well as, emergency procedures.

All drilling equipment and wellhead equipment will be designed to minimize H₂S damage and will meet standards for H₂S service.

Ironite sponge and ammonia will be maintained on location and will be added to the mud system if H₂S is detected. In addition, zinc carbonate will be maintained in the mud system at approximately five lbs. per bbl. Zinc carbonate will reduce H₂S at a ratio of one lb. zinc carbonate to 500ppm H₂S. All produced fluid from the well on drill stem tests or swabbing will be handled through a low pressure separator. Gas will then be diverted to a flare pit and burned. During any such operations the gas will be ignited by a continuous pilot light.

In the event of an uncontrolled blowout, the county sheriff of San Juan County, Utah and/or a qualified Fagin Exploration Company representative will have the authority to ignite the well so as to eliminate H₂S gas in the immediate area of the wellsite.

In the event that H₂S is detected by one of the electronic monitors, in a concentration greater than 100ppm, visual and audio alarms will be activated on the rig floor and in the toolpusher trailer houses. The driller will put on a 30 minute self-contained breathing apparatus. He will then shut the well in, if possible, and evacuate to the upwind briefing area. All other personnel will evacuate immediately to the upwind briefing area.

The toolpusher and/or company supervisor will account for all personnel and appraise the situation. If a person is unaccounted for, two men will put on fresh-air breathing equipment and with safety ropes attached, will make a search of the location for the missing individual, using the buddy system and staying within eyesight of each other at all times.

If it is determined that an emergency situation exists -- All fresh-air breathing equipment will be checked for proper functioning prior to entering the hazardous area. Only personnel trained in the use of fresh-air breathing equipment will be allowed to enter the area. No one will enter the area alone or without a lifeline attached and no one will enter the area without fresh-air breathing equipment in use.

The driller and the motor man will go to the rig control station. The derrick man will go to the remote BOP control station accompanied by a floor man. One floor man will go to the access road, put up flags and signs and stop unauthorized personnel from entering the location. The mud loggers, geologists, and other personnel not directly involved in controlling the situation will remain at the briefing area.

The Fagin Exploration Company supervisor and the toolpusher will direct the work toward bringing the well under control.

The Denver office of Fagin Exploration Company will be notified by the Supervisor of the problem as soon as possible. The Denver office will then notify authorities, government agencies, etc., as deemed necessary by the men on location. Union Oil Company plant personnel one mile east of the wellsite will also be notified by the drilling supervisor as soon as possible.

Equipment to be onsite during any potentially hazardous drilling periods is listed as follows:

A. Air Pack:

- 1 - 30 minute escape pack on the derrick
- 4 - 30 minute escape packs in dog house
- 1 - 30 minute pack in each trailer
- 1 - 30 minute pack in mud shed
- 1 - 30 minute pack at bottom of stairs to floor

Total: 10 - 30 minute packs
6 - Airline work units

B. Cascade System:

- 10 - 380 cu. ft. cylinder air supply system
- 1 - 5 outlet manifold on floor
- 1 - 5 outlet manifold on mud tanks
- 6 - air line masks
- 1000' - low pressure air line hose with quick connects

C. Detection Equipment

- 1 - Tac Monitor with a sensor at bellnipple, one on floor and one at shaker. A siren and light will be positioned in derrick so to be seen from all points on location.
- 2 - Hand sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

D. This equipment is available for persons normally on location. This includes the five man crew, toolpusher, drilling supervisor, and mud loggers. Maximum number of people to be on location during normal drilling operations should range from ten to twelve.

- 1. Two areas on location will be designated as BRIEFING AREAS. The one that is upwind from the wellbore will be designated as the "SAFE BRIEFING AREA". The SAFE BRIEFING AREA will be recognized by the positioning of the SAFETY trailer in this area.
- 2. The "SAFETY" trailer provided by SAFETY INTERNATIONAL INC. will contain the equipment listed above and will have a wind sock or streamer to indicate wind direction.
- 3. A second wind sock or streamer will be located at the end of catwalk and visible from the rig floor.
- 4. A third wind sock at the entrance to location.

-
5. A condition warning sign will be displayed at entrance of location regarding current operation condition.
 6. Three road cones will be available to block entrance to location should an emergency occur.

CREW TRAINING AND PROTECTION:

1. H₂S Training and Drills:

All personnel shall be instructed and certified 1 week prior to penetrating an expected hydrogen sulfide zone. Training will include: the correct use of the air masks, wind socks, safety ropes, and oxygen resuscitator, instruction on artificial respiration and on the emergency procedure.

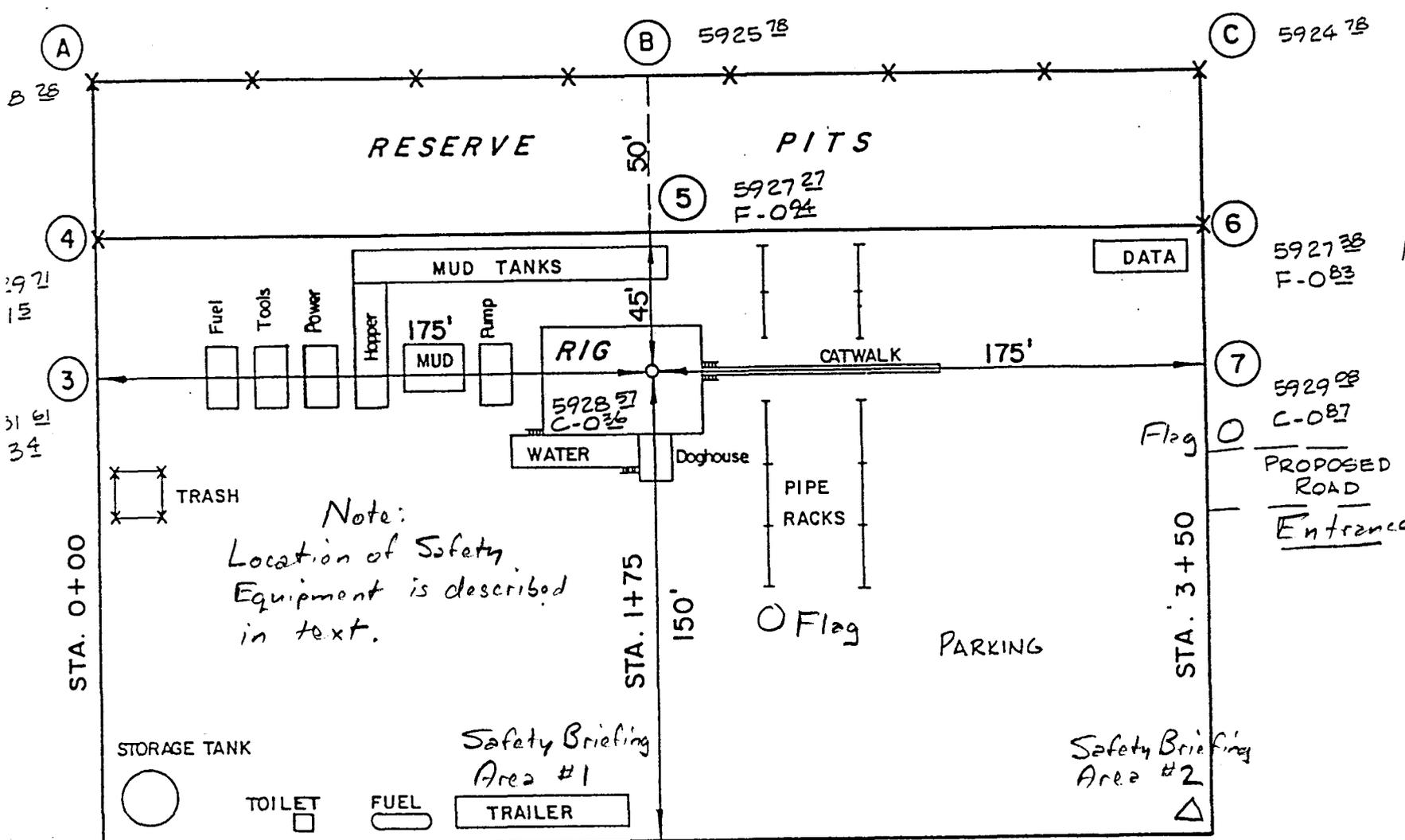
H₂S drills will be held periodically. The company representative, along with the toolpusher, shall plan and activate drills. They will activate, without warning, the H₂S alarm and participate in the drill. The crew will proceed to put on a mask and secure it as per posted drilling procedure.

2. A Safety Supervisor will be on site when drilling or testing the H₂S bearing zones.

SAFETY EQUIPMENT TO BE PROVIDED BY SAFETY INTERNATIONAL INC.

- 1 Complete H₂S Safety Trailer
- 10 Bottle Cascade
- 10 30-minute Scott Rescue Units
- 6 5-minute work/escape pack-plug-in units
- 5 5-minute escape capsules
- 1000' Airline Hose
- 1 Filler hose for Work Units
- 3 Windsocks
- 1 Well Condition Sign with Flags (4x4)
- 1 H₂S Caution Sign (4x4)
- 2 Briefing Area Signs (4x4)
- 1 Gastec hand detector with tubes
- 1 Flare gun with shells
- 1 Stretcher
- 1 Resuscitator
- 1 Set Air Splints

- 1 Fire blanket
- 3 Traffic Cones
- 1 Life-line with harness
- 1 Three Channel Monitor with light set at 10 ppm and siren set at 20 ppm.
- 1 2 Bottle Cascade System at #2 Briefing Area
- 1 First Aid Kit

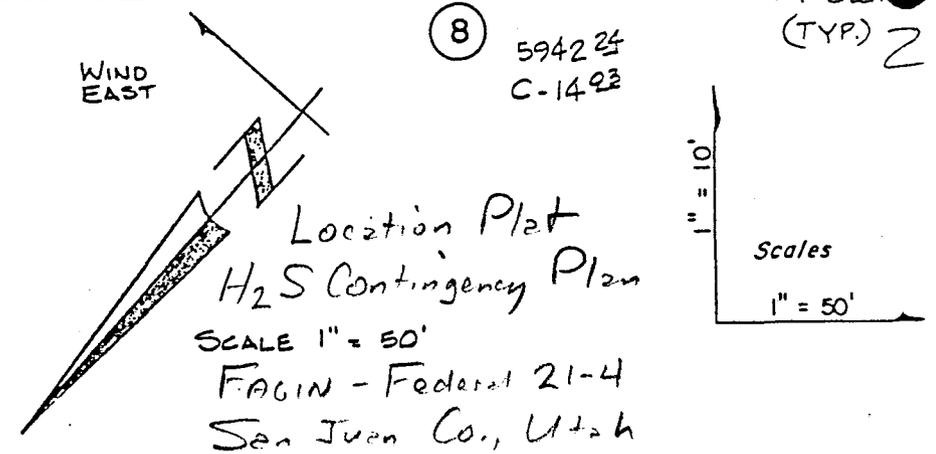
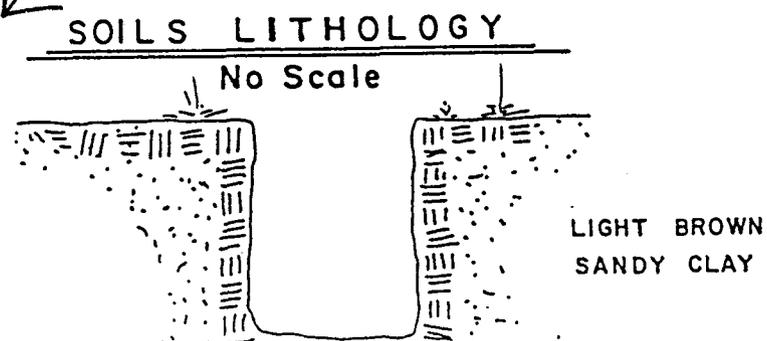


Note:
Location of Safety
Equipment is described
in text.

STORAGE TANK
TOILET
FUEL
TRAILER
Safety Briefing Area #1
Safety Briefing Area #2

O
S
S
S
S
E
C
T
I
O
N
S

Alternate
Escape
Path



10AB DISTRICT

CONDITIONS OF APPROVAL FOR PERMIT TO DRILL

Company Fagin Exploration Company Well No. 21-4
Location Sec. 21 T 30S R 24E Lease No. U-44216
1051 ft. SFL 685 ft. E FL

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

A. DRILLING PROGRAM

1. Surface Formation and Estimated Formation Tops: _____

Navajo	Surface
Chinle	650
Moenkopi	1200
Ismay	5060
Paradox	5370
Mississippian	8040
Ouray	8490
Elbert	8570

2. Estimated Depth at Which Oil, Gas, Water, or Other Mineral Bearing Zones Are Expected to be Encountered:

	<u>Formation</u>	<u>Zone</u>
Expected oil zones:	Mississippian-Leadville	8040
Expected gas zones:	N/A	
Expected water zones:	N/A	
Expected mineral zones:	N/A	

All fresh water and prospectively valuable minerals (as described by BLM at onsite) encountered during drilling, will be recorded by depth cased and cemented. All oil and gas shows will be tested to determine commercial potential.

3. Pressure Control Equipment: 3000 psi double ram preventer and annular preventer will be used. Hand controls will be provided on the floor. Before drilling surface casing cement, rams and surface casing will be tested to 2000 psi and checked operationally each day thereafter.

Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventor controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

4. Casing Program and Auxiliary Equipment: Surface casing will be new "K" grade 8 5/8" or 9 5/8" set at 1000 ft. Production casing if needed, will be new K,L, and N grade 5 1/2", 15.5 and 17 lb. set at 8600' TD. Will provide Kelly cock, drill pipe float and floor stabbing valve.
5. Mud Program and Circulating Medium: Fresh water base mud will be used to 5000 ft. converting to brine system with water loss control at 5000 ft. Mud weight will be increased to 10.5 ppg. at TD and viscosity and water loss maintained at 40-45 sec. and 10 cc or less.
6. Coring, Logging and Testing Program: It is anticipated the Mississippian will be cored and drill stem tested if warranted. Logs will include DILL-GR, FDC-CNL, and possibly BHC and dipmeter. Intervals of detail logging will be determined upon reaching TD.

Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted not later than 15 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the District Manager.

7. Abnormal Conditions, Bottom Hole Pressures and Potential Hazards:
No abnormal temperatures and only low volume gas kicks are anticipated in the Paradox salt. It is likely H₂S will be encountered in the Mississippian and personnel will be prepared to handle safely and effectively. See attached H₂S Contingency Plan.

8. Anticipated Starting Dates and Notifications of Operations:

Construction date: March 26, 1984

Spud date: April 1, 1984

The operator will contact the San Juan Resource Area at 801-587-2201, 48 hours prior to beginning any dirt work on this location.

No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the District Manager. If operations are to be suspended, prior approval of the District Manager will be obtained and notification given before resumption of operations.

The spud date will be reported orally to the San Juan Area Manager, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5) will be sent w/in 24 hrs spudding, reporting the spud date and time. The Sundry will be sent to the District Manager.

In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 9-329 "Monthly Report of Operations," starting with the month in which operations begin and continue each month until the well is physically plugged and abandoned. This report will be ~~filed, in duplicate, directly with Boyette Management Accounting Center, Minerals Management Service, P.O. Box 2859, Casper, Wyoming 82602,~~ and a copy sent to the Moab BLM District Office, P.O. Box 970, Moab, Utah 84532.

If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to that effect will be filed, for prior approval of the District Manager. All conditions of this approved plan are applicable during all operations conducted with the replacement rig.

If the well is successfully completed for production, then the District Manager will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, not later than the first business day following the date on which the well is placed on production.

No well abandonment operations will begin without the prior approval of the District Manager. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the District Manager. A "Subsequent Report of Abandonment" (Form 3160-5), will be filed with the District Manager, within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration.

Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the San Juan Area Manager or his representative, or the appropriate Surface Managing Agency.

A first production conference will be scheduled within 15 days after receipt of the first production notice. The operator will schedule the conference with the San Juan Area Manager.

Other: _____

B. THIRTEEN POINT SURFACE USE PLAN

1. Existing Roads:

a. Location of proposed well in relation to town or other reference point: 26 miles north of Monticello and 45 miles south of Moab via US 160. See detail access on Topo Map "A" attached.

b. Proposed route to location: See Topo Map "A" attached.

c. Location and description of roads in the area: All roads are black top until entering location via access road which will be newly constructed dirt road.

d. Plans for improvement and/or maintenance of existing roads: None

The maximum total disturbed width will be 16 feet.

e. An encroachment permit will be obtained from the San Juan County Road Dept., (801) 587-2231, ext. 43.

f. Other: _____

2. Planned Access Roads:

- a. The maximum total disturbed width will be 16 feet.
- b. Maximum grades: flat
- c. Turnouts: none
- d. Location (centerline): See Topo Map "B"
- e. Drainage: limited ditching during drilling; upgraded for production
- f. Other: no surface materials or culverts needed for drilling.

Each fence which is crossed by the road will be braced as shown in Enclosure number 1, and tied off before cutting to prevent slackening of the wire. A gate or cattleguard which must be approved by BLM, will be installed.

If road construction cuts through natural topography which serves as a livestock barrier, a fence shall be constructed as shown in Enclosure 1.

Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

The access road will be water barred or brought to Class III Road Standards within 60 days of dismantling of the drilling rig.

If this time frame cannot be met, the San Juan Area Manager will be notified so that temporary drainage control can be installed along the access road.

The Class III Road Standards which ensure drainage control over the entire road through the use of natural, rolling topography; ditch turnouts; drainage dips; outsloping; crowning; low water crossings; and culverts will be determined at the appropriate field inspection.

- 3. Location of Existing Wells: Closest well is Union Oil (Belco)
Lisbon Unit B-816, water injection well one-half mi. NNE of location.
- 4. Location of Tank Batteries and Production Facilities:

All permanent (on site for six months or longer) structures constructed or installed (including oil well pump jacks) will be painted a flat, nonreflective, earthtone color to match the standard environmental colors, as determined by the Rocky Mountain 5-State Interagency Committee. All facilities will

be painted within 6 months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded.

If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1½ times the storage capacity of the battery.

Tank batteries will be placed on the: Federal Lease U-44216

All loading lines will be placed inside the berm surrounding the tank battery.

All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.

All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.

All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

Gas meter runs for each well will be located within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and 500 feet downstream of the meter run or any production facilities. Meter runs will be housed and/or fenced.

The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy will be conducted monthly for the first three months on new meter installations and at least quarterly thereafter. The San Juan Area Manager will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the Moab District Office. All meter measurement facilities will conform with the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

5. Location and Type of Water Supply:

All water needed for drilling purposes will be obtained from:

Moab commercial suppliers.

Use of water for this operation will be approved by obtaining a temporary use permit from the Utah State Engineer, (301) 637-1303 and by receiving permission from the land owner or surface management agency to use the land containing the water source.

6. Source of Construction Material:

Road surfacing and pad construction material will be obtained from: none required.

The use of materials under BLM jurisdiction will conform to 43 CFR 3610.2-3. Construction material (will/will not) be located on lease.

7. Methods of Handling Waste Disposal:

The reserve pit (will/will not) be lined with commercial bentonite sufficient to prevent seepage. At least half of the capacity will be in cut.

Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.

A trash pit will be constructed near the mud tanks and dug at least six feet into solid undisturbed material. It will be totally enclosed with a fine wire mesh before the rig moves in. The road and pad will be kept litter free.

A burning permit is required for burning trash between May 1 and October 31. This can be acquired by contacting the State Fire Warden, John Baker, at (801) 587-2705.

Produced waste water will be confined to a (lined/unlined) pit for a period not to exceed 90 days after initial production. During the 90 day period an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Maager's approval. Failure to file an application within the time allowed will be considered an incident of noncompliance, and will be grounds for issuing a shut-in order.

8. Ancillary Facilities:

Camp facilities (will/will not) be required. They will be located: _____

9. Well Site Layout:

The reserve pit will be located: See rig layout attached.

The top 12 inches of soil material will be removed from the location and stockpiled separate from the trees on the pad ends. side. Topsoil along the access will be reserved in place.

Access to the well pad will be from: new road shown on Topo Map "A".

10. Reclamation:

- a. Immediately on completion of drilling, all trash and debris will be collected from the location and surrounding area. All trash and debris will be disposed of in the trash pit and will then be compacted and buried under a minimum of two feet of compacted soil.
- b. The operator /holder or his contractor will contact the San Juan Resource Area office in Monticello, Utah, (801) 587-2201, 48 hours before starting reclamation work that involves earthmoving equipment and upon completion of restoration measures.
- c. Before any dirt work to restore the location takes place, the reserve pit must be completely dry.
- d. All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts.
- e. The stockpiled topsoil will be spread evenly over the disturbed area. All disturbed areas will be ripped 12 inches deep with the contour.
- f. Water bars will be built as follows to control erosion.

<u>Grade</u>	<u>Spacing</u>
2%	Every 200 feet
2-4%	Every 100 feet
4-5%	Every 75 feet
5+%	Every 50 feet

- g. Seed will be broadcast between October 1 and February 28 with the following prescription. A harrow or similar implement will be dragged over the area to assure seed cover.

<u>2</u>	lbs/acre Indian ricegrass (<u>Oryzopsis hymenoides</u>)
<u>1</u>	lbs/acre Curlygrass (<u>Hilaria jamesii</u>)
<u> </u>	lbs/acre crested wheatgrass (<u>Agropyron desertorum</u>)
<u> </u>	lbs/acre Western wheatgrass (<u>Agropyron smithii</u>)
<u> </u>	lbs/acre Alkali sacaton (<u>Sporobolus airoides</u>)
<u> </u>	lbs/acre Sand dropseed (<u>Sporobolus cryptandrus</u>)
<u>2</u>	lbs/acre Fourwing saltbush (<u>Atriplex canescens</u>)
<u> </u>	lbs/acre Shadscale (<u>Atriplex confertifolia</u>)
<u> </u>	lbs/acre Green ephedra (<u>Ephedra viridis</u>)
<u> </u>	lbs/acre Cliffrose (<u>Cowania mexicana</u>)
<u> </u>	lbs/acre Desert bitterbrush (<u>Purshia glandulosa</u>)
<u> </u>	lbs/acre Winterfat (<u>Eurotia lanata</u>)
<u> </u>	lbs/acre Globemallow (<u>Sphaeralcea ambigua</u>)
<u>1</u>	lbs/acre Wild sunflower (<u>Helianthus annuus</u>)
<u>2</u>	lbs/acre Grammagrass

13. Lessee's or Operator's Representative and Certification

Representative

Name: David K. Fagin Joe L. Fusselman
Address: Suite 4380 City Center 4
1801 California Street Denver, Colorado 80202
Phone No.: Office: 303-293-2703 303-293-2703
Home: 303-694-9651 303-781-8381

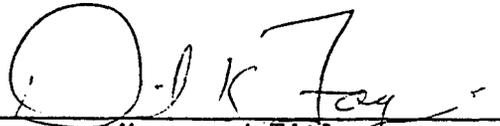
Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by

Fagin Exploration Company
Operator's Name

and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

March 19, 1984
Date


Name and Title
David K. Fagin, President

ON-SITE

DATE: March 15, 1984

PARTICIPANTS:

TITLES:

Brian Wood

Natural Resource Specialist-BLM

Gary Streeter

Surveyor-Uintah Engineering

David Fagin

President-Fagin Exploration Company

Chuck Johnson

Exploration Manager-Fagin Exploration Company

- h. ~~After seeding is complete, the stockpiled trees will be scattered evenly over the disturbed areas.~~ The access will be blocked to prevent vehicular access.
- i. The reserve pit and that portion of the location and access road not needed for production or production facilities will be reclaimed as described in the reclamation section. Enough topsoil will be kept to reclaim the remainder of the location at a future date. This remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.
11. Surface Ownership: Bureau of Land Management
Mineral Ownership: Federal
12. Other Information: Samples will be collected at regular intervals and a geologist will be available to interpret.
-
-

There will be no change from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be used. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.2.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.

The dirt contractor will be provided with an approved copy of the surface use plan.

If subsurface cultural materials are exposed during construction, work in that spot will stop immediately and the San Juan Resource Area Office will be contacted. All people who are in the area will be informed by the operator/holder that they are subject to prosecution for disturbing archaeological sites or picking up artifacts. Salvage or excavation of identified archaeological sites will be done by a BLM approved archaeologist only if damage occurs.

This permit will be valid for a period of one year from the date of approval. After permit termination a new application will be filed for approval for any future operations.

Your contact with the District Office is: Bob Graff

Office Phone: 801-259-6111

Address: P.O. Box 970, Moab UT 84532

Resource Area Manager's address and contacts:

Address: P.O. Box 7, Monticello, UT 84535

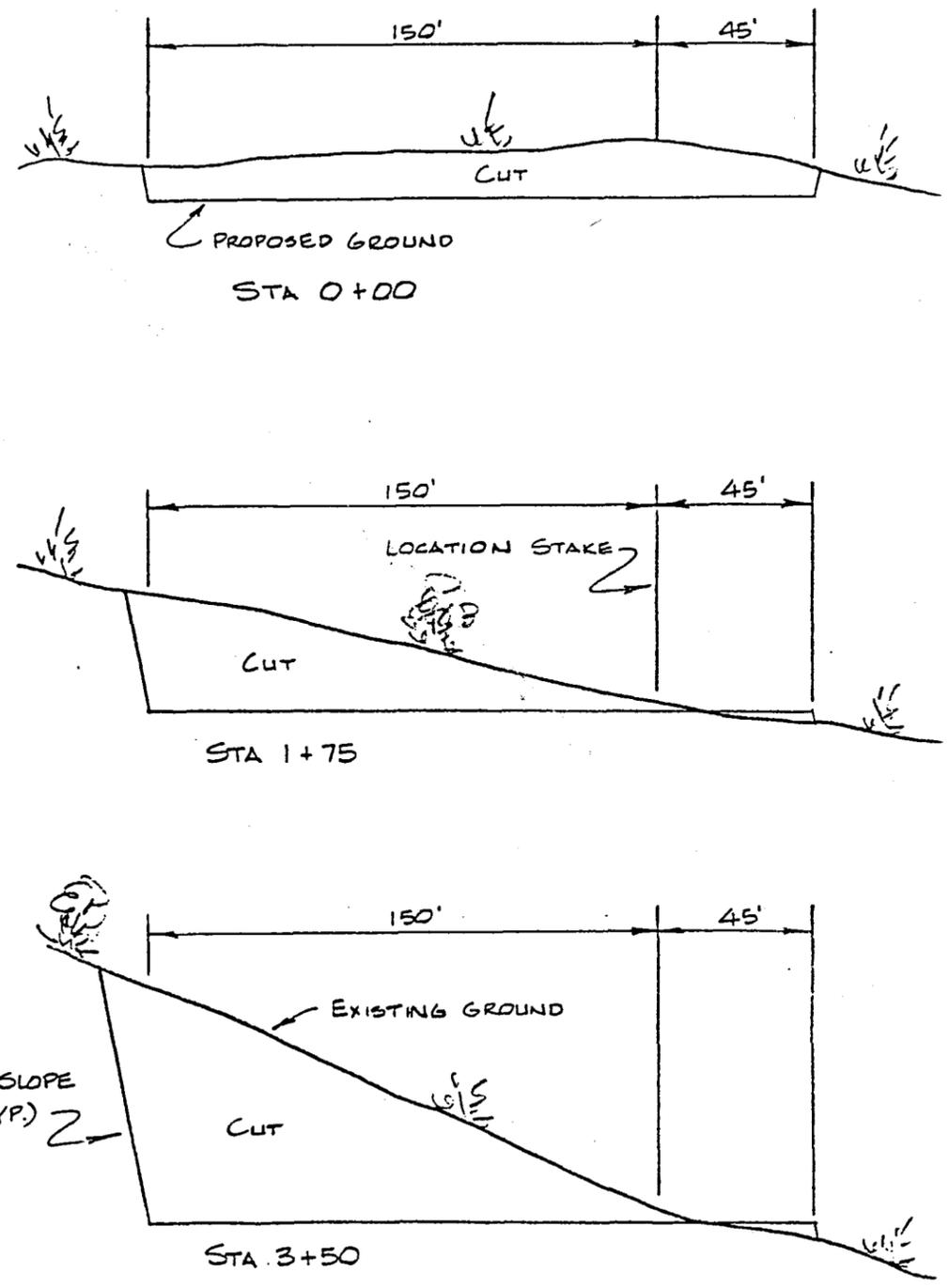
Your contact is: Brian Wood

Office Phone: 801-587-2201

Home Phone: 801-587-2087

FAGIN EXPLORATION
FED. # 21-4

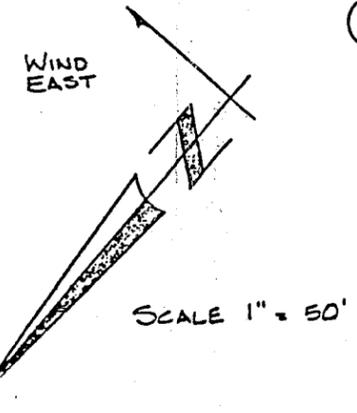
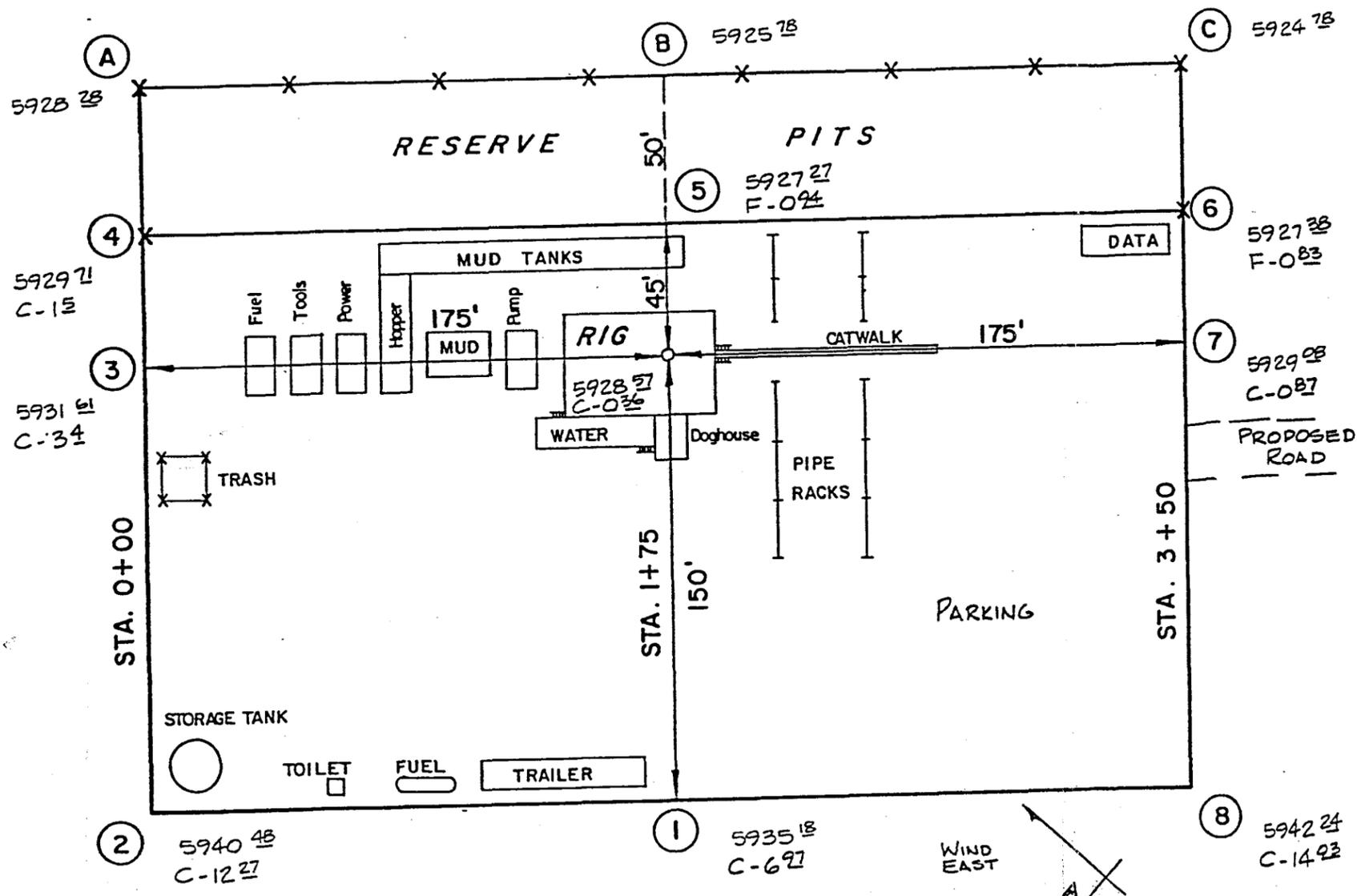
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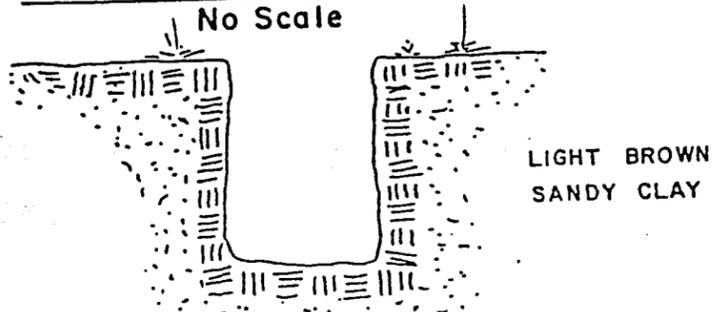
1" = 10'
Scales
1" = 50'

APPROXIMATE YARDAGES

Cu. Yds. Cut - 11,890
Cu. Yds. Fill - 133



SOILS LITHOLOGY



MAGIN EXPLO
FED. # 21-4 (ALT)

TOPO MAP A

SCALE 1:4 M

PROPOSED LOCATION
FED. # 21-4 (ALT)

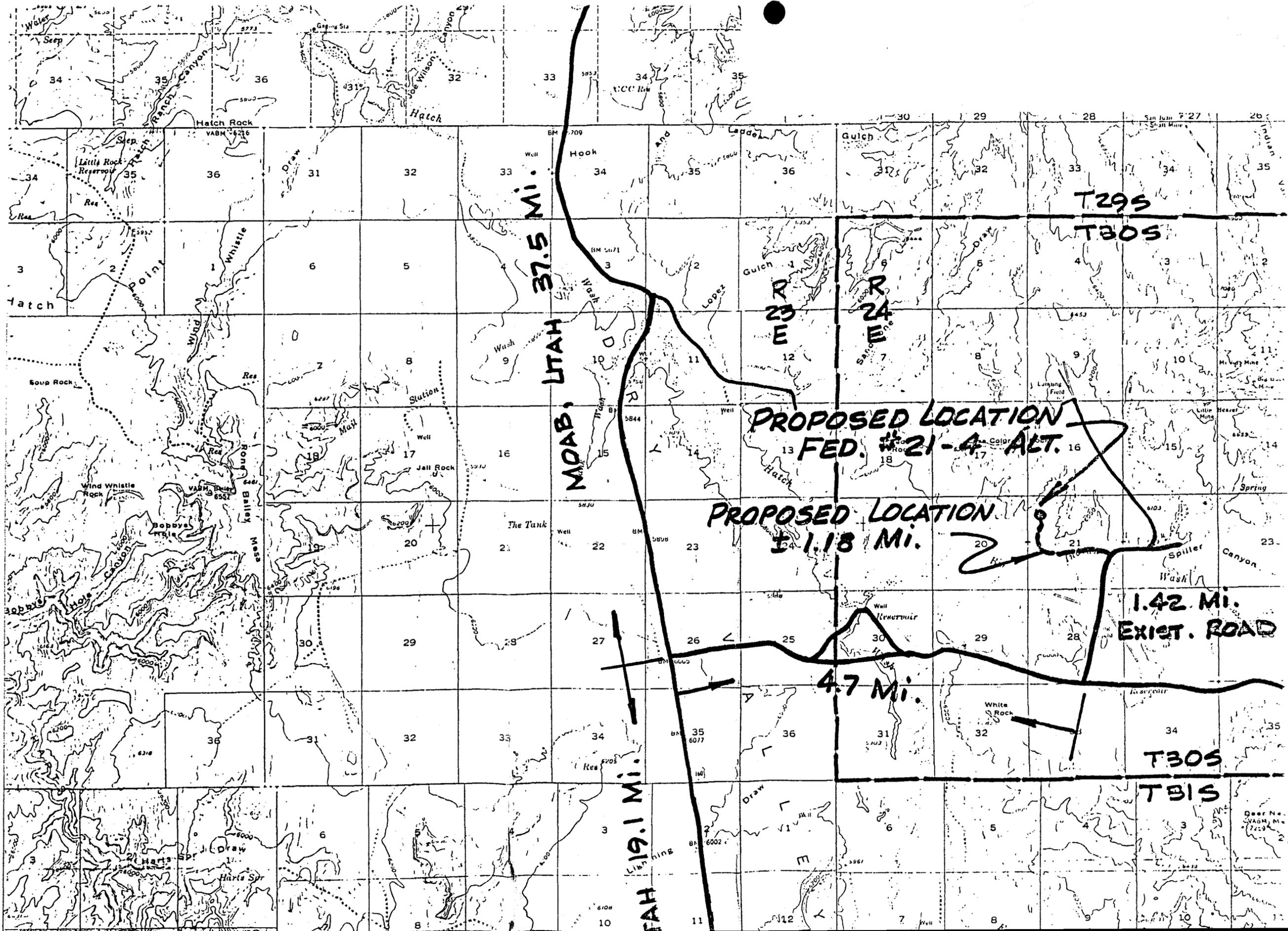
PROPOSED
ROAD
1.18 MI

6.2 MI

1.91 MI

MONTICELLO





37.5 Mi.

MOAB, UTAH

PROPOSED LOCATION
FED. #21-A ALT.

PROPOSED LOCATION
1.18 Mi.

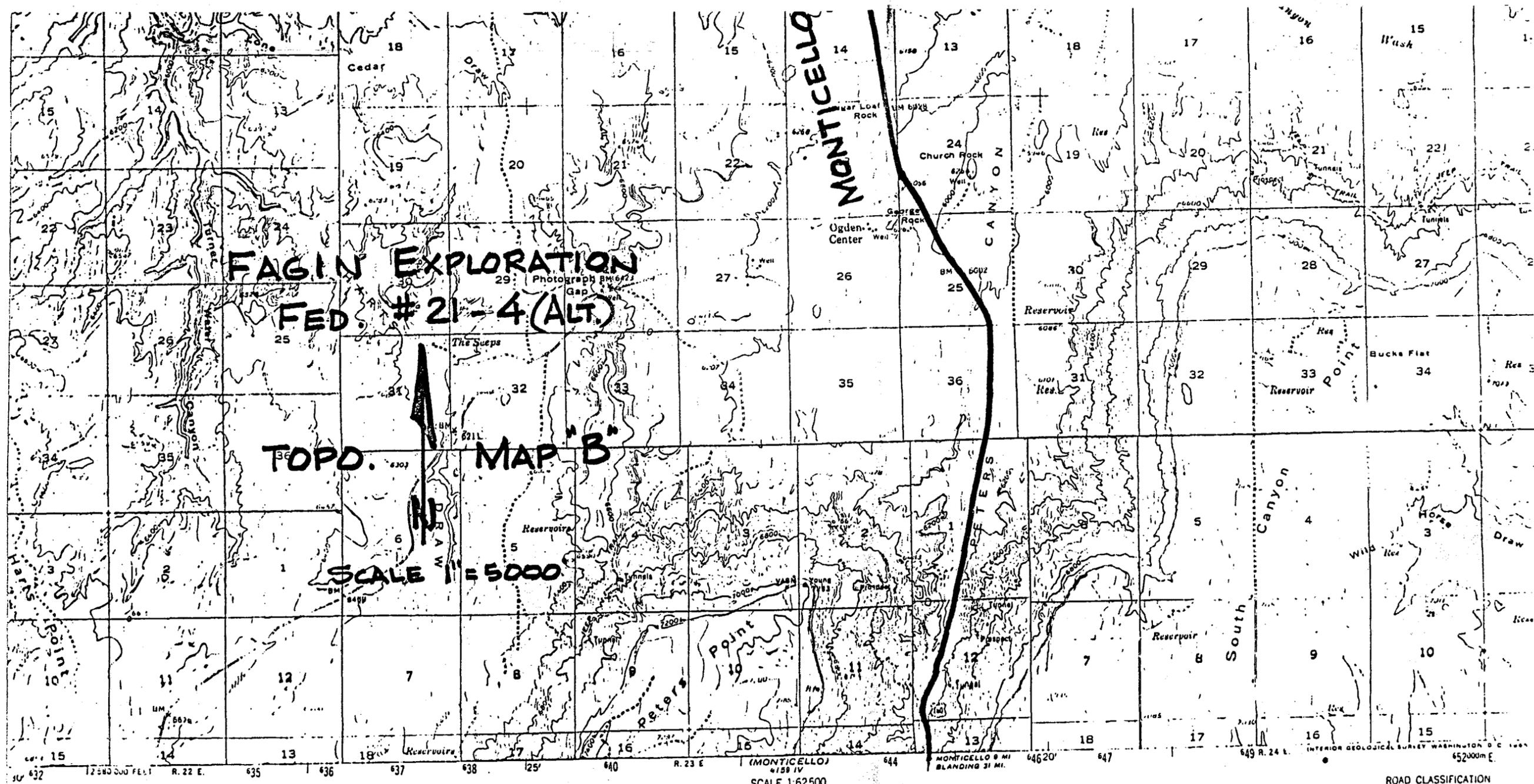
1.42 Mi.
EXIST. ROAD

19.1 Mi.

4.7 Mi.

T29S
T30S

T30S
T31S



FAGIN EXPLORATION
#21-4 (ALT)

TOPO. MAP 'B'

SCALE 1:62500

SCALE 1:62500

ROAD CLASSIFICATION

632 125°30'00" WEST R. 22 E. 635 636 637 638 125° 640 R. 23 E. (MONTICELLO) 4159 IV 644 MONTICELLO 9 MI. BLANDING 31 MI. 646 20' 647 649 R. 24 E. INTERIOR GEOLOGICAL SURVEY WASHINGTON D. C. 1954 652000m E

OPERATOR Fagin Exploration DATE 3-14-83

WELL NAME Federal 21-4

SEC ^{NW NW} ~~C111111~~ 21 T 30 S R 24 E COUNTY San Juan

43-037-30999
API NUMBER

Fed
TYPE OF LEASE

POSTING CHECK OFF:

INDEX

HL

NID

PI

MAP

PROCESSING COMMENTS:

needs water

Will send letter for exception + copy of Fed appl. OK rec'd 3/30/84.

APPROVAL LETTER:

SPACING: A-3 _____ UNIT

c-3-a _____ CAUSE NO. & DATE

c-3-b

c-3-c

SPECIAL LANGUAGE:

1. water

2. Exception Location

RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.

AUTHENTICATE LEASE AND OPERATOR INFORMATION

VERIFY ADEQUATE AND PROPER BONDING

AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.

APPLY SPACING CONSIDERATION

ORDER _____

UNIT _____

c-3-b

c-3-c

CHECK DISTANCE TO NEAREST WELL.

CHECK OUTSTANDING OR OVERDUE REPORTS FOR OPERATOR'S OTHER WELLS.

IF POTASH DESIGNATED AREA, SPECIAL LANGUAGE ON APPROVAL LETTER

IF IN OIL SHALE DESIGNATED AREA, SPECIAL APPROVAL LANGUAGE.



FAGIN EXPLORATION COMPANY
SUITE 4380 ■ CITY CENTER 4 ■ 1801 CALIFORNIA ■ DENVER, CO 80202 ■ (303) 293-2703

RECEIVED
MAR 22 1984

March 19, 1984

**DIVISION OF
OIL, GAS & MINING**

Mr. Ronald Firth
Chief Petroleum Engineer
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

Dear Mr. Firth:

On March 15, 1984 we mailed to you an incorrect survey plat for the Fagin Exploration Federal #21-4. We enclose herewith a correct copy of that same plat and ask that you please destroy the one previously sent.

We apologize for this error and thank you for your assistance.

Sincerely yours,

Kathy Crowe

Kathy Crowe

/kc
Enclosure



FAGIN EXPLORATION COMPANY
 SUITE 4380 ■ CITY CENTER 4 ■ 1801 CALIFORNIA ■ DENVER, CO 80202 ■ (303) 293-2703

DAVID K. FAGIN
 PRESIDENT

RECEIVED

MAR 30 1984

March 29, 1984

DIVISION OF
 OIL, GAS & MINING

Division of Oil, Gas, and Mining
 State of Utah
 4241 State Office Building
 Salt Lake City, Utah 84114

Attention: Mr. R.J. Firth

Re: Fagin Exploration Company
 Federal #21-4
 San Juan County, Utah

Gentlemen:

In accordance with my telephone conversation yesterday with Miss Arlene Sollice, I enclose herewith a copy of our Application to Drill which has been filed with the Moab District of the Bureau of Land Management. Also enclosed is a copy of the H₂S Contingency Plan for the well since we expect to encounter H₂S gas in drilling through the Mississippian. You will note that our Well Application called for the well to be drilled in the NWNW of Section 21, T30S, R24E, 1051' from the north line and 685' from the west line of Section 21. We understand that this is an irregular location and too close to the south quarter section boundary to be approved by you without special ruling.

The specific location for this well was chosen on-site by the Operator and the Bureau of Land Management in order to minimize surface damage and location expense due to outcropping rocks and scrub timber which existed at a normal location site. Our geology in this area was not so precise as to create any difficulty geologically with the revised location. In addition, the mineral and surface rights of the adjacent quarter section are under the same base lease number U-44216 from the U.S. Department of the Interior. Please also find enclosed a plat on which we have indicated the mineral and lease ownership.

We were reminded by Miss Sollice and are aware of our responsibility to provide you with a copy of our water permit prior to commencement of

Exception location, C-3-C.
APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
 DATE: _____
 BY: _____

drilling. We have requested that you provide us with a full set of state wide rules and regulations concerning oil and gas operations in Utah as this is our first operative well in the State.

On the basis of the evidence provided with this letter, we respectfully request your approval of location designated for the Federal #21-4 well since we are still attempting to commence drilling at an early date. We would be grateful if you would notify us by phone. Thank you for your consideration.

Yours truly,

A handwritten signature in black ink, appearing to read "D. K. Fagin". The signature is written in a cursive style with a large initial "D".

DAVID K. FAGIN

DKF:kac
Enclosures

April 1, 1984

Eagin Exploration Company
1801 California Street, #4380
Denver, Colorado 80202

RE: Well No. Federal 21-4
NW 1/4 Sec. 21, T. 30 S, R. 24E
1051' PML, 685' PML
San Juan County, Utah

Gentlemen:

Approval to drill the above referenced oil well is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

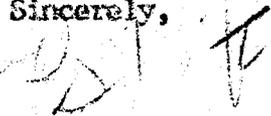
1. Spudding notification to the Division within 24 hours after drilling operations commence.
2. Submittal to the Division of completed Form OCG-8-X, Report of Water Encountered During Drilling.
3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify R. J. Firth, Chief Petroleum Engineer, Telephone (301) 533-5771 (Office), 571-5068 (Home).
4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

Fagin Exploration Company
Well No. Federal 21-4
April 1, 1984
Page 2

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-30999.

Sincerely,



R. J. Firth
Associate Director, Oil & Gas

RJF/as

cc: Branch of Fluid Minerals
Enclosures

BWAB INCORPORATED



RECEIVED

APR 16 1984

DIVISION OF OIL
GAS & MINING

April 12, 1984

State of Utah
Natural Resources
Oil, Gas & Mining
4241 State Office Bldg
Salt Lake City, UT 84114

ATTENTION: R.J. FIRTH

RE: Federal #21-4
NW NW Sec. 21-T30S-R24E
San Juan Co., UT

Dear Sir:

Enclosed herewith are three (3) copies of our revised front page to our Federal Permit to Drill for the above captioned well. This has been filed with the BLM in Moab, UT. This revision was necessitated due to BWAB Incorporated taking over operations from Fagin Exploration Co. and a change in the casing design. If this meets with your approval, please execute and return one (1) copy to me for our files.

Your expediency in this matter will be greatly appreciated.

Very truly yours,

BWAB Incorporated

Carrie M. Sullivan
Senior Production Assistant

:CMS

Enclosures (3)

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER
 SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 **BWAB Incorporated

3. ADDRESS OF OPERATOR
 1000 City Centre 4, 1801 California St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface 685' FWL & 1051' FNL NW NW
 At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 Moab, Utah 20 miles North of location

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest dirg. unit line, if any) 685'

16. NO. OF ACRES IN LEASE
 1760

17. NO. OF ACRES ASSIGNED TO THIS WELL
 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. N/A

19. PROPOSED DEPTH
 8600'

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 5929' GL

22. APPROX. DATE WORK WILL START*
 4/25/84

23. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	9-5/8"	36#	1000'	Cmt. back to surface
7-7/8"	5-1/2"	15.5, 17, 20#	8600'	350 sxs.

1. Drill to TD of 8600' (Elbert).
2. Run 5-1/2" production casing if any commercial production encountered.
3. If dry hole P & A as instructed by BLM.
4. Well will be drilled with a fresh water base chemically controlled to 500' above the Paradox Salt at which time it will be converted to a brine base system. Mud weight will be designed for well control.
5. Well control equipment will include 3000 psi working pressure double ram and annular preventor hydraulically actuated. Equipment and surface casing will be pressure tested before drilling surface casing cement and checked daily.

** Fagin Exploration Co. has turned operations over to BWAB Incorporated effective 4/11/84

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

24. SIGNED Robert C. Arceneaux TITLE V.P. Operations DATE 4/11/84
 Robert C. Arceneaux

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____

CONDITIONS OF APPROVAL, IF ANY:

**APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING**

DATE: _____
 BY: _____

APR 02 1984

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 Fagin Exploration Company

3. ADDRESS OF OPERATOR
 1801 California Street #4380 - Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
 At surface
 685' FWL 1051' FNL Sec. 21 T30S R24E
 At proposed prod. zone
 Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 Moab, Utah 20 miles north of location

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
 685'

16. NO. OF ACRES IN LEASE
 1760

17. NO. OF ACRES ASSIGNED TO THIS WELL
 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
 N/A

19. PROPOSED DEPTH
 8600'

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 5929' Grd

22. APPROX. DATE WORK WILL START*
 April 1, 1984

RECEIVED

APR 11 1984

DIVISION OF OIL
GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.
 U-44216

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
 Federal

9. WELL NO.
 21-4

10. FIELD AND POOL, OR WILDCAT
 Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
 Sec. 21 T30S R24E

12. COUNTY OR PARISH
 San Juan

13. STATE
 Utah

22. APPROX. DATE WORK WILL START*
 April 1, 1984

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	8 5/8"	32 lb	1000'	Cement to surface
7 7/8	5 1/2"	15.5 and 17 lb	8600'	350 sx

1. Drill to TD of 8600' (Elbert).
2. Run 5 1/2" production casing if any commercial production encountered.
3. If dry hole P & A as instructed by BLM.
4. Well will be drilled with a fresh water base chemically controlled to 500 feet above the Paradox Salt at which time it will be converted to a brine base system. Mud weight will be designed for well control.
5. Well control equipment will include 3000 psi working pressure double ram and annular preventor hydraulically actuated. Equipment and surface casing will be pressure tested before drilling surface casing cement and checked daily.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

24. SIGNED David K. Fagin TITLE President DATE 3/29/84

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY /s/ GENE NODINE TITLE DISTRICT MANAGER DATE 06 APR 1984

CONDITIONS OF APPROVAL, IF ANY:

FLARING OR VENTING OF GAS IS SUBJECT TO NTL 4-A DATED 1/1/80

CONDITIONS OF APPROVAL ATTACHED

RECEIVED
(May 1963)

SUBMIT IN DUPLICATE*
(Other instructions on reverse side)

REC'D MDO APR 16 1984
Form approved.
Budget Bureau No. 42-R1425
fcl

APR 23 1984

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

**DIVISION OF OIL
GAS & MINING** PERMIT FOR DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.
U-44216
6. IF INDIAN, ALLOTTEE OR TRIBE NAME
7. UNIT AGREEMENT NAME
8. FARM OR LEASE NAME
9. WELL NO.
21-4
10. FIELD AND POOL, OR WILDCAT
Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 21-T30S-R24E
12. COUNTY OR PARISH
San Juan
13. STATE
UT

b. TYPE OF WELL
OIL WELL GAS WELL OTHER
SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
**BWAB Incorporated

3. ADDRESS OF OPERATOR
1000 City Centre 4, 1801 California St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
At surface 685' FWL & 1051' FNL NW NW
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
Moab, Utah 20 miles North of location

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 685'

16. NO. OF ACRES IN LEASE 1760

17. NO. OF ACRES ASSIGNED TO THIS WELL 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. N/A

19. PROPOSED DEPTH 8600'

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
5929' GL

22. APPROX. DATE WORK WILL START*
4/25/84

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/2"	9-5/8"	36#	1000'	Cmt. back to surface
7-7/8"	5-1/2"	15.5, 17, 20#	8600'	350 sxs.

1. Drill to TD of 8600' (Elbert).
2. Run 5-1/2" production casing if any commercial production encountered.
3. If dry hole P & A as instructed by BLM.
4. Well will be drilled with a fresh water base chemically controlled to 500' above the Paradox Salt at which time it will be converted to a brine base system. Mud weight will be designed for well control.
5. Well control equipment will include 3000 psi working pressure double ram and annular preventor hydraulically actuated. Equipment and surface casing will be pressure tested before drilling surface casing cement and checked daily.

** Fagin Exploration Co. has turned operations over to BWAB Incorporated effective 4/11/84

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

24. SIGNED Robert C. Arceneaux P. Operations DATE 4/11/84
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY /s/ GENE NODINE TITLE DISTRICT MANAGER DATE 19 APR 1984

CONDITIONS OF APPROVAL, IF ANY:
THIS APPROVAL IS SUBJECT TO THE CONDITIONS OF APPROVAL IN THE ORIGINAL APPLICATION FOR FAGIN EXPLORATION COMPANY'S 21-4 WELL APPROVED APRIL 6, 1984.

*See Instructions On Reverse Side

FLARING OR VENTING OF GAS IS SUBJECT TO NTL 4-A DATED 1/1/80

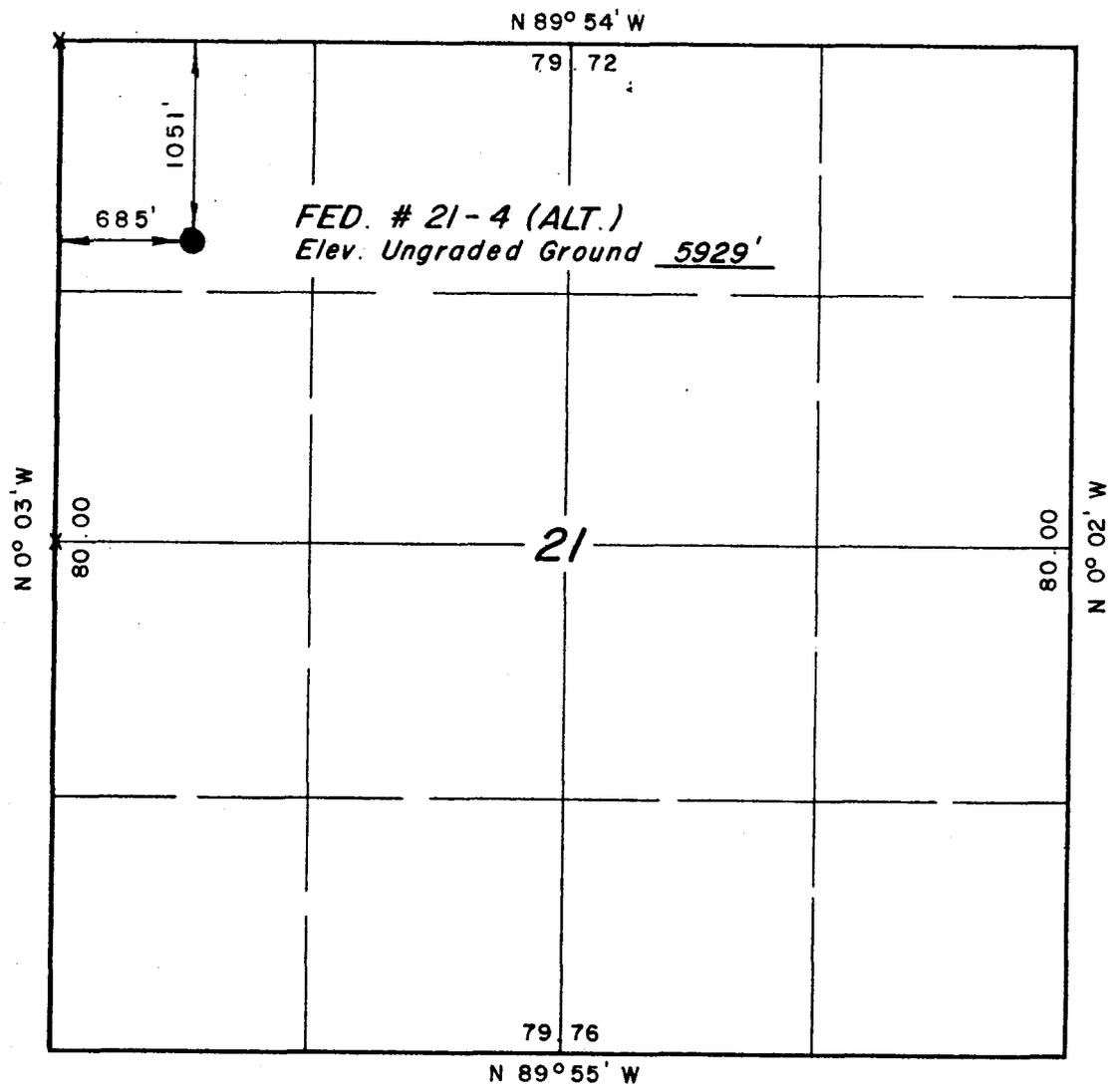
CONDITIONS OF APPROVAL ATTACHED

State of Utah - DOG-M

T 30 S, R 24 E, S.L.B. & M.

PROJECT
FAGIN EXPLORATION

Well location, *FED. # 21-4 (ALT.)*,
located as shown in the NW 1/4
NW 1/4 Section 21, T 30 S, R 24 E,
S.L.B. & M San Juan County, Utah.



X = Section Corners Located



CERTIFICATE

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

Dane Stewart
REGISTERED LAND SURVEYOR
REGISTRATION NO 3154
STATE OF UTAH

REVISED 3/6/84

UTAH ENGINEERING & LAND SURVEYING P. O. BOX Q - 85 SOUTH - 200 EAST VERNAL, UTAH - 84078	
SCALE 1" = 1000'	DATE 3-1-84
PARTY G.S. D.K. B.F.W.	REFERENCES GLO Plat
WEATHER Fair	FILE FAGIN EXPLORATION

Fagan Exploration Company
Well No. 21-4
Sec. 21, T. 30 S., R. 24 E.
Lease U-44216
San Juan County, Utah

Supplemental Stipulation:

1. The following ranchers, whose cattle graze within 1 mile of the well, must be called in case of an H₂S Emergency:

Dean Robinson - 801-587-2333 and
Paul Redd - 801-587-2749 or
303-859-7358.

Water
2

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: BWAB

WELL NAME: FEDERAL 21-4

SECTION NWNW 21 TOWNSHIP 30S RANGE 24E COUNTY SAN JUAN

DRILLING CONTRACTOR ENERGY SEARCH DRILLING COMPANY

RIG # 2

SPUDDED: DATE 4-26-84

TIME 9:30 AM

HOW Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Carrie

TELEPHONE # 303-295-7444

DATE 4-26-84

SIGNED GL



RECEIVED

APR 30 1984

DIVISION OF OIL
GAS & MINING

April 27, 1984

State of Utah
Natural Resources
Oil, Gas & Mining
4241 State Office Bldg.
Salt Lake City, UT 84114

ATTENTION: R.J. Firth

RE: Federal #21-4
NW NW Sec. 21-T30S-R24E
San Juan Co., UT

Dear Sir:

Enclosed herewith are three (3) copies of our Spudding Notification for the above captioned well. If this meets with your approval, please execute and return one (1) copy to me for our files.

If any further information is needed, please do not hesitate to contact the undersigned.

Very truly yours,

BWAB Incorporated

Carrie M. Sullivan
Senior Production Assistant

:CMS

Enclosures (3)

RECEIVED

PERMIT IN TRIPLICATE*
(Other instructions on reverse side)

APR 30 1984

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

DIVISION OF OIL
GAS & MINING
VARIOUS NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.	U-44216
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
7. UNIT AGREEMENT NAME	
8. FARM OR LEASE NAME	Federal
9. WELL NO.	21-4
10. FIELD AND POOL, OR WILDCAT	Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	Sec. 21-T30S-R24E
12. COUNTY OR PARISH	San Juan
13. STATE	UT

1. OIL WELL GAS WELL OTHER

2. NAME OF OPERATOR
RWAB Incorporated

3. ADDRESS OF OPERATOR
1000 City Centre 4, 1801 California St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*
See also space 17 below.)
At surface
NW NW 685' FWL & 1051' FNL

14. PERMIT NO.
43-037-30999

15. ELEVATIONS (Show whether OF, RT, GR, etc.)
5929' GL

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	
(Other) SPUDDING NOTIFICATION <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spudded 4/26/84 at 9:45 a.m. Drilling contractor is Energy Search Drilling Co., P.O. Box 190, Farmington, NM 87401, Rig #2.

18. I hereby certify that the foregoing is true and correct
SIGNED Robert C. Arceneaux TITLE V.P. Operations DATE 4/26/84
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

ORAL APPROVAL TO PLUG AND ABANDON WELL

Operator BWAB, Inc. Representative Ms. Curry

Well No. Federal 21-4 Location NW 1/4 NW 1/4 Section 21 Township 30S Range 24 E

County San Juan Field _____ State Ut

Unit Name and Required Depth Wildcat Base of fresh water sands _____

T.D. 8817' Size hole and Fill per sack 7 7/8" Mud Weight ' and Top 10.5 #/gal. between plugs _____

Casing Size	Set At	Top of Cement	To Be Pulled	Plugging Requirements		
				From	To	Sacks Cement
<u>9 5/8</u>	<u>995'</u>	<u>Surf.</u>	<u>No.</u>	<u>8500'</u>	<u>8700'</u>	<u>75</u>
				<u>5150'</u>	<u>5450'</u>	<u>110</u>
<u>Formation</u>	<u>Top</u>	<u>Base</u>	<u>Shows</u>	<u>3550'</u>	<u>3750'</u>	<u>75</u>
<u>Navajo</u>	<u>Surf.</u>			<u>1750'</u>	<u>1850'</u>	<u>45</u>
<u>Chinle</u>	<u>650'</u>			<u>900'</u>	<u>1000'</u>	<u>50</u>
<u>Moenkopi</u>	<u>1200'</u>			<u>Surface</u>		<u>10</u>
<u>Ismay</u>	<u>5060'</u>					
<u>Paradox</u>	<u>5370'</u>					
<u>Miss.</u>	<u>8040'</u>					
<u>Ouray</u>	<u>8490'</u>					
<u>Elbert</u>	<u>8570'</u>					

REMARKS

DST's, lost circulation zones, water zones, etc., _____

Approved by John R. Baya Date 5/30/84 Time 11:00 a.m.

Note:

Well was plugged on 5/27/84. Verbal approval obtained from Ed Gwynn @ BLM.



RECEIVED

JUN 4 1984

DIVISION OF OIL
GAS & MINING

May 30, 1984

State of Utah
Natural Resources
Oil, Gas & Mining
4241 State Office Bldg.
Salt Lake City, UT 84114

ATTENTION: R.J. FIRTH
Chief Petroleum Engineer

Dear Sir:

Enclosed herewith are three (3) copies of our Subsequent Report of Abandonment and two (2) copies of our Well Completion Report and Log for the above captioned well. If the Sundry Notice meets with your approval, please execute and return one (1) copy to me for our files.

If you have any questions in this regard, please do not hesitate to contact the undersigned.

Very truly yours,

BWAB Incorporated

A handwritten signature in cursive script that reads "Carrie M. Sullivan".

Carrie M. Sullivan
Senior Production Assistant

:CMS

Enclosures (5)

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 or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.	U-44216
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
7. UNIT AGREEMENT NAME	
8. FARM OR LEASE NAME	Federal
9. WELL NO.	21-4
10. FIELD AND POOL, OR WILDCAT	Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	Sec. 21-T30S-R24E
12. COUNTY OR PARISH	San Juan
13. STATE	UT

1. OIL WELL GAS WELL OTHER Dry

2. NAME OF OPERATOR
BWAB Incorporated

3. ADDRESS OF OPERATOR
1000 City Centre 4, 1801 California St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
NW NW 685' FWL & 1051' FNL

14. PERMIT NO.
43-037-30999

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
5929' GL

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input checked="" type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spudded well 4/26/84 at 9:45 a.m. Drilled to 995'. Set 9-5/8", 36# surface casing w/460 sx. cmt. circulated back to surface. Drilled to 4845' and ran DST #1 from 4800'-4845'. Recovered 5' drilling mud. Drilled to total depth - 8817'. Ran logs. Received plugging instructions from Ed Guynn, BLM - Salt Lake City, UT. Plugged and abandoned as follows:

- Plug #1: 8700'-8500' w/75 sx. cmt.
- Plug #2: 5450'-5150' w/110 sx. cmt.
- Plug #3: 3750'-3550' w/75 sx. cmt.
- Plug #4: 1850'-1750' w/45 sx. cmt.
- Plug #5: 1000'-900' w/50 sx. cmt.
- Plug #6: Surface w/10 sx. cmt.

MW 10.5# left in hole. Rig released @ 10:00a.m. 5/29/84. Dry hole marker will be erected when rig is moved off and location is restored.

ACCEPTED
APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 6/4/84
BY: John R. Bays

18. I hereby certify that the foregoing is true and correct

SIGNED Robert C. Arceneaux TITLE V.P. Operations DATE 5/30/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

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

5. LEASE DESIGNATION AND SERIAL NO.

U-44216

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal

9. WELL NO.

21-4

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

Sec. 21-T30S-R24E

12. COUNTY OR PARISH
San Juan

13. STATE
UT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other _____

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RESVR. Other _____

2. NAME OF OPERATOR
BWAB Incorporated

3. ADDRESS OF OPERATOR

1000 City Centre 4, 1801 California St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface NW NW 685' FWL & 1051' FNL

At top prod. interval reported below

At total depth

14. PERMIT NO. 43-037-30999 DATE ISSUED 4/1/84

15. DATE SPUDDED 4/26/84 16. DATE T.D. REACHED 5/27/84 17. DATE COMPL. (Ready to prod.) P&A 5/29/84 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* 5929' GL 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD 8817' 21. PLUG, BACK T.D., MD & TVD 22. IF MULTIPLE COMPL., HOW MANY* 23. INTERVALS DRILLED BY 0-8817' ROTARY TOOLS CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* NONE 25. WAS DIRECTIONAL SURVEY MADE NO

26. TYPE ELECTRIC AND OTHER LOGS RUN HDT; LSS; DLL/GR 27. WAS WELL CORRED NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	36#	995'	12 1/4"	460 sxs.	NONE

29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED	DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8700'-8500'	75 sxs. cmt.	1000'-900'	w/50 sxs. cmt.; Surf. - 10 sxs.
5450'-5150'	110 sxs. cmt.		
3750'-3550'	75 sxs. cmt.		
1850'-1750'	45 sxs. cmt.		

33.* DATE FIRST PRODUCTION PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) WELL STATUS (Producing or shut-in) P & A 5/29/84

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS
Will be sent under separate cover.

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

SIGNED Robert C. Arceneaux V.P. Operations

DATE 5/30/84

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on Items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. **Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38.

GEOLOGIC MARKERS

NAME	MEAS. DEPTH	TOP TRUE VERT. DEPTH
Shinarump	1454'	
Moenkopi	1538'	
Cutler	1936'	
Hermosa	3528'	
LaSalle	4388'	
Ismay	5049'	
Paradox Shale	5260'	
Paradox Salt	5396'	
Pinkerton Trail	8298'	
Molas	8445'	
Leadville	8518'	
TD	8817'	

BEST COPY
AVAILABLE

JUL 9 1984

DIVISION OF OIL
GAS & MINING*S. J. HARRIGAN CO.**Wellsite Geological Services**P. O. Box 256
Glendive, Montana
59330
406-365-6750*B W A B, Incorporated

Federal #21-4

NW $\frac{1}{4}$, NW $\frac{1}{4}$, 1,051'FNL & 685'FWL

Section 21, T.30S., R.24E.

Southwest Lisbon Prospect

San Juan County, Utah

*Prepared by: Steve and Sharon Harrigan

WELL DATA

Well Name: B W A B, Inc.
Federal #21-4

Well Location: NW $\frac{1}{4}$, NW $\frac{1}{4}$, 1,051'FNL & 685'FWL
Section 21, T.30S., R.24E.
Southwest Lisbon Prospect
San Juan County, Utah

Contractor: Energy Search Drilling Company
Rig: Rig #1

Elevations: 5,929' Ground Level
5,943' Kelly Bushing

Spud Date: April 26, 1984
Finished Drilling: May 27, 1984

Total Depth: 8,815' - Driller
8,817' - Schlumberger

Surface Casing: 996' of 9-5/8" casing cemented with
260 sacks lite and 200 sacks class
B.

Drillstem Tests: DST #1: LaSal 4,800'-4,845'

Electric Logs: DLL/GR 8,817'-8,300'
5,400'-3,500'
LSS/GR/Caliper 8,817'-1,000'
Dipmeter 8,817'-8,300'
5,400'-4,200'

Wellsite Geologist: Steve Harrigan

Mud Logger: S. J. Harrigan Co., Inc.

Mud Company: N. L. Baroid

Samples: B W A B , Inc. (Dry)
State of Utah (Dry)

FORMATION TOPS

<u>Formation</u>	<u>Sample Depth</u>	<u>Subsea</u>	<u>E-Logs</u>	<u>Subsea</u>
Navajo	---	---	---	---
Chinle	---	---	---	---
Shinarump	---	---	1,455'	(+4,488)
Moenkopi	1,249'	+4,694	1,538'	(+4,405)
Cutler	1,936'	+4,007	1,936'	(+4,007)
Hermosa	3,528'	+2,415	3,528'	(+2,415)
LaSal	4,401'	+1,542	4,388'	(+1,555)
Ismay	5,054'	+ 891	5,049'	+ 894
Paradox Salt	5,401'	+ 544	5,396'	+ 547
Base of Salt	8,300'	-2,357	8,298'	-2,355
Pinkerton Trail	8,300'	-2,357	8,298'	-2,355
Molas	8,436'	-2,493	8,445'	-2,502
Leadville	8,518'	-2,575	8,518'	-2,575
Total Depth	8,815'	---	8,817'	---

BRIEF WELL HISTORY

The well was conventionally drilled to a depth of 8,815'. Problems with a washed out section of conductor pipe was responsible for more operating time being needed to drill the surface hole. In addition, while drilling in the Paradox Salt section at a measured depth of 5,562', we 'twisted off' with the top of our fish at 4,786'. However, within 24 hours, drilling operations had resumed.

After drilling 457' into the LaSal formation, drilling ceased in order to run our first and only drillstem test. The test recovery consisted of only a small amount of drilling fluid with no gas or oil.

Upon reaching the base of Paradox formation at 8,300', it was clear that our salt section was considerably thicker than originally anticipated.

After drilling 297' into the Mississippian Leadville and having no porosity development, drilling operations ceased at a total depth of 8,815'. After running and evaluating the Electric Logs, the decision was made to plug and abandon the well.

MUD PROGRAM

This well was drilled to a depth of 1,000', (driller), with fresh water. 9-5/8" surface casing was set to 996'. Upon drilling out from underneath surface casing, a fresh water mud system was continued to 5,290'. Aquagel was used to control the viscosity. Chromates were used for corrosion control.

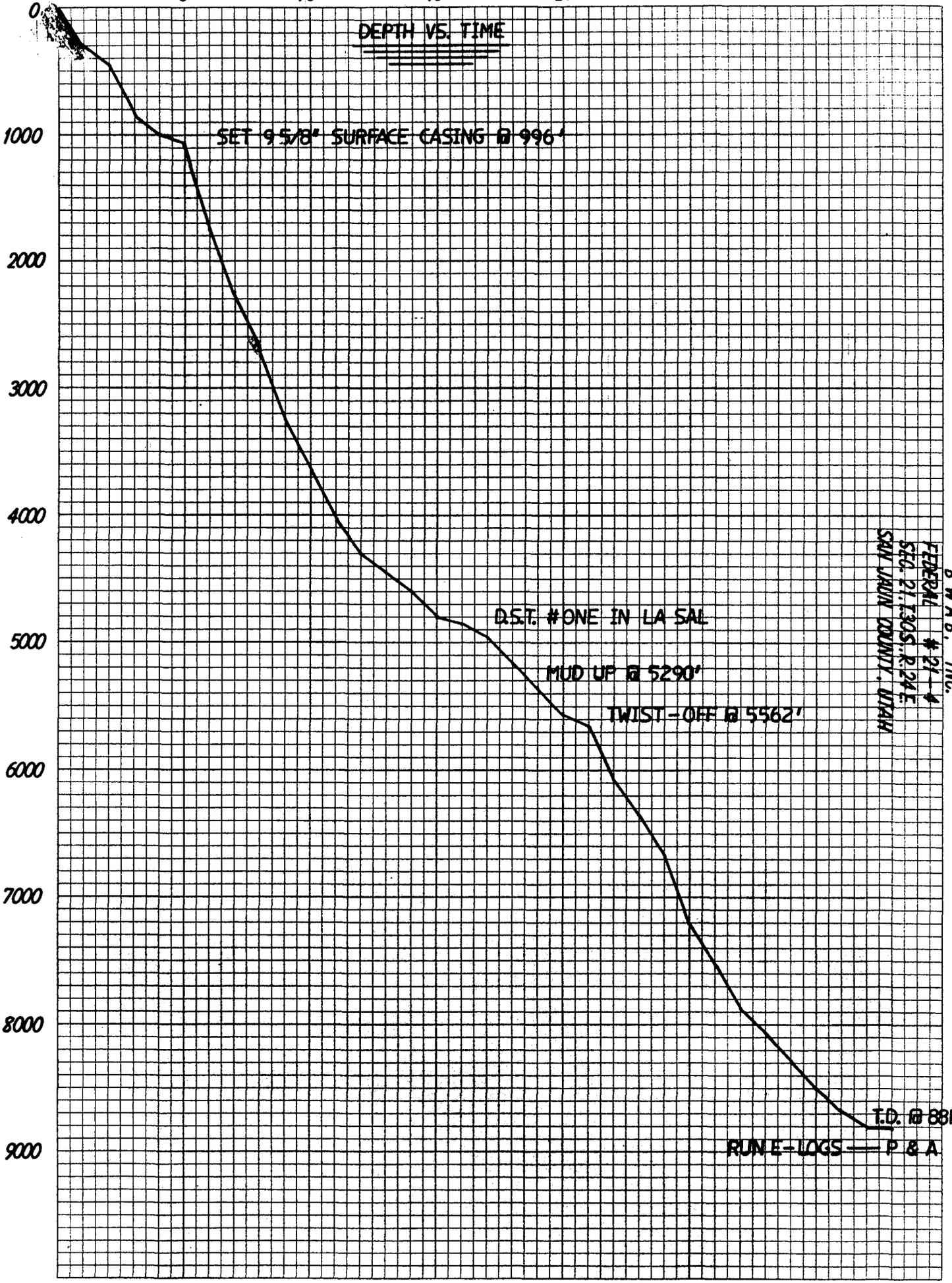
At 5,290', before penetrating the Paradox Salt formation, the hole was displaced with brine water. From 5,290' to 8,815', the mud weight was maintained at 10.1 to 10.5, viscosity at 33 to 45, and the water loss from 4 to 13 cc. No lost circulation problems were encountered after drilling out from underneath surface casing.

The mud was provided by N. L. Baroid and under the supervision of mud engineer, Salomon Garcia, of Cortez, Colorado.

DAILY DRILLING PROGRESS

<u>Wt.</u>	<u>Vis.</u>	<u>Wl.</u>	<u>Report #</u>	<u>Date</u>	<u>Status</u>	<u>Footage</u>	<u>Hours</u>
Fresh Water/Native Mud				04-26-84	Spud @ 9:45 AM	(0')	0
08.4	34	N/C	1	04-27-84	Drilled 0' to 305'	(305')	10.75
08.7	34	N/C	2	04-28-84	Drilled 305' to 447'	(142')	15
09.1	32	N/C	3	04-29-84	Drilled 447' to 864'	(417')	17.25
09.4	38	N/C	4	04-30-84	Drilled 864' to 1,000'	(136')	12.25
				Ran 996' of 9-5/8" casing. Rig up B.O.P.			
08.5	35	12	5	05-01-84	Drilled 1,000' to 1,075'	(75')	2
08.9	35	10	6	05-02-84	Drilled 1,075' to 1,737'	(662')	22.75
09.0	33	10	7	05-03-84	Drilled 1,737' to 2,253'	(516')	23
09.0	35	10	8	05-04-84	Drilled 2,253' to 2,691'	(438')	17.50
09.0	34	11	9	05-05-84	Drilled 2,691' to 3,240'	(549')	22.50
09.0	33	11	10	05-06-84	Drilled 3,240' to 3,647'	(407')	23.25
09.0	31	12	11	05-07-84	Drilled 3,647' to 4,050'	(403')	22.75
09.0	35	11	12	05-08-84	Drilled 4,050' to 4,297'	(247')	20.50
08.9	33	13	13	05-09-84	Drilled 4,297' to 4,450'	(153')	18.50
09.0	35	11	14	05-10-84	Drilled 4,450' to 4,596'	(146')	14.50
08.9	34	12	15	05-11-84	Drilled 4,596' to 4,796'	(200')	17
09.0	42	11	16	05-12-84	Drilled 4,796' to 4,845'	(49')	4.25
				Running DST #1 @ 6:00 AM in LaSal.			
09.0	35	10	17	05-13-84	Drilled 4,845' to 4,953'	(108')	12.50
08.9	36	14	18	05-14-84	Drilled 4,953' to 5,180'	(227')	18.25
10.1	39	4	19	05-15-84	Drilled 5,180' to 5,370'	(190')	16.75
				Mud up @ 5,290'			
10.2	35	10	20	05-16-84	Drilled 5,370' to 5,558'	(188')	15.75
10.2	33	6	21	05-17-84	Drilled 5,558' to 5,660'	(102')	7.75
				Twist-off @ 5,562' M.D. - Top of Fish @ 4,786'. Fish out with Dotco.			
10.5	34	10	22	05-18-84	Drilled 5,660' to 6,084'	(424')	19.75
10.4	34	13	23	05-19-84	Drilled 6,084' to 6,350'	(266')	10.75
10.5	34	12	24	05-20-84	Drilled 6,350' to 6,688'	(338')	21.75
10.4	34	12	25	05-21-84	Drilled 6,688' to 7,220'	(532')	21.25
10.5	34	8	26	05-22-84	Drilled 7,220' to 7,546'	(326')	15.50
10.5	36	10	27	05-23-84	Drilled 7,546' to 7,883'	(337')	21.50
10.5	36	10	28	05-24-84	Drilled 7,883' to 8,078'	(195')	13.25
10.4	42	8	29	05-25-84	Drilled 8,078' to 8,316'	(238')	22
10.4	41	10	30	05-26-84	Drilled 8,316' to 8,502'	(186')	22.75
10.4	41	8	31	05-27-84	Drilled 8,502' to 8,684'	(182')	23
10.5	45	10	32	05-28-84	Drilled 8,684' to 8,815'	(131')	12
				Total depth @ 6:15 PM - Running E-Logs @ 6:00 AM.			
No Report			33	05-29-84	Complete E-Logs - Plug and Abandon.		

DEPTH VS. TIME



SET 9 5/8" SURFACE CASING @ 996'

D.S.T. #ONE IN LA SAL

MUD UP @ 5290'

TWIST-OFF @ 5562'

B W A B, INC.
FEDERAL # 21-4
SEC. 21, T30S, R. 24E
SAN JUAN COUNTY, UTAH

T.D. @ 8815

RUNE-LOGS — P & A

46 0703

K•E 10 X 10 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

BIT RECORD

<u>Bit #</u>	<u>Size</u>	<u>Make</u>	<u>Type</u>	<u>Depth Out</u>	<u>Footage</u>	<u>Hours</u>	<u>Grade</u>
1 (RR)	12-1/4	Sec.	S84F	778'	778'	34-1/2	3-S/E-in
2 (RR)	12-1/4	Sec.	S84F	1,000'	222'	19-1/4	4-S/E-in
3	7-7/8	Sandvik	CFS20	2,517'	1,517'	60-1/4	5-S/E-in
4	7-7/8	Sec.	S84F	4,297'	1,780'	94-3/4	5-S/E-in
5	7-7/8	Varel	V527	4,582'	285'	31-3/4	7-S/E-in
6	7-7/8	Sec.	S84F	4,845'	263'	14-1/2	6-S/E-in
7	7-7/8	STC	F2	4,969'	124'	14-1/4	7-8-out
8	7-7/8	Sec.	S86F	5,498'	529'	35-1/4	2-S/E-in
9	7-7/8	Sec.	S44F	6,152'	654'	38	5-S/E-in
10	7-7/8	STC	SDGH	7,426'	1,274'	63-1/2	5-6-out
11	7-7/8	STC	SDGH	8,061'	635'	37	5-5-out
12	7-7/8	Sec.	S86F	8,815'	754'	82-3/4	8-6-out

DEVIATION RECORD

<u>Measured Depth</u>	<u>Deviation</u>
145'	1/2°
334'	3/4°
395'	3/4°
456'	3/4°
546'	1/4°
650'	1/2°
750'	1/2°
850'	1/4°
1,000'	1/2°
1,189'	3/4°
1,403'	3/4°
1,737'	3/4°
2,014'	1°
2,289'	3/4°
2,598'	1/2°
2,907'	3/4°
3,215'	3/4°
3,522'	1°
3,675'	3/4°
3,890'	3/4°
4,106'	1-3/4°
4,136'	1-3/4°
4,197'	2°
4,228'	1-3/4°
4,290'	1-3/4°
4,351'	1-1/2°
4,412'	1-1/2°
4,475'	1-3/4°
4,534'	1-1/4°
4,565'	1-1/4°
4,629'	1-1/4°
4,722'	1-1/2°
4,815'	1°
4,937'	1°
5,062'	1-1/4°
5,154'	3/4°
5,247'	1°
5,464'	3/4°
5,555'	1°
5,646'	1-1/2°
5,770'	1°
5,862'	1/2°
6,014'	1/2°
6,292'	1°
6,506'	1-3/4°
6,598'	1-1/4°
6,839'	1°
7,148'	1-1/2°

DEVIATION RECORD (CONT.)

<u>Measured Depth</u>	<u>Deviation</u>
7,424'	1-3/4°
7,636'	1-1/2°
7,883'	1-3/4°
8,061'	2-3/4°
8,129'	2-1/2°
8,253'	2-1/2°
8,348'	2-3/4°
8,534'	2-3/4°
8,815'	1-3/4°

DRILLSTEM TEST #1

Interval: 4,800' - 4,845'

Formation: LaSal

First Open: 15 Mins. Open tool with weak surface blow,
remained for 12 minutes, died at 12 minutes.

First Shut-in: 60 Mins. Close tool with no blow.

Second Open: 60 Mins. Open tool with no blow.

Second Shut-in: 120 Mins. Close tool with no blow.

No Gas To Surface

Recovery: 5' - Drilling mud

Pressures:

Depth	4,845' - Out	4,775' - In
I.H.	2,274	2,259
F.H.	2,261	2,205
I.O.	2.7-2.7	0.1-0.1
I.S-I.	5.4	2.07
F.O.	2.7-2.7	0.1-0.1
F.S-I.	2.7	2.07
B.H.T.	110°F.	

Sampler: 0 PSI With No Gas

25 CC - Drilling Mud

INTERPRETIVE SAMPLE DESCRIPTIONS

- 1,200' Shale: gray, soft to firm, slightly calcareous; conglomerate, coarse grains, trace clear white chert, some interbedded shale, traces of limestone.
- 1,220' Shale and conglomerate: as above, pyritic in part; limestone, tan, gray, very fine crystalline.
- 1,230' Sandstone: clear white, fine grain, subround.
- *Moenkopi Top @ 1,249'
- 1,249' Siltstone: red orange, very fine to fine grain, calcareous; scattered gray green; sandstone, red clear to white, fine grain, silty in part, interbedded shale.
- 1,280' Siltstone: red orange, very fine to fine grain, calcareous; becoming predominantly shale, red, firm, calcareous, interbedded gray green in part.
- 1,304' Sandstone: clear red to white, fine to very fine grain, silty in part; abundant shale and siltstone as above, scattered bulky pyrite.
- 1,340' Shale: red, occasional gray green, firm, silty in part, decreasing to slightly calcareous; siltstone, red orange, very fine grain, firm; sandstone streaks with trace glauconite.
- 1,362' Shale and siltstone: as above, scattered quartz sand grains, round; sandstone streaks, clear white, fine grain.
- 1,395' Sand: coarse grains, quartz, round, free grains in part.
- 1,404' Siltstone: red to orange clear, very fine grain, moderately hard to firm, traces of mica, trace slightly calcareous; shale, red, interbedded gray green, firm to moderately hard.
- 1,418' Shale: gray green, firm to moderately hard, bulky, slightly calcareous, some silty, trace pyrite; abundant red beds as above, scattered quartz sand grains.
- 1,457' Chert: clear white to a red tint, sharp; abundant sandstone, clear to red, white, fine to a coarse grain, quartz, some conglomerate, trace shale beds.

- 1,486' Shale: red orange, abundant gray green, firm to moderately hard, slightly bulky, silty in part; siltstone, red to orange clear, very fine grain, firm, calcareous, abundant mica, trace sandstone streaks, trace chert beds.
- 1,508' Shale: as above, increasing in gray green; sandstone, clear white to red, fine grain, silty to a siltstone, trace chert.
- 1,532' Shale: red, gray, firm to moderately hard, bulky pyrite; interbedded limestone, white, soft, some tan, hard, dense; siltstone, red, very fine grain, mica.
- 1,542' Sandstone: clear white to red, fine to medium grain, quartz in part, scattered conglomerate, coarse to medium grain, trace chert.
- 1,562' Shale: red gray green, purple, firm to moderately hard, calcareous, bulky in part; siltstone, red orange, firm, some gray, very fine grain, calcareous, mica, interbedded limestone; sandstone as above, trace arkosic, trace chert beds.
- 1,592' Sandstone: white to gray clear, fine grain, slightly calcareous; scattered conglomerate, medium to coarse grain, trace pyrite and chert.
- 1,612' Siltstone: predominantly red, very fine grain, firm to slightly friable, mica, calcareous; shale, becoming predominantly gray, some purple, abundant red, firm to moderately hard, trace limestone beds.
- 1,630' Shale: gray, firm, slightly calcareous; sandstone, gray to white clear, fine grain, firm, slightly friable, trace glauconite, trace chert.
- 1,642' Conglomerate: clear, gray, some red, medium grain, trace sandstone stringers as above.
- 1,656' Shale: orange to red, some gray, firm, calcareous, streaks of soft, white limestone; siltstone, red, very fine grain, mica.
- 1,664' Sandstone: white to gray clear, fine grain, slightly calcareous, trace arkosic; chert, clear white.
- 1,689' Conglomerate: clear to gray, coarse grains, some tan dense limestone fragments, trace chert.
- 1,708' Limestone: white, soft; brown red, anhydric.

- 1,714' Sandstone: red clear to white, some pink, fine to medium grain quartz, trace arkosic.
- 1,726' Shale: gray, red, firm, some purple, streaks of limestone; siltstone, red, very fine grain, mica.
- 1,736' Sandstone: clear red, trace conglomerate; chert, clear white to a red tint.
- 1,745' Shale: red orange, abundant gray green, predominantly firm, calcareous, silty in part; trace limestone, white, soft; tan, dense, argillaceous gray.
- 1,760' Siltstone: red, some gray, very fine grain, calcareous, mica; scattered sandstone stringers, white to red clear, fine grain; predominantly shale as above, some purple, moderately hard.
- 1,777' Sandstone: white to red clear, fine grain, abundant medium to coarse grains, quartz; conglomerate, clear, gray.
- 1,784' Chert: clear white to a red tint, sharp, very hard; sandstone as above, trace arkosic.
- 1,801' Shale: interbedded gray green and red, firm to moderately hard, calcareous, pyrite in part; sandstone, clear white, fine grain; scattered loose large quartz grains; limestone, thin beds, white, soft.
- 1,812' Chert: as above.
- 1,822' Shale: increasing in red, firm; siltstone, red orange, very fine grain, calcareous in part, mica; trace sandstone.
- 1,843' Siltstone: red orange, some gray, very fine grain, calcareous, mica.
- 1,856' Shale: red orange, abundant gray green, firm to moderately hard, some sandy, anhydrite inclusions; trace limestone, tan, hard, dense.
- 1,878' Sandstone: clear white to gray, tan, fine to very fine grain, firm, calcareous cement, no fluorescence, no cut.
- 1,891' Shale and siltstone: as above.
- 1,897' Sandstone: clear red, some white, fine to medium grain, quartz, round, moderately sorted, poor cement, friable in part, indications fair to good porosity, no fluorescence, no cut; chert beds, clear white to a red tint.

*Cutler Top @ 1,936'

- 1,936' Sandstone: as above, increasing in white, well cement.
- 1,939' Shale: red, some gray, firm to moderately hard, calcareous, anhydrite inclusions, trace interbedded limestone; sandstone, stringers white to red clear, very fine to fine grain.
- 1,968' Shale and sandstone: as above, scattered large quartz grains; siltstone, red orange, very fine grain, calcareous, trace gray.
- 1,992' Sandstone: clear white, some red tint, fine grain, calcareous cement, chert beds.
- 2,008' Shale: predominantly red, some gray, firm to hard, anhydrite inclusions in part, some sandy; trace interbedded tan limestone, very fine crystalline, dense; sandstone, as above.
- 2,044' Anhydrite: white to tan translucent, predominantly soft, calcareous.
- 2,048' Sandstone: clear white to gray, tan, very fine to fine grain, well cement in part, calcareous, trace glauconite.
- 2,058' Siltstone: red orange, very fine grain, calcareous; predominantly shale, red, gray, firm to moderately hard, silty and sandy in part, scattered anhydrite inclusions.
- 2,087' Sandstone: as above; some red clear, very fine grain, shaly, well cement, tight.
- 2,110' Shale: red, some gray, purple, firm to moderately hard, bulky in part, calcareous, some sandy, trace pyrite; siltstone as above.
- 2,146' Shale: predominantly red, firm to hard, calcareous, anhydric in part, interbedded dense limestone.
- 2,156' Anhydrite: white, soft, calcareous; sandstone, clear white, fine grain.
- 2,167' Sandstone: clear red, white to gray clear, fine to coarse grain in part, predominantly well cement, interbedded chert, scattered conglomerate beds; shale and siltstone as above, thin limestone beds, white, tan, dense, anhydric.

- 2,199' Shale: red orange, gray green, some purple, firm, calcareous, bulky, trace pyrite; siltstone, red orange, very fine grain, calcareous, mica, interbedded limestone.
- 2,226' Sandstone: predominantly orange clear, some white, fine grain, quartz, shale stringers; chert beds, clear white.
- 2,247' Sandstone: as above, some pink, fine to an occasional medium grain, well cement in part; scattered conglomerate, clear to gray, red, coarse grain, chert.
- 2,264' Shale: red orange, abundant gray, firm to moderately hard, calcareous, silty in part; interbedded limestone, tan gray, abundant white, very fine crystalline, anhydrite inclusions; siltstone, red orange, very fine to fine grain, mica.
- 2,292' Sandstone: white to red, pink, some gray clear, fine to an occasional medium grain, calcareous cement, scattered coarse grain conglomerate beds, trace glauconite; chert, clear white to red tint, brown, sharp.
- 2,310' Shale: as above, predominantly red, anhydric in part.
- 2,316' Siltstone: red orange, some gray, very fine to fine grain, firm to moderately hard in part, calcareous; shale, red to a purple, abundant gray, firm, calcareous, trace pyrite; limestone, tan, gray, abundant white.
- 2,339' Shale and siltstone: as above.
- 2,352' Sandstone: red to orange clear, white, fine to an occasional free coarse grain, round, moderately sorted, quartz, calcareous cement, shale stringers, conglomerate bed as above; abundant chert, clear white to red, lavender tint, exceptional sharp.
- 2,378' Siltstone: red orange, very fine grain, firm, calcareous; becoming predominantly shale, red orange, gray, purple, firm to moderately hard, calcareous; thin limestone beds, white, tan gray, dense; sandstone as above.
- 2,422' Sandstone: red orange to clear, fine to medium grain, quartz, round to subround, moderately sorted, calcareous cement; chert, clear white; conglomerate, clear, gray, some red, medium to coarse grain.

- 2,448' Shale and siltstone: as above, trace anhydrite inclusions.
- 2,465' Shale: red orange to purple, abundant gray green, firm to moderately hard, calcareous, bulky, trace pyrite, interbedded limestone; siltstone, very fine grain, mica.
- 2,488' Limestone: gray to tan translucent, very fine crystalline, anhydric.
- 2,494' Siltstone: red orange, very fine grain, calcareous, firm, soft.
- 2,498' Conglomerate: clear, gray, red, medium to coarse grain, cherty; sandstone, red clear, white, pink, fine grain, cemented, calcareous; chert, white to orange, lavender, sharp.
- 2,515' Shale: red, abundant gray, firm; interbedded limestone.
- 2,518' Sandstone: red to orange clear, some white, gray, fine to medium grain in part, quartz, round, calcareous cement; abundant chert, clear white to an orange tint; trace shale stringers and conglomerate beds.
- 2,535' Shale: becoming predominantly gray green, soft to firm, silty in part; abundant red, purple, firm, calcareous, bulky, trace pyrite; limestone, tan to gray, very fine crystalline, dense.
- 2,554' Siltstone: red orange, very fine to fine grain, calcareous.
- 2,558' Sandstone: as above, increasing in white, calcareous cement, tight.
- 2,580' Shale: predominantly red orange, gray, purple, firm to moderately hard, calcareous, some silty to siltstone as above; interbedded thin limestone, tan, white, very fine crystalline, anhydric in part; sand stringers.
- 2,604' Dolomite: trace tan gray, microgranular, argillaceous, mineral fluorescence; shale as above.
- 2,610' Chert: clear white to a red orange tint, sharp; scattered sandstone, red to orange clear, pink, white, fine to a trace of coarse grains, quartz, some calcareous cement, trace conglomerate beds; interbedded shale and siltstone.

- 2,664' Limestone: tan, gray, very fine crystalline, some white with dead oil.
- 2,668' Shale: predominantly red orange, some gray green, firm, soft, calcareous, bulky in part; siltstone, red orange, very fine to fine grain, calcareous, sandstone stringers and chert as above.
- 2,690' Limestone: tan translucent, hard, dense, scattered white, soft; shale, orange, hard, anhydric.
- 2,722' Shale and siltstone: as above.
- 2,738' Sandstone: red to orange clear, some white, fine to an occasional coarse grain, quartz, round to subround, indications of friable porosity in part, no fluorescence, no cut; abundant chert, clear white to orange, lavender tint.
- 2,750' Siltstone: red orange, some gray, very fine to fine grain, firm to slightly friable, calcareous; abundant shale.
- 2,768' Shale: red orange, purple, abundant gray green, firm, calcareous, bulky, pyrite trace; siltstone and sandstone as above; trace chert.
- 2,796' Limestone: gray, tan, very fine crystalline, anhydric in part.
- 2,806' Shale: red orange, abundant gray green, some purple, firm, bulky, silty in part; siltstone, red orange, very fine to fine grain, calcareous; chert beds; interbedded limestone, tan, gray, very fine crystalline, abundant soft white.
- 2,826' Sandstone: clear white to gray, some pink, fine to very fine grain, well cement, calcareous, scattered medium grain, clear orange; chert, clear white to a red tint.
- 2,862' Siltstone: red orange, very fine to fine grain, calcareous, trace of scattered quartz sand grains, chert beds; shale as above, calcareous, trace pyrite.
- 2,878' Sandstone: as above; conglomerate beds, clear, gray, some red, purple, medium to fine grain, calcareous in part.
- 2,910' Siltstone: red to orange clear, very fine to fine grain, firm to hard in part, calcareous, occasional large quartz sand grains.

- 2,920' Chert: clear white to an orange clear, sharp; sandstone, clear orange, some gray to tan, fine grain, calcareous cement, silty in part, no fluorescence, no cut.
- 2,936' Shale: red, orange, purple, abundant gray, firm, silty in part; interbedded limestone, tan.
- 2,950' Chert: as above; trace of conglomerate, clear, gray, fine to medium grain, trace pyrite.
- 2,974' Siltstone: red orange, firm to moderately hard, very fine grain, calcareous; abundant shale, red and gray beds; limestone, tan, brown, very fine crystalline, scattered white.
- 3,008' Limestone: tan to red brown, dense; some gray, very fine crystalline, argillaceous; shale as above.
- 3,030' Shale: red orange, abundant gray green, firm, calcareous, silty in part; interbedded dense limestone, tan, white.
- 3,052' Siltstone: red to orange clear, very fine to fine grain, firm to moderately hard, calcareous, scattered coarse grain quartz sand; shale as above, some purple.
- 3,064' Limestone: brown, gray, very fine crystalline, slightly argillaceous in part; shale as above.
- 3,086' Sandstone: clear to orange, some pink, white, medium to coarse grain, angular, quartz, some fine grain with calcareous cement, no fluorescence, no cut; decreasing in chert, clear white to tan, sharp.
- 3,106' Siltstone: red to orange clear, some light gray, very fine to fine grain, calcareous, trace conglomerate beds; shale as above with interbedded limestone.
- 3,134' Limestone: brown, white, very fine to microcrystalline, thin beds; abundant siltstone as above.
- 3,148' Siltstone: red to orange clear, some gray, very fine to fine grain, calcareous; scattered sandstone stringers, clear white, gray, tan, very fine to fine grain, calcareous; shale, red orange, gray, firm, calcareous, silty in part, trace pyrite.
- 3,192' Sandstone: clear white, gray, tan, very fine to fine grain, calcareous; some orange clear, fine to medium grain, quartz, subangular, trace chert; siltstone as above.

- 3,214' Limestone: abundant brown, hard, dense.
- 3,220' Siltstone: predominantly red orange, very fine to fine grain, calcareous; shale, red orange, gray, some purple, firm to moderately hard, calcareous interbedded limestone; sandstone, clear orange to white, pink, fine to an occasional coarse grain, quartz, well cement in part, trace clear white chert.
- 3,248' Sandstone: as above; grading to conglomerate in part, clear, gray, trace red, calcareous; siltstone and shale as above.
- 3,274' Limestone: thin beds, tan gray, brown, dense.
- 3,284' Sandstone: clear to an orange tint, medium grain to coarse grain, angular to subangular, quartz, trace arkosic, trace dead oil, no fluorescence, no cut; scattered clear white chert; conglomerate beds, clear to gray, green, tan, medium to fine grain, limy in part, trace pyrite.
- 3,302' Sandstone: clear orange to white, pink, fine to an occasional coarse grain, quartz, indications fair to good porosity, no show.
- 3,310' Siltstone: red orange, some gray green with trace dead oil, very fine to fine grain, calcareous, no show; shale, red orange, firm, soft, calcareous.
- 3,322' Shale: red orange, firm, soft, calcareous, some gray; interbedded limestone, tan to red brown, very fine to microcrystalline, dense.
- 3,340' Siltstone: increasing gray green, very fine to fine grain, becoming increasing calcareous, no fluorescence, no cut.
- 3,374' Sandstone: clear to an orange tint, some white, fine to medium grain, quartz, calcareous cement in part, indications poor to fair porosity, no fluorescence, no cut; milky white chert; conglomerate beds, clear, gray, green, fine to medium grain tan limestone.
- 3,394' Shale: red orange, gray, firm, calcareous.
- 3,400' Sandstone: as above, angular to subangular, becoming medium to coarse grain, indications fair to good porosity, no fluorescence, no cut.
- 3,410' Shale: orange, hard, anhydric; abundant gray green siltstone, very fine to fine grain, calcareous to limy; limestone, tan, dense; gray, silty.

- 3,430' Sandstone: orange clear, pink, some white, medium to coarse grain, quartz, subangular to angular, trace arkosic, moderately sorted, indications of fair to good porosity.
- 3,454' Siltstone: light gray green, very fine to fine grain, calcareous to limy, grading to conglomerate, trace pyrite; sandstone, clear gray to white, fine grain, trace intergranular porosity, predominantly tight, no fluorescence, no cut.
- 3,470' Shale: becoming gray, gray green, firm, pyrite.
- 3,472' Limestone: tan to gray brown, very fine to medium crystalline, dense, trace fossil debris; some white, chalky; shale and siltstone as above.
- 3,500' Shale: gray, gray green, firm, scattered red orange; limestone as above, some gray green, silty in part.
- 3,510' Sandstone: clear gray, fine grain, subangular to subround, trace of poor intergranular porosity, no fluorescence, no cut; conglomerate beds, clear, gray, some green, fine to medium grain, grading to siltstone.
- 3,524' Siltstone: gray green to clear, very fine to fine grain, calcareous.

*Hermosa Top @ 3,528'

- 3,528' Limestone: tan to gray brown, very fine to fine crystalline, fossils, occasional sucrosic tan, trace dead oil, pale gold fluorescence in part, no cut; abundant gray white, firm, some chalky; trace sandstone stringers as above.
- 3,546' Siltstone: gray green to brown, very fine grain, grading to limestone.
- 3,552' Shale: gray green, moderately firm, calcareous, trace pyrite.
- 3,564' Limestone: predominantly white, very fine to fine crystalline, chalky in part.
- 3,570' Sandstone: white to clear gray, tan, very fine to fine grain, trace intergranular porosity, no show; grading to siltstone, gray to green, very fine grain, calcareous to limy, trace pyrite.
- 3,580' Limestone: tan to gray, microcrystalline, dense, white as above; abundant light gray green, silty to a siltstone.

- 3,606' Shale: gray to green, firm, dark red brown, hard, mica.
- 3,608' Limestone: tan white to brown, gray green, very fine to medium crystalline, fossils, siliceous in part, pyrite, interbedded milky white chert.
- 3,616' Siltstone: gray green, very fine grain, calcareous to limy.
- 3,626' Limestone: tan white to gray brown, micro to medium crystalline, fossils, pyritic, trace dead oil, pale fluorescence in part, no cut; trace chert beds.
- 3,650' Siltstone: light gray green to tan gray, very fine grain, calcareous to limy with sandstone stringers, clear gray to white, very fine to fine grain, subangular, well cement; interbedded limestone as above, trace chert.
- 3,667' Siltstone: as above, firm to moderately hard, abundant mica, trace glauconite, grading to sandstone; shale, gray to green, firm, calcareous.
- 3,678' Sandstone: clear white to gray, tan, fine to medium grain, subangular to angular, moderately hard, trace mica, intergranular porosity 2-7%, no fluorescence, no cut; siltstone as above.
- 3,706' Limestone: tan white to gray brown, dense, siliceous; gray green, firm; silty grading to siltstone, light gray green to gray brown, very fine to fine grain in part, scattered mica; traces sandstone stringers.
- 3,732' Shale: red brown, gray green, firm.
- 3,735' Limestone: tan white to brown, gray, green, medium to microcrystalline, siliceous in part, fossils; trace chert, milky white; siltstone as above, limy to silty limestone.
- 3,752' Siltstone: light gray green to gray brown, very fine to fine grain, calcareous to limy, mica, grading to limestone.
- 3,764' Shale: dark gray brown, firm, pyrite.
- 3,770' Sandstone: clear white to gray, fine grain, subangular to angular, trace of mica and pyrite, fair intergranular porosity, trace dead oil, no fluorescence, no cut; some conglomerate beds; limestone, becoming dark brown, gray, very fine to medium crystalline.

- 3,790' Siltstone: gray green, gray brown, very fine to fine grain, calcareous, trace dead oil, scattered mica, pyrite, no fluorescence, no cut, becoming silty limestone in part.
- 3,804' Limestone: tan white to brown, hard, siliceous in part; shale, dark gray, abundant gray green, firm.
- 3,828' Limestone: as above, some green, very fine to medium crystalline, fossils, argillaceous in part.
- 3,838' Sandstone: clear to gray green, tan, very fine to fine grain, conglomerate streaks, grading to siltstone.
- 3,854' Siltstone: light gray green, gray brown, very fine to fine grain, calcareous to silty in part, mica, pyrite; shale, gray to green, some orange, firm, calcareous, pyritic; interbedded tan white to brown limestone, micro to medium crystalline, imbedded quartz sand.
- 3,890' Shale: gray to green, some orange, firm; some dark red brown, moderately hard.
- 3,896' Siltstone: as above, scattered sandstone stringers.
- 3,912' Limestone: tan white to brown, very fine to medium crystalline, hard, fossil debris; gray green, argillaceous, silty in part, trace chert; abundant dark brown, very fine crystalline.
- 3,922' Sandstone: clear white to gray, green, fine to very fine grain, moderately hard, conglomerate in part; siltstone, gray green to brown, very fine to fine grain; limestone, becoming dark gray brown.
- 3,939' Sandstone: clear gray to green, white, fine grain, subangular, fair intergranular porosity, trace stain, no fluorescence, no cut; siltstone, becoming red brown, very fine to fine grain, abundant mica, calcareous.
- 3,954' Shale: gray to green, abundant red brown, firm to moderately hard, sandy in part.
- 3,964' Limestone: tan white to brown, medium to very fine crystalline, calcitic in part; chert, clear orange.

- 3,973' Siltstone: red brown as above, some gray green, very fine to fine grain, calcareous, sandstone streaks, grading to conglomerate, gray, green, fine to medium grain.
- 3,986' Limestone: tan white to brown, no visible porosity, trace stain, no show.
- 4,010' Sandstone: clear gray to green, some pink, fine to medium grain, subangular, calcareous cement, poor porosity, no show, conglomerate stringers.
- 4,024' Shale: red brown, firm to moderately hard, trace mica; abundant gray green, orange.
- 4,036' Limestone: white to tan, gray brown, medium to very fine crystalline, siliceous in part, calcite crystals, mineral fluorescence in part.
- 4,048' Siltstone: red brown, gray, very fine to fine grain, calcareous to silty limestone in part, abundant mica.
- 4,058' Sandstone: trace clear gray to green, tan, some pink, medium to predominantly very fine grain, firm to slightly friable, subangular, silty in part, fair intergranular porosity, no fluorescence, no cut; predominantly siltstone, red brown.
- 4,076' Limestone: as above, fossils in part; shale, gray, green, orange, calcareous, silty in part.
- 4,086' Siltstone: red brown, abundant gray green, very fine to fine grain, mica in part; scattered sandstone, clear, red, very fine to fine grain, calcareous, trace of chert.
- 4,097' Limestone: white to tan, medium to very fine crystalline, siliceous in part; increasing in shale, gray green, orange to brown, firm, calcareous, trace pyrite.
- 4,118' Sandstone: clear to gray green, fine to medium grain, subangular to subround, well cement in part, conglomerate, some friable intercrystalline porosity, no show.
- 4,128' Siltstone and limestone: as above.
- 4,142' Limestone: gray brown, green, very fine to fine crystalline, argillaceous, silty in part; abundant white to brown, fossils, siliceous, trace of sucrosic, mineral fluorescence, no cut; shale, gray green, interbedded orange, dark gray, firm.

- 4,156' Sandstone: as above, some white, tight, no show.
- 4,186' Shale: dark gray, dark brown, firm to moderately hard, calcareous, platy, trace mica.
- 4,194' Siltstone: red brown, abundant gray green, very fine to fine grain, calcareous, mica, trace pyrite.
- 4,202' Shale: becoming dark gray brown, moderately hard, platy, pyritic, slightly dolomitic; limestone, tan, becoming dark gray brown, micro to medium crystalline, siliceous, pyritic in part, trace clear white chert.
- 4,232' Limestone: tan white to brown, micro to medium crystalline, fossil debris, milky white chert.
- 4,240' Siltstone: red brown, some gray green, very fine to fine grain, mica in part; sandstone, clear gray to green, some pink, fine grain, well cement, grading to conglomerate, mica, trace of pyrite.
- 4,266' Siltstone: as above; sandstone, clear gray, traces of red, fine to medium grain, angular, friable porosity, no fluorescence, no cut; conglomerate, clear, gray, green, medium grain.
- 4,284' Limestone: tan to gray, very fine to medium crystalline, silty in part.
- 4,292' Shale: dark gray, red brown, firm to hard.
- 4,304' Siltstone: red brown, some gray, very fine to fine grain, abundant mica, trace orange clear chert.
- 4,314' Shale: gray green, soft to firm, silty in part; abundant orange, firm, calcareous, interbedded orange brown limestone, dense; predominantly gray brown, fine crystalline to granular, silty in part.
- 4,328' Siltstone: light gray white to green, firm to medium hard, calcareous; sandstone, clear gray to green, some pink, fine grain, trace conglomerate.
- 4,340' Limestone: white to brown, medium to very fine crystalline, siliceous; gray to green, very fine granular, silty in part, trace chert.
- 4,348' Shale: as above.

- 4,362' Limestone: tan white to dark gray brown, very fine to fine crystalline, scattered fossils, argillaceous in part, some silty, predominantly siltstone, trace chert.
- 4,386' Limestone: very dark gray brown, fine to very fine crystalline, argillaceous in part; becoming shale, dark gray, dark brown, medium hard, platy, slightly carbonaceous, calcareous.
- *LaSal Top @ 4,401'
- 4,401' Limestone: tan, micro to cryptocrystalline, very siliceous; abundant chert, milky white.
- 4,410' Limestone: white to tan, dull gray brown, fine to microcrystalline, becoming granular in part, slightly dolomitic, predominantly dense, siliceous, trace poor intergranular porosity, trace brown stain, occasional mineral fluorescence, no cut, interbedded chert.
- 4,428' Shale: gray to dark gray brown, moderately hard, slightly calcareous; limestone, becoming dark gray brown, very fine crystalline, siliceous in part, slightly carbonaceous, argillaceous in part; scattered light gray, firm, silty; chert as above.
- 4,454' Siltstone: light gray green, some red brown, very fine to fine grain, firm to moderately hard, mica, occasional sandstone beds, tight; interbedded shale and limestone.
- 4,474' Sandstone: clear white to gray, some tan, trace conglomerate, medium to fine grain, subangular, firm to slightly friable, mineral deposit, mica, indications of fair to good porosity, trace bitumen stain, no fluorescence, trace streaming yellow cut; interbedded siltstone and shale.
- 4,492' Limestone: gray brown, microcrystalline, argillaceous; abundant tan white to brown, micro to fine crystalline, hard, siliceous; trace of dolomite, micro to very fine sucrosic, poor porosity, no show; chert, clear, white.
- 4,510' Shale: gray to black, moderately hard, carbonaceous, slightly calcareous; interbedded limestone, siliceous as above; siltstone, light gray white, soft, very calcareous; trace micro-sucrosic dolomite, tan, thin beds.
- 4,528' Shale: black, hard, carbonaceous, pyritic.

- 4,537' Shale: predominantly gray brown, moderately hard to hard, calcareous to slightly dolomitic; occasional black as above; limestone, white to tan, interbedded gray brown, very fine to medium crystalline, fossils in part, argillaceous in part, abundant siliceous, scattered clear to white calcite, no show.
- 4,554' Siltstone: light gray white to green, very fine to fine grain, calcareous to limy, mica, pyrite, sandstone stringers.
- 4,566' Sandstone: clear white to gray, green, very fine to fine grain, poor to fair porosity, abundant mica, no fluorescence, no cut; shale, light gray green, soft.
- 4,578' Limestone: gray white to tan, dull brown gray, micro to fine crystalline in part, siliceous, trace calcite and bitumen stain edges, indications of fractures, no fluorescence, trace very faint residual cut; chert, milky white.
- 4,608' Limestone: as above, predominantly brown, hard, siliceous, no visible porosity, scattered mineral fluorescence, no cut; thin beds of microsugrosic dolomite, light gray brown, visible porosity less than 5%, no fluorescence, no cut; occasional shale laminations, gray brown, slightly carbonaceous; chert, abundant clear milky white.
- 4,646' Limestone: becoming gray brown, very fine to fine crystalline, slightly argillaceous, scattered gray to black shale laminations, carbonaceous, no fluorescence, trace faint residual cut; interbedded white to tan, hard, siliceous, clean; trace scattered chert.
- 4,664' Shale: gray to dark gray brown, moderately hard to hard, slightly calcareous; trace black, carbonaceous.
- 4,678' Limestone: becoming predominantly very dark gray to brown, very fine to microcrystalline, argillaceous to shaly in part, some fossil debris, no fluorescence, no cut; interbedded tan, siliceous; tan gray, silty, grading to siltstone.
- 4,690' Siltstone: light gray brown, very fine grain, slightly friable, trace with fair intergranular porosity, no fluorescence, trace residual cut; shale, dark gray to brown as above.

- 4,704' Limestone: becoming tan white, brown, micro to fine crystalline, occasional chalky, fossils in part, trace dead oil on the edges, possible fractures, some mineral fluorescence, no cut, trace chert; shale, increasing in black, hard, carbonaceous, faint yellow cut.
- 4,722' Shale: gray to black, firm to hard, carbonaceous in part, pyrite; limestone, predominantly gray brown, very fine crystalline.
- 4,736' Limestone: white to tan, brown, micro to very fine crystalline, siliceous, interbedded chert; shale, black, carbonaceous, no fluorescence, weak yellow cut.
- 4,760' Limestone: white to tan, brown, micro to very fine crystalline; some gray brown, very fine granular, slightly dolomitic, argillaceous; shale, predominantly black, moderately hard to hard, carbonaceous, weak yellow cut.
- 4,780' Shale: black, moderately hard, carbonaceous; scattered light gray green, soft.
- 4,796' Limestone: increasing gray brown, crystalline and granular, slightly dolomitic, argillaceous in part; abundant tan, hard, dense, siliceous.
- 4,810' Siltstone: light gray to gray brown, very fine grain, very calcareous.
- 4,814' Sandstone: clear white to light gray, fine to very fine grain, subangular, poor to moderately sorted, abundant mica, glauconite, intergranular porosity 3-7%, less than 5% with dead oil stain, no fluorescence, faint residual cut; grading to siltstone; pyrite.
- 4,840' Limestone: white to brown, micro to fine crystalline, siliceous, calcite crystals; gray brown, very fine crystalline, argillaceous; trace anhydrite.
- 4,852' Limestone: as above, scattered cream to tan, sandy becoming sandstone, very fine grain, limy, poor porosity, residual cut.
- 4,860' Sandstone: clear, tan gray cement, dolomitic, slightly argillaceous, trace mica, subangular to a trace of subround, quartz, poor porosity, green gold fluorescence, slightly streaming cut.

- 4,878' Siltstone: gray green, very fine grain, poor porosity, no fluorescence, residual cut; shale, black, dark brown, carbonaceous.
- 4,884' Limestone: dark brown to black, dolomitic in part, slightly sucrosic texture, tight, carbonaceous, trace chert.
- 4,894' Shale: very dark gray brown to black, moderately hard to hard, carbonaceous, slightly calcareous, pyritic in part; no fluorescence, slightly yellow cut, interbedded limestone; siltstone as above, slightly friable, good streaming cut.
- 4,916' Limestone: becoming white to tan, brown, microcrystalline, siliceous, interbedded chert; tan gray, firm to moderately hard, slightly argillaceous, trace of shale.
- 4,930' Shale: gray to dark gray brown, firm, slightly calcareous.
- 4,942' Limestone: tan to gray brown, very fine crystalline, slightly argillaceous, abundant siliceous, clean; dolomite, traces of tan, sucrosic, porosity less than 5%, mineral fluorescence, no cut.
- 4,954' Siltstone: gray brown, very fine grain, firm, poor porosity, calcareous, no fluorescence, faint streaming cut, grading to a sucrosic dolomite, argillaceous, residual cut in part; interbedded black carbonaceous shale, hard, slightly streaming cut.
- 4,970' Limestone: becoming dark brown to gray brown, micro to very fine crystalline, slightly dolomitic in part, slightly argillaceous, carbonaceous, disseminate pyrite; tan, dense, clean; chert, clear white; trace shale beds.
- 4,984' Siltstone: light gray brown, firm, residual cut.
- 5,004' Limestone: predominantly dark brown to gray brown, as above, crystalline to granular; interbedded tan white to light brown, siliceous, trace fossils, trace chert beds.
- 5,012' Shale: dark gray brown to black, firm to hard, calcareous, carbonaceous, pyrite in part, no fluorescence, slightly yellow cut; siltstone, gray brown, very fine grain, firm, calcareous, poor porosity, no fluorescence, fair yellow cut; interbedded thin limestone, dark gray brown, slightly dolomitic, carbonaceous, residual cut, trace chert.

*Ismay Top @ 5,054'

- 5,054' Limestone: white to tan, brown, micro to very fine crystalline, trace fossil debris, siliceous in part, calcareous, trace anhydrite inclusions; tan gray, medium hard, silty; shale, dark gray black, carbonaceous, pyrite in part, yellow cut; chert, clear gray.
- 5,074' Dolomite: gray brown, microsugrosic, argillaceous to shaly.
- 5,086' Shale: dark gray black, carbonaceous; siltstone, gray brown, firm, very fine grain, no fluorescence, weak yellow cut, grading to dolomite.
- 5,092' Anhydrite: white to tan translucent, very fine crystalline, dense.
- 5,098' Dolomite: tan to gray brown, micro to very fine granular, argillaceous to shaly; tan, sugrosic, poor porosity, no visible show.
- 5,106' Limestone: tan to brown, very fine crystalline, anhydrite inclusions.
- 5,114' Anhydrite: white to gray translucent, very fine crystalline, dense.
- 5,128' Shale: black, hard, carbonaceous, no fluorescence, yellow cut.
- 5,132' Anhydrite: white to gray translucent, very fine crystalline; trace dolomite, gray brown, very fine granular, moderately hard, argillaceous, chalky texture, carbonaceous, trace black stain, no fluorescence, residual cut.
- 5,154' Shale: very dark gray to black, firm to hard, calcareous, carbonaceous, pyrite in part, platy, no fluorescence, slow yellow cut; siltstone, light gray brown, very fine grain, firm to slightly friable, faint yellow cut; limestone, gray brown, microcrystalline, dense, trace chert.
- 5,190' Limestone: tan to medium gray brown, very fine to microcrystalline, predominantly hard, dense, slightly argillaceous in part, anhydrite inclusions, trace chert beds; interbedded gray shale.
- 5,214' Anhydrite: white to gray translucent, very fine crystalline, dense; predominantly tan to brown limestone, very fine crystalline, dense, anhydrite inclusions; dolomite, tan, fine crystalline, poor porosity, no fluorescence, no cut.

- 5,241' Dolomite: tan gray to brown, very fine granular, firm to moderately hard, argillaceous in part, chalky texture, poor pinpoint porosity, black stain, no fluorescence, slightly yellow cut; shale, black, carbonaceous, yellow cut.
- 5,259' Limestone: tan to brown, light gray brown, very fine to microcrystalline, trace fossils, anhydrite inclusions; shale, dark brown to black, carbonaceous in part, some cut.
- 5,272' Anhydrite: white to gray translucent, very fine crystalline, dense.
- 5,278' Limestone: white to tan, microcrystalline, hard, siliceous in part.
- 5,288' Shale: very dark brown to black, moderately hard to hard, calcareous, carbonaceous, no fluorescence, slightly yellow cut; interbedded dark brown limestone, dense, carbonaceous.
- 5,308' Shale and limestone: as above; siltstone, light gray brown, very fine grain, firm, no fluorescence, faint cut.
- 5,326' Dolomite: brown, very fine to microsugrosic, argillaceous in part, intercrystalline and pinpoint porosity 3-7%, trace stain, no fluorescence, faint cut; predominantly shale, black, carbonaceous, no fluorescence, yellow cut.
- 5,354' Dolomite: brown, microsugrosic, argillaceous in part, trace stain, no fluorescence, faint cut; possible salt, none in samples.
- 5,370' Anhydrite: white to tan translucent, very fine crystalline, dense, clean; limestone, brown, some gray brown, dense.
- 5,386' Shale: gray brown to black, firm to hard, carbonaceous, no fluorescence, slightly yellow cut; interbedded siltstone and dolomite as above.

*Paradox Salt Top @ 5,401'

- 5,401' Salt: by p-rate only; abundant shale, gray brown, silty, salt molds.
- 5,474' Salt: clear, hard, clean.
- 5,494' Shale: gray brown to black, firm to hard, carbonaceous in part, slightly calcareous, no fluorescence, faint yellow cut in part; limestone, brown, gray brown, micro to very fine crystalline, anhydrite inclusions, carbonaceous, dense.

- 5,520' Salt: abundant free salt in samples.
- 5,524' Shale: as above, predominantly black; trace of sucrosic dolomite.
- 5,534' Anhydrite: white to tan translucent, very fine crystalline, dense; limestone, predominantly brown, dense.
- 5,562' Salt: clear, hard, clean; shale, orange brown.
- 5,606' Limestone: tan, very fine crystalline, clean.
- 5,622' Salt: clear, hard, clean, scattered limestone and shale stringers.
- 5,630' Shale: orange brown, firm to moderately hard; salt as above.
- 5,652' Shale: orange brown, firm to moderately hard, noncalcareous, bulky; limestone, brown, micro to very fine crystalline, hard, dense, trace anhydrite.
- 5,670' Salt: clear, hard, clean.
- 5,688' Shale and limestone: as above.
- 5,694' Salt: clear, hard, clean; occasional shale beds.
- 5,820' Shale: orange, abundant light gray, firm, grainy; scattered interbedded black, hard, carbonaceous; limestone, tan, very fine crystalline, dense, traces of bitumen stain.
- 5,832' Anhydrite: white translucent, dense, clean.
- 5,836' Salt: clear, hard, clean; traces of orange shale stringers.
- 5,898' Shale: light gray, firm, calcareous; some black, hard, carbonaceous; traces of limestone; salt as above.
- 5,920' Salt: clear, hard, clean; scattered orange shale.
- 5,976' Shale: predominantly black, gray brown to gray, firm to hard, carbonaceous, some silty, trace faint cut; limestone, dark gray brown, micro to very fine crystalline; trace argillaceous dolomite.
- 5,986' Anhydrite: white to tan translucent, very fine crystalline, dense.

- 6,012' Salt: clear, hard, clean; scattered orange shale, firm.
- 6,124' Shale: predominantly orange, firm, bulky; some gray, black, firm to moderately hard, calcareous.
- 6,130' Limestone: tan, very fine crystalline, clean, trace anhydrite.
- 6,144' Salt: clear; shale stringers, gray, orange.
- 6,296' Shale: dark gray brown to black, firm to hard, carbonaceous, no fluorescence, faint yellow cut; dolomite, dark brown to gray brown, microgranular, hard, argillaceous, some sucrosic with poor porosity, very argillaceous, trace stain, no fluorescence, very faint cut; anhydrite, white, translucent.
- 6,326' Salt: clear, hard, clean, interbedded carbonaceous shale; trace siltstone.
- 6,350' Anhydrite: white translucent, very fine crystalline, dense with interbedded dolomite, gray brown, argillaceous.
- 6,366' Shale: dark gray brown to black, firm to hard, carbonaceous, no fluorescence, faint yellow cut; dolomite, gray brown, microsucrosic, argillaceous, no fluorescence, trace residual cut.
- 6,394' Salt: clear, hard, clean; shale stringers.
- 6,500' Anhydrite: white translucent, dense, abundant soft.
- 6,514' Shale: black, firm to moderately hard, very carbonaceous, noncalcareous, no fluorescence, slow milky yellow cut; dolomite, dark gray brown, microgranular, dense, argillaceous; scattered light gray brown; siltstone, very fine grain.
- 6,524' Anhydrite: white translucent, very fine crystalline, soft, powdery.
- 6,534' Salt: clear, hard; interbedded shale, dark gray, firm; trace siltstone.
- 6,614' Anhydrite: white translucent, very fine crystalline, dense; predominantly dolomite, tan to gray brown, very fine to microgranular, argillaceous, traces of veining stain, trace yellow fluorescence, faint residual cut; trace limestone, gray brown, microcrystalline.

- 6,624' Salt: clear, hard; abundant dolomite and siltstone.
- 6,632' Siltstone: light gray brown, very fine grain, firm, dolomitic.
- 6,670' Anhydrite: white translucent, very fine crystalline, dense.
- 6,660' Dolomite: gray brown, argillaceous, grading to siltstone.
- 6,666' Shale: black, hard, carbonaceous, no fluorescence, faint cut.
- 6,670' Salt: clear, hard, clean; traces of light gray brown siltstone.
- 6,784' Shale: orange, moderately hard, bulky, noncalcareous.
- 6,788' Anhydrite: white to tan translucent, very fine crystalline; traces of limestone, brown, very fine crystalline, clean; scattered siltstone.
- 6,796' Dolomite: gray brown, argillaceous; becoming gray green, microgranular, argillaceous.
- 6,798' Salt: clear, hard, clean.
- 6,832' Shale: black, moderately hard, carbonaceous, faint cut.
- 6,834' Salt: clear, hard, clean; trace of limestone, brown, very fine crystalline.
- 6,878' Shale: gray, firm; some orange, bulky.
- 6,880' Salt: clear, hard, clean.
- 6,906' Shale: black, carbonaceous, no fluorescence, faint cut.
- 6,908' Salt: clear, hard; scattered gray shale; traces of limestone; traces siltstone, gray brown.
- 6,998' Anhydrite: white, soft, powdery.
- 7,104' Shale: very dark gray to black, firm to moderately hard, carbonaceous, trace faint cut; siltstone, gray brown, very fine grain, no fluorescence, no cut; limestone, brown.
- 7,113' Salt: clear, hard, traces of shale and siltstone.

- 7,178' Shale: black, firm, slightly carbonaceous; salt as above.
- 7,200' Limestone: brown, microcrystalline, hard, dense; shale and siltstone as above.
- 7,224' Salt: clear, hard; scattered shale and siltstone.
- 7,343' Salt: as above; thin shale beds, orange, bulky.
- 7,370' Siltstone: gray brown, very fine grain, firm to slightly friable.
- 7,372' Limestone: brown, microcrystalline, dense; anhydrite, white.
- 7,380' Shale: very dark brown to black, firm to moderately hard, carbonaceous, trace cut; limestone, gray brown, argillaceous, microgranular to crystalline, slightly carbonaceous.
- 7,398' Anhydrite: milky white, soft, powdery.
- 7,402' Salt: clear, hard; scattered gray shale.
- 7,424' Shale: black, moderately hard, carbonaceous, trace faint yellow cut.
- 7,428' Salt: clear, hard; scattered shale and siltstone.
- 7,470' Shale: dark gray to black, slightly carbonaceous; siltstone, gray brown, very fine grain, shaly; limestone and anhydrite as above.
- 7,478' Salt: clear, hard; shale, orange, moderately hard, bulky, noncalcareous.
- 7,520' Salt: clear to trace of a pink orange tint, mineral deposit.
- 7,692' Shale: black, firm to moderately hard, gassy.
- 7,694' Salt: clear, hard; trace of gray brown siltstone.
- 7,710' Anhydrite: white translucent, very fine crystalline, dense, abundant soft.
- 7,712' Shale: black, firm to moderately hard, gassy; siltstone, gray brown, very fine grain, shaly.
- 7,724' Limestone: brown, very fine crystalline, dense, anhydrite inclusions.

- 7,728' Dolomite: gray brown, very fine granular, argillaceous, intergranular and vugular porosity less than 7%, traces of dead oil, no fluorescence, residual cut; shale, gray to black, firm, gassy; traces of siltstone, light gray; abundant pyrite.
- 7,760' Anhydrite: white to translucent, very fine crystalline, predominantly soft.
- 7,764' Shale: very dark gray to black, firm, slightly carbonaceous, gassy, no fluorescence, faint yellow cut; dolomite, gray brown as above, abundant pyrite.
- 7,775' Dolomite: tan gray, microgranular, dense, hard, anhydric, traces of mineral fluorescence.
- 7,786' Anhydrite: milky white, soft, powdery.
- 7,790' Shale: gray to black, firm to moderately hard, carbonaceous, gassy, pyrite, faint cut; traces of dolomite.
- 7,798' Anhydrite: white translucent, very fine crystalline, dense, predominantly soft, powdery; limestone, light brown, dense.
- 7,810' Salt: clear, hard; scattered siltstone and shale; trace of anhydrite; limestone, brown, very fine crystalline, dense.
- 7,884' Shale: dark gray to black, moderately hard, slightly carbonaceous.
- 7,890' Salt: clear, hard; siltstone, gray brown, very fine grain, shaly; abundant limestone as above.
- 7,910' Anhydrite: white to translucent, very fine crystalline, dense; limestone, brown, very fine to microcrystalline, carbonaceous, no fluorescence, no cut.
- 7,914' Salt: clear, hard, clean; traces of shale stringers, traces of white to tan translucent anhydrite.
- 8,008' Shale: black, hard, calcareous, very gassy.
- 8,012' Salt: clear, hard; shale, scattered gray, firm; traces of siltstone and limestone.

- 8,036' Shale: very dark gray to black, firm to moderately hard, calcareous, very carbonaceous, no fluorescence, trace residual cut, pyrite; trace clear sandstone stringers, very tight, no fluorescence, no cut; limestone, brown, very fine crystalline, hard, carbonaceous, no show.
- 8,050' Anhydrite: white, very fine crystalline, clean; limestone, brown, micro to very fine crystalline, dense, interbedded clear chert; siltstone, gray brown, very fine grain, calcareous, pyrite in part.
- 8,064' Siltstone: gray brown, very fine grain, calcareous, firm to moderately hard, poor porosity, no fluorescence, no cut; traces of sandstone, very fine grain; interbedded chert; predominantly shale, dark gray brown to black, slightly carbonaceous; limestone as above, siliceous in part, scattered pyrite.
- 8,078' Anhydrite: white translucent, dense, soft.
- 8,082' Salt: clear, hard; traces of dark gray shale.
- 8,176' Shale: black, firm to moderately hard, carbonaceous, residual cut.
- 8,178' Anhydrite: white translucent, very fine crystalline, predominantly soft, powdery; limestone, brown, microcrystalline, dense, interbedded clear white chert.
- 8,184' Shale: as above; siltstone, gray brown, very fine grain, poor porosity, no fluorescence, no cut, scattered chert and pyrite.
- 8,192' Shale: black, moderately hard, carbonaceous, residual cut.
- 8,198' Anhydrite: as above.
- 8,210' Shale: black, hard, carbonaceous, no fluorescence, weak yellow cut.
- 8,212' Salt: clear, hard, clean; shale, gray, black, firm to moderately hard, traces of siltstone.

*Pinkerton Trail @ 8,300'

- 8,300' Anhydrite: white, translucent, very fine crystalline, dense.

- 8,302' Shale: very dark gray brown to black, firm to hard, pyrite, no fluorescence, residual cut; siltstone, gray brown, dolomitic, very fine grain, very argillaceous, grading to dolomite.
- 8,318' Limestone: gray brown, very fine crystalline, argillaceous, becoming brown.
- 8,326' Shale: predominantly black as above, carbonaceous, very gassy.
- 8,332' Limestone: brown, microcrystalline, dense; gray brown, argillaceous.
- 8,338' Siltstone: gray brown, very fine grain, dolomitic, very argillaceous, trace residual cut; traces of dolomite; scattered pyrite.
- 8,351' Shale: gray to black, carbonaceous; limestone as above, abundant dense, platy, interbedded clear white chert.
- 8,360' Limestone: brown, gray brown, very fine to microcrystalline in part, becoming predominantly clean, dense, trace anhydrite inclusions, trace chert beds; shale, gray, thin beds of green, soft, firm; trace siltstone; scattered pyrite.
- 8,380' Limestone: becoming tan white, brown, micro to very fine crystalline, hard, dense, siliceous in part, interbedded chert; shale, black, hard, carbonaceous, weak yellow cut; dolomite, gray brown, microgranular, argillaceous.
- 8,394' Limestone: as above, scattered calcite crystals, no show.
- 8,400' Shale: light gray, firm, disseminate pyrite, some black, carbonaceous; siltstone, light gray brown, firm.
- 8,406' Dolomite: tan gray, microgranular, mineral fluorescence.
- 8,411' Limestone: tan to tan gray, abundant white, brown, micro to very fine crystalline, siliceous, calcite, evidence of fractures, no fluorescence, no cut, interbedded chert, trace pyrite.
- 8,422' Shale: gray green, trace thin red beds, firm, silty in part, some dolomitic; trace sandstone.
- 8,432' Dolomite: tan, very fine to microgranular, silty, siliceous.

*Molas Top @ 8,436'

- 8,436' Shale: red brown to lavender, soft to firm, silty in part, trace pyrite.
- 8,443' Limestone: tan white to brown, some argillaceous, red brown, very fine to microcrystalline, siliceous, calcite crystals; abundant chert, white to tan, hard, weathered in part.
- 8,454' Shale: red to lavender, some gray green, soft, firm, noncalcareous, trace siltstone and pyrite; limestone as above.
- 8,484' Limestone: white to tan, abundant red brown, micro to very fine crystalline, dense, calcite (karst), siliceous, interbedded milky white to brown chert, weathered in part.
- 8,498' Shale: as above, predominantly red brown, silty in part, traces of quartz sand; limestone, tan white to brown, abundant siliceous, increases in chert.
- 8,510' Shale: black, hard, carbonaceous, weak yellow cuts; abundant red to lavender; limestone, as above.

*Leadville Top @ 8,518'

- 8,518' Limestone: white to tan, very fine to microcrystalline, siliceous, calcitic, scattered karst, disseminate pyrite, interbedded chert, no fluorescence, no cut; trace dolomite, tan gray, microcrystalline, hard, slightly argillaceous; abundant shale, red brown, gray.
- 8,548' Limestone: as above, increasing chert beds, traces of fractures, scattered carbonaceous shale laminations.
- 8,574' Limestone: white to tan, very fine crystalline, clean, calcite in part, trace gray black shale laminations, evidence of fractures, no fluorescence, no cut; chert, clear white.
- 8,594' Limestone: white to tan, very fine crystalline, clean, some brown, microcrystalline; dolomite, interbedded light gray to tan, micro to very fine crystalline, siliceous, hard, trace calcite edged, indicating fractures, trace disseminate pyrite, chert beds, no fluorescence, no cut.

- 8,620' Limestone: white to tan, very fine crystalline, clean, predominantly white, some soft, amorphous, interbedded chert, trace dolomite.
- 8,630' Dolomite: buff to tan gray, micro to very fine granular, slightly argillaceous, intergranular porosity less than 3%, mineral fluorescence, no visible show.
- 8,644' Limestone: white to tan, very fine crystalline, firm to hard, clean, predominantly dense, trace carbonaceous black shale laminations with residual yellow cut; trace interbedded gray dolomite; trace chert.
- 8,666' Limestone: white to tan, very fine crystalline, firm to hard, clean, becoming dolomitic in part, some microcrystalline brown with indications of fractures, no fluorescence, no cut, interbedded chert; dolomite, buff, light gray, very fine to microcrystalline, siliceous, trace calcite edged, indications of possible fractures, occasional mineral fluorescence, no cut.
- 8,702' Limestone: white, tan, very fine crystalline, firm to hard, clean, scattered calcite, interbedded clear white chert with traces of disseminate pyrite, possible fractures, no fluorescence, no cut; interbedded gray dolomite.
- 8,744' Limestone: white to tan, very fine crystalline, dense, trace shale laminations; dolomite, as above; trace tan, sucrosic, visible porosity less than 5%, no fluorescence, trace residual cut.
- 8,782' Dolomite: brown, some tan, very fine crystalline, sucrosic, vugular and intercrystalline porosity 2-7%, trace spotty bitumen stain, no fluorescence, trace faint residual cut; interbedded limestone, brown, very fine crystalline, traces of carbonaceous and bitumen laminations, evidence fractures, no fluorescence, residual cut.
- 8,803' Dolomite: brown, very fine crystalline, decreasing sucrosic, matrix porosity 2-5%, no fluorescence, no cut; becoming gray to tan, microcrystalline, dense, siliceous; interbedded limestone, brown, micro to very fine crystalline, dense, platy.

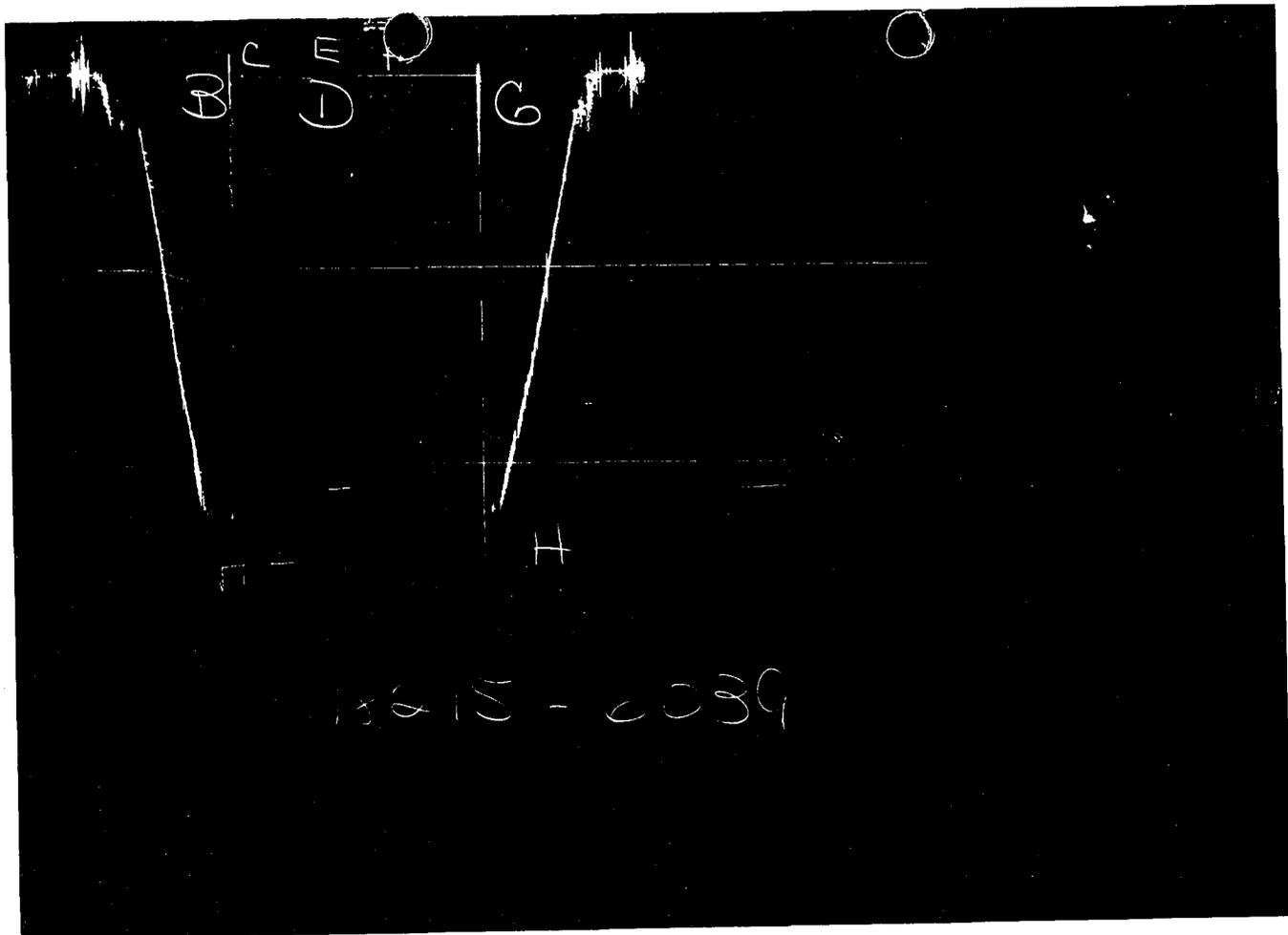
*Total Depth @ 8,815'



TICKET NO. 71821500
 18-MAY-84
 FARMINGTON

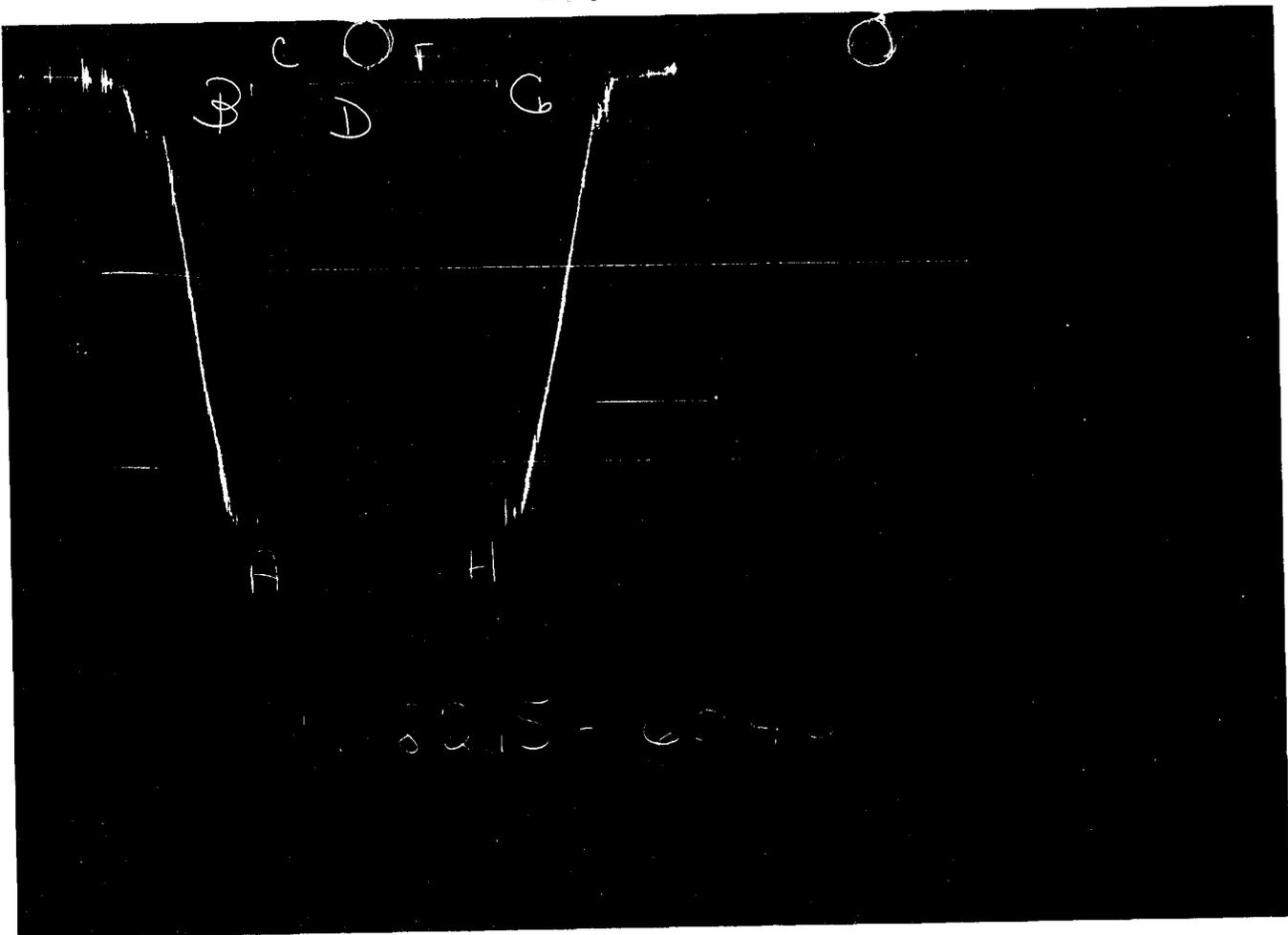
FORMATION TESTING SERVICE REPORT

FEDERAL	21-4	1	4800. - 4845.	BYAB. INCORPORATED
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RANG.	21 - 30 SOUTH - 24 EAST	FIELD AREA	WILDCAT	COUNTY
				SAN JUAN
				STATE
				UTAH
				P#



GAUGE NO: 6039 DEPTH: 4779.0 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2259	2238.8			
B	INITIAL FIRST FLOW		9.6			
C	FINAL FIRST FLOW		9.6	15.0	15.0	F
C	INITIAL FIRST CLOSED-IN		9.6			
D	FINAL FIRST CLOSED-IN	2	25.5	90.0	90.0	C
E	INITIAL SECOND FLOW		12.9			
F	FINAL SECOND FLOW		12.9	60.0	60.0	F
F	INITIAL SECOND CLOSED-IN		12.9			
G	FINAL SECOND CLOSED-IN	2	16.8	120.0	120.0	C
H	FINAL HYDROSTATIC	2205	2238.0			



GAUGE NO: 6040 DEPTH: 4842.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2274	2273.4			
B	INITIAL FIRST FLOW	3	45.4			
C	FINAL FIRST FLOW	3	45.4	15.0	15.0	F
C	INITIAL FIRST CLOSED-IN	3	45.4			
D	FINAL FIRST CLOSED-IN	5	56.3	90.0	90.0	C
E	INITIAL SECOND FLOW	3	47.6			
F	FINAL SECOND FLOW	3	47.6	60.0	60.0	F
F	INITIAL SECOND CLOSED-IN	3	47.6			
G	FINAL SECOND CLOSED-IN	3	47.6	120.0	120.0	C
H	FINAL HYDROSTATIC	2261	2269.6			

EQUIPMENT & HOLE DATA

FORMATION TESTED: LA SALLE
 NET PAY (ft): _____
 GROSS TESTED FOOTAGE: 45.0
 ALL DEPTHS MEASURED FROM: KELLY BUSHING
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 5929
 TOTAL DEPTH (ft): 4845.0
 PACKER DEPTH(S) (ft): 4794, 4800
 FINAL SURFACE CHOKE (in): _____
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 9.00
 MUD VISCOSITY (sec): 38
 ESTIMATED HOLE TEMP. (°F): 110
 ACTUAL HOLE TEMP. (°F): 110 @ 4845.0 ft

TICKET NUMBER: 71821500
 DATE: 5-12-84 TEST NO: 1
 TYPE DST: OPEN HOLE
 HALLIBURTON CAMP: FARMINGTON
 TESTER: GENE ROBERTS
 WITNESS: STEVE HARRIGAN
 DRILLING CONTRACTOR: ENERGY SEARCH #1

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
<u>PIT</u>	<u>4.440 @ 85 °F</u>	<u>_____ ppm</u>
<u>SAMPLE</u>	<u>4.200 @ 84 °F</u>	<u>_____ ppm</u>
_____	<u>_____ @ _____ °F</u>	<u>_____ ppm</u>
_____	<u>_____ @ _____ °F</u>	<u>_____ ppm</u>
_____	<u>_____ @ _____ °F</u>	<u>_____ ppm</u>
_____	<u>_____ @ _____ °F</u>	<u>_____ ppm</u>

SAMPLER DATA

Psig AT SURFACE: 0
 cu.ft. OF GAS: 0.00
 cc OF OIL: 0
 cc OF WATER: 0
 cc OF MUD: 25
 TOTAL LIQUID cc: 25

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F
 GAS/OIL RATIO (cu.ft. per bbl): _____
 GAS GRAVITY: _____

CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED:

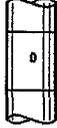
5 FEET OF DRILLING MUD

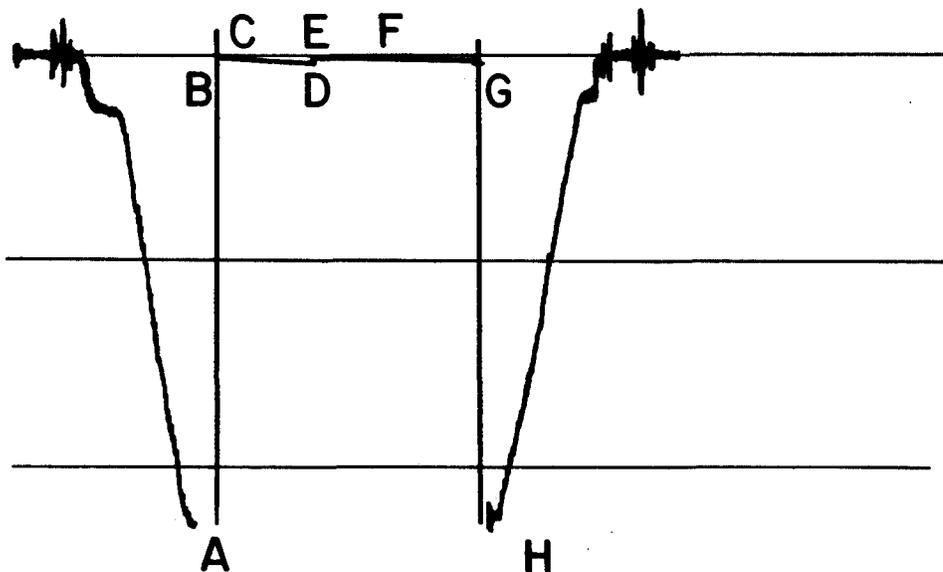
MEASURED FROM
TESTER VALVE

REMARKS:

REPORTED ELEVATION IS AT GROUND LEVEL

LENGTH OF DRILL COLLAR AND DRILL PIPE ABOVE REVERSING SUB NOT REPORTED

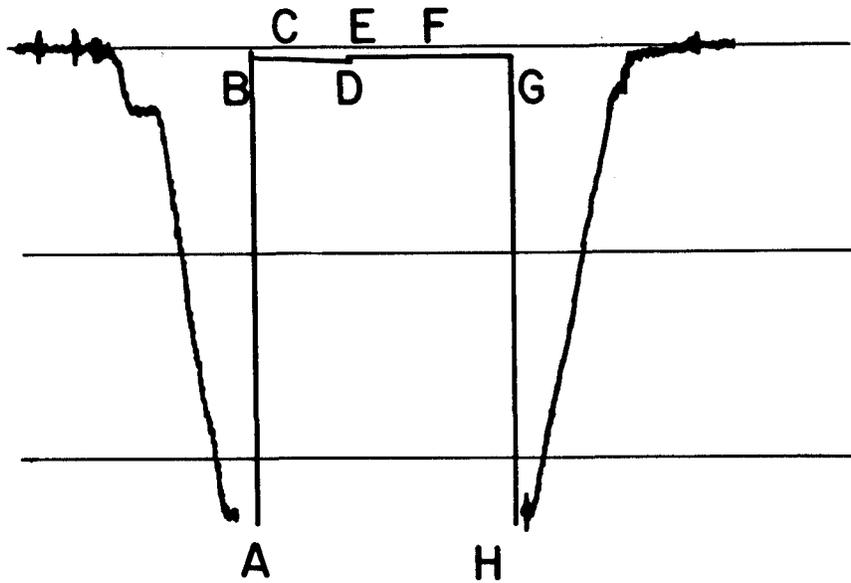
		O.D.	I.D.	LENGTH	DEPTH
1		DRILL PIPE.....	4.500	3.826	
3		DRILL COLLARS.....	6.250	2.750	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0 4735.0
3		DRILL COLLARS.....	6.250	2.750	30.0
5		CROSSOVER.....	6.000	3.000	1.0
13		DUAL CIP SAMPLER.....	5.030	0.750	7.0
60		HYDROSPRING TESTER.....	5.000	0.750	5.0 4777.0
80		AP RUNNING CASE.....	5.000	2.250	4.0 4779.0
15		JAR.....	5.030	1.750	5.0
16		VR SAFETY JOINT.....	5.000	1.000	3.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0 4794.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0 4800.0
5		CROSSOVER.....	6.000	3.000	1.0
3		DRILL COLLARS.....	6.250	2.750	30.0
5		CROSSOVER.....	6.000	3.000	1.0
20		FLUSH JOINT ANCHOR.....	5.750	1.500	7.0
81		BLANKED-OFF RUNNING CASE.....	5.750		4.0 4842.0
TOTAL DEPTH					4845.0



718215 - 6039

GAUGE NO: 6039 DEPTH: 4779.0 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2259	2238.8			
B	INITIAL FIRST FLOW		9.6			
C	FINAL FIRST FLOW		9.6	15.0	15.0	F
C	INITIAL FIRST CLOSED-IN		9.6			
D	FINAL FIRST CLOSED-IN	2	25.5	90.0	90.0	C
E	INITIAL SECOND FLOW		12.9			
F	FINAL SECOND FLOW		12.9	60.0	60.0	F
F	INITIAL SECOND CLOSED-IN		12.9			
G	FINAL SECOND CLOSED-IN	2	16.8	120.0	120.0	C
H	FINAL HYDROSTATIC	2205	2238.0			



718215-6040

GAUGE NO: 6040 DEPTH: 4842.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2274	2273.4			
B	INITIAL FIRST FLOW	3	45.4			
C	FINAL FIRST FLOW	3	45.4	15.0	15.0	F
C	INITIAL FIRST CLOSED-IN	3	45.4			
D	FINAL FIRST CLOSED-IN	5	56.3	90.0	90.0	C
E	INITIAL SECOND FLOW	3	47.6			
F	FINAL SECOND FLOW	3	47.6	60.0	60.0	F
F	INITIAL SECOND CLOSED-IN	3	47.6			
G	FINAL SECOND CLOSED-IN	3	47.6	120.0	120.0	C
H	FINAL HYDROSTATIC	2261	2269.6			

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

*Incorrect
address*

REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name & Number Federal #21-4
Operator BWAB Incorporated Address 1000 City Centre 4, 1801 California St. Denver, CO 80202
Contractor Energy Search Drilling Co. Address P.O. Box 190, Farmington, NM 87401
Location NW 1/4 NW 1/4 Sec. 21 T. 30S R. 24E County San Juan

Water Sands All fresh water sandstones behind surface casing. No sandstones were tested which yielded water.

<u>Depth</u>		<u>Volume</u>	<u>Quality</u>
From	To	Flow Rate or Head	Fresh or Salty
1.			
2.			
3.			
4.			
5.			

(Continue of reverse side if necessary)

Formation Tops Shinarump - 1454', Moenkopi - 1538', Cutler - 1936', Hermosa - 3528', LaSalle - 4388', Ismay - 5049', Paradox Shale - 5260', Paradox Salt - 5396', Pinkerton Trail - 8298', Molas - 8445', Leadville - 8518'.
Remarks

- NOTE: (a) Report on this form as provided for in Rule C-20, General Rules and Regulations and Rules of Practice and Procedure.
- (b) If a water analysis has been made of the above reported zone, please forward a copy along with this form.

RECEIVED

NOV 20 1984



BWAB INCORPORATED

DIVISION OF
OIL, GAS & MINING

November 16, 1984

State of Utah
Natural Resources & Energy
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

RE: Federal #21-4
Sec 21-T30S-R24E
San Juan County, Utah

Gentlemen:

Enclosed herewith please find four (4) copies of the Sundry Notice - Reclamation of Site on the above referenced well. If this meets with your approval, please execute and return one (1) copy to me for our files.

If any other information is needed, please advise.

Sincerely,

BWAB Incorporated

Susan M. Rein
Production Assistant

smr

Enclosures

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 or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Dry		5. LEASE DESIGNATION AND SERIAL NO.
2. NAME OF OPERATOR BWAB Incorporated		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR 1801 California Street, 1000 City Center 4, Denver, CO 80202		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface NWNW 685' NWL & 1051' FNL		8. FARM OR LEASE NAME Federal
14. PERMIT NO. 43-037-30999	15. ELEVATIONS (Show whether SP, RT, CR, etc.) GR 5929'	9. WELL NO. 21-4
		10. FIELD AND POOL, OR WILDCAT Wildcat
		11. SEC., T., R., M., OR B.L.E. AND SURVEY OR AREA Sec. 21-T30S-R24E
		12. COUNTY OR PARISH San Juan
		13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Reclamation Site</u> <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

- 1). Restoration was commenced on September 17, 1984.
- 2). Pit has been emptied of all salt water - Galley Construction Inc.
- 3). Capped wellhead on 5/29/84.
- 4). Moved rig off location on 5/29/84.
- 5). Location was re-seeded and top soil restored.
- 6). Surface owner - Bureau of Land Management
P. O. Box 970
Moab, UT 84532

ACCEPTED
APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 11/20/84
BY: J. R. Boy

18. I hereby certify that the foregoing is true and correct
 SIGNED: Robert C. Arceneaux TITLE: Vice President/Operations DATE: 11/11/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
 CONDITIONS OF APPROVAL, IF ANY: