April 29, 1983

Bureau of Land Management
Oil & Gas Division
1745 W. 1700 S., Ste. 2000
Salt Lake City, UT 84104

Re: Designation of Agent

Gentlemen:

This letter will serve as notification that McIlnay-Adams & Co., Inc. 2305 Oxford Lane, Casper, WY 82604, is hereby designated Agent for Cowboy Resources in matters of administration, drilling, completion and production operations.

They will remain our duly authorized Agent until further notification on this well.

Very truly yours,

COWBOY RESOURCES

Dwight B. Despain

President

PH AC 307: 265-4351

McILNAY-ADAMS & CO., INC.

McILNAY-ADAMS

2305 OXFORD LANE • CASPER, WYOMING 82601
PETROLEUM CONSULTING ENGINEERS & PROPERTY MANAGEMENT

REGISTERED PROFESSIONAL ENGINEERS

May 2, 1983

RECEIVED
MAY 04 1983
DIVISION OF
OIL, GAS & MINING

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

Attn: Chief Petroleum Engr.

Re: Well Spacing Exception
Cowboy Resources, Inc.
Brown Fed. #1-33
NW NW Sec. 33-T34S-R1E
Garfield County, Utah

Dear Sirs:

Cowboy Resources, Inc. of Casper, Wyoming has staked a proposed 9200' oil test (40 acre spacing) in the NW, NW, Section 33-T34S-R1E, Garfield Co., Utah.

Due to topography (the center spot of NW, NW, Sec. 33 fell against a sharp ridge) it was necessary to move the location 227' East of center and stake the location 682' FNL and 887' FWL of Section 33 as indicated on the attached well plat. Distance to the nearest ¼ ¼ boundry would thence be 433'.

The offsetting 40 acre tracts to the North, Northeast, and East are all part of the same Federal lease, namely Utah #U-39458A with same Operator as the proposed wellsite.

Based on topographic necessity, as agent for Cowboy Resources, Inc., we hereby request an exception to normal spacing rules and request approval be granted for the unorthodox location of said well as per the attached surveyor's well plat.

Please advise if you have any questions or need additional information.

Very truly yours,

McILNAY - ADAMS & CO., INC.

C.K. Adams, P.E.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 5-4-83
BY: Norman C. Stout

CKA:ps
Attachment

This is not approval to drill, but is approved as a request for unorthodox location when APD is submitted. Send a copy of this approval with the APD.

Form OGC-1a

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

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

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well
Oil Well [X] Gas Well [ ] Other — Single Zone [ ] Multiple Zone [ ]

2. Name of Operator
Cowboy Resources, Inc.

3. Address of Operator c/o McIlnay-Adams & Co., Inc.
2305 Oxford Lane, Casper, WY 82604

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface
682' FNL & 887' FWL (NW NW) Section 33-T34S-R1E
At proposed prod. zone
same

5. Lease Designation and Serial No.
U-39458A

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

7. Unit Agreement Name
N/A

8. Farm or Lease Name
Brown - Federal

9. Well No.
1-33

10. Field and Pool, or Wildcat
Wildcat

11. Sec., T., R., M., or Blk. and Survey or Area
33-T34S-R1E SLB&M

12. County or Parrish 13. State
GARFIELD

14. Distance in miles and direction from nearest town or post office*
Approximately 14 miles west of Escalante, Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any)
433' from east boundry of NW ¼ ¼

16. No. of acres in lease
520

17. No. of acres assigned to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.
None

19. Proposed depth
9200 REDWALL

20. Rotary or cable tools
Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
7218' GL ungraded

22. Approx. date work will start*
June 1, 1983

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
20"	16"	65#	200'	300 sxs
14 3/4"	8 5/8"	24# & 37#	3000'*	1500 sxs
7 7/8"	5 1/2"	15.5 & 17#	9200'	300 sxs

* Parasite string - (2 3/8" EUE tubing) will be run on the outside of the 8 5/8" casing and attached at 2500' for air injection.

It is proposed to drill an exploratory well at the above location. Primary zone of interest is the Redwall at 8970'. If the well is found productive, 5 1/2" casing will be cemented in place and the well completed. If the well is found non-productive, the well will be plugged and abandoned as per BLM instructions and the surface restored as per BLM and U.S. Forest Service instructions.

See attached "Well Control and Related Information" summary and "BLM Surface Use and Operating Plan" for details.

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 Gerald L. Moyle Title Secretary Treasurer Date 5/4/83

(This space for Federal or State office use)

Permit No. ..... Approval Date .....

Approved by ..... Title ..... Date .....

Conditions of approval, if any:

RECEIVED
MAY 6 1983
DIV. OF OIL, GAS & MINING

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 5-[illegible]-83
BY: [signature]

*See Instructions On Reverse Side

PROJECT

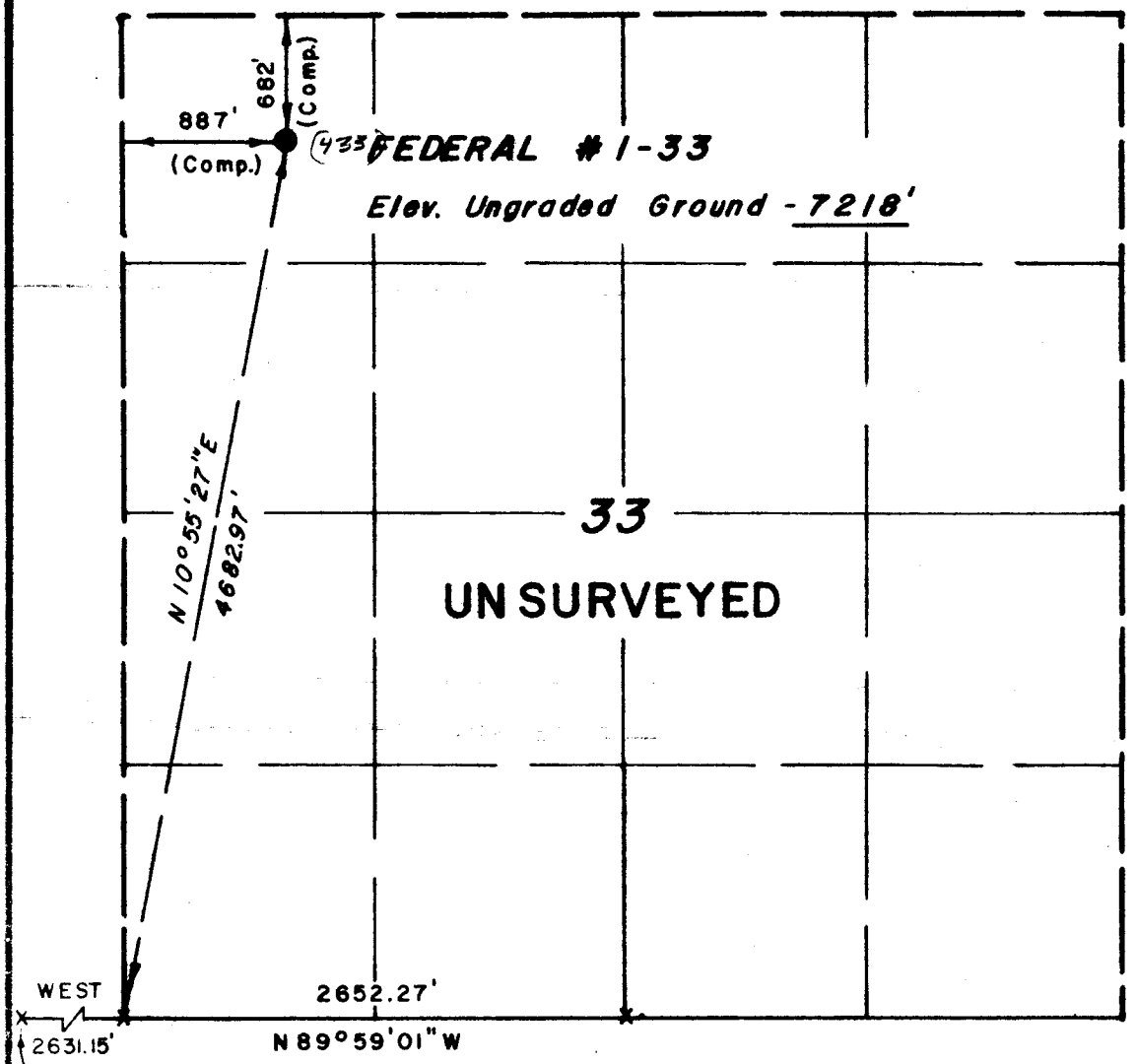
COWBOY RESOURCES

Well location, *FEDERAL #1-33*, located as shown in the NW 1/4 NW 1/4 Section 33, T34S, R1E, S.L.B.&M Garfield County, Utah.

NOTE

THIS IS AN UNSURVEYED TOWNSHIP, FOOTAGES WERE COMPUTED FROM AN AVAILABLE PROTRACTION DIAGRAM OF THE AREA.

T 34 S, R 1 E, S.L.B.&M.



X = Section Corners Located

CERTIFICATE

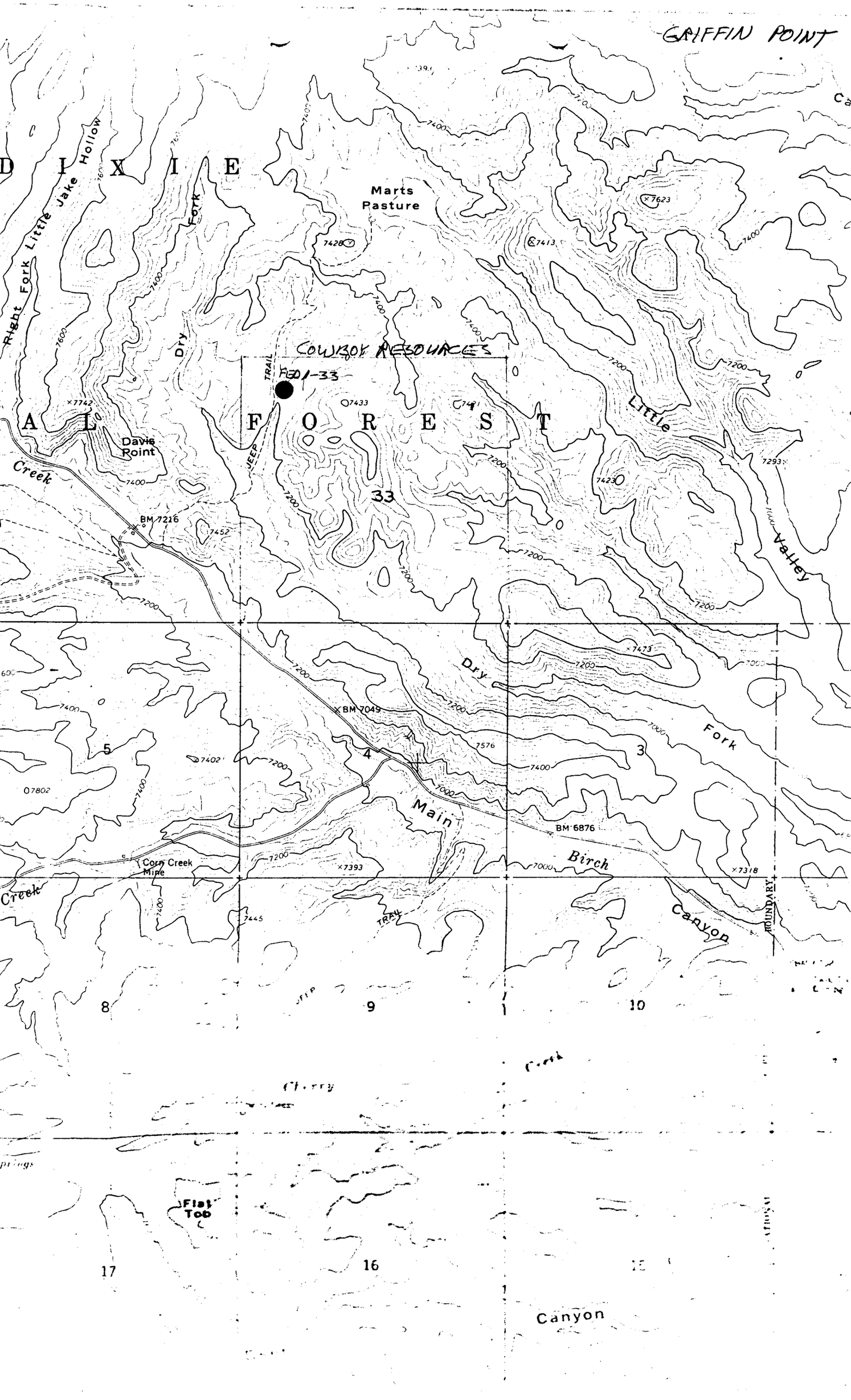
THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Lawrence C. Kay

REGISTERED LAND SURVEYOR
REGISTRATION Nº 3137
STATE OF UTAH

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

SCALE 1" = 1000'	DATE 4 / 9 / 83
PARTY D.K. B.K. J.K.	REFERENCES G L O Plat
WEATHER Fair	FILE COWBOY RESOURCES


GRIFFIN POINT
DIXIE
FOREST
Marts Pasture
Right Fork Little Jake Hollow
Dry Fork
Little Valley
Davis Point
Creek
COWBOY RESOURCES
FED 1-33
TRAIL
JEEP
33
BM 7216
BM 7049
BM 6876
Dry Fork
Main Birch Creek
Corn Creek Mine
Canyon
BOUNDARY
TRAIL
Flat Top
Canyon
5
4
3
8
9
10
17
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7428
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7623
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7742

WELL CONTROL AND RELATED INFORMATION

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

1. Surface Formation:
Tertiary

2. Estimated Geological Tops:

Cretaceous	500'
Navajo	3000'
Chinle	5045'
Shinarump	5445'
Moenkopi	5570'
Timpoweap	6330'
Kaibab	6470'
Redwall	8970'
T.D.	9200'

3. Estimated Depths at which Anticipated Water, Oil, Gas or other Mineral-Bearing Formations are Expected to be Encountered:
Possible oil or gas bearing zone anticipated at 6500' or 9000'. Commercial water zones are not expected. All porous formations below about 200' could contain some water.

4. Casing Program: (new casing)

Conductor Casing:
16" - 65#/ft, 200' (5 jts) new, H40, ST&C - Cemented to surface.

Surface Casing:

Interval	No. Jts	Net Footage	Specifications
0 - 1900'	47	1900'	8 5/8", 24#/ft, K55, ST&C, R3, "A" csg
1900' - 3000'	28	1100'	8 5/8", 32#/ft, K55, ST&C, R3, "A" csg

Parasite String:
2 3/8" EUE tubing to 2500' for air injection.
Surface casing cemented with 1500 sxs.

Production Casing:

Interval	No. Jts	Net Footage	Specifications
0 - 1600'	53	1600'	5 1/2", 17#/ft, N80, LT&C, Rg 3, "A" csg
1600 - 6600'	125	5000'	5 1/2", 15.5#/ft, K55, ST&C, Rg 3, "A" csg
6600 - 8600'	25	1000'	5 1/2", 17#/ft, K55, LT&C, Rg 3, "A" csg
8600 - 9200'	15	600'	5 1/2", 17#/ft, N80, LT&C, Rg 3, "A" csg

Cemented with 300 sxs. cement.

5. Minimum Pressure Control Equipment: (See attached diagram)

a. One 10", 3000 psig preventer with drill pipe rams and blind rams. (make unknown.)
b. One 3" kill line will be installed below BOP rams. A 3000 psig choke manifold (screw connected) with two chokes will be utilized.
c. A 70 gal accumulator rated at 3000 psig W.P. with 3 hyrdraulic control stations will be utilized. One for blind rams, one for pipe rams and one extra station. Controls are located in accumulator house at G.L. Manual controls are located at G.L. under substructure.
d. The pressure control equipment will be be tested to 1500 psig for 30 minutes prior to drilling below surface casing.
e. A daily operational check of the BOP equipment will be made and recorded.

6. Drilling Fluids:

Interval	Wt#/gal	Vis	W.L	Type System
0-3000'	8.4-8.6	40-45	N.C.	Fresh wtr LSND
3000-9200'	8.4-8.6	35-40	10-12	Lignosulfanate

Sufficient mud materials to maintain mud requirements and meet minor lost circulation and blowout problems will be on the wellsite.

7. Auxiliary equipment to be Used:
   a. No float at bit will be utilized.
   b. Mud logging unit will be utilized.
   c. A full-opening drill pipe stabbing valve with proper connections will be on the rig floor ready for use when the kelly is not in the string.

8. Testing, Logging and Coring Program:
   a. No cores
   b. Drill stem tests depending on sample shows and drilling breaks.
   c. If a completion attempt is to be made, 5 1/2" casing will be cemented into place. The following presents a summary of tentative completion procedures.

      1. Perforate the Redwall or Kaibab zone with approximately 40 holes

      2. No stimulation is anticipated. A natural completion will be attempted.

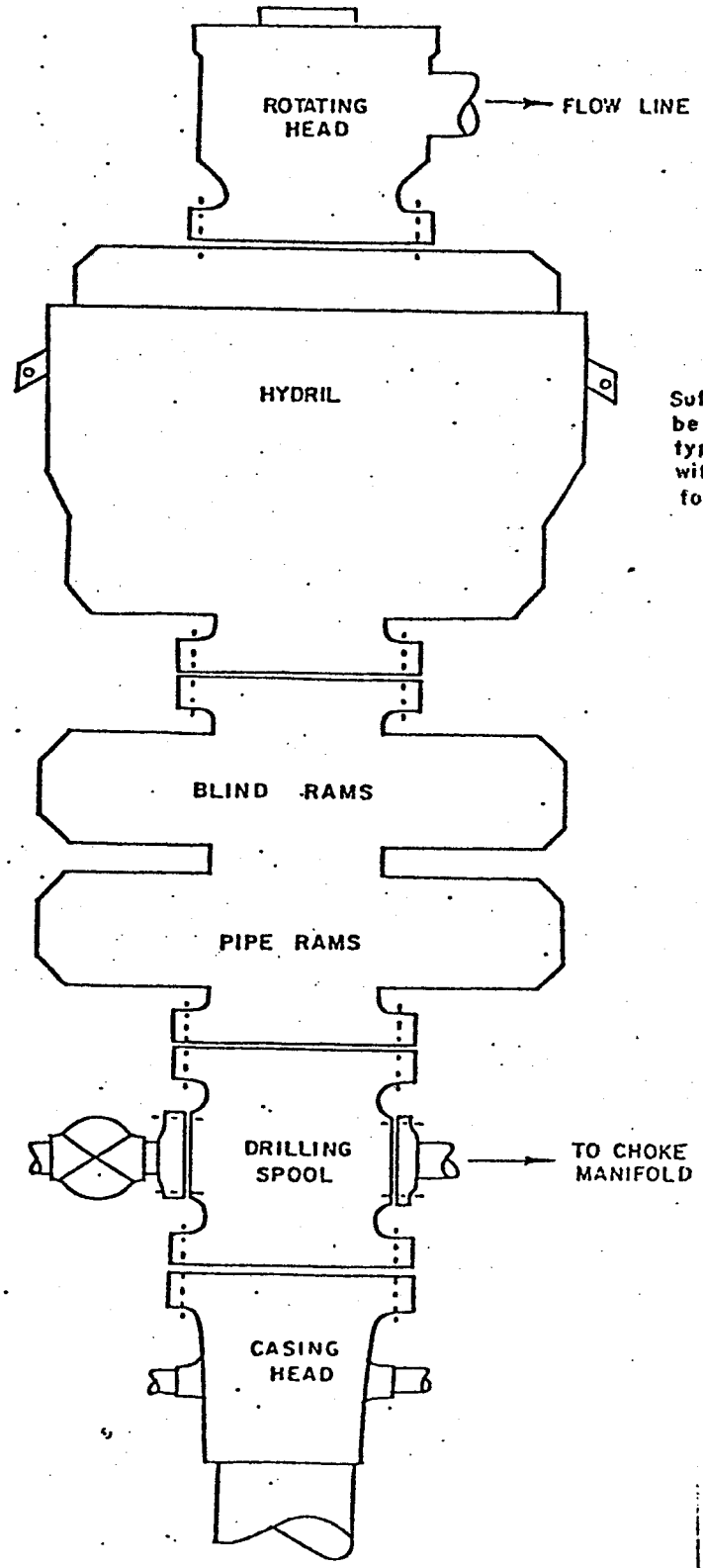
         Note: All perforations and size of stimulation jobs are tentative and will be designed based on electric log and core data.

   d. Logging: GR-DIL or DLL from T.D. to surface casing.
      GR-BHC-FDC-SONIC from T.D. to surface casing.

9. Abnormal Conditions or Potential Hazards:
Abnormal conditions or potential hazards are not expected. Estimated temperature at T.D. is 140°F. Estimated bottom hole pressure is 4000 psig. Hydrogen sulfide gas is not expected. Lost circulation problems are anticipated in various zones below 3000'.

10. Anticipated Starting Date of Drilling Operations:
Plan to start drilling June 1, 1983. Approximately 60 days should be required to drill.

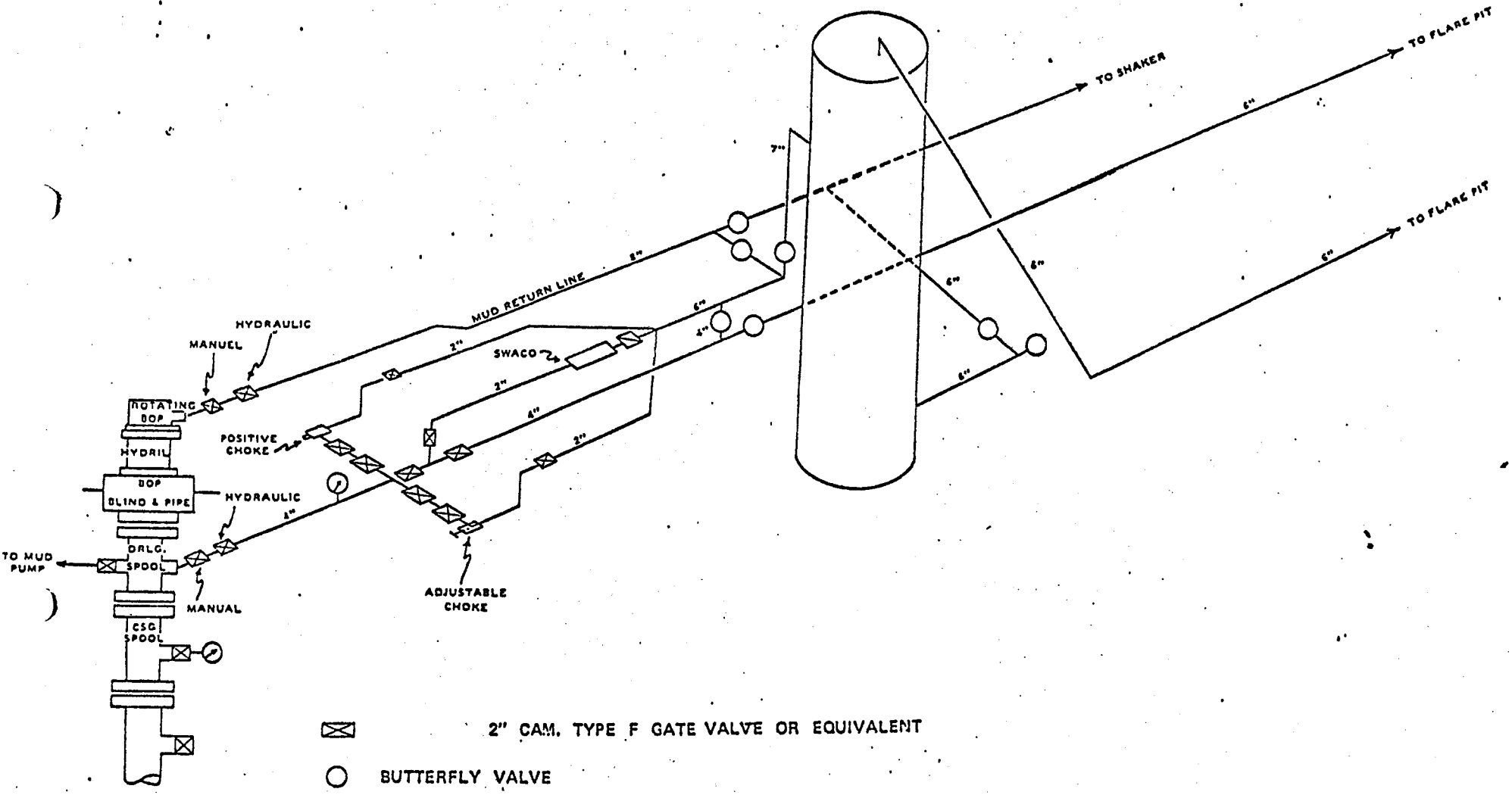
BLOWOUT PREVENTER DIAGRAM



CLOSING METHOD

Sufficient accumulator volume shall be available to operate both the bag type preventer and pipe ram preventer with a snap-action through the following steps: close-open-close.

COWBOY RESOURCES, INC.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A



COWBOY RESOURCES, INC.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

BLM SURFACE USE AND OPERATING PLAN

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

1. Existing Roads:
   A. Proposed wellsite: See surveyor's plat and Figures 1 and 2, attached. Elevations were measured at several points around the wellsite as shown on Figure 3.
   B. To visit the wellsite, proceed west from Escalante, Utah on State Highway 12 approximately 4.6 miles and turn right on County Road. Proceed north westerly on County Road approximately 8.2 miles and turn right on existing road. Continue on existing road approximately 0.5 miles and take the left fork on to proposed new access road. Proceed approximately 0.7 miles on proposed new access road to the proposed well location. (Figures 1 & 2).
   C. Approximately 0.7 miles of access road will be newly constructed (see Figure 2).
   D. An exploratory well.
   E. Existing roads are shown on the attached Figures 1 and 2. These roads are paved, gravel or dirt and are suitable for heavy loads in dry weather.
   F. The existing dirt and gravel lease roads and the newly constructed road may require periodic blading and maintenance by the operator.

2. Access Roads: (see Figures 1 and 2)
   1. Width: Bladed to 16'.
   2. Maximum Grade: Less than 10% for access road
   3. Turnouts: Not required.
   4. Drainage: None.
   5. Culverts: Two. (See Figure 2.)
   6. Surfacing Material: Native soil.
   7. Auto Gates: None.
   8. The road alignment will be changed to location as flagged in field (Figure 2).
   9. Access road to be constructed is on U. S. Forest Service Land.
   10. A culvert or key locked fill will be used at crossing A (Figure 2), and a culvert will be installed at crossing B (Figure 2.) The road will roll in and out of other small drainages, leaving the grade as is at drainage crossing points.

3. Location of Existing Wells: (see Figure 1)
   1. Water Wells: None.
   2. Abandoned Wells: None.
   3. Temporarily Abandoned Wells: None.
   4. Disposal Wells: None.
   5. Drilling Wells: None.
   6. Producing Wells: None.
   7. Shut-in Wells: None
   8. Injection Wells: None
   9. Monitoring or observation wells for other resources: None.

4. Location of Existing and/or Proposed Facilities:
   A. Owned and Controlled by Lessee/Operator within 1 mile of Proposed Well:
      1. Tank Batteries: None.
      2. Production Facilities: None.
      3. Oil Gathering Lines: None.
      4. Gas Gathering Lines: None.
      5. Injection Lines: None.
      6. Disposal Lines: None.

4. Location of Existing and/or Proposed Facilities: (continued)
   B. New Facilities Required in the Event of Production:
      1. Location of Facilities:
         See Figure 4 for location of facilities. All facilities will be on the wellsite pad or disturbed area.
      2. Dimension of Facilities:
         Production pad 165' x 300' (see Figure 4). A 6' x 20' heater-treater will be located 120' northwest of the well. Two (2) 400-bbl storage tanks will be located 160' east of the treater and 120' northeast of the well. An emergency disposal pit (25' x 25' x 6') will be located 80' south of the treater.
      3. Construction Methods and Materials:
         a. Facilities will be constructed utilizing "good and acceptable" oil field practices.
         b. Flowlines and all piping will consist of steel and/or fiberglass goods with W.P. of 300 psig.
         c. Tanks and treater will be constructed of steel and meet API standards.
      4. Protective Measures to Protect Livestock and Wildlife:
         a. The emergency and disposal pits will be fenced and flagged.
         b. The tank battery and treater will be diked.
         c. Flowlines will be buried to a depth of approximately four (4) feet.
   C. Plan for Rehabilitation of Disturbed Areas No Longer Needed for Producing Operations:
      All disturbed areas not required for producing operations will be restored and reseeded as per BLM and U.S. Forest Service specifications.

5. Location and Type of Water Supply: (see Figure 2)
   A. The source of water will be Marts Pasture waterline or Birch Creek (SE Section 32-T34S-R1E). Application has been made to the State of Utah (Application to Appropriate Water).
   B. Water will be hauled from Birch Creek by truck (Figure 2.)
   C. A water well will not be drilled.

6. Source of Construction Materials:
   A. Native soil will be utilized in the drilling site and access road. No additional construction material will be required for drilling operations. Crushed rock or gravel may be needed for the pulling unit pad, wellsite and to make the access road passable during all weather conditions if the well is found productive.
   B. No construction material from Federal or Indian lands.
   C. Crushed rock, if necessary, will be purchased from construction contractors in the area from privately owned sources.
   D. Access road will not cross Indian lands.
   E. If the well becomes a producer, the road will be surfaced and additional culverts installed as specified by the Forest Service.

7. Methods for Handling Waste Disposal:
   1. Cuttings: Semi-permeable reserve pit 100' x 150' x 10' fenced on three sides during drilling operations. The fourth side will be fenced when the rig moves out (see Figures 3 and 5).
   2. Drilling Fluids: Semi-permeable reserve pit 100' x 150' x 10' (see Figures 3 and 5).
   3. Produced Fluids:
      1. Recovered during drill-stem tests will be disposed in a test tank.
      2. During completion operations, produced fluids will be contained in swab tanks (see Figure 5).
      3. Water disposal will be provided in accordance with BLM regulations NTL-2B. All disposal pits will be constructed as per the NTL-2B regulations.
   4. Sewage: Sanitation holes 20-40' (will be filled) with a minimum of 4' of earth when rig is released and chemically treated.
   5. Garbage and Trash:
      1. 15' x 15' x 6' trash pit completely enclosed with woven mesh wire and maybe burned with approval from the District Ranger, Escalante District, Dixie National Forest.
      2. Engine oil and lubricants will be collected in steel containers.
   6. Clean-up of Wellsite Area after Rig is Removed:
      1. Debris on location will be picked up and burned or buried in garbage pit (minimum of 4' of earth cover).
      2. All pits and wellsite will be covered, leveled and reseeded as per BLM and U.S. Forest Service instructions.

8. Ancillary Facilities:
None.

9. Wellsite Layout:
1. Cross Section: See Figure 3 for elevations and cross sections. Maximum cut approximately 9' on the northeast corner of the drilling pad. Maximum fill approximately 4' on the southwest corner of the drilling pad.
2. Location of rig, pits and associated equipment (see Figure 3).
3. Topsoil will be stockpiled at southwest corner and along the northside of the location (See Figure 3).
4. Rig orientation, parking lots, etc. (see Figure 3).
5. Pits will be unlined.

10. Plans for Restoration of Surface:
1. All pits will be backfilled, leveled and contoured to as near the current condition as is practical.
2. Revegetation and rehabilitation of wellsite and access road: Well be returned to original grade, and the road closed. Road and location will be seeded with crested wheatgrass 8 lbs/acre, / intermediate wheatgrass 2 lbs/acre, / smooth brome 4 lbs/acre seed mixture.
3. All pits will be fenced until dry and then backfilled.
4. If oil is present on the reserve pit, overhead flagging will be installed.
5. Rehabilitation will be commenced when the rig moves out with the location restored by September 30, 1983. Reseeding will be done by June 30, 1984. Rehabilitation will be completed by June 30, 1986, including vegetation.

11. Other Information:
1. a. Wellsite and access roads are located in hilly forested terrain.
   b. Soil is light brown sandy clay.
   c. Vegetation consists of native grasses and trees.
   d. The area is a natural habitat for wildlife (i.e., deer and rabbits etc.).
2. a. The wellsite and the proposed access road are on U.S. Forest Service land.
   b. Livestock were not grazing in the area when the wellsite was visited, but do graze there at times.
3. a. Intermittent streams (i.e., flow during wet seasons of the year) do exist in the area.
   b. There are no occupied buildings within one mile of the proposed wellsite.
   c. Historical, cultural or archaeological sites not apparent. An archaeological survey will be conducted.
4. The operator will be responsible to maintain water in troughs serviced by the Marts Pasture waterline as needed for range management. The waterline must be in satisfactory condition after drilling is completed.
5. All trees removed will be cut off at ground level and lopped.

12. Lessee's or Operator's Representative:
McIlnay-Adams & Co., Inc.----------(307) 265-4351
2305 Oxford Lane, Casper, Wyoming 82604
Edward W. McIlnay, P.E.----------(307) 237-3655

13. Certification:
I hereby certify that I or persons under my direct supervision, have inspected the proposed drillsite and access roads, that I am familiar with the conditions which presently 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 Cowboy Resources, Inc. and its' contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

May 4, 1983
Date

Dwight B. Despain
Dwight B. Despain
President
Cowboy Resources, Inc.

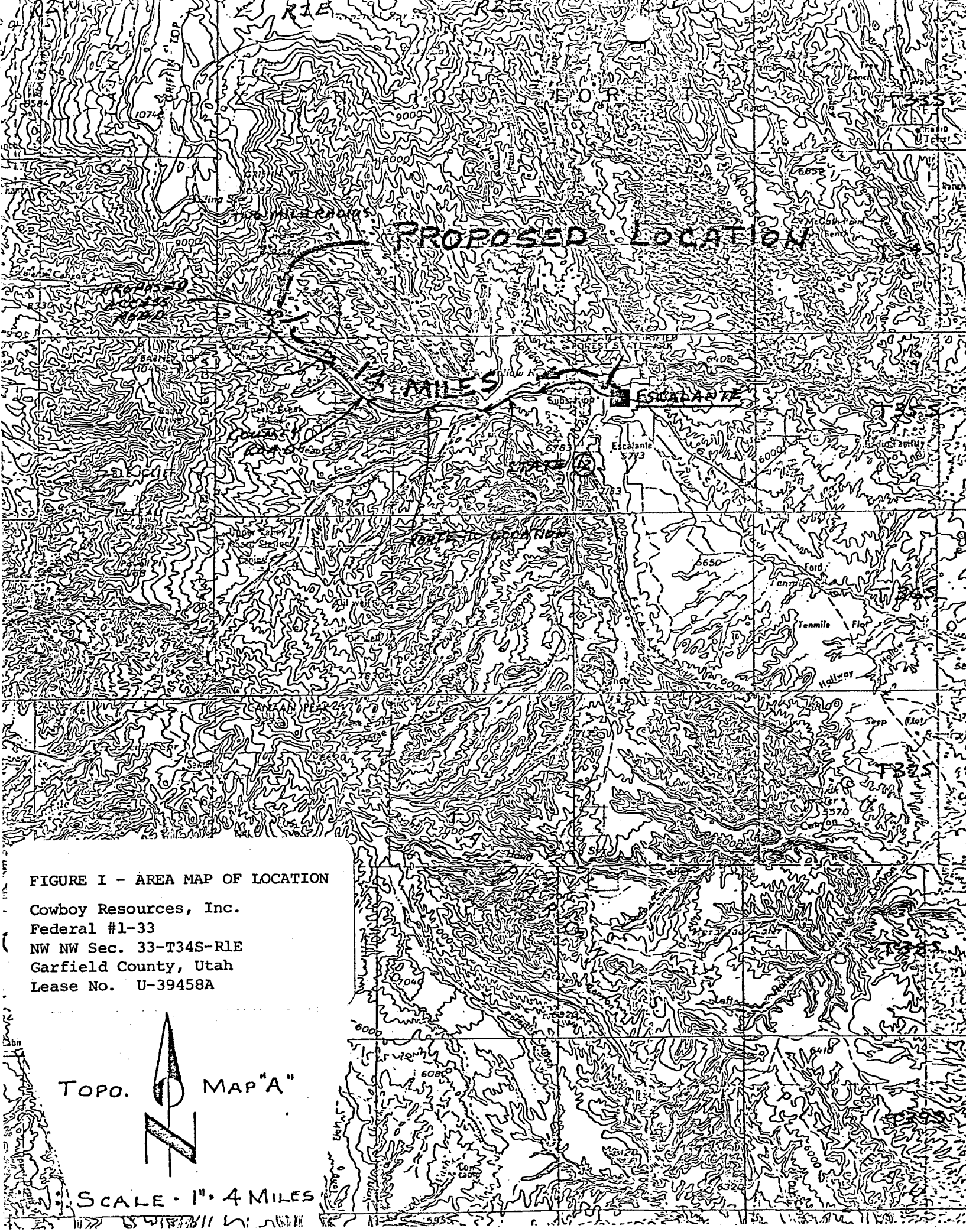


FIGURE I - AREA MAP OF LOCATION

Cowboy Resources, Inc.
Federal #1-33
NW NW Sec. 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

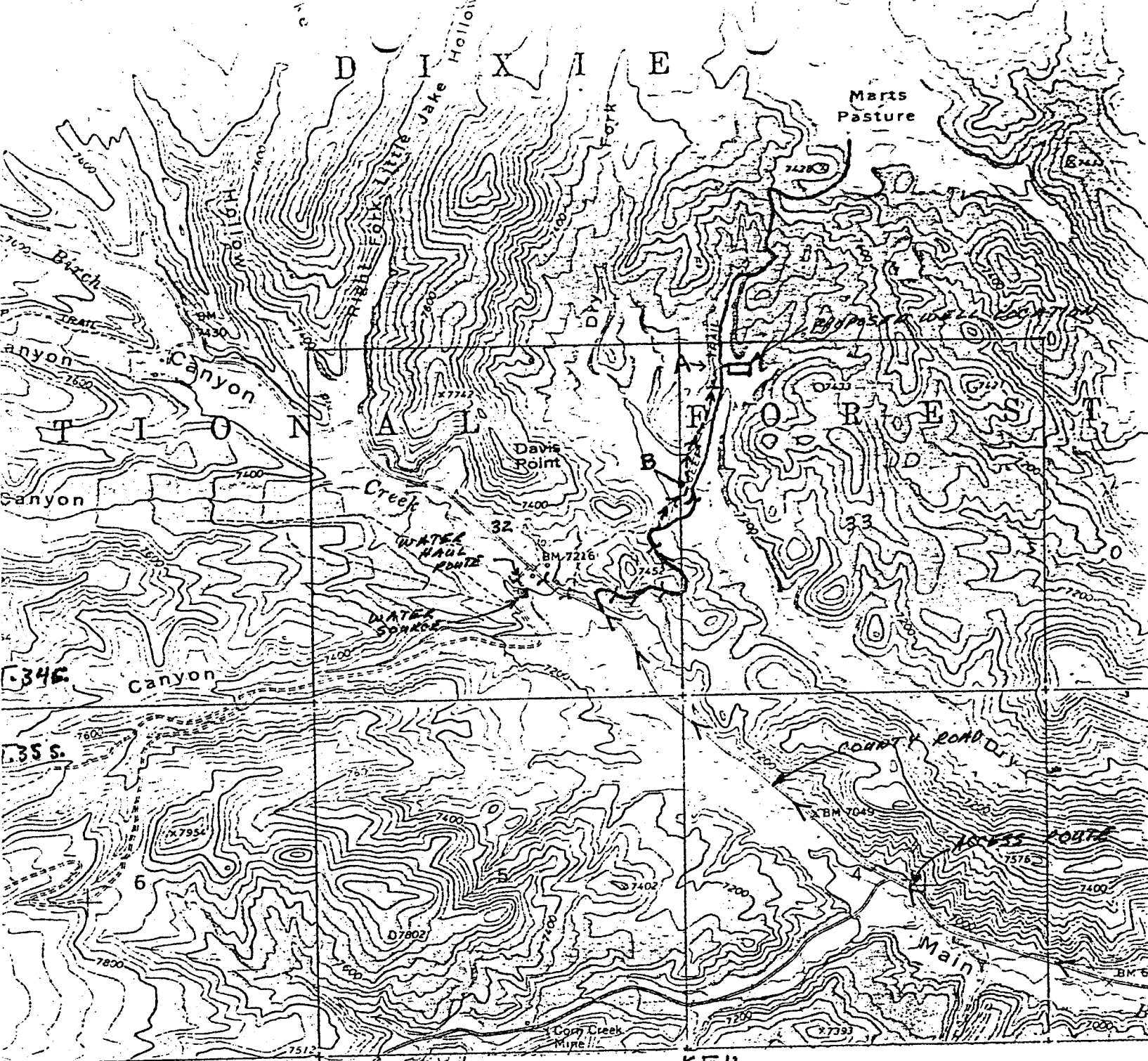


FIGURE 2 - TOPOGRAPHIC MAP OF LOCATION

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

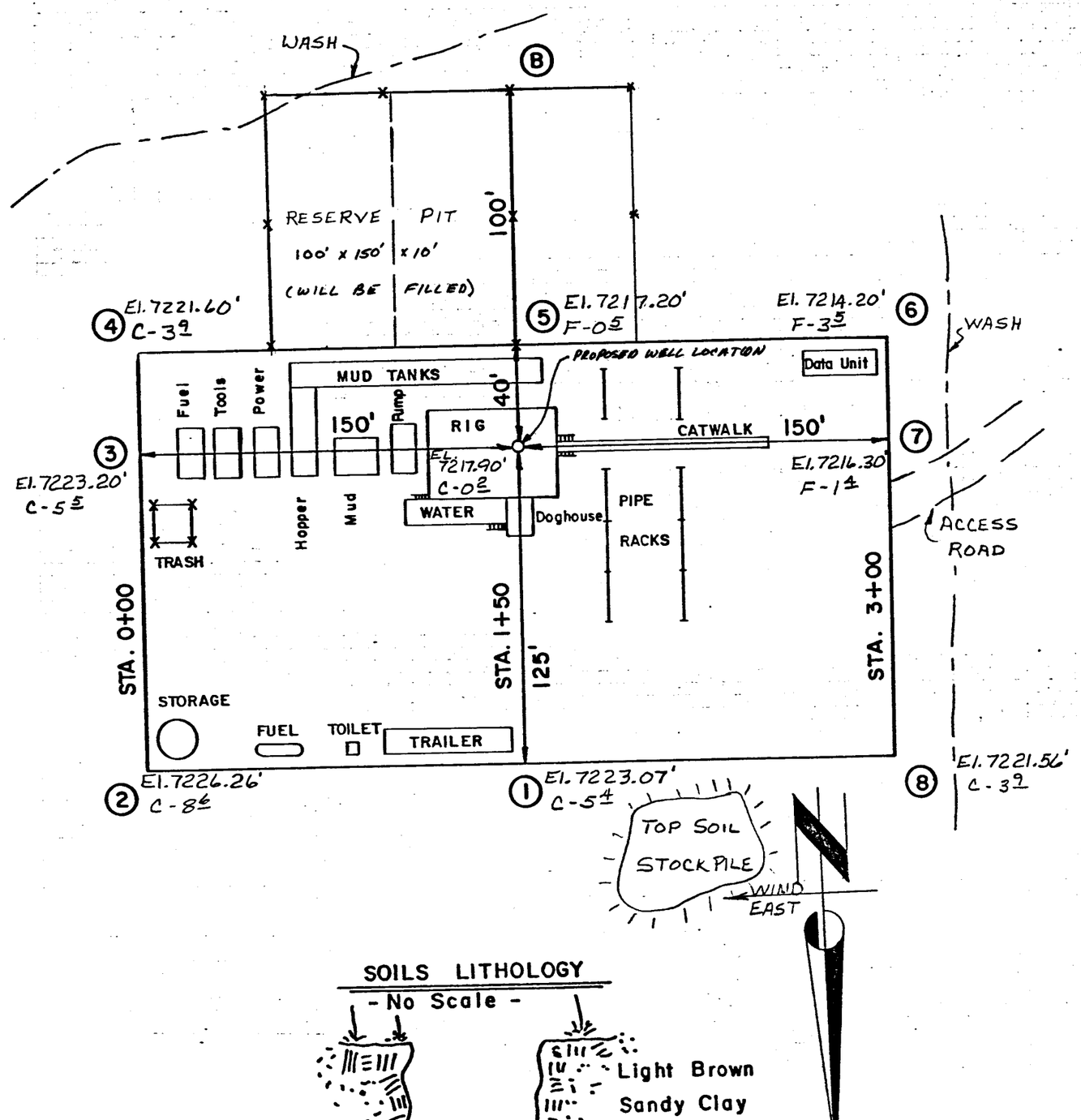
COWBOY RESOURCES

FEDERAL # 1-33

LOCATION LAYOUT & CUT SHEET

FIGURE 3 - CROSS SECTIONS AND RIG LAYOUT OF LOCATION

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

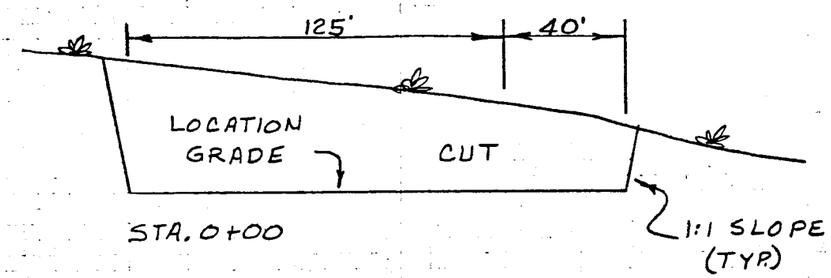


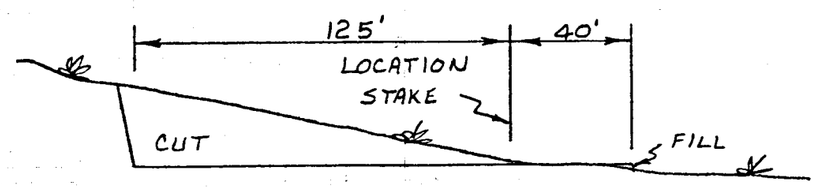
SOILS LITHOLOGY

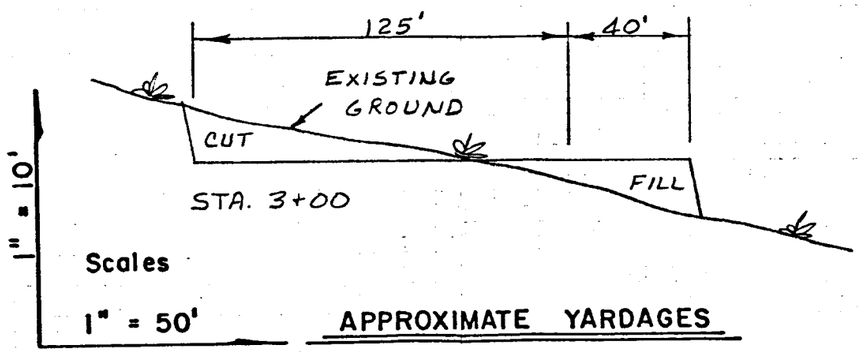
- No Scale -

Light Brown Sandy Clay

CROSS SECTIONS







Scales

1" = 50'

APPROXIMATE YARDAGES

Cubic Yards Cut - 5656

Cubic Yards Fill - 388

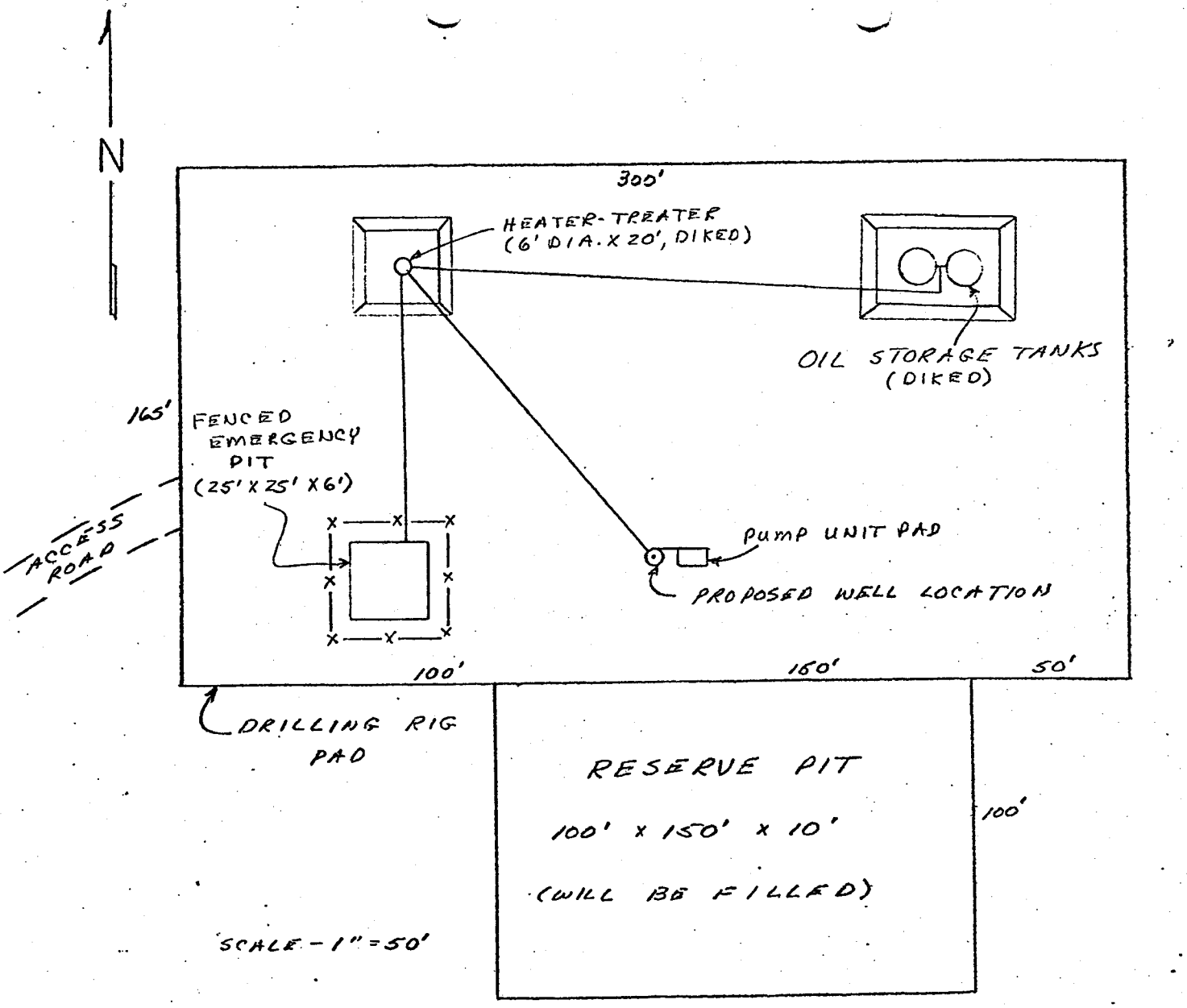


FIGURE 4 - PRODUCTION FACILITIES

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

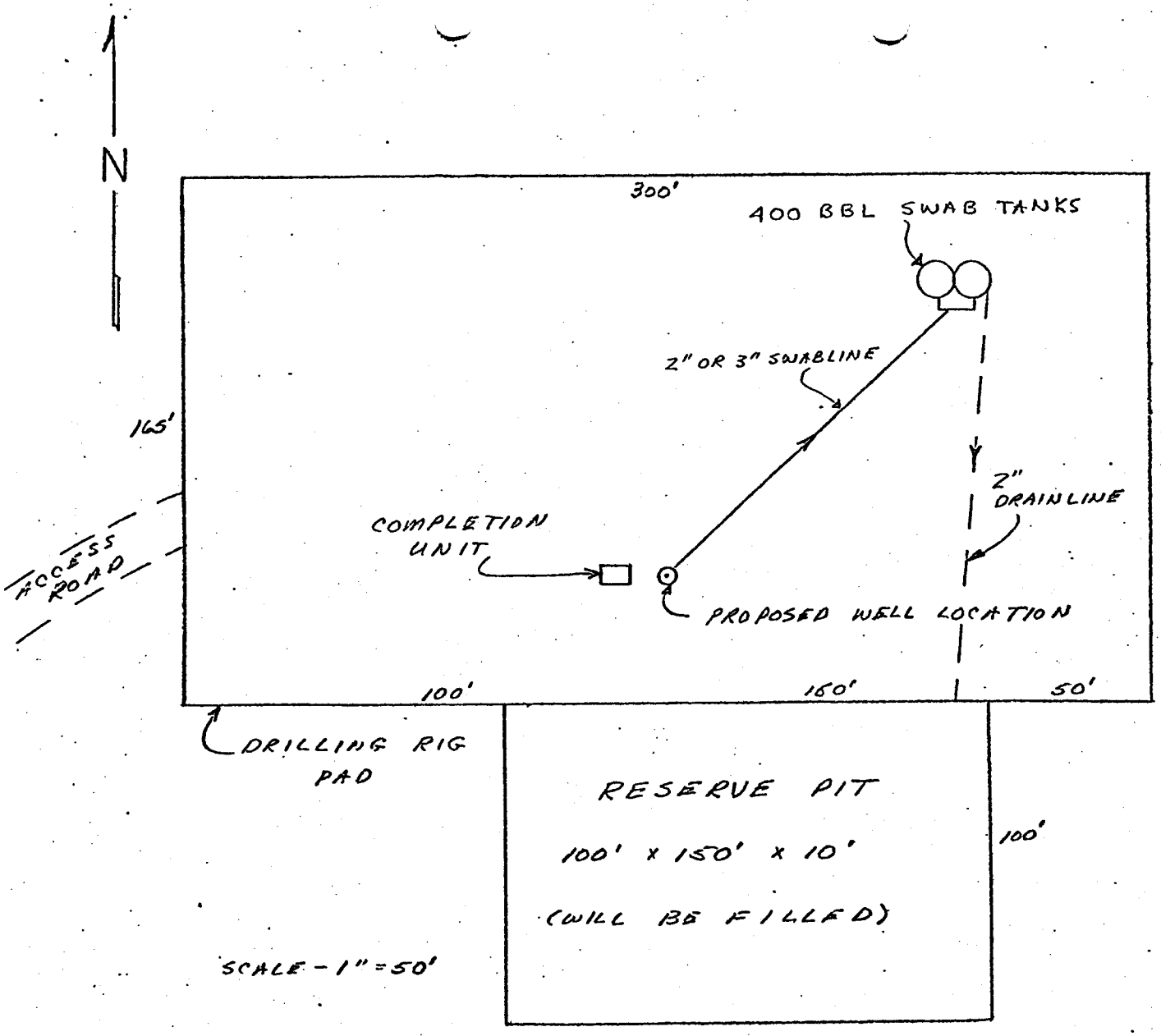


FIGURE 5 - COMPLETION LAYOUT

Cowboy Resources, Inc.
Federal #1-33
NW NW Section 33-T34S-R1E
Garfield County, Utah
Lease No. U-39458A

Form 97 2M 10-70

TEMPORARY

Application No. _____

APPLICATION TO APPROPRIATE WATER

STATE OF UTAH

NOTE:—The information given in the following blanks should be free from explanatory matter, but when necessary, a complete supplementary statement should be made on the following page under the heading "Explanatory."

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, for uses indicated by (X) in the proper box or boxes, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

1. Irrigation ☐ Domestic ☐ Stockwatering ☐ Municipal ☐ Power ☐ Mining ☐ Other Uses ☒

2. The name of the applicant is Cowboy Resources

3. The Post Office address of the applicant is 2305 Oxford Lane, Casper, WY 82604

4. The quantity of water to be appropriated _____ second-feet and/or _____ acre-feet

5. The water is to be used for Oil Drilling Fluids (Major Purpose) from May 1983 (Month) (Day) to Oct. 1983 (Month) (Day)

   other use period NA (Minor Purpose) from _____ (Month) (Day) to _____ (Month) (Day)

   and stored each year (if stored) from NA (Month) (Day) to _____ (Month) (Day)

6. The drainage area to which the direct source of supply belongs is _____ (Leave Blank)

7. The direct source of supply is* Birch Creek (Name of stream or other source)

   which is tributary to Escalante River, tributary to _____

*Note.—Where water is to be diverted from a well, a tunnel, or drain, the source should be designated as "Underground Water" in the first space and the remaining spaces should be left blank. If the source is a stream, a spring, a spring area, or a drain, so indicate in the first space, giving its name, if named, and in the remaining spaces, designate the stream channels to which it is tributary, even though the water may sink, evaporate, or be diverted before reaching said channels. If water from a spring flows in a natural surface channel before being diverted, the direct source should be designated as a stream and not a spring.

8. The point of diversion from the source is in Garfield County, situated at a point* SE Section 32-T34S-R1E

*Note.—The point of diversion must be located definitely by course and distance or by giving the distances north or south, and east or west with reference to a United States land survey corner or United States mineral monument, if within a distance of six miles of either, or if at a greater distance, to some prominent and permanent natural object. No application will be received for filing in which the point of diversion is not defined definitely.

9. The diverting and carrying works will consist of Pump out of stream into trucks to be hauled to point of usage

10. If water is to be stored, give capacity of reservoir in acre-feet NA height of dam _____ area inundated in acres _____ legal subdivision of area inundated _____

11. If application is for irrigation purposes, the legal subdivisions of the area irrigated are as follows: NA

_____ Total _____ Acres

12. Is the land owned by the applicant? Yes _____ No x If "No," explain on page 2.

13. Is this water to be used supplementally with other water rights? Yes _____ No x

    If "yes," identify other water rights on page 2.

14. If application is for power purposes, describe type of plant, size and rated capacity. NA

15. If application is for mining, the water will be used in NA Mining District at the _____ mine, where the following ores are mined _____

16. If application is for stockwatering purposes, number and kind of stock watered NA

17. If application is for domestic purposes, number of persons NA, or families _____

18. If application is for municipal purposes, name of municipality NA

19. If application is for other uses, include general description of proposed uses Drilling fluids for exploratory well in the NW NW Sec. 33-T4S-R1E

20. Give place of use by legal subdivision of the United States Land Survey for all uses described in paragraphs 14 to 19, incl. _____

21. The use of water as set forth in this application will consume .052 second-feet and/or acre-feet of water and 0 second feet and/ or acre feet will be returned to the natural stream or source at a point described as follows: _____

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

No. 12 - Land owned by the Government - U. S. Forest Service - Leased for exploration purposes for oil and/or gas

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described.

Wright B Wespaur
Signature of Applicant*

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF ~~UTAH~~ *WYOMING*
County of *NATRONA* } ss

On the *2nd* day of *May*, 19*83* personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

MRS. SHARON ORR - Notary Public
County of Natrona (SEAL) State of Wyoming
My Commission Expires May 26, 1986

Sharon Orr
Notary Public

OPERATOR COWBOY RESOURCES INC DATE 5-10-83

WELL NAME BROWN FED 1-33

SEC NW NW 33 T 34S R 1E COUNTY GARFIELD

43-017-30119	FED
API NUMBER	TYPE OF LEASE

POSTING CHECK OFF:

☐ INDEX	☐ HL	☐
☐ NID	☐ PI	☐
☐ MAP	☐	☐

PROCESSING COMMENTS:
NO OIL WELLS WITHIN 1000'

RJF ✓

APPROVAL LETTER:

SPACING: ☐ A-3 _____ UNIT ☐ c-3-a _____ CAUSE NO. & DATE

☐ c-3-b ☒ c-3-c

SPECIAL LANGUAGE:

- [✓] RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.
- [✓] AUTHENTICATE LEASE AND OPERATOR INFORMATION
- [✓] VERIFY ADEQUATE AND PROPER BONDING FED
- [✓] AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.
- [ ] APPLY SPACING CONSIDERATION
  - [ ] ORDER NO
  - [ ] UNIT NO
  - [ ] c-3-b
  - [X] 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.

May 10, 1983

Cowboy Resources, Inc.
c/o McIlnay-Adams & Co., Inc.
2305 Oxford Lane
Casper, Wyoming 82604

RE: Well No. Brown Fed. 1-33
NWNW Sec. 33, T.34S, R.1E
682 FNL, 887 FWL
Garfield,County, Utah

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to oil well on said unorthodox location is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

RONALD J. FIRTH - Chief Petroleum Engineer
Office: 533-5771
Home: 571-6068

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (acquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-017-30119.

Sincerely,

Norman C. Stout
Administrative Assistant

NCS/as
cc: Oil & Gas Operations
Enclosure

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

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 Change of Plans SINGLE ZONE ☐ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: True Oil Company

3. ADDRESS OF OPERATOR: P.O. Box 2360 Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 682' FNL & 887' FWL (NW NW) Sec. 33-T34S-R1E
At proposed prod. zone:

5. LEASE DESIGNATION AND SERIAL NO.: U-39458A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal

9. WELL NO.: #1-33

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 33-T34S-R1E

12. COUNTY OR PARISH: Garfield

13. STATE: UT

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 14 miles west of Escalante, UT

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 433' from east boundry NW¼

16. NO. OF ACRES IN LEASE: 520

17. NO. OF ACRES ASSIGNED TO THIS WELL: 40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: None

19. PROPOSED DEPTH: 6800'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 7217.9' GL ungraded

22. APPROX. DATE WORK WILL START*: June 15, 1983

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/4"	13-3/8 "	48#	150'	Cement to surface w/300 sx
12-1/4"	8-5/8"	24# & 32#	3000'	300 sx
7-7/8"	5-1/2"	15.5 & 14#	6800'	300 sx

It is proposed to drill an exploratory well at the above location. Primary zone of interest is the Kaibab at 6470'. If the well is found productive, 5-1/2" casing will be cemented in place and the well completed. If the well is found non-productive, the well will be plugged and abandoned as per BLM instructions and the surface restored as per BLM and U.S. Forest Service instructions.

See attached "Well Control and Related Information" summary and BLM Surface Use and Operating Plan" for details.

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 J. D. Milliken TITLE Manager DATE June 3, 1983

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

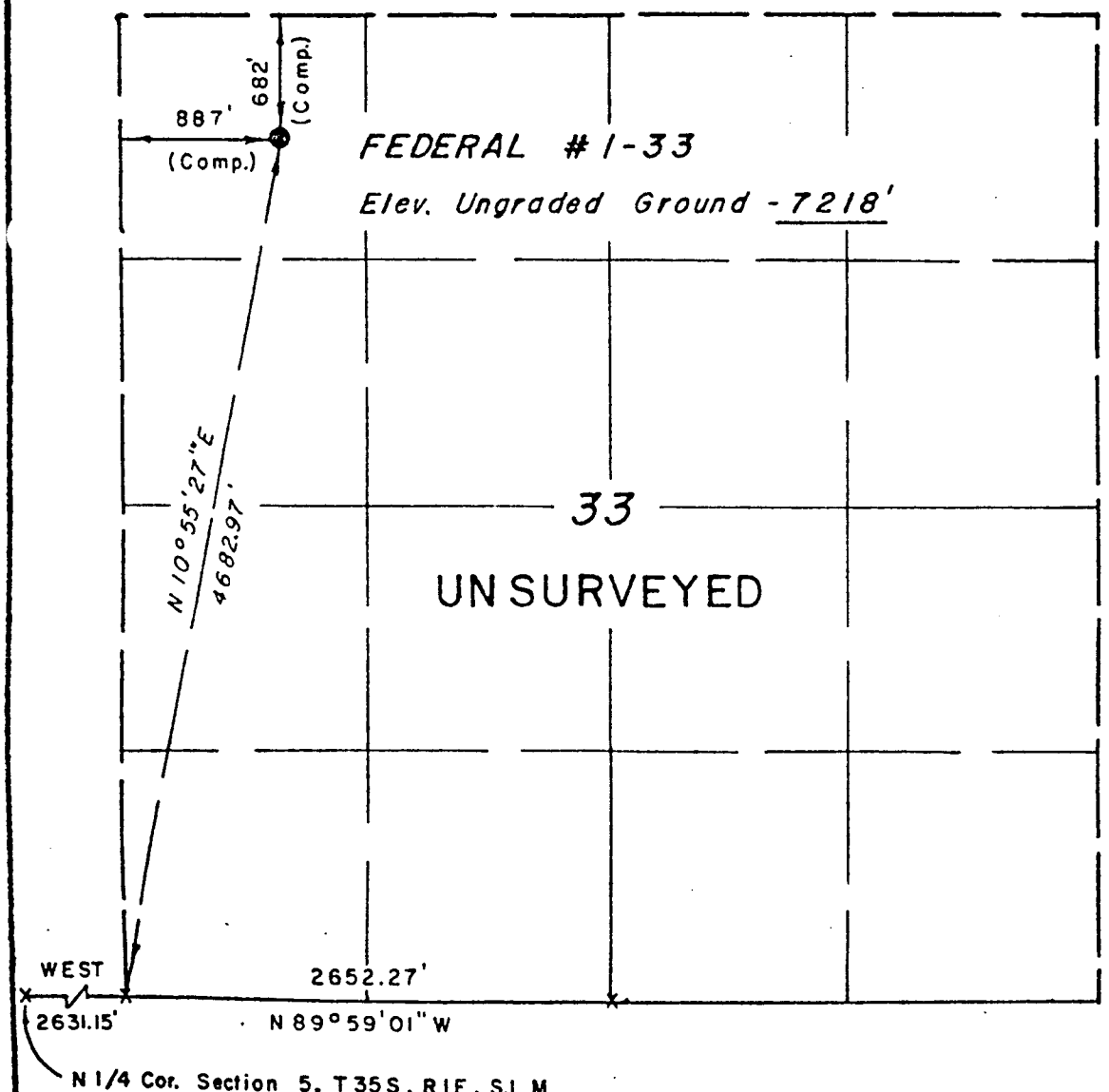
APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

BLM,S,F

*See Instructions On Reverse Side

T 34 S, R I E, S.L.B.&M.



X = Section Corners Located

PROJECT

COWBOY RESOURCES

Well location, *FEDERAL #1-33*, located as shown in the NW 1/4 NW 1/4 Section 33, T34S, R I E, S.L.B.&M Garfield County, Utah.

NOTE

THIS IS AN UNSURVEYED TOWNSHIP, FOOTAGES WERE COMPUTED FROM AN AVAILABLE PROTRACTION DIAGRAM OF THE AREA.

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.

Lawrence E. Kay

REGISTERED LAND SURVEYOR
REGISTRATION Nº 3137
STATE OF UTAH

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

SCALE	DATE
1" = 1000'	4 / 9 / 83
PARTY	REFERENCES
D.K. B.K. J.K.	G L O Plat

True Oil Company
Well No. 1-33
Section 33, T. 34 S., T. 1 E.
Garfield County, Utah
Lease U-39458A

Supplemental Stipulations

1) Adequate and sufficient electric/radioactive logs will be run to locate and identify anticipated coal beds in the Kaiparowits KRCRA. Please also provide two copies of drilling logs. Casing and cementing programs will be adjusted to eliminate any potential influence of the well bore or productive hydrocarbon zones on the coal resource. Surface casing program may require adjustment for protection of fresh water aquifers.

2) The 8 5/8" intermediate casing shall be set to the top of the Navajo formation with sufficient cement to protect the Straight Cliffs formation.

3) In the event 5 1/2" casing is run to total depth, the cement shall be brought back to 200' above the top of the Chinle formation.

4) The water conditions of the Morrison, Entrada, Navajo and Wingate formations must be assessed carefully and any plugging program or production casing strings must be designed to adequately isolate these formations from borehole circulation of other saline formation waters.

5) A preconstruction conference must be held with the U. S. Forest Service, Escalante Ranger District before any surface disturbing activities occur.

6) A trash cage will be used instead of a trash pit and may be burned with approval of the Dixie National Forest.

7) All provisions of the Surface Use Plan submitted by Cowboy Resources, Inc., for this well must be adhered to. No additional surface disturbing activities will be allowed without prior approval.

ADDITIONAL STIPULATIONS FOR PRODUCTION FACILITIES

Your Application for Permit to Drill also included a submittal for production facilities. These production facilities are approved for the lessee and his designated operator under Section 1 of the Oil and Gas Lease with the following conditions:

(1) The oil and gas measurement facilities must be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy are to be conducted monthly for the first three months on new meter installations and at least quarterly thereafter. Please provide this office with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports are to be submitted to the Salt Lake City District Oil and Gas Supervisor. Royalty payments will be made on all production volume as determined by the meter measurements or the tank measurements. All measurement facilities must conform with the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

(2) 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 must be housed and/or fenced.

(3) All disturbed areas not required for operations will be rehabilitated.

(4) All produced liquids must be contained including the dehydrator vent/ condensate line effluent. All production pits must be fenced.

(5) The well activity, the well status and the date the well is placed on production must be reported on Lessee's Monthly Report of Operations, Form 9-329.

(6) All off-lease storage, off-lease measurement, or commingling on lease or off-lease must have written approval.

(7) All product lines entering and leaving hydrocarbon storage tanks must be locked/sealed.

(8) You are reminded of the requirements for handling, storing, or disposing of water produced from oil and gas wells under NTL-2B.

(9) All materials, trash, junk, debris, etc. not required for production must be removed from the well site and production facility site at the completion of these operations.

(10) A copy of the Gas Sales Contract will be provided to this office and the Royalty Accounting Department as directed.

(11) Construction and maintenance for surface use approved under this plan should be in accordance with the surface use standards as set forth in the BLM/GS Oil and Gas Brochure entitled, "Surface Operating Standards for Oil and Gas Exploration and Development." This includes, but is not limited to, such items as road construction and maintenance, handling of top soil and rehabilitation.

(12) "Sundry Notice and Reports on Wells" (form 9-331) will be filed for all changes of plans and other operations in accordance with 30 CFR 221.58. Emergency approval may be obtained verbally, but such approval does not waive the written report requirement. Any additional construction, reconstruction, or alternations of facilities, including roads, gathering lines, batteries, measurement facilities, etc., will require the filing of a suitable plan and prior approval by the survey.

PH AC 307: 265-4351

McILNAY-ADAMS & CO., INC.

McILNAY ADAMS

2305 OXFORD LANE • CASPER, WYOMING 82601
PETROLEUM CONSULTING ENGINEERS & PROPERTY MANAGEMENT

REGISTERED PROFESSIONAL ENGINEERS

June 10, 1983

State of Utah
Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Re: Cowboy Resources, Inc.
Federal #1-33, U-39458-A
NW NW 33-T34S-R1E
Garfield Co., Utah

Gentlemen:

Effective immediately all correspondence on the above referenced well should be sent to

True Oil Company
c/o Mr. Jim Taylor
Drawer 2360
Casper, WY 82602

True Oil Company will be taking over the operations of this well and all future permit approvals, requests for information, etc. should be sent directly to their office.

Very truly yours,

McILNAY - ADAMS & CO., INC.

Sharon Orr

Sharon Orr
Office Manager

so

cc: Cowboy Resources, Inc.
True Oil Company

RECEIVED
JUN 14 1983
DIVISION OF
OIL, GAS & MINING

NOTICE OF SPUD

Company: True Oil

Caller: Susa Lujan

Phone: 307-266-0246

Well Number: 1-33

Location: NW¼ NW¼ Sec. 33 - 34S - 1E

County: Garfield State: UT

Lease Number: U-39458-A

Lease Expiration Date:

Unit Name (If Applicable):

Date & Time Spudded: 6-29-83 2:30 P.M.

Dry Hole Spudder/Rotary:

Details of Spud (Hole, Casing, Cement, etc.)

Rotary Rig Name & Number: Loffland Bros #1

Approximate Date Rotary Moves In: 6-23-83

FOLLOW WITH SUNDRY NOTICE

Call Received By: Cindy Barta

Date: 6-30-83 1:30 P.M.

cc: Well file
UT St. Oil & Gas
BLM, Vernal
YPA

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Water Rights

1636 West North Temple • Salt Lake City, UT 84116 • 801-533-6071

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dee C. Hansen, State Engineer

July 15, 1983

Cowboy Resources
2305 Oxford Lane
Casper, Wyoming 82604

RE: Temporary Application 58850 (97-1912)

Gentlemen:

Enclosed is a copy of your approved Temporary Application Number 58850 (97-1912).. This is your authority to construct your works and to divert the water for the uses described.

This application will expire October 31, 1983, and it is expected that no diversion or use of the water will be done after that date unless another proposal has been made and approved.

Your contact with this office, should you need it, is with the Area Engineer, Gerald W. Stoker. The telephone number is 586-4231.

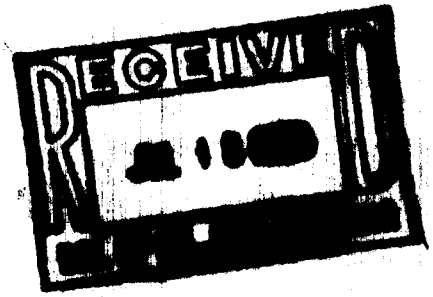
Yours truly,

Dee C. Hansen

Dee C. Hansen, P. E.
State Engineer

DCH:slm

Enclosure



Deputy State Engineer/Earl M. Staker Directing Engineers/Harold D. Donaldson • Donald C. Norseth
Stanley Green • Robert L. Morgan

an equal opportunity employer • please recycle paper

Form 97 2M 10-70

RECEIVED MAY 13 1983 WATER RIGHTS

TEMPORARY

TEMPORARY

Application No. 58850

97-1912

APPLICATION TO APPROPRIATE WATER
STATE OF UTAH

NOTE:—The information given in the following blanks should be free from explanatory matter, but when necessary, a complete supplementary statement should be made on the following page under the heading "Explanatory."

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, for uses indicated by (X) in the proper box or boxes, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

1. Irrigation ☐ Domestic ☐ Stockwatering ☐ Municipal ☐ Power ☐ Mining ☐ Other Uses ☒
2. The name of the applicant is Cowboy Resources
3. The Post Office address of the applicant is 2305 Oxford Lane, Casper, WY 82604
4. The quantity of water to be appropriated .052 second-feet and/or _____ acre-feet
5. The water is to be used for Oil Drilling Fluids (Major Purpose) from May 1983 (Month) (Day) to Oct. 1983 (Month) (Day)

   other use period NA (Minor Purpose) from _____ (Month) (Day) to _____ (Month) (Day)

   and stored each year (if stored) from NA (Month) (Day) to _____ (Month) (Day)
6. The drainage area to which the direct source of supply belongs is _____
7. The direct source of supply is* Birch Creek (Name of stream or other source)

   which is tributary to Escalante River, tributary to _____

RECEIVED JUN 18 1983 DIV. OF OIL, GAS & MINING

*Note.—Where water is to be diverted from a well, a tunnel, or drain, the source should be designated as "Underground Water" in the first space and the remaining spaces should be left blank. If the source is a stream, a spring, a spring area, or a drain, in the first space, giving its name, if named, and in the remaining spaces, designate the stream channels to which it is tributary, even though the water may sink, evaporate, or be diverted before reaching said channels. If water from a spring flows in a natural surface channel before being diverted, the direct source should be designated as a stream and not a spring.

8. The point of diversion from the source is in Garfield County, situated at a point*
   SE Section 32-T34S-R1E

   Main Canyon

*Note.—The point of diversion must be located definitely by course and distance or by giving the distances north or south, and east or west with reference to a United States land survey corner or United States mineral monument, if within a distance of six miles of either, or if at a greater distance, to some prominent and permanent natural object. No application will be received for filing in which the point of diversion is not defined definitely.

9. The diverting and carrying works will consist of Pump out of stream into trucks to be hauled to point of usage
10. If water is to be stored, give capacity of reservoir in acre-feet NA height of dam _____ area inundated in acres _____ legal subdivision of area inundated _____
11. If application is for irrigation purposes, the legal subdivisions of the area irrigated are as follows:
    NA

    _____ Total _____ Acres
12. Is the land owned by the applicant? Yes _____ No x If "No," explain on page 2.
13. Is this water to be used supplementally with other water rights? Yes _____ No x
    If "yes," identify other water rights on page 2.
14. If application is for power purposes, describe type of plant, size and rated capacity. NA
15. If application is for mining, the water will be used in NA Mining District at the _____ mine, where the following ores are mined _____
16. If application is for stockwatering purposes, number and kind of stock watered
    NA
17. If application is for domestic purposes, number of persons NA, or families _____
18. If application is for municipal purposes, name of municipality NA
19. If application is for other uses, include general description of proposed uses Drilling fluids for exploratory well in the NW NW Sec. 33-T34S-R1E
20. Give place of use by legal subdivision of the United States Land Survey for all uses described in paragraphs 14 to 19, incl. T34S
21. The use of water as set forth in this application will consume .052 second-feet and/or acre-feet of water and 0 second feet and/ or acre feet will be returned to the natural stream or source at a point described as follows: _____

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

No. 12 - Land owned by the Government - U. S. Forest Service - Leased for exploration purposes for oil and/or gas

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described.

Dwight B Wespam
Signature of Applicant*

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF ~~UTAH~~ *WYOMING*
County of *NATRONA* } ss

On the *2nd* day of *May*, 19*83* personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

MRS. SHARON ORR - Notary Public
County of Natrona SEAL State of Wyoming
My Commission Expires May 26, 1986

Sharon Orr
Notary Public

FEES FOR APPLICATIONS TO APPROPRIATE WATER IN UTAH

Flow rate — c.f.s.	Cost	
0.0 to 0.1	$ 15.00	
over 0.1 to 0.5	30.00	
over 0.5 to 1.0	45.00	
over 1.0 to 15.0	45.00	plus $7.50 for each cfs above the first cubic foot per second.
over 15.0	150.00	

Storage — acre-feet		
0 to 20	22.50	
over 20 to 500	45.00	
over 500 to 7500	45.00	plus $7.50 for each 500 a.f. above the first 500 acre feet.
over 7500	150.00	

(This section is not to be filled in by applicant)

STATE ENGINEER'S ENDORSEMENTS

1. 5/13/83 Application received ~~by mail~~ over counter in State Engineer's office by [illegible]
2. Priority of Application brought down to, on account of
3. 5/23/83 Application fee, $15.00, received by smc Rec. No. 02782
4. Application microfilmed by Roll No.
5. 6-7-83 Indexed by d.n. Platted by
6. May 23, 1983 Application examined by [illegible]
7. Application returned, or corrected by office
8. Corrected Application resubmitted by mail over counter to State Engineer's office.
9. ~~May 23, 1983~~ Application approved for advertisement by [illegible] SG
10. Notice to water users prepared by
11. Publication began; was completed
    Notice published in
12. Proof slips checked by
13. Application protested by

TEMPORARY

14. Publisher paid by M.E.V. No.
15. Hearing held by
16. Field examination by
17. 7/5/83 Application designated for ~~rejection~~ approval SG & GWS
18. 7/15/83 Application copied or photostated by slm proofread by
19. 7/15/83 Application ~~rejected~~ approved x
20. Conditions:

    This Application is approved, subject to prior rights, as follows:

    a. Actual construction work shall be diligently prosecuted to completion.

    b. Proof of Appropriation shall be submitted to the State Engineer's office by NPR

    c. TEMPORARY APPROVAL--Expires October 31, 1983.

Dee C. Hansen

Dee C. Hansen, P.E., State Engineer

21. Time for making Proof of Appropriation extended to
22. Proof of Appropriation submitted.
23. Certificate of Appropriation, No. , issued

WATER RIGHTS DATA BASE
ENTERED - DATE 6/14/83 BY
VERIFIED - DATE 6/21/83 BY

Application No. 58850

Temporary

Form OGCC-3

SUBMIT IN DUPLICATE*

STATE OF UTAH

(See other instructions on reverse side)

OIL & GAS CONSERVATION COMMISSION

RECEIVED

AUG 24 1983

DIVISION OF OIL, GAS & MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

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

2. NAME OF OPERATOR: True Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 2360 Casper, WY 82602

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 682 FNL & 887 FWL NW NW Sec. 33-T34S-R1E
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: U-39458A

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

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: Brown Federal

9. WELL NO.: 1-33

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 33-T34S-R1E SLB&M

14. PERMIT NO. 43-017-30119 DATE ISSUED

12. COUNTY OR PARISH: Garfield

13. STATE: UT

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6/29/83	8/10/83		7218' GR	-

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
7974			→	Surf.-TD	N/A

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: None

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: FDC, Cyberlook, BHC-SFL, Nat. GR Spectrometry

27. WAS WELL CORED: No

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

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
16"		139.41'	21"	300 sx	
8-5/8"	24#	4028'	12-1/4"		
7"	23 & 20#	6780'	8-1/8"	500 sx	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

31. PERFORATION RECORD (*Interval, size and number*): N/A

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
N/A	

33.* PRODUCTION

P&A

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)

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

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

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

SIGNED J. D. Milliken TITLE Manager DATE Aug. 18, 1983

*(See Instructions and Spaces for Additional Data on Reverse Side)

BLM, S, F, Cowboy(2), Taha, Pram, Cluff, Oxford, Kirkwood, Cities

TRUE OIL COMPANY

RIVER CROSS ROAD

CASPER, WYOMING
P.O. DRAWER 2360
PHONE 237-9301
82602

August 23, 1983

Taha Corporation
Attn: Steve Findeiss
6300 Classen Center, Ste A 100
Oklahoma City, OK 73118

Cluff Oil, Inc.
Attn: Mr. Dan Lux
2100 West Loop South, Ste 840
Houston, TX 77027

Oxford Exploration Company
Attn: Dave Park
1550 Denver Club Building
Denver, CO 80202

CRAM Exploration Corporation
Attn: Jim Klipp
410 17th Street, Suite 1305
Denver, CO 80202

Cities Service Company
Attn: Bob Doty
P. O. Box 1919
Midland, TX 79702

Kirkwood Oil & Gas
Attn: Steve Kirkwood
P. O. Box 3439
Casper, WY 82602

Minerals Management Service
1745 West 1700 South
Suite 2000
Salt Lake City, UT 84104

Utal Dept. of Natural Resources
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

Re: TRUE OIL COMPANY
BROWN FEDERAL #1-33
NW NW 33-34S-1E
GARFIELD COUNTY, UT

Gentlemen:

Recently you received your logs on the above referenced well. Please note that Schlumberger has the location incorrectly stated on the log heading. The township should read 34S not 24S.

Sincerely,

Leisa Lujan

Leisa Lujan
Geological Secretary

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RECEIVED
AUG 25 1983
DIVISION OF
OIL, GAS & MINING

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other

AUG 1 1983

DIVISION OF OIL, GAS & MINING

2. NAME OF OPERATOR
True Oil Company

3. ADDRESS OF OPERATOR
P. O. Box 2360 Casper, WY 82602

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.) 682 FNL & 887 FWL NW NW Sec. 33
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
U-39458A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Brown Federal

9. WELL NO.
1-33

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 33-T34S-R1E SLB&M

12. COUNTY OR PARISH
Garfield

13. STATE
UT

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
7218'GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☒
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

We plugged & abandoned the above well as follows:

Plug #1: 6600-6900, 58 sx
#2: 3900-4100, 65 " - base of 8-5/8" casing
#3: 2000-2200, 68 sx
#4: surface, 25 sx

Shot off 7" casing @ 5010' & recovered same.

When the location has been cleaned and seeded, we will notify your office so final inspection can be made.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 8/23/83
BY:

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED J. D. Milliken TITLE Manager DATE August 22, 1983

(This space for Federal or State office use)

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

BLM,S,F,Cowboy(2),Taha,Cram,Cluff,Oxford,Kirkwood,Cities

*See Instructions on Reverse Side

MICROFICHE

TRUE OIL COMPANY
#1-33 BROWN FEDERAL
NWNW Sec. 33, T34S, R1E
GARFIELD CO., UTAH
(NORTH UPPER VALLEY)

WELLSITE GEOLOGIST: RALPH EARLE
INTERMOUNTAIN WELLSITE GEOLOGISTS
P.O. BOX 4007
CASPER, WYOMING 82604
(307) 266-2009

TABLE OF CONTENTS

WELL DATA

OPERATOR:	True Oil Company
LEASE/AREA:	#1-33 Brown Federal/North Upper Valley
LOCATION:	NW NW Section 33, T34S, R1E Garfield Co., Utah Elevations: GL: 7218' KB: 7237'
SPUD:	June 29, 1983
COMPLETED:	August 10, 1983
TOTAL DEPTH:	7,974' (driller) 7,975' (logs)
CONTRACTOR:	Loffland Brothers, Rig #1
CASING:	Surface: 16" set @ 139' Intermediate: 8 5/8" set @ 4,028' Liner: 7" set @ 6,776'
HOLE SIZE:	14 3/4" (surface casing to 3,879') 12¼" (3,879' to 4,067') 7 7/8" (4,067' to 6,780') 6 1/8" (6,780' to T.D.)
DRILLING FLUID:	Milchem (aereated mud: surface to 6,780) (Air: 6,780' to 7,764") (Aereated mud: 7,764 to T.D.) Air Compression service: Ingersoll-Rand Compression Services
ELECTRIC LOGS:	Schlumberger Farmington, N.M. (c/o T. Link)
WELLSITE GEOLOGY:	R.T. Earle Intermountain Wellsite Geologists Casper, Wyoming

WELL CHRONOLOGY

(6,100' - T.D.)

(depth below date is T.D. at 12AM MDT)

July 31, 1983 (6,141')	Intermountain geologist on location and commenced service at 2AM, rig tripping for bit #8. Tripping hours 13½, work on brake bands 10½ hours.
August 1, 1983 (6,141')	Wash and ream to bottom w/bit #9, encountered 20' fill, resumed drilling at 1AM, w/WOB 18/20 K, RPM 68, SPM 48 (drilling with aereated mud).
August 2, 1983 (6,462')	Total drilling 19½ hours at WOB 18/20 K, RPM 68, SPM 48. Reached T.D. for setting 7" liner at 7:30PM at 6,780. Circulated and conditioned hole for casing.
August 3, 1983 (6,780')	Running 7" liner at midnight, liner setting completed by 2PM, cementing and plug down completed by 4PM, while waiting on cement, 4½" drill string changed out for 3½" pipe.
August 4, 1983 (6,780)	New 3½" string on location by 1PM, running new pipe in hole at midnight.
August 5, 1983 (6,780')	Picked up 3½" string, rigged down casing and laydown crews by 2AM, starting drilling cement @ 2:30AM, drilled casing shoe @ 10:45PM. Below shoe pulled up and began blowing hole dry to air drill.
August 6, 1983 (6,780')	Hole blown dry and resumed drilling at 5:30AM, drilled ½ hour with scant returns and pulled up to continue blowing hole. Resumed air drilling @ 9AM, w/WOB 15/20K, RPM 40, PSI 300.
August 7, 1983 (7,132')	Total drilling 23 hours, w/WOB 15/20K, RPM 40, CFM 1500, PSI 390. Good returns and good sample quality with bottoms up lag estimated at 8-10 minutes.
August 8, 1983 (7,531')	Total drilling 15½ hours, tripping to change out bits and pick up 6 collars, 8½ hours, resumed drilling w/air at 6PM.

August 9, 1983 (7,775')	Drilled until 7,764', with scant dust and returns, began building back pressure on air compressors, apparently from fluid entering wellbore. Noted gassy smell from flow line while attempting to drill. Pulled up 11 stands at 1:30AM and began to re-mud up. Built mud from 2AM - 8AM, circulated aereated mud 8AM - 9AM and resumed drilling at 9:30AM. Noted strong gassy odor on location when initial fluid circulated up out of hole (w/drilling mud). Drilling w/WOB 24K, RPM 46, SPM 31. Total drilling 14½ hours. Schlumberger on location at 9AM.
August 10, 1983 (7,940')	Drilled to T.D. of 7,974' (SLM 7,981', Logs 7,975') @ 4AM, circulated and conditioned hole 4½ hours, logging commenced at 11:30AM, finished up by 4:30PM. Intermountain consultant released. Plugging orders received to plug and abandon well.

BIT RECORD

BIT #	SIZE	TYPE	T.D. OUT	FOOTAGE	HOURS	DEVIATION
1	14 3/4	S-3-J	370'	328	13.5	3/4°
2	17 1/2	--	--	160	3	--
RR 1	14 3/4	S-3-J	1487'	1445	42	1 1/4°
3	14 3/4	S-3-J	2367'	880	28	--
4	14 3/4	S-84-F	3879'	1512	139	1 1/2°
5	12 1/4	R-2	3988'	109	15	2°
6	12 1/4	J-22	4067'	79	--	--
7	7 7/8	J-55R	--	--	--	--
8	7 7/8	J-22	6141'	2074	84	--
9	7 7/8	J-22	6780'	639	42.5	--
10	6 1/8	F-5	7685'	905	48.5	--
11	6 1/8	F-5	7975'	290	24	--

OTHER DEVIATION SURVEYS

DEPTH	DEVIATION
554'	0 °
1040'	3/4 °
1446'	1 1/4 °
1905'	1 °
3244'	1 1/4 °
3928'	1 1/2 °
4790'	3 °
4935'	6 1/4 °
5028'	7 1/2 °
5402'	6 1/4 °

DRILLING FLUID RECORD

DATE	T.D. SMPL	WT	VIS	PV	YP	WL	PH	FC	CL(PPM)
	2470'	8.6	28	6	1	24.0	10	2/32	400
	3129'	8.6	28	5	1	N/C	8.5	2/32	400
	3538'	8.6+	28	5	1	N/C	9.5	3/32	700
	3879'	9.2+	35	6	5	N/C	10.5	3/32	67000 (Carmel salt)
07/14/83	4067'	8.6+	38	10	7	N/C	9.5	3/32	1000
	4317'	8.5	33	7	4	18.6	10	2/32	800
	5122'	8.6	33	8	4	20.2	9.5	2/32	600
	5790'	8.4	32	6	3	N/C	8.5	3/32	500
	6146	8.4	29	4	2	20.0	9.0	3/32	3000
08/01/83	6150'	8.4	29	4	2	20.0	9.0	3/32	3000
08/02/83	6460'	8.4	32	5	2	20.0	9.5	2/32	4000
	(drilled with aereated mud from BSC to 6780'; with air 6780' - 7764')								
08/10/83	7940'	8.4	35	9	5	16.0	8.5	2/32	3500

FORMATION TOPS

FORMATION	LOG TOP	SUBSEA (KB 7237')
Navajo (main)	4035'	+3202
Kayenta	5515'	+1722
Wingate	5858'	+1379
Chinle	6134'	+1103
Shinarump	6500'	+ 737
Moenkopi	6747'	+ 490
Timpoweap	*7538'	- 301
Kaibab	*7692'	- 455
Kaibab K_4	*7745'	- 508
White Rim	*7824'	- 587
T.D.	7975'	- 738

*These are rough "field tops", with some question as to their accuracy.

SUMMARY OF HYDROCARBON SHOWS

Hydrocarbon shows were anticipated in both the Timpoweap (lower Moenkopi member) and Kaibab carbonate sections, with shows basically limited to the Timpoweap. There are two zones of interest with weak to fair shows in the Timpoweap -- an upper zone at the top (sample and log interval 7540' - 7560'), and a lower zone (interval 7640' - 7660') which appeared below a tight and somewhat unexpected limestone cap.

Both of these zones exhibit basically similar sample shows: microcrystalline to very fine crystalline dolomites with up to 80% of cuttings displaying yellow to yellow-green hydrocarbon fluorescence and generally enthusiastic bright yellow cuts. Light brown to spotty dark brown and black (dead?) staining was observed, and in both cases a faint sweet petroliferous odor was present in fresh wet samples. Visible porosities in cuttings were judged to be poor to fair.

The upper (7540' - 7560') zone shows much less porosity development than the lower (7640' - 7660'): an average of 7-9% density porosity for the upper zone, versus an average of 12-15% density porosity for the lower zone (density log run on 2.87 dolomite matrix). Resistivity values are correspondingly higher in the tighter, upper zone. Best R_t values in the lower zone average 12-15 ohms, versus an upper zone average of 40-60 ohms.

The Kaibab section (top approximately 7700') was topped by an anhydrite--anhydritic dolomite and chert zone, appearing dense to tight in samples and displaying scattered predominantly asphaltic dark staining which gave only scattered weak milky yellow cuts. Lower Kaibab, including the denoted "K-4" porosity zone, showed good porosity development averaging 12-14% in dolomites. Intercrystalline, intergranular and vuggy porosity was often well developed, but the section was entirely clean and free of any staining, fluorescence or cuts. The lower part of this interval is sandy and evidently grades into the White Rim sand -- generally intergrading dolomitic sand/sandy dolomite. No shows noted through the lower interval.

The Upper Valley/North Upper Valley area has not been known for any significant shows or production of hydrocarbon gas, and #1-33 Brown Federal was no exception. Gas detection equipment was running from the base of the Shinarump to T.D., with none to a trace of background gas carried throughout. A small amount of trip gas was detected after the 7685' bit trip, following penetration of the Timpoweap hydrocarbon zones. CO_2 was noted in various small amounts through a fair portion of the carbonate sections.

LITHOLOGY

NOTE: True sample (lag) depth marked below rig caught sample depth. With few exceptions sample quality ranged from fair to excellent during both mud and air drilling. "As above" refers to nearest preceding description for same lithology type.

30' SAMPLES

2500-2620 (2500-2612)	Shale - medium, dark gray, blocky - platy, moderately firm, earthy, slightly - moderately calcareous, some silty
	Siltstone (scattered) - red brown, firm, calcareous, shaly
2620-2715 (2612-2705)	Shale - red brown, orange, blocky, calcareous in part
	Siltstone - as above
	Sandstone - light orange, very fine - silty, poorly sorted, moderately firm, calcareous, tight
2715-2745 (2705-2738)	Shale - gray and red brown, as above
	Sandstone - white, fine to medium, subangular - subrounded, fair sorting, frosted, friable, slightly calcareous, scattered fair porosity, no show
2745-2835 (2738-2825)	Shale (60%) - red brown, orange, blocky, moderately firm - firm, silty in part grading to siltstone, calcareous in part
	Shale (30%) - medium to dark gray as above
	Sandstone (15%) - orange, as above
2835-2995 (2825-2990)	Shale - as above, red brown 60%, gray 30-40%
	Sandstone - scattered, orange as above
2995-3145 (2990-3137)	Shale - red brown, dark gray as above, slightly - moderately calcareous, trace coal chips w/pyrite, trace chert
	Sandstone - orange, shaly as above, calcareous (trace in samples)
3145-3235 (3137-3230)	Lithologies generally as above
3235-3325 (3230-3322)	Shale - orange brown, pink brown, gray, red brown, blocky, firm, earthy, calcareous
	Shale - cream gray, moderately firm, very slightly calcareous

3325-3385 (3322-3380)	Shale - increasingly light - medium gray, platy, moderately firm, slightly - very calcareous grading to shaly limestone in part
	Siltstone - light gray, moderately firm, shaly, calcareous
3385-3475 (3380-3467)	Shale - orange brown, platy - blocky, earthy, calcareous in part, silty in part
	Shale - light - medium gray, blocky, generally as above
3475-3505 (3467-3492)	Shale - as above, decreasing
	Sandstone - orange, very fine to some medium, subangular - rounded poorly sorted, friable, shaly, slightly calcareous
3505-3605 (3492-3600)	Shale - medium, dark gray, platy - blocky, moderately firm, calcareous in part
	Shale - red brown, blocky, earthy, slightly calcareous w/scattered anhydrite/gypsum - white, micro-crystalline, moderately soft - firm
3605-3665 (3600-3660)	Shale - brown orange, blocky, moderately firm, earthy, silty - sandy in part, calcareous, grading in part - very shaly limestone
	Shale - medium gray, blocky - platy, very slightly calcareous in part
3665-3725 (3660-3717)	Shale - orange, red brown, limy in part as above
	Limestone - buff, white, silty - shaly, micro-crystalline in part, very firm some chalky, dense
3725-3785 (3717-3780)	(No Samples)
3785-3815 (3780-3810)	Shale (40%) - red brown, platy - blocky, moderately firm, silty in part
	Limestone (60%) - buff, light tan, microcrystalline - occasional very silty, sandy, shaly in part, soft and friable - firm, scattered fair intergranular porosity, no shows
3815-3925 (3810-3917)	Lithologies generally as above
3925-3980 (3917-3978)	Shale - medium, dark red brown, blocky, soft - moderately firm, silty - sandy in part, earthy, calcareous, heavily vugged in part with salt cavities

3980-4010 (3978-4002)	(No Samples)
4010-4040 (4002-4025)	Shale - generally as above (poor sample, cavings into the Navajo ss?)
4040-4100 (4025-4085)	(No Samples)
4100-4220 (4085-4210)	Sandstone - clear, very light orange, fine - medium, sub - well rounded, frosted, moderately - well sorted, unconsolidated loose grains
4220-4340 (4210-4318)	Sandstone - as above
4340-4370 (4318-4340)	Sandstone - clear, increasingly fine, subangular - subrounded, frosted, loose grains
4370-4520 (4340-4485)	Sandstone - clear, very light orange, fine - medium, sub-well rounded, frosted loose grains
4520-4700 (4485-4660)	Sandstone - as above, generally fine - scattered medium, generally frosted mostly well rounded, loose grains
4700-4820 (4660-4775)	Sandstone - increasingly light orange to some pink orange, very fine - fine some medium, sub - well rounded
4820-4920 (4775-4880)	(No Samples)
4920-5010 (4880-4980)	Sandstone - generally as above
5010-5130 (4980-5108)	Sandstone - clear, very light orange, fine - medium, some very fine, sub - well rounded, good sorting, generally frosted, loose grains
5130-5280 (5108-5268)	Sandstone - increasingly light orange, very fine - medium, rounded - some subangular, fair - good sorting, frosted, loose grains
5280-5370 (5268-5355)	Sandstone - orange, increasingly very fine, friable, 50% loose grains, tight where visible
5370-5400 (5355-5375)	(No Samples)
5400-5460 (5375-5442)	Sandstone - orange, some clear, very fine as above
5460-5550 (5442-5540)	Sandstone - light - medium orange, clear, some light pink, very fine - fine, subangular - rounded, fair sorting, loose grains

5550-5580 (5540-5555)	Sandstone - light - medium pink, some clear - orange pink, very fine - fine generally subrounded, well sorted, loose grains
5580-5610 (5555-5585)	Sandstone - pink as above, increasingly fine
5610-5640 (5585-5620)	Sandstone - as above, w/scattered yellow grains, slight increase in dark red clay filling
5640-5700 (5620-5670)	Sandstone - light pink, orange, clear, very fine - medium generally as above
5700-5730 (5670-5700	(No Samples)
5730-5820 (5700-5795)	Sandstone - light, medium pink, red orange, very fine - fine, subangular - subrounded, fair - good sorting, moderately firm - friable, some red brown shaly
5820-5880 (5795-5852)	Sandstone - as above
	Shale (5%) - brown red, platy, earthy, non-calcareous
5880-5940 (5852-5905)	Sandstone - orange, clear, pink, very fine - some medium, fair sorting, loose grains
5940-6030 (5905-5995)	Sandstone - light pink, light orange, fine - very fine, generally subangular, good - well sorted, loose grains, frosted
6030-6120 (5995-6096)	Sandstone - increasingly orange, clear, w/light pink, fine - very fine subangular - subrounded, good - fair sorting, loose grains
	Shale (10%) - brown red, platy, subwaxy, very slightly calcareous
6120-6150 (6096-6135)	Shale - generally, as above
6150-6270 (6135-6250)	Shale - orange, brown, pink orange, some cream yellow, blocky - platy, very silty - shaly siltstone in part, earthy - trace subwaxy non-calcareous
6270-6360 (6250-6340)	Shale - variegated yellow, orange, brown, lavender, platy - some blocky, as above, calcareous, silty in part, some anhydritic

6360-6420 (6340-6400)	Shale - lavender, lavender brown, orange brown, generally sub-blocky, firm, subwaxy - earthy non-calcareous, w/few pieces of limestone - pink gray, tan - buff, microcrystalline, dense
6420-6510 (6400-6495)	Shale - as above, scattered pieces of limestone as above, no shows Sandstone - gray brown, very fine - silty, shaly, moderately firm trace very slightly calcareous, no shows
6510-6540 (6495-6518)	Shale - generally as above Sandstone - white, very light gray to slightly salt and pepper in part, very fine - some fine, subangular - subrounded, well sorted, moderately firm trace calcareous, fair - some good visible porosity, no shows
6540-6570 (6518-6550)	Sandstone - white, clear, fine to medium, subangular, glassy quartz, loose grains
6570-6600 (6550-6585)	Sandstone - white, very light gray, trace pale orange, medium - course, subangular - subrounded, loose, glassy - frosted, trace pyrite Shale - orange, red brown, platy - subblocky, subwaxy, non-calcareous
6600-6660 (6586-6645)	Sandstone - as above and increasingly light orange, increasingly frosted, fine - very coarse, subangular - subrounded, poor sorting, mostly loose, trace pyrite Shale - as above and gray - olive gray, platy, subwaxy

(Start 10' samples @ 6660' to determine top of Moenkopi for setting 7" liner in hole)

6660-6680 (6645-6665)	Sandstone - white, clear, some light orange, pink, fine to medium w/some coarse, subangular - sub-rounded, unconsolidated, poor sorting where visible Shale (40%) - variegated orange, brown, gray green, lavender, platy - blocky moderately firm, slightly calcareous in part
6680-6690 (6665-6670)	Sandstone - as above Shale (50%) - as above Limestone - (trace) - pink, red gray, tan, crypto-microcrystalline, very firm clean, dense

6690-6700 (6670-6678)	Sandstone - white, clear, medium - some very coarse, subangular - subrounded poor sorting, loose grains, non-calcareous
	Shale - medium gray, gray green, platy, moderately firm, subwaxy, non-calcareous
6700-6720 (6678-6705)	Sandstone - white, light pink, light orange, course - very coarse, subangular - subrounded, frosted and glassy, mostly loose, trace pyrite
6720-6730 (6705-6708)	Sandstone - as above, white, clear, very light orange, coarse to increasingly very coarse
	Shale (10%) - dark gray, blocky - platy, firm, earthy, trace possible carbonaceous
6730-6740 (6708-6715)	Shale - dark gray as above increasing to 50%
	Sandstone - as above, coarse, very poorly sorted
6740-6750 (6715-6728)	Sandstone - white, very light orange, tan, fine - medium, coarse, glassy - frosted, subangular - some rounded, poor sorting, some argillaceous, loose grains, scattered very fine pyrite
6750-6760 (6728-6750)	Sandstone - as above, very coarse - coarse w/chert light orange, yellow, white, gray
6760-6770 (6750-6760)	Dolomite - buff, white, pink tan, microcrystalline, shaly, silty, anhydritic in part, moderately - very firm, clean, dense (60% sample)
	Shale - chocolate - orange brown, blocky, very firm, silty grading to siltstone in part, moderately dolomitic
6770-6780 (6760-6767)	Shale - chocolate and dark brown, as above, silty in part, dolomitic, micaceous in part
	Limestone (trace) - gray, light brown, crypto-microcrystalline, hard
6780 (1½ hour circ smpls)	Shale - generally as above
	Dolomite (15%) - buff, crypto - microcrystalline, silty in part, clean

(Began air drilling @ 6780', resumed 30' samples)

6780-6900 (6780-6895)	Shale/Siltstone - red brown, trace light gray green, blocky, very firm - hard intergrading and interbedded, micaceous in part, dolomitic

6900-6960 (6895-6955)	Shale/Siltstone - as above
	Shale (40%) - light gray green, blocky, firm, micaceous - silty, slightly dolomitic
6960-6990 (6955-6985)	Shale/Siltstone - red brown, blocky, firm - very firm, earthy - micaceous slightly - moderately dolomitic
6990-7020 (6985-7015)	Shale/Siltstone - as above
	Shale (30%) - green gray, very firm - hard, silty micaceous in part, dolomitic in part
7020-7080 (7015-7075)	Shale/Siltstone - intergrading, red brown generally as above
7080-7200 (7075-7195)	Shale/Siltstone - red to chocolate brown, blocky, firm, slightly dolomitic
7200-7260 (7195-7257)	Shale - red brown, blocky, very silty - siltstone in part, dolomitic, firm
	Siltstone - gray brown, firm, trace sandy, micaceous in part, slightly dolomitic
	Sandstone - tan, very fine - silty, poor - fair sorting, dolomitic, tight, no shows
7260-7290 (7257-7285)	Sandstone - off white, tan, very fine - silty as above
	Shale - chocolate, gray brown, blocky - some subfissile, firm, earthy - silty in part, very slightly dolomitic in part
7290-7350 (7285-7346)	Siltstone - brown, brown orange, blocky, firm - hard, micaceous, sandy in part, moderately dolomitic
7350-7380 (7346-7377)	Siltstone - as above
	Sandstone - tan, gray brown, very fine, moderately firm, very slightly dolomitic, tight, no show
7380-7460 (7377-7456)	Siltstone - red brown, as above
7460-7490 (7456-7487)	Siltstone - as above, becoming increasingly gray brown, more micaceous, slightly dolomitic
	Sandstone - light tan, orange tan, very fine grading - siltstone in part, subangular, fair sorting, firm, slightly dolomitic, tight, no show

7490-7500 (7487-7495	Shale - red to gray brown, blocky, very firm, earthy, silty in part

(Resume 10' samples for remainder of hole)

7500-7520 (7495-7515)	Shale/Siltstone - red brown, firm, micaceous - silty, moderately dolomitic
7520-7530 (7515-7525)	Shale/Siltstone - as above (60% sample) Dolomite - light - medium gray, microcrystalline, very firm, dense, no show, slightly silty in part
7530-7540 (7525-7538)	Dolomite - as above and trace cryptocrystalline, very firm, 5% with pale green yellow fluorescence and quick streaming yellow cuts, some with light tan to pinpoint black (asphaltic) stain
7540-7550 ((7538-7545)	Dolomite - gray, microcrystalline, tan - light brown, some very fine crystalline, very fine sandy(?) in part, tight, 40% with spotty staining and fair fluorescence and cuts as above; trace pyrite, mica
7550-7560 (7545-7557)	Dolomite - white, light gray, tan, light brown, very fine - fine crystalline some microcrystalline, tight, very firm - hard, very faint petroliferous odor, 80% w/pale yellow fluorescence and quick streaming, bright yellow cuts, 60% with light brown - spotty dark brown (dead) stain, poor intercrystalline, pinpoint vug porosity
7560-7570 (7557-7567)	Dolomite - buff, white, light gray, micro - very fine crystalline, slightly sandy, very firm - hard, 10% w/weak shows generally as above, generally tight
7570-7580 (7567-7576)	Dolomite - tan, gray, cryptomicrocrystalline, some very fine, hard, dense, 20% with pale yellow fluorescence, some slow bleeding yellow cuts, scarce visible stain
7580-7590 (7576-7587)	Dolomite - buff, light - medium gray, micro - very fine crystalline, some cryptocrystalline, firm - hard, trace pale yellow fluorescence, weak pale yellow cuts, no visible stain Limestone (trace) - tan, buff, cryptocrystalline, hard, dense, clean
7590-7600 (7587-7597)	Dolomite - gray, buff, as above, 10% with weak shows as above Limestone (60%) - tan, buff, cryptocrystalline, some very fine crystalline, scattered black suboolites, fossil fragments, firm, dense, clean

7600-7610 (7597-7607)	Limestone - tan, some gray, cryptocrystalline, some very fine, hard clean, as above
7610-7620 (7606-7618)	Limestone - tan, gray - white mottled, micro - cryptocrystalline, very firm, scattered black pellets - pisolites, trace fossil fragments
7620-7640 (7618-7636)	Limestone - as above, generally cryptocrystalline, very firm - hard, no visible stain, 20% pale yellow fluorescence, w/scattered slow bleeding yellow cuts, no visible porosity
7640-7650 (7636-7645)	Limestone - as above, trace weak show as above Dolomite - medium, dark gray, microcrystalline, hard, dense, calcareous in part, no show
7650-7660 (7645-7652)	Dolomite - tan orange, light brown, micro - some cryptocrystalline, moderately firm, 80% w/pale yellow - yellow green fluorescence, faint petroliferous odor w/good bleeding to some quick streaming bright yellow cuts, general light brown - spotty dark brown, black staining, some asphaltic, ticht - fair intercrystalline, pinpoint vug porosity - visible brown oil cuts in solvent
7660-7680 (7652-7677)	Dolomite - as above, trace microsucrosic, moderately - very firm, poor intercrystalline porosity, 10% dull yellow fluorescence w/weak yellow cuts
7680-7690 (7677-7685)	(very poor sample following bit trip) - abundant Moenkopi cavings, trace limestone, tan orange dolomite as above
7690-7700 (7685-7698)	(poor sample) Anhydrite - white, blocky, very hard, dense, trace vugs, with dark brown asphaltic staining, pale yellow fluorescence, very slow milky - some slow bleeding yellow cuts
7710-7720 (7705-7717)	(poor sample) Chert - light gray, milky, some w/ asphaltic stain and weak yellow fluorescence, milky weak cuts Anhydrite - as above Dolomite - white, microcrystalline - very anhydritic, very hard, dense, dark brown asphaltic stain, weak yellow cuts
7720-7740 (7717-7736)	(very poor samples) Scattered chert, dolomite (anhydritic) as above

7740-7750 (7736-7744)	(poor sample)
	Dolomite - white, as above, weak dead stain and show as above w/chert - milky, clear
7750-7760 (7744-7755)	Dolomite - white, buff, crypto - microcrystalline hard, dense, general brown asphaltic staining, scattered pale yellow fluorescence w/some very weak pale yellow slow cuts
	Chert (scattered) - white, milky, some dead staining w/scattered coarse crystalline quartz - possible fracture fill?
7760-7770 (7755-7765)	(No Sample following mud up)
7770-7780 (7765-7768)	Dolomite - white, very fine - fine and microcrystalline moderately friable - firm, fair - good intercrystalline and some vug porosity, no visible shows, few pieces with very weak milky "crush" cut w/scattered quartz fracture material
	Shale (5%) - dark red brown, platy, moderately firm, earthy, slightly dolomitic in part
7780-7800 (7768-7780)	Dolomite - white, some very light orange - pink, micro - very fine crystalline, poor - fair and common good intercrystalline porosity, common fair - good pinpoint to fine vug porosity, no shows, scattered emerald green grains and inclusions, trace pyrite
	Shale (trace) - green, platy, waxy
7800-7820 (7780-7810)	Dolomite - white, micro - very fine crystalline, moderately - very sandy in part, grading in part to dolomitic sand, fair - good intercrystalline, intergranular porosity, some vugs, no shows, scattered green grains, some coarse crystalline quartz
7820-7830 (7810-7815)	Dolomite - white, very pale green, micro - very fine crystalline, increasingly sandy, fair - good visible intercrystalline, intergranular porosity, no shows, white and anhydritic or chalky in part, trace very fine pyrite

7830-7840 (7815-7820)	Dolomite (calcareous) - tan, light brown, micro-crystalline, sandy in part, moderately firm, fair visible porosity, common vugs, no shows
	Sandstone (10%) - clear, very fine, glassy quartz, subangular, very well sorted, friable, slightly dolomitic in part, fair - good visible porosity no shows
	Shale (5%) - dark red brown, platy, earth, non-calcareous
7840-7850 (7820-7830)	Sandstone (80%) - clear, white, very fine, sub-angular, dolomitic in part, fair to some good visible porosity, no shows
7850-7870 (7830-7845)	Dolomite - white, tan, micro - very fine crystalline, some very firm, moderately - very sandy in part, tight - fair intercrystalline porosity, no shows, grading in part to dolomitic sandstone
7870-7880 (7845-7855)	Anhydrite/Gypsum - bright white, moderately - very firm, earthy, dense, w/dolomitic inclusions
	Sandstone - tan, white, very fine, subangular, very well sorted, moderately friable - some firm, dolomitic, poor - fair visible porosity, no shows
7880-7900 (7855-7890)	Sandstone - as above
	Dolomite - tan, white, micro - very fine crystalline, moderately firm - firm fair intercrystalline, some vug porosity, no shows, sandy in part
7900-7930 (7890-7920)	Dolomite - generally as above, trace microsucrosic and cryptocrystalline, moderately - very firm, poor - fair porosity, scattered calcite crystals, some chert fragments
7930-7960 (7920-7945)	Dolomite - white, tan, microcrystalline, generally as above, no shows
7960-7970 (7945-7956)	Sandstone - white, buff, tan, very fine - fine, subangular - subrounded, fair - good sorting, friable - moderately firm, glassy - frosted, slightly - moderately dolomitic, tight - fair visible porosity, no shows
7974 T.D. (1 hr. circ.) (7956-7970)	Sandstone - as above, decreasing
	Dolomite - light tan, white, microcrystalline, trace microsucrosic, generally moderately sandy, tight, no shows
7974 (2 hr. circ.) (7970-T.D.)	Dolomite - as above, increasing