FILE NOTATIONS

Entered in NID File ..✓.....
Location Map Pinned .....
Card Indexed ..✓.....

Checked by Chief .....
Approval Letter .....
Disapproval Letter .....

COMPLETION DATA:

Date Well Completed .....

OW..... WW..... TA.....
GW..... OS..... PA.....

Location Inspected .....

Bond released
State or Fee Land .....

LOGS FILED

Driller's Log.....
Electric Logs (No.) .....
E..... I..... Dual I Lat..... GR-N..... Micro.....
BHC Sonic GR..... Lat..... Mi-L..... Sonic.....
CBLog..... CCLog..... Others.....

TEX OIL COMPANY
4133 SOUTH 635 EAST
SALT LAKE CITY, UTAH 84109
PHONE (801) 262-6869

Wasatch

June 20, 1978

CDFSW

State of Utah
Division of Oil & Gas Conservation
1588 West North Temple
Salt Lake City, Utah 84116

Re: Permit to drill Well 1-21C5
Section 21, T3S, R5W
Duchesne County, Utah

Dear Sir:

Enclosed please find the requisite copy of Federal Form 9-331C with Supplemental Information and a Multi-Point Surface Use Plan. Also, you will note that the proposed location is outside the drilling window and a topographic exception is hereby requested under Order 139-8. The location site has been selected, (with verbal approval from Pat Driscoll) to avoid topographic restrictions in the area.

We trust that this application is complete and in the proper form to facilitate the rapid approval of a permit for our planned operations. If there are any questions please contact us at the above address or phone number.

Thank you.

Sincerely,

Kenneth Chattin

Kenneth Chattin

O.K. Topo Exception

Note Topo. Map "B" for detail of Area

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

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-H62-2393

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: TRIBAL

9. WELL NO.: 1-21C5

10. FIELD AND POOL, OR WILDCAT: ALTAMONT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 21, T3S, R5W, USB&M

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: UTEX OIL COMPANY (Kenneth Chattin)

3. ADDRESS OF OPERATOR: 4133 South 635 East, Salt Lake City, Utah 84107

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1,980' NSL, 1980"EWL
At proposed prod. zone:

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 14 road miles northwest of Duchesne, Utah

12. COUNTY OR PARISH: DUCHESNE

13. STATE: UTAH

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 1980'

16. NO. OF ACRES IN LEASE:

17. NO. OF ACRES ASSIGNED TO THIS WELL: 640

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

19. PROPOSED DEPTH: 10,500'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5,789' GR

22. APPROX. DATE WORK WILL START*: September 1, 1978

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	10 3/4"	40.5#	800'	As necessary
9 7/8"	7 5/8"	29.7#	8,000'	As necessary
6 3/4"	5 1/2"	26.0#	10,500	As necessary

State of Utah, Department of Natural Resources
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

RECEIVED OCT 18 1978 DIVISION OF OIL, GAS, & MINING

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 [signature] TITLE President DATE 5-19-78

(This space for Federal or State office use)

PERMIT NO. APPROVAL DATE

APPROVED BY [signature] TITLE ACTING DISTRICT ENGINEER DATE OCT 17 1978

CONDITIONS OF APPROVAL, IF ANY:

CONDITIONS OF APPROVAL ATTACHED TO OPERATOR'S COPY

NOTICE OF APPROVAL

State O. & G.

*See Instructions On Reverse Side

NECESSARY FLARING OF GAS DURING DRILLING AND COMPLETION APPROVED SUBJECT TO ROYALTY (NTL-4)

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

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-H62-2393

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: TRIBAL

9. WELL NO.: 1-21C5

10. FIELD AND POOL, OR WILDCAT: ALTAMONT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 21, T3S, R5W, USB&M

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

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9 7/8"	7 5/8"	29.7#	8,000'	As necessary
6 3/4"	5 1/2"	26.0#	10,500	As necessary

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. Otto TITLE geologist DATE 5-19-78

(This space for Federal or State office use)

PERMIT NO. 43-013-30447 APPROVAL DATE

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

1. Surface Formation: Tertiary Uinta Formation

2. Estimated tops of geologic markers:

0 - 3550	Uinta Formation
3550	Green River Formation
7900	Wasatch Formation

3. Estimated depths to anticipated water, oil and gas or mineral bearing formations:

0 - 3550	Uinta, Water bearing
3550 - 7900	Green River, Oil & Gas
7900 - T.D.	Wasatch, Oil & Gas

4. Proposed casing program:

Size	Weight lb/ft	Grade
10 3/4"	40.5#	J-55
7 5/8"	29.7#	N-80
5 1/2"	26.0#	N-80

5. Pressure control equipment: See diagram.

Blowout preventer: A 10# Series 1500, 5,000 psi hydraulically operated, double ram type preventer with pipe and blind rams. Also a Hydril type preventer will be used.

Testing Procedure: Before drilling out casing,blowout preventers, casing head and casing will be pressure tested to 3,000 psi, and will be checked for proper operation each day.

6. Type and characteristics of proposed circulating medium:

0 - 6000 drill with brine water

6000 - T.D. Fresh gel mud

Approximately 400 bbls. of circulating fluid and adequate weighting material will be maintained at the surface.

7. Auxillary Equipment:

A Kelly cock will be used, float on bit optional with contractor, a mud logging unit is planned from 4,000 feet to total depth, and a full opening valve will be maintained on the rig floor.

8. Testing, Logging and Coring:

No cores or DST's planned, electric logs to include:

DIL w/SP, Gamma Ray & Compensated Neutron and Fracture Identification Log.

9. Anticipated Hazards:

No abnormal temperatures or pressures are anticipated. No hydrogen sulfide is present in this area.

10. Anticipated starting date:
July 15, 1978, with duration of operations approximately 45 days.

KENNETH CHATTIN (UTEX OIL COMPANY)

13 Point Surface Use Plan

for

Well Location

No. 1-21 C 5

Located In

Section 21, T3S, R5W, U.S.B. & M.

Duchesne County, Utah

Kenneth Chattin (Utex Oil Company)
No. 1-21- C 5
Section 21, T3S, R5W, U.S.B. & M.

1. EXISTING ROADS

See attached Topographic Map "A", to reach the Kenneth Chattin (Utex Oil Company) well location, No. 1-21-C 5, located in the NE 1/4 SW 1/4 Section 21, T3S, R5W, USBM from Duchesne, Utah.

Proceed Westerly out of Duchesne, Utah on U.S. Highway 40, 6.6 miles to an existing ramp onto the Old Highway 40 which is approximately 500' long and runs in a Northerly direction onto the aforementioned Old Highway 40; proceed Easterly along the said Old Highway 40, 2000' to its junction with a road to the North; proceed Northerly along this road 0.9 miles to a fork in the road, proceed Northerly along the right fork 0.6 miles to another fork in the road; proceed Northerly along the right fork 3 miles to its junction with a road to the Southeast; proceed Southeasterly along this road 2.8 miles to its junction with an existing road to the South; proceed Southerly along this road 2000' to its junction with a road to the East; proceed Easterly along this road 700' to the proposed location site in the NE 1/4 SW 1/4 Section 21, T3S, R5W, USBM.

At the present time there is no major construction anticipated along any portion of the above described road.

The road will be maintained and kept at the necessary standards required for an orderly flow of traffic during the drilling, completion, and production activities of this location.

2. PLANNED ACCESS ROAD

See Topographic Map "B".

There will be no planned access road as the existing road goes to the proposed location site.

3. LOCATION OF EXISTING WELLS

As shown in Topographic Map "B", there are other producing wells within a two mile radius of the proposed well site. (See location plat for placement of Kenneth Chattin (Utex Oil Company).

4. LOCATION OF TANK BATTERIES, PRODUCTION FACILITIES, AND PRODUCTION GATHERING AND SERVICE LINES

All petroleum production facilities are to be contained within the proposed location site. There are no other Kenneth Chattin (Utex Oil Company) flow, gathering, injection or disposal lines wihin a one-mile radius of this location.

In the event production is established, plans for a gas flow line from this location to existing gathering lines or a main production line shall be submitted to the appropriate agencies for approval.

The rehabilitation of the disturbed area that is not required for the production of this well, will meet the requirements of Items #7 and #10 and these requirements and standards will be adhered to.

5. LOCATION AND TYPE OF WATER SUPPLY

Water for this location will be taken from an existing loading dock on Starvation Reservoir in the W 1/2 of Section 20, T3S, R6W, USBM 1 road mile East of the proposed location site.

LOCATION AND TYPE OF WATER SUPPLY - continued

If the water source is not available then the necessary arrangements will be made and all concerned parties will be notified.

6. SOURCE OF CONSTRUCTION MATERIALS

All construction materials for this location site and access road shall be borrow materials accumulated during construction of the location site and access road. No additional road gravel or pit lining material from other sources are anticipated at this time, but if they are required, the appropriate actions will be taken to acquire them from private sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

See location layout sheet.

A reserve and burn pit will be constructed.

The reserve pit will be approximately 8' deep and at least one-half of this depth shall be below the surface of the existing ground.

One-half of the reserve pit will be used as a fresh water storage area during the drilling of this well and the other one-half will be used to store non-flammable materials such as cuttings, salts, drilling fluids, chemicals, produced fluids, etc.

If deemed necessary by the agencies concerned, to prevent contamination to surrounding areas the reserve pits will be lined with a gel.

The pits will have wire and overhead flagging installed at such time as deemed necessary to protect the water fowl, wildlife and domesticated animals.

At the onset of drilling, this reserve pit will be fenced on three sides and at the time the drilling activities are completed, it will be fenced on the fourth side and allowed to dry completely prior to the time that back-filling and reclamation activities are attempted.

When the reserve pit dries and the reclamation activities commence, the pits will be covered with a minimum of four feet of soil and all requirements in Item #10 will be followed.

The burn pits will be constructed and fenced on all four sides with a small mesh wire to prevent any flammable materials from escaping and creating a fire hazard.

All flammable materials will be burned and then buried upon completion of this well.

A portable chemical toilet will be supplied for human waste.

There are no ancillary facilities planned for at the present time and none foreseen in the near future.

9. WELL SITE LAYOUT

See Location Layout Sheet.

The Ute Tribal District Manager, Federal and State Representatives, shall be notified before any construction begins on the proposed location site.

WELL SITE LAYOUT - continued

As mentioned in Item #7, the pits will be unlined unless it is determined by the representatives of the agencies involved that the materials are too porous and would cause contamination to the surrounding area; then the pits will be lined with a gel and any other type material necessary to make it safe and tight.

10. PLANS FOR RESTORATION OF SURFACE

As there is some topsoil on the location site, all topsoil shall be stripped and stockpiled. (See Location Layout Sheet and Item #9). When all drilling and production activities have been completed, the location site and access road will be reshaped to the original contour and stockpiled topsoil spread over the disturbed area.

Any drainages re-routed during construction activities shall be restored to their original line of flow as near as possible. Fences around pits are to be removed upon completion of drilling activities and all waste being contained in the trash pit shall be buried with a minimum of 5' of covering.

As mentioned in Item #7, the reserve pit will be completely fenced and wire and overhead wire and flagging installed, if there is oil in the pits, and then allowed to completely dry before covering.

Restoration activities shall begin within 90 days after completion of this well. Once completion activities have begun, they shall be completed within 30 days.

When restoration activities have been completed, the location site and access ramp shall be reseeded with a seed mixture recommended by the Ute Tribal District Manager, Federal and State Representatives, when the moisture content of the soil is adequate for germination. The Lessee futher convenants and agrees that all of said cleanup and restoration activities shall be done and performed in a diligent and most workmanlike manner, and in strict conformation with the above mentioned Items #7 and #10.

11. OTHER INFORMATION

The Topography of the General Area (See Topographic Map "A").

The area is located in the Uintah Basin which is formed by the Uinta Mountains to the North and the Book Cliff Mountains to the South with the Duchesne River flowing through the Basin floor, into the Green River.

The area is interlaced with numerous canyons, ridges, and plateaus of which the sides are extremely steep with numerous ledges formed in sandstones and conglomerates.

The soils in this semi-arid area of the Uinta Formation from the Eocene Epoch (Tertiary Period) and the Duchesne River formation Lower Eocene Epoch (Tertiary Period) and consists of light brownish gray clays (OL) to sandy soils (SM-ML) with poorly graded gravels.

Outcrops of sandstone ledges and conglomerate deposits are common in this area.

The majority of the numerous washes and streams in the area are of a non-perennial nature flowing during the early spring run-off and extremely heavy rain storms of long duration which are extremely rare as the normal annual rainfall in the area is only 8".

OTHER INFORMATION - continued

The Duchesne River flows from the Northwest to the Southeast and is approximately three miles East of the location.

The Starvation Reservoir lies approximately 2500' to the South of the location and drains to the East into Duchesne River which is a tributary of the Green River to the Southeast.

Due to the low precipitation average, climate conditions and the marginal types of soils, the vegetation that is found in the area is common of the semi arid region we are located in, it consists of pinion pine, juniper trees, sagebrush, bitterbrush, rabbit brush, some grasses and cacti.

The fauna of the area consists predominatly of the mule deer, coyotes, rabbits and varieties of small ground squirrels and other types of rodents.

The area is used by man for the primary purposes of grazing domesticated sheep and cattle.

The birds of the area are raptors, finches, ground sparrows, magpies, crows, and jays.

The Topography of the Immediate Area (See Topographic Map "B").

No. 1-21-C 5 sits on a relatively flat area which slopes gradually to the East into Starvation Reservoir.

The terrain in the immediate vicinity of the well site slopes from the top of the ridge to the West, down through the location to the East at approximately a 2% grade to the edge of Starvation Reservoir.

All washes and draws in the immediate area are of a non-perennial nature.

The Geologic Structure visible in the immediate area is of the Duchesne River Formation and consist of a redish-brown sandy clay type topsoil.

The vegetation in the immediate area surrounding the location site is predominantly pinion pine, juniper trees, sagebrush and grasses.

There are no occupied dwellings or other facilities of this nature in the general area.

There are no visible archaeological, historical, or cultural sites within any reasonable proximity of the proposed location site. (See Topographic Map "B").

12. LESSEE'S OR OPERATOR'S REPRESENTATIVE

Kenneth Chattin
Utex Oil Company
4133 South 635 East
Salt Lake City, Utah 84017

TELE: 262-6869

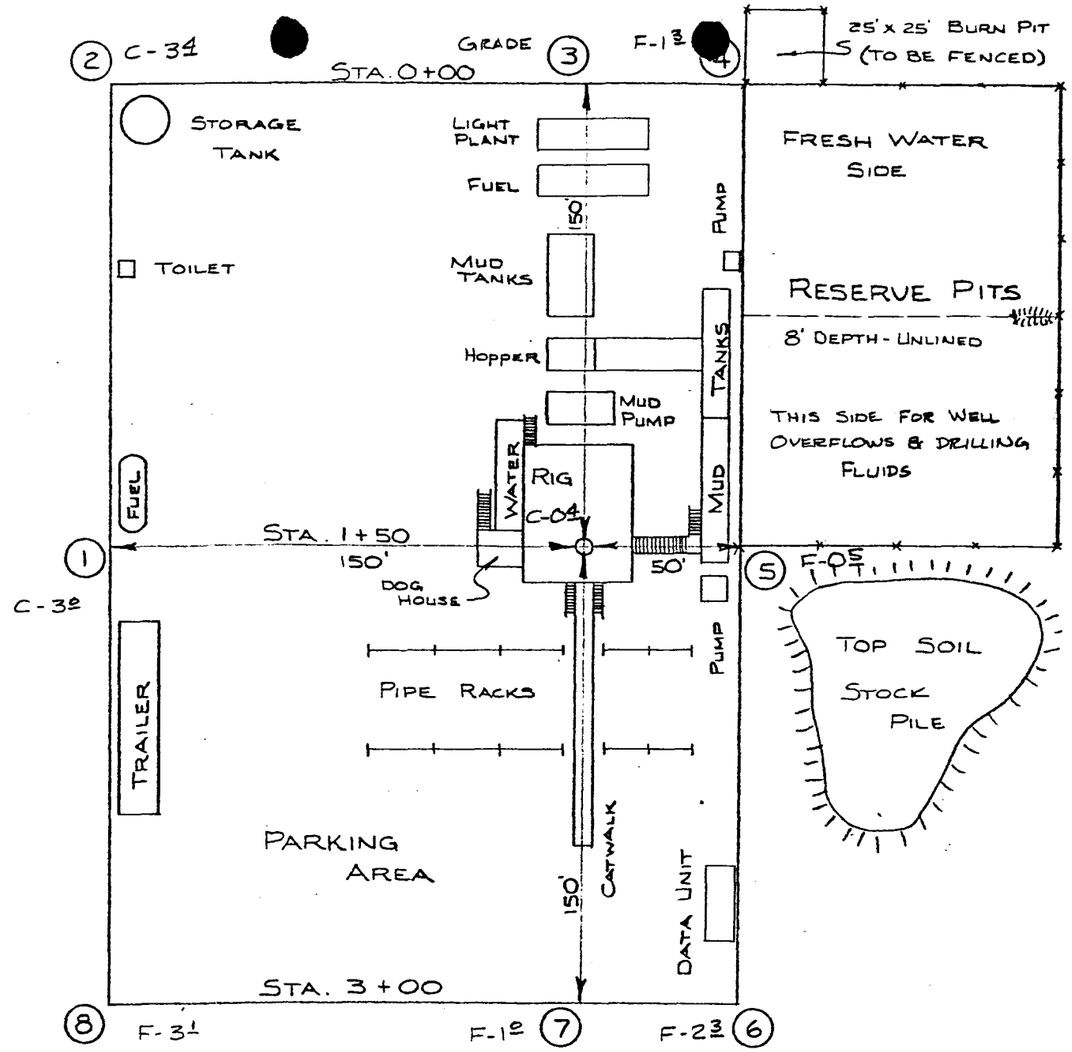
Kenneth Chattin (Utex Oil Company)
No. 1-21-C 5
Section 21, T3S, R5W, U.S.B. & M.

13. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; 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 operation proposed herein will be performed by Kenneth Chattin (Utex Oil Company) and its contractors and sub-contractors in conformity with this plan and terms and conditions under which it is approved.

June 19, 1978
Date

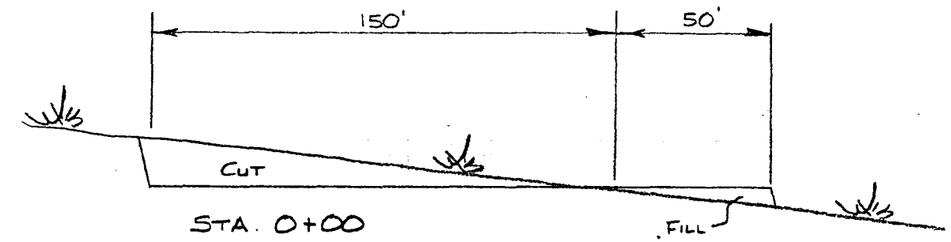
Kenneth Chattin
Kenneth Chattin

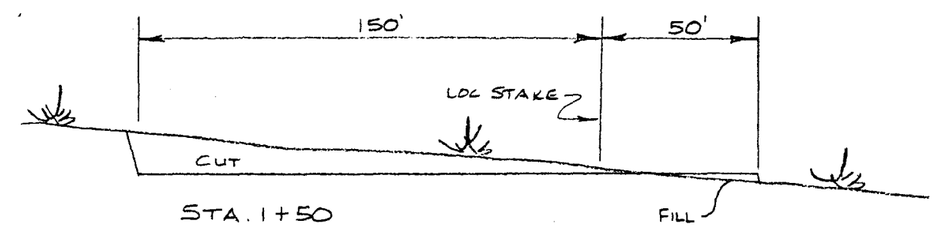


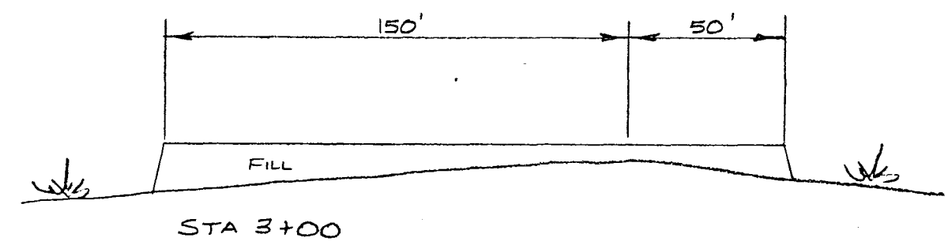
KENNETH CHATTIN (UTEX OIL CO.)
Nº 1-21 C5

LOCATION LAYOUT SHEET

CROSS SECTIONS

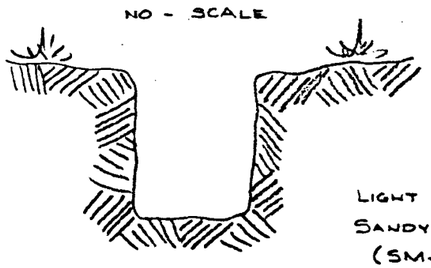


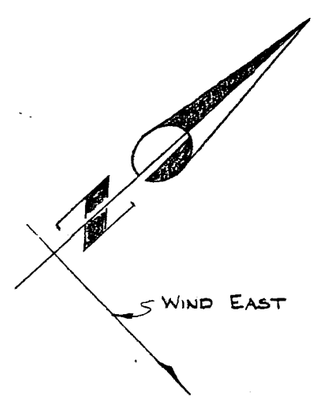




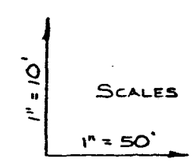
SOILS LITHOLOGY

NO - SCALE





SCALE 1" = 50'



APPROX. YARDAGES

CUT	2,170	CU. YDS.
FILL	1,221	CU. YDS.

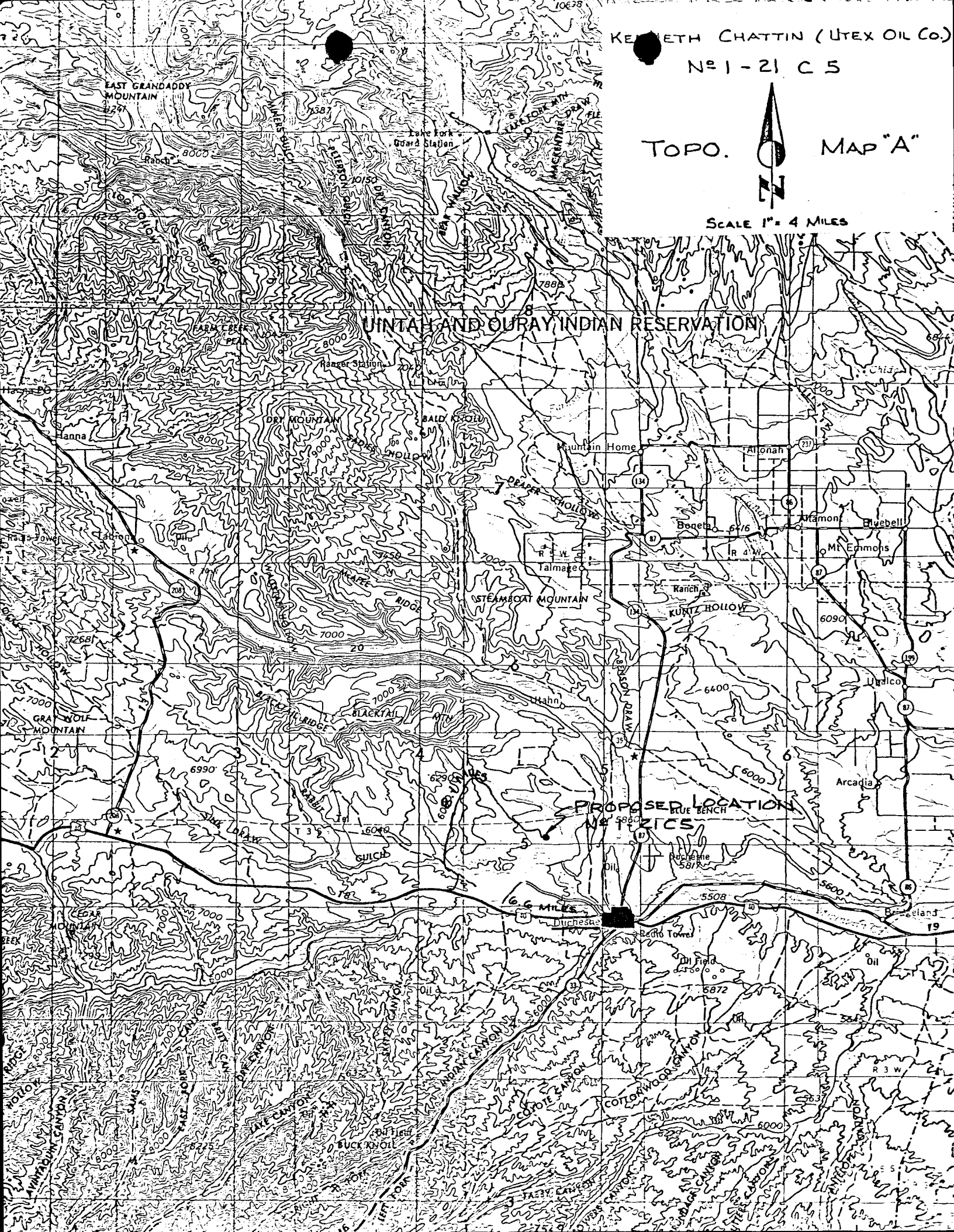
KENNETH CHATTIN (UTEX OIL CO.)

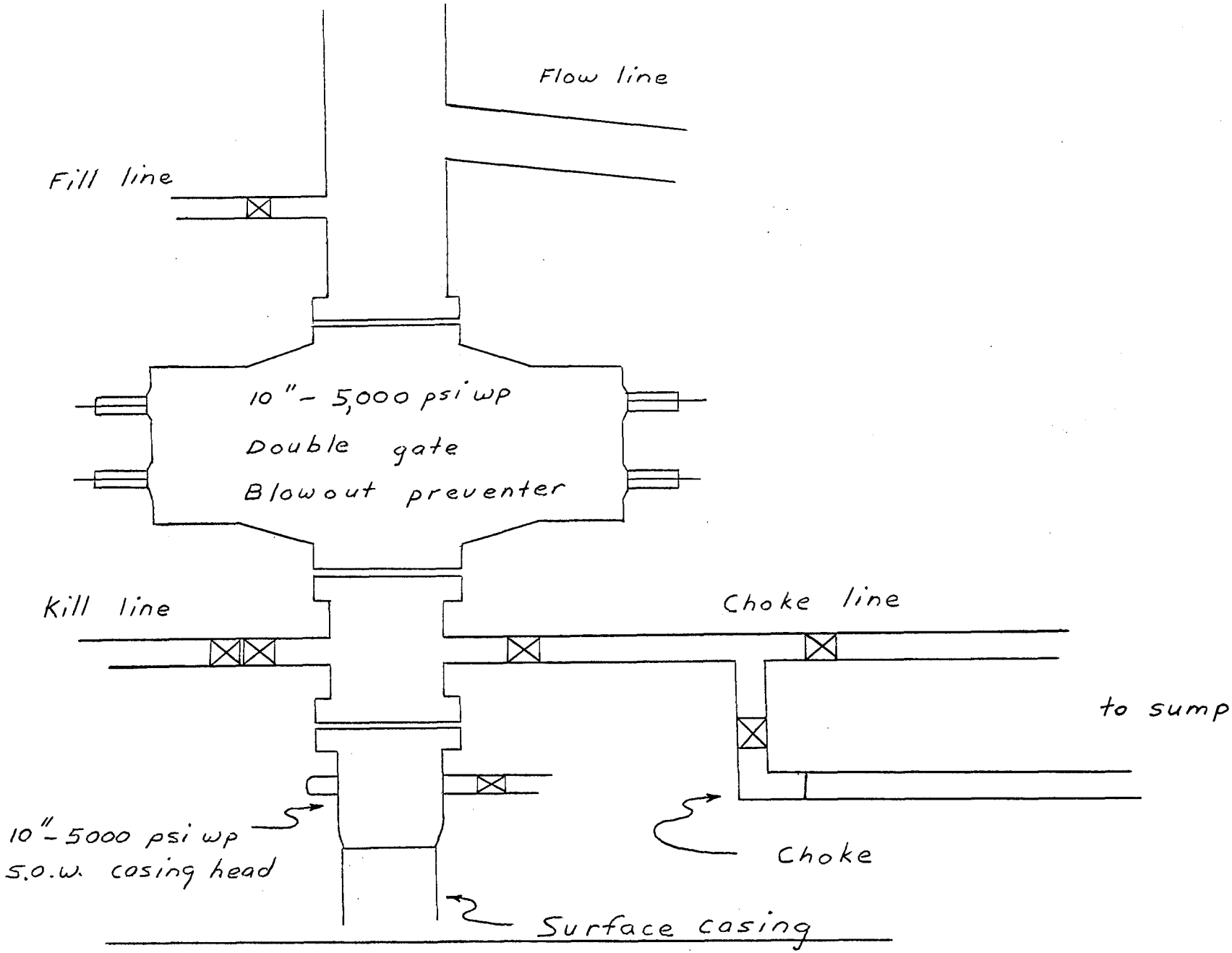
Nº 1-21 C 5

TOPO. MAP "A"

N

SCALE 1" = 4 MILES



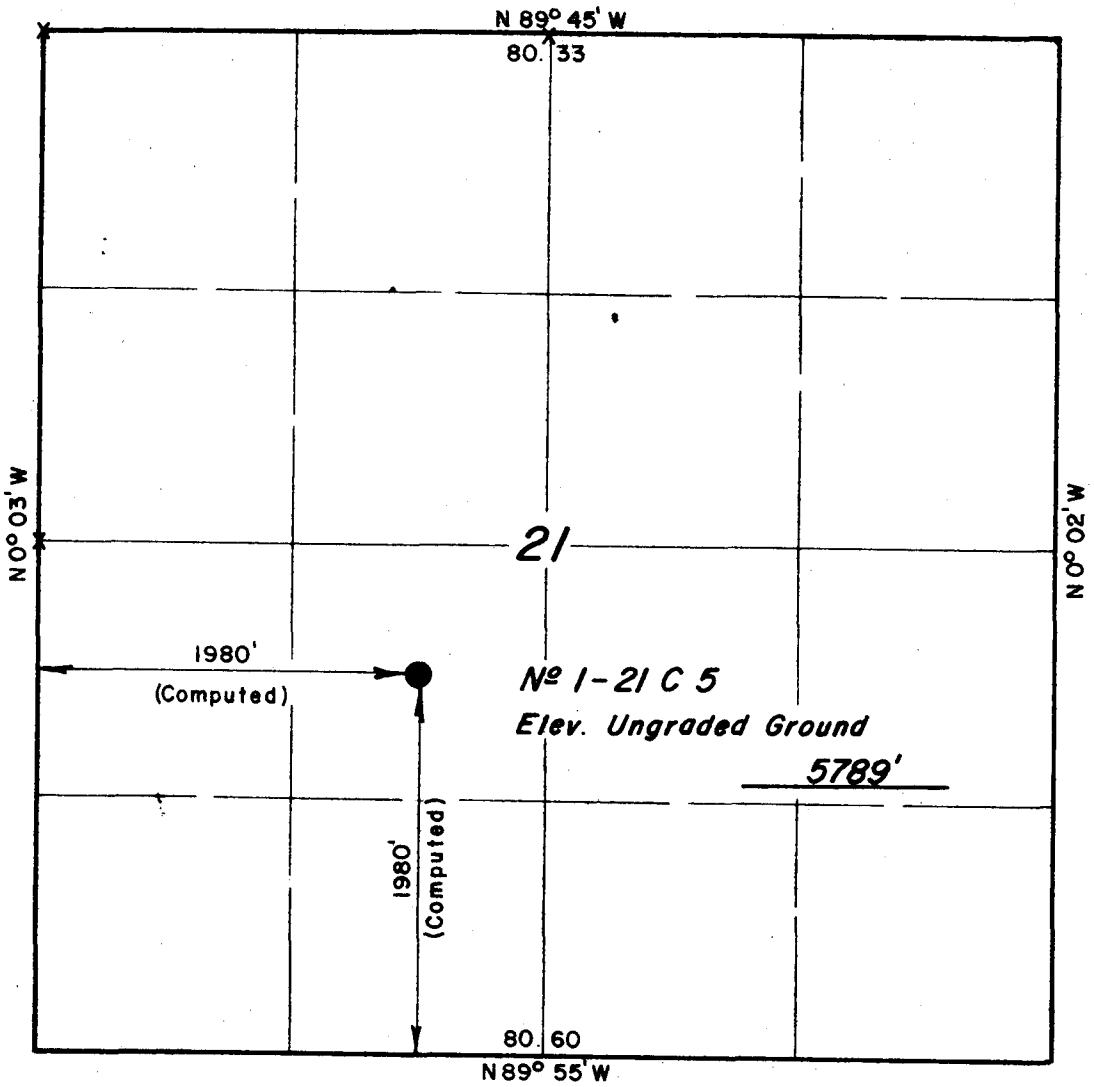

Flow line
Fill line
10" - 5,000 psi wp
Double gate
Blowout preventer
Kill line
Choke line
to sump
10" - 5000 psi wp
S.O.W. casing head
Choke
Surface casing

T 3 S, R 5 W, U.S.B.&M.

PROJECT

KENNETH CHATTIN (UTEX OIL CO.)

Well location, 1-21 C 5, located as shown in the NE 1/4 SW 1/4 Section 21, T 3 S, R 5 W, U.S.B.& M. Duchesne 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.

Laurence C. Kay

REGISTERED LAND SURVEYOR
REGISTRATION № 3137
STATE OF UTAH

UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q ~ 110 EAST - FIRST SOUTH
VERNAL, UTAH - 84078

SCALE 1" = 1000'	DATE 5 / 30 / 78
PARTY D.A. J.B. D.S. BFW	REFERENCES GLO Plat
WEATHER Fair	FILE KENNETH CHATTIN (UTEX OIL)

C NE SW
Wasatch Test

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

** FILE NOTATIONS **

Date: June 23, 1978

Operator: Utex Oil Co.

Well No: Ute 1-21C5

Location: Sec. 21 T. 35 R. 5W County: Duchesne

File Prepared: / / *Entered on N.I.D.:* / /

Card Indexed: / / *Completion Sheet:* / /

API NUMBER:

CHECKED BY:

Administrative Assistant

Remarks:

Petroleum Engineer

Remarks:

Director

Remarks:

Topo. Exception Warranted. See Topo. Map "3"

INCLUDE WITHIN APPROVAL LETTER:

Bond Required: / / *Survey Plat Required:* / /

Order No. 139-8 / / *Surface Casing Change to* / /

Rule C-3(c), Topographic exception/company owns or controls acreage within a 660' radius of proposed site / /

O.K. Rule C-3 / / *O.K. In* *Unit* / /

Other:

topo exception

/ / *Letter Written/~~Approved~~*

June 22, 1978

U-Tex Oil Company
(Kenneth Chattin)
4133 South 635 East
Salt Lake City, Utah 84107

Re: Well No's:
Ute Tribal 1-21C5,
Sec. 21, T. 3 S, R. 5 W,
Ute Tribal 1-29C5,
Sec. 29, T. 3 S, R. 5 W,
Duchesne County, Utah

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to wells is hereby granted in accordance with the Order issued in Cause No. 139-8, topographic exception.

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

PATRICK L. DRISCOLL - Chief Petroleum Engineer
HOME: 582-7247
OFFICE: 533-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling.

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

The API numbers assigned to these wells are:

#1-21C5: 43-013-30448 #1-29C5: 43-013-30449

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

CLEON B. FEIGHT, Director

Form OGCC-1 b

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

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.)

RECEIVED FEB 28 1979 OIL, GAS & MINING

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: UTEX OIL COMPANY (Kenneth Chattin)

3. ADDRESS OF OPERATOR: 4133 South 635 East, Salt Lake City, Utah 84107

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980'NSL, 1980' EWL

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-H62-2393

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: TRIBAL

9. WELL NO.: 1-21C5

10. FIELD AND POOL, OR WILDCAT: ALTAMONT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 21, T3S, R5W, USB&M

14. PERMIT NO.: 43-103-30448

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5789 GR

12. COUNTY OR PARISH: Duchesne

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	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			[ ]
(Other)			[ ]	(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.) *

This well was spudded at 8:00 P.M., February 23, 1979

Drilling at 140 feet February 24, 1979.

Drilling Contractor: TWT Rig # 6

Well site Geologist: Robert C. Chattin

Drilling Superintendent : W.E. Prince

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

SIGNED _____ TITLE Secretary DATE 2-24-79

(This space for Federal or State office use)

APPROVED BY A T Hansen TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

United States Department of the Interior
Geological Survey
8440 Federal Building
Salt Lake City, Utah 84138

RECEIVED
SEP 26 1978
OFFICE OF
CONSERVATION MANAGER
CENTRAL REGION

Unusual Environmental Analysis No. 1181

Application for Permit to Drill

Utex Oil Company (Kenneth Chattin), Operator

Well No. 1-21C-5
NE 1/4 SW 1/2 Sec. 21, T.3 S., R.5 W
USB&M, Duchesne County, Utah

Ute Tribal Lease No. 14-20-H62-2393

DCA

Prepared by: Donald C. Alvord, District Geologist, Salt Lake City, Utah
Gordon W. McCrary, Petroleum Technician, Salt Lake City, Utah

Date: September 18, 1978

Reviewed by: Lynn E. Rust, NRMA Environmental Scientist, Casper, Wyoming

Date: September 20, 1978

Related Environmental Analyses: EA-1180

Introduction (On-site examinations and evaluation process):

The following participated in a joint inspection of the proposed well site and access on July 27, 1978:

Name	Representing	Title	Stationed
Robert C. Chattin	Utex Oil Company	Geologist	Salt Lake City, Utah
Jack Skewes	Skewes & Hamilton	Dirt Contractor	Duchesne, Utah
Lynn Hall	U.S. Bureau of Indian Affairs	Soil Conservationist	Fort Duchesne, Utah
Gordon W. McCrary	U.S. Geological Survey	Petroleum Technician	Salt Lake City, Utah

Donald C. Alvord examined the proposed well site and surroundings on August 16-17, 1978. This examination included:

1) a careful drive along the proposed access road to the proposed well site;

2) a check of one reasonable alternate access route to the proposed site;

3) examination of the proposed pad area;

4) examination of several producing oil and gas wells in the vicinity;

5) examination of plugged and abandoned oil and gas wells in the vicinity;

6) discussions with pump men servicing producing oil and gas wells in the vicinity concerning environmental impact and potential environmentally deleterious accidents related to the wells under their service;

7) examination of current oil and gas drilling and work-over operations located nearest to the application area;

8) discussions with tool pushers supervising the operation of rotary drill rigs and work-over rigs located nearest to the application area concerning their viewpoints regarding the environmental impact of their operations.

9) drive out to all easily accessable viewpoints in the Starvation Reservoir area to obtain a reservoir user's view of the impact of oil and gas operations in the vicinity;

10) discussion of the oil and gas operations in view with reservoir users;

11) interview and discussion with environmental scientists, geologists, and engineers of the U.S. Bureau of Reclamation stationed at Duchesne in order to obtain site specific data and their opinions regarding the proposed oil and gas tests;

12) discussion with Lynn Hall, Soil Conservationist, Bureau of Indian Affairs, concerning his examination of the proposed oil and gas test and his opinion regarding oil and gas operations in the area, generally;

Subsequent to the on-site examination Don Alvord interviewed face to face or by phone the following specialists for additional expertise and data concerning the proposed action:

1) Garth W. Leishman, Party Leader
Vernal Soil Survey Party, Suite No. 3
U.S. Soil Conservation Service
1303 West 600 South
Vernal, Utah 84078

2) William C. White, Assistant Area Manager
Colorado-Utah Area
U.S. Fish and Wildlife Service
1426 Federal Building
Salt Lake City, Utah 84138

3) Floyd Johnson, Meteorologist
U.S. Geological Survey
MS-601, Box 25046
Federal Center
Denver, Colorado 80225

4) Robert P. Dalley, Air Quality Specialist
Air Pollution, Environmental Health Services Branch
Utah Social Services Department
150 West, North Temple
Salt Lake City, Utah 84103

5) Gerald Tazenby, Sedimentationist
U.S. Bureau of Reclamation
7406 Federal Building
Salt Lake City, Utah 84138

The Bureau of Land Management was contacted but has no surface management responsibility in close vicinity to of the application area, and therefore had no input of use to this environmental analysis.

Critical references used in preparation of this analysis are listed under "Source Materials" at the end of the memorandum.

Proposed Action:

On June 21, 1978, Utex Oil Company filed an application for Permit to Drill the No. 1-21C5 development well, a 10,500 foot test of the Green River and Wasatch formations for oil and gas. The proposed test is located at 5,789 feet above sea level on the Uinta Formation in the Altamont field, on Ute Tribal mineral lands and private surface, under Lease No. 14-20-H62-2393.

A rotary rig would be used for the drilling. The proposed casing and cementing program would be adequate to protect other leasable solid minerals and for a producing oil and gas well. However, the proposed surface string, 10-3/4 inch casing to 800 feet, may not be deep enough to protect possible aquifers containing usable ground water (see discussions in Hydrology and Subsurface Effects). A blow-out preventer would be used during the drilling of the well. The proposed pressure rating is considered adequate for tests in the Altamont field. It should be noted, however, that Mountain Fuel Supply reported a blowout at 8,471 feet in the Green River Formation in its oil and gas test No. 2 Cedar River drilled about 6 miles west of the proposal in SW-1/4, NE-1/4, Sec. 20,T.3S., R.6W., USB&M. The operator's NTL-6 10-Point Subsurface and 13-Point Surface Protection Plans are included in the appendix.

The operator proposes to construct a drilling pad 200' x 300' (1.4 acre), and a reserve pit 75' x 150' wide (0.3 acre) and 8' deep. At least half of the 8 foot depth would be below the existing ground surface. A new access road would be constructed having an 18' crown and about 1.02 miles of traverse. Disturbed surface associated with this road construction would average 24' in width and cummulate about 3 acres. If production is established the operator would erect production facilities on the disturbed area of the proposed pad and a gas flow line, plans for which have been submitted to the appropriate agencies for approval.

Agreement has been reached with the private surface owner, Mrs. Juanita Smith, 1476 South Wasatch Drive, Salt Lake City, Utah 84108, a letter to follow from Utex Oil Company. Rehabilitation plans would be decided upon as the well neared completion; concerned surface management agencies would be consulted for technical expertise on those arrangements.

The anticipated starting date, as of this writing, is September 1978, and duration of drilling activities would be about 45 days.

There was no objection raised during the field examinations, to the proposed well site nor to the proposed access road, or during any interview or discussion with reservoir users or with agency personnel concerned with the administration of the lands involved or near by.

Location and Access:

By straight line the proposed test site No. 1-29C5 is 3.9 miles N.43°W. of the Uintah Basin Field office of the U.S. Bureau of Reclamation located on U.S. 40 in the Town of Duchesne, all in Duchesne County, Utah (fig.1). Registered land survey or plot (fig.1a) shows the precise land net location of the proposed hole and its approximate ground evelation of 5,789 feet above sea level.

Road access to the proposed site is as follows: From the Bureau of Reclamation office in Duchesne proceed west along U.S. 40 5.1 miles to the west abutment of the bridge across Starvation Reservoir. Continue west 1.5 miles to the only 180° right turn off on black top, and proceed 0.3 miles to a left (north) turn off on heavy duty gravel road. Proceed north and northeastward up the north fork of Rabbit Gulch past producing oil and gas well T-F1 up a steep rise to a flat and the right turn off southeast, a total of 4.4 miles. Proceed 2.84 miles southeastward to Texas-Gulf pumping unit No. TGI-20. From the pumper travel due east on a truck trail 0.44 miles to its intersection with a south bearing truck trail, turn south and go 0.43 miles to turn off east, turn east and travel 0.16 miles to proposed test site 1-20C5 (fig. 1).

Topography:

Proposed test No. 1-21C5 is sited at an altitude of 5789' above sea level within a broad gently rolling relatively flat area that slopes gently at a rate of 2% east or northeastward to the shore of Starvation Reservoir (fig. 1). Drainage is intermittent, consisting of widely spaced shallow washes or draws leading easterly into the reservoir. Photo Plates No. 1, 2, and 3 illustrate the extremely low local relief and the general character of the terrane in the vicinity of the proposed drilling pad. Construction of the pad will involve no more than 3 feet of cut, and generally less than 3 feet of fill, (see applicant's location layout sheet, 13 point surface use plan, enclosed).

Starvation Reservoir has a designed active conservation stage of 5,712.0' above sea level, an inactive stage of 5,624.8', and a maximum water stand of 5,718.3'. The proposed test would be within about 1,650 feet of the high water line and range, with the changing stage levels, from about 71 to 164 feet above the reservoir surface.

Altitude of the terrane along the proposed inproved access road would range from about 5,820' at TG1-20 down to about 5,790' at the drill site (fig. 1). The road grade would mostly range from less than 1 to about 2 percent. In order to affect a feasable curve for heavy long-bedded vehicles, two or three juniper trees might need be taken where the improved road turns south. Otherwise the road improvement would be entirely through big sagebrush community. At least one culvert would be needed to prevent damming and possible washouts following cloudbursts or during spring run off.

Geology:

Proposed test No. 1-21C5 is located in the Altamont oil and gas field in the western portion of the Uinta structural and physiographic basin (fig. 2, 4, and 5a). References concerning the geology and petroleum potential of the area include: Crawford, 1963, Eardly, 1950, Picard, 1973, Sabatka, 1964, Seal, 1957, and Staff, 1964.

Major structural elements related to the Uinta Basins history and setting are shown in figure 2. The geologic section and areal geology of the Duchesne area, is summarized on figure 3. Figures 4, 5, and 5a outline structural and stratigraphic features germane to the setting of the proposed test.

Among the rock formations listed on figure 3, only the Wasatch, Green River, and Uinta Formations are of direct concern to the application. Surface rocks throughout the area of the proposal and most of the Starvation Reservoir area, are of the Uinta Formation, Eocene in Age.

The exposures of Uinta rocks are chiefly made up of complex interstratified lenticular units of quartz wacke sandstone and bentonitic shales. The sandstone is mostly light gray weathering buff to slightly reddish brown, fine-to medium-grained, moderately consolidated, locally calcareous. The shale is variegated shades of grayish red, grayish green, and medium-dark gray, silty to sandy, bentonitic, and locally calcareous. When not eroded the maximum thickness of the Uinta Formation is about 4,000 feet; however, in the application area, probably only about 1,500 feet of these rocks are

present. These surface rocks dip from 2-4° north to northeast, in conformity with the regional structure of the Uinta Basin. All the proposed surface activity will be in these rocks or soils derived thereof.

The Green River Formation is known only from the subsurface in the application area. Of Paleocene and Eocene in age, this formation is made up mainly of complexly interstratified mostly thin beds of shale, siltstone, sandstone, and limestone of lacustrine origin and some beds of oil shale and carbonate evaporties. Units with lithologies clearly of Green River in nature interfinger with both the overlying Uinta Formation and the underlying Wasatch Formation. Allowing for structure and ground elevation, this intertonguing causes wildly differing reported depths to the tops of the Green River and Wasatch among several holes drilled by different operators in the same general area, such as the area represented by figure 1 of this report. Thus, for example, oil and gas wells JV1-19C5 and TG 1-20 report Green River top at 3,742' and 4,111' respectively, whereas wells UT 32-1 and T 33-1 report Green River top at 1,230' and 700' respectively. Allowance for ground evaluation and structure, combined, would only account for differences in the magnitude of 750-1,000 feet at the most. In the western part of the Uinta Basin and the vicinity of Duchesne, the maximum thickness of the Green River may approach 7,000 feet.

Paleocene in age, the Wasach Formation consists chiefly of lacustrine grayish red shale, sandstone, and conglomerate. It interfingers with the underlying formations and its maximum lithostratigraphic thickness may exceed 5,000 feet in the western Uinta Basin area.

Hydrocarbons:

In the Altamont field natural gas, condensates, and oil is produced from the top of the Lower Green River Formation (TGR_3 marker) to the base of the Wasatch Formation (top of the Cretaceous). State regulated drilling units are 640 acres with no more than one well on any such unit in production from the defined common source of supply. Accumulation and entrapment is largely stratigraphic in sandstone effected in part, by structural gradients, and in part by complex intertonguing and lithofacies changes, both inter-and intra-formational. Fault control is inferred locally. Production from the upper part of the Wasatch and Units A and B of the Black Shale facies of the Green River Formation (Picard and others, 1973), has been comingled in some wells, but more commonly first production is obtained from the Wasatch, the reserves in the Green River being held for later test and production.

The oils from the Altamont field are paraffin based with high gravity and pour points. Solidifying temperatures as high as 130°F are reported. Reportedly, the oil leaves the ground at temperatures as high as 150°F. The A.P.I. gravity of first production oil reported for 15 of the 17 producing or plugged and abandoned holes shown on figure 1 ranged from 23.5° to 53.8° and averaged 44.6° (S=7). Although the high gravity-pour point of the Altamont field oil creates problems in production and transport, the same property reduces the chance of an oil spill reaching drainage almost to zero. At nearly any potential ambient temperature in the area, the oil will be either like shoe-polish wax or a grease, which will mound up where spilt but will flow only very short distances and will not soak into the soil.

Reportedly, the oil is light yellow, practicably free of sulfur ($\bar{X}$=0.10%) and the natural gas from the field is "sweet" or essentially free of hydrogen sulfide and generally high in BTU value (950-1,100 BTU/cf) (oral communication, Charles Brunnert, Refinery Manger, Plateau, Inc. Refinery, Roosevelt, Utah, August 18, 1978).

Other Leasable Minerals:

Geological Survey information indicates that all of the lands within figure 1 are valuable for oil and gas, oil shale, and asphalt (bituminous limestone and wurtzilite), and are without value for other minerals, either metalliferous or nonmetalliferous. All of these lands are in oil shale withdrawal by Executive Order No. 5327, approved April 15, 1930.

Oil Shale

The thickest and the richest of the oil shale deposits occur near the deepest part of the Uinta Basin. The lands involved here are situated near the edge of the basin and, though they are in the Oil Shale Withdrawal, would have a nominal value for oil shale. Preliminary data indicate that the oil shale deposits in this area are approximately 15 feet thick and would yield about 15 gallons of oil, or less, per ton of rock.

Asphaltic Materials

It has been known since 1901 (and probably earlier) that the Green River Formation in the general area of lands involved in this report contains some bituminous limestones. The bitumen impregnated limestones are generally 2 to 6 feet thick with an outcrop length of 50 to 500 feet and commonly contain between 10 and 20 percent bitumen, with a maximum of 70 percent. Wurtzilite veins also occur in this area, enclosed in the bituminous marlstones of the Uinta Formation. Liquid wurtzilite oozes from the bed of the Strawberry River west of Duchesne.

Sodium Minerals

The top of an 87 foot thick sequence of bedded sodium carbonate minerals (including nahcolite, trona, shortite, northupite, eitelite, and wegsheiderite) was penetrated at 4,153 feet in a core test located in NE-1/4 NE-1/4 sec. 10, T.3S., R.5 W. These beds have also been identified by their mechanical log characteristics in well No.1-JS (Carter Oil Company) in sec. 16 (fig.1) at a depth of 3,600 feet. If widespread, this same zone of sodium carbonate minerals might be penetrated in 1-21C5 at a depth of somewhere between 3,200 and 3400 feet.

Geologic Hazards:

Practically speaking, there are no life endangering geologic hazards in the area. In view of the small drainage area available, flash flooding might prove costly in terms of road maintenance but would not be of a scope to endanger workers. The proposal is in a zone of minimal seismic risk where only minor danger from earthquakes would be expected (Algermissen, 1969). All recorded earthquake activity from 1853 to 1975 in the west central Uinta Basin area and surroundings is shown on figure 6.

Soils:

Soils along the proposed access road and at proposed test No. 1-21C5 are derived from rocks of the Uinta Formation. Development is largely in situ except for local removal and redeposition owing to surface run off and slight accretion of wind born particulates.

The soil at the proposed site is light brown (5YR6/2) clayey silty sand loam evidently largely derived from sandstone beds which crop out nearby in all directions from the proposed hole. The material is loose to compact and easily dug. It does not appear stratified. Organic material is largely lacking under 14X hand lens. The maximum expected depth to bed rock is about 5 feet but locally, within the area of the proposed pad, weathered sandstone crops out.

A trench and hole in its bottom, dug to a depth of 2 feet located 20 feet west of the proposed hole, did not encounter bed rock or rock fragments. Dilute hydrochloric acid caused the soil in the hole to rapidly fizz at all depths excepting the top inch or so. Water (one quart) dumped into a 5" X 5" X 6" deep hole cut into the bottom of 1-1/2 foot deep trench disappeared in 1-1/2 minutes. The ground was dry and I didn't have sufficient water to saturate.

According to Garth W. Leishman, Party Leader and Soil Scientist with the U.S. Department of Agriculture at Vernal, Utah (oral communication, 08-29-78), there are no soil surveys in the area of the proposal. Based on my description of the site Garth stated that the taxonomic name for the soil is "coarse-loamy mixed (calcareous) fridgid ustic torriothents."

Soil cover along the proposed access road would be comparable to that described at the proposed well site although more clayey at many localities. In any case, surface run off is rapid and erosion hazard is moderate when natural vegetation is standing, and is high when the vegetation is removed, especially where the soil structure has been broken.

Drilling muds prepared to prevent lost circulation might be adequately retained by reserve pits constructed at the site area, the fresh water side, however, would need lining with bentonite or film, in order to retain water effectively.

Climate and Air Quality:

There is little available specific to the area concerning climate or air quality. However, from oral communication with Floyd Johnson, Meteorologist, and Robert P. Dalley, Air Quality Specialist (see listing under introduction), and from the references specific to climate listed at the end of this report, some generalizations can be made concerning the town of Duchesne located only about 4 miles southeast of the proposed action.

At a general altitude of 5,520' above sea level on the flood plain of the Duchesne and Strawberry Rivers, the Climate at the town of Duchesne is semiarid. During the interval 1906-1972 annual precipitation at Duchesne ranged from 4.60 to 15.70 inches and averaged 9.19 inches. Dryer than average cycles occurred in the area during the mid-1930's, the late 1950's, the early 1960's, and from 1965-1972. Most precipitation in the area falls in the July-October period, the season of peak thunderstorm activity in the Uinta Basin. During this period local torrential rains result in rapid run off and flash floods.

The area has hot summers and cold winters. During the interval 1941-1972, the mean annual temperature at Duchesne ranged from less than 20°F in January to about 70°F in July. During the same period the annual temperature averaged 45.3°F and the coldest January averaged 17.9°F. However, minimum midwinter temperatures commonly fall below 0°F and maximum midsummer temperatures commonly exceed 90°F. The growing season-average number of days between the last spring-first fall temperature of 28°F-is about 150 days.

Evapotranspiration in the Uinta Basin area is high. Average annual lake evaporation in most of the area exceeds 36 inches (Iorns and others, 1965), which greatly exceeds the average annual supply from precipitation.

Reportedly, prevailing winds would flow from the southeast towards the northwest but there are no data available concerning this or the pattern of the wind velocities.

The proposed test is in an area where all National Ambient Air Quality Standards (NAAQS) are being met for all evaluation polluants (SO_2, CO, HC, NO_2, O_x and SPM) and is included in a Class II Prevention of Significant Deterioration (PSD) requirement area. That is, the area is an "attaining area" in which new facilities are subject to PSD requirements.

Speculation suggests that on days of high winds evaluation polluant SPM (suspended particulate matter) would exceed the NAAQS and that on days of high air pollution potential (subsidence inversions) the HC originating from the vegetal cover would exceed the NAAQS. This is a gray area, however, about which there are no area specific data.

Hydrology:

The Strawberry River, including, Starvation Reservoir, is the only perennial surface drainage serving the application area. Surface drainage in the application area is intermittent and flows principally east or south and east into Starvation Reservoir. The quality and long-term discharge of the Strawberry River water as determined at gaging stations and sampling sites located close above Starvation Reservoir and at Duchesne, are here reported on Water Plates No. 1, 2, 3, 4, and 5 (taken from Hood and others, 1976).

Potable ground-water in the area occurs mainly in unconsolidated glacial outwash and alluvium along the Strawberry River channel (now beneath Starvation Reservoir) and in the consolidated rocks of the Uinta Formation. Ground-water occuring in the glacio-fluvial deposits at the bottom of Starvation Reservoir is of academic interest only, and will not be discussed here.

Where the Uinta rocks occur at practical depths, much of the water used for domestic and stock purposes is obtained from this formation. Sandstone, principally in the upper part of the Uinta, commonly contains water under artesian pressure but the aquifers generally have low permeabilities. The ability of the Uinta rocks to yield and transmit water is locally greatly enhanced by fracturing commonly related to basin subsidence effects on the rocks. Tests performed by Hood and others (1976) found that where dewatered by pumping, the Uinta sandstone would have an estimated specific yield of only about 1 percent, and that the permeability of the rocks is such that uncontrolled production creates large declines in the potentiometric surfaces near the wells.

Water in the Uinta Formation ranges from fresh to very saline, depending upon the lithology and the depth of burial of the producing zone. Usable fresh to saline water may occur in the Uinta to depths of about 900 feet in the immediate area south of Starvation Reservoir. Most small diameter wells in these rocks have small yields--less than 10 gallons/minute--and large drawdown. Well records and quality analyses for water from the Uinta Formation from the NE-1/4 SW-1/4 NE-1/4 Sec. 7, and from the SE-1/4 SW-1/4 SE-1/4 Sec. 31, both in T.3S., R.5 W., USB and M, are shown on Water Plates No. 6 and 7.

Ground-water recharge is normally derived from precipitation that falls within and nearby the area of concern and from seepage losses along the perennial drainage ways. Since the Starvation Reservoir was established, it is likely that seepage intake along this portion of the Strawberry River has increased at some localities. Although the rate of ground-water movement is slow in most places because of the generally low permeability of the rocks, the probable extent and configuration of fractured ground in the locality of the proposed test cannot be predicted. Also, available water-level data are insufficient to determine direction of groundwater movement in the area. It is possible that fresh or useable saline water reserves in the vicinity of the proposed test, at times move towards the reservoir and at other times are receiving water from the reservoir, depending upon changes in the potentiometric surface and in the levels of the reservoir. Most likely, at the proposed test water occuring in the upper several hundred feet of the rock column flows slowly through the rocks towards the reservoir. A casing and cementing program adequate to completely protect the rocks to a depth of a least 1,000 feet would probably be adequate to prevent production fluids from the Green River and Wasatch Formations commingling with usable ground water in the Uinta, as well as prevent ultimate pollution of the reservoir. If the operator protests cementing a string from surface to at least 1,000 feet, let him demonstrate the presence of unusable very saline waters at shallower depth by geophysical logging after the drilling has reached the casing depths in discussion.

Flora and Fauna

An area of shallow soils and rocky terrane ranging from about 5,700 to 6,000 feet in altitude, the application area is within the Juniper-Pinyon zone of vegetation which in the Uinta Basin region occurs between 5,500 and 7,000 feet. Juniper-pinyon predominates in the rock outcrop areas whereas big sagebrush community predominates in the soil covered areas.

During the examination the following plant types were noted as common in the area: juniper, Pinyon pine, sage brush, bitter brush, rabbit brush, sparse grasses and forbes, barrel cactus, prickly pear, yucca,

and Mormon tea. Wildlife noted included: ants, lizards, nesting doves (in Juniper), rabbits (desert cottontail), prarie dog (solitary) ground squirrels, chipmunks, sparrows (?), Jays, and one turkey vulture. Evidence of other animal use in the area included badger holes, cow dung, horse plops, and deer skeletons. Sea gulls, ducks, and geese were seen about the reservoir.

According to Lee K. Swenson, Big Game Biologist, U.S. Bureau of Reclamation stationed at Duchesne: The proposal is part of a major winter range for mule deer. Other habitants reported in the area include skunks, coyotes, marsh hawks, red tail hawks, ruff legged hawks, vesper sparrows, magpies, crows, and blue heron. The endangered bald eagle and peregrine falcon winter in the Uintah Basin region but there have been no official sightings at Starvation Reservoir. There are no strutting grounds in the area.

Endangered Species:

According to Wm. C. White of the U.S. Fish and Wildlife Service, (see introduction), there are no endangered species (fauna) residing in the Starvation Reservoir or its immediate surroundings. The Strawberry River, however, is tributary to the Green River wherin reside threatened and endangered species.

The application area is within or at the fringe of the distribution range of four species of wildlife Federally listed as endangered (in range). The four endangered species are the black-footed ferret, the American peregrine falcon, the whooping crane, and the bald eagle. The unit area is also within the historic range of the bobcat, which is on the State's list of declining species.

The State of Utah reported in 1974 that it was unlikely the black-footed ferret exists in the State at the present (Utah Division of Wildlife Resources, 1974). In 1975, one ferret was sighted by a Fish and Wildlife Service employee about 50 miles east of the project area near Vernal (Fish and Wildlife Service, 1975b). This is the farthest West black-footed ferrets have been reported and appears to be at the western edge of their known distribution range (Bureau of Land Management, 1972). No ferrets were observed during the bioloigcal inventory (Utah Division of Wildlife Resources, 1977).

Two whooping cranes were observed during migration on the Ouray Wildlife Refuge near Ouray during the summer of 1976. These birds are a product of a fish and wildlife experiment carried out in Idaho. In this experiment, whooping crane eggs were hatched beneath greater sandhill crane parents and later released.

The bald eagle is currently dispersed throughout Utah from October to April as a winter visitor, coming from as far away as Saskatchewan, Canada, and including birds from many areas between Utah and Canada. As a result, bald eagles occasionally use the Uinta region during the winter, but winter-concentration areas are typically located on State and Federal waterfowl management areas within the State (Utah Division of Wildlife Resources, 1977e).

There have been infrequent sightings of peregrine falcons east of Starvation Reservoir in eastern Duchesne County and western Uintah County by biologists of the Fish and Wildlife Service. The high cliffs above Whiterocks Canyon constitute peregrine falcon habitat, but no past sightings have been reported.

The Colorado River squawfish and humpbacked chub, both Federally listed as endangered are not believed to presently exist in the area of the Starvation Reservoir. A single humpbacked chub was found in 1976 at the confluence of the Duchesne and Green Rivers by the Fish and Wildlife Service (personal communication, Del Robinson, biologist at Vernal, Utah, October 3, 1977). Both species are known to occur in the Green River, upstream and downstream from the Duchesne River confluence (Holden and Stalnaker, 1975; Fish and Wildlife Service, 1975c).

No plant species in Utah are presently receiving protection under the Endangered Species Act; however, the U.S. Department of the Interior has recently published a list of species proposed for endangered status (U.S. Department of the Interior, 1976c). Of the approximately 1,700 plants on the proposed list, 15 can be found in Duchesne and Uintah Counties. Table B-8 lists these species, none of which were found in eastern Duchesne or western Uintah Counties in vegetative studies conducted by the Utah Division of Wildlife Resources (Utah Division of Wildlife Resources, 1977).

Table B-8

Endangered vegetation in Duchesne and Uintah Counties

Species	Common name
Cryptantha breviflora	Catseye (unnamed)
Lepidium barnebyanum	Barneby's peppergrass
Physaria grahamii	Twinpod (unnamed)
Sclerocactus glaucus	No common name
Astragalus detritalis	Milkvetch (unnamed)
Astragalus hamiltonii	Hamilton's milkvetch
Astragalus saurinus	Milkvetch (unnamed)
Hermidium alipes	No common name
Erigonum sphedroides	Wild buckwheat (unnamed)
Penstemon garrettii	Garrett's beardtongue
Penstemon grahamii	Beardtongue
Glaucocarpum suffrutescens	Pack mountain mustard
Erigonium hylophilum	Wild buckwheat
Erigonium intermountain	Wild buckwheat
Astralagus lutosus	Dragon Milkvetch

The species listed above were reviewed by Brigham Young University regarding their probable occurrence in project feature areas or on full service irrigation lands. The university determined that of the 15 listed species only two, Astragalus hamiltonii (Hamilton's milkvetch) and Cryptantha breviflora (Catseye), could possibly exist in the area. Further, the latter is a common endemic plant which is neither endangered nor threatened and therefore will probably not be found on the final list of endangered species when published in the Federal Register.

Socioeconomics and Land Use:

The area is sparsely populated, averaging about 3.7 persons per square mile. About 2,250 people reside at Duchesne (personal communication, Linda Furrh, Duchesne City Treasurer), the only town in the immediate area. Some 15-20% of Duchesne's population depend upon oil and gas for income, about 25% upon the U.S. Bureau of Reclamation, 40% upon the services and trades, and 20% upon farming and ranching.

Social and economic conditions in the area are in disequilibrium due to a growing, if somewhat fluctuating movement from a century-long totally agrarian based economy towards a diversified economy in which exploration and production of oil and gas, river basin development (Bureau of Reclamation), tourism, hunting and fishing, summer residence, and allied service industries, have become major if not predominant. Seemingly, people who are almost exclusively of one religion and common socioeconomic culture, are being overwhelmed by people of mostly other religions, differing life styles, and notably higher incomes.

Drillers and operators would employ some local people (drivers and helpers) as well as obtain goods and shelter in Duchesne. This increase in the local economy is temporary but welcome by the merchants and motel operators. The proposed action would not strain faciltities as the town has adequate transient facilities, even during the tourist season.

The proposal is on private surface where controlled grazing, hunting and wildlife habitat are the only established uses. There are no occupied or abandoned dwellings on the private land or in the area of figure 1 north of Starvation Reservoir. Neither archeologic sites or fossils of unusual scientific interest are known in the area of the proposal. The area surrounding (north of the reservoir) has exploration and production of oil and gas as the most economically important activity, in addition to wildlife habitat, hunting, and controlled grazing. In view of the nations increasing desperate need for convenient petroleum products and the current research towards improved methods of secondary and tertiary production, it is likely the area will see increased development-production expenditures and associated employment for at least 50 years.

The site is 1,600 feet north of Starvation Reservoir, an important recreation area. Starvation Reservoir is important for fishing, boating,

swimming, camping, and general scenic value. The monthly visitation record for Starvation Reservoir in 1977 is tabluated below.

Month	Visitors
January	825
February	926
March	2,202
April	4,914
May	18,974
June	15,005
July	28,044
August	17,399
September	12,965
October	3,115
November	1,029
December	845
1977	106,243

See socio-economic Plate No. 1 for a detailed summary of the physical features, recreational facilities, and uses made of this reservoir. See also Photo Plates No. 1, 2, 7*, 9*, and 10* for visual perspective into the scenic value of Starvation Reservoir.

Effects on the Environment:

Surface Effects

Ground-water and surface-water quality and quantity, livestock and wildlife grazing and open-space qualities would be degraded and restricted in the vicinity of the test until successful reclamation was completed. Fugitive dust would be visible at times during the drilling and additional population-related activities would add to the long-term regional degradation of the air quality. Overall impact of the area, however, would be light and distractions from aesthetics which would occur over the lifetime of the project are judged to be minor. Site and access road preparation will denude about 4.7 acres of land. This would destroy the vegetation, displace the animals and increase erosion and dust. If erosion became serious, additional drainage controls such as water bars and dikes would be installed, and reseeding of slope-cuts done, to minimize the problem.

Should the well site be abandoned, surface rehabilitation would be done according to the surface owner's requirements and to USGS' satisfaction. This would involve leveling, contouring, reseeding, and possibly replanting of the location and possibly of the access road. If the well should produce hydrocarbons, measures would be undertaken to protect wildlife and domestic stock from the production equipment.

*/ See EA-1180 for color prints

The area receives sufficient rainfall for rehabilitation to be successful. No endangered or threatened species of plant or animal is known to be present. During drilling, traffic would be kept to a minimum and only necessary people would be allowed on or near the site, with housing off-site for all the drill crew except the toolpusher and geologist.

Traffic and drilling operations would increase air and noise pollution and be aesthetically objectionable. Noise from the drilling operation may temporarily disturb wildlife and people in the area. Noise levels would be moderately high during drilling and completion operations. Upon completion, noise levels would be infrequent and significantly less. If the area were abandoned, noise levels would return to pre-drilling levels.

Relatively heavy traffic would occur during the drilling operations, increasing dust levels and exhaust pollutants in the area. If the well was completed for production, traffic would be reduced substantially to a maintenance schedule with a corresponding decrease of dust levels and exhaust pollutants to minor levels. If the project resulted in a dry hole, all operations and impact form vehicular traffic would cease after abandonment. Due to the limited number of service and limited time span of their operation, the air quality would not be substantially reduced.

Even with adequate blow-out prevention equipment, contingency plans, and experienced crews, a blow-out could happen. A blow-out of gas might burn, which would be visible from the reservoir, but such a burn would be of short duration. If a blow-out of oil were to occur, the oil could be easily cleaned up before reaching Starvation Reservoir.

There would be impact on tourism. While not visible from major roads, the site would be visible from Starvation Reservoir. After drilling operations, completion equipment would be visible to reservoir users but would not present a major instrusion. All permanent facilities placed on the location would be painted light sand color to blend with the natural environment.

Should this well discover significant hydrocarbons, local, state and national economics would be improved and additional development wells should be anticipated, with additional environmental and economic impacts. A view from the shore of Starvation Reservoir of the locality of proposed test well NO. 1-21C5 is shown on Photo Plate No. 1. Owing to the lack of vegetal concealment, and to the gradual uninterrupted rise from the shoreline to the drilling site, the drilling rig and support facilities would be in conspicuous view during the drilling. Photo Plates No. 5 * and 6 * approximate what an inquisitive individual would

*/ See EA-1180 for color prints

see should the site be visited during the drilling. Owing primarily to greater distances involved, however, the visual impact of drilling 1-21C5 on the reservoir user would generally be less than that of the rig shown from 1/4 miles distance by the upper print in Photo Plate No. 5.

Oil and gas producing well facilities typical of the area and in close proximity to the reservoir are shown in Photo Plates No. 7*, 8*, and 9*. Should proposed test No. 1-21C5 prove commercial, its production facilities would resemble those shown in Photo Plate No. 8*. A reservoir user's access to view of production facilities located at the proposed site would be limited from the south but quite ~~open from the east.~~ Construction of its pad, however, would not create anywhere near the amount of cut, fill, and spoil bank as were generated for producer No. UT1-36, shown on Photo Plates No. 8* and 9*.

Photo Plate No. 10* shows views of a formerly producing oil and gas well which was drilled and completed only 150 feet from the shore of Starvation Reservoir in January 22, 1972. The operator reported final abandonment and restoration of surface (including reseeding) for this hole on May 15, 1975. As of this writing final abandonment for this hole had not been approved by the Geological Survey. Obviously, a little knowledgeable replanting and a few years time would be needed to render this locality fully compatable with the areas natural scenic and use values.

Waste Disposal

The mud and reserve pits would contain all fluids used during the operations. The trash pit would be utilized for any solid waste generated at the site and would be buried at the completion of the operations. Sewage would be handled according to State sanitary codes. For further information, see the 13-Point Surface Plan.

Subsurface Effects

The leasable minerals that might be penetrated if the hole were drilled (oil shale, bitumen impregnated limestone, bedded sodium carbonate minerals, and wurtzelite) would be adequately protected by the proposed casing and cementing program. Fresh water aquifers may be encountered in the first few hundred feet and usable saline water to depths of about 800 or 1,000 feet.

Approval of the proposed action would be conditioned that adequate and sufficient electric, radioactive, density logging surveys would be made to locate and identify any potential mineral resources. Production casing and cementing would be adjusted to assure no influence of the hydrocarbon zones through the well bore on these minerals. In the event the well is abandoned, cement plugs will be placed with drilling fluid in the hole to assure protection of any mineral resources.

*/ See EA-1180 for color prints

The potential for loss of circulation would exist and is possible in the sandstone units of the Green River. Loss of circulation may result in the lowering of the mud levels, which might permit exposed upper formations to blow-out or to cause formation to slough and stick to drill pipe. A loss of circulation would result in contamination due to the introduction of drilling muds, mud chemicals, filler materials, and water deep into the permeable zone, fissures, fractures, and caverns within the formation in which fluid loss is occurring. The use of special drilling techniques, drilling muds, and lost circulation materials may be effective in controlling lost circulation.

A geologic review of the proposed action has been furnished by the District Geologist, U.S. Geological Survey, Salt Lake City, Utah. The operator's drilling, cementing, and blow-out prevention programs have been reviewed by the Geological Survey engineers and determined to be adequate.

Adverse Environmental Effects Which Cannot Be Avoided:

Surface disturbance and removal of vegetation from approximately 4.7 acres of land surface for the lifetime of the project which would result in increased and accelerated erosional potential. Erosion from the site could eventually be carried as sediment into Starvation Reservoir but this impact would be extremely slight compared to the current sedimentation rate into the reservoir. Grazing would be eliminated in the disturbed areas and there would be a minor and tempory disturbance of wildlife and livestock. Minor induced air pollution due to exhaust emmissions from rig engines and support traffic engines would occur. Minor increase in dust pollution would occur due to vehicular traffic associated with the operation. If the well is a gas producer, additional surface disturbance would be required to install production pipelines. The potential for fires, leaks, spills of gas, oil or water would exits. During the construction and drilling phases of the project, noise levels would increase. Potential for sub-surface damage to fresh water aquifers and other geologic formations exists. Some minor pollution of ground water systems would occur with the introduction of drilling fluids (filtrate) into the acquifer. This is normal and unavoidable during rotary drilling operations.

Minor distractions from aesthetics during the lifetime of the project would exist. The proposed drilling would be visible and audible to the reservoir user from many portions of the reservoir, but only for a few weeks. Although an oil and gas production facility located at the site would also be in clear view, it would not be very noticeable from the reservoir as it would be painted to blend with the terrane.

If the well is a producer, an irreplaceable and irretrievable commitment of resources would be made. The potential for pollution to Starvation Reservoir would exist through leaks and spills, but the hazard is judged to be extremely low. Water production with the gas would require disposal of produced water per the requirement of NLT-2B.

Alternatives to the Proposed Action:

(1) Not approving the proposed permit--The oil and gas lease grants the Lessee exclusive right to drill for, mine, extract, remove and dispose of all oil and gas deposits.

Under leasing provisions, the Geological Survey has an obligation to allow mineral development if the environmental consequences are not too severe or irreversible. Upon rehabilitation of the site, the environmental effects of this action would be substantially mitigated, if not totally annulled. Permanent damage to the surface and subsurface would be prevented as much as possible under the U.S. Geological Survey and other controlling agencies supervision with rehabilitation planning reversing almost all effects. Additionally, the growing scarcity of oil and gas should be taken into consideration. Therefore, the alternative of not proceeding with the proposed action at this time is rejected.

(2) Minor relocation of the well site and access road or any special, restrictive stipultions or modifications to the proposed program would not significantly reduce the environmental impact. There are no severe vegetative, animal or archaeological-historical-cultural conflicts at the site. At abandonment, rehabilitation of the area such as contouring reseeding, etc., would be undertaken with an eventual return to the present status as outlined in the 13-Point Surface Plan.

(3) The only other alternative would be to deny the operator his rights under the federal oil and gas lease.

Controversial Issues:

The writers have not encountered any controversial issues during preparation of this analysis. No person interviewed, including persons administratively concerned with the area and persons found using the Starvation Reservoir, raised any objection to the proposal.

Determination

In my opinion, the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment in the sense of NEPA, Section 102(2)(c), and the environmental impacts of the proposed action are not likely to be highly controversial.

District Engineer — Date: SEP 22 1978

I Concur — Area Supervisor — Date: 9/25/78

I determine that preparation of an Environmental Impact Statement is not required.

Conservation Manager — Date: 9/29/78

Source Materials

Geologic:

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Eardly, A. J., Ed., 1950, Petroleum geology of the Unita Basin: Intermountain Assoc. of Petroleum Geologists Guide Book, 152 p.

Iorns, W. V., Hembree, C. H., and Oakland, G. L., 1965, Water resources of the Upper Colorado River Basin--Tech. rept.: U.S. Geol. Survey Prof. Paper No. 441.

Picard, M. D., Thompson, Wm. D., and Williamson, C. R., 1973, Petrology, geochemistry and stratigraphy of black shale facies of Green River Formation, Uinta Basin, Utah: Utah Geol. and Mineral Survey Bull. 100, 52 p.

Sabatka, E. R., 1964, Guidebook to the geology and mineral resources of the Uinta Basin: Thirteenth Annual Field Conference, Intermountain Assoc. of Petroleum Geologists, 277 p.

Seal, O. G., 1957, Guidebook to the geology of the Uinta Basin: Eight Annual Field Conference, Intermountain Assoc. of Petroleum Geologist, 224 p.

Staff, U.S. Geological Survey and others, 1964, Mineral and water resources of Utah: Utah Geol. and Mineral Survey Bull. No. 73, 275 p.

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Hood, J. W., Mundorff, J. C., and Price, Don, 1976, Selected hydrologic data, Uinta Basin area, Utah and Colorado: U.S. Geol. Survey Utah Basin-Data Release No. 26, 321 p.

Price, Don, and Miller, L. L., 1975, Hydrologic reconnaissance of the southern Uinta Basin, Utah and Colorado: Utah Dept. of Natural Resources Tech. Pub. No. 49, 66 p.

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Staff, 1970, The national altas of the United States of American: U.S. Dept. of the Interior Geological Survey, 417 p., 6 overlays.

Flora, Fauna, and Socio-economics:

Staff, Upper Colorado Regional Office, 1978, Uintah Unit, Central Utah Project, Utah: U.S. Bureau of Reclamation Draft Environmental Statement, 228 p.

Environmental Analysis, Principles:

Detwyler, T. R., Ed., 1971, Man's impact on environment: McGraw-Hill, 731 p.

Kormondy, E. J., 1969, Concepts of ecology: Prentice-Hall, 209 p.

Manahan, S. E., 1972, Environmental Chemistry: Willard Grant Press, 393 p.

Staff, 1977, Environmental analysis procedures and guidelines--Onshore oil and gas operations: U.S. Geological Survey, 28 p.

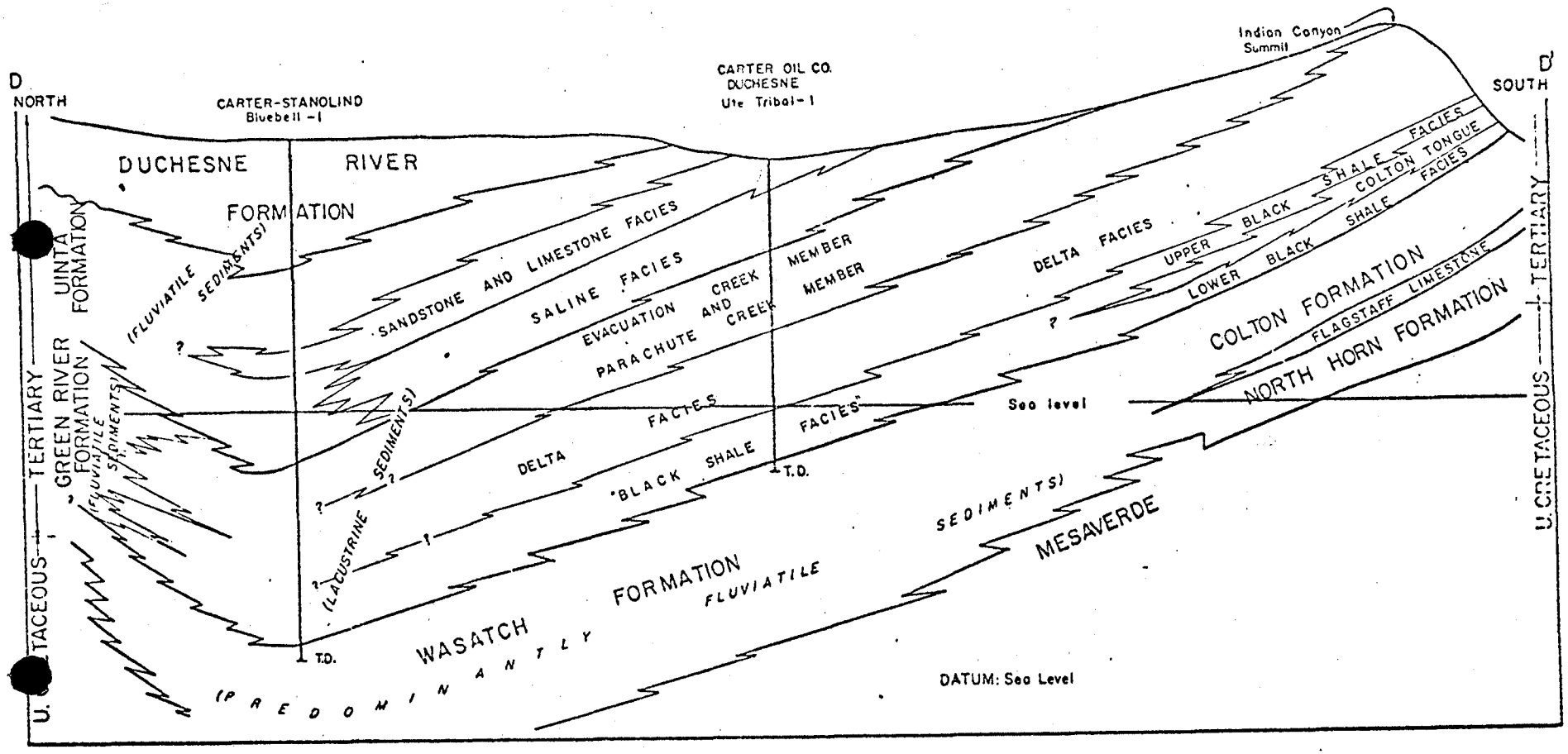


Figure 5.- View east of cross section of Uinta Basin showing stratigraphy and intertonguing of Tertiary rocks. Ute Tribal-1 (in section) is located about 8 miles southeast of the application area .

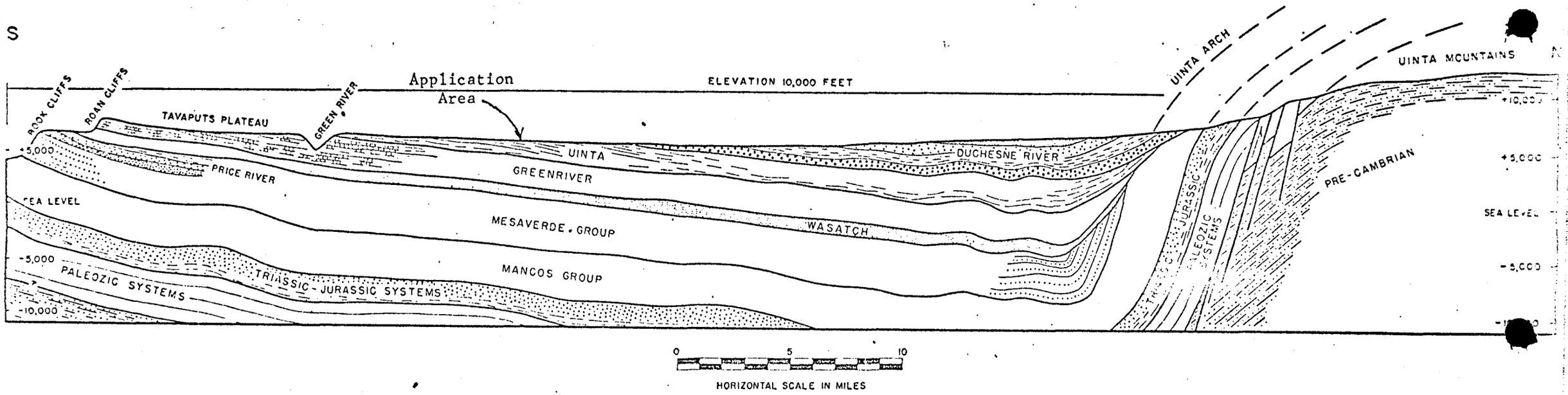
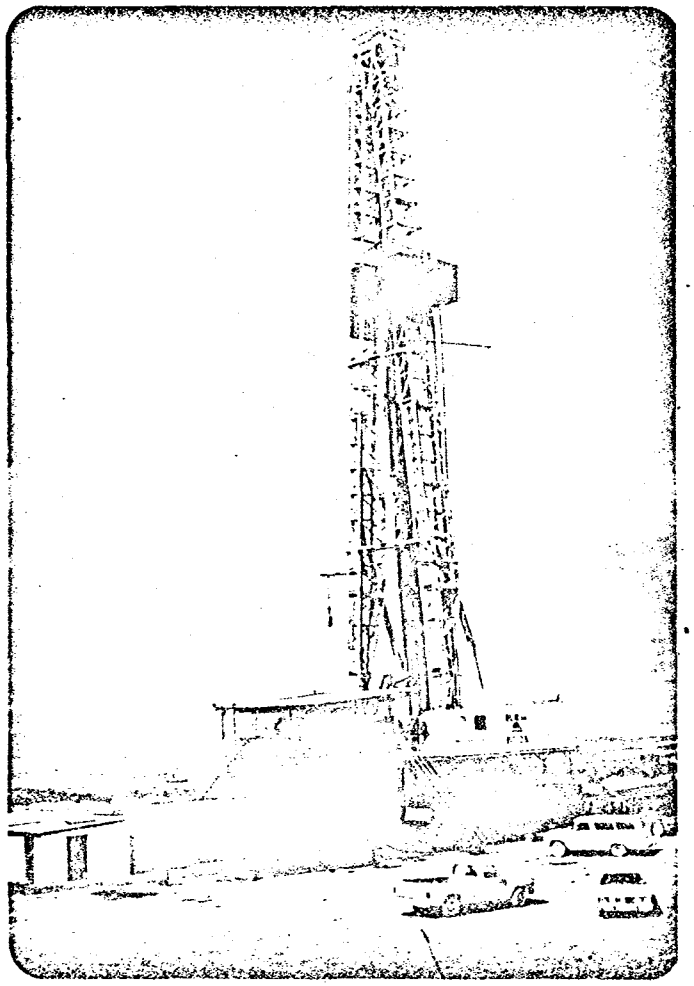
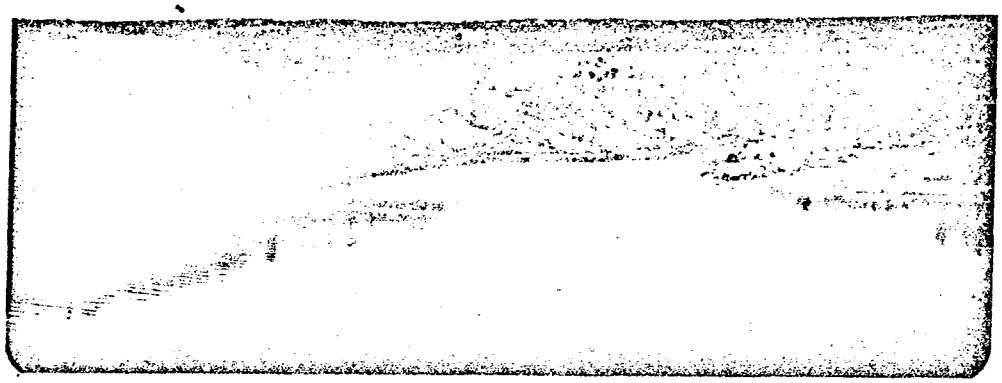


Figure 5a- Cross-section of the Uinta Basin generallizing the stratigraphic and structural framework of the rock section of interest in the application area.

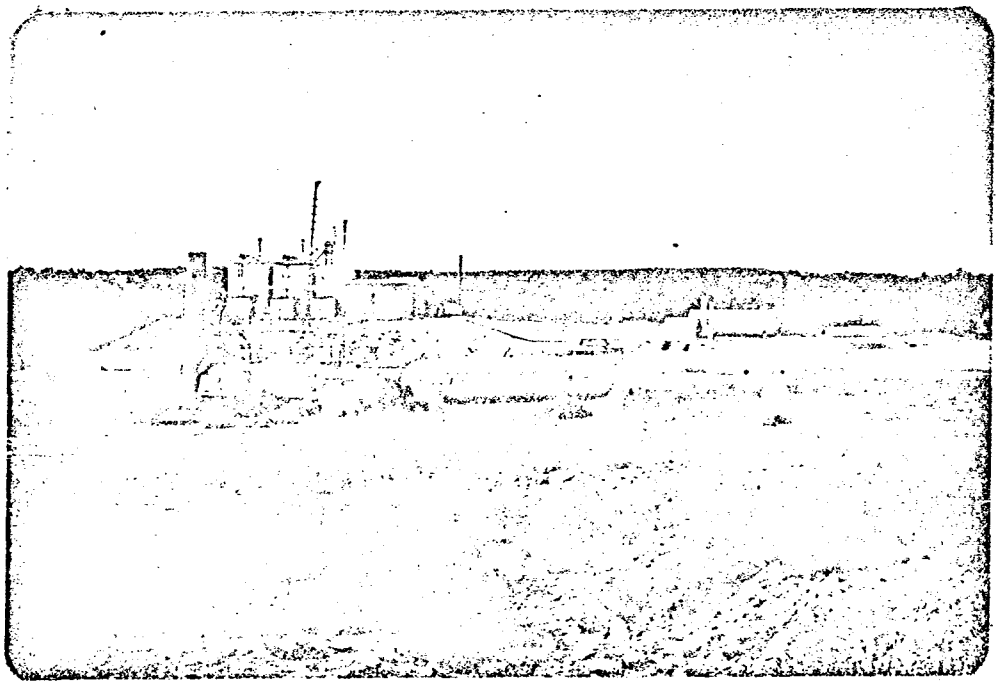


View northeast of oil and gas test rotary drilling rig operation at well site Ute 1-23B2 (Gulf Oil) located in NE NE Sec. 23, T.4S., R.6W., USB&M, Duchesne County, Utah

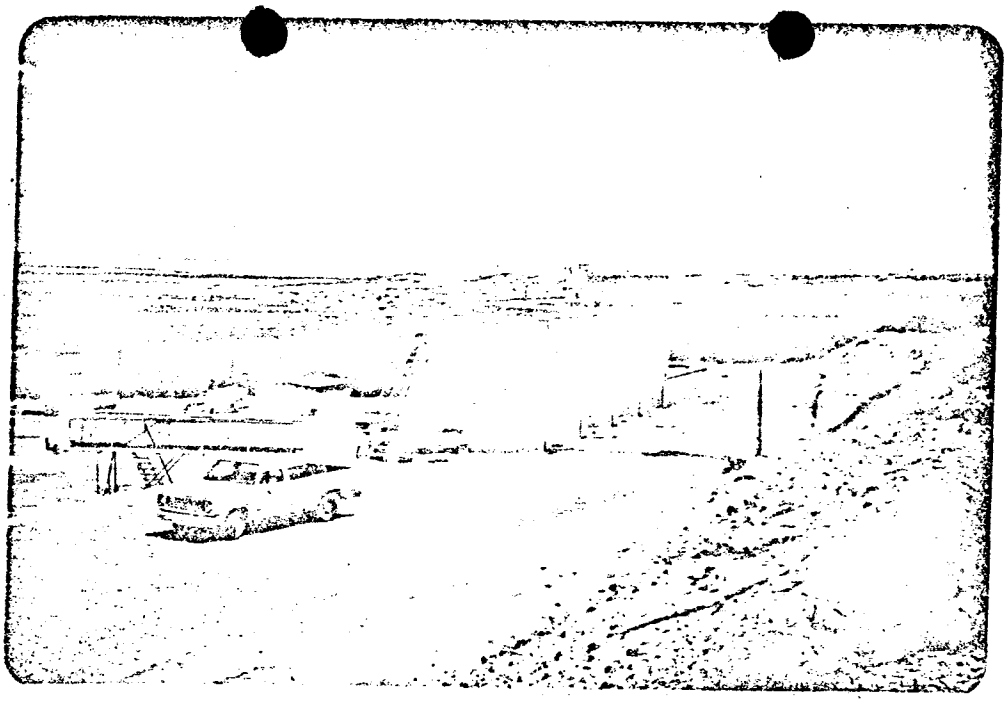
Photo Plate No. 6



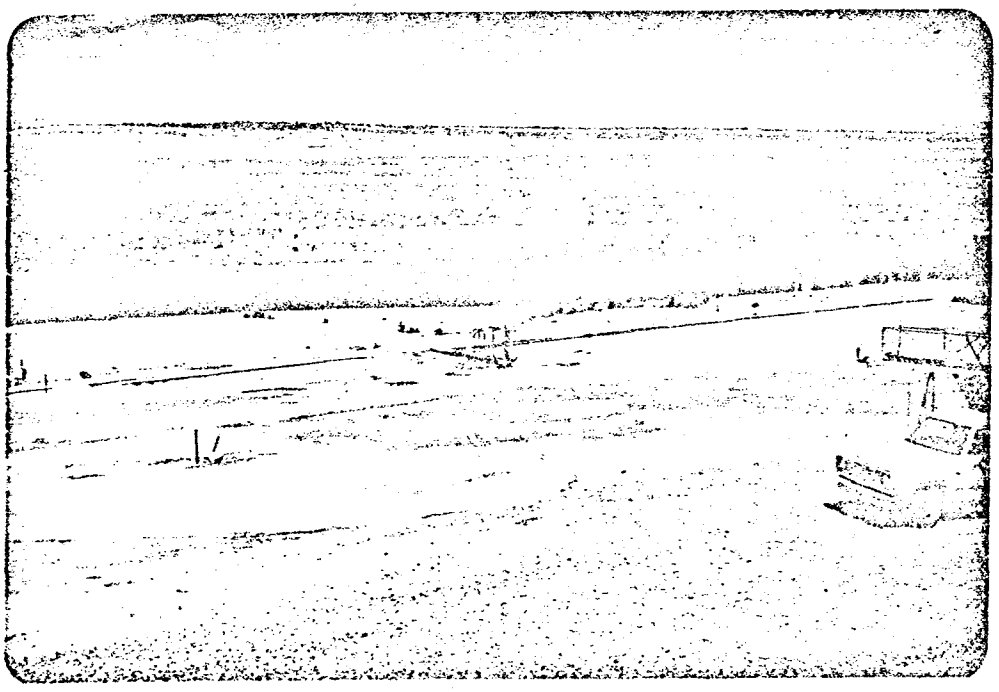
Reservoir user's view south of typical local producing oil well, No. UT5-1, located 0.65 miles from viewing point V_1 (see fig 1).



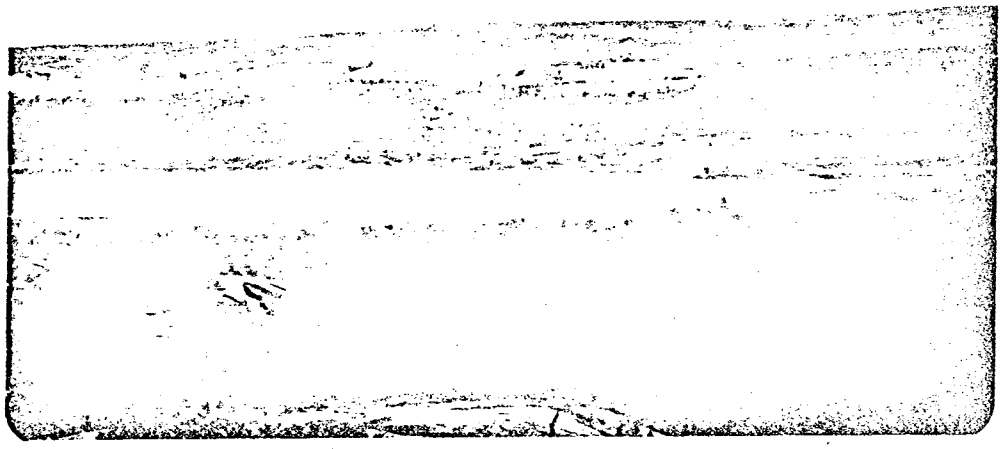
Viewing south at producing well No. UT5-1 showing most producing facilities and pad area (see fig. 1). Most vegetal cover seen on pad surface is the noxious weed "halogeton".



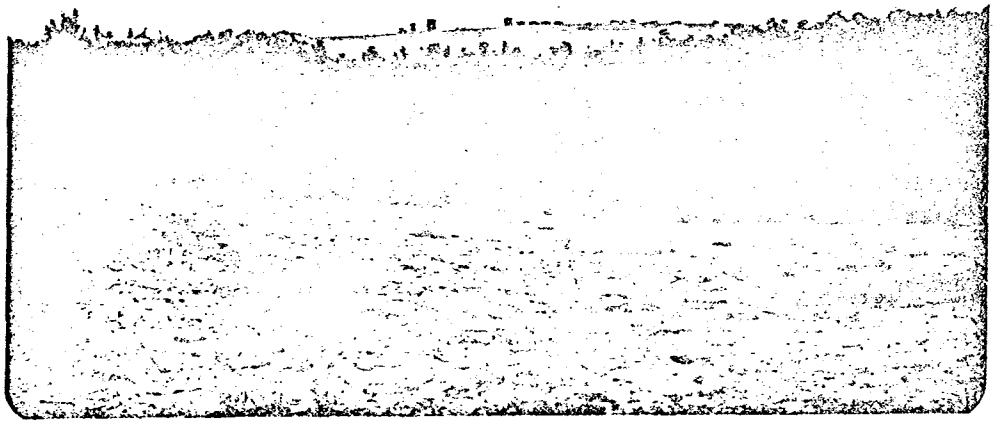
View northeast of new producing well No. UT1-36 showing major producing facilities painted to minimize contrast with natural scenery of area (see fig. 1)



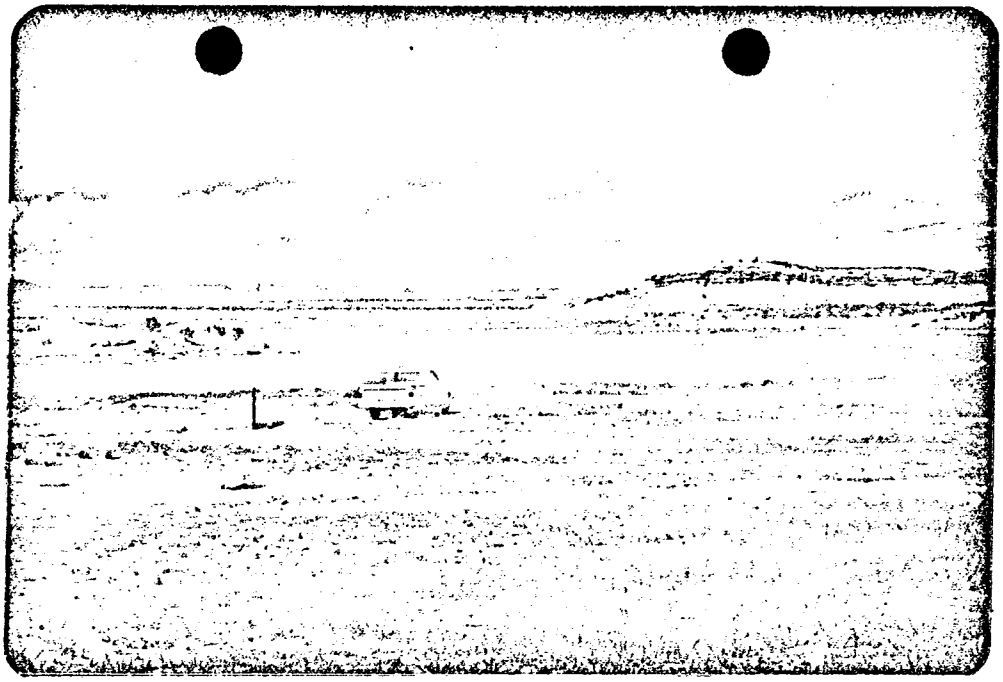
View north of producing well No. UT1-36. Well head is located about 1,000 feet south of the Starvation Reservoir shore line (see fig. 1)



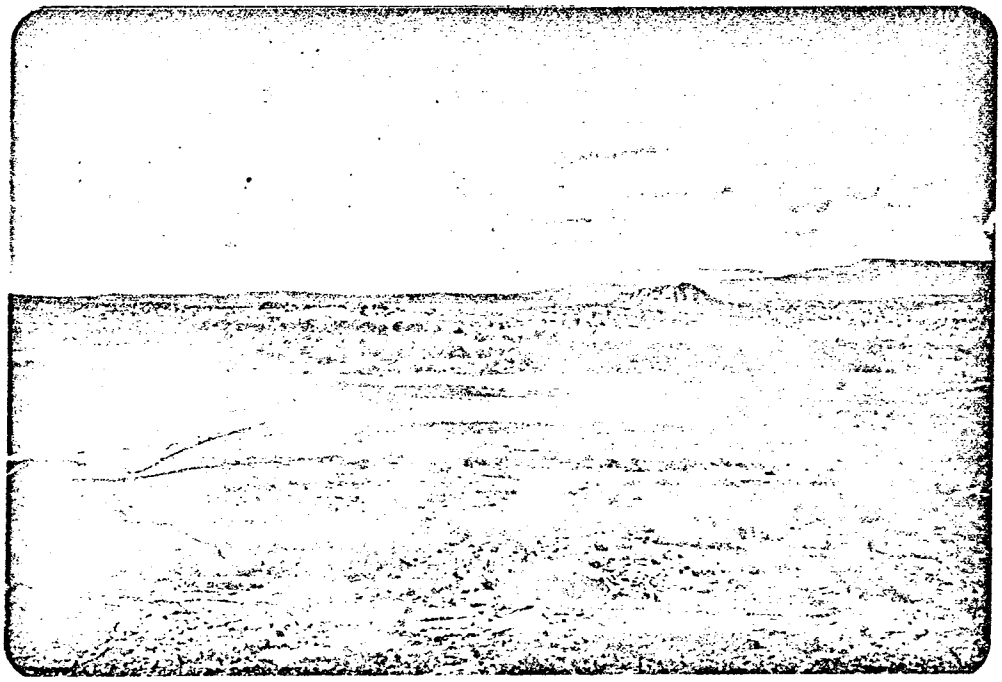
View south across Starvation Reservoir at newly producing well No. UT1-36 (Oil Development Co. of Utah), located 0.8 miles from viewing point producing well T-1-25 (see fig. 1). Cited wells produce oil and gas from the Wasatch Formation from depths of 7,538-8,788 feet and 8,014-8,894 feet, respectively.



View south of newly producing well UT1-36 located 0.25 miles from shore of Starvation Reservoir (Viewing point V_4, see fig. 1). Note extent of spoil banks resulting from pad construction on hillside. Proposed drilling locations 1-29C5 and 1-21C5, of this application, will not disrupt terrane equilibrium to anywhere near this extent owing to their locations on extremely flat topography.



View northeast of plugged and abandoned oil and gas well Ute 32-1 and Starvation Reservoir. Standpipe of this former producing facility is only about 150 feet from reservoir shoreline (see fig. 1). Most ground cover in view between camera and standpipe is the noxious weed "halogeton".



View west-northwest by west of plugged and abandoned oil and gas well Ute 32-1 and Starvation Reservoir (see fig. 1). Production was from Green River Formation at 7,815-7,878 feet and Wasatch Formation at 7,878-7,986 feet. Surface casing was 10 3/4 inch to 990 feet with 685 sacks of cement.

Water [illegible]ate No. 1

stream discharge at gaging stations--[illegible]nued

09288180 Strawberry River near Duchesne, Utah

LOCATION.--Lat 40°09'17", long 110°33'15", in SE¼SW¼SW¼ sec.3, T.4 S., R.6 W., Uintah meridian, Duchesne County, on right bank 150 ft (46 m) downstream from County Road bridge 2,000 ft (610 m) upstream from mouth of Strawberry Reservoir, and 7.5 miles (12.1 km) west of Duchesne.

DRAINAGE AREA.--770 sq mi (1,990 km^2), approximately (includes approximately 170 sq mi or 440 km^2 tributary to Strawberry Reservoir).

PERIOD OF RECORD.--May 1968 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 5,722 ft (1,744 m) above mean sea level (Rabbit Gulch Quadrangle which gives bridge elevation).

AVERAGE DISCHARGE.--5 years, 150 ft^3/s (4.248 m^3/s), 108,700 acre-ft/yr (134 hm^3/yr).

EXTREMES.--Maximum discharge, 1,310 ft^3/s (37.1 m^3/s) May 18, 1973 (gage height, 6.30 ft or 1.920 m); minimum daily discharge, 40 ft^3/s (1.13 m^3/s) Feb. 27, 1971.

REMARKS.--Records good except those for winter periods, which are poor. Several diversions above station for irrigation, including transmountain diversions to The Great Basin. Storage in Strawberry Reservoir began July 14, 1912; water diverted to reservoir from headwaters of Currant Creek feeder canal since 1936. Diversions from reservoir through Strawberry tunnel to Spanish Fork drainage and from tributaries above reservoir through Hobble Creek ditch and Strawberry River and Willow Creek ditch to Provo River drainage. New Soldier Creek Dam, 7 miles (11 km) below Strawberry Reservoir, completed fall 1972, and began storage spring 1973.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
						Monthly and yearly mean discharge, in cubic feet per second							
1968	-	-	-	-	-	-	-	484	430	158	152	98.1	-
1969	114	91.7	87.6	97.4	88.9	84.3	325	827	335	178	130	110	207
1970	118	101	88.3	62.5	72.9	79.8	107	357	219	108	81.5	86.4	124
1971	84.8	80.3	65.6	72.1	48.5	82.2	173	361	220	103	82.2	74.8	121
1972	78.9	80.7	54.1	68.2	80.3	138	208	327	193	86.9	67.3	73.1	121
1973	91.6	83.1	68.9	64.0	66.6	96.0	208	827	334	115	71.5	89.2	177
						Monthly and yearly runoff, in acre-feet							
1968	-	-	-	-	-	-	-	29,730	25,580	9,700	9,330	5,840	-
1969	7,020	5,460	5,390	5,990	4,940	5,180	19,320	50,880	19,930	10,920	7,980	6,560	149,600
1970	7,240	6,030	5,430	3,840	4,050	4,910	6,340	21,950	13,020	6,670	5,010	5,140	89,620
1971	5,220	4,780	4,030	4,430	2,690	5,050	10,270	22,220	13,100	6,360	5,060	4,450	87,670
1972	4,850	4,800	3,320	4,200	4,620	8,500	12,380	20,100	11,510	5,340	4,140	4,350	88,110
1973	5,630	4,950	4,230	3,940	3,700	5,900	12,350	50,850	19,850	7,060	4,400	5,310	128,200

STATION NUMBER	DATE OF SAMPLE	TIME	TEMPERATURE (DEG C)	DISCHARGE (FT^3/S)	DISSOLVED SILICA (SiO_2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO_3) (MG/L)	CARBONATE (CO_3) (MG/L)	DISSOLVED SULFATE (SO_4) (MG/L)
09288100	71-10-14	0910	5.0	28	--	--	--	--	--	--	--	--	--
	71-11-17	1355	1.0	40	--	--	--	--	--	--	--	--	--
	71-12-14	1000	.0	2.2	--	--	--	--	--	--	--	--	--
	72-01-11	1500	5.0	29	--	--	--	--	--	--	--	--	--
	72-02-16	1315	1.0	39	--	--	--	--	--	--	--	--	--
	72-03-22	1205	6.0	67	--	--	--	--	--	--	--	--	--
	72-04-12	1500	8.0	126	--	--	--	--	--	--	--	--	--
	72-05-16	1530	13.0	146	--	--	--	--	--	--	--	--	--
	72-06-15	1230	14.0	58	--	--	--	--	--	--	--	--	--
	72-07-18	1400	16.0	26	--	--	--	--	--	--	--	--	--
	72-08-16	1440	21.0	25	--	--	--	--	--	--	--	--	--
	72-09-15	0900	9.0	26	--	--	--	--	--	--	--	--	--
	72-11-08	1500	4.0	39	--	--	--	--	--	--	--	--	--
	73-01-15	1155	--	23	--	--	--	--	--	--	--	--	--
	73-02-26	1305	3.0	35	--	--	--	--	--	--	--	--	--
	73-03-26	1055	1.0	37	11	58	33	97	--	2.2	304	0	90
	73-04-26	1005	6.0	93	--	--	--	--	--	--	--	--	--
	73-05-07	1320	8.0	195	--	--	--	--	--	--	--	--	--
	73-05-10	1040	8.0	260	--	--	--	--	--	--	--	--	--
	73-05-14	1145	11.0	380	--	--	--	--	--	--	--	--	--
	73-05-21	--	11.5	325	4.8	44	11	9.0	--	1.4	181	0	14
	73-06-12	1415	15.0	79	--	--	--	--	--	--	--	--	--
	73-07-11	1620	23.0	38	--	--	--	--	--	--	--	--	--
	73-07-25	1250	16.0	35	13	53	28	44	--	2.0	308	0	49
	73-08-17	1020	16.0	35	13	52	33	65	--	3.0	351	0	63
	73-08-23	1110	15.0	35	13	52	32	61	--	2.4	348	0	55
	73-09-10	1320	14.0	38	--	--	--	--	--	--	--	--	--
	73-10-25	1540	9.0	36	12	57	28	37	--	1.6	312	0	38
	73-11-15	1325	.5	32	--	--	--	--	--	--	--	--	--
	74-01-08	1255	.0	40	--	--	--	--	--	--	--	--	--
	74-02-13	1535	1.5	35	--	--	--	--	--	--	--	--	--
	74-04-02	1540	8.0	48	--	--	--	--	--	--	--	--	--
	74-05-08	1205	10.0	305	--	--	--	--	--	--	--	--	--
	74-06-05	1230	12.0	61	--	--	--	--	--	--	--	--	--
	74-06-26	1640	24.0	30	--	--	--	--	--	--	--	--	--
09288150	71-09-08	1150	9.5	4.0	--	--	--	--	--	--	--	--	--
	71-11-17	1000	.0	2.0	--	--	--	--	--	--	--	--	--
	72-01-11	1045	.5	2.2	--	--	--	--	--	--	--	--	--
	72-02-16	0930	.5	2.1	--	--	--	--	--	--	--	--	--
	72-03-22	0900	2.0	14	--	--	--	--	--	--	--	--	--
	72-04-12	1030	6.0	19	--	--	--	--	--	--	--	--	--
	72-05-16	1145	9.5	53	--	--	--	--	--	--	--	--	--
	72-06-01	0800	6.0	48	--	--	--	--	--	--	--	--	--
	72-07-18	1000	11.0	8.6	--	--	--	--	--	--	--	--	--
	72-08-16	1030	12.0	3.6	--	--	--	--	--	--	--	--	--
	72-09-13	0900	6.0	3.3	--	--	--	--	--	--	--	--	--
	72-11-08	1125	4.0	4.0	--	--	--	--	--	--	--	--	--
	73-02-27	1320	3.0	2.2	--	--	--	--	--	--	--	--	--
	73-04-05	0930	3.0	6.6	22	46	29	66	--	2.1	358	0	65
	73-04-26	0750	1.0	54	--	--	--	--	--	--	--	--	--
	73-05-07	1015	5.0	147	--	--	--	--	--	--	--	--	--
	73-05-09	0815	3.0	193	--	--	--	--	--	--	--	--	--
	73-05-11	0855	5.0	273	--	--	--	--	--	--	--	--	--
	73-05-25	1110	9.0	190	24	47	26	27	--	1.4	317	0	28
	73-06-12	1100	12.0	59	--	--	--	--	--	--	--	--	--
	73-07-12	0935	11.0	17	--	--	--	--	--	--	--	--	--
	73-08-17	0800	9.0	5.8	23	52	32	45	--	1.5	360	0	44
	73-09-18	1100	9.0	3.7	--	--	--	--	--	--	--	--	--
	73-10-25	1730	9.0	3.0	--	--	--	--	--	--	--	--	--
	73-11-15	1045	.0	3.0	--	--	--	--	--	--	--	--	--
	74-02-13	1220	.0	2.0	--	--	--	--	--	--	--	--	--
	74-04-02	1130	7.0	5.0	--	--	--	--	--	--	--	--	--
	74-05-08	0810	5.0	39	--	--	--	--	--	--	--	--	--
	74-06-05	1040	8.0	22	--	--	--	--	--	--	--	--	--
	74-06-26	1510	17.0	11	--	--	--	--	--	--	--	--	--
09288180	48-06-09	1235	--	--	21	--	--	--	--	--	348	0	--
	49-04-07	1045	9.0	--	--	--	--	--	--	--	338	0	--
	49-10-14	1255	11.0	--	--	50	36	--	68	--	379	0	93
	50-11-06	1305	9.5	--	19	57	33	--	68	--	376	0	84
	51-09-07	0745	14.0	--	--	--	--	--	--	--	--	--	--
	56-08-14	--	--	50	--	47	34	86	--	2.0	373	5	104
	56-11-07	--	--	40	--	49	32	83	--	2.0	361	9	90

from sites at gaging stations—Continued

DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	PH (UNITS)	AGENCY ANA-LYZING SAMPLE
--	--	--	--	--	--	--	--	--	570	--	--	--	--	
--	--	--	--	--	--	--	--	--	520	--	--	--	--	
--	--	--	--	--	--	--	--	--	540	--	--	--	--	
--	--	--	--	--	--	--	--	--	580	--	--	--	--	
--	--	--	--	--	--	--	--	--	525	--	--	--	--	
--	--	--	--	--	--	--	--	--	470	--	--	--	--	
--	--	--	--	--	--	--	--	--	406	--	--	--	--	
--	--	--	--	--	--	--	--	--	360	--	--	--	--	
--	--	--	--	--	--	--	--	--	530	--	--	--	--	
--	--	--	--	--	--	--	--	--	530	--	--	--	--	
--	--	--	--	--	--	--	--	--	620	--	--	--	--	
--	--	--	--	--	--	--	--	--	590	--	--	--	--	
--	--	--	--	--	--	--	--	--	650	--	--	--	--	
--	--	--	--	--	--	--	--	--	430	--	--	--	--	
--	--	--	--	--	--	--	--	--	490	--	--	--	--	
100	--	--	--	--	--	--	--	541	840	280	31	2.5	7.8	
--	--	--	--	--	--	--	--	--	550	--	--	--	--	
--	--	--	--	--	--	--	--	--	400	--	--	--	--	
--	--	--	--	--	--	--	--	--	360	--	--	--	--	
--	--	--	--	--	--	--	--	--	310	--	--	--	--	
6.3	--	--	--	--	--	--	--	180	319	160	7	.3	7.6	
--	--	--	--	--	--	--	--	--	500	--	--	--	--	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
31	.00	--	.00	.00	.4	100	--	372	622	250	0	1.2	8.3	
47	--	--	--	--	--	--	--	449	772	270	0	1.7	8.2	
43	.04	--	.03	.03	.3	160	--	431	720	260	0	1.6	8.3	
--	--	--	--	--	--	--	--	--	640	--	--	--	--	
22	--	--	--	--	--	--	--	349	660	260	2	1.0	8.2	
--	--	--	--	--	--	--	--	--	670	--	--	--	--	
--	--	--	--	--	--	--	--	--	550	--	--	--	--	
--	--	--	--	--	--	--	--	--	550	--	--	--	--	
--	--	--	--	--	--	--	--	--	630	--	--	--	--	
--	--	--	--	--	--	--	--	--	320	--	--	--	--	
--	--	--	--	--	--	--	--	--	450	--	--	--	--	
--	--	--	--	--	--	--	--	--	550	--	--	--	--	
--	--	--	--	--	--	--	--	--	495	--	--	--	--	
--	--	--	--	--	--	--	--	--	590	--	--	--	--	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
--	--	--	--	--	--	--	--	--	580	--	--	--	--	
--	--	--	--	--	--	--	--	--	540	--	--	--	--	
--	--	--	--	--	--	--	--	--	525	--	--	--	--	
--	--	--	--	--	--	--	--	--	470	--	--	--	--	
--	--	--	--	--	--	--	--	--	425	--	--	--	--	
--	--	--	--	--	--	--	--	--	418	--	--	--	--	
--	--	--	--	--	--	--	--	--	510	--	--	--	--	
--	--	--	--	--	--	--	--	--	520	--	--	--	--	
--	--	--	--	--	--	--	--	--	510	--	--	--	--	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
5.9	--	--	--	--	--	--	--	413	644	230	0	1.9	7.4	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
--	--	--	--	--	--	--	--	--	570	--	--	--	--	
--	--	--	--	--	--	--	--	--	480	--	--	--	--	
--	--	--	--	--	--	--	--	--	490	--	--	--	--	
6.5	--	--	--	--	--	--	--	316	508	220	0	.8	7.4	
--	--	--	--	--	--	--	--	--	520	--	--	--	--	
--	--	--	--	--	--	--	--	--	550	--	--	--	--	
10	--	--	--	--	--	--	--	385	641	260	0	1.2	8.3	
--	--	--	--	--	--	--	--	--	610	--	--	--	--	
--	--	--	--	--	--	--	--	--	630	--	--	--	--	
--	--	--	--	--	--	--	--	--	600	--	--	--	--	
--	--	--	--	--	--	--	--	--	600	--	--	--	--	
--	--	--	--	--	--	--	--	--	610	--	--	--	--	
--	--	--	--	--	--	--	--	--	480	--	--	--	--	
--	--	--	--	--	--	--	--	--	500	--	--	--	--	
--	--	--	--	--	--	--	--	--	520	--	--	--	--	
--	--	--	--	--	--	--	--	--	649	--	--	--	--	
76	--	--	--	--	--	--	--	--	922	--	--	--	--	
9.0	--	--	--	--	--	--	--	--	764	273	0	1.8	--	
21	--	.50	--	--	--	--	468	--	731	278	0	1.8	--	
--	--	--	--	--	--	--	--	--	680	--	--	--	--	
23	--	--	--	--	--	450	495	--	810	256	0	2.3	--	BR
23	--	--	--	--	--	390	496	--	783	255	0	2.2	8.3	BR

Water Plate No. 2 --Chemical analyses of water

STATION NUMBER	DATE OF SAMPLE	TIME	TEMPERATURE (DEG C)	DISCHARGE (FT^3/S)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
09288180 — CONT.	57-06-26	--	--	222	--	--	--	--	--	--	--	--	--
	64-04-02	--	--	100	--	47	24	81	--	2.8	304	0	84
	64-04-29	--	--	200	--	37	18	37	--	2.4	231	0	36
	64-06-01	--	--	415	--	53	23	35	--	1.6	291	0	48
	64-06-29	--	--	175	--	57	29	72	--	2.0	314	13	89
	64-08-03	--	--	70	--	31	37	148	--	3.9	354	30	161
	64-09-01	--	--	40	--	46	38	130	--	3.1	388	22	133
	64-09-30	--	--	50	--	46	37	103	--	2.4	353	27	113
	64-11-18	--	--	60	--	29	34	104	--	2.4	304	33	90
	65-02-01	--	--	65	--	35	18	85	--	4.3	206	5	86
	69-11-03	--	--	109	--	45	34	67	--	2.4	314	7	94
	70-03-04	--	--	75	--	44	36	82	--	2.4	294	22	90
	70-04-07	--	--	103	--	49	30	67	--	4.3	325	4	83
	70-09-04	--	--	79	--	49	39	87	--	3.7	354	8	107
	71-07-14	--	--	97	--	43	33	61	--	1.8	313	0	81
	71-08-23	--	--	114	--	53	28	69	--	7.3	328	0	79
	71-10-06	--	--	71	--	55	35	75	--	3.0	364	14	88
	71-11-17	--	--	70	--	49	35	79	--	3.7	328	0	79
	71-11-18	0915	.0	50	--	--	--	--	--	--	--	--	--
	71-12-16	--	.0	32	--	--	--	--	--	--	--	--	--
	72-01-10	1500	--	66	--	--	--	--	--	--	--	--	--
	72-02-15	1415	.0	77	--	--	--	--	--	--	--	--	--
	72-03-17	0800	5.0	139	--	--	--	--	--	--	--	--	--
	72-04-06	--	--	162	--	55	26	45	--	2.4	299	12	59
	72-04-13	1610	6.0	266	--	--	--	--	--	--	--	--	--
	72-05-12	--	--	340	--	44	28	33	--	1.8	282	0	43
	72-05-17	0830	10.0	388	--	--	--	--	--	--	--	--	--
	72-06-14	--	18.0	179	--	--	--	--	--	--	--	--	--
	72-06-28	--	--	133	--	46	30	56	--	2.4	325	0	66
	72-07-17	--	22.0	81	--	--	--	--	--	--	--	--	--
	72-07-26	--	--	78	--	29	32	77	--	2.4	276	20	87
	72-08-16	0820	13.0	63	--	--	--	--	--	--	--	--	--
	72-08-24	--	--	59	--	43	36	88	--	3.7	356	12	102
	72-09-11	--	13.0	79	--	--	--	--	--	--	--	--	--
	72-09-19	--	--	73	--	28	32	86	--	3.7	290	18	98
	72-10-13	--	--	--	--	52	33	70	--	3.0	374	0	80
	72-11-09	0930	2.0	80	--	--	--	--	--	--	--	--	--
	73-01-22	1410	--	56	--	--	--	--	--	--	--	--	--
	73-02-27	1155	3.0	84	--	--	--	--	--	--	--	--	--
	73-03-23	1010	4.0	87	15	52	37	130	--	2.0	405	0	120
	73-04-16	1545	9.0	191	--	--	--	--	--	--	--	--	--
	73-05-08	0920	6.0	744	--	--	--	--	--	--	--	--	--
	73-05-10	0835	8.0	905	--	--	--	--	--	--	--	--	--
	73-05-11	1145	9.0	1030	--	--	--	--	--	--	--	--	--
	73-05-14	0840	7.5	1200	--	--	--	--	--	--	--	--	--
	73-05-19	1005	10.0	1250	--	--	--	--	--	--	--	--	--
	73-05-20	--	10.0	250	18	47	24	26	--	2.0	271	0	43
	73-05-25	--	--	--	--	36	24	28	--	3.0	236	0	46
	73-06-06	1900	16.0	560	--	--	--	--	--	--	--	--	--
	73-07-11	1650	16.5	100	--	--	--	--	--	--	--	--	--
	73-07-25	0930	15.0	95	18	52	35	75	--	2.0	375	0	99
	73-08-09	--	--	--	--	46	37	99	--	4.3	405	0	102
	73-08-16	1620	21.0	70	18	48	38	94	--	2.4	389	16	110
	73-08-16	1640	21.0	57	--	--	--	--	--	--	--	--	--
	73-09-04	--	--	--	--	19	35	85	--	3.7	257	16	99
	73-09-13	0930	11.0	93	--	--	--	--	--	--	--	--	--
	73-10-25	1140	5.5	76	15	57	36	80	--	2.0	363	8	93
	73-10-25	1150	5.5	76	--	--	--	--	--	--	--	--	--
	73-11-15	1535	1.0	68	--	--	--	--	--	--	--	--	--
	74-01-09	1330	.0	69	--	--	--	--	--	--	--	--	--
	74-02-14	1600	.0	68	--	--	--	--	--	--	--	--	--
	74-03-18	1640	5.0	115	--	--	--	--	--	--	--	--	--
	74-05-01	0920	9.0	138	--	--	--	--	--	--	--	--	--
	74-05-07	1640	15.0	341	--	--	--	--	--	--	--	--	--
	74-06-03	1710	16.0	156	--	--	--	--	--	--	--	--	--
	74-06-24	1545	23.0	69	--	--	--	--	--	--	--	--	--
09288500	41-04-19	--	--	110	17	54	31	80	--	.0	342	22	92
	41-05-18	--	--	700	15	47	28	33	--	.0	295	0	50
	46-07-31	--	--	59	--	48	35	--	66	--	339	9	87
	47-03-20	1535	--	132	--	56	21	--	77	--	334	0	125
	47-05-11	1155	--	640	--	58	22	--	12	--	260	0	36
	47-06-22	1430	--	177	--	54	30	--	56	--	356	0	63
	47-09-20	1125	--	78	22	59	34	--	62	--	380	0	79
	48-06-09	1225	--	151	23	51	29	--	61	--	344	0	69

Sheet 4-4

s sites at gaging stations--Continued

ED	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	HARD-NESS (CA+MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	PH (UNITS)	AGENCY ANA-LYZING SAMPLE
L)														
--	--	--	--	--	--	--	365	--	606	--	--	--	--	BR
	--	--	--	--	--	--	436	--	732	220	0	2.4	7.9	
	--	--	--	--	--	--	287	--	453	170	0	1.2	7.7	
	--	--	--	--	--	--	319	--	533	230	0	1.0	7.9	
	--	--	--	--	--	--	439	--	736	260	0	1.9	8.3	
	--	--	--	--	--	--	610	--	951	230	0	4.2	8.7	
	--	--	--	--	--	--	606	--	975	270	0	3.4	8.4	
	--	--	--	--	--	--	520	--	863	270	0	2.7	8.4	
	--	--	--	--	--	--	482	--	788	210	0	3.1	8.7	
	--	--	--	--	--	--	407	--	691	160	0	2.9	8.7	
	--	--	--	--	--	--	429	--	674	250	0	1.8	8.3	BR
	--	--	--	--	--	--	464	--	771	260	0	2.2	8.3	BR
	--	--	--	--	--	--	422	--	681	250	0	1.8	8.3	BR
	--	--	--	--	--	--	505	--	782	280	0	2.3	8.4	BR
	--	--	--	--	--	--	408	--	656	240	0	1.7	8.0	BR
	--	--	--	--	--	--	442	--	714	250	0	1.9	7.9	BR
	--	--	--	--	--	--	485	--	770	280	0	2.0	8.5	BR
	--	--	--	--	--	--	473	--	750	270	0	2.1	8.3	BR
--	--	--	--	--	--	--	--	--	900	--	--	--	--	
--	--	--	--	--	--	--	--	--	830	--	--	--	--	
--	--	--	--	--	--	--	--	--	800	--	--	--	--	
--	--	--	--	--	--	--	--	--	650	--	--	--	--	
--	--	--	--	--	--	--	--	--	640	--	--	--	--	
	--	--	--	--	--	--	372	--	598	240	0	1.2	8.5	BR
--	--	--	--	--	--	--	--	--	530	--	--	--	--	
.9	--	--	--	--	--	--	314	--	508	230	0	.9	8.2	BR
--	--	--	--	--	--	--	--	--	485	--	--	--	--	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
	--	--	--	--	--	--	389	--	646	240	0	1.6	8.1	BR
--	--	--	--	--	--	--	--	--	660	--	--	--	--	
	--	--	--	--	--	--	392	--	673	200	0	2.3	8.4	BR
--	--	--	--	--	--	--	--	--	730	--	--	--	--	
	--	--	--	--	--	--	486	--	811	260	0	2.4	8.3	BR
--	--	--	--	--	--	--	--	--	765	--	--	--	--	
	--	--	--	--	--	--	411	--	695	200	0	2.7	8.6	BR
	--	--	--	--	--	--	458	--	759	270	0	1.9	8.1	BR
--	--	--	--	--	--	--	--	--	760	--	--	--	--	
--	--	--	--	--	--	--	--	--	650	--	--	--	--	
--	--	--	--	--	--	--	--	--	680	--	--	--	--	
	--	--	--	--	--	--	--	622	962	280	0	3.4	8.2	
--	--	--	--	--	--	--	--	--	770	--	--	--	--	
--	--	--	--	--	--	--	--	--	510	--	--	--	--	
--	--	--	--	--	--	--	--	--	500	--	--	--	--	
--	--	--	--	--	--	--	--	--	500	--	--	--	--	
--	--	--	--	--	--	--	--	--	480	--	--	--	--	
--	--	--	--	--	--	--	--	--	460	--	--	--	--	
.2	--	--	--	--	--	--	--	301	501	220	0	.8	8.1	
.7	--	--	--	--	--	--	271	--	468	190	0	.9	7.7	BR
--	--	--	--	--	--	--	--	--	590	--	--	--	--	
--	--	--	--	--	--	--	--	--	720	--	--	--	--	
	.00	--	.03	.03	.6	500	--	493	792	270	0	2.0	8.3	
	--	--	--	--	--	--	530	--	876	270	0	2.6	8.0	BR
	.13	--	.12	.12	.6	710	--	548	873	280	0	2.5	8.5	
--	--	--	--	--	--	--	--	--	800	--	--	--	--	
	--	--	--	--	--	--	442	--	704	190	0	2.6	8.5	BR
--	--	--	--	--	--	--	--	--	760	--	--	--	--	
	--	--	--	--	--	--	--	495	806	290	0	2.0	8.4	
--	--	--	--	--	--	--	--	--	810	--	--	--	--	
--	--	--	--	--	--	--	--	--	850	--	--	--	--	
--	--	--	--	--	--	--	--	--	800	--	--	--	--	
--	--	--	--	--	--	--	--	--	830	--	--	--	--	
--	--	--	--	--	--	--	--	--	750	--	--	--	--	
--	--	--	--	--	--	--	--	--	560	--	--	--	--	
--	--	--	--	--	--	--	--	--	430	--	--	--	--	
--	--	--	--	--	--	--	--	--	610	--	--	--	--	
--	--	--	--	--	--	--	--	--	770	--	--	--	--	
	--	1.2	--	--	--	500	--	500	785	263	0	2.1	8.2	SL
.1	--	3.7	--	--	--	280	--	383	560	234	0	.9	--	SL
	--	.80	--	--	--	--	--	430	722	264	0	1.8	--	
	--	1.1	--	--	--	--	--	--	671	251	0	2.1	--	
.0	--	2.9	--	--	--	--	--	--	455	235	22	--	--	
	--	.40	--	--	--	--	--	--	647	258	0	1.5	--	
	--	.90	--	--	--	--	--	--	712	287	0	1.6	--	
	--	.50	--	--	--	--	--	--	652	246	0	1.7	--	

Water Plate No. 3 --Summarized records of stream discharge at gaging stations--Continued

09288500 Strawberry River at Duchesne, Utah

LOCATION.--Lat 40°09'40", long 110°24'40", in SW¼NE¼ sec.2, T.4 S., R.5 W., Uintah meridian, on right bank 0.8 mile (1.3 km) west of Duchesne and 1.5 miles (2.4 km) upstream from mouth.

DRAINAGE AREA.--950 sq mi (2,460 km^2), approximately (includes approximately 170 sq mi or 440 km^2 tributary to Strawberry Reservoir).

PERIOD OF RECORD.--June 1908 to November 1910 (no winter records), March 1914 to September 1968. Published as "at Theodore" 1908-10.

GAGE.--Water-stage recorder. Datum of gage is 5,512.4 ft (1,680.18 m) above mean sea level, adjustment of 1927. Prior to Oct. 26, 1948, chain or staff gages near present site at various datums. Oct. 26, 1948, to Aug. 12, 1952, water-stage recorder at site 60 ft (18 m) upstream at datum 1.99 ft (0.607 m) higher. Aug. 13, 1952, to Aug. 2, 1960, at same site at datum 0.70 ft (0.213 m) higher. Since Apr. 2, 1962, auxiliary water-stage recorder on left bank.

AVERAGE DISCHARGE.--54 years (1914-68), 151 ft^3/s (4.28 m^3/s), 109,300 acre-ft/yr (135 hm^3/yr).

EXTREMES.--Maximum discharge, 3,490 ft^3/s (98.8 m^3/s) May 7, 1952 (gage height, 5.34 ft or 1.628 m, datum then in use); maximum gage height, 5.49 ft (1.673 m) Mar. 11, 1966 (backwater from ice); minimum discharge observed, 1 ft^3/s (0.028 m^3/s) for several days in July 1931.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. Several diversions above station for irrigation, including transmountain diversions to The Great Basin. Storage in Strawberry Reservoir began July 14, 1912, water diverted to reservoir from headwaters of Currant Creek through Currant Creek feeder canal since 1936. Diversions from reservoir through Strawberry tunnel to Spanish Fork drainage (see station 09282000) and from tributaries above reservoir through Hobble Creek ditch and Strawberry River and Willow Creek ditch to Provo River drainage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
1908	-	-	-	-	-	-	-	-	-	179	153	123	-
1909	135	136	100	-	-	-	451	2,080	1,950	541	365	335	-
1910	212	214	-	-	-	-	1,090	1,020	379	219	165	163	-
1911	165	142	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	437	1,020	519	241	160	118	-
1915	138	93.5	76.5	77	83	112	209	305	244	102	68.5	83.2	133
1916	86.2	103	71.7	66.0	85.0	305	463	1,110	521	239	182	102	279
1917	172	90.7	88.5	45.0	85.0	175	301	886	1,200	359	176	170	313
1918	146	135	137	70.3	95.0	132	156	248	211	132	63.5	79.9	134
1919	104	78.5	49.7	46.0	70.0	130	219	495	176	82.7	97.2	107	138
1920	91.7	83.8	63.6	75.0	80.0	98.9	146	926	584	198	248	128	228
1921	113	108	87.5	90	137	212	277	962	970	271	332	167	311
1922	133	121	126	84.4	99.3	202	227	1,790	1,280	317	261	169	402
1923	148	149	120	100	90	118	298	1,190	742	298	202	144	301
1924	142	128	104	100	110	111	189	206	80.4	55.8	44.1	44.1	109
1925	60.2	70.5	54.7	60.0	65.0	93.2	136	142	116	123	81.8	56.1	88.3
1926	79.1	72.5	65.4	60	70	100	215	268	96.7	73.5	121	38.5	105
1927	46.5	55.8	44.7	35	38.1	72.2	140	715	292	204	116	247	168
1928	111	133	93.8	70	70	150	340	1,140	339	123	89.4	53.6	227
1929	110	92.6	75.7	75	75	109	138	615	319	196	168	139	177
1930	91.6	87.2	75	70	90	74.6	206	252	121	70.9	91.0	69.7	108
1931	70.7	60.4	50	50	60	69.4	84.9	90.7	44.8	34.5	41.6	23.7	56.2
1932	36.5	49.7	60	70	80	91.4	147	503	260	87.8	97.6	56.1	129
1933	53.8	57.0	47.6	55	50	67.2	85.1	250	343	99.8	57.1	45.6	101
1934	36.5	48.4	48.1	50	52.1	46.3	35.4	16.5	7.6	11.3	18.0	8.0	31.4
1935	21.5	35.9	35	35	35	55.5	75.3	202	201	46.2	49.3	22.1	67.9
1936	32.5	41.8	48.9	55	60	64.3	232	567	248	189	124	92.3	147
1937	63.5	83.3	85	80	80	100	221	838	369	196	163	169	205
1938	95.1	94.5	94.2	70.2	102	103	304	521	242	104	69.1	136	161
1939	83.6	76.1	84.9	65	55	169	192	209	93.6	42.7	39.2	54.9	97.3
1940	56.3	61.0	69.8	60	60	81.2	101	127	47.9	27.5	20.9	97.0	67.4
1941	50.8	52.9	55.6	45	55	76.2	123	648	337	140	108	61.9	147
1942	104	123	99.3	85.0	86.4	107	344	397	210	99.8	62.4	59.6	148
1943	67.1	80.1	74.2	66.1	92.7	96.3	382	372	219	96.0	110	51.7	142
1944	77.4	77.1	74.9	60	70	99.6	166	643	360	137	70.2	65.0	159
1945	85.1	90.9	79.4	85.2	91.8	92.9	102	328	192	108	136	66.7	122
1946	71.3	72.8	60.2	60	75	103	279	279	105	71.0	67.4	52.2	108
1947	69.5	81.1	75.5	66.8	107	119	206	480	176	78.5	83.7	68.3	135
1948	68.2	74.6	69.1	65	69.4	106	124	274	118	50.6	29.5	29.2	89.9
1949	52.8	61.6	56	50	56.4	117	374	763	366	161	86.7	72.3	185
1950	102	97.2	69.7	60.0	65.9	112	340	604	373	153	88.4	88.4	180
1951	90.8	97.7	91.0	84.0	91.7	91.6	172	415	246	111	124	63.4	140
1952	84.0	81.6	78.5	80	85	97.6	565	2,155	827	305	264	200	403
1953	163	132	110	100	95	114	140	181	199	94.8	97.7	61.1	124
1954	77.4	86.1	79.7	75	84.9	93.2	148	150	77.1	61.9	55.2	82.9	89.2
1955	72.6	72.8	63.0	58	55	62.6	138	313	131	65.0	104	56.7	99.7
1956	52.0	59.6	77.0	76.4	91.4	124	198	425	179	81.1	56.7	39.2	122
1957	62.5	71.5	84.4	85.0	84.6	90.0	104	429	454	140	105	78.1	149
1958	82.7	102	104	87.9	100	103	182	740	256	89.5	60.0	77.5	166
1959	61.2	65.4	61.9	52.6	60.9	74.0	81.1	78.4	41.5	29.3	31.9	31.2	55.7
1960	52.9	51.0	44.2	44.2	45	62.6	89.6	136	49.9	19.8	12.1	21.3	52.4
1961	42.6	49.6	43.6	40.0	45.0	55.2	66.5	43.0	13.2	5.89	25.1	67.5	41.3
1962	47.2	49.7	39.0	36.1	78.9	117	454	638	253	101	54.9	54.9	161
1963	99.7	75.9	57.2	40.2	80.3	65.7	101	263	117	39.6	97.0	81.2	93.3
1964	51.9	65.9	42.4	40.2	50.0	59.7	118	426	228	85.4	58.5	45.4	106
1965	51.0	60.4	53.5	59.4	60.7	75.0	172	672	527	218	158	127	187
1966	109	114	86.1	74.1	77.7	122	261	284	129	73.6	54.5	73.7	122
1967	81.4	77.6	62.3	57.4	71.0	100	128	449	559	234	143	118	174
1968	101	92.9	78.5	83.4	90.6	114	141	506	436	159	157	103	172

Water Plate No. 3 —Summarized records of stream discharge at gaging stations—Continued

09288500 Strawbery River at Duchesne, Utah--Continued

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
1908	-	-	-	-	-	-	-	-	-	11,000	9,410	7,320	-
1909	8,300	8,090	6,150	-	-	-	26,800	128,000	116,000	33,300	22,400	19,900	-
1910	13,000	12,700	-	-	-	-	64,900	62,700	22,600	13,500	10,100	9,700	-
1911	10,100	8,450	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	26,000	62,700	3,900	14,800	9,840	7,020	-
1915	8,480	5,560	4,700	4,730	4,610	6,890	12,400	18,800	14,500	6,270	4,210	4,950	96,100
1916	5,300	6,130	4,410	4,060	4,890	18,800	27,600	68,200	31,000	14,700	11,200	6,070	202,000
1917	10,600	5,400	5,440	2,770	4,720	10,800	17,900	54,500	71,400	22,100	10,800	10,100	227,000
1918	8,980	8,030	8,420	4,320	5,280	8,120	9,280	15,200	12,600	8,120	3,900	4,750	97,000
1919	6,400	4,670	3,060	2,830	3,890	7,990	13,000	30,400	10,500	5,080	5,980	6,370	100,000
1920	5,640	4,990	3,910	4,610	4,600	6,080	8,690	56,900	34,800	12,200	15,200	7,620	165,000
1921	6,950	6,430	5,380	5,530	7,610	13,000	16,500	59,200	57,700	16,700	20,400	9,940	225,000
1922	8,180	7,200	7,750	5,190	5,510	12,400	13,500	110,000	76,200	19,500	16,000	10,100	292,000
1923	9,100	8,870	7,380	6,150	5,000	7,260	17,700	73,200	44,200	18,300	12,400	8,570	218,000
1924	8,730	7,620	6,400	6,150	6,330	6,820	11,250	12,700	4,780	3,430	2,710	2,620	79,500
1925	3,700	4,200	3,360	3,690	3,610	5,730	8,090	8,730	6,900	7,560	5,030	3,340	63,900
1926	4,860	4,310	4,020	3,690	3,890	6,150	12,800	16,500	5,750	4,520	7,440	2,290	76,200
1927	2,860	3,320	2,750	2,150	2,120	4,440	8,330	44,000	17,400	12,500	7,130	14,700	122,000
1928	6,820	7,910	5,770	4,300	4,030	9,220	20,200	70,100	20,200	7,560	5,500	3,190	165,000
1929	6,760	5,510	4,650	4,610	4,170	6,700	8,210	37,800	19,000	12,100	10,300	8,270	128,000
1930	5,630	5,190	4,610	4,300	5,000	4,590	12,300	15,500	7,200	4,360	5,600	4,150	78,400
1931	4,350	3,590	3,070	3,070	3,330	4,270	5,050	5,580	2,670	2,120	2,560	1,410	41,100
1932	2,240	2,960	3,690	4,300	4,600	5,620	8,750	30,900	15,500	5,400	6,000	3,340	92,300
1933	3,310	3,390	2,930	3,380	2,780	4,130	5,060	15,400	20,400	6,140	3,510	2,710	73,100
1934	2,250	2,880	2,960	3,070	2,890	2,840	2,100	1,010	454	696	1,110	478	22,740
1935	1,320	2,130	2,150	2,150	1,940	3,410	4,480	12,430	11,950	2,840	3,030	1,310	49,140
1936	2,000	2,490	3,010	3,380	3,450	3,950	13,800	34,850	14,740	11,630	7,600	5,490	106,400
1937	3,900	4,950	5,230	4,920	4,440	6,150	13,130	51,540	21,970	12,050	10,010	10,080	148,400
1938	5,850	5,620	5,790	4,310	5,670	6,310	18,080	32,010	14,380	6,380	4,250	8,080	116,700
1939	5,140	4,530	5,220	4,000	3,050	10,390	11,400	12,840	5,570	2,630	2,410	3,270	70,450
1940	3,460	3,630	4,290	3,690	3,450	4,990	6,010	7,790	2,850	1,690	1,290	5,770	48,910
1941	3,120	3,150	3,420	2,770	3,050	4,690	7,320	39,850	20,030	8,630	6,650	3,680	106,400
1942	6,420	7,300	6,110	5,230	4,800	6,580	20,470	24,430	12,490	6,140	3,840	3,540	107,400
1943	4,130	4,770	4,560	4,070	5,150	5,920	22,750	22,870	13,020	5,900	6,760	3,070	103,000
1944	4,760	4,590	4,600	3,690	4,030	6,120	9,880	39,520	21,450	8,400	4,320	3,870	115,200
1945	5,230	5,410	4,880	5,240	5,100	5,710	6,060	20,150	11,400	6,610	8,360	3,970	88,120
1946	4,380	4,330	3,700	3,690	4,170	6,320	16,600	17,140	6,270	4,360	4,140	3,110	78,210
1947	4,270	4,830	4,650	4,110	5,950	7,310	12,270	29,520	10,500	4,820	5,150	4,060	97,440
1948	4,190	4,440	4,250	4,000	3,990	6,510	7,400	16,830	6,990	3,110	1,810	1,740	65,260
1949	3,250	3,660	3,440	3,070	3,130	7,220	22,220	46,910	21,770	9,900	5,330	4,300	134,200
1950	6,270	5,790	4,280	3,690	3,660	6,870	20,250	37,130	22,180	9,380	5,430	5,260	130,200
1951	5,580	5,810	5,600	5,170	5,090	5,640	10,230	25,550	14,640	6,810	7,630	3,770	101,500
1952	5,160	4,860	4,830	4,920	4,890	6,000	33,640	132,500	49,180	18,730	16,210	11,900	292,800
1953	10,010	7,860	6,760	6,150	5,280	7,030	8,360	11,120	11,860	5,830	6,010	3,640	89,910
1954	4,760	5,120	4,900	4,610	4,710	5,730	8,820	9,220	4,590	3,810	3,390	4,930	64,590
1955	4,460	4,330	3,880	3,570	3,050	3,850	8,230	19,260	7,800	4,000	6,390	3,370	72,190
1956	3,200	3,550	4,740	4,700	5,260	7,610	11,780	26,150	10,670	4,990	3,490	2,330	88,470
1957	3,840	4,250	5,190	5,230	4,700	5,540	6,220	26,360	27,020	8,640	6,440	4,650	108,100
1958	5,090	6,050	6,370	5,400	5,570	6,300	10,830	45,470	15,210	5,500	3,690	4,610	120,100
1959	3,760	3,890	3,810	3,230	3,380	4,550	4,820	4,820	2,470	1,800	1,960	1,860	40,350
1960	3,250	3,040	2,720	2,720	2,590	3,850	5,330	8,360	2,970	1,220	745	1,270	38,060
1961	2,620	2,950	2,660	2,460	2,500	3,390	3,960	2,640	785	362	1,540	4,020	29,910
1962	2,900	2,960	2,400	2,220	4,380	7,190	27,010	39,220	15,070	6,220	3,380	3,270	116,200
1963	6,130	4,510	3,520	2,470	4,460	4,040	6,020	16,150	6,980	2,440	5,970	4,830	67,520
1964	3,190	3,920	2,610	2,470	2,880	3,670	7,050	26,200	13,590	5,250	3,590	2,700	77,120
1965	3,140	3,590	3,290	3,650	3,370	4,610	10,250	41,310	31,330	13,390	9,700	7,580	135,200
1966	6,670	6,770	5,290	4,550	4,320	7,530	15,530	17,450	7,680	4,530	3,350	4,390	88,070
1967	5,010	4,620	3,830	3,530	3,940	6,170	7,640	27,610	33,280	14,410	8,800	7,040	125,900
1968	6,230	5,530	4,830	5,130	5,210	7,000	8,420	31,130	25,920	9,750	9,660	6,140	124,900

Water Plate No. 4

--Chemical analyses of water from

SITE NUMBER ON PLATE 2A OR 2B	SITE	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	TEMPERATURE (DEG C)	DISCHARGE (FT³/S)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
47	INDIAN CREEK DIVERSION CANAL NR MOUTH	40 08 28	111 08 39	73-09-21	1710	16.0	20	19	61	29	16	--
48	DRAIN BELOW PLEASANT VALLEY CANAL AT STATE ROAD 216	40 08 34	110 05 32	72-04-27	--	22.0	--	--	--	--	--	--
49	ANTELOPE CREEK AT U(C-4-3)10CDD	40 08 37	110 12 34	72-03-13	--	11.0	3.0	26	200	270	450	--
50	GREY MTN CANAL AT GRAVEL PITS NR MYTON	40 08 47	110 10 48	72-05-02	0915	9.0	--	--	--	--	--	--
51	PLEASANT VALLEY WASH BELOW COUNTY ROAD	40 08 52	110 02 50	73-07-25	1400	19.0	9.0	16	130	47	580	--
				73-08-22	1550	22.0	20	14	93	46	400	--
				74-07-18	--	19.0	11	15	110	53	450	--
52	PLEASANT VALLEY WASH AT COUNTY ROAD	40 08 52	110 02 57	72-04-28	1010	11.0	E1	--	--	--	--	--
				72-08-28	1525	20.0	E10	--	110	53	470	--
53	ANTELOPE CREEK AT US HIGHWAY 40 NR MOUTH	40 09 17	110 12 23	41-07-31	--	--	--	34	127	177	256	--
				49-07-02	--	--	--	--	128	173	368	--
				61-08-31	--	--	1.0	--	137	128	381	--
				73-03-07	--	.0	3.0	--	170	210	360	--
				73-07-11	--	--	8.0	--	196	184	421	--
				73-07-23	--	--	5.0	--	134	180	423	--
				73-07-25	0800	10.0	8.0	27	180	190	420	--
				73-08-07	--	--	5.0	--	160	153	393	--
				73-08-20	--	--	8.0	--	152	143	421	--
				73-08-23	1100	15.5	6.0	23	160	150	370	--
				73-09-04	--	--	4.0	--	152	146	382	--
				74-07-18	--	12.0	10	22	240	170	360	--
54	INDIAN CREEK AT MOUTH AT DUCHESNE	40 09 26	110 24 18	41-05-18	--	--	--	35	47	52	109	--
				41-07-31	--	--	--	27	34	130	448	--
				47-05-14	1025	--	--	--	52	53	--	115
				48-06-09	1215	--	--	45	26	91	--	283
				49-07-02	--	--	--	--	35	85	228	--
				49-09-10	--	--	--	--	20	92	400	--
				57-10-21	--	--	2.3	--	34	117	374	--
				58-05-07	--	--	12	34	50	59	--	149
				58-07-28	--	--	1.0	19	56	141	--	515
				60-02-20	1300	.5	1.5	20	46	137	--	418
				60-02-20	1315	.5	1.5	28	60	126	--	380
				60-02-20	1330	.5	1.5	18	52	124	--	344
				60-02-20	1345	.5	1.5	24	52	131	--	372
				60-02-20	1410	.5	1.0	20	48	136	--	437
				61-08-31	--	--	.50	--	22	145	548	--
				73-03-27	--	6.0	--	--	--	--	--	--
				73-05-20	--	10.0	35	35	57	58	140	--
56	STRAWBERRY RIVER AT MOUTH	40 09 39	110 23 16	59-06-26	0800	18.5	--	15	39	46	--	153
				60-08-30	1400	25.0	30	27	22	41	--	96
				61-08-24	1435	21.0	--	19	42	40	--	160
				72-05-02	1900	13.0	--	--	--	--	--	--
				72-08-02	--	10.5	--	--	--	--	--	--
				72-11-15	--	10.0	--	--	--	--	--	--
				73-03-07	--	4.5	50	--	64	38	95	--
				73-03-07	1435	5.0	--	--	--	--	--	--
				73-05-20	--	9.5	160	13	59	38	83	--
				73-06-13	1200	14.0	--	--	--	--	--	--
				73-07-25	1425	18.0	105	14	51	40	100	--
				73-08-23	0910	11.5	200	14	57	35	84	--
				73-09-21	1355	15.0	160	14	59	38	85	--
				73-11-05	--	4.0	35	--	--	--	--	--
				74-02-21	1100	2.0	75	13	58	38	83	--
				74-03-25	--	--	100	--	--	--	--	--
57	DUCHESNE RIVER AT STATE ROAD 86 AT BRIDGELAND	40 09 44	110 13 57	47-03-20	--	--	--	--	58	26	--	40
				47-05-11	--	--	--	--	35	13	--	12
				47-06-22	--	--	--	--	26	12	--	19
				47-09-20	--	--	--	12	68	36	--	65
				48-06-09	--	--	--	8.3	28	12	--	19
				48-09-29	--	--	--	12	89	57	--	146
				49-04-07	--	--	--	--	--	--	--	--
				49-10-14	--	--	--	--	--	--	--	--
				50-06-04	--	--	--	--	--	--	--	11
				50-11-06	--	--	--	13	65	36	--	58
				51-09-07	--	--	--	--	--	--	--	--
				54-08-26	--	--	--	10	84	57	133	--
				73-07-25	1340	--	135	7.6	49	24	41	--
				73-08-23	0900	18.5	170	10	58	20	62	--
58	DUCHESNE RIVER BELOW STRAWBERRY RESERVOIR	40 09 47	110 23 03	73-07-25	1430	19.0	450	6.2	39	16	18	--
				73-08-23	0910	14.0	475	10	51	19	50	--
				73-09-21	1410	15.0	325	11	55	31	53	--
				74-02-21	1050	1.5	220	11	62	31	59	--
				74-03-25	--	--	200	--	--	--	--	--
				74-05-01	1700	12.0	500	10	51	28	60	--
				74-05-22	0905	8.0	1000	--	--	--	--	--
59	DUCHESNE RIVER AT GREY MTN CANAL	40 09 50	110 16 33	72-04-21	1555	12.0	--	--	--	--	--	--

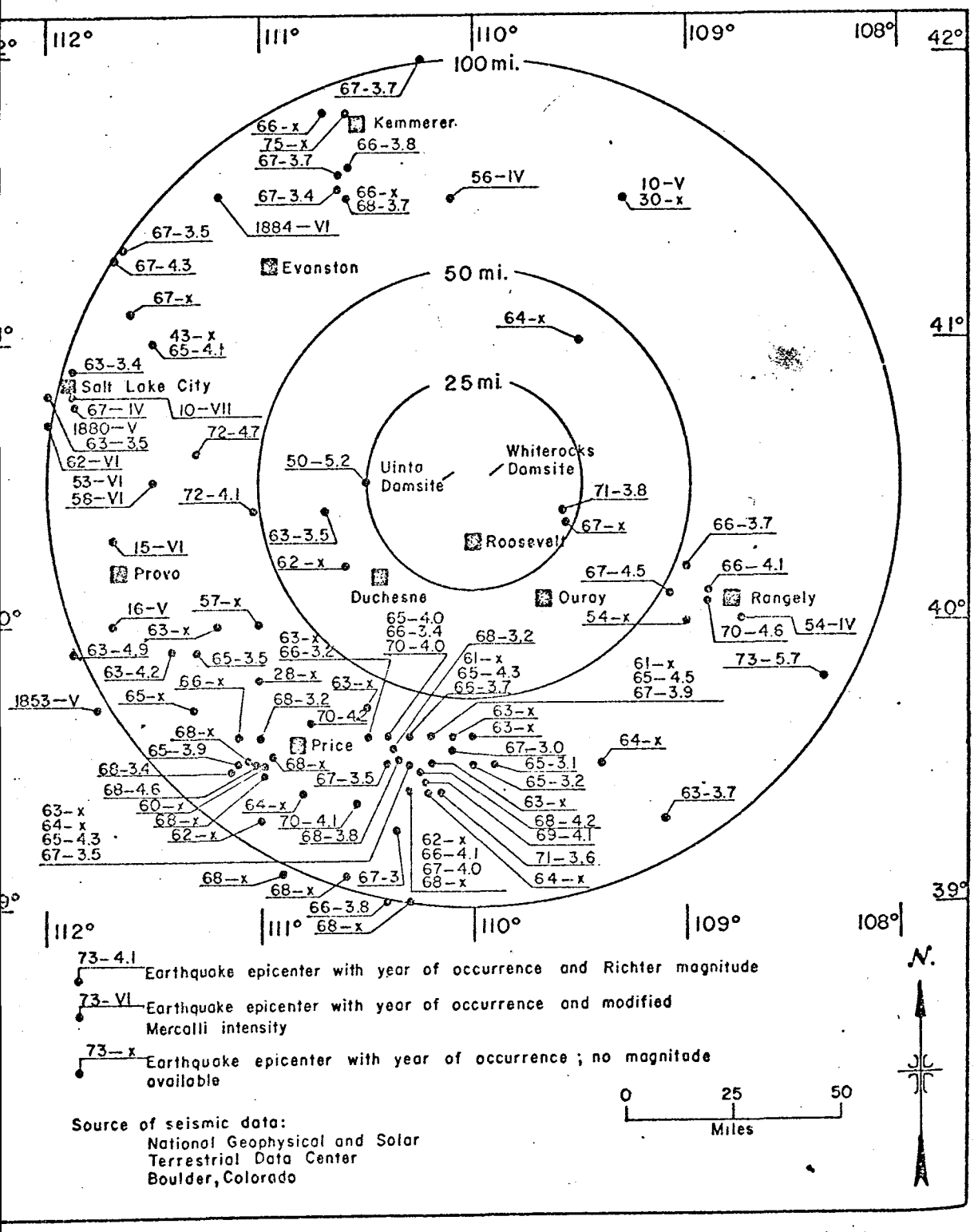


Figure 6. - Siesmic History, western Uintah Basin and surroundings

flows of
Whiterocks
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Gulch Cree
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Whiterocks
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Whiterocks
feeds the
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Canal 2 mil
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Channel are
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voir at Bott

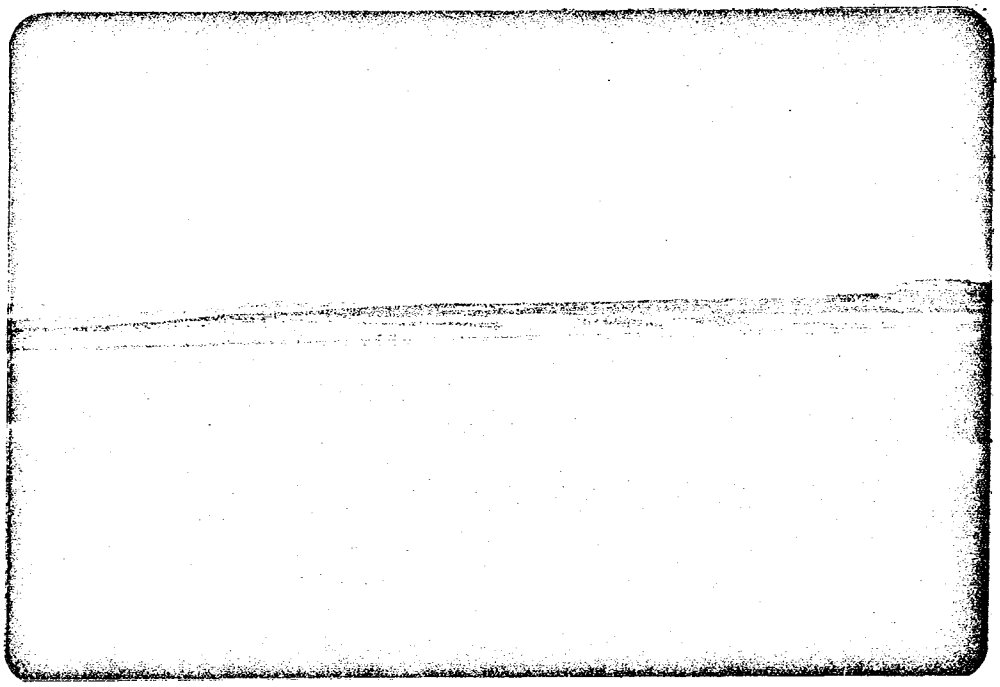
-economic Plate No. 1

Recreation and Wildlife Summary of Reservoir Use for 1977 in Upper Colorado Area of Most of Utah, U. S Bureau of Reclamation

	Arizona Utah	Utah														
	Glen Canyon (Lake Powell) Colorado River Storage Project	Causey Reservoir Weber Basin Project	Deer Creek Reservoir Provo River Project	East Canyon Reservoir Weber Basin Project	Echo Reservoir Weber River Project	Huntington No. Res. Emery County Project	Hyrum Reservoir Hyrum Project	Joes Valley Reservoir Emery County Project	Lost Creek Reservoir Weber Basin Project	Moon Lake Reservoir Moon Lake Project	Newton Reservoir Newton Project	Pineview Reservoir Weber Basin Project	Rockport Reservoir Weber Basin Project	Scofield Reservoir Scofield Project	Starvation Reservoir	Steinaker Reservoir Central Utah Project
General Information																
2. Physical features																
2a. Total area (fee & withdrawn) (acres)																
Land	1,074,180	407	3,260	277	395	128	291	1,575	723	1,963	202	710	771	366	3 520	2,608
Water	162,700	140	2,681	684	1,470	242	475	1,170	365	773	288	2,870	1,080	2,810	3,495	820
2b. Area available for recreation (acres)																
Land	1,074,080	407	3,226	267	395	111	252	1,553	693	1,963	202	470	550	312	3,310	2,283
Water	162,628	140	2,435	681	1,470	237	457	1,160	345	773	288	2,789	1,030	2,804	3,445	795
2c. Flowage easement land (acres)	0	10	47	0	0	0	0	0	0	0	0	0	0	1,178	269	0
2d. Shoreline length (miles)	1,960	5	39	10	13	3	5	7	9	8	10	25	10	17	23	8
2e. MCP elevation	3,700	5,690	5,147	5,705	5,560	5,838	4,672	6,990	5,998	8,137	4,774	4,900	6,037	7,617	5,712	5,517.8
3. Management Practices																
3a. Recreation O&M (man-years)	95.6	0.4	5.5	4.5	3.0	2.0	3.5	1.4	1.0	1.2	0.1	21.0	4.0	1.5	3.0	2.0
3b. Fees			3/	3/			3/						3/	3/	3/	3/
(1) Parking-amount	0	0	3/	0	4/	0	3/	0	0	0	0	0	3/	3/	3/	3/
(2) Camping-amount	1/	0	3/	3/	5/	0	3/	1/	0	1/	0	1/	3/	3/	3/	3/
(3) Picnicking-amount	0	0	3/	3/	6/	0	3/	0	0	0	0	0	3/	3/	3/	3/
(4) Boat launching-amount	0	0	3/	3/	7/	0	3/	0	0	0	0	7/	3/	3/	3/	3/
(5) Cabin-site rental-amount	0	0	0	0	0	0	0	0	0	0	0	0	10/	0	0	0
(6) Other-amount	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreation Facilities Inventory																
4. Access roads (No.)	7	1	4	3	2	2	2	3	1	1	2	6	2	1	6	1
5. Interior roads (miles)	148	1	3	8	2	1	1	8	4	2	1	2	6	1	30	2
6. Parking (car spaces)	3,300	35	450	200	50	60	180	460	40	101	50	1,045	600	140	126	100
7. Campgrounds (No.)	7	0	1	1	2	1	0	2	1	1	1	2	3	1	1	1
7a. Tent spaces (No.in campground)	577	0	24	30	50	30	0	78	0	63	30	243	80	40	74	22
7b. Trailer spaces(No.in campground)	2/	0	2/	2/	2/	2/	0	2/	0	2/	2/	2/	2/	2/	2/	2/
8. Picnic areas (No.)	3	1	3	2	1	2	2	1	0	0	1	1	3	1	2	1
9. Picnic tables (No.)	76	10	24	30	14	15	15	54	10	56	6	157	140	8	83	70
10. Picnic shelters (No.)	17	0	0	11	1	4	0	0	0	0	1	1	7	0	0	2
11. Toilets (No.)	126	6	50	18	10	8	5	24	4	19	2	92	35	4	23	12
12. Drinking water outlets (No.)	21	0	22	7	11	1	24	20	0	11	1	38	15	1	18	15
13. Swimming beaches (No.)	2	0	0	1	0	1	2	0	0	0	0	1	0	0	1	1
14. Boat launching ramps (No.)	7	0	1	1	2	1	1	1	1	0	1	2	1	1	1	1
15. Boat docks (capacity)	395	0	44	8	16	8	6	10	0	0	4	130	40	6	12	6
16. Cabin sites (No.)																
16a. Total	0	0	7	0	0	0	0	0	0	0	0	0	6	36	0	0
16b. Cabins built	0	0	7	0	0	0	0	0	0	0	0	0	6	36	0	0
16c. Cabins leased	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17. Organized camps																
17a. Total No.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
17b. Kind and capacity	0	0	0	0	0	0	0	0	0	0	0	2/ 150	0	0	0	0
18. Concessions																
18a. Total No.	5	0	3	1	1	0	0	1	0	1	0	1	1	1	0	0
18b. Lodging capacity	720	0	50	0	0	0	0	0	0	76	0	0	40	0	0	0
18c. Rental boats (No.)	250	0	70	6	0	0	0	10	0	10	0	0	10	10	0	0
18d. Cafes (No.)	3	0	3	1	1	0	0	1	0	1	0	1	1	0	0	0
18e. Other (No.)	0	0	0	0	0	0	0	0	0	8/ 1	0	0	0	0	0	0
Visitation																
19. Sightseeing	383,336	8,916	30,468	14,365	4,617	23,561	31,378	28,500	3,130	36,000	840	22,000	20,708	4,329	10,086	2,566
20. Picnicking	19,866	2,100	201	10,653	6,926	20,600	24,312	8,400	1,070	15,000	340	45,600	20,507	1,906	3,370	24,326
21. Camping	1,039,369	1,050	80,104	24,993	9,237	2,950	10,207	20,000	5,620	15,000	175	30,200	99,609	13,306	30,262	6,047
22. Swimming	43,070	230	11,117	2,554	2,431	9,600	18,601	25	250	3,000	398	90,200	8,000	1,250	905	3,609
23. Waterskiing	169,644	0	37,698	4,602	4,873	11,100	28,513	25	100	600	815	23,850	30,284	1,975	2,250	4,167
24. Boating	217,039	2,250	117,116	29,684	19,493	12,300	14,620	9,200	3,524	6,400	583	48,450	47,995	21,030	26,722	8,926
25. Fishing	245,440	7,385	147,555	59,109	150	10,100	13,151	66,000	3,469	13,800	320	56,420	67,750	24,206	37,064	12,399
26. Hunting	1,732	380	1,771	2,065	0	1,700	265	4,600	2,669	250	166	1,800	3,858	1,900	304	307
27. Other	7,327	0	260	420	2	100	23,148	1,200	251	1,500	218	8,300	4,093	517	1,368	2,023
28. Total visitation	2,127,419	22,311	426,290	141,645	47,729	92,011	164,195	137,950	20,083	91,550	3,860	326,800	293,804	70,319	106,151	64,370
29. Peak day (No. of visitors)	27,077	480	6,556	11,380	3,252	1,554	4,883	17,000	498	2,000	142	15,000	6,956	1,600	2,435	1,549
30. Cars in area (total No.)	591,163	3,594	65,820	36,326	11,626	28,839	44,630	26,000	6,294	9,200	715	120,000	52,052	17,405	17,932	16,247
31. Distribution of visitation (%)																
31a. Local	7	90	95	95	95	90	95	60	97	60	80	85	95	95	93	76
31b. Other	93	10	5	5	5	10	5	40	3	40	20	15	5	5	7	24
Watercraft Use																
32. Boat days (total)	217,639	1,183	29,952	7,507	5,400	4,501	12,881	4,600	1,554	1,100	580	12,278	11,350	9,403	5,445	3,253
32a. Powerboats	215,463	230	25,645	6,663	4,750	4,043	7,827	4,500	1,317	500	520	9,828	9,400	8,488	5,102	2,978
32b. Rowboats & Sailboats	2,176	953	4,307	844	650	458	5,054	100	237	600	60	2,400	1,920	915	343	275
33. Peak day use (No. of boats) total	3,416	100	887	530	300	65	361	85	36	45	40	585	642	997	281	154
33a. Powerboats	3,384	20	793	463	250	50	304	75	30	20	30	525	604	918	199	137
33b. Rowboats & Sailboats	32	80	94	67	50	15	57	10	6	25	10	60	38	79	82	17
Fish and Wildlife																
34. Fish - sport catch	750,000	10,000	140,000	70,150	250	8,000	10,900	90,000	12,600	12,000	700	45,000	19,600	200,000	14,200	5,963
35. Ducks--a. Total use days (No.)	375,000	10,000	170,000	75,000	115,000	30,000	70,000	325,000	40,000	40,000	50,000	40,000	75,000	170,000	75,000	150,000
b. Season take	110	60	650	150	0	100	300	60	120	0	75	300	800	150	200	225
36. Geese--a. Total use days (No.)	65,000	2,000	5,000	5,000	1,200	3,000	10,000	2,000	10,000	4,000	2,000	18,000	10,000	5,000	10,000	2,500
b. Season take	10	0	50	15	0	5	50	0	10	0	15	20	15	15	15	20
37. Public hunting grounds (acres)	1,236,488	547	5,941	948	0	348	709	2,713	1,038	2,736	490	3,580	1,580	3,116	6,696	3,078
38. Refuge areas (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value of Public Use Facilities & O&M Costs																
39. USBR--a. Total value	2,030,043	94,800	92,656	99,230	0	78,500	100,000	0	36,188	0	0	864,353	463,332	72,197	518,102	289,640
b. Value added this year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c. O&M Costs this year	500	100	200	270	100	100	400	100	100	200	100	300	200	200	200	200
40. Administering agency--a. Total Value	10,473,942	30,000	1,000,824	197,988	0	3,537	223,020	343,601	678	142,160	31,000	67,500	255,645	103,720	1,138,266	62,364
b. Value added this year	463,500	0	74,715	14,401	0	0	1,445	0	0	0	0	40,000	0	14,043	25,876	3,000
c. O&M Costs this year	1,988,700	2,000	55,203	39,725	0	17,327	44,858	20,000	14,048	12,600	1,200	60,000	62,299	22,624	49,737	26,021
41. Concessions--a. Total value	6,040,099	0	18,000	4,173	106,900	0	0	17,500	0	100,000	0	53,500	152,788	3,800	0	0
b. Value added this year	270,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c. O&M Costs this year	2,730,000	0	8,000	5,845	22,000	0	0	5,000	0	4,500	0	3,000	2,389	0	0	0
42. Organized camps--a. Total value	0	0	0	0	0	0	0	0	0	0	0	73,500	0	0	0	0
b. Value added this year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c. O&M costs this year	0	0	0	0	0	0	0	0	0	0	0	2,000	0	0	0	0
43. Private cabins--a. Total value	0	0	0	0	0	0	0	0	0	0	0	0	0	30,000	0	0
b. Total added this year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

erts
$2.00 per day.
sites are suitable for either tents or trailers, being used for both, but do not have sewage, r electric hookups.
$10.00 per year is charged by the State of Utah of facilities at State-administered recreation a daily charge is made for camping and launching of the annual fee.
$1.50 per day.
$3.00 per day.
ng $1.50 per day.
nching $2.00 per boat.
or hire.
ub.

10/ Cabin rental $12.00 per night.
11/ Parking $1.00 per day.
12/ Camping $2.00 per week-end.
13/ Boat launching $4.00 per year.
14/ Cabinsite rental $30.00 per year.
15/ Trailer site rental $20.00 per year.
16/ Enlarged Strawberry Reservoir is presently separated into two bodies of water by the old Strawberry Dam. After the old dam is inundated making one reservoir, reports will be combined.
17/ Acreage is that part of enlargement east of Strawberry Dam that would be available to recreation users.
18/ Water available for boating at elevation 7476.
19/ Present elevation at 7476.
20/ Inca concession - capacity 24.
21/ Camping $3.00 per day.
22/ A Colorado pass costing $5.00 per year or $1.00 per day is required for entrance into and use of State-operated recreation areas.
23/ Blue Mesa Reservoir.
24/ Morrow Point Reservoir.
25/ General Merchandise Store.
26/ Cabinsite $225 per year.
27/ Wharf permits-private $15.00 per year. Commercial $3.00 minimum $.60 per square foot of surface area.
28/ Boat permits - private - none. Commercial - less than 14 feet $10.00 per year - over 14 feet $15.00 per year - Skiing - $30.00 per year - Sailboat $10.00 per year.
29/ Camping $2.00 per day - New Mexico portion.



Reservoir user's view west (bearing 260°) of locality of proposed oil and gas test 1-21C5 (Utex Oil Company). Site is 1.5 miles from viewing point V_6 (see fig. 1) on shore of the Starvation Reservoir.

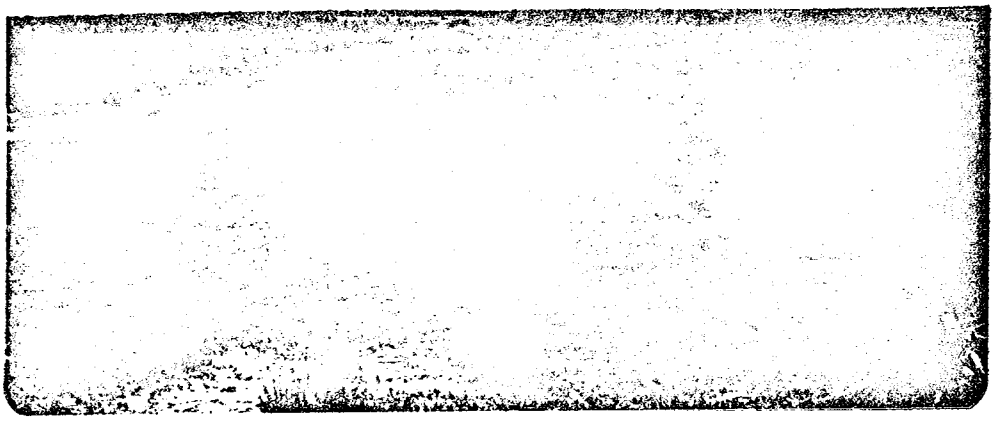
Photo Plate No. 1

View north from proposed oil and gas test 1-21C5 (Utex Oil Company). Only big sagebrush community would be set back by construction of the drilling-production facility.

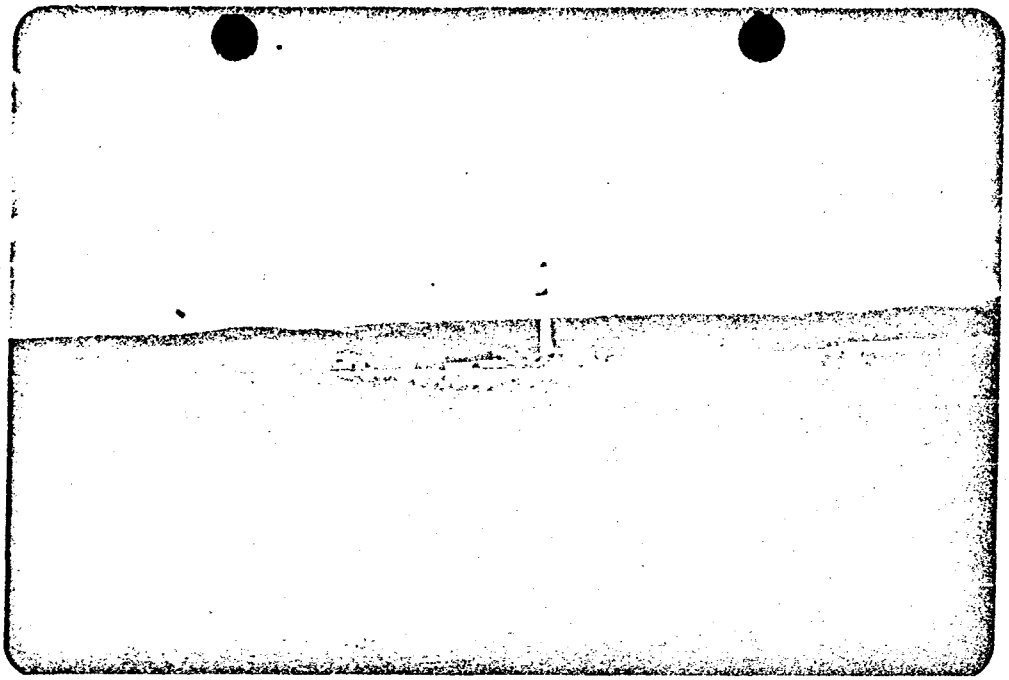
View east from proposed oil and gas test 1-21C5. The west shore of Starvation Reservoir (background) is 0.6 miles from the camera.

Photo Plate No. 2

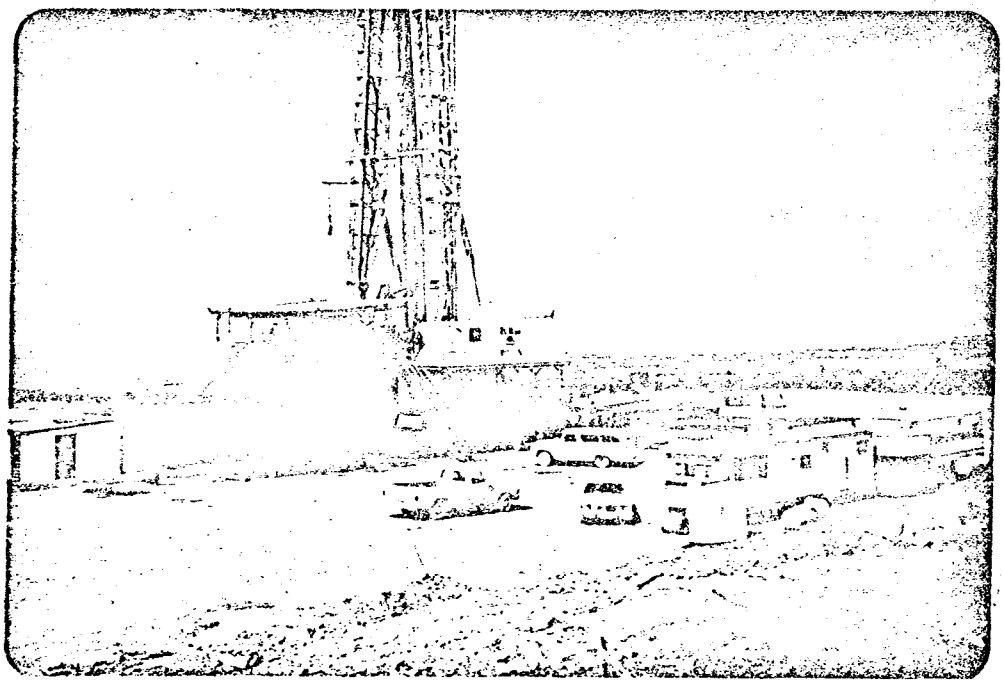
View south from proposed oil and gas test 1-21C5 (Utex Oil Company). Soil is clayey sand loam developed in situ from the bed rock. Depth to bed rock is uncertain but it is possible that construction of the drilling pad and reserve pits would not reach bed rock.



View west from proposed oil and gas test 1-21C5. Big sagebrush clearly is the dominant cover -- grasses and forbs being rare and diminutive in comparison. Lightly used truck trail on the left is access road shown in figure 1



View south of representative oil and gas test rotary drilling rig located in Juniper-Pinyon vegetative zone, 0.25 mile from the viewing point. Locality is southwest of the area represented in figure 1 of this report, in T.4S., R.6W., USB&M, Duchesne County, Utah.



View northeast of oil and gas test rotary drilling rig operation on well site Ute 1-23B2 (Gulf Oil) located in NE NE Sec.23, T.4S., R.6W., USB&M, Duchesne County, Utah

Sheet 2-2

scellaneous sites on streams--Continued

IS-LVED D-IS-IUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (REST-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	PH (UNITS)	AGENCY ANA-LYZING SAMPLE
1.0	278	0	56	3.2	.02	--	.12	.4	50	--	323	520	270	44	.4	8.0	GS
--	--	--	--	--	--	--	--	--	--	--	--	2000	--	--	--	--	GS
1	573	0	2000	97	1.6	--	.06	2.4	7800	--	3350	4170	1600	1100	4.9	7.9	GS
--	--	--	--	--	--	--	--	--	--	--	--	510	--	--	--	--	GS
1.9	395	0	1300	140	2.6	--	.09	.5	1100	--	2440	3090	600	280	10	8.3	GS
4.2	393	0	850	82	.81	--	.09	.7	990	--	1690	2280	420	99	6.5	8.1	GS
3.3	421	0	950	110	1.1	--	.18	.6	1100	--	1910	2710	500	150	8.8	8.0	GS
--	--	--	--	--	--	--	--	--	--	--	--	4000	--	--	--	--	GS
2.2	426	0	980	100	--	--	--	--	--	--	--	2800	490	140	9.2	8.3	GS
9.4	378	18	1140	62	--	2.5	--	--	4200	--	2260	2590	1050	705	3.4	8.3	SL
20	275	34	1420	70	--	.80	--	--	5600	--	2350	3150	1030	738	5.0	--	SU
5.9	494	9	1150	65	--	--	--	--	5320	2340	--	2800	870	450	5.6	8.2	
7.9	562	0	1500	66	1.1	--	.06	--	--	--	2610	3080	1300	830	4.4	7.8	GS
7.8	522	0	1580	81	--	--	--	--	--	3100	--	3460	1200	820	5.2	8.1	
7.8	400	0	1530	76	--	--	--	--	--	2880	--	3270	1100	750	5.6	8.1	
4.8	568	0	1500	72	1.3	--	.09	2.4	6600	--	2690	3170	1200	770	5.2	7.8	GS
7.4	484	0	1340	66	--	--	--	--	--	2610	--	3050	1000	630	5.3	8.0	
5.6	478	0	1460	75	--	--	--	--	--	2810	--	3200	1100	660	5.6	8.1	
7.3	428	0	1400	62	--	--	--	--	--	--	2380	2940	1000	670	5.1	7.9	GS
7.4	494	0	1300	72	--	--	--	--	--	2560	--	3020	980	580	5.3	8.0	
15	470	0	1600	80	1.6	--	.12	1.8	5200	--	2740	3350	1300	920	4.3	7.3	GS
4.7	442	12	160	12	--	4.3	--	--	1800	684	651	1000	332	0	2.6	8.2	SL
9.8	660	61	835	55	--	.60	--	--	8600	1960	1930	2670	618	0	7.8	8.3	SL
--	494	0	166	12	--	3.1	--	--	--	--	644	1010	348	0	2.7	--	GS
--	548	35	484	30	--	.20	--	--	--	--	1260	1770	439	0	5.9	--	GS
15	480	67	449	24	--	.20	--	--	4600	--	1140	1770	437	0	4.7	--	SU
22	578	56	744	45	--	.20	--	--	9400	--	1670	2400	428	0	8.4	--	SU
9.3	712	34	648	40	--	1.4	--	--	--	--	1610	2300	564	0	6.8	8.4	GS
--	526	0	226	14	--	2.6	--	--	2700	806	--	1180	365	0	3.4	8.1	GS
--	815	38	981	62	--	.30	--	--	9100	2250	--	2960	720	0	8.3	8.5	GS
--	862	26	743	44	--	2.2	--	--	7600	--	--	2580	678	0	7.0	8.4	GS
--	824	51	653	36	--	2.1	--	--	6200	--	--	2400	658	0	6.4	8.6	GS
--	804	20	621	33	--	1.4	--	--	6600	--	--	2250	638	0	5.9	8.4	GS
--	844	35	651	36	--	1.3	--	--	6800	--	--	2380	670	0	6.3	8.5	GS
--	814	43	789	46	--	2.6	--	--	7600	--	--	2630	678	0	7.3	8.3	GS
11	789	58	979	69	--	--	--	--	10000	2260	--	3084	650	0	9.3	8.4	
--	--	--	--	--	--	--	--	--	--	--	--	1600	--	--	--	--	GS
7.1	506	0	210	16	--	--	--	--	--	--	773	1170	380	0	3.1	8.1	GS
--	484	0	161	38	--	1.5	--	--	--	--	--	993	286	0	3.9	8.2	GS
--	450	30	164	42	--	.90	--	--	--	--	--	1120	224	0	5.7	8.6	GS
--	506	0	143	38	--	1.2	--	--	--	--	--	1080	270	0	4.2	8.1	GS
--	--	--	--	--	--	--	--	--	--	--	--	800	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	840	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	635	--	--	--	--	GS
2.6	318	7	220	28	.08	--	.03	--	--	--	425	940	320	44	2.3	8.4	GS
--	--	--	--	--	--	--	--	--	--	--	--	960	--	--	--	--	GS
2.8	324	0	160	25	--	--	--	--	--	--	541	847	300	38	2.1	8.1	GS
--	--	--	--	--	--	--	--	--	--	--	--	1360	--	--	--	--	GS
3.0	321	0	200	24	.04	--	.06	.6	950	--	592	919	290	29	2.5	8.3	GS
2.8	265	6	180	23	.26	--	.03	.5	590	--	535	869	290	59	2.2	8.4	GS
2.8	290	11	180	23	.18	--	.12	.5	620	--	558	880	300	48	2.1	8.4	GS
--	--	--	--	--	--	--	--	--	--	--	--	500	--	--	--	--	GS
2.9	320	5	180	25	.06	--	.06	.5	580	--	564	876	300	30	2.1	8.4	GS
--	--	--	--	--	--	--	--	--	--	--	--	790	--	--	--	--	GS
--	249	0	105	16	--	2.4	--	--	--	--	370	618	252	48	1.1	--	GS
--	140	0	44	4.0	--	1.3	--	--	--	--	178	307	141	26	--	--	GS
--	121	0	45	6.0	--	.50	--	--	--	--	168	289	114	16	--	--	GS
--	296	0	181	20	--	.60	--	--	--	--	528	803	318	75	1.6	--	GS
--	132	0	44	4.0	--	.60	--	--	--	--	181	291	120	12	--	--	GS
--	294	9	440	39	--	.10	--	--	--	--	940	1340	456	195	3.0	--	GS
--	293	0	--	33	--	--	--	--	--	--	--	752	--	--	--	--	GS
--	287	0	--	15	--	--	--	--	--	--	--	744	--	--	--	--	GS
--	166	0	30	3.0	--	--	--	--	--	--	--	335	147	11	--	--	GS
--	308	0	151	18	--	.40	--	--	--	--	493	756	310	58	1.4	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	689	--	--	--	--	GS
--	337	0	389	35	--	.00	--	--	--	--	874	1320	444	168	2.7	8.1	GS
1.7	186	11	120	11	.00	--	.03	.3	310	--	358	574	220	50	1.2	8.6	GS
2.6	238	0	140	16	.03	--	.03	.4	350	--	427	711	230	32	1.8	8.2	GS
1.3	172	0	58	5.9	.01	--	.00	.3	160	--	230	385	160	22	.6	8.0	GS
2.2	215	0	130	14	.13	--	.03	.3	330	--	383	646	210	29	1.5	8.3	GS
2.3	247	0	130	16	.08	--	.06	.4	330	--	421	680	270	62	1.4	8.3	GS
2.2	285	0	130	19	.12	--	.06	.4	350	--	456	726	280	49	1.5	8.3	GS
--	--	--	--	--	--	--	--	--	--	--	--	650	--	--	--	--	GS
2.1	251	8	120	18	.00	--	.03	.3	310	--	422	679	240	23	1.7	8.4	GS
--	--	--	--	--	--	--	--	--	190	265	--	424	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	605	--	--	--	--	GS

Sheet 1-2

Water Plate No. 5 --Chemical analyses of water from

SITE NUMBER ON PLATE 2A OR 2B	SITE	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	TEMPERATURE (DEG C)	DISCHARGE (FT³/S)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED SODIUM PLUS POTASSIUM (MG/L)
66	DUCHESNE RIVER ABOVE DUCHESNE FEEDER CANAL--CONT.	40 10 16	110 18 11	68-05-15	--	--	1000	--	52	27	36	--
				68-06-20	--	--	3500	--	27	8.7	8.7	--
				68-10-03	--	--	800	--	59	26	40	--
				69-02-19	--	--	200	--	64	30	46	--
				69-04-08	--	--	450	--	57	25	44	--
				69-08-07	--	--	80	--	54	31	47	--
				69-10-14	--	--	450	--	62	34	58	--
				69-11-05	--	--	80	--	61	27	30	--
				70-03-04	--	--	15	--	85	87	200	--
				70-04-09	--	--	100	--	59	29	35	--
				70-05-08	--	--	300	--	53	25	44	--
				70-09-03	--	--	300	--	55	33	53	--
				70-11-16	--	--	--	--	65	27	27	--
				71-04-29	--	--	300	--	57	26	39	--
				71-07-14	--	--	100	--	42	18	23	--
				71-08-23	--	--	--	--	64	29	47	--
				71-10-07	--	--	--	--	70	33	51	--
				71-11-17	--	--	--	--	63	28	39	--
				72-04-06	--	--	--	--	56	24	25	--
				72-05-12	--	--	600	--	48	20	30	--
				72-06-28	--	--	--	--	35	13	18	--
				72-07-26	--	--	--	--	52	21	31	--
				72-09-19	--	--	--	--	63	34	61	--
				72-10-13	--	--	--	--	61	28	40	--
				73-05-24	--	--	--	--	32	13	25	--
				73-07-11	--	--	800	--	46	22	36	--
				73-07-23	--	--	700	--	47	21	33	--
				73-09-06	--	--	--	--	49	26	46	--
67	MYTON TOWNSITE CANAL BELOW GREY MTN CANAL	40 10 19	110 02 50	73-06-07	--	--	90	--	45	23	51	--
				73-07-11	--	--	87	--	80	54	116	--
				73-07-25	--	--	30	--	58	33	61	--
				73-08-07	--	--	42	--	65	57	133	--
				73-08-20	--	--	75	--	64	38	83	--
				73-08-22	--	24.0	45	13	90	53	110	--
				73-09-04	--	--	--	--	75	49	107	--
				73-09-19	--	--	36	--	63	47	105	--
68	STRAWBERRY RIVER BELOW STARVATION RESERVOIR	40 10 25	110 25 44	69-11-03	--	--	--	--	50	36	81	--
				70-03-04	--	--	1.0	--	83	83	289	--
				70-04-07	--	--	3.0	--	69	49	137	--
				70-09-04	--	--	50	--	63	32	48	--
				71-07-14	--	--	50	--	58	31	64	--
				71-08-23	--	--	--	--	70	33	73	--
				71-10-06	--	--	--	--	79	36	74	--
				71-11-17	--	--	--	--	59	34	69	--
				72-04-06	--	--	--	--	70	44	109	--
				72-05-12	--	--	100	--	59	33	74	--
				72-06-28	--	--	--	--	43	29	63	--
				72-07-26	--	--	--	--	54	34	77	--
				72-09-19	--	--	--	--	43	36	79	--
				72-10-13	--	--	--	--	69	37	80	--
				73-05-25	--	--	--	--	44	33	77	--
				73-07-25	1410	17.0	75	12	50	33	67	--
				73-08-09	--	--	--	--	57	33	76	--
				73-08-23	0945	10.5	190	13	55	33	68	--
				73-09-04	--	--	--	--	50	33	73	--
				73-09-21	1435	13.0	145	14	58	34	70	--
				74-02-21	1015	2.0	70	13	61	34	81	--
				74-03-25	--	--	95	--	--	--	--	--
				74-05-01	1730	8.0	350	12	51	34	71	--
				74-05-22	0940	10.0	350	--	--	--	--	--
69	DRAIN RETURN TO GREY MTN CANAL NR MYTON	40 10 28	110 03 58	72-05-03	1705	15.5	E1	--	--	--	--	--
70	GREY MTN CANAL AT MOUTH	40 10 29	110 03 28	73-08-22	1430	20.0	8.0	15	100	46	120	--
71	GREY MTN CANAL AT COUNTY ROAD	40 10 32	110 03 58	72-05-03	1700	22.5	E.5	--	--	--	--	--
				72-05-04	1030	11.0	E5	--	--	--	--	--
				72-10-06	1015	11.5	--	--	--	--	--	--
				73-04-12	1600	12.0	E.5	--	--	--	--	--
72	BRYANTS FORK AT BRYANTS FORK GUARD STATION	40 10 32	111 11 18	73-09-21	1700	14.5	2.0	6.3	52	29	3.2	--
73	DUCHESNE FEEDER CANAL AT DIVERSION NR BRIDGELAND	40 10 33	110 17 55	73-08-23	--	14.0	90	11	52	19	51	--
74	DRAIN RETURN TO GREY MTN CANAL NR MYTON	40 10 41	110 04 06	72-05-04	1005	13.0	--	--	--	--	--	--
75	MYTON TOWNSITE CANAL NR SAND PASS	40 10 42	109 58 05	73-09-05	--	--	--	--	91	55	145	--
76	LAKE BOREHAM OUTFLOW NR MYTON	40 10 43	110 09 55	73-07-25	1350	18.0	35	8.1	62	26	94	--
				73-08-23	0805	20.5	45	9.7	78	30	110	--
				74-07-18	1120	17.0	53	9.2	59	26	74	--
77	DRAIN INTO GREY MTN CANAL AT STATE ROAD 53 NR MYTON	40 10 45	110 05 56	73-07-11	--	--	2.0	--	114	45	130	--
				73-07-25	--	--	4.05	--	188	72	244	--
				73-08-07	--	--	1.0	--	142	58	179	--
				73-08-20	--	--	4.0	--	146	61	186	--
				73-09-04	--	--	1.0	--	123	55	162	--
78	ROCKY POINT CANAL AT STATE ROAD 87 AT DUCHESNE	40 10 46	110 23 56	72-04-02	1720	9.5	--	--	--	--	--	--
				72-05-31	--	10.0	--	--	--	--	--	--

Sheet 2-2

cellaneous sites on streams--Continued

SOLVED SUM (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED ORTHO PHOSPHATE (PO4) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180° C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	PH (UNITS)	AGENCY ANALYZING SAMPLE
1.2	247	0	87	11	--	--	--	--	--	322	--	512	240	38	.9	8.2	
2	108	0	30	2.5	--	--	--	--	--	144	--	226	100	15	.4	7.9	
2.0	253	6	103	13	--	--	--	--	--	375	--	583	250	36	1.1	8.3	
1.6	242	20	123	17	--	--	--	--	--	419	--	644	280	51	1.2	8.4	
1.6	265	0	97	17	--	--	--	--	--	378	--	576	250	28	1.2	8.1	
2.4	272	2	116	13	--	--	--	--	--	401	--	633	260	36	1.3	8.3	
2.4	326	0	121	21	--	--	--	--	--	481	--	739	300	27	1.5	8.0	
1.6	245	0	111	9.6	--	--	--	--	--	378	--	576	260	62	.8	8.2	
3.5	371	0	617	44	--	--	--	--	--	1280	--	1660	570	270	3.7	8.1	
2.4	215	5	138	12	--	--	--	--	--	400	--	587	270	82	.9	8.3	
2.4	243	0	110	16	--	--	--	--	80	374	--	587	240	36	1.2	8.2	
2.4	242	0	161	17	--	--	--	--	--	451	--	664	270	75	1.4	8.2	
1.6	222	6	122	12	--	--	--	--	--	391	--	586	270	81	.7	8.3	
1.6	205	6	122	14	--	--	--	--	--	380	--	594	250	72	1.1	8.4	
1.2	170	0	76	9.2	--	--	--	--	--	262	--	430	180	40	.6	8.2	
2.0	234	8	143	12	--	--	--	--	--	441	--	674	280	73	1.2	8.3	
2.0	256	7	163	18	--	--	--	--	--	491	--	734	310	90	1.3	8.3	
2.4	217	13	125	16	--	--	--	--	--	406	--	624	270	73	1.0	8.3	
1.6	195	7	100	11	--	--	--	--	0	345	--	522	240	67	.7	8.3	
2.4	190	0	88	11	--	--	--	--	--	313	--	479	200	46	.9	8.0	
1.2	144	0	54	6.0	--	--	--	--	--	203	--	345	140	23	.7	7.9	
1.6	221	0	93	12	--	--	--	--	--	326	--	533	220	35	.9	8.2	
2.7	270	0	183	20	--	--	--	--	--	504	--	780	300	76	1.5	8.2	
2.0	253	0	128	14	--	--	--	--	--	414	--	603	270	60	1.1	8.1	
1.6	143	0	56	8.5	--	--	--	--	--	220	--	365	130	16	.9	7.7	
2.0	206	0	96	11	--	--	--	--	--	340	--	540	210	36	1.1	7.9	
2.0	201	0	92	11	--	--	--	--	--	328	--	519	200	39	1.0	8.0	
2.4	217	4	136	15	--	--	--	--	--	420	--	628	230	44	1.3	8.3	
1.6	190	0	142	15	--	--	--	--	--	384	--	616	210	51	1.6	8.1	
3.1	232	10	413	27	--	--	--	--	--	884	--	1220	420	220	2.4	8.3	
2.4	188	18	202	18	--	--	--	--	--	518	--	772	280	46	1.6	8.5	
3.1	190	16	451	29	--	--	--	--	--	930	--	1270	400	210	2.9	8.3	
[illegible]	258	0	259	23	--	--	--	--	--	639	--	928	320	110	2.0	8.2	
4.9	294	0	420	25	.25	--	.06	.7	1000	--	866	1220	440	200	2.3	8.1	GS
3.1	276	0	359	28	--	--	--	--	--	828	--	1140	390	160	2.4	8.0	
3.1	251	0	323	27	--	--	--	--	--	728	--	1040	350	150	2.4	8.2	
1.6	337	6	120	26	--	--	--	--	--	488	--	769	270	0	2.2	8.3	
2.7	434	0	540	61	--	--	--	--	--	1250	--	1660	550	190	3.9	8.2	
2.7	376	0	297	40	--	--	--	--	470	789	--	1160	370	66	3.1	8.2	
2.4	270	9	193	21	--	--	--	--	--	507	--	747	290	52	1.8	8.4	
1.6	261	0	166	21	--	--	--	--	--	483	--	737	270	58	1.7	8.1	
4.7	253	18	195	25	--	--	--	--	--	560	--	854	310	73	1.8	8.3	
2.4	296	0	215	23	--	--	--	--	--	604	--	892	350	100	1.8	3.2	
3.1	265	0	179	26	--	--	--	--	--	512	--	780	290	70	1.8	8.2	
2.7	308	0	278	35	--	--	--	--	400	710	--	1040	360	100	2.5	8.2	
2.4	273	0	180	26	--	--	--	--	--	522	--	791	280	59	1.9	8.1	
2.4	231	0	144	21	--	--	--	--	--	420	--	681	230	37	1.8	8.2	
2.0	268	0	186	28	--	--	--	--	--	533	--	803	280	55	2.0	8.2	
2.7	193	13	206	24	--	--	--	--	--	516	--	767	260	76	2.2	8.4	
2.7	301	0	210	28	--	--	--	--	--	593	--	912	330	78	1.9	8.1	
2.4	267	0	163	27	--	--	--	--	--	482	--	771	250	27	2.7	8.2	
2.2	272	8	150	22	.03	--	.03	.5	360	--	479	755	260	24	1.8	8.4	GS
2.7	302	0	165	26	--	--	--	--	--	503	--	808	280	30	2.0	8.1	
2.3	250	0	160	22	.22	--	.06	.5	320	--	478	788	270	68	1.8	8.3	GS
2.7	257	9	154	21	--	--	--	--	--	488	--	757	260	35	2.0	8.4	
2.5	301	0	160	22	.20	--	.12	.5	340	--	511	810	280	38	1.8	8.3	GS
2.7	314	3	160	24	.08	--	.09	.3	400	--	535	836	290	30	2.1	8.4	GS
--	--	--	--	--	--	--	--	--	--	--	--	755	--	--	--	--	GS
2.6	289	6	140	22	.01	--	.06	.4	380	--	482	771	270	20	1.9	8.4	GS
--	--	--	--	--	--	--	--	--	380	460	--	760	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	3400	--	--	--	--	GS
5.2	319	0	400	30	--	--	--	--	--	--	873	1290	440	180	2.5	7.9	GS
--	--	--	--	--	--	--	--	--	--	--	--	2200	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	950	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	820	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	2600	--	--	--	--	GS
1.4	268	0	8.3	2.5	.12	--	.03	.2	20	--	236	430	250	29	.1	8.2	GS
2.4	216	0	130	15	--	--	--	--	--	--	387	662	210	31	1.5	8.3	GS
--	--	--	--	--	--	--	--	--	--	--	--	3100	--	--	--	--	GS
3.9	259	0	509	34	--	--	--	--	--	1050	--	1400	450	240	3.0	8.2	
2.2	218	0	260	18	.00	--	.06	.4	360	--	579	882	260	83	2.5	8.1	GS
3.2	203	0	350	30	.13	--	.00	.5	430	--	712	1040	320	150	2.7	8.0	GS
2.2	234	0	190	17	.04	--	.00	.3	350	--	494	782	260	63	2.0	8.1	GS
2.7	304	0	451	35	--	--	--	--	--	1000	--	1340	470	220	2.5	8.1	
1.6	340	0	869	61	--	--	--	--	--	1820	--	2230	770	490	3.8	8.0	
3.1	360	0	605	51	--	--	--	--	--	1310	--	1710	590	300	3.2	8.0	
2.4	348	17	648	56	--	--	--	--	--	1410	--	1800	470	300	3.3	8.3	
4.7	317	0	542	56	--	--	--	--	--	1200	--	1610	530	270	3.1	7.9	
--	--	--	--	--	--	--	--	--	--	--	--	345	--	--	--	--	GS
--	--	--	--	--	--	--	--	--	--	--	--	135	--	--	--	--	GS

Table 2.--Records of

LOCATION	OWNER	YEAR CON-STRUCTED	WELL DEPTH (FT)	CASING DEPTH (FT)	CASING DIAM-ETER (IN)	WELL FINISH	MAJOR AQUIFER	WATER-BEARING MATERIAL	LENGTH OF WELL OPEN TO AQUIFER (FT)
U(C- 3- 2)29BAD 1	D SHELTON	1946	100 3	--	4	--	124UINT	V	--
U(C- 3- 2)29CBB 1	WANLESS SHIELDS	1947	119 3	68	5	X	DO	S	51
U(C- 3- 2)30AAD 1	MARION ROSS	1946	115 6	67	6	--	DO	--	--
U(C- 3- 2)30CDD 1	HERBERT MURPHY	1960	72 6	72	--	--	DO	--	--
U(C- 3- 2)31BAC 1	FRANK MURPHY	1960	48 3	48	6	O	112OTSH	R	--
U(C- 3- 2)31DCD 1	E B MURPHY	1958	80 3	80	6	O	124UINT	V	--
U(C- 3- 2)33DDA 1	L HARDINGER	1952	90 3	80	5	P	DO	F	--
U(C- 3- 3) 4BBA 1	N G BALDWIN	1973	300 3	120	4	F	DO	V	50
U(C- 3- 3) 4DAA 1	E G MULLINS	1970	200 3	100	4	F	DO	--	100
U(C- 3- 3) 8BDC 1	HALE HOLGATE	1943	175 3	--	6	--	DO	V	69
U(C- 3- 3) 8CDD 1	H T RICHINS	1932	240 6	100	2	--	DO	--	--
U(C- 3- 3)10CAB 1	RAY GILL	1941	52 3	52	6	O	112OTSH	5R	--
U(C- 3- 3)10CAB 2	M W BLEAZARD	1951	142 3	136	5	P	124UINT	V	6
U(C- 3- 3)12BCD 1	L O SERKIST	1959	64 3	36	6	X	DO	V	28
U(C- 3- 3)13ADB 1	FAIRBANKS LVSTK	1946	90 3	35	7	X	DO	V	55
U(C- 3- 3)14DCC 1	A B EVANS	1951	75 3	--	5	--	DO	V	--
U(C- 3- 3)15BBC 1	ERVIN JOHNSON	1966	270 3	46	6	X	DO	V	224
U(C- 3- 3)17DAD 1	FRANK HORRICKS	1933	202 6	60	6	X	DO	--	--
U(C- 3- 3)21DAA 1	J F ROSS	1943	86 3	--	--	--	DO	V	--
U(C- 3- 3)24DAA 1	E M KELLER	1947	50 3	30	6	P	112OTSH	R	13
U(C- 3- 3)25DCC 1	EVANS	1971	60 6	--	--	--	DO	--	--
U(C- 3- 3)27AAA 1	J C ROSS	1943	256 3	--	4	--	124UINT	V	--
U(C- 3- 3)28BBC 1	I W JOHNSON	1946	400 3	60	3	X	DO	F	340
U(C- 3- 3)31CDC 1	J BLEAZARD	1957	36 3	35	6	O	112OTSH	R	--
U(C- 3- 3)34DCC 1	VARLEN JOHNSON	1963	254 3	26	6	X	124UINT	V	228
U(C- 3- 3)35CBC 1	D K CLAYBURN	1962	100 3	38	6	X	DO	V	62
U(C- 3- 4) 1CDB 1	GRANT HANSEN	1963	615 3	59	8	X	DO	V	556
U(C- 3- 4) 7ACA 1	GULF OIL CORP	1972	460 3	400	7	P	DO	V	60
U(C- 3- 4) 7CAD 1	KNIGHT INV CO	1927	402 3	177	6	X	DO	V	225
U(C- 3- 4) 7CAD 2	KNIGHT INV CO	1922	209 3	--	6	--	DO	V	--
U(C- 3- 4)21AAA 1	KNIGHT INV CO	1927	261 3	--	4	P	DO	V	--
U(C- 3- 4)22BAB 1	DUCHESNE COUNTY	--	175 6	175	2	--	DO	--	--
U(C- 3- 4)26CDC 1	LLOYD REMUND	1957	60 3	58	6	O	112OTSH	5R	--
U(C- 3- 4)27DDA 1	EMIL MUNZ	1945	97 3	63	6	P	124UINT	V	6
U(C- 3- 4)30BCD 1	DUCHESNE CITY	1949	350 3	320	5	P	DO	S	--
U(C- 3- 4)30CCB 1	DUCHESNE CITY	1973	500 3	220	5	P	DO	V	180
U(C- 3- 4)31CAB 1	KERMIT POULSON	1946	70 3	41	6	P	112OTSH	5R	29
U(C- 3- 4)31CCB 1	HAROLD SPENCER	1945	70 3	44	6	P	DO	R	26
U(C- 3- 4)31DAD 1	G K STRATTON	1970	30 3	20	6	P	DO	R	10
U(C- 3- 4)32ABD 1	W J MERKLEY	1945	65 3	62	8	X	DO	G	3
U(C- 3- 4)32BDA 1	ELMER MOON	1944	59 3	50	6	P	112OTSH	S	9
U(C- 3- 4)32CBC 1	PHILLIP MOON	--	40 6	--	--	--	DO	5R	--
U(C- 3- 4)33ACA 1	E C WIMMER	1947	50 3	38	6	P	DO	5R	11
U(C- 3- 4)33ADB 1	MAXINE BURDICK	1949	51 3	41	4	P	DO	R	10
U(C- 3- 4)33BAD 1	D THOMAS	1947	43 3	30	6	P	DO	5R	10
U(C- 3- 4)33BBC 1	JOHN RAYBURN	1951	43 3	36	4	P	DO	R	7
U(C- 3- 4)34ACA 1	HARVEY GEE	1951	50 3	42	5	P	DO	R	8
U(C- 3- 4)34BAC 1	GEORGE MARETT	1946	53 3	41	6	P	DO	S	9
U(C- 3- 4)34BCB 1	G GOURDIN	1949	32 3	22	4	P	DO	R	10
U(C- 3- 4)34BDA 1	HARVEY GEE	1952	40 3	32	4	P	DO	R	8
U(C- 3- 4)35ADC 1	J A SWASEY	1969	16 3	16	6	O	DO	G	--
U(C- 3- 4)35DAB 1	T B ABOTT	1971	58 3	48	6	P	DO	R	10
U(C- 3- 4)36CAD 1	L R SWASEY	1945	41 3	36	6	P	DO	R	5
3- 4)36CBA 1	G L SWASEY	1969	48 3	48	6	O	DO	R	--
3- 4)36DDB 1	E O BENCH	1947	48 3	40	6	P	DO	R	8
SE¼NE¼ Sec. 7, T.3S., R.5W.									
3- 5) 5AAC 1	GULF OIL CORP	1973	700 3	400	6	P	124UINT	V	200
-- 3- 5) 7ACA 1	UTE TRIBE-GULF	1972	500 3	400	9	P	DO	V	100
U(C- 3- 5)13BBB 2	M R WHITE	1948	50 3	40	6	P	112OTSH	5R	10
U(C- 3- 5)13CAC 1	DUCHESNE CITY	1970	35 3	35	22	O	DO	5R	--
U(C- 3- 5)13CAC 2	DUCHESNE CITY	1972	37 3	37	12	O	DO	5R	--
U(C- 3- 5)13CAC 3	DUCHESNE CITY	1972	35 3	35	20	O	DO	R	--
U(C- 3- 5)13CAC 4	DUCHESNE CITY	1973	35 3	35	12	O	DO	5R	--
U(C- 3- 5)13CAC 5	DUCHESNE CITY	1973	43 3	43	12	O	DO	5R	--
U(C- 3- 5)13CCC 1	DUCHESNE CITY	1957	47 3	47	8	O	DO	5R	--
U(C- 3- 5)14DDD 1	DUCHESNE CITY	1957	45 3	42	12	O	DO	5R	--
U(C- 3- 5)14DDD 2	DUCHESNE CITY	1959	49 3	49	12	O	DO	5R	--
U(C- 3- 5)24ACC 1	VERNAL BROMLEY	1947	100 3	46	6	P	DO	S	10
U(C- 3- 5)24BBB 1	DUCHESNE CITY	1962	40 3	38	12	X	DO	5R	2
U(C- 3- 5)25BCB 1	C P CHILD	1959	14 3	14	6	O	DO	5R	--
U(C- 3- 5)25BCB 1D	WRIGHT RANCH CO	1970	29 3	29	6	O	DO	5R	--
U(C- 3- 5)25BCC 1	C P CHILD	1959	29 3	29	6	O	DO	5R	--
- 5)25CCC 1	D E BASTIAN	1966	57 3	57	8	O	DO	5R	--
- 5)25DBA 1	LYN MILLER	1972	310 3	245	6	F	124UINT	V	65
- 5)25DCA 1	BRINKERHOFF CO	1972	300 3	240	6	F	DO	V	47
¼SW¼SE¼ Sec. 31, T.3S., R.5W.									
-- - 5)31DCD 1	D T JONES	1969	200 3	42	6	X	DO	F	158
U(C- 3- 5)36BBD 1	J W ROZZELLE	1947	50 3	50	6	O	112OTSH	5R	--
U(C- 3- 5)36DCC 1	J A CLEMENT	--	16 1	--	12	W	DO	--	--
U(C- 3- 5)36DDC 1	D W BAUM	1954	144 3	15	6	P	DO	5R	26
U(C- 3- 6)25CDA 1	C D LINSCHOTEN	1973	130 3	100	5	F	124UINT	V	--
U(C- 3- 7) 9ADC 1	MOBIL OIL CORP	1971	500 3	--	5	--	DO	V	--

Water Plate No. 6 - Well Records

Sheet 1-2

selected water wells—Continued

ALTI-TUDE-OF LSD (FT)	WATER LEVEL (FT)	DATE WATER LEVEL MEASURED	USE OF WATER	TYPE LIFT	YIELD (GAL/MIN)	DRAW DOWN (FT)	TEM-PER-ATURE (°C)	CHEMICAL ANALYSIS AVAILABLE	LOG AVAIL-ABLE	WATER LEVEL RECORD AVAIL-ABLE
5183 3	20 D	12-46	H	--	5	55 3	--	--	DR	--
5210 5	32 D	4-47	H	--	4	-- 3	--	--	D	--
5183 3	--	--	H	--	7	-- 6	--	--	--	--
5225 3	13 G	--	H	C	--	--	15.5	K	--	--
5213 3	20 D	5-60	H	C	12	10 3	15.0	K	DR	--
5192 3	30 D	12-58	S	--	10	10 3	--	--	D	--
5260 4	26 D	11-52	H	--	4	59 3	--	--	D	--
5600 5	60 D	9-73	H	--	6	--	--	--	D	--
5468 4	+5 D	5-70	H	--	15	80 3	--	C	D	--
5463 4	+20 D	5-43	I	--	20	-- 3	12.0	P	DR	--
5423 3	+13 I	10-36	H	N	0.3	-- 1	11.5	--	--	W
5368 4	8 D	3-41	U	--	100	8 3	--	P	D	--
5368 4	+30 D	10-51	H	--	25	-- 3	--	C	DR	--
5261 4	+14 D	12-59	S	--	7	-- 3	--	--	DR	--
5184 4	5 D	12-46	S	--	2	-- 3	--	--	D	--
5270 3	10 D	10-51	H	--	25	50 3	--	P	D	--
5351 4	F D	9-66	H	--	3	-- 3	--	--	DR	--
5371 4	12 A	10-36	U	--	--	--	--	--	--	W
5311 3	--	--	U	N	--	--	--	--	DR	--
5215 3	8 D	1-47	H	--	5	10 3	--	--	DR	--
5263 3	--	--	H	C	--	--	13.5	K	--	--
5267 3	+10 D	4-43	S	--	50	-- 3	--	--	D	--
5348 3	--	--	U	--	3	-- 3	--	--	DR	--
5343 3	3 A	4-72	U	N	10	8 3	12.0	C	D	--
5330 4	--	--	H	--	3	-- 3	--	--	DR	--
5292 5	65 G	--	H	--	1	45 3	--	--	D	--
5611 2	F D	10-63	S	N	15	-- 3	10.0	C	DR	--
5960 4	30 D	4-72	N	--	60	320 3	--	--	D	--
5935 4	125 A	10-36	U	P	3	-- 6	--	--	DR	W
5934 4	123 A	10-38	U	P	3	-- 6	--	--	D	W
5923 4	91 A	10-36	U	--	--	--	--	--	DR	W
5945 3	165 A	3-71	U	--	--	--	--	--	--	W
5478 3	17 D	3-57	U	--	10	8 3	--	--	DR	--
5500 4	31 D	5-45	S	P	2	-- 3	--	--	DR	--
5812 3	225 D	1-49	U	N	11	125 3	--	--	DR	--
5755 4	--	--	P	--	4	382 3	--	--	D	--
5640 3	38 D	12-46	H	C	20	6 3	8.0	K	DR	--
5645 3	30 D	6-45	H	C	7	18 3	10.0	K	D	--
5458 3	8 D	5-70	H	J	12	4 3	10.0	K	D	--
5469 3	27 G	1-45	U	--	40	1 3	--	--	DR	--
5476 3	28 D	11-44	U	--	25	1 3	--	--	DR	--
5458 4	--	--	H	--	--	--	--	P	--	--
5431 3	18 D	2-47	S	J	35	1 3	11.0	K	D	--
5430 3	20 D	1-49	H	J	20	2 3	--	K	D	--
5438 3	19 D	2-47	H	J	35	1 3	10.0	K	D	--
5462 3	20 D	10-51	H	J	10	3 3	--	K	D	--
5432 3	23 A	4-72	S	J	20	1 3	11.0	K	D	--
5440 3	31 D	5-46	H	J	24	1 3	12.5	K	DR	--
5412 3	6 D	2-49	U	N	20	14 3	--	--	D	--
5424 3	10 D	7-52	H	J	20	1 3	12.5	K	D	--
5383 3	--	--	H	J	5	--	10.0	K	D	--
5382 3	11 D	5-71	H	--	12	14 3	10.0	C	DR	--
5380 3	15 G	4-72	H	J	20	1 3	10.0	K	DR	--
5386 3	29 A	4-72	H	J	10	33 3	9.5	K	D	--
5365 4	18 D	2-47	H	--	30	1 3	13.5	P	DR	--
6125 4	240 D	10-73	N	--	60	--	--	--	D	--
5890 4	16 D	2-72	N	S	35	384 3	13.5	C	DR	--
5712 4	30 D	2-48	H	--	20	1 3	--	--	DR	--
5660 4	1 D	6-70	P	T	--	--	--	C	DR	--
5660 3	8 D	6-72	P	--	177	-- 3	--	--	D	--
5660 4	8 D	5-72	P	--	143	20 3	--	--	D	--
5660 3	11 D	5-73	P	--	130	6 3	--	--	D	--
5660 3	12 D	6-73	P	--	135	3 3	--	--	D	--
5653 3	7 D	4-57	U	N	50	31 3	--	--	D	--
5661 3	3 D	10-57	P	T	200	35 3	--	--	D	--
5665 2	10 D	7-59	P	--	125	25 3	--	--	DR	--
5665 4	35 D	4-47	H	--	20	1 3	--	--	DR	--
5651 3	2 D	9-62	P	T	120	30 3	--	--	D	--
5589 3	5 D	6-59	N	--	10	5 3	--	--	D	--
5589 3	11 D	4-70	H	--	10	12 3	--	--	D	--
5586	7 D	4-59	--	--	10	8 3	--	--	D	--
5575 3	5 D	6-66	H	--	20	35 3	--	--	DR	--
5765 4	--	--	H	--	10	-- 3	--	--	D	--
5746 4	74 A	3-73	H	S	8	-- 3	--	H	DR	--
5790 3	24 D	7-69	H	S	9	169 3	10.0	C	DR	--
5564 4	7 D	3-47	U	--	35	7 3	--	--	DR	--
5536 4	5 A	10-36	U	N	--	--	--	--	--	W
5648 3	19 D	12-54	U	N	< 0.4	125 3	--	--	DR	--
5750 4	+3 D	12-73	H	--	5	63 3	--	--	D	--
6924 5	--	--	U	N	2	-- 3	--	--	DR	--

Sheet 2-2

Table 10.—Chemical analyses of water from selected

LOCATION	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	TOTAL DEPTH OF WELL (FT)	DEPTH TO TOP OF SAMPLE INTER-VAL (FT)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL (FT)	TEMPER-ATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM PLUS POTAS-SIUM (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
(C- 2-11)33CCC-S1	73-09-13	1335	124UINT	--	--	--	7.0	7.2	10	45	17	2.3	--	.7
(C- 2-12)27CCA-S1	73-09-13	1000	1120TSH	--	--	--	7.5	9.4	30	50	2.9	2.6	--	.9
(C- 2-12)35DBB-S1	58-07-09	--	124UINT	750	--	--	8.5	--	<500	--	--	--	--	--
(C- 3- 1)33CBC- 1	72-05-09	--	1120TSH	20	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 2) 3AAD- 1	34-12-18	--	124UINT	430	--	--	13.0	--	--	--	--	--	--	--
(C- 3- 2) 3ADA- 1	55-04-11	--	124UINT	38	--	38	--	5.9	--	419	45	--	--	--
	55-09-14	--	124UINT	38	--	38	--	6.6	--	434	50	--	2610	--
(C- 3- 2) 3DDD-S1	53-05-22	--	124UINT	--	--	--	--	12	160	68	16	--	52	--
	72-03-16	--	124UINT	--	--	--	11.5	--	--	--	--	--	--	--
	72-04-27	1750	124UINT	--	--	--	11.5	--	--	--	--	--	--	--
	72-05-31	1330	124UINT	--	--	--	12.0	--	--	--	--	--	--	--
	72-06-15	1315	124UINT	--	--	--	11.5	--	--	--	--	--	--	--
	72-08-02	--	124UINT	--	--	--	12.0	--	--	--	--	--	--	--
	72-10-06	1000	124UINT	--	--	--	12.0	--	--	--	--	--	--	--
	72-11-14	--	124UINT	--	--	--	12.0	--	--	150	30	110	--	2.5
	73-06-13	1445	124UINT	--	--	--	12.5	--	--	--	--	--	--	--
(C- 3- 2)28CAA- 1	58-07-09	--	1120TSH	32	--	--	10.5	14	--	134	65	--	162	--
(C- 3- 2)30CDD- 1	72-05-11	--	124UINT	72	--	--	15.5	--	--	--	--	--	--	--
(C- 3- 2)31BAC- 1	72-05-09	--	1120TSH	48	--	--	15.0	--	--	--	--	--	--	--
(C- 3- 3) 4AAD-S1	58-07-05	--	1120TSH	--	--	--	--	9.5	--	80	38	--	69	--
	67-05-16	--	1120TSH	--	--	--	--	8.0	0	280	92	390	--	3.0
(C- 3- 3) 4DAA- 1	73-07-27	1045	124UINT	200	--	--	--	8.6	90	1.6	.4	320	--	.9
(C- 3- 3) 8BDC- 1	58-07-05	--	124UINT	175	--	175	12.0	7.6	--	2.4	1.0	--	326	--
(C- 3- 3)10CAB- 1	44-09-15	--	1120TSH	52	--	--	--	12	--	166	45	183	--	20
(C- 3- 3)10CAB- 2	67-05-16	--	124UINT	142	--	--	--	5.0	20	4.0	2.0	285	--	2.0
(C- 3- 3)14DCC- 1	51-07-31	--	124UINT	75	--	75	--	--	--	512	86	2500	--	16
(C- 3- 3)25DCC- 1	72-05-09	--	1120TSH	60	--	--	13.5	--	--	--	--	--	--	--
(C- 3- 3)31CCA-S1	73-03-30	1500	124UINT	--	--	--	11.5	15	20	270	87	560	--	3.5
(C- 3- 3)31CDC- 1	73-07-11	1300	1120TSH	36	--	--	12.0	8.6	50	12	65	750	--	45
(C- 3- 4) 1CDB- 1	71-11-18	--	124UINT	615	--	615	10.0	8.4	20	1.6	.4	260	--	.7
(C- 3- 4)31CAB- 1	72-04-06	--	1120TSH	70	--	--	8.0	--	--	--	--	--	--	--
(C- 3- 4)31CCB- 1	72-04-06	--	1120TSH	70	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 4)31DAD- 1	72-04-06	--	1120TSH	30	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 4)31DBD-S1	72-04-20	--	124UINT	--	--	--	12.5	--	--	--	--	--	--	--
(C- 3- 4)32CBC- 1	60-05-15	--	1120TSH	40	--	--	--	15	--	124	72	--	78	--
(C- 3- 4)33ACA- 1	72-04-06	--	1120TSH	50	--	--	11.0	--	--	--	--	--	--	--
(C- 3- 4)33ADB- 1	72-04-06	--	1120TSH	51	--	--	--	--	--	--	--	--	--	--
(C- 3- 4)33BAD- 1	72-04-06	--	1120TSH	43	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 4)33BBC- 1	72-04-06	--	1120TSH	43	--	--	--	--	--	--	--	--	--	--
(C- 3- 4)34ACA- 1	72-04-07	--	1120TSH	50	--	--	11.0	--	--	--	--	--	--	--
(C- 3- 4)34BAC- 1	72-04-06	--	1120TSH	53	--	--	12.5	--	--	--	--	--	--	--
(C- 3- 4)34BDA- 1	72-04-06	--	1120TSH	40	--	--	12.5	--	--	--	--	--	--	--
(C- 3- 4)35ADC- 1	72-04-06	--	1120TSH	16	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 4)35DAB- 1	71-11-18	--	1120TSH	58	--	58	10.0	17	2800	340	170	660	--	2.4
(C- 3- 4)36CAD- 1	72-04-03	--	1120TSH	41	--	--	10.0	--	--	--	--	--	--	--
(C- 3- 4)36CBA- 1	72-04-21	--	1120TSH	48	--	--	9.5	--	--	--	--	--	--	--
(C- 3- 4)36DDB- 1	58-07-05	--	1120TSH	48	40	48	13.5	--	1000	--	--	--	--	--
	72-04-20	--	1120TSH	48	--	--	14.0	--	--	--	--	--	--	--
(C- 3- 5) 7ACA- 1	72-03-29	--	124UINT	500	--	500	13.5	9.3	40	1.4	1.0	230	--	.7
(C- 3- 5)13CAC- 1	70-09-21	--	1120TSH	35	--	35	--	10	--	85	27	23	--	3.0
(C- 3- 5)25BDD- 1	53-05-08	--	124GRRV	5257	5123	5257	--	--	--	--	<1.0	--	1710	--
(C- 3- 5)25DCA- 1	72-09-07	--	124UINT	300	--	--	--	7.0	0	6.0	.0	830	--	2.0
	73-03-27	1315	124UINT	300	--	--	--	8.0	50	1.3	1.5	820	--	1.5
(C- 3- 5)28DAD-S1	70-05-28	--	124UINT	--	--	--	--	11	60	96	74	190	--	5.0
(C- 3- 5)31A -S	60-05-15	--	111ALVM	--	--	--	14.0	15	--	78	92	--	302	--
(C- 3- 5)31DCD- 1	72-03-30	--	124UINT	200	--	200	10.0	18	20	4.6	6.4	450	--	1.4
(C- 3- 5)35AD -S	62-10-16	--	124UINT	50	--	--	--	--	--	140	64	69	--	4.9
(C- 3- 5)36BDA- 1	53-09-01	--	124GRRV	4800	4520	4560	--	--	--	2.0	4.0	--	7490	--
	53-10-01	--	124GRRV	4800	4686	4705	--	--	--	--	5.0	--	3630	--
(C- 3- 6) 8BBA- 1	68-09-16	--	124GRRV	6379	5238	5300	--	--	0	16	3.0	9600	--	70
(C- 3- 6)18BBD- 1	65-09-30	--	124GRRV	6000	4647	4662	--	--	--	67	10	10900	--	20
	65-10-01	--	124GRRV	6000	4647	4662	--	--	0	73	17	10100	--	30
	65-11-01	--	124GRRV	6000	4647	4715	--	--	0	7.0	2.0	10200	--	21
	65-11-19	--	124GRRV	6000	4647	4715	--	--	0	8.0	2.0	10700	--	25
	66-01-07	--	124GRRV	6000	4647	4715	--	--	0	9.0	2.0	9550	--	25
(C- 3- 6)18BDD- 1	66-03-28	--	124UINT	5507	1380	1510	--	--	0	30	6.0	430	--	17
	66-03-29	--	124GRRV	5507	1483	3050	--	--	0	9.0	3.0	663	--	5.0
	66-04-13	--	124GRRV	5507	4180	4255	--	--	0	4.0	1.0	12090	--	55
(C- 3- 6)20ACB- 1	69-09-03	--	124GRRV	8211	2001	2043	--	--	--	7.0	3.0	962	--	12
	69-10-22	--	124GRRV	8211	6822	6841	--	--	--	14	1.0	2150	--	39
	70-02-23	--	124WSTC	8211	7794	8211	--	--	--	1150	31	4190	--	146
(C- 3- 7) 1CBC- 1	61-12-26	--	124GRRV	9251	4810	4845	--	--	--	11	2.0	--	10980	--
	61-12-26	0200	124GRRV	9251	5133	5163	--	--	--	9.0	7.0	--	13160	--
	61-12-26	0300	124GRRV	9251	5442	5452	--	--	--	3.0	3.0	--	5740	--
	61-12-26	0400	124GRRV	9251	5542	5552	--	--	--	12	5.0	--	10080	--
	62-02-08	--	124GRRV	9251	4075	4089	--	--	--	4.0	1.0	--	886	--
	62-02-08	1130	124GRRV	9251	8524	8570	--	--	--	10	5.0	--	2450	--
	62-02-08	1230	124GRRV	9251	8737	8759	--	--	--	11	3.0	--	2360	--
- 3- 7)19DBA- 1	68-11-01	--	124UINT	--	--	--	--	23	0	128	59	85	--	2.0
- 3- 7)19DBA- 2	73-09-20	0900	124UINT	90	--	--	--	24	40	160	150	150	--	3.6

Water Plate No. 7 - Water Well Quality

Sheet 1-2

wells, springs, and petroleum-test wells--Continued

E	CAR-BONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	SODIUM AD-SORP-TION RATIO	PH (UNITS)	AGENCY ANA-LYZING SAMPLE
2	0	12	2.7	.1	--	.82	--	.09	30	--	195	180	8	348	.1	7.7	
4	0	2.4	2.1	.0	--	.32	--	.06	20	--	158	140	0	277	.1	7.6	
5	--	--	25	--	--	--	--	--	--	--	--	205	--	<400	--	7.5	
	--	--	--	--	--	--	--	--	--	--	--	--	--	2200	--	--	
	--	--	4710	--	--	--	--	--	--	14390	--	--	--	--	--	--	
9	0	1370	3910	1.2	.00	--	--	--	--	8510	--	1230	1030	--	--	6.8	DH
8	0	1290	3830	1.0	.00	--	--	--	--	8530	--	1290	1060	--	E32	7.3	DH
8	2	165	4.0	1.2	.24	--	--	--	--	435	--	235	62	--	E1.5	8.2	DH
6	--	300	17	--	--	--	--	--	--	--	--	--	--	1030	--	7.3	
	--	--	--	--	--	--	--	--	--	--	--	--	--	780	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	840	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1300	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	780	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1130	--	--	
9	0	410	13	--	--	--	--	--	--	--	888	500	210	1280	2.1	7.1	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1210	--	--	
6	0	427	38	--	.80	--	--	--	--	1140	1110	602	146	1590	E2.9	7.4	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1950	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	--	--	
6	0	262	16	--	1.0	--	--	--	--	616	602	356	146	887	E1.6	7.6	
4	1	1500	60	.6	1.8	--	1.8	--	1000	2716	2540	1080	736	3215	5.2	--	DH
7	31	64	4.7	2.8	--	.06	--	.43	2200	--	786	6	0	1250	59	8.6	
6	35	48	5.0	--	1.0	--	--	--	--	768	788	10	0	1210	E45	8.6	
9	0	605	45	--	1.0	--	--	--	280	--	1260	599	288	1720	2.3	7.4	
0	12	53	12	4.1	.20	--	2.0	--	1800	734	612	18	0	1210	29	8.6	DH
8	14	668	4500	--	--	--	--	--	--	9090	8413	1630	1410	14100	27	--	DH
	--	--	--	--	--	--	--	--	--	--	--	--	--	1625	--	--	
9	0	1800	64	1.0	--	2.5	--	.06	1200	--	3010	1000	700	3770	7.6	7.4	
0	0	100	180	.7	--	19	--	12	3200	--	2110	300	0	3820	19	8.0	
9	64	43	1.1	1.4	--	.01	--	.25	150	--	651	6	0	1030	48	8.8	
	--	--	--	--	--	--	--	--	--	--	--	--	--	545	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	585	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1100	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	780	--	--	
0	0	272	37	--	4.9	--	--	--	630	--	865	604	171	1280	E1.4	7.9	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1050	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1100	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1500	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	3000	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	1850	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	6100	--	--	
8	0	2400	100	.5	--	.01	--	.09	3700	--	3890	1500	1200	4600	7.3	7.3	
	--	--	--	--	--	--	--	--	--	--	--	--	--	3400	--	--	
	--	--	--	--	--	--	--	--	--	--	--	--	--	5500	--	--	
9	--	--	325	--	--	--	--	--	--	--	--	1780	1290	--	--	7.5	
	--	--	--	--	--	--	--	--	--	--	--	--	--	5500	--	--	
5	62	96	4.3	.5	--	.00	--	.06	680	--	576	8	0	919	36	9.1	
8	2	59	23	.3	12	--	--	.00	210	424	426	324	18	660	.6	--	DH
3	1261	81	620	--	--	--	--	--	--	4520	4070	--	--	6670	--	9.9	PL
4	36	140	176	11	.00	--	.70	--	5650	2130	2030	15	0	3170	93	8.6	DH
0	70	8.1	40	12	--	.03	--	.74	7500	--	1850	9	0	3280	116	8.6	
2	3	520	61	.5	4.8	--	.00	--	910	1248	1180	545	185	1625	3.5	--	DH
0	0	717	58	--	.00	--	--	--	1100	--	1500	572	170	2070	E5.5	8.2	
6	52	310	140	1.2	--	.03	--	.12	2700	--	1230	38	0	1950	32	8.9	
6	6	382	13	--	--	--	--	--	280	949	--	610	260	1282	1.2	--	BR
0	5275	119	4560	--	--	--	--	--	--	16100	18000	21	0	20800	--	10.0	PL
0	1369	436	2520	--	--	--	--	--	--	9050	8940	--	--	13000	--	9.4	PL
0	1320	25	5600	--	--	--	--	--	--	--	23200	52	0	28900	578	8.5	PL
0	126	25	6400	--	--	--	--	--	--	--	26300	210	0	32800	329	8.3	PL
0	0	10	5300	--	--	--	--	--	--	--	24500	250	0	32800	277	8.2	PL
0	2280	10	5800	--	--	--	--	--	--	--	24500	26	0	32800	875	8.8	PL
0	2400	10	5800	--	--	--	--	--	--	--	25700	28	0	34400	877	9.0	PL
0	--	210	5300	--	--	--	--	--	--	--	22900	31	0	30600	734	7.8	PL
6	0	483	52	--	--	--	--	--	--	--	1310	--	--	1570	--	8.2	PL
4	264	260	180	--	--	--	--	--	--	--	1700	--	--	2590	--	9.3	PL
0	7080	.0	5700	--	--	--	--	--	--	--	28900	--	--	33300	--	9.6	PL
0	432	276	150	--	--	--	--	--	--	--	2400	--	--	2900	--	9.1	PL
0	--	10	350	--	--	--	--	--	--	--	5130	39	0	7050	150	8.1	PL
0	--	3330	5550	--	--	--	--	--	--	--	15000	--	--	19100	--	7.5	PL
8	9460	67	5100	--	--	--	--	--	--	26900	26200	--	--	30600	--	10.0	PL
0	9115	13	7000	--	--	--	--	--	--	31500	31500	51	0	36600	--	9.9	PL
0	2760	26	3320	--	--	--	--	--	--	16600	13800	20	0	20400	--	9.3	PL
0	5765	46	5400	--	--	--	--	--	--	23900	24100	51	0	29700	--	9.6	PL
0	552	.0	80	--	--	--	--	--	--	2080	2070	--	--	3000	--	9.0	PL
0	0	<1.0	1260	--	--	--	--	--	--	5860	5890	46	0	8470	--	7.9	PL
0	0	<1.0	1200	--	--	--	--	--	--	5710	5670	40	0	8470	--	7.6	PL
6	1	312	46	.3	.10	--	1.1	--	300	970	875	564	195	1285	1.6	--	DH
3	0	510	310	.6	--	.59	--	.15	490	--	1550	1000	620	2300	2.0	7.5	

Sheet 2-2

U. S. GEOLOGICAL SURVEY - CONSERVATION DIVISION

FROM : DISTRICT GEOLOGIST, SALT LAKE CITY, UTAH

TO : DISTRICT ENGINEER, O&G, SALT LAKE CITY, UTAH

SUBJECT: APD MINERAL EVALUATION REPORT LEASE NO. 14-20-H62-2393

OPERATOR: UTEX OIL CO. WELL NO. 1-21C5

LOCATION: ¼ NE ¼ SW ¼ sec. 21, T. 3 S., R. 5 W., USB&M

DUSCHSNE County, UTAH

1. Operator predicted stratigraphy and predicted hydrocarbon zones are adequate? No. If not, USGS predictions are: OPERATOR PICKED TOP FOR WASATCH IS ACCEPTABLE BUT TO OF UPPER GREEN RIVER APPEARS TOO DEEP. UPPER GREEN RIVER MORE LIKELY TO BE AT DEPTHS OF 700-1500'.

2. Fresh water aquifers probable below surface casing? POSSIBLE. SEE ATTACHED WRD REPORT.

3. Other probable leasable minerals? YES. OIL SHALE AND BITUMENS AND SODIUM (NAHCOLITE). THE RICHEST OIL SHALE BEDS ARE IN THE MAHOGENY ZONE OF THE GREEN RIVER FM., PROBABLY AT A DEPTH OF 2700'±.

4. Are hazardous fluids or gases likely? UNKNOWN — SEE #5

5. Are abnormal conditions of pressure or temperature likely? POSSIBLE. MFS-CEDAR RIM #2 IN SEC 20., T.3 S., R.20E., REPORTED A BLOWOUT AT 8471'.

6. Will any strata penetrated need special mud, casing, or cementing beyond that proposed in the APD? _____. PROTECT FRESH WATER AQUIFERS.

7. Is additional logging or sampling needed? _____. OPERATOR SUITE SHOULD BE RUN THROUGH OIL SHALE INTERVAL

8. References - remarks: USGS Files, Salt Lake City, Utah

Is location within 2 miles of a KGS? No.

Signature: T.R.A. Date: 7/17/78.

Brinkerhoff #32-1 SW SE Sec 32, T. 3S., R 5W., USM

Brinkerhoff #32-1--continued

2. Fresh Water Sands--continued

"Stratigraphic units	Tops, approx.	Quality of water
Uinta Formation	surface	Usable to about 900 ft/saline
Green River Formation	1,300 ft	Saline/brine (?)
Wasatch Formation	8,000 ft	Brine

Water wells in the vicinity do not exceed about 200 feet in depth. Usable water may be found as deep as 900 feet at this proposed test site, and deeper aquifers will yield saline water or brine."

WRD 9/21/71

UTEX OIL COMPANY
SUITE 41B
4700 SOUTH 9TH EAST
SALT LAKE CITY, UTAH 84117
PHONE 801 - 262-6869

May 30, 1979

State of Utah
Division of Oil & Gas Conservation
1588 West North Temple
Salt Lake City, Utah 84116

Gentlemen:

Enclosed please find the completion report for the 1-21C5 well, Section 21, T3S, R5W, Duchesne County, Utah.

You will receive copies of all logs run under seperate cover.

We hereby request that all information submitted on this well be held confidential until further notice.

RECEIVED
JUN 5 1979
DIVISION OF
GAS & MINING

Sincerely,

D. T. Hansen

D. T. Hansen

Release date: 12/19/79

11

Form 9-331
(Rev. 5-63)

CONFIDENTIAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

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: UTEX OIL COMPANY

3. ADDRESS OF OPERATOR: Suite 41-B 4700 South 9th East, Salt Lake City, Utah 84117

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1980' EWL 1980' NSL
At top prod. interval reported below
At total depth

CONFIDENTIAL

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-H62-2393
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
7. UNIT AGREEMENT NAME
8. FARM OR LEASE NAME: TRIBAL
9. WELL NO.: 1-21C5
10. FIELD AND POOL, OR WILDCAT: ALTAMONT
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

14. PERMIT NO.: 43-103-30448 | DATE ISSUED: 6-22-78
12. COUNTY OR PARISH: Duchesne | 13. STATE: Utah

15. DATE SPUDDED: 2-23-79 | 16. DATE T.D. REACHED: 4-10-79 | 17. DATE COMPL. (*Ready to prod.*): 5-19-79 RD: 12/19/79 | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 5789 Gr. | 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD: 10,001 | 21. PLUG, BACK T.D., MD & TVD: 9950 | 22. IF MULTIPLE COMPL., HOW MANY* | 23. INTERVALS DRILLED BY → | ROTARY TOOLS: TD | CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 8842'-9591'
25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL, SP, GR, Neutron
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
10 3/4	40.5#	1006'	14 3/4	750 sx Class "G"	
7 5/8	26.4 & 29.7#	8217'	9 7/8	15 sx calcium chloride 496# A-2	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
5½	8137	10,000	310	

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	8600	8600
2 3/8	7000	Heat string

31. PERFORATION RECORD (*Interval, size and number*)
9583'-9591'
8850'-8857'
8842'-8846'

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8842'-9591'	10,000 gal. 28% HCL and 10,000 gal. water

33.* PRODUCTION

DATE FIRST PRODUCTION: 5-19-79 | PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*): Flowing | WELL STATUS (*Producing or shut-in*): Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
5-20-79	24	16/64		768	667	0	.868

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1800	0		768	667	0	49

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Flared (to be sold to Koch)
TEST WITNESSED BY: D. Baucum

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: Robert C. [illegible] TITLE: Geologist DATE: 5-30-79

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

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	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Top of Wasatch	8176'	

UTEX OIL COMPANY
SUITE 41B
4700 SOUTH 9TH EAST
SALT LAKE CITY, UTAH 84117
PHONE 801 - 262-6869

June 5, 1979

RECEIVED
JUN 7 1979

State Of Utah
Division of Oil & Gas Conservation
1588 West North Temple
Salt Lake City, Utah
84116

Gentlemen:

Enclosed please find one copy of each log run on our 1-21C5 well, Section 21, T3S, R5W, Duchesne County, Utah.

We hereby request that this material be held confidential as marked.

Thank you.

Sincerely,

D. T. Hansen

D. T. Hansen

CONFIDENTIAL

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: Utex Oil Company

WELL NAME: Ute Tribal 1-21C5

SECTION 28 TOWNSHIP 3S RANGE 5W COUNTY Duchesne

DRILLING CONTRACTOR TWT Exploration, Inc.

RIG # 6

SPUDDED: DATE July 17, 1979

TIME 9:00 p.m.

HOW Rotary

DRILLING WILL COMMENCE ASAP

REPORTED BY Dorothy

TELEPHONE # 262-6869

DATE July 18, 1979 SIGNED M. J. Minder

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

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.)

RECEIVED
JUN 27 1988
DIVISION OF OIL, GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.: CA-UT080I49-86C699

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ute

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: ANR Production Company

8. FARM OR LEASE NAME: Ute Tribal

3. ADDRESS OF OPERATOR: P.O. Box 749, Denver, Colorado 80210-0749

9. WELL NO.: #1-21C5

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL

10. FIELD AND POOL, OR WILDCAT: Altamont

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 21, T3S-R5W

14. PERMIT NO.: 43-013-30448

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5789' GR

12. COUNTY OR PARISH: Duchesne

13. STATE: Utah

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

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]
(Other)			[ ]

SUBSEQUENT REPORT OF:

WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
(Other) Change of Operator			[X]

(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.)*

Effective April 1, 1988, ANR Production Company took over operations from Utex Oil Company on the above-referenced well.

OIL AND GAS	
DRN	RJF
JRB	GLH
DTS	SLS
1-TAS	
2- MICROFILM ✓	
3- FILE	

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

SIGNED Eileen Danni Dey TITLE Regulatory Analyst DATE June 24, 1988

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

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

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

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.: CA-UT080I49-86C699

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ute Indian Tribe

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Ute Tribal

9. WELL NO.: 1-21C5

10. FIELD AND POOL, OR WILDCAT: Altamont

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 21, T3S-R5W

12. COUNTY OR PARISH: Duchesne

13. STATE: Utah

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: ANR Production Company

3. ADDRESS OF OPERATOR: P.O. Box 749, Denver, Colorado 80201-0749

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL

RECEIVED FEB 03 1989 DIVISION OF OIL, GAS & MINING

14. PERMIT NO.: 43-013-30448

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5824' GL, 5839' KB

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[XX]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			[ ]
(Other)			[ ]				

(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.)*

Proposed Procedure:

1. MIRU. Kill well. ND wellhead & NU BOPE. POOH w/tbg, pump cavity, & packer.
2. Clean out csg & liner to PBTD (9947').
3. Perf Wasatch w/3 SPF using 3-1/8" csg gun per attached perforating schedule.
4. PU 5" retrievamatic pkr on 2-7/8" tbg & TIH. Set pkr @ 8100'.
5. Acidize Wasatch perfs from 8272-9924' w/18,000 gals 15% HCL w/additives.
6. Flow back acid water until PH $\geq$ 5.5.
7. Unseat pkr & POOH w/tbg & pkr.
8. Rerun hydraulic production eqpt & return to production.

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

SIGNED: Eileen Danni Dey TITLE: Regulatory Analyst DATE: February 1, 1989

(This space for Federal or State office use)

APPROVED BY: TITLE: DATE:

CONDITIONS OF APPROVAL, IF ANY:

Federal approval of this action is required before commencing operations.

ACCEPTED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 2-9-89
BY: John R. Baza

*See Instructions on Reverse Side

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

Tribal #1-21C5
NE/SW Section 21, T3S-R5W
Duchesne County, Utah

Proposed additional perforations, Wasatch Formation.

Reference Log: Dresser-Atlas DIL dated 3-22-79 and 4-9-79.

8283	8601	9034
86	62	
95		9283
	8748	90
8356	52	
67	59	9537
73	70	62
76	72	66
86		
	8839	9608
8487		22
90	8919	
	34	9815
8525	37	
42	39	
	55	
	57	

Totals: 26 zones, 35 feet.

W. Cole
October 24, 1988

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

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.: CA-UT080149-86C699

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ute Indian Tribe

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: ANR Production Company

8. FARM OR LEASE NAME: Ute Tribal

3. ADDRESS OF OPERATOR: P.O. Box 749, Denver, Colorado 80201-0749

9. WELL NO.: 1-21C5

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL & 1980' FWL

RECEIVED MAY 22 1989 DIVISION OF OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT: Altamont

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 21, T3S-R5W

14. PERMIT NO.: 43-013-30448

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5824' GL

12. COUNTY OR PARISH: Duchesne

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	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[XX]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			[ ]
(Other)			[ ]	(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.)*

April 25 through May 4, 1989;

1. MIRU. Kill well. ND WH. NU BOP's. POOH w/tbg, pump cavity, & pkr.
2. Clean out 5" liner to 9895'.
3. Perf Wasatch 8283-9815' w/3 SPF using 3-1/8" csg gun. RIH w/5" pkr & set @ 8210'.
4. Acidize Wasatch perfs w/18,000 gals 15% HCL + add. ATP 7800#, AIR 16 BPM, ISIP 50#. Flow back well. Release pkr.
5. RIH w/5" pkr, PBGA & pump cavity on tbg. Set pkr @ 8169'. ND BOP's. NU WH. Return well to production.

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

SIGNED Eileen Danni Dey — TITLE Regulatory Analyst — DATE May 18, 1989

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

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

Instructions

General: This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State, pursuant to applicable State law 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.

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 17: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

PRIVACY ACT

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et. seq., 351 et. seq., 25 U.S.C. et. seq.; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is to be used to evaluate, when appropriate, approve applications, and report completion of secondary well operations, on a Federal or Indian lease.

ROUTINE USES: (1) Evaluate the equipment and procedures used during the proposed or completed subsequent well operations. (2) Request and grant approval to perform those actions covered by 43 CFR 3162.3-2(2). (3) Analyze future applications to drill or modify operations in light of data obtained and methods used. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this notice and report and disclosure of the information is mandatory once an oil or gas well is drilled.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501, et. seq.) requires us to inform you that:

This information is being collected in order to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

This information will be used to report subsequent operations once work is completed and when requested, to obtain approval for subsequent operations not previously authorized.

Response to this request is mandatory for the specific types of activities specified in 43 CFR Part 3160.

1-TAS
2- MICROFILM
3- FILE
SLS
GLH
RJF

☆ U.S. Government Printing Office:1983-776-009/4702 R8

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

FEB 07 1991
DIVISION OF
OIL, GAS & MINING

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No.
See attached list

2. Name of Operator
ANR Production Company

9. API Well No.
43-013-

3. Address and Telephone No.
P. O. Box 749, Denver, Colorado 80201-0749

10. Field and Pool, or Exploratory Area
Altamont

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
See attached list

11. County or Parish, State
Duchesne County, Utah

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
	[ ] Recompletion	[ ] New Construction
[ ] Subsequent Report	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
[ ] Final Abandonment Notice	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other NTL-2B Extension	[ ] Dispose Water (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

ANR Production Company, as operator of 19 BLM regulated emergency pits in the Altamont/Bluebell field, (see attached list) respectfully requests an extension for the NTL-2B application dated February 23, 1990. This application requested a variance to NTL-2B Section VI, "Temporary Use of Surface Pits."

ANR's intention was to recover waste fluid from these pits, clean up crude contaminated soils, recontour the emergency pits and then install 500 BBL steel capture vessels for emergency fluids.

ANR has removed the waste fluid from these pits, but we are currently evaluating the most effective method of pit cleanup. After this is accomplished the 500 BBL steel capture vessels will be installed. We will keep you apprised of our status on these emergency pits.

We apologize for our delay in completing this project, however the costs and complexity of proper reclamation has required more time than anticipated. Thank you for your patience and understanding on this matter.

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 2/19/91
By:

14. I hereby certify that the foregoing is true and correct
Signed Eileen Danielley Title Regulatory Analyst Date 2-4-91
(This space for Federal or State office use)

Approved by Federal Approval of this Action is Necessary Title Date
Conditions of approval, if any:

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

*See Instruction on Reverse Side

WELL NAME	WELL LOCATION	LEASE #	CA #	API #43-013	TRIBE NAME
Ute #1-35A3	Sec. 35, T1S-R3W	14-20-H62-1802	N/A	30181	Ute
Ute #1-6B2	Sec. 6, T2S-R2W	14-20-H62-1807	N/A	30349	Ute
Ute Tribal #2-33Z2	Sec. 33, T1N-R2W	14-20-H62-1703	9C140	31111	Ute
Ute Tribal #1-33Z2	Sec. 33, T1N-R2W	14-20-H62-1703A	9C140	30334	Ute
Ute #1-34A4	Sec. 34, T1S-R4W	14-20-H62-1774	9640	30075 6	Ute
Ute #1-36A4	Sec. 36, T1S-R4W	14-20-H62-1793	9642	30069	Ute
Ute #1-20B5	Sec. 20, T2S-R5W	14-20-H62-2507	9C000143	30376	Ute
Ute #1-21C5	Sec. 21, T3S-R5W	14-20-H62-4123	UTO80I49-86C699	30448 POW	Ute
Ute Tribal #1-28B4	Sec. 28, T2S-R4W	14-20-H62-1745	9681	30242	Ute
Monsen #1-27A3	Sec. 27, T1S-R3W	UTU-0141455	NW581	30145	N/A
Ute #2-31A2	Sec. 31, T1S-R2W	14-20-H62-1801	N/A	31139	Ute
Ute Tribal #1-31Z2	Sec. 31, T1N-R2W	14-20-H62-1801	N/A	30278	Ute
Evans #2-19B3	Sec. 19, T2S-R3W	14-20-H62-1734	9678	31113	Ute
Ute Jenks #2-1B4	Sec. 1, T2S-R4W	14-20-H62-1782	N/A	31197	Uintah & Ouray
Ute #1-1B4	Sec. 1, T2S-R4W	14-20-H62-1798	9649	30129	Ute
Murdock #2-34B5	Sec. 34, T2S-R5W	14-20-H62-2511	9685	31132	Ute
Ute #1-25B6	Sec. 25, T2S-R6W	14-20-H62-2529	N/A	30439	Ute
Ute Tribal #1-29C5	Sec. 29, T3S-R5W	14-20-H62-2393	9C200	30449	Ute
Ute #2-22B5	Sec. 22, T2S-R5W	14-20-H62-2509	N/A	31122	Ute

Form 3160-5
June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-H62-4123
6. If Indian, Allottee or Tribe Name: Ute
7. If Unit or C.A., Agreement Designation: UT080I4986C699
8. Well Name and No.: Ute #1-21C5
9. API Well No.: 43-013-30448 POW
10. Field and Pool, or Exploratory Area: Altamont
11. County or Parish, State: Duchesne County, Utah

Type of Well: ___ Oil ___ Gas ___ XX Well ___ Well ___ Other

FEB 11 1991
DIVISION OF OIL, GAS & MINING

1. Name of Operator: ANR Production Company
3. Address and Telephone No.: P. O. Box 749, Denver, Colorado 80201-0749 (303) 573-4476
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FSL & 1980' FWL, Section 21, T3S-R5W

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other NTL2B Application Produced Water	[ ] Dispose Water (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

ANR Production Company hereby requests permission to dispose of produced water from the above referenced well under NTL-2B, Disposal of Produced Water. The produced water from the Ute #1-21C5 flows into a steel tank equipped w/a high level float switch which shuts the well in if the tank becomes overloaded. The water is then hauled off by truck and disposed of in the state approved Hanson Mitchell (GRAND) Disposal Pit, Section 2, T3S-R4W, Duchesne County, Utah, or injected into ANR's SWD facilities. These facilities consist of the following five state approved SWD wells:

LDS Church #2-27B5	Sec. 27, T2S-R5W, Duchesne County, Utah
Shell #2-27A4	Sec. 27, T1S-R4W, Duchesne County, Utah
Lakefork #2-23B4	Sec. 23, T2S-R4W, Duchesne County, Utah
Ehrich #2-11B5	Sec. 11, T2S-R5W, Duchesne County, Utah
Hanson #2-4B3	Sec. 4, T2S-R3W, Duchesne County, Utah

14. I hereby certify that the foregoing is true and correct
Signed: Eileen Danielson Title: Regulatory Analyst Date: 2-7-91

(This space for Federal or State office use)
Approved by: Federal Approval of this Action is Necessary Title: Date:
Conditions of approval, if any:

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 2-19-91
By:

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

*See Instruction on Reverse Side

Form 3160-5
June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

5. Lease Designation and Serial No.
14-20-H624123

6. If Indian, Allottee or Tribe Name
Ute Indian Tribe

SUBMIT IN TRIPLICATE

7. If Unit or C.A. Agreement Designation
UT080I4986C699

Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No.
Ute #1-21C5

2. Name of Operator
ANR Production Company

9. API Well No.
43-013-30448

3. Address and Telephone No.
P. O. Box 749 Denver, CO 80201-0749 (303) 573-4476

10. Field and Pool, or Exploratory Area
Altamont

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & 1980' FWL
Section 21, T3S-R5W

11. County or Parish, State
Duchesne County, Utah

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[X] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other _____	[ ] Dispose Water
		(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

Please see the attached chronological report for the plug and abandonment procedure performed on the above referenced well. (Note also the attached cement verification reports.)

RECEIVED
OCT 09 1991
DIVISION OF
OIL GAS & MINING

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

Signed Colleen Hamilton Title Regulatory Analyst Date 10/3/91

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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

*See Instruction on Reverse Side

THE COASTAL CORPORATION
PRODUCTION REPORT

CHRONOLOGICAL HISTORY

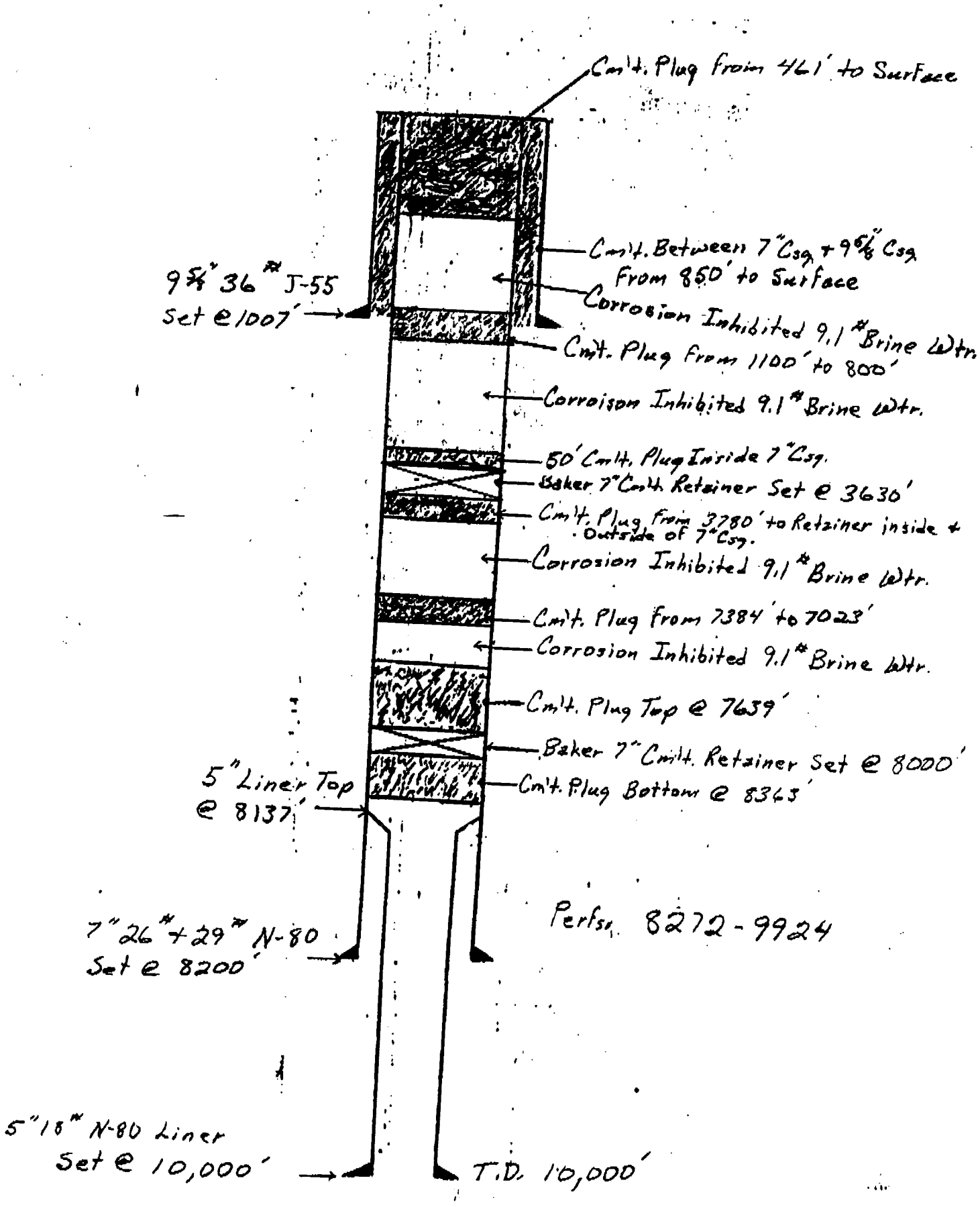
UTE TRIBAL #1-21C5 (P&A)
ALTAMONT/BLUEBELL FIELD
DUCHESNE COUNTY, UTAH
WI: 65.6547% ANR AFE: 63533
TD: 10,000' PBTD: 9,947'
5" LINER @ 8,137'-10,000'
PERFS: 8,272'-9,924' (WASATCH/GREEN RIVER)
CWC(M$): $43.8

9/10/91 POOH w/side string. MIRU. CP 1400#. ND WH, NU BOP. Hot oil 2-3/8" tbg.
DC: $4,191 TC: $4,191

9/11/91 Cmt CICR. POOH w/2-3/8" side string. POOH w/2-7/8" power string. Set 7" CICR @ 8000' on WL. SIH w/stinger.
DC: $6,349 TC: $10,540

9/12/91 POOH w/tbg. Sting into CICR. Pump 50 sxs cmt below CICR & 50 sxs cmt above. POOH to 7384'. Spot 50 sxs cmt from 7384'-7123'. SOOH.
DC: $7,188 TC: $17,728

9/13-15/91 Well P&A'd. Perf 4 sqz holes @ 3800'. Set cmt @ 3630'. Pump 56 sxs below ret & spot 9 sxs on top. Spot 39 sxs cmt from 900'-1119'. Perf 4 SPF @ 850'. Pmp 105 sxs RFC cmt from 850' in 7" x 9-5/8" annulus. Spot 55 sxs RFC from sfc to 461'. Drop from report.
DC: $19,375 TC: $37,103


Cm't. Plug from 461' to Surface
Cm't. Between 7" Csg + 9⅝" Csg From 850' to Surface
9⅝" 36# J-55 Set @ 1007'
Corrosion Inhibited 9.1# Brine Wtr.
Cm't. Plug from 1100' to 800'
Corroison Inhibited 9.1# Brine Wtr.
50' Cm't. Plug Inside 7" Csg.
Baker 7" Cm't. Retainer Set @ 3630'
Cm't. Plug from 3780' to Retainer inside + Outside of 7" Csg.
Corrosion Inhibited 9.1# Brine Wtr.
Cm't. Plug from 7384' to 7023'
Corrosion Inhibited 9.1# Brine Wtr.
Cm't. Plug Top @ 7639'
Baker 7" Cm't. Retainer Set @ 8000'
Cm't. Plug Bottom @ 8363'
5" Liner Top @ 8137'
Perfs. 8272-9924
7" 26# + 29# N-80 Set @ 8200'
5" 18# N-80 Liner Set @ 10,000'
T.D. 10,000'

DOWELL SCHLUMBERGER INCORPORATED

REMITTANCE

INVOICE

REMIT TO: P O BOX 650780
DALLAS TX 75265-0780

1593

INVOICE DATE	PAGE	INVOICE NUMBER
09/12/91	1	15-03-7584

317297
ANR PRODUCTION CO

P O BOX 129
ALTAMONT UT 84001

TYPE SERVICE
CEMENTING
PLUG TO ABANDON

WELL NAME / JOB SITE	STATE	COUNTY / CITY	SERVICE FROM LOCATION	SHIPPED VIA	CUSTOMER P.O. NO./REF.
12105	UT	DUCHESNE	VERNAL		

LOCATION / PLANT ADDRESS	DATE OF SERVICE ORDER	CUSTOMER OR AUTHORIZED REPRESENTATIVE
	09/12/91	HAROLD CUNDALL

ITEM CODE	DESCRIPTION	UOM	QTY	LIST PRICE	LIST AMOUNT	% OFF	NET PRICE	NET AMOUNT
019287000	CMR/20Z/PLG 7501-8000' 1ST 8	EAR	1	2,650.0000	2,650.00	30.0	1,855.0000	1,855.00
049102000	TRANSPORTATION CMNT TON MILE	MI	518	.0800	414.40	30.0	.5600	290.08
049100000	SERVICE CHG CEMENT BATL LAND	CFT	150	1.1500	172.50	30.0	.8050	120.75
059697000	PACR TREAT ANALYSIS RECORDER	JOB	1	125.0000	125.00	30.0	87.5000	87.50
040007000	D907, CEMENT CLASS G	CFT	150	8.8500	1,327.50	30.0	6.1950	929.25
059200002	MILEAGE, ALL OTHER EQUIPMENT	MI	70	2.8000	196.10	30.0	1.9550	137.27
					4,885.50	30.0	SUB TOTAL —	3,419.85
M C	STATE TAX ON						290.08	17.40
M C	STATE TAX ON						929.25	55.75
							AMOUNT DUE —	3,493.00

1-2105

WOR

9-20-91

911 1499 0024 000000533789 8770 3493 00
Ny 9-20-91

WITH QUESTIONS CALL 801-789-0411
FEDERAL TAX ID # 38-239-7173
TERMS — NET 30 DAYS DUE ON OR BEFORE OCT 12, 1991

THANK YOU. WE APPRECIATE YOUR BUSINESS.

W B CULPEPPER

DOWELL SCHLUMBERGER INCORPORATED

P.O. BOX 4378 HOUSTON, TEXAS 77210

SPECIAL HANDLING

OILFIELD SERVICES ☒
INDUSTRIAL SERVICES ☐

DSI SERVICE LOCATION NAME AND NUMBER: Vernal, UT 1503

DSI SERVICE ORDER RECEIPT AND INVOICE NO.	CUSTOMER NUMBER	CUSTOMER P.O. NUMBER	TYPE SERVICE CODE	BUSINESS CODES
1503-7584	917297		295	

WORKOVER ☒ W
NEW WELL ☐ N
OTHER ☐

API OR IC NUMBER

CUSTOMER'S NAME: AWR

ADDRESS: Box 120

CITY, STATE AND ZIP CODE: Altamont UT

DSI will furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DSI INDUSTRIAL SERVICE CONTRACT NO. _____ in accordance with the terms and conditions as printed on the reverse side of this form.

IMPORTANT
SEE OTHER SIDE FOR TERMS & CONDITIONS

ARRIVE LOCATION	MO.	DAY	YR.	TIME
	9	12	91	08:00

SERVICE ORDER RECEIPT

I certify that the materials and services listed were authorized and received and all services performed in a workmanlike manner and that I have the authority to accept and execute this document.

JOB COMPLETION	MO.	DAY	YR.	TIME
	9	12	91	13:00

SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE: X Harold Cundall

Set 2 cement plugs; 1st @ 5500' with 100 sks G Neat, 2nd plug @ 7368 50 sks G Neat. Displace with Formation H2O and brine as per customer request.

STATE	CODE	COUNTY / PARISH	CODE	CITY
UTAH		Duchesne		

WELL NAME AND NUMBER / JOB SITE: 121CS

LOCATION AND POOL/PLANT ADDRESS:

SHIPPED VIA: D.S.

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
102872-080	Pump Charge	FA	1	2650.00	2650.00
049162-000	Delivery Charge	T.M.	518	.80	414.40
049160-000	Service Charge (7T @ 74mi)	SKS	150	1.15	172.50
059697-000	PACR	FA	1	125.00	125.00
040007-000	Class G cement	SKS	150	8.85	1327.50
050200-002	Mileage Charge Unit	MI	74	2.65	196.10
	121CS				
	WC2				
	9-20-91				

Field Estimate $5305.50 Discounted Field Estimate $3713.85

SUB TOTAL			3713.85
LICENSE/REIMBURSEMENT FEE			
LICENSE/REIMBURSEMENT FEE			
STATE	6 % TAX ON $	219.33	13.15
COUNTY	% TAX ON $		
CITY	% TAX ON $		
TOTAL			$ 3732.00

REMARKS: Thanks for using D.S.

SIGNATURE OF DSI REPRESENTATIVE: Doug Mauldy

DS 8510

CEMENTING SERVICE REPORT

DS-496 PRINTED IN U.S.A.

DOWELL SCHLUMBERGER INCORPORATED

TREATMENT NUMBER	DATE
1503 - 2584	9-12-91
STAGE —	DS DISTRICT Vernal, UT

WELL NAME AND NO. 121C5

LOCATION (LEGAL)

FIELD-POOL

FORMATION

COUNTY/PARISH Duchesne

STATE UT

API. NO.

NAME ANR

AND

ADDRESS

ZIP CODE

RIG NAME: Western

WELL DATA:		BOTTOM			TOP
BIT SIZE	CSG/Liner Size	7			
TOTAL DEPTH	WEIGHT	26			
☐ ROT ☐ CABLE	FOOTAGE	8000 +			
MUD TYPE	GRADE				
☐ BHST ☐ BHCT	THREAD				
MUD DENSITY	LESS FOOTAGE SHOE JOINT(S)				TOTAL
MUD VISC.	Disp. Capacity				

NOTE: Include Footage From Ground Level To Head In Disp. Capacity

Float		Stage Tool	
TYPE		TYPE	
DEPTH		DEPTH	
SHOE TYPE		TYPE	
DEPTH		DEPTH	

SPECIAL INSTRUCTIONS

Set 2 cement plugs: 1st @ 8000' with 100 sks G Neat, 2nd plug @ 7348 with 50 sks G Neat Displace with formation H_2O and Brine as per customer request

Head & Plugs	☒ TBG ☐ D.P.	SQUEEZE JOB	
☐ Double	SIZE 2 7/8"	TOOL TYPE	Retainer
☐ Single	☒ WEIGHT 6.5#	DEPTH	8000'
☐ Swage	☐ GRADE	TAIL PIPE: SIZE —	DEPTH —
☐ Knockoff	☒ THREAD Seal lock	TUBING VOLUME	4/6 Bbls
TOP ☐R ☐W	☐ NEW ☐ USED	CASING VOL. BELOW TOOL	— Bbls
BOT ☐R ☐W	DEPTH 8000'	TOTAL	— Bbls
		ANNUAL VOLUME	— Bbls

IS CASING/TUBING SECURED? ☒ YES ☐ NO

LIFT PRESSURE PSI CASING WEIGHT - SURFACE AREA (3.14 x R²)

PRESSURE LIMIT 1000 PSI BUMP PLUG TO PSI

ROTATE — RPM RECIPROCATE — FT No. of Centralizers —

JOB SCHEDULED FOR TIME: 08:00 DATE: 9-12-91

ARRIVE ON LOCATION TIME: 08:00 DATE: 9-12-91

LEFT LOCATION TIME: 16:00 DATE: 9-12-91

TIME 0001 to 2400	PRESSURE TBG OR D.P.	PRESSURE CASING	VOLUME PUMPED BBL INCREMENT	VOLUME PUMPED BBL CUM	INJECT RATE	FLUID TYPE	FLUID DENSITY	SERVICE LOG DETAIL
09:00								PRE-JOB SAFETY MEETING
09:30		800	154	0	7	Form H_2O	8.32	Fill up backside with Formation H_2O
10:15		500		154	-	Form H_2O	8.32	pressure backside up to 500 psi: Held
10:19	-	-	-	-	-	-	-	Call Vernal for H_2O test kit, wait for new H_2O
12:42	0	-	5	154	3.5	H_2O	8.32	Start Water Ahead
12:51	0	-	20	159	3.5	cmt	15.8	start cement slurry
12:57	0	-	44.5	179	3.5	Form H_2O	8.32	Start Displacement
13:10	0	-		215	-			Shut down sting out of retainer
13:11	0	-		215	3	Form H_2O	8.32	Resume displacement
13:14	0			223.5	-	-	-	shutdown POOH
13:29	-	1000	277	223.5	4.2	Brine	9	Start Reverse circulation
14:30	-	-		500.5	-	-	-	shut down POOH
14:53	0	-	2	500.5	2.5	H_2O	8.32	Start H_2O Ahead
14:54	0	-	10.	502.5	2.7	cmt	15.8	Start cement slurry
15:04	0		3	512.5	1.7	H_2O	8.32	Start H_2O behind
15:05			37	514.5	1.6	Brine	9	Start Displacement
15:17	—	—	—	551.5	—	-	-	End Job Rig Down D.S.

REMARKS H_2O: pH 6.5 chlorides 620 mg/l

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS	SLURRY MIXED BBLS	SLURRY MIXED DENSITY
1.	50	1.15	"G" Neat	20.4	15.8
2.	100	1.15	"G" Neat	10.2	15.8
3.					
4.					
5.					
6.					

BREAKDOWN FLUID TYPE — VOLUME DENSITY

☐ HESITATION SQ. — ☐ RUNNING SQ.

BREAKDOWN — PSI FINAL — PSI

Washed Thru Perfs ☐ ~~YES~~ ☐ NO TO — FT.

CIRCULATION LOST ☐ YES ☐ NO

DISPLACEMENT VOL. 6/4/39 Bbls

MEASURED DISPLACEMENT ☒ ☐ WIRELINE

PRESSURE MAX: 1000 MIN: 0

Cement Circulated To Surf. ☐ YES ☒ NO Bbls.

TYPE OF WELL ☒ OIL ☐ GAS ☐ STORAGE ☐ INJECTION ☐ BRINE WATER ☐ WILDCAT

PERFORATIONS TO X TO X TO TO

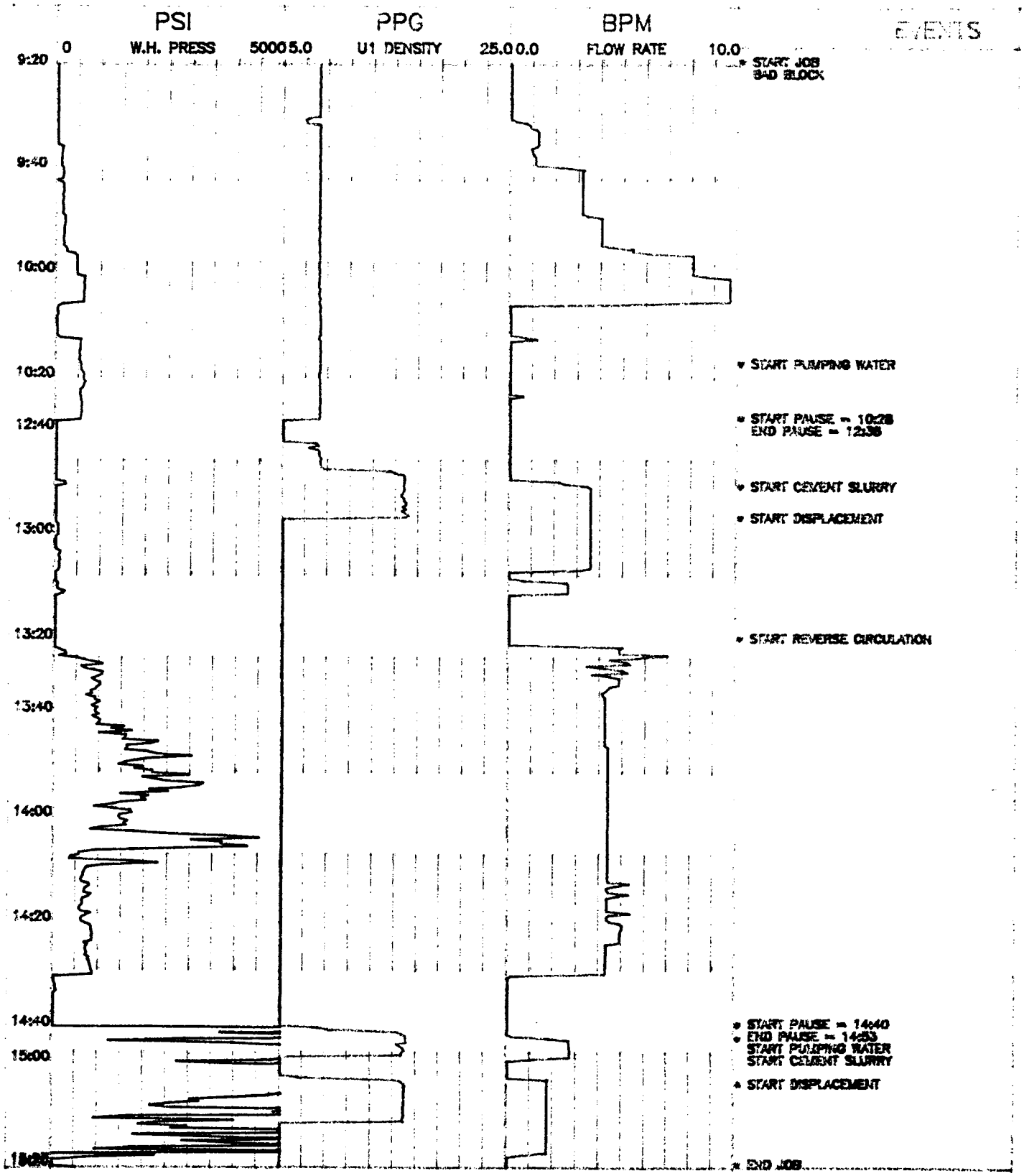
CUSTOMER REPRESENTATIVE Hal Ivy

DS SUPERVISOR Doug Mauthen

PACR PLOT

AWR
121C5
WESTERN

VERNAL, UTAH
PLUG TO ABANDON
1503-7584
9-12-91



PACR MicroVAX V2.0 13-SEP-91 08:25:51

© DOWELL SCHLUMBERGER

DOWELL SCHLUMBERGER INCORPORATED

REMITTANCE

INVOICE

REMIT TO: P O BOX 890788
DALLAS TX 75389-0788

503

INVOICE DATE	PAGE	INVOICE NUMBER
09/13/91	1	15-03-7587

117299
AMR PRODUCTION CO

P O BOX 120
ALTAMONT UT 84001

TYPE SERVICE: CEMENTING
PLUG TO ABANDON

WELL NAME / JOB SITE	STATE	COUNTY / CITY	SERVICE FROM LOCATION	SHIPPED VIA	CUSTOMER P.O. NO./REF.
1-21-C5	UT	DUCHESNE	VERNAL		

LOCATION / PLANT ADDRESS	DATE OF SERVICE ORDER	CUSTOMER OR AUTHORIZED REPRESENTATIVE
SEC21 T3S R5W	09/13/91	HAROLD CUNDALL

ITEM CODE	DESCRIPTION	UOM	QTY	LIST PRICE	LIST AMOUNT	% DTF	NET PRICE	NET AMOUNT
102971040	CEMC CMNT 3501-4000' 12T SHR	CMC	1	1,550.0000	1,550.00	30.0	1,085.0000	1,085.00
049102000	TRANSPORTATION CMNT TON MILE	MI	375	.8000	300.00	30.0	.5600	210.00
049100000	SERVICE CHG CEMENT BATL LAND	CFT	106	1.1500	121.90	30.0	.8050	85.33
059697000	PACR TREAT ANALYSIS RECORDER	JOB	1	125.0000	125.00	30.0	87.5000	87.50
040097000	D907, CEMENT CLASS G	CFT	105	8.8500	929.25	30.0	6.1950	650.48
057005160	S1,CALCIUM CHLORIDE	LBS	75	.3400	25.50	30.0	.2380	17.85
048026000	CEMENT PUMP-ADDL HR ON LOCAT	HR	2	260.0000	520.00	30.0	182.0000	364.00
048019000	CEMENT BULK UNIT HRS ON LOCA	HR	2	45.0000	90.00	30.0	31.5000	63.00
102476000	SERVICE SUPER OR FIELD ENGR	HR	2	45.0000	90.00	30.0	31.5000	63.00
102476001	EQUIP OPER OR SERVICE TECH	HR	4	35.0000	140.00	30.0	24.5000	98.00
					3,891.65	30.0	SUB TOTAL —	2,724.16
0 C	STATE TAX ON						210.00	12.60
0 C	STATE TAX ON						668.33	40.10
							AMOUNT DUE --	2,776.86

1-21C5

LOCK

7-24-91

AL 1409 0024 000 000 6553 789 8770 2776 86
Ay092791

WITH QUESTIONS CALL 801-789-0411
FEDERAL TAX ID # 38-239-7173
TERMS -- NET 30 DAYS DUE ON OR BEFORE OCT 13, 1991

THANK YOU. WE APPRECIATE YOUR BUSINESS.

W B Culpepper
W B CULPEPPER

DOWELL SCHLUMBERGER INCORPORATED

P.O. BOX 4378 HOUSTON, TEXAS 77210

SPECIAL HANDLING

OILFIELD SERVICES ☒
INDUSTRIAL SERVICES ☐

DSI SERVICE LOCATION NAME AND NUMBER: Vernal, UTah 15-03

DSI SERVICE ORDER RECEIPT AND INVOICE NO.: 15-03-7587

CUSTOMER NUMBER: 917277

CUSTOMER P.O. NUMBER:

TYPE SERVICE CODE: 295

BUSINESS CODES:

WORKOVER ☒ W
NEW WELL ☐ N
OTHER ☐

API OR IC NUMBER:

CUSTOMER'S NAME: A.N.R.

ADDRESS: Box 120

CITY, STATE AND ZIP CODE: Altamont Ut

IMPORTANT
SEE OTHER SIDE FOR TERMS & CONDITIONS

ARRIVE LOCATION	MO.	DAY	YR.	TIME
	9	13	91	0800

DSI will furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DSI INDUSTRIAL SERVICE CONTRACT NO. _____ in accordance with the terms and conditions as printed on the reverse side of this form.

Perform Plug to Abandon 1st Plug 64sks "G" And Displace with Brine Leaving 30' of cement on Retainer 2nd Plug Pump 39sks "G" + 2% S-1 And Displace For Plug from 1100' to 900' As Requested

SERVICE ORDER RECEIPT

I certify that the materials and services listed were authorized and received and all services performed in a workmanlike manner and that I have the authority to accept and execute this document.

JOB COMPLETION	MO.	DAY	YR.	TIME
	9	13	91	1800

SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE: Harold Crabtree

STATE	CODE	COUNTY / PARISH	CODE	CITY
UTah		Duchesne		

WELL NAME AND NUMBER / JOB SITE: 1-21-C5

LOCATION AND POOL / PLANT ADDRESS: Sec 21 T 3S R 5W

SHIPPED VIA: O.S.

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
102871-040	Pump Truck Charge 3501-4100	ea	1	1550.00	1550.00
059200-002	Mileage charge 1 unit	mi	75	2.65	N/C
049102-000	Delivery Charge 5 Th 75 mi	tn/mi	375	.80	300.00
049100-000	Service Charge	cu/ft	106	1.15	121.90
059697-000	Pacr	ea	1	125.00	125.00
040007-000	D-907 Class "G" cement	cu/ft	105	8.85	929.25
067005-100	S-1 Calcium Chloride	lb	75	.34	25.50
048020-000	Additional Hrs over 8hrs Pump Truck	Hr	2	260.00	520.00
048019-000	Additional Hrs over 8hrs Bulk Tr	Hr	2	45.00	90.00
102476-000	Additional Hrs over 8hrs SS.	Hr	2	45.00	90.00
102476-001	Additional Hrs over 8hrs 2 oper.	Hr	4	35.00	140.00
	1-21-C5				
	9-24-91				1167.49

SUB TOTAL

Field est = $3891.65 Less Discount = $2724.15

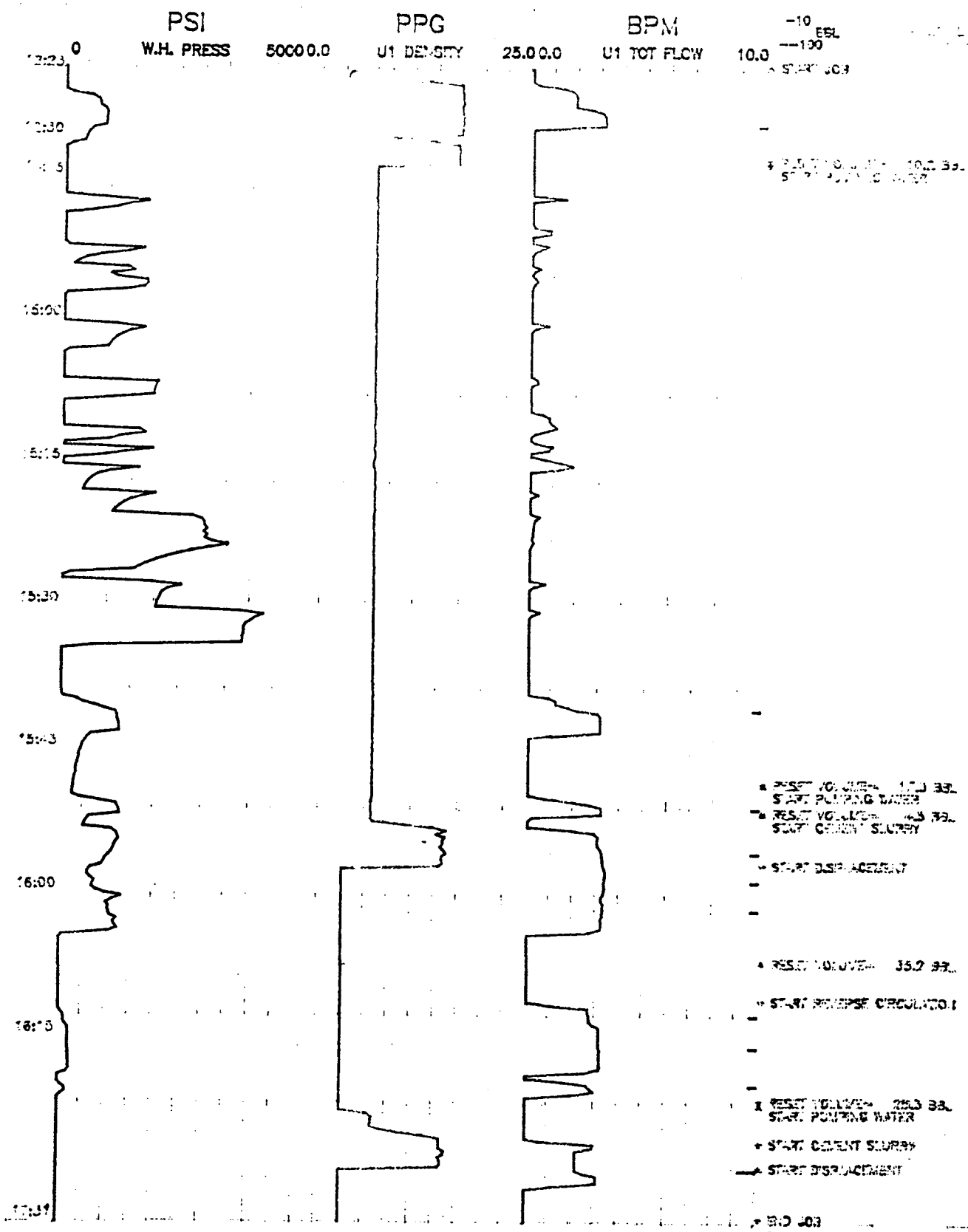
LICENSE/REIMBURSEMENT FEE

LICENSE/REIMBURSEMENT FEE

REMARKS: Pump Truck left on Loc From Job Day Before

STATE	6 % TAX ON $	878.33	52.70
COUNTY	% TAX ON $		
CITY	% TAX ON $		
SIGNATURE OF DSI REPRESENTATIVE		TOTAL	

R. Tafoya



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CEMENTING SERVICE REPORT

DS-496 PRINTED IN U.S.A.

DOWELL SCHLUMBERGER INCORPORATED

TREATMENT NUMBER 15-03-7587 DATE 9-13-91

STAGE DS DISTRICT Vernal Utah

WELL NAME AND NO. 1-21-C5

LOCATION (LEGAL) Sec 21 T3S R5W

FIELD/POOL Duchesne

FORMATION —

COUNTY/PARISH Duchesne

STATE Utah

API NO.

NAME AnR

AND

ADDRESS

ZIP CODE

RIG NAME Western Well Services

WELL DATA		BOTTOM	TOP
BIT SIZE	CSG./Liner Size	7"	
TOTAL DEPTH	WEIGHT	26#	
☐ ROT ☐ CABLE	FOOTAGE	—	
MUD TYPE	GRADE	—	
☐ BHST ☐ BHCT	THREAD	—	
MUD DENSITY	LESS FOOTAGE SHOE JOINT(S)	—	TOTAL
MUD VISC.	Disp. Capacity	—	

NOTE: Include Footage From Ground Level To Head In Disp. Capacity

Float		Stage Tool	
TYPE		TYPE	
DEPTH		DEPTH	
TYPE		TYPE	
DEPTH		DEPTH	

SPECIAL INSTRUCTIONS Plug TO ABAndon 1ST Plug 64sks "G" And Displace with Brine Leaving 30' OF Cement On TOP OF Retaner 2nd Plug Pump 39 sks "G" + 2% S-1 And Displace For Plug From 1100' TO 900' AS Requested

Head & Plugs			SQUEEZE JOB	
☐ Double	☒ TBG ☐ D.P. SIZE 2 7/8	TOOL	TYPE Retaner	
☐ Single	☐ WEIGHT 6.7		DEPTH 3630	
☐ Swage	☐ GRADE —		TAIL PIPE: SIZE —	DEPTH
☐ Knockoff	☐ THREAD 8R		TUBING VOLUME 21	Bbl
TOP ☐R ☐W	☐ NEW ☒ USED		CASING VOL. ~~BELOW TOOL~~	Bbl
BOT ☐R ☐W	DEPTH 3630		TOTAL —	Bbl
			ANNUAL VOLUME —	Bbl

IS CASING/TUBING SECURED? ☒ YES ☐ NO

LIFT PRESSURE — PSI CASING WEIGHT - SURFACE AREA (3.14 x R²)

PRESSURE LIMIT 4500 PSI BUMP PLUG TO — PSI

ROTATE — RPM RECIPROCATE — FT No. of Centralizers

JOB SCHEDULED FOR TIME: R.T.P 0800 DATE: 9-13 ARRIVE ON LOCATION TIME: 0800 DATE: 9-13-91 LEFT LOCATION TIME: 18:30 DATE: 9-13-91

TIME 0001 to 2400	PRESSURE TBG OR D.P.	PRESSURE CASING	VOLUME PUMPED BBL INCREMENT	VOLUME PUMPED BBL CUM	INJECT RATE	FLUID TYPE	FLUID DENSITY	SERVICE LOG DETAIL
0800								PRE-JOB SAFETY MEETING Rig up D.S. Wait To Perforate And Run Retaner
1225	—	700	0	0	1.8	Brine	9	START Pumping Down Casing est inj RATE
1227	—	870	—	0	3	"	"	Increase Rate
1230	—	560	10	10	0	"	"	Shut Down WAIT TO Run Retaner ISIP 560
1448	—	4000	—	10	.2	"	"	START Pumping Couldn't Pump into Perfs
1450	—	0	—	—	—	—	—	Bleed Press OFF move TOOLS 7 Times
1550	—	1200	0	0	3	H2O	8.34	START Pumping Fresh Ahead
1553	—	1200	5	5	3	Cem	15.8	START Pumping Cement Slurry
1557	—	730	13	18	3.3	H2O	8.34	START Fresh Behind Disp.
1558	—	700	3	21	3.3	Brine	9	START Brine Disp
1606	—	0	17	38	0	"	"	Shut Down Sting OUT PULL 4 JOINTS
1612	—	140	—	38	3	Brine	9	START Reversing OUT
1623	—	0	25		0	"	"	Shut Down PULL OUT OF HOLE TO 1100'
1625								1ST Plug Down WAIT On Rig TO PULL
1719	—	30	0	0	2.2	Fresh	8.34	START Fresh
1723	—	30	1	1	2.2	Cem	15.8	START Cement Slurry
1725	—	0	8	9	3	Brine	9	START Disp.
1729	—	0	4.5	13.5	0	"	"	Shut Down PULL OUT OF HOLE With Tubing Job Complete

REMARKS Water Tested Chlorides 606, Calcium 110, P.H. 6.5 Sulfate 600

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS	SLURRY MIXED BBLS	SLURRY MIXED DENSITY
1.	64	1.15	Class "G" Cement	13	15.8
2.	39	1.15	Class "G" + 2% S-1	8	15.8
3.					
4.					
5.					
6.					

BREAKDOWN FLUID TYPE VOLUME DENSITY PRESSURE 4000 MAX. MIN:

☐ HESITATION SQ. ☐ RUNNING SQ. CIRCULATION LOST ☐ YES ☒ NO Cement Circulated To Surf. ☐ YES ☒ NO Bbls.

BREAKDOWN — PSI FINAL — PSI DISPLACEMENT VOL. 1ST 21 BBLS 2nd Bbls TYPE OF WELL ☒ OIL ☐ GAS ☐ STORAGE ☐ INJECTION ☐ BRINE WATER ☐ WILDCAT

Washed Thru Perfs ☐ YES ☐ NO TO — FT. MEASURED DISPLACEMENT ☒ ☐ WIRELINE

PERFORATIONS TO 3800 TO TO TO

CUSTOMER REPRESENTATIVE HAL IVY

DS SUPERVISOR Robert Fox

DOWELL SCHLUMBERGER INCORPORATED

REMITTANCE

INVOICE

REMIT TO: P O BOX 690788
DALLAS TX 75369-0788

1395

INVOICE DATE	PAGE	INVOICE NUMBER
09/14/91	1	15-03-7590

47297
AMR PRODUCTION CO
P O BOX 130,
ALTAMONT UT 84001

TYPE SERVICE: CEMENTING
PLUG TO ABANDON

WELL NAME / JOB SITE	STATE	COUNTY / CITY	SERVICE FROM LOCATION	SHIPPED VIA	CUSTOMER P.O. NO./REF.
1 21 C5	UT	DUCHESNE	VERNAL		

LOCATION / PLANT ADDRESS	DATE OF SERVICE ORDER	CUSTOMER OR AUTHORIZED REPRESENTATIVE
SEC21 T3S R5W	09/14/91	HAROLD CONDALL

ITEM CODE	DESCRIPTION	UOM	QTY	LIST PRICE	LIST AMOUNT	% OFF	NET PRICE	NET AMOUNT
192871519	CSNG CMNT 501-1000' 1ST 8 HR	CHR	1	930.0000	930.00	30.0	651.0000	651.00
049102000	TRANSPORTATION CMNT TON MILE	MI	750	.8000	600.00	30.0	.5600	420.00
049180000	SERVICE CHG CEMENT MATL LAND	CFT	221	1.1500	254.15	30.0	.8050	177.91
059697009	PWCR TREAT ANALYSIS RECORDER	JOB	1	125.0000	125.00	30.0	87.5000	87.50
192146602	D394A, REGULATED FILLUP CMNT	SX	190	12.6500	2,403.50	30.0	8.8550	1,682.45
067005100	S1,CALCIUM CHLORIDE	LBS	357	.3400	121.38	30.0	.2380	84.97
					4,434.03	30.0	SUB TOTAL --	3,103.83
S C	STATE TAX ON						420.00	25.20
S C	STATE TAX ON						1,767.42	106.04
							AMOUNT DUE --	3,235.07

1-21C5

WOR

HES 9-24-91

94 1499 0024 000 000 03553789 5170523507
✓ MJ092791

WITH QUESTIONS CALL 801-789-0411
FEDERAL TAX ID # 38-239-7173
TERMS -- NET 30 DAYS DUE ON OR BEFORE OCT 14, 1991

THANK YOU. WE APPRECIATE YOUR BUSINESS. W B Culpepper
W B CULPEPPER

SPECIAL HANDLING

DOWELL SCHLUMBERGER INCORPORATED

P.O. BOX 4378 HOUSTON, TEXAS 77210

OILFIELD SERVICES ☒
INDUSTRIAL SERVICES ☐

DSI SERVICE LOCATION NAME AND NUMBER: Vernal, UTah 15-03

DSI SERVICE ORDER RECEIPT AND INVOICE NO.: 15-03-7590

CUSTOMER NUMBER: 917777

CUSTOMER P.O. NUMBER:

TYPE SERVICE CODE: 295

BUSINESS CODES:

WORKOVER ☒ W
NEW WELL ☐ N
OTHER ☐

API OR IC NUMBER:

CUSTOMER'S NAME: A. N. R.

ADDRESS: Box 190

CITY, STATE AND ZIP CODE: Altamont Ut 84001

IMPORTANT
SEE OTHER SIDE FOR TERMS & CONDITIONS

ARRIVE LOCATION	MO.	DAY	YR.	TIME
	9	14	91	0730

DSI will furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DSI INDUSTRIAL SERVICE CONTRACT NO. _____ in accordance with the terms and conditions as printed on the reverse side of this form.

Pump 98 sks 10-2 RFC And 13 BBls 9# Brine And 64 sks 10-2 RFC For Surface And Annulas Plug To Abandon As Requested

SERVICE ORDER RECEIPT

I certify that the materials and services listed were authorized and received and all services performed in a workmanlike manner and that I have the authority to accept and execute this document.

JOB COMPLETION	MO.	DAY	YR.	TIME
	9	14	91	0730

SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE: Harold Cardell

STATE	CODE	COUNTY / PARISH	CODE	CITY
UTah		Duchesne		

WELL NAME AND NUMBER / JOB SITE: 1-21-6 5

LOCATION AND POOL / PLANT ADDRESS: Sec 21 T3S R5W

SHIPPED VIA: D.S.

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	$ AMOUNT
102871-010	Pump Truck charge	EA	1	930.00	930.00
059200-002	mileage charge 1 Unit	mi	75	2.65	N/C
049102-000	Delivery charge 10 Tn 75 mi	tn/mi	750	.80	600.00
049100-000	service charge	cu/ft	221	1.15	254.15
059697-000	Pacer	ea	1	125.00	125.00
102146-002	R.F.C. cement D804A	sk	190	12.65	2403.50
067005-100	S-1 Calcium chloride	lb	357	.34	121.38
					(1330.20)

SUB TOTAL

Field est - $4434.03 Less Disc. - $3103.82

LICENSE/REIMBURSEMENT FEE

LICENSE/REIMBURSEMENT FEE

REMARKS: Thanks For Using D.S.

STATE % TAX ON $ 2187.42 131.24

COUNTY % TAX ON $

CITY % TAX ON $

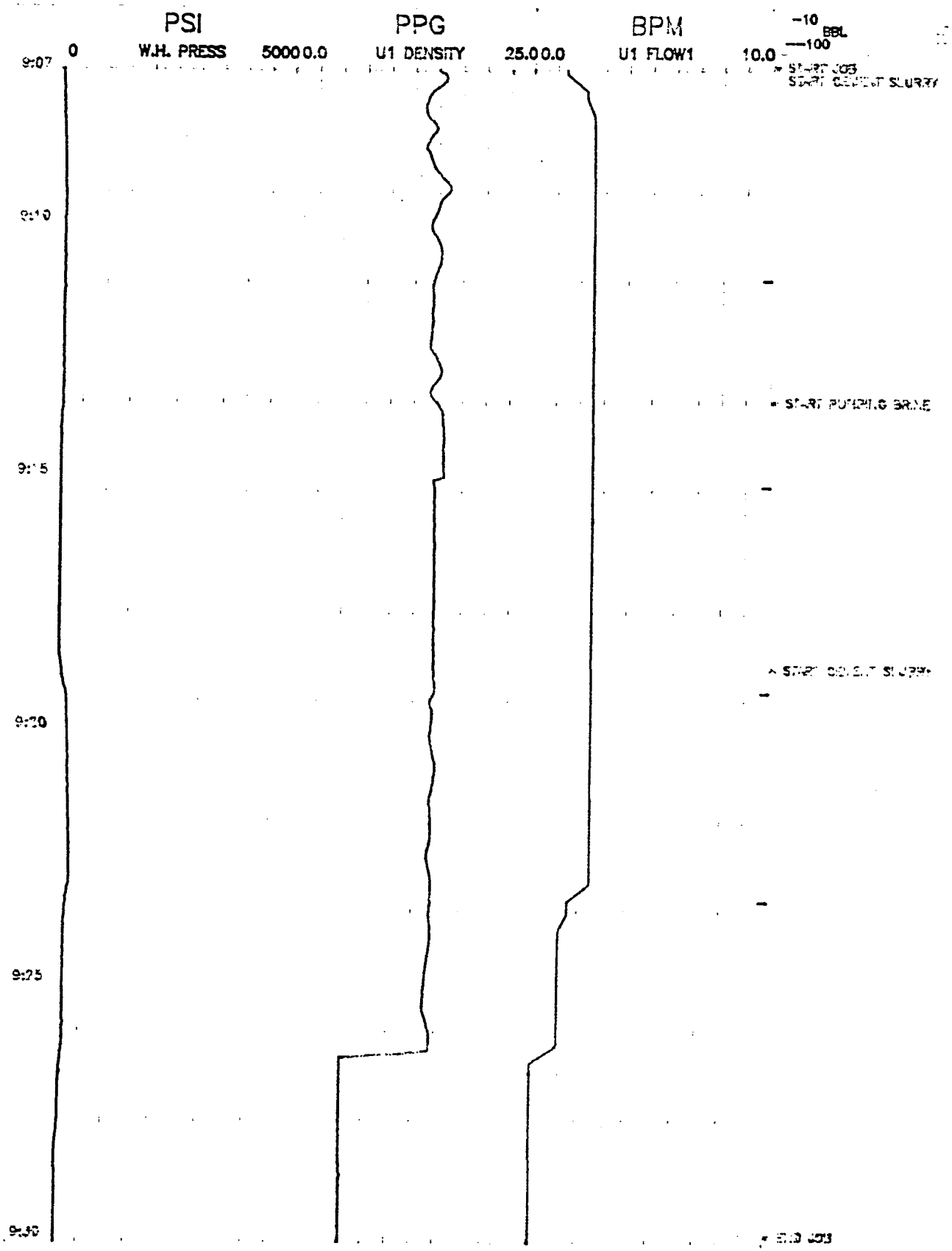
SIGNATURE OF DSI REPRESENTATIVE

TOTAL

PROP PLOT

WELL
1-21-C5
WESTERN WELL SERVICE
DOCHESENE

15-03-7590
9-15-91



PROP PLOT 2.0 15-SEP-91 09:17:50

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CEMENTING SERVICE REPORT

DS-496 PRINTED IN U.S.A.

DOWELL SCHLUMBERGER INCORPORATED

TREATMENT NUMBER 15-03-7540 | DATE 9-14-91
STAGE | DS DISTRICT Vernal, Utah

WELL NAME AND NO. 1-21-C5 | LOCATION (LEGAL) SEC 21T 3SR5W | RIG NAME: Western Well Service

FIELD-POOL Duchesne | FORMATION Surface

COUNTY/PARISH Duchesne | STATE Utah | API. NO.

NAME A.N.R.

AND

ADDRESS

ZIP CODE

WELL DATA:		BOTTOM			TOP
BIT SIZE	CSG/Liner Size	8 5/8			
TOTAL DEPTH	WEIGHT	—			
☐ ROT ☐ CABLE	FOOTAGE	850+			
MUD TYPE	GRADE	—			
☐ BHST ☐ BHCT	THREAD	8R			
MUD DENSITY	LESS FOOTAGE SHOE JOINT(S)	—			TOTAL
MUD VISC.	Disp. Capacity	—			

NOTE: Include Footage From Ground Level To Head In Disp. Capacity

Float			Stage Tool		
	TYPE			TYPE	
	DEPTH			DEPTH	
SHOE	TYPE			TYPE	
	DEPTH			DEPTH	

SPECIAL INSTRUCTIONS Pump 98 sks of 10-2 RFC and 13 Bbls 9# Brine and 64 sks 10-2 RFC ~~and~~ for surface and annulas plug as requested for plug to abandon

Head & Plugs	☐ TBG	☐ D.P.	SQUEEZE JOB	
☐ Double	SIZE		TOOL TYPE	
☐ Single	☐ WEIGHT		TOOL DEPTH	
☐ Swage	☐ GRADE		TAIL PIPE: SIZE	DEPTH
☐ Knockoff	☐ THREAD		TUBING VOLUME	Bbls
TOP ☐R ☐W	☐ NEW ☐ USED		CASING VOL. BELOW TOOL	Bbls
BOT ☐R ☐W	DEPTH		TOTAL	Bbls
			ANNULAR VOLUME	Bbls

IS CASING/TUBING SECURED? ☒ YES ☐ NO

LIFT PRESSURE — PSI | CASING WEIGHT - SURFACE AREA (3.14 x R²)

PRESSURE LIMIT 1000 PSI | BUMP PLUG TO PSI

ROTATE — RPM | RECIPROCATE FT | No. of Centralizers

JOB SCHEDULED FOR TIME: Rep DATE: 9-14 | ARRIVE ON LOCATION TIME: 0730 DATE: 9-14 | LEFT LOCATION TIME: 11:30 DATE: 9-14

TIME 0001 to 2400	PRESSURE TBG OR D.P.	PRESSURE CASING	VOLUME PUMPED BBL INCREMENT	VOLUME PUMPED BBL CUM	INJECT RATE	FLUID TYPE	FLUID DENSITY	SERVICE LOG DETAIL
0730								PRE-JOB SAFETY MEETING Rig up get Ready To cement down. Casing out 9 5/8"
0815	—	20	0	0	3	Brine	9	START Pumping Brine
0823	—	140	20	20	3	Fresh	8.34	START Fresh
0828	—	170	5	25	2.5	cem	14.2	START cement slurry
0835	—	0	to	31	0	"	"	Shut Down Fix Deck motor
0906	—	110	—	31	2.5	"	"	Resume pumping slurry
0913	—	120	22	53	2.5	Brine	9	START Brine spacer
0918	—	130	13	66	2.5	cem	14.2	START cement slurry
0925	—	10	16	82	0	"	"	Shut Down close casing valve in
0930								~~Job complete~~ Wait To Break well Head off And on cement
11:18								Job complete cement To surface

REMARKS

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS	SLURRY MIXED BBLS	SLURRY MIXED DENSITY
1	162	1.61	10-2 RFC	46	14.2
2.					
3.					
4					
5					
6					

BREAKDOWN ~~FLUID TYPE~~ ~~VOLUME~~ DENSITY | PRESSURE 170 MAX. MIN:

☐ HESITATION SQ. ☐ RUNNING SQ. | CIRCULATION LOST ☐ YES ☒ NO | Cement Circulated To Surf. ☒ YES ☐ NO 6 Bbls.

BREAKDOWN — PSI FINAL — PSI | DISPLACEMENT VOL. — Bbls | TYPE OF WELL ☒ OIL ☐ GAS ☐ STORAGE ☐ INJECTION ☐ BRINE WATER ☐ WILDCAT

Washed Thru Perfs ~~☐ YES~~ ☐ NO TO — FT | MEASURED DISPLACEMENT ☒ ☐ WIRELINE

PERFORATIONS TO 850' TO | CUSTOMER REPRESENTATIVE Hal Ivy | DS SUPERVISOR Robert I Fu

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-H624123
6. If Indian, Allottee or Tribe Name: Ute Indian Tribe
7. If Unit or CA, Agreement Designation: UT080I4986C699
8. Well Name and No.: Ute #1-21C5
9. API Well No.: 43-013-30448
10. Field and Pool, or Exploratory Area: Altamont
11. County or Parish, State: Duchesne County, Utah

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: ANR Production Company
3. Address and Telephone No.: P. O. Box 749 Denver, CO 80201-0749 (303) 573-4476
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FSL & 1980' FWL Section 21, T3S-R5W

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans	
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction	
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing	
	[ ] Casing Repair	[ ] Water Shut-Off	
	[ ] Altering Casing	[ ] Conversion to Injection	
	[X] Other Oil Sales	[ ] Dispose Water (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

13. 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.)*

The above referenced well was P&A'd 9/15/91. After reclaiming the pit, 39.28 bbls of oil were recovered, put into saleable condition and sold on January 16, 1992.

RECEIVED
MAR 16 1992
DIVISION OF
OIL GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Eileen Danni Dey Title Regulatory Analyst Date 3/11/92
(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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

*See Instruction on Reverse Side