



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

ORDER SWD-337

THE APPLICATION OF MERIDIAN OIL, INC.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Meridian Oil, Inc. made application to the New Mexico Oil Conservation Division on March 22, 1988, for permission to complete for salt water disposal its Cedar Hill SWD Well No. 1 located in Unit B of Section 29, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico.

The Division Director finds:

(1) Application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified; and

(3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met.

(4) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, Meridian Oil, Inc. is hereby authorized to complete its Cedar Hill SWD Well No. 1, located in Unit B of Section 29, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Morrison and Entrada formations at approximately 7550 feet to approximately 8550 feet through 4 1/2 inch plastic lined tubing set in a packer located at approximately 7550 feet.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

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Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

Prior to commencing injection operations into the well, the operator shall submit to the Santa Fe Office of the Division, a water analysis of formation water from the Morrison and Entrada formations within the subject well.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 1510 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Morrison and Entrada formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity so that the same may be inspected and witnessed.

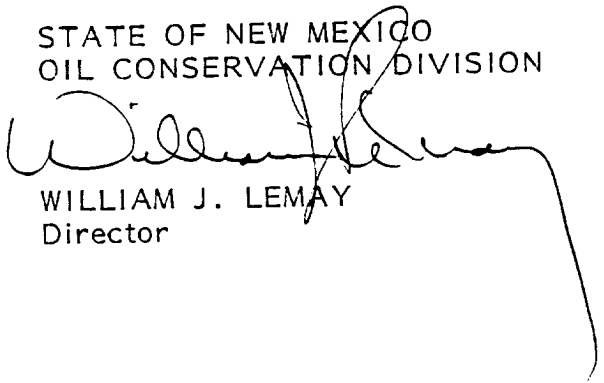
The operator shall immediately notify the supervisor of the Division's Aztec district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

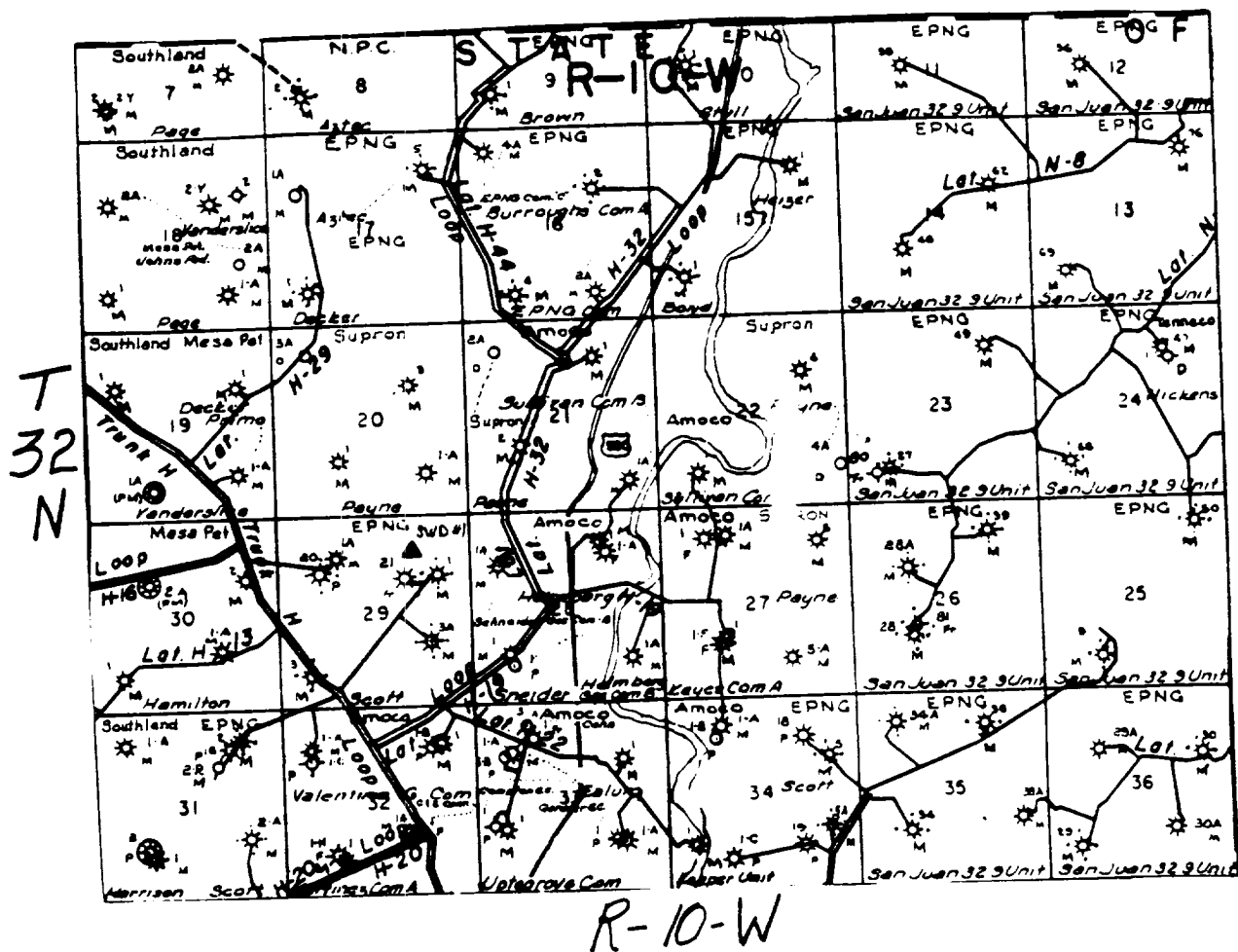
PROVIDED FURTHER, Jurisdiction of this cause is hereby retained by the Division for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in a this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

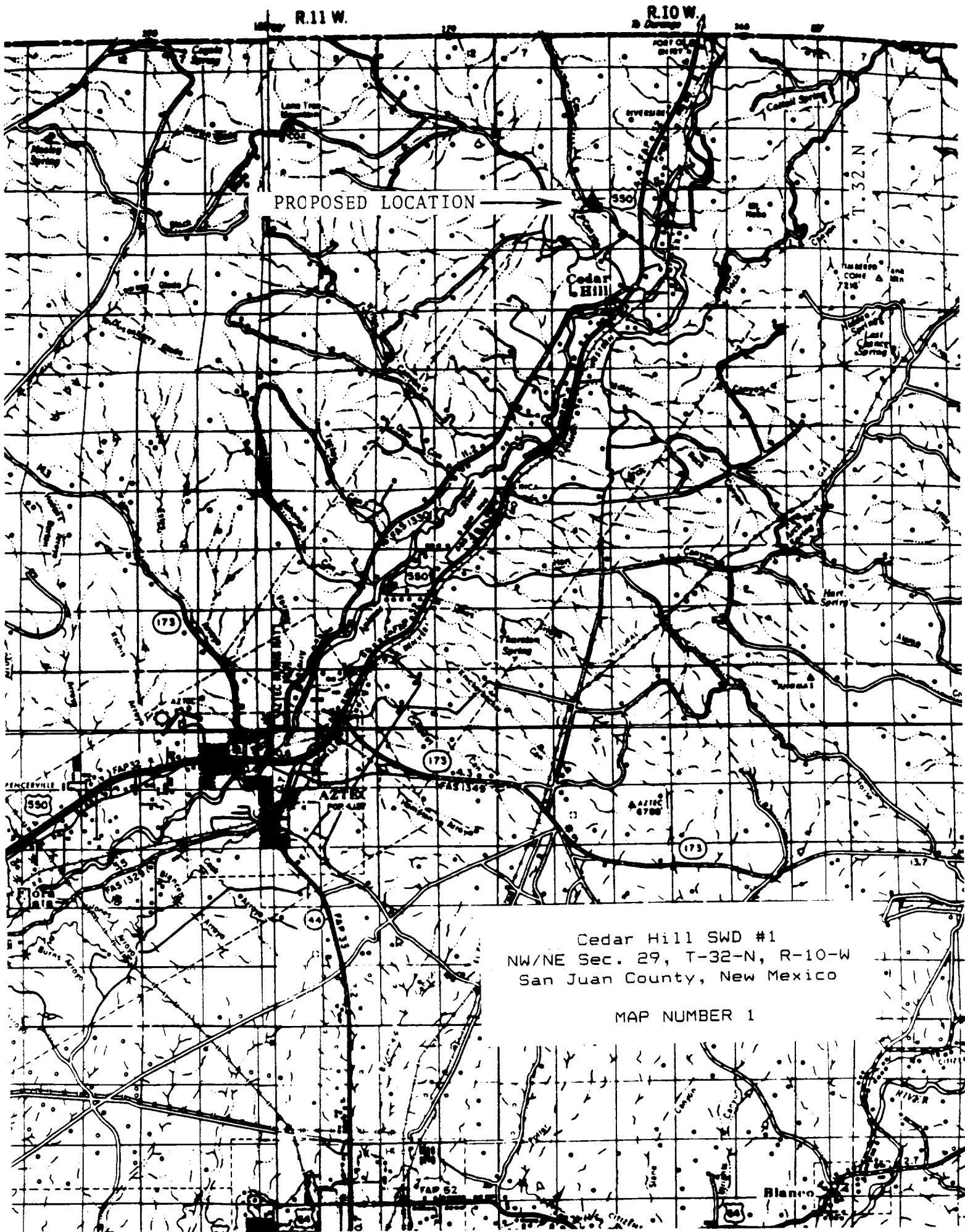
Operator shall submit monthly reports of the disposal operations in accordance with Rule 706 and 1120 of the Division Rules and Regulations.

Approved at Santa Fe, New Mexico, on this 2nd day of May, 1988.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director





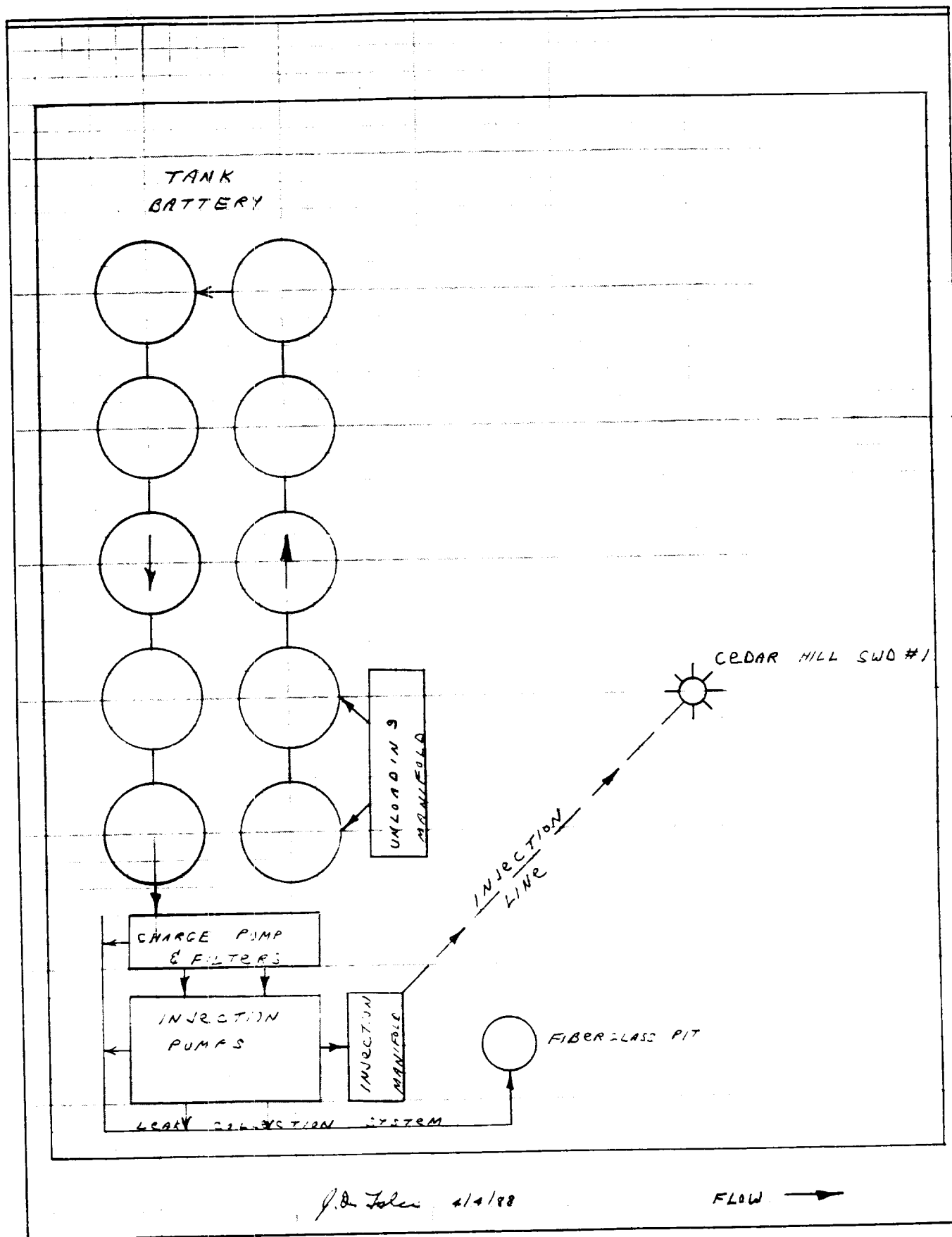
Cedar Hill SWD #1
NW/NE Sec. 29, T-32-N, R-10-W
San Juan County, New Mexico

MAP NUMBER 1

MERIDIAN OIL CO.
ENGINEERING CALCULATION

Sheet: 02 of 10
Date: 02/02/88
By: JS
File: CHSW01

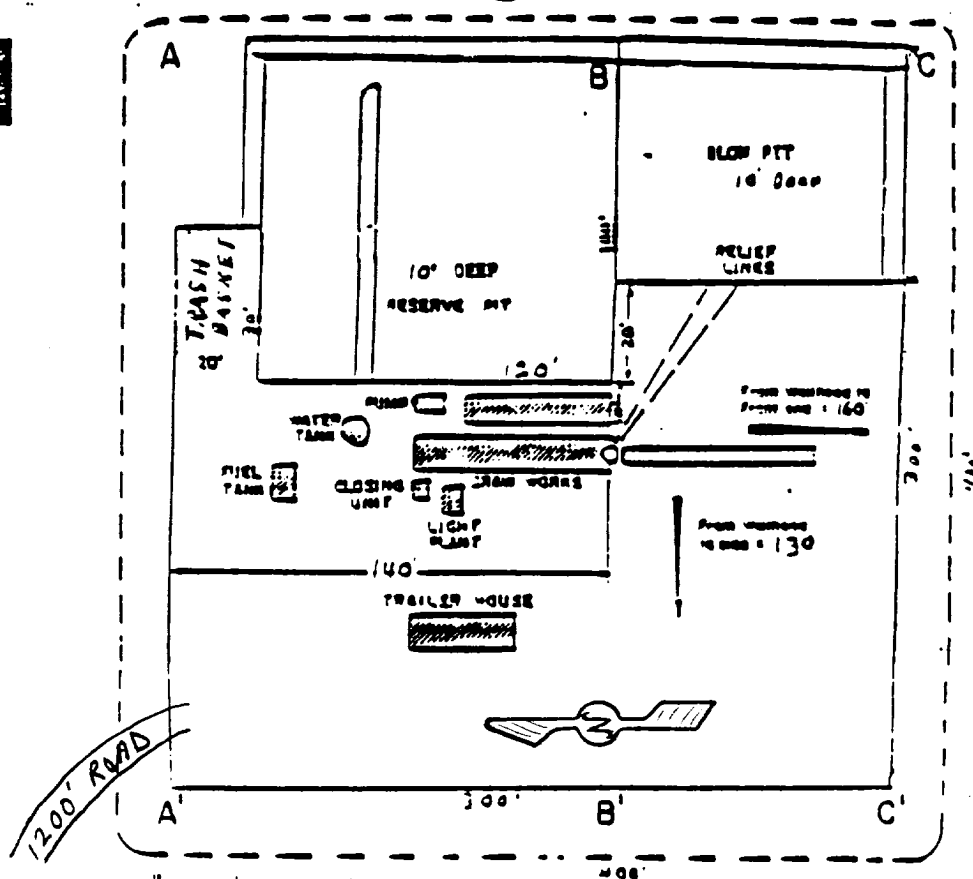
ANTICIPATED INJECTION FACILITIES
CEDAR HILL SWD #1





WELL NAME

Meridian Oil Co.
Cedar Hill SWD #1
830F/NL 1775F/EL
Section 29, T32N, R10W
San Juan County, N.M.
SWD



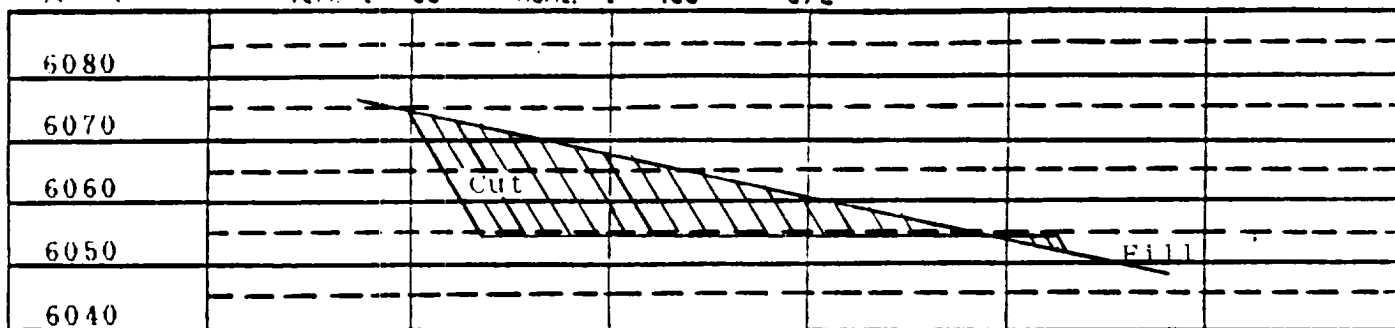
A - A'

Vert.: 1" = 30'

Horiz.: 1" = 100'

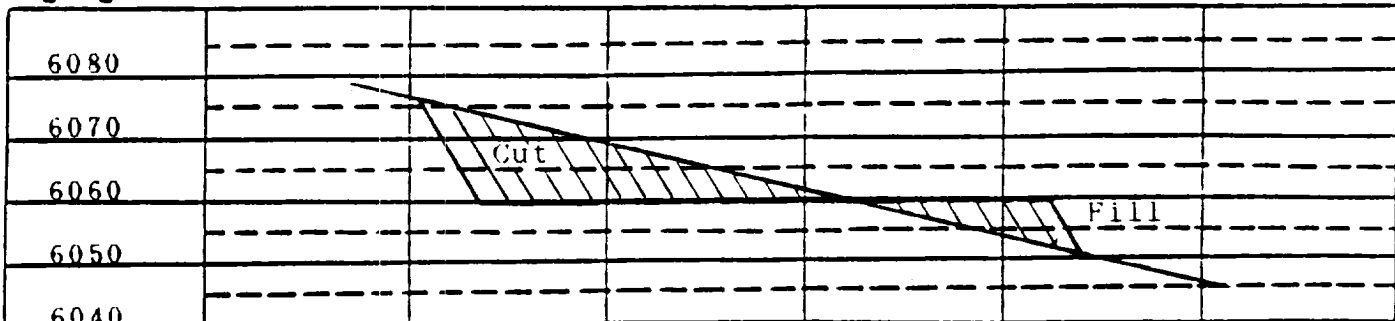
C/L

400'



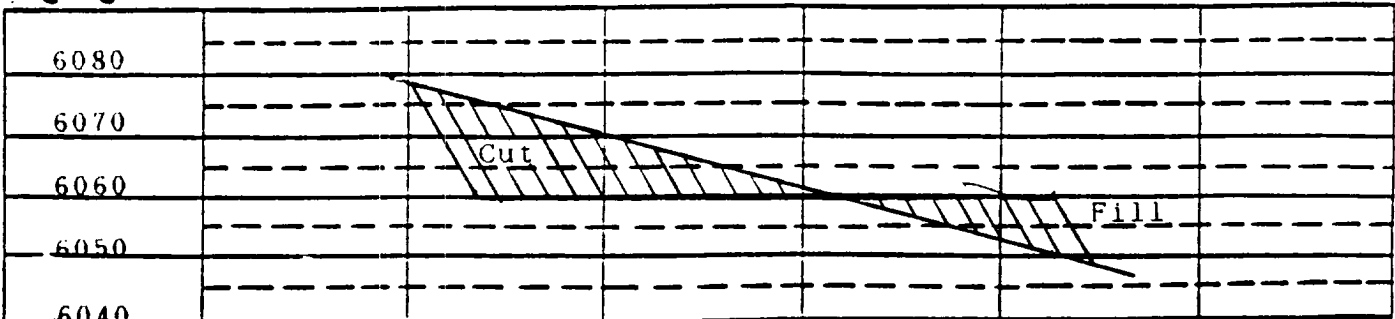
B - B'

C/L



C - C'

C/L



TYPICAL LOCATION PLAT FOR

FRUITLAND COAL

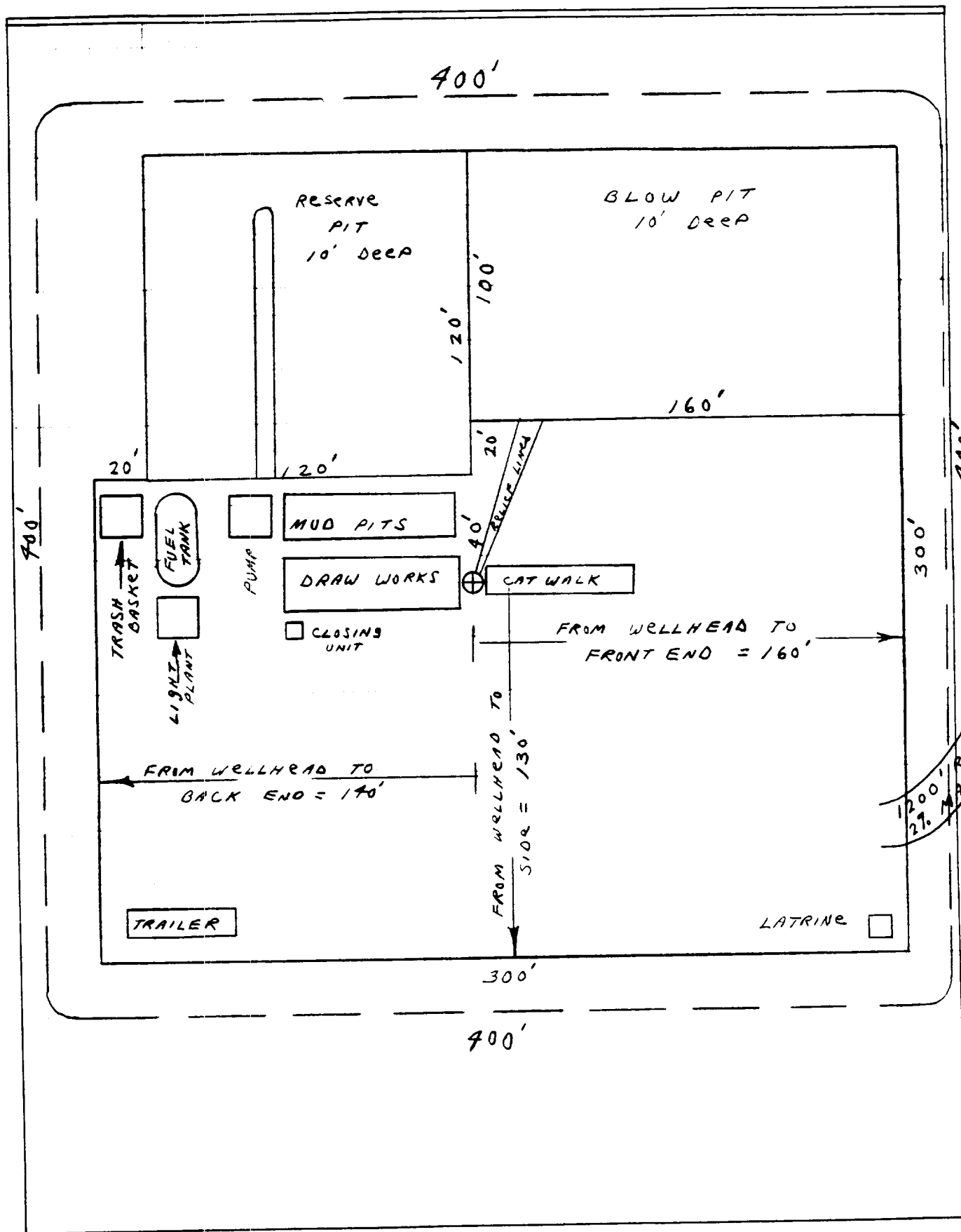
DRILL SITE

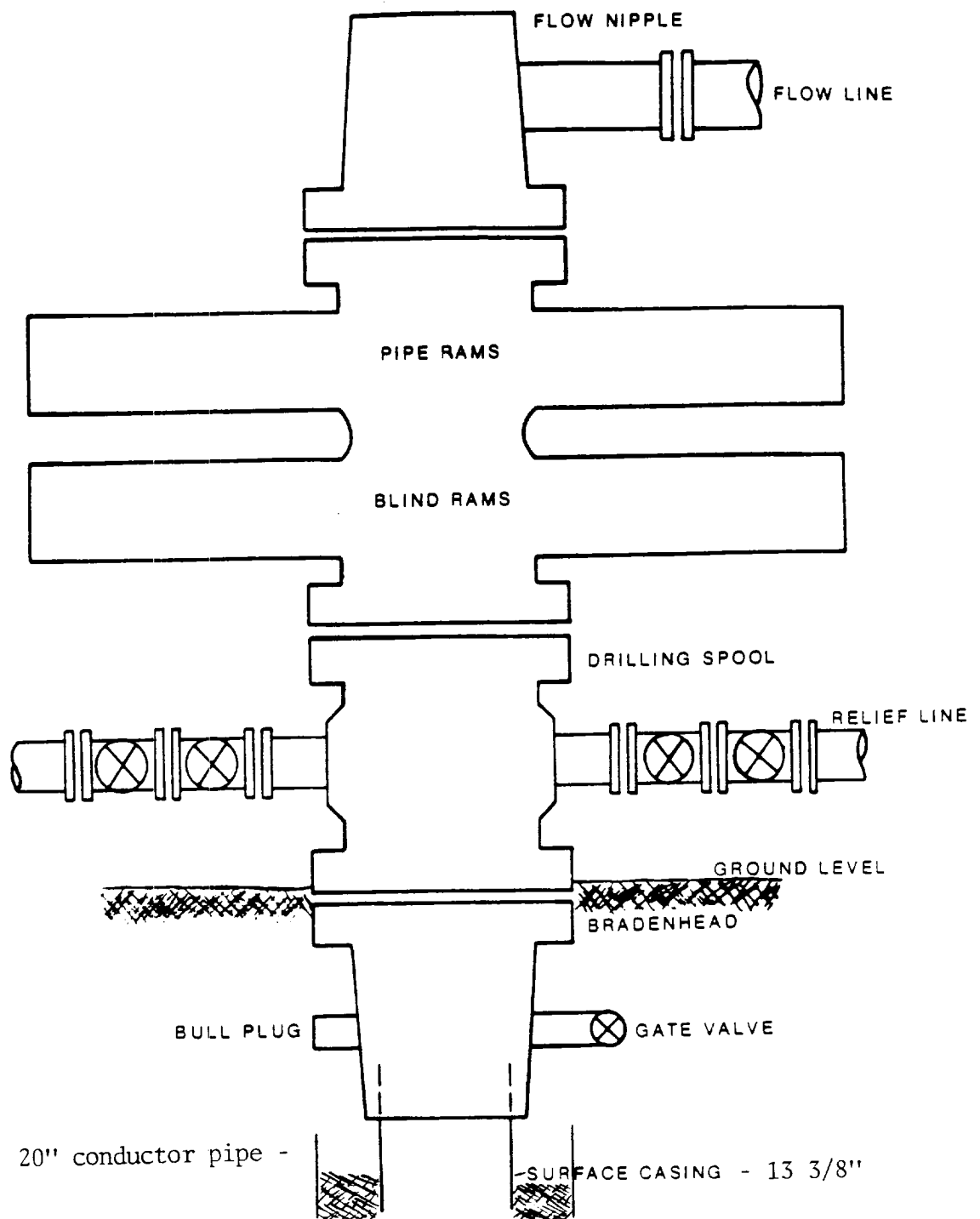
MERIDIAN OIL CO.
ENGINEERING CALCULATION

Sheet 1 of 1
Date: 03/31/88
By: ABJ
File: CHSW01

MERIDIAN OIL, INC.
LOCATION PLAT FOR THE
CEDAR HILL SWD #1

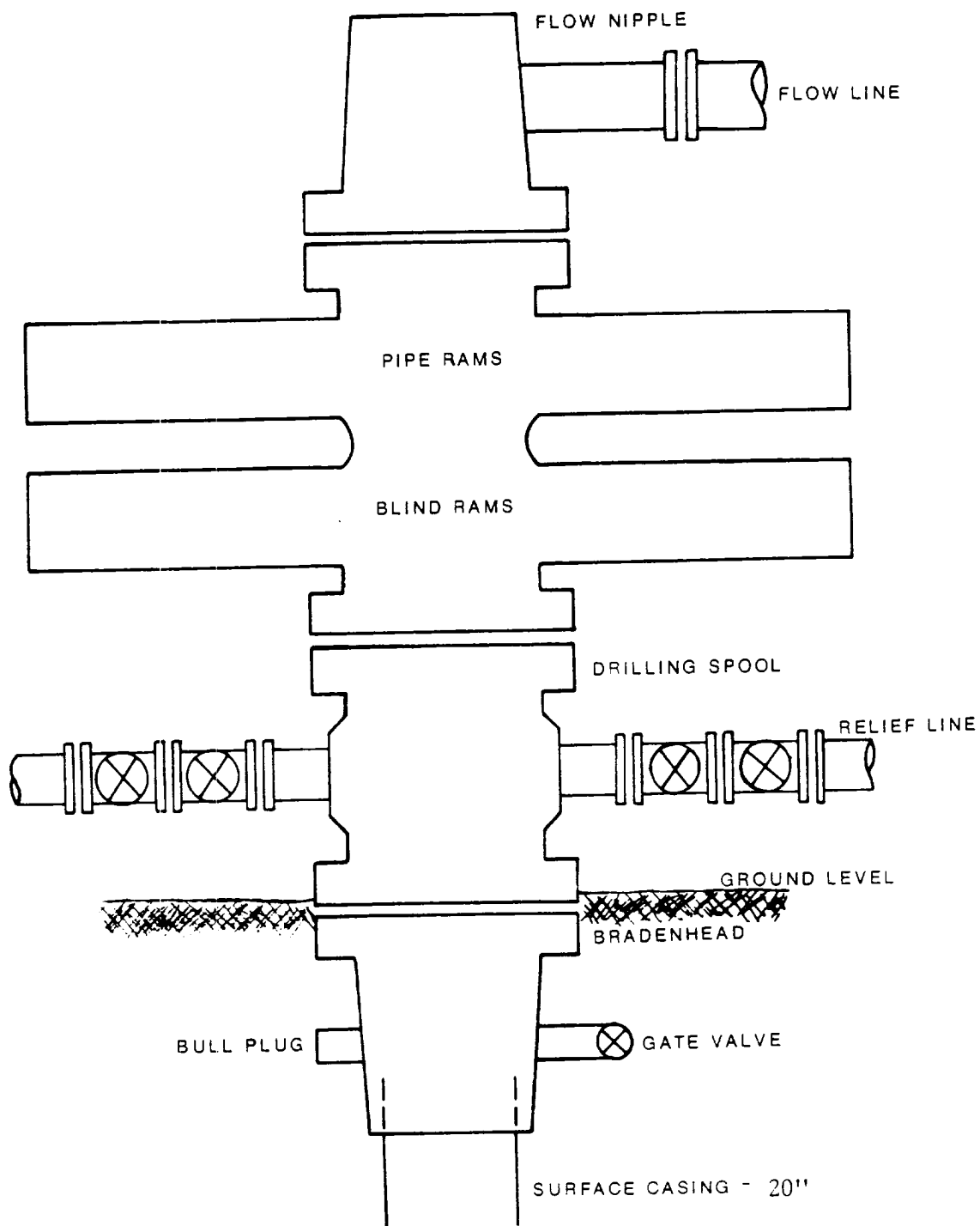
LOCATION PLAT #1





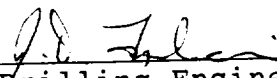
Series 900 Double Gate B.O.P.
Rated at 3000 psi Working Pressure

When gas drilling operations begin, a Schaffer Type 50 or equivalent rotating head is installed on top of the flow nipple and the flow liner is converted into a bleed line



20" 3000 psi Double Gate B.O.P. for drilling
 17 1/2" hole. When drilling operations begin,
 a rotating head is installed on top the flow
 nipple and the flow line goes to the mud pit.

8. Ancillary Facilities - No camps or air strips will be associated with this project.
9. Wellsite Layout - Please refer to the attached plat that includes cut and fill, orientation diagram and shows access road. The reserve pit will not be lined.
10. Plans for Restoration of the Surface - After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeded operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeded operations will be performed during the time period set forth by the regulatory body. The location injection equipment will be painted as designated by the responsible government agency.
11. Other Information- Terrain is a sandy slope with sage, pinon, and juniper growing. Bureau of Land Management is the surface owner. Deer, rabbits and cattle are occasionally seen on the proposed project site.
12. Operators Representative - S. W. Nance, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9723.
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 operations proposed herein will be performed by Meridian Oil Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.


Drilling Engineer

Multi-Point Surface Use Plan
Meridian Oil Inc. Cedar Hill SWD #1

1. Existing Road - Please refer to Maps No. 1 and 2 which show the existing roads. New roads which will be required have been marked on these maps. Meridian Oil has applied for an existing road right-of-way. All existing and new roads will be properly maintained during the duration of this project.
2. Planned Access Roads - Please refer to Map No. 2. The maximum grade of the access roads will be 2%. Approximately 1200 feet of road will be constructed that will not exceed twenty feet (20') in width. No additional turnarounds or turnouts will be required. Upon completion of the project, the access road will be adequately drained to control soil erosion. Three culverts will be required to control drainage and will be placed as required. No gates or cattleguards will be installed.
3. Location of Existing Wells - Please refer to Map No. 3.
4. Location of Tank Batteries and Injection Facilities - Please refer to Map No. 2. Map No. 2 shows the existing roads and new proposed access road. All proposed injection facilities are shown on the attached anticipated injection facilities plat.
5. Location and Type of Water Supply - Water will be hauled by truck for the proposed project and will be obtained from existing Meridian Oil Fruitland coal wells in the Cedar Hill area. Also, the Decker Water Hole located in Section 29, T-32-N, R-10-W will be used.
6. Source of Construction Materials - No additional materials will be required to build either the access road or the proposed location.
7. Methods of Handling Waste Materials - All garbage and trash materials will be put into a trash basket shown on the attached Location Plat No. 1. The trash basket will be emptied as necessary. A latrine, the location of which is also shown on Plat No. 1, will be provided for human waste. If large amounts of liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying any of these materials into the watershed. No earthen pit will be located on natural drainage; all earthen pits will be so constructed as to prevent leakage from occurring.

Operations Plan - Cedar Hill SWD #1

13 3/8" intermediate - (cont'd)

Second stage - cement with 900 sacks of 65/35 Class "B" Pozmix with 6 1/4#/sack gilsonite, 2% calcium chloride. Tail in with 100 sacks Class "B" with 2% calcium chloride, 1/4#/sack flocele (1650 cu.ft. of slurry, 100% excess to circulate to surface). Run temperature survey at 8 hours if cement does not circulate to surface. WOC 12 hours. Test casing to 1200 psi for 30 minutes.

9 5/8" liner - lead with 800 sacks of 50/50 Class "B" Pozmix with 2% gel, 10% salt, 1% Halad-9, 1/4#/sack flocele. Tail in with 100 sacks Class "B" with 1/4#/sack flocele, and 0.4% Halad-22A (1150 cu.ft. of slurry, 30% excess to circulate liner). WOC 12 hours. Test casing to 1200 psi for 30 minutes.

7" long string - lead with 300 sacks 50/50 Premium Poz, 2% gel, 10% salt, 1% Halad-22A, 35% coarse silica, 1/4#/sack flocele. Tail with 200 sacks Premium cement, 35% coarse silica, 1% Halad-22A, 1/4#/sack flocele (625 cu.ft. of slurry, 50% excess to circulate to bottom of 9 5/8" liner). Run temperature survey at 8 hours. WOC 18 hours.

Operations Plan - Cedar Hill SWD #1

III. Casing Program:

<u>A. Hole Size</u>	<u>Csg. Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Interval</u>
26"	20"	133.0#	K-55	0-500'
17 1/2"	13 3/8"	61.0#&68.0#	K-55	0-3110'
12 1/4"	9 5/8"	36.0#&40.0#	K-55 & N-80	2970-5770'
8 3/4"	7"	23.0#&26.0#	K-55 & N-80	0-8600'

B. Float Equipment:

20" surface - cement nose float shoe equipped for inner string cementing.

13 3/8" intermediate - cement nose guide shoe, float collar and multiple stage cementer equipped for two stage cementing. Set tool for second stage at $\pm 1200'$. Ten centralizers, one every other joint off bottom for a total of five, one below and four above the stage tool every other joint.

9 5/8" liner - cement nose guide shoe, float collar and five centralizers every other joint off bottom. A 9 5/8" x 13 3/8" liner hanger or external casing packer will be used to isolate the top of the liner.

7" long string - cement nose guide shoe, float collar and centralizers every other joint as required to centralize casing across injection intervals.

C. Injection string:

7550' of 4 1/2", 10.5#, K-55 8rd tubing with a 7" x 4 1/2" Baker Model "FA-1" production packer and Baker Model "K" seal assembly on bottom.

D. Wellhead Equipment:

13 3/8" weld on x 7" x 4 1/2" 3000 psi xmas tree assembly single completion for standard service.

IV. Cementing:

20" surface - cement with 1270 sacks Class "B" neat with 1/4# cello-flake/sack and 3% calcium chloride (1500 cu.ft. of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 600 psi for 30 minutes.

13 3/8" intermediate -
First stage - cement with 1000 sacks of 65/35 Class "B" Pozmix with 6 1/4#/sk gilsonite, 2% calcium chloride. Tail in with 200 sacks class "B" with 2% calcium chloride, 1/4#/sack flocele (1950 cu.ft. of slurry, 50% excess to circulate to stage tool). Drop opening bomb, wait 30 minutes, open stage tool and circulate for three hours.

Operations Plan
Cedar Hill SWD #1

Location: 830'N, 1775'E, Sec. 29, T-32-N, R-10-W, San Juan Co., NM

Formation: Morrison/Entrada Wildcat Disposal Well Elevation: 6059'GL

I. Geology:

A. Formation Tops:	Surface	Nacimiento	Point Lookout	5170'
	Ojo Alamo	1105'	Mancos	5670'
	Kirtland	1180'	Gallup	6475'
	Fruitland	2450'	Greenhorn	7195'
	Pic.Cliffs	2875'	Graneros	7250'
	Lewis	2980'	Dakota	7320'
	Chacra	3630'	Morrison	7575'
	Mesa Verde	4440'	Todilto	8385'
	Cliff House	4745'	Entrada	8400'
	Menefee	4820'	Total Depth	8600'

B. Logging Program:

GR-Neutron: TD - surface.

Induction-Density: TD - intermediate casing

± 15 sidewall cores across injection interval

Mud loggers from Dakota to TD

Natural gauges at 3620', 4430', 4735', 4820', 5160', 5320',
5770', 6465', 7185', 7240', 7310', 7415', and 7560'.

II. Drilling

A. Mud Program:

1. 26" surface hole: 0 - 500' spud mud
2. 17 1/2" intermediate hole: 500' - 3110' fresh water based mud system
3. 12 1/4" drilling liner: 3110' - 5770' natural gas
4. 8 3/4" long string: 5770' - 8600' natural gas through the Dakota to ± 7575'. Fresh water based mud system to TD.

B. BOP Program:

1. 26" hole: none required
2. 17 1/2" hole: 20" 3000 psi double gate BOP with 20" 3000 psi rotating head (see Figure #BOP 1)
3. 12 1/4" hole: 13 5/8" 3000 psi double gate BOP with 13 5/8" 3000 psi rotating head (see Figure #BOP 2)
4. 8 3/4" hole: 13 5/8" 3000 psi double gate BOP with 13 5/8" 3000 psi rotating head (see Figure #BOP 2)