GTLT - ____13____

Steam Reserve Corporation
(6&8)-16S-7W
Sierra County

Well No. 7 & 9

April 19. 1985

Roy E. Johnson
State of New Mexico
Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Sundry Notices and Reports on Geothermal Resource Exploration Operations in Sierra County, New Mexico for Steam Reserve Corporation's Hillsboro Project No. 1124

Dear Mr. Johnson:

Enclosed are three Geothermal Sundry Notices for holes Nos. 1124-6, 1124-7, and 1124-9, drilled at Steam Reserve Corporation's Hillsboro Project in Sierra County, New Mexico. The holes were properly completed and abandoned in accordance with the rules and regulations of the State of New Mexico. Also enclosed are lithologic descriptions for the three holes.

Very truly yours,

Anita Clement

Anita Clement
Permit Administrator

AC/m
Enc.

Hold For inspection

Hillsboro 1124-7

Depth (ft)	Description
0 - 500' TD	Santa Fe Group alluvium. Silt, sand, and gravel. Clasts are predominantly intrusive and extrusive fragments. Various felsic compositions predominant. Basalt fragments are present, but minor. Textural variations from predominantly sand to predominantly gravel. Intervals at 30 to 90 feet and 470 to 500 feet are mostly sand-size material. Gravel predominates in all other samples. Intact gravel clasts exhibiting weathered surfaces are mostly angular to subangular. Minor content of well-rounded gravel. Depositional environment is interpreted as alluvial fan, but may also contain thin fluvial-channel deposits. Very-fine-grained metallic mineralization, probably pyrite, is present in many samples, but appears to be associated exclusively with basalt fragments. This mineralization is interpreted to have occurred within the basalt formation and not within the Santa Fe Group alluvium. Samples from this hole are similar to hole 1124-9, but exhibit a greater heterogeneity of clast lithology.

Form G-103
Adopted 10/1/74

NO. OF COPIES RECEIVED		
DISTRIBUTION		
File	✓	
N. M. B. M.		
U. S. G. S		
Operator		
Land Office		

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. Box 2088, Santa Fe 87501

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease State ☐ Fee ☒
5.a State Lease No. N/A

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☒ Low-Temp Thermal ☐ Injection/Disposal ☐

7. Unit Agreement Name: N/A

2. Name of Operator: STEAM RESERVE CORPORATION

8. Farm or Lease Name: V. H. Cunningham

3. Address of Operator: 1707 Cole Blvd., Golden, Colorado 80401-3293

9. Well No.: 7

4. Location of Well
Unit Letter K 2200 Feet From The West Line and 2300 Feet From The South Line, Section 6 Township 16S Range 7 West NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation *(Show whether DF, RT, GR, etc.)*: 5520'

12. County: Sierra

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☒	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER ☐		OTHER ☐	

17. Describe Proposed or completed Operations *(Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work)* SEE RULE 203.

Completion - After hole No. 1124-7 was completed on 1-25-85 and the drill stem removed from the holes, a 3/4" PVC pipe, which had been capped on the bottom, was inserted into the holes. The pipe was filled with water and capped. The area around the intruded pipe was then backfilled with drill cuttings to 10 feet below surface, the upper 10 feet of annulus was filled with cement.

Abandonment - Hole No. 1124-7 was properly abandoned on 3-14-85. The PVC pipe was cut off below ground level. The upper 3m (10 feet) was filled with cement. Any remaining depression was filled with soil and raked to restore the site to its original appearance and contour. All drilling-related refuse was removed and disposed of properly.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Anita Clement TITLE Attorney-in-Fact DATE 4-18-85

APPROVED BY Roy E. Johnson TITLE DISTRICT SUPERVISOR DATE 11/1/85

CONDITIONS OF APPROVAL, IF ANY:

Form G-101
Adopted 10/1/74

NO. OF COPIES RECEIVED		
DISTRIBUTION		
File	1	✓
N.M.B.M.	1	
U.S.G.S.	1	
Operator	1	
Land Office		

NEW MEXICO OIL CONSERVATION COMMISSION

P. O. Box 2088, Santa Fe 87501

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK---GEOTHERMAL RESOURCES WELL

5. Indicate Type of Lease: STATE ☐ FEE ☒

5.a State Lease No.: N/A

1a. Type of Work: Drill ☒ Deepen ☐ Plug Back ☐

b. Type of Well: Geothermal Producer ☐ Low-Temp Thermal ☐ Temp Observation ☒ Injection/Disposal ☐

7. Unit Agreement Name: N/A

8. Farm or Lease Name: V. H. Cunningham

2. Name of Operator: Steam Reserve Corporation

9. Well No.: 7

3. Address of Operator: 1707 Cole Boulevard, Golden, CO 80401

10. Field and Pool, or Wildcat: Wildcat

4. Location of Well: UNIT LETTER K LOCATED 2200 FEET FROM THE West LINE AND 2300 FEET FROM THE South LINE OF SEC. 6 TWP. 16S RGE. 7W NMPM

12. County: Sierra

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
500'	Tertiary seds & volcanics	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
5520'	10,000 Multiple	To be determined	June 1, 1984

Well Low Temp. Well or Geothermal Observation Well Bond

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
4-3/4" - 6-3/4"	N/A	N/A	N/A	N/A	N/A

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 8-20-84
UNLESS DRILLING UNDERWAY

(1) Drill hole 4-3/4" - 6-3/4" to TD
(2) Run 3/4" PVC or 3/4" iron pipe to TD
(3) Cement top 10' of annulus around pipe
(4) Fill pipe with water
(5) Measure temperature of hole
(6) Install cement plug inside the PVC or iron pipe

RECEIVED
MAY 8 2 1984
OIL CONSERVATION
SANTA FE

OIL CONSERVATION COMMISSION TO BE NOTIFIED WITHIN 24 HOURS OF BEGINNING OPERATIONS

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. Give blowout preventer program, if any.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Joyce Emerson Joyce Emerson Title Attorney-in-Fact Date 5/4/84

(This space for State Use)

APPROVED BY Carl Wong TITLE DISTRICT SUPERVISOR DATE 5/22/84

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. BOX 2088 SANTA FE 87501

Form C-102
Adopted 10/1/7

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Steam Reserve Corporation	V. H. Cunningham	7

Unit Letter	Section	Township	Range	County
K	6	16 South	7 West	Sierra

Actual Footage Location of Well:
2200 feet from the West line and 2300 feet from the South line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
5520'	N/A	N/A	N/A Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

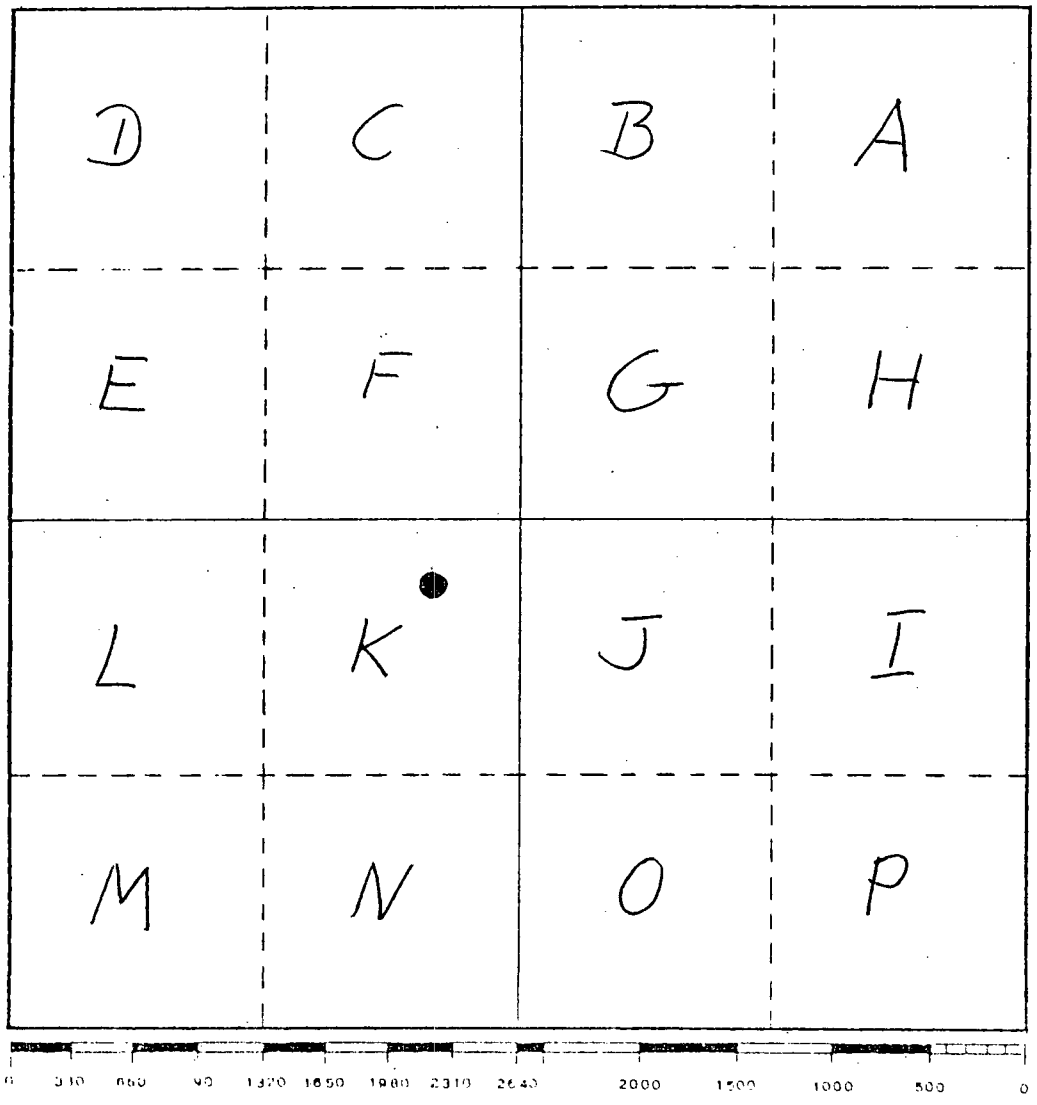
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). N/A

3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc? N/A

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Joyce Emerson

Position: Attorney-in-Fact

Company: Steam Reserve Corporation

Date: 5/4/84

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

Hillsboro 1124-9

Depth (ft)	Description
0 - 500' TD	Santa Fe Group alluvium. Silt, sand, and gravel. Gravel-size material comprises approximately 75 percent of samples above 370 feet. Below 370 feet, samples are approximately half sand-size material and half gravel-size material. Sand fraction is composed of lithic fragments, feldspar grains, and quartz grains. Gravel fraction appears to be derived from one igneous source rock. Lithic fragments are moderate-reddish-brown to dark-reddish-brown, pale-red-purple, and medium gray. Fragments exhibit moderate weathering but preserve some textural features. Most fragments are porphyritic, but a few are aphanitic. Altered feldspars are the most common phenocryst. These sedinents were probably derived from the Pollack Quartz Latite of Jicha (1954) and Hedlund (1977). Samples from this hole are similar to those from hole 1124-7, but exhibit less heterogeneity of lithology. Depositional environment is interpreted to be alluvial fan.

Form G-103
Adopted 10/1/74

NO. OF COPIES RECEIVED		
DISTRIBUTION		
File	✓	
N. M. B. M.		
U. S. G. S		
Operator		
Land Office		

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. Box 2088, Santa Fe 87501

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease State ☐ Fee ☒
5.a State Lease No. N/A

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☒ Low-Temp Thermal ☐ Injection/Disposal ☐
7. Unit Agreement Name: N/A
2. Name of Operator: STEAM RESERVE CORPORATION
8. Farm or Lease Name: V. H. Cunningham
3. Address of Operator: 1707 Cole Blvd., Golden, CO 80401-3293
9. Well No.: 9
4. Location of Well: Unit Letter L 900 Feet From The West Line and 1800 Feet From The South Line, Section 8 Township 16S Range 7 West NMPM.
10. Field and Pool, or Wildcat: Wildcat
15. Elevation (*Show whether DF, RT, GR, etc.*): GR-5360'
12. County: Sierra

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☒	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER ☐		OTHER ☐	

17. Describe Proposed or completed Operations *(Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work)* SEE RULE 203.

Completion - After hole No. 1124-9 was completed on 1-31-85 and the drill stem removed from the holes, a 3/4" PVC pipe, which had been capped on the bottom, was inserted into the holes. The pipe was filled with water and capped. The area around the intruded pipe was then back-filled with drill cuttings to 10 feet below surface, the upper 10 feet of annulus was filled with cement.

Abandonment - Hole No. 1124-9 was properly abandoned on 3-14-85. The PVC pipe was cut off below ground level. The upper 3m (10 feet) was filled with cement. Any remaining depression was filled with soil and raked to restore the site to its original appearance and contour. All drilling-related refuse was removed and disposed of properly.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Anita Clement TITLE Attorney-in-Fact DATE 4-18-85

APPROVED BY Roy E. Johnson TITLE DISTRICT SUPERVISOR DATE 11/1/85

CONDITIONS OF APPROVAL, IF ANY:

Form G-101
Adopted 10/1/74

NO. OF COPIES RECEIVED		
DISTRIBUTION		
File	1	✓
N.M.B.M.	1	
U.S.G.S.	1	
Operator	1	
Land Office		

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. Box 2088, Santa Fe 87501

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK---GEOTHERMAL RESOURCES WELL

5. Indicate Type of Lease: STATE ☐ FEE ☒
5.a State Lease No.: N/A

1a. Type of Work: Drill ☒ Deepen ☐ Plug Back ☐
b. Type of Well: Geothermal Producer ☐ Low-Temp Thermal ☐ Temp Observation ☒ Injection/Disposal ☐
7. Unit Agreement Name: N/A
8. Farm or Lease Name: V. H. Cunningham
2. Name of Operator: Steam Reserve Corporation
9. Well No.: 9
3. Address of Operator: 1707 Cole Boulevard, Golden, Colorado 80401
10. Field and Pool, or Wildcat: Wildcat
4. Location of Well: UNIT LETTER L LOCATED 900 FEET FROM THE West LINE AND 1800 FEET FROM THE South LINE OF SEC. 8 TWP. 16S RGE. 7W NMPM
12. County: Sierra

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
500'	Tertiary seds & volcanics	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
5360'	10,000 Multiple Well, Low Temp. Well or Geothermal Observation Well Bond	To be determined	June 1, 1984

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
4-3/4" - 6-3/4"	N/A	N/A	N/A	N/A	N/A

(1) Drill hole 4-3/4" - 6-3/4" to TD
(2) Run 3/4" PVC or 3/4" iron pipe to TD
(3) Cement top 10' of annulus around pipe
(4) Fill pipe with water
(5) Measure temperature of hole
(6) Install cement plug inside the PVC or iron pipe

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 8-20-84
UNLESS DRILLING UNDERWAY

RECEIVED
MAY 22 1984
OIL CONSERVATION DIVISION
SANTA FE

OIL CONSERVATION COMMISSION TO BE NOTIFIED WITHIN 24 HOURS OF BEGINNING OPERATIONS

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. Give blowout preventer program, if any.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Joyce Emerson by Joyce Emerson Title Attorney-in-Fact Date 5/4/84

(This space for State Use)

APPROVED BY Carl Ulvog TITLE DISTRICT SUPERVISOR DATE 5-22-84

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. BOX 2088 SANTA FE 87501

Form G-102
Adopted 10/1/74

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Steam Reserve Corporation	V. H. Cunningham	9

Unit Letter	Section	Township	Range	County
L	8	16 South	7 West	Sierra

Actual Footage Location of Well:
900 feet from the West line and 1800 feet from the South line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
5360'	N/A	N/A	N/A Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). N/A

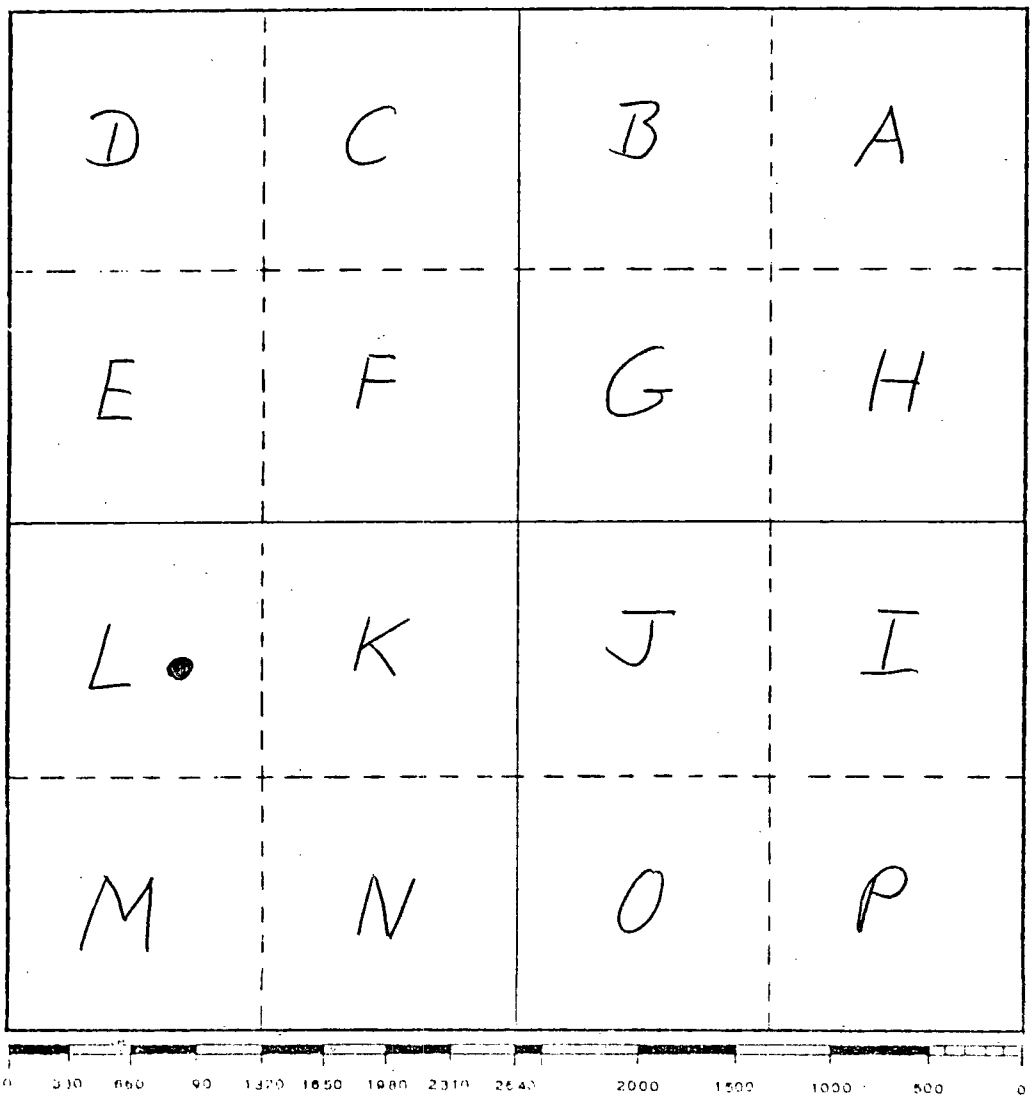
3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc? N/A

☐ Yes ☐ No If answer is "yes," type of consolidation _____

RECEIVED
MAY 22 1984
OIL CONSERVATION DIVISION
SANTA FE

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Joyce Emerson

Position: Attorney-in-Fact

Company: Steam Reserve Corporation

Date: 5/4/84

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

PROJECT DESCRIPTION

Steam Reserve Corporation will take necessary measures to protect all aspects of the environment. Steam Reserve Corporation also agrees that the proposed drilling program will be conducted in accordance with terms and conditions included within the approved permit.

Steam Reserve Corporation is currently permitting three (3) drill site locations for the Hillsboro Project in Sierra County, New Mexico. Two of these holes are located on privately held land to which the owner has 100% surface and minerals rights and one of the holes will be located on New Mexico State Lease No. GTR-290. Steam Reserve Corporation will notify the New Mexico Oil Conservation Commission prior to commencing operations.

Exhibit A - Hillsboro Project Information indicates:

(1) Hole numbers
(2) Location
(3) Section
(4) Township
(5) Range
(6) Elevation
(7) AMAX lease number
(8) Land status

Shallow exploratory thermal gradient drill holes are usually drilled to depths of 30 to 500 feet. The holes which Steam Reserve Corporation proposes to drill will have a maximum depth of 500 feet.

Thermal gradient holes generally are drilled with bits 4-3/4" to 6-3/4" in diameter. Water wells, by contrast, frequently are drilled with bits 8" to 12" in diameter. Consequently, the drilling of a thermal gradient hole usually has less overall impact than the drilling of a water well of comparable depth.

The equipment used to drill shallow thermal gradient drill holes consist of a light truck-mounted rotary drill rig and a water truck. The truck-mounted drill is usually set up on level ground as close as possible to existing roads. No bulldozing or leveling is required nor is the drill dug in. The water truck is parked adjacent to the drill.

Air is used to remove drill cuttings from the holes when drilling above the water table. Water mixed with drilling mud and circulated through a portable mud tank accomplishes the same in drilling below the water table or in areas where the water table is relatively shallow. Foam will be used when necessary and contained within mud tanks or mud sumps. Defoamer will be used only when necessary and also will be contained within mud tanks or mud sumps. No toxic substances will be used at any time. Drill cuttings from the holes are used to back-fill the drill holes.

A 300 foot hole generally requires approximately 5 to 20 hours to drill depending upon rock hardness and other drilling conditions. Under normal conditions, a 500 foot hole requires between 10 and 40 hours to drill. Therefore, depending upon shift length, a 500 foot well can usually be completed in a maximum of five days.

After the drill hole is completed and the drill rods removed from the hole, a PVC or iron pipe of approximately 1" in outside diameter is inserted into the hole. The pipe is capped on the bottom and is filled with water. The drill hole is then backfilled with drill cuttings. Approximately one week later, after the hole has had a chance to reach near thermal equilibrium with the surrounding rocks, a thermister probe is lowered into the hole and temperature measurements are made at intervals down the hole. A second and final temperature survey is made about a month after completion of the well.

Drilling operations are planned to take approximately 30 days. Temperature observation measurements will require an additional 60 days. Thus, the total project operations will require approximately 90 days. Each hole will be used for temperature observation purposes for approximately 8 weeks. Upon completion of operations, the pipe will be cut off at ground level and the top 10' filled with cement.

Mr. Dean Pilkington, Chief Geologist, Steam Reserve Corporation will be in charge of the overall operation. Ms. Joyce Emerson, Manager of Government Relations Steam Reserve Corporation will be responsible for regulatory and environmental matters. All personnel can be contacted at the letterhead address.

EXHIBIT A
Hillsboro Project (1124)
Sierra County, New Mexico NMPM

Hole Number	Location				Elevation	AMAX Lease No.	Land Status
	Description	Section	Township	Range			
1124-6	NW/4NE/4	32	15S	7W	5,680'	1124-2001	New Mex. GTR-290
1124-7	SW/4NW/4	6	16S	7W	5,520'	1124-3001	V.H. Cunningham
1124-9	SE/4NW/4	8	16S	7W	5,360'	1124-3001	V.H. Cunningham

Township 15 & 16 South, Range 7 West