

GTLT - _____ 5 _____

**Amax Exploration, Inc.
(Sierra County)**

GTR-290; 1124-1 & 1124-4

APR 22 1982
OIL CONSERVATION DIVISION
SANTA FE

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

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

Indicate Type of Lease
STATE FEE

5.a State Lease No.
GTR-290

1a. Type of Work
Drill Deepen Plug Back
b. Type of Well
Geothermal Producer Temp Observation
Low-Temp Thermal Injection/Disposal

7. Unit Agreement Name
N/A

8. Farm or Lease Name
State (1124)

2. Name of Operator
AMAX Exploration, Inc.

9. Well No.
5

3. Address of Operator
1707 Cole Blvd.; Golden, Colorado 80401

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well
UNIT LETTER I LOCATED 5100 FEET FROM THE West LINE
AND 2900 FEET FROM THE North LINE OF SEC. 32 TWP. 15S RGE. 7W NMPM

12. County
Sierra

19. Proposed Depth 500' 19A. Formation Santa Fe 20. Rotary or C.T. Rotary

21. Elevations (Show whether DF, RT, etc.) 5,680' gr 21A. Kind & Status Plug. Bond \$10,000 Multiple- 21B. Drilling Contractor unknown at present 22. Approx. Date Work will start April 26, 1982

Well Low Temperature Well or Geothermal Observation Well Bore
PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
N/A	N/A	N/A	N/A	N/A	N/A

AMAX Exploration, Inc. proposes to drill one shallow temperature gradient hole to a maximum depth of 500'. This hole will be drilled with a diamond drill.

5-25-83 - Inspection
OK

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 7-27-82
UNLESS DRILLING UNDERWAY

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

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 Carolyn J. Holtgrewe Title Permit Assistant Date April 20, 1982

(This space for State Use)

APPROVED BY Carl Ulvog TITLE SENIOR PETROLEUM GEOLOGIST DATE 4/23/82

CONDITIONS OF APPROVAL, IF ANY:

APR 22 1982

OIL CONSERVATION DIVISION

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

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Operator	1	
Land Office	1	

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

SANTA FE State Type of Lease
STATE FEE
5.a State Lease No. **GTR-290**

1a. Type of Work Drill <input checked="" type="checkbox"/> Deepen <input type="checkbox"/> Plug Back <input type="checkbox"/>		7. Unit Agreement Name N/A
b. Type of Well Geothermal Producer <input type="checkbox"/> Temp Observation <input checked="" type="checkbox"/> Low-Temp Thermal <input type="checkbox"/> Injection/Disposal <input type="checkbox"/>		8. Farm or Lease Name State (1124)
2. Name of Operator AMAX Exploration, Inc.		9. Well No. 5
3. Address of Operator 1707 Cole Blvd.; Golden, Colorado 80401		10. Field and Pool, or Wildcat Wildcat
4. Location of Well UNIT LETTER I LOCATED 5100 FEET FROM THE West LINE AND 2900 FEET FROM THE North LINE OF SEC. 32 TWP. 15S RGE. 7W NMMPM		12. County Sierra
		19. Proposed Depth 500'
		19A. Formation Santa Fe
		20. Rotary or C.T. Rotary
21. Elevations (Show whether DF, RT, etc.) 5,680' gr	21A. Kind & Status Plug. Bond \$10,000 Multiple-	21B. Drilling Contractor unknown at present
		22. Approx. Date Work will start April 26, 1982

**Well Low Temperature Well or Geothermal Observation Well Bons
PROPOSED CASING AND CEMENT PROGRAM**

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
N/A	N/A	N/A	N/A	N/A	N/A

AMAX Exploration, Inc. proposes to drill one shallow temperature gradient hole to a maximum depth of 500'. This hole will be drilled with a diamond drill.

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 7-22-82
UNLESS DRILLING UNDERWAY

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

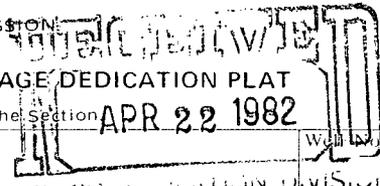
IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. Give blowout preventer program, if any.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.
Signed Carolyn J. Holtgrewe Title Permit Assistant Date April 20, 1982
(This space for State Use)

APPROVED BY Carl Ulvog TITLE SENIOR PETROLEUM GEOLOGIST DATE 4/23/82
CONDITIONS OF APPROVAL, IF ANY:

GEOHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

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

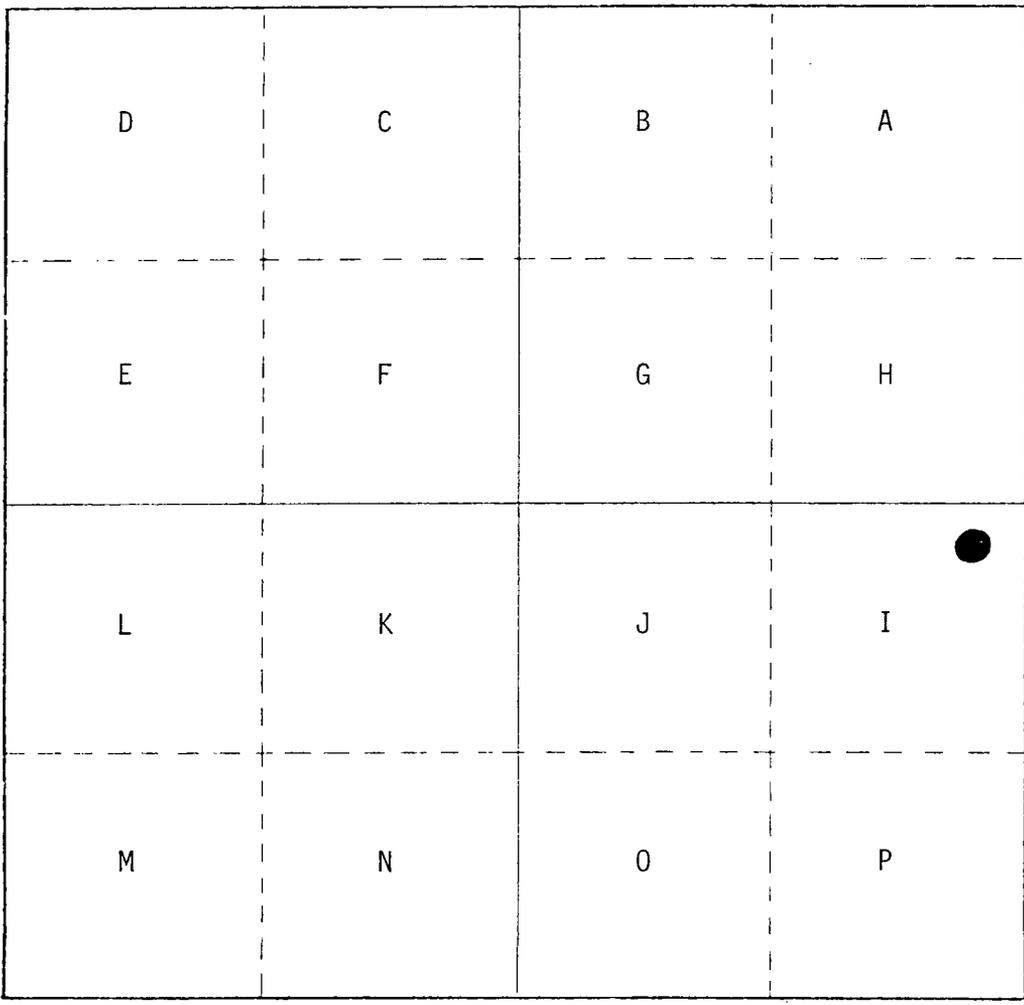


Operator AMAX Exploration, Inc.			Lease State (1124)		Well No. 5
Unit Letter I	Section 32	Township 15S	Range 7W	County SANTA FE Sierra	
Actual Footage Location of Well: 5100 feet from the West line and 2900 feet from the North line					
Ground Level Elev. 5,680'	Producing Formation N/A	Pool N/A	Dedicated Acreage: N/A Acres		

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
N/A
- 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
- If more than one lease of different ownership 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 **Carolyn J. Holtgrewe**
Carolyn J. Holtgrewe
 Position **Attorney-in-Fact**
Permit Assistant

Company
AMAX Exploration, Inc.

Date
April 20, 1982

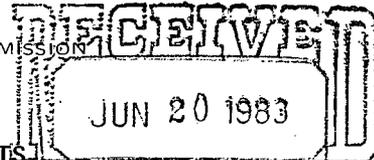
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed _____

Registered Professional Engineer and/or Land Surveyor _____

Certificate No. _____

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



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SUNDRY NOTICES AND REPORTS
ON OIL CONSERVATION DIVISION
GEOTHERMAL RESOURCES WELLS SANTA FE State Fee

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.)		5.a State Lease No. N/A
1. Type of well Geothermal Producer <input type="checkbox"/> Temp. Observation <input checked="" type="checkbox"/> Low-Temp Thermal <input type="checkbox"/> Injection/Disposal <input type="checkbox"/>		7. Unit Agreement Name N/A
2. Name of Operator AMAX Exploration, Inc.		8. Farm or Lease Name N/A
3. Address of Operator 1707 Cole Boulevard, Golden, CO 80401		9. Well No. 1124-1
4. Location of Well Unit Letter <u>A</u> <u>70</u> Feet From The <u>North</u> Line and <u>65</u> Feet From The <u>East</u> Line, Section <u>5</u> Township <u>16S</u> Range <u>7W</u> NMPM.		10. Field and Pool, or Wildcat Wildcat
15. Elevation (Show whether DF, RT, GR, etc.) 5560' GR		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 <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG & ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 203. Method of Completion: Hole No. 1124-1 was drilled and completed on 1-5-82. Drill stem was removed from the hole, 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 within 10 feet of the surface and then a 10 foot cement plug was placed at the top of the hole. (Hole was drilled to 300')

Abandonment Procedure: The hole was abandoned on 5-24-83. The 3/4" 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. Site was restored properly and in accordance with your abandonment procedure requirements.

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

SIGNED [Signature] TITLE Manager, Unit Relations DATE 6/15/83

APPROVED BY [Signature] TITLE Geologist DATE 7-11-83

CONDITIONS OF APPROVAL, IF ANY:

NOV 23 1981

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

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Operator	/
Land Office	

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 Temp Observation
 Low-Temp Thermal Injection/Disposal

7. Unit Agreement Name
N/A

8. Farm or Lease Name
N/A

2. Name of Operator
AMAX Exploration, Inc.

9. Well No.
1124-1

3. Address of Operator
1707 Cole Boulevard; Golden, Colorado 80401

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well UNIT LETTER A LOCATED 70 FEET FROM THE North LINE
 AND 65 FEET FROM THE East LINE OF SEC. 5 TWP. 16S RGE. 7W NMPM

12. County
Sierra

19. Proposed Depth 500'	19A. Formation Tertiary seds & Volcanics	20. Rotary or C.T. Rotary
21. Elevations (Show whether DF, RT, etc.) 5,560' GR	21A. Kind & Status Plug. Bond \$10,000 Multiple-	21B. Drilling Contractor not known at this time
		22. Approx. Date Work will start December 1981

Well Low Temperature 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

- (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

5-25-83 Inspection
OK

At abandonment, top of pipe and cement plug - inside and outside of pipe - to be at least one foot below original ground level, and surface to be restored.

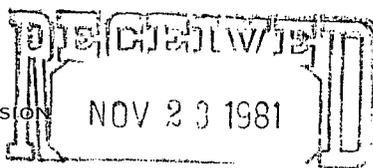
OIL CONSERVATION COMMISSION TO BE NOTIFIED
WITHIN 24 HOURS OF BEGINNING OPERATIONS

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 2-22-82
UNLESS DRILLING UNDERWAY

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 Carolyn J. Holtgrewe Title Permit Assistant Date November 19, 1981
 (This space for State Use)

APPROVED BY Carl Ullrog TITLE SENIOR PETROLEUM GEOLOGIST DATE 11/24/81



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

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U.S.G.S.	/	
Operator	/	
Land Office		

**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 Temp Observation
Low-Temp Thermal Injection/Disposal

7. Unit Agreement Name
N/A

8. Farm or Lease Name
N/A

2. Name of Operator
AMAX Exploration, Inc.

9. Well No.
1124-1

3. Address of Operator
1707 Cole Boulevard; Golden, Colorado 80401

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well UNIT LETTER A LOCATED 70 FEET FROM THE North LINE
AND 65 FEET FROM THE East LINE OF SEC. 5 TWP. 16S RGE. 7W NMPM

12. County
Sierra

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

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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

At abandonment, top of pipe and cement plug - inside and outside of pipe - to be at least one foot below original ground level, and surface to be restored.

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

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 2-22-82
UNLESS DRILLING UNDERWAY

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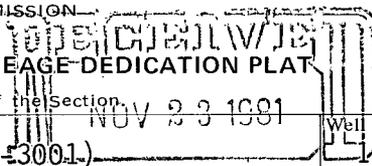
Signed Carolyn J. Holtgrewe Title Permit Assistant Date November 19, 1981
(This space for State Use)

APPROVED BY Carl Ulvog TITLE SENIOR PETROLEUM GEOLOGIST DATE 11/24/81

CONDITIONS OF APPROVAL, IF ANY:

GEOHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

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



Operator AMAX Exploration, Inc.		Lease Private (1124-3001)		Well No. 1124-1
Unit Letter A	Section 5	Township 16S	Range 7W	County SANTA FE Sierra

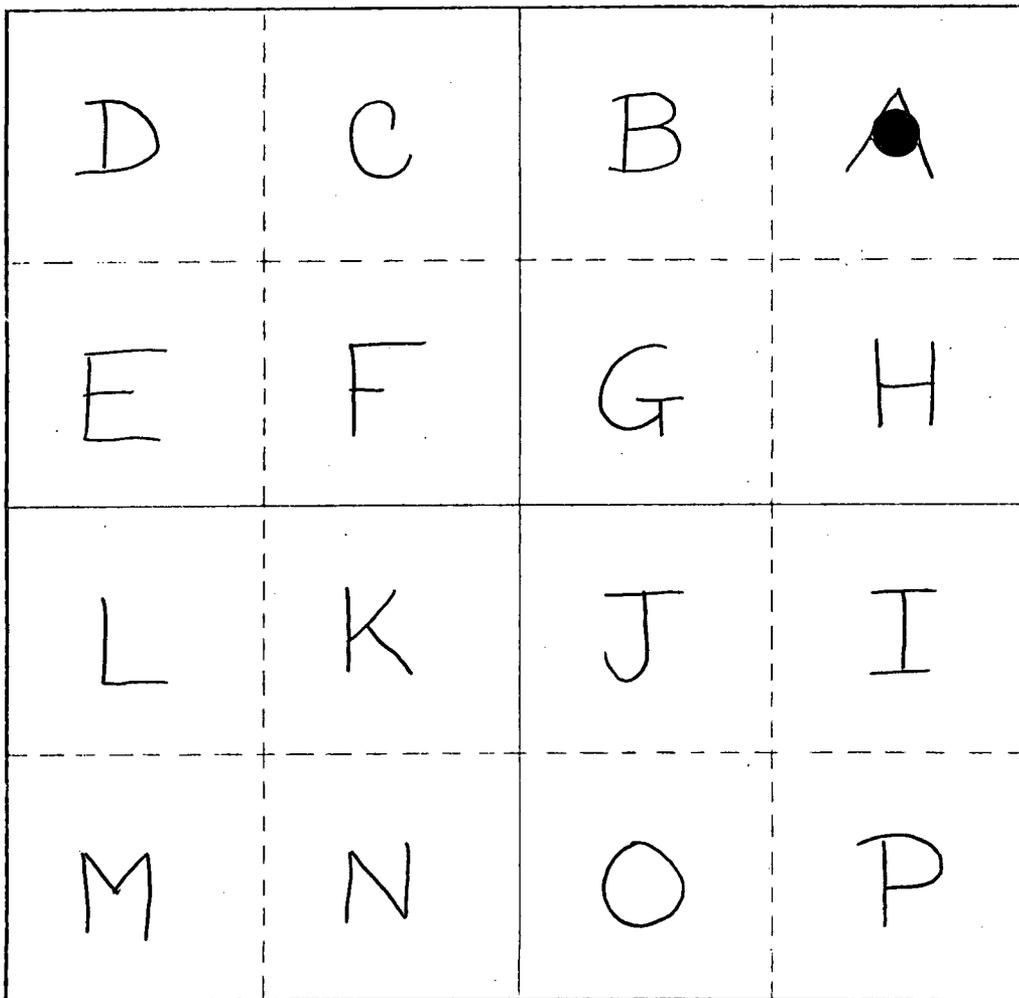
Actual Footage Location of Well:
70 feet from the **North** line and **65** feet from the **East** line

Ground Level Elev. 5,560'	Producing Formation N/A	Pool N/A	Dedicated Acreage: N/A Acres
-------------------------------------	-----------------------------------	--------------------	--

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. **N/A**
 - 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**
 - If more than one lease of different ownership 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 **Carolyn J. Holtgrewe**
Carolyn J. Holtgrewe
 Position **Attorney-in-fact**
Permit Assistant

Company
AMAX Exploration, Inc.

Date
November 19, 1981

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

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

AMAX Exploration, Inc. is currently permitting four (4) drill site locations for the Hillsboro Project in Sierra County, New Mexico. All of these holes are located on privately held land to which the owner has 100% surface and minerals rights. AMAX Exploration, Inc. 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 AMAX Exploration, Inc. 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, Geothermal Branch, AMAX Exploration, Inc. will be in charge of the overall operation. Ms. Carolyn J. Holtgrewe, Permit Assistant, AMAX Exploration, Inc. will be responsible for regulatory and environmental matters. All personnel can be contacted at the letter-head address.

Prior to commencement of drilling operations, AMAX Exploration, Inc. will notify the Oil Conservation Commission concerning:

- (1) Actual rig size and capacity
- (2) Name of drilling contractor
- (3) Name of responsible on-site field geologist
- (4) Spud-in date

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

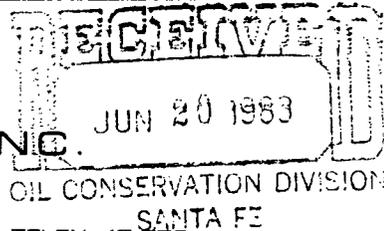
<u>Hole Number</u>	<u>Description</u>	<u>Location</u>			<u>Elevation</u>	<u>AMAX Lease No.</u>	<u>Land Status</u>
		<u>Section</u>	<u>Township</u>	<u>Range</u>			
1124-1	NE/4NE/4	5	16S	7W	5,560'	1124-3001	V.H. Cunningham
1124-2	SE/4NE/4	5	16S	7W	5,480'	1124-3001	V.H. Cunningham
1124-3	SE/4NE/4	5	16S	7W	5,480'	1124-3001	V.H. Cunningham
1124-4	SW/4SW/4	4	16S	7W	5,385'	1124-3001	V.H. Cunningham

AMAX EXPLORATION, INC.

A SUBSIDIARY OF AMAX INC.

1707 COLE BOULEVARD • GOLDEN, COLORADO 80401 • (303) 234-9020 • TELEX: 45-556

LAND DEPARTMENT



June 14, 1983

Mr. Carl Ulvog
Senior Petroleum Geologist
State of New Mexico
Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: AMAX Exploration, Inc.'s Hillsboro
Project (1124), Sierra County, New Mexico

Dear Mr. Ulvog:

On November 19, 1981, AMAX filed four permits (Form No. G-101) "Application for Permit to Drill, Deepen or Plug Back Geothermal Resources Well" for wells No. 1124-1, 1124-2, 1124-3 and 1124-4 which were approved by your office on November 24, 1981.

Enclosed please find two reports (Form No. G-103) "Sundry Notices and Reports on Geothermal Resources Wells" for wells No. 1124-1 and 1124-4 which were drilled on January 5, 1982 and properly abandoned on May 24, 1983. Wells No. 1124-2 and 1124-3 were not drilled.

Hopefully the information on the enclosed report is sufficient, however, please feel free to contact me if I can be of further assistance regarding this matter.

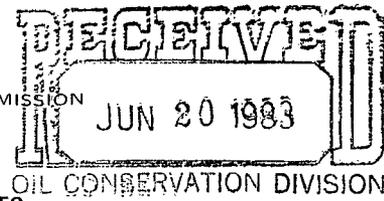
Very truly yours,

AMAX EXPLORATION, INC.

Anita Clement

Anita Clement
Land Secretary

/ac
enclosures



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

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Operator	
Land Office	

**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 <input type="checkbox"/> Temp. Observation <input checked="" type="checkbox"/> Low-Temp Thermal <input type="checkbox"/> Injection/Disposal <input type="checkbox"/>	7. Unit Agreement Name N/A
2. Name of Operator AMAX Exploration, Inc.	8. Farm or Lease Name N/A
3. Address of Operator 1707 Cole Boulevard, Golden, CO 80401	9. Well No. 1124-4
4. Location of Well Unit Letter <u>M</u> <u>40</u> Feet From The <u>South</u> Line and <u>135</u> Feet From The <u>West</u> Line, Section <u>4</u> Township <u>16S</u> Range <u>7W</u> NMPM.	10. Field and Pool, or Wildcat Wildcat
15. Elevation (Show whether DF, RT, GR, etc.) 5385' GR	12. County Sierra

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

<p>NOTICE OF INTENTION TO:</p> <p>PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/></p> <p>TEMPORARILY ABANDON <input type="checkbox"/></p> <p>PULL OR ALTER CASING <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/></p> <p>OTHER _____ <input type="checkbox"/></p>	<p>SUBSEQUENT REPORT OF:</p> <p>REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/></p> <p>COMMENCE DRILLING OPNS. <input type="checkbox"/> PLUG & ABANDONMENT <input checked="" type="checkbox"/></p> <p>CASING TEST AND CEMENT JOB <input type="checkbox"/></p> <p>OTHER _____ <input type="checkbox"/></p>
---	---

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

Method of Completion: Hole No. 1124-4 was drilled and completed on 1-7-82. Drill stem was removed from the hole, a 3/4" PVC pipe, which had been capped on the bottom, was inserted into the hole. The pipe was filled with water and capped. The area around the intruded pipe was then backfilled with drill cuttings within 10 feet of the surface and then a 10 foot cement plug was placed at the top of the hole. (Hole was drilled to 363')

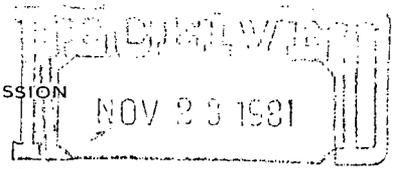
Abandonment Procedure: The hole was abandoned on 5-24-83. The 3/4" PVC pipe was cut off below ground level. The upper 3m (10 feet) was filled with cement. Any remaining depression was filled with soil and raked to restore the site to its original appearance and contour. All drilling-related refuse was removed and disposed of properly. Site was restored in accordance with your abandonment procedure requirements.

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

SIGNED Tony J. Davis TITLE Manager, Soil Relations DATE 6/15/83

APPROVED BY Roy E. Johnson TITLE Geologist DATE 7-11-83

CONDITIONS OF APPROVAL, IF ANY:



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

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Operator	/	
Land Office		

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 Temp Observation
 Low-Temp Thermal Injection/Disposal

7. Unit Agreement Name
N/A

8. Farm or Lease Name
N/A

2. Name of Operator
AMAX Exploration, Inc.

9. Well No.
1124-4

3. Address of Operator
1707 Cole Boulevard; Golden, Colorado 80401

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well UNIT LETTER M LOCATED 40 FEET FROM THE South LINE
 AND 135 FEET FROM THE West LINE OF SEC. 4 TWP. 16S RGE. 7W NMPM

12. County
Sierra

19. Proposed Depth 500' 19A. Formation Tertiary seds & volcanics 20. Rotary or C.T. Rotary
 21. Elevations (Show whether DF, RT, etc.) 5,385' GR 21A. Kind & Status Plug. Bond \$10,000 Multiple- 21B. Drilling Contractor Not known at this time 22. Approx. Date Work will start December 1981

Well Low Temperature 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

- OIL CONSERVATION COMMISSION TO BE NOTIFIED
WITHIN 24 HOURS OF BEGINNING OPERATIONS
- Drill hole 4-3/4" - 6-3/4" to TD
 - Run 3/4" PVC or 3/4" iron pipe to TD
 - Cement top 10' of annulus around pipe
 - Fill pipe with water
 - Measure temperature of hole
 - Install cement plug inside the PVC or iron pipe
- 5-25-83 Inspection
OK

At abandonment, top of pipe and cement plug - inside and outside of pipe - to be at least one foot below original ground level, and surface to be restored.

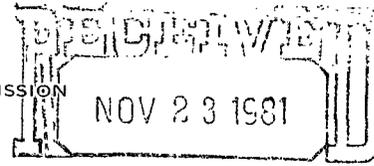
APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 2-22-82
UNLESS DRILLING UNDERWAY

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 Carolyn J. Holtgrewe Title Permit Assistant Date November 19, 1981
 Carolyn J. Holtgrewe, Attorney-in-fact

(This space for State Use)
 APPROVED BY Carl Ulvog TITLE SENIOR PETROLEUM GEOLOGIST DATE 11/24/81



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

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U.S.G.S.	/	
Operator	/	
Land Office		

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

OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO
5. Indicate Type of Lease STATE FEE

1a. Type of Work Drill <input checked="" type="checkbox"/> Deepen <input type="checkbox"/> Plug Back <input type="checkbox"/>		7. Unit Agreement Name N/A	
b. Type of Well Geothermal Producer <input type="checkbox"/> Temp Observation <input checked="" type="checkbox"/> Low-Temp Thermal <input type="checkbox"/> Injection/Disposal <input type="checkbox"/>		8. Farm or Lease Name N/A	
2. Name of Operator AMAX Exploration, Inc.		9. Well No. 1124-4	
3. Address of Operator 1707 Cole Boulevard; Golden, Colorado 80401		10. Field and Pool, or Wildcat Wildcat	
4. Location of Well UNIT LETTER <u>M</u> LOCATED <u>40</u> FEET FROM THE <u>South</u> LINE AND <u>135</u> FEET FROM THE <u>West</u> LINE OF SEC. <u>4</u> TWP. <u>16S</u> RGE. <u>7W</u> NMPM		12. County Sierra	
21. Elevations (Show whether DF, RT, etc.) 5,385' GR		19. Proposed Depth 500'	19A. Formation Tertiary sed & volcanics
21A. Kind & Status Plug. Bond \$10,000 Multiple-	21B. Drilling Contractor Not known at this time	20. Rotary or C.T. Rotary	
		22. Approx. Date Work will start December 1981	

Well Low Temperature 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

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

- (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

At abandonment, top of pipe and cement plug - inside and outside of pipe - to be at least one foot below original ground level, and surface to be restored.

APPROVAL VALID FOR 90 DAYS
PERMIT EXPIRES 2-22-82
UNLESS DRILLING UNDERWAY

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 Carolyn J. Holtgrewe Title Permit Assistant Date November 19, 1981
(This space for State Use)

APPROVED BY Carl Ulvog TITLE SENIOR PETROLEUM GEOLOGIST DATE 11/24/81
CONDITIONS OF APPROVAL, IF ANY:

GEOHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section. NOV 23 1981

Operator AMAX Exploration, Inc.		Lease Private (1124-43001)		Well No. 1124-4
Unit Letter M	Section 4	Township 16S	Range 7W	County SANTA FE Sierra

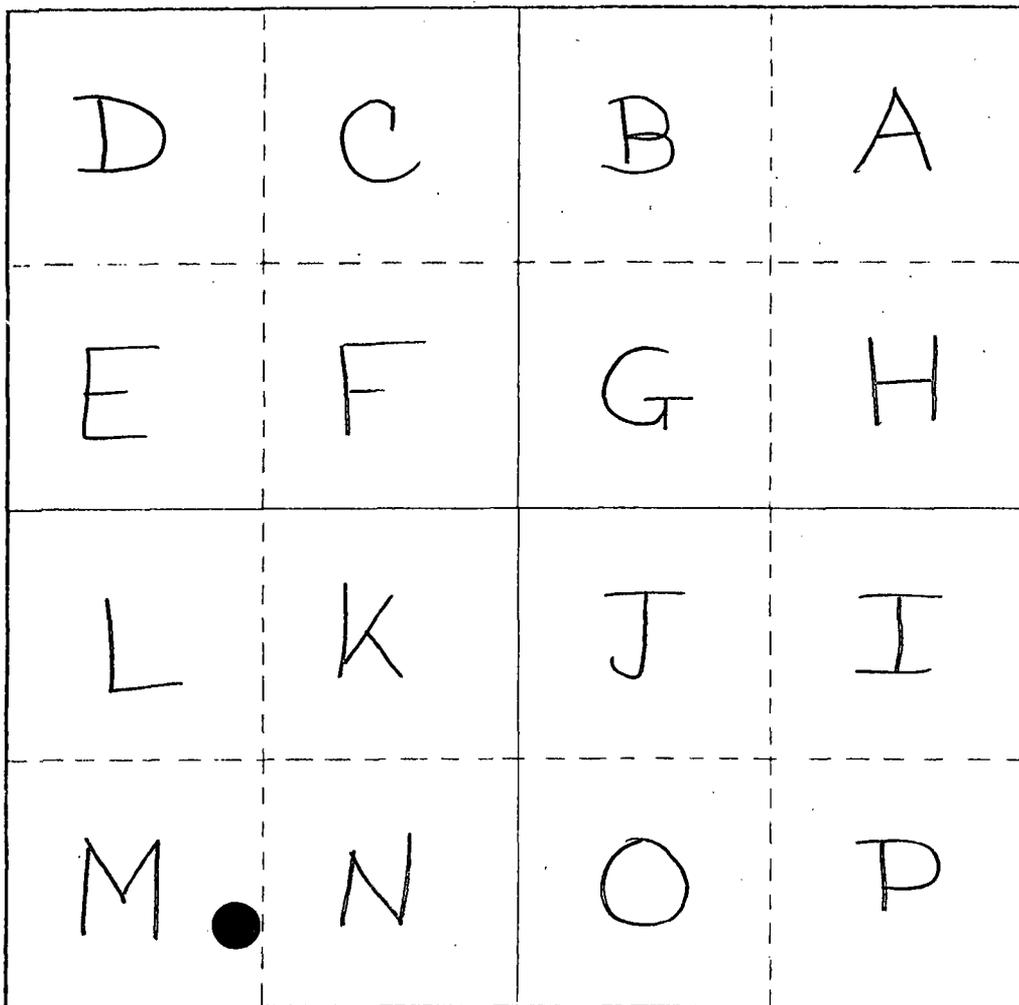
Actual Footage Location of Well:
40 feet from the **South** line and **135** feet from the **West** line

Ground Level Elev. 5,385' GR	Producing Formation N/A	Pool N/A	Dedicated Acreage: N/A Acres
--	-----------------------------------	--------------------	--

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. **N/A**
- 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**
- If more than one lease of different ownership 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 **Carolyn J. Holtgrewe**
Carolyn J. Holtgrewe
 Position **Attorney-in-fact**
Permit Assistant
 Company **AMAX Exploration, Inc.**
 Date **November 19, 1981**

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

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

AMAX Exploration, Inc. is currently permitting four (4) drill site locations for the Hillsboro Project in Sierra County, New Mexico. All of these holes are located on privately held land to which the owner has 100% surface and minerals rights. AMAX Exploration, Inc. 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 AMAX Exploration, Inc. 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, Geothermal Branch, AMAX Exploration, Inc. will be in charge of the overall operation. Ms. Carolyn J. Holtgrewe, Permit Assistant, AMAX Exploration, Inc. will be responsible for regulatory and environmental matters. All personnel can be contacted at the letter-head address.

Prior to commencement of drilling operations, AMAX Exploration, Inc. will notify the Oil Conservation Commission concerning:

- (1) Actual rig size and capacity
- (2) Name of drilling contractor
- (3) Name of responsible on-site field geologist
- (4) Spud-in date

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

<u>Hole Number</u>	<u>Description</u>	<u>Location</u>			<u>Elevation</u>	<u>AMAX Lease No.</u>	<u>Land Status</u>
		<u>Section</u>	<u>Township</u>	<u>Range</u>			
1124-1	NE/4NE/4	5	16S	7W	5,560'	1124-3001	V.H. Cunningham
1124-2	SE/4NE/4	5	16S	7W	5,480'	1124-3001	V.H. Cunningham
1124-3	SE/4NE/4	5	16S	7W	5,480'	1124-3001	V.H. Cunningham
1124-4	SW/4SW/4	4	16S	7W	5,385'	1124-3001	V.H. Cunningham