# GTLT - \_\_\_\_7\_\_\_\_

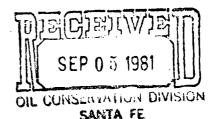
# (12-16)-21S-1W Dona Ana County

# 784; 11-77; 781 & 3-77



## **Chevron Resources Company**

A Division of Chevron Industries, Inc. 595 Market Street, San Francisco, California Mail Address: P.O. Box 3722, San Francisco, CA 94119



August 31, 1981

Mr. Carl Ulvog New Mexico Oil and Gas Commission P.O. Box 2088 Sante Fe, New Mexico 87501

Dear Mr. Ulvog:

Chevron Resources respectfully submits well completion reports for the following shallow temperature observation wells in Dona Ana and Hidalgo Counties, New Mexico:

McKibbin #786 and Wamel #179

Chevron did not drill and requests that the permits be cancelled for the following proposed holes:

Radium Springs Area, Dona Ana Co. State Lease 781, <u>Colquitt 784</u> Lordsburg Area, Hidalgo Co. Evans 279, Davis 379, Evans 479

Should you have any questions regarding these matters, please feel free to contact me at (415) 894-2508.

Thank you for your time and consideration regarding this request.

Respectfully,

Nach Schoe

Mark Kehoe Permit Representative

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NEW MEXICO	UIL CONSERVATION	COMMISSION

	NEW MEXICO OIL CO	DNSERVATION CO	IMMISSION	
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Chevron U.S.A. Inc.		Colquitt	•	Well flo. 784
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3. If more than one lease of d	ilferent ownership is dec	licated to the well.	have the interests of	all owners been consoli-
dated by communitization, u	nitization, force-pooling	etc?	· · · · · · · · · · · · · · · · · · ·	
Yes No Ifar	iswer is "yes," type of c	onsolidation		•
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forced-pooling, or otherwise)	or until a non-standard u	mit, eliminating su	consolidated (by come ch interests, has been	approved by the Commis-
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DISTRIBUTION	
File	
N. M. B. M. SUNDRY NOTICES AND REPORTS	
S. G. S ON	5. Indicate Type of Lease
Operator GEOTHERMAL RESOURCES WELLS	State Fee 🔀
Land Office	5.a State Lease No.
	~ /~ / . /~ /~ /~ /~ /~ /~ /~ /~ /~ /~ /~ /~ /~
Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit	
L Type of well Geothermal Producer Temp, Observation	7. Unit Agreement Name
Low-Temp Thermal	
2. Name of Operator	8. Farm or Lease Name
Chevron U.S.A. Inc.	Colquitt
	9. Well No.
P. O. Box 3722 San Francisco, California 94119	784
	10. Field and Pool, or Wildcat
Unit Letter C 300 Feet From The N Line and 1600 Feet From	<b>N</b> .
The WLine, Section 12Township T215_Range RIW_NMPM.	
11. Elevation (Show whether DF, RT, GR, etc.)	12. County
4120'	Dona Ana
19. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data	
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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.

See	Exhibit	"A"
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		CONCERNITION CONTR
		N CON Service

18. Thereby certify that the information	on above is true and complete to the best of my knowled	ge and belief.
SIGNED	nerAttorney-In-	Fact
APPROVED BY		DATE

CONDITIONS OF APPROVAL, IF ANY:

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NO. OF COPIES RECEIVED DISTRIBUTION File N.M. B. M. O.G. S Operator Land Office Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back. to a Different Reservoir. Use "Application For Permit	Adonted 10/1/ S. Tindicate Type of Lease WWState. E Fee. X. S.a. State Lease No.
N. M. B. M.       SUNDRY NOTICES AND REPORTS         Operator       I         Land Office       I         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	5. Indicate Type of Lease Wy <sub>State</sub> Fee. X 5.a. State Lease No.
Land Office Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back, to a Different Reservoir. Use "Application For Permit	State Ease No.
For Permit —" (Form G-101) for Such Proposals.) 1. Type of well Geothermal Producer Temp. Observation	
	7. Unit Agreement Name
2 Name of Operator	8. Farm or Lease Name
Chevron U.S.A. Inc.	Colquitt Co. 9. Well No. 11-77
P.O. Box 3722 San Francisco, CA 94119	11-77
Unit Letter <u>H 700</u> Feet From The <u>E</u> Line and <u>3900</u> Feet From The <u>S</u> Line, Section <u>13</u> Township <u>21</u> S Range <u>1W</u> NMPM.	
15. Elevation (Show whether DF, RT, GR, etc.) 4060 '	12. County Dona Ana
PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK TEMPORARILY ABANDON COMMENCE DRILLING OPNS. 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, inclu	ALTERING CASING     PLUG & ABANDONMENT     ding estimated date of starting any
proposed work) SEE RULE 203.	
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#### CHEVRON RESOURCES COMPANY PLAN OF OPERATION SHALLOW TEMPERATURE OPERATION HOLES

#### 1. Description of the Operation

The Shallow Temperature Observation Hole Program, as conducted by the Chevron Resources Company, requires the drilling of 250-500 foot holes with a diameter of 4-3/4 to 5-3/8 inches. The number of holes will vary with the size of the area to be evaluated. These holes will be drilled by a state licensed drilling contractor using a truck mounted drill rig.

Once each hole is completed a 1 inch (I.D.) black steel pipe, sealed at the bottom, will be placed in the hole with the top being 8-12 inches from the ground surface. The pipe is then filled with water and capped. The hole is then back-filled with cuttings and/or drilling mud to within 10 feet of the surface. The remaining void is then filled with cement.

As necessary, the pipe is unearthed and a temperature probe is lowered to total depth. Once the series of temperature logs are completed, the pipe is then filled with cement and buried. The ground surface is then smoothed and returned to as nearly as practical to pre-drilling condition.

The equipment for drilling, as well as the drill rig, consists of a water truck and a light pickup truck. The temperature probe consists of a thermometer or thermister device on the end of a wire line and a small tripod-mounted wheel for lowering the probe down the hole.

- 2. The following plan of operations as required by Section 270.34 of the Federal Regulations for Geothermal Operations on public acquired and withdrawn lands, covering paragraphs (a) through (h), is submitted pursuant to Section 270.78:
  - (a) The hole locations, lease numbers (Exhibit "A") and outline of a typical drill site layout (Exhibit "B") are attached.
  - (b) No new roads will be constructed for this operation. Access to sites will be along existing roads.
  - (c) No water sources on federally administered lands will be developed and no road building material will be used.
  - (d) Campsites, airstrips or other supporting facilities will not be required.
  - (e) Minimal access scars, limited mainly to tire impressions, may occur during the course of drilling the hole. All such disturbances will be restored as nearly as possible to pre-drilling condition. All materials will be removed from the area once the hole is completed.

- (f) Topographic features of the drill site areas and drainage can be observed from the attached map (Exhibit "A").
- (g) If drilling mud is used, it will be contained by an 8' x 3' x 3-1/2' steel mud pit. When the hole is completed the mud residue will be dried and spread on the ground surface.
- (h) The Chevron Resources Company will use all reasonable precautions to prevent waste of geothermal resources and other natural resources found in the area. At all times during operations the following precautions will be taken:

Traffic will be light and only when necessary. Light pickups will be used whenever possible. To the extent possible only existing roads, fence lines or jeep trails will be used.

Site preparation will be limited to driving the truck-mounted drill rig to the site and setting it up for drilling.

Since the topography is not severe, the construction of drill pads will not be required.

All vehicles will be equipped with spark arresters and will carry the required fire-fighting equipment and all adequate fire protection measures will be taken to prevent any damage from fire.

No water or other material will be pumped onto the surface of the ground which might result in soil erosion. Appropriate care will be taken so that natural drainage will not be affected and so that no pollution can occur to surface or ground water.

Geothermal operations will have no material impact on fish and the disturbance of wildlife and vegetation in the area will be minor due to the short duration of operations and the limited number of personnel comprising the field crews. No significant damage or destruction of vegetation will occur and unavoidable dislocation of wildlife will be short term only.

Mufflers and other available devices will be used on all vehicles to control noise pollution. Minor air pollution will occur from vehicle exhaust, but all feasible measures will be used to control this pollution, in compliance with applicable laws, rules and regulations. Minor air pollution will occur from dust caused by vehicle traffic on dirt roads. Since this pollution is dependent upon natural road conditions and is temporary it therefore has no significant affect on the areas environment.

There will be very little hazard to public health and safety due to the lack of population in the area. All such hazard is confined to the crew or the rig. All appropriate safety measures and equipment will be utilized. WATER TRUCK

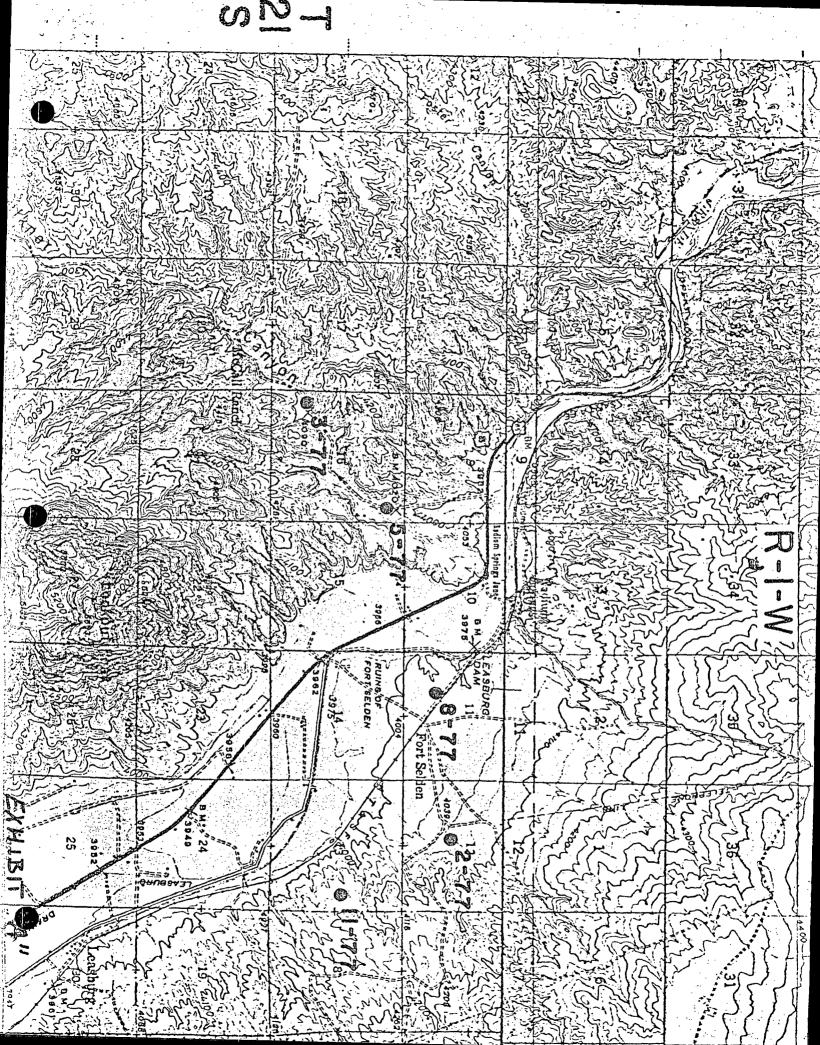
PIPE TRAILER (IF NEEDED)

SCHEMATIC OF SHALLOW TEMPERATURE HOLE DRILL SITE

# MUD PIT (IF NEEDED)

DRILL RIG

EXHIBIT



#### CHEVRON RESOURCES COMPANY PLAN OF OPERATION SHALLOW TEMPERATURE OPERATION HOLES

#### 1. Description of the Operation

The Shallow Temperature Observation Hole Program, as conducted by the Chevron Resources Company, requires the drilling of 250-500 foot holes with a diameter of 4-3/4 to 5-3/8 inches. The number of holes will vary with the size of the area to be evaluated. These holes will be drilled by a state licensed drilling contractor using a truck mounted drill rig.

Once each hole is completed a l inch (I.D.) black steel pipe, sealed at the bottom, will be placed in the hole with the top being 8-12 inches from the ground surface. The pipe is then filled with water and capped. The hole is then back-filled with cuttings and/or drilling mud to within 10 feet of the surface. The remaining void is then filled with cement.

As necessary, the pipe is unearthed and a temperature probe is lowered to total depth. Once the series of temperature logs are completed, the pipe is then filled with cement and buried. The ground surface is then smoothed and returned to as nearly as practical to pre-drilling condition.

The equipment for drilling, as well as the drill rig, consists of a water truck and a light pickup truck. The temperature probe consists of a thermometer or thermister device on the end of a wire line and a small tripod-mounted wheel for lowering the probe down the hole.

- 2. The following plan of operations as required by Section 270.34 of the Federal Regulations for Geothermal Operations on public acquired and withdrawn lands, covering paragraphs (a) through (h), is submitted pursuant to Section 270.78:
  - (a) The hole locations, lease numbers (Exhibit "A") and outline of a typical drill site layout (Exhibit "B") are attached.
  - (b) No new roads will be constructed for this operation. Access to sites will be along existing roads.
  - (c) No water sources on federally administered lands will be developed and no road building material will be used.
  - (d) Campsites, airstrips or other supporting facilities will not be required.
  - (e) Minimal access scars, limited mainly to tire impressions, may occur during the course of drilling the hole. All such disturbances will be restored as nearly as possible to pre-drilling condition. All materials will be removed from the area once the hole is completed.

- (f) Topographic features of the drill site areas and drainage can be observed from the attached map (Exhibit "A").
- (g) If drilling mud is used, it will be contained by an 8' x 3' x 3-1/2' steel mud pit. When the hole is completed the mud residue will be dried and spread on the ground surface.
- (h) The Chevron Resources Company will use all reasonable precautions to prevent waste of geothermal resources and other natural resources found in the area. At all times during operations the following precautions will be taken:

Traffic will be light and only when necessary. Light pickups will be used whenever possible. To the extent possible only existing roads, fence lines or jeep trails will be used.

Site preparation will be limited to driving the truck-mounted drill rig to the site and setting it up for drilling.

Since the topography is not severe, the construction of drill pads will not be required.

All vehicles will be equipped with spark arresters and will carry the required fire-fighting equipment and all adequate fire protection measures will be taken to prevent any damage from fire.

No water or other material will be pumped onto the surface of the ground which might result in soil erosion. Appropriate care will be taken so that natural drainage will not be affected and so that no pollution can occur to surface or ground water.

Geothermal operations will have no material impact on fish and the disturbance of wildlife and vegetation in the area will be minor due to the short duration of operations and the limited number of personnel comprising the field crews. No significant damage or destruction of vegetation will occur and unavoidable dislocation of wildlife will be short term only.

Mufflers and other available devices will be used on all vehicles to control noise pollution. Minor air pollution will occur from vehicle exhaust, but all feasible measures will be used to control this pollution, in compliance with applicable laws, rules and regulations. Minor air pollution will occur from dust caused by vehicle traffic on dirt roads. Since this pollution is dependent upon natural road conditions and is temporary it therefore has no significant affect on the areas environment.

There will be very little hazard to public health and safety due to the lack of population in the area. All such hazard is confined to the crew or the rig. All appropriate safety measures and equipment will be utilized.

## WATER TRUCK

. . . .

## PIPE TRAILER (IF NEEDED)

SCHEMATIC OF SHALLOW TEMPERATURE HOLE DRILL SITE

DRILL RIG

MUD PIT (IF NEEDED)

• -

EXHIBIT "B"

#### CHEVRON RESOURCES COMPANY

#### PLAN OF OPERATION

#### SHALLOW TEMPERATURE GRADIENT HOLES

EXHIBIT "A"

1. Description of the Operation

The Shallow Temperature Observation Hole Program, as conducted by the Chevron Resources Company, requires the drilling of 250-500 foot holes with a diameter of 4-3/4 to 5-3/8 inches. The number of holes will vary with the size of the area to be evaluated. These holes will be drilled by a state licensed drilling contractor using a truck mounted drill rig. The mud-out temperature will be monitored continually during the actual drilling.

Once each hole is completed a 1 inch (I.D.) black steel pipe, sealed at the bottom, will be placed in the hole with the top being 8-12 inches from the ground surface. The pipe is then filled with water and capped. The hole is then back-filled with cuttings and/or drilling mud to within 10 feet of the surface. The remaining void is then filled with cement.

As necessary, the pipe is unearthed and a temperature probe is lowered to total depth. Once the series of temperature logs is completed, the pipe is then filled with cement and buried. The ground surface is then smoothed and returned to as nearly as practical to pre-drilling condition.

The drilling operations will be suspended if the mud-out temperature reaches 125°F and cannot be lowered or stabilized with the addition of well-head or cooling devices. The hole will then be completed as a temperature gradient hole or abandoned.

The drilling operations will also be suspended if flowing hot water or steam at 150°F or more is encountered. The hole will then be completed as a temperature gradient hole by placing 1 inch (I.D.), black, steel pipe to total depth and cementing from total depth to surface. If the hole is to be abandoned it will be plugged with cement from total depth to surface.

If cold artesian flow is encountered the hole will be completed or abandoned as described in the paragraph above.

The equipment for drilling, as well as the drill rig, consists of a water truck and a light pickup truck. The temperature probe consists of a thermometer or thermister device on the end of a wire line and a small tripod-mounted wheel for lowering the probe down the hole.

2. The following plan of operations as required by Section 270.34 of the Federal Regulations for Geothermal Operations on public acquired and

withdrawn lands, covering paragraphs (a) through (h), is submitted pursuant to Section 270.78:

- (a) The hole locations, lease numbers (Exhibit "B") and outline of a typical drill site layout (Exhibit "C") are attached.
- (b) No new roads will be constructed for this operation. Access to area of operations will be along existing roads.
- (c) No water sources on federally administered lands will be developed and no road building material will be used.
- (d) Campsites, airstrips or other supporting facilities will not be required.
- (e) Minimal access scars, limited mainly to tire impressions, may occur during the course of drilling the hole. All such disturbances will be restored as nearly as possible to pre-drilling condition. All materials will be removed from the area once the hole is completed.
- (f) Topographic features of the drill site areas and drainage can be observed from the attached map (Exhibit "B").
- (g) If drilling mud or foam are used they will be contained by portable steel containers. When the hole is completed, the mud residue will be dried and spread on the ground surface.
- (h) The Chevron Resources Company will use all reasonable precautions to prevent waste of geothermal resources and other natural resources found in the area. At all times during operations the following precautions will be taken:

Traffic will be light and only when necessary. Light pickups will be used whenever possible. To the extent possible, only existing roads, fence lines or jeep trails will be used.

Site preparation will be limited to driving the truck-mounted drill rig to the site and setting it up for drilling.

Since the topography is not severe, the construction of drill pads will not be required.

All vehicles will be equipped with spark arresters and will carry the required fire-fighting equipment and all adequate fire protection measures will be taken to prevent any damage from fire.

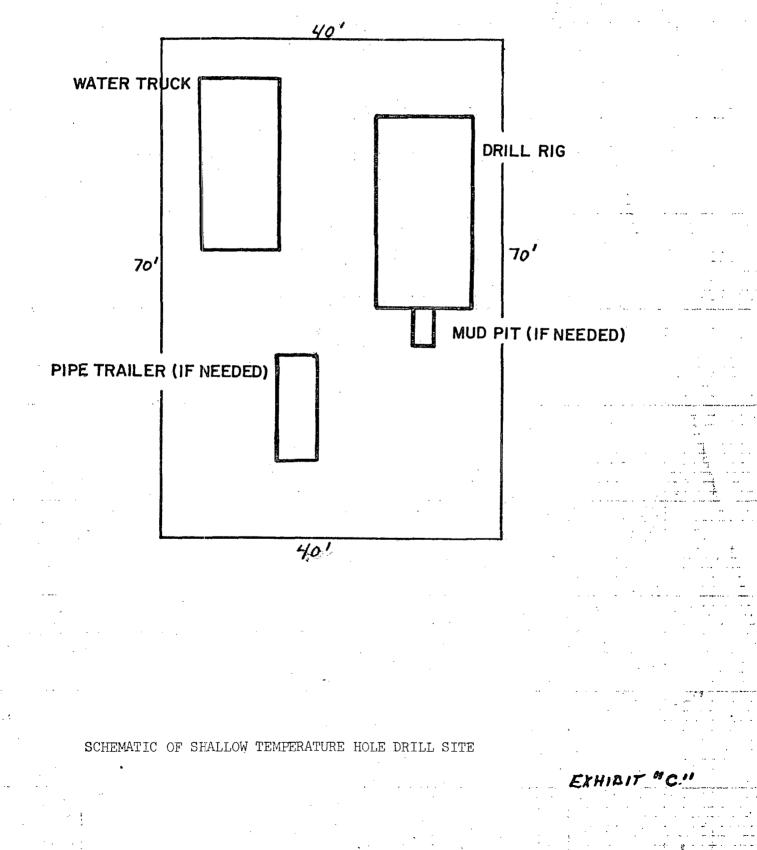
No water or other material will be pumped onto the surface of the ground which might result in soil erosion. Appropriate care will be taken so that natural drainage will not be affected and so that no pollution can occur to surface or ground water.

Geothermal operations will have no material impact on fish and the

disturbance of wildlife and vegetation in the area will be minor due to the short duration of operations and the limited number of personnel comprising the field crews. No significant damage or destruction of vegetation will occur and unavoidable dislocation of wildlife will be short term only.

Mufflers and other available devices will be used on all vehicles to control noise pollution. Minor air pollution will occur from vehicle exhaust, but all feasible measures will be used to control this pollution, in compliance with applicable laws, rules and regulations. Minor air pollution will occur from dust caused by vehicle traffic on dirt roads. Since this pollution is dependent upon natural road conditions and is temporary it therefore has no significant affect on the areas environment.

There will be very little hazard to public health and safety due to the lack of population in the area. All such hazard is confined to the crew or the rig. All appropriate safety measures and equipment will be utilized.



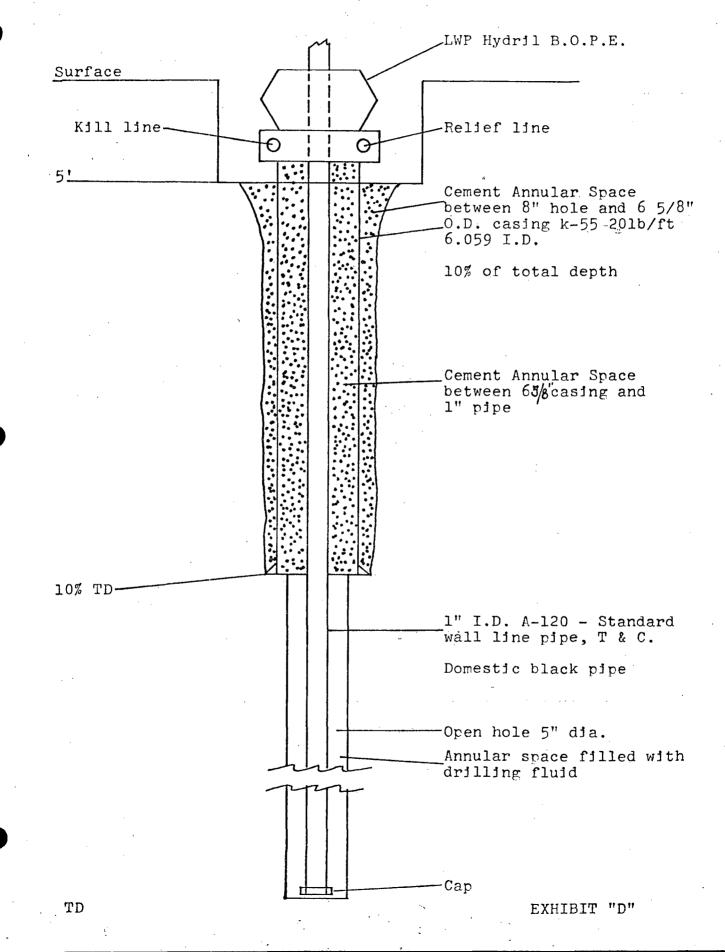
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#### ADDITION TO PLAN OF OPERATION (EXHIBIT "A") SHALLOV TEMPERATURE GRADIENT HOLES DEEPER THAN 500 FEET

The normal drilling procedures (Exhibit "A") will be changed to adhere to U.S.G.S. requirements when drilling shallow temperature gradient holes deeper than 500 feet. The logistical and environmental factors will remain the same since the drilling equipment is identical. The changes for the holes deeper than 500 feet are as follows:

- An 3 3/4 inch hole will be drilled to 10 % of proposed total depth and 6 5/8 inch (0.D.) welded, steel casing will be lowered into the hole and cemented into place. The cement will be allowed to set for a minimum of 24 hours.
- 2. A small cellar will then be dug to allow for the blowout preventer and flange to be attached to the surface casing beneath the truck-mounted drill rig.
- 3. A bag or ram type blow-out prevention unit will be bolted into place. The blow-out equipment will conform to U.S.G.S. requirements.
- 4. The remaining hole to proposed total depth will be completed as a temperature gradient hole as described in Exhibit "A".
- 5. Drilling operations will be suspended immediately if:
  - Mud-out temperature reaches 175<sup>o</sup>F and cannot be lowered or stabilized by the addition of cooling devices or materials.
  - b. Flowing steam or hot water at or greater than 175<sup>o</sup>F is encountered.
- 6. If the temperature limit as described in item "5a" is reached, the hole will be completed as a temperature gradient hole or abandoned as described in Exhibit "A".
- 7. If the temperature limit as described in "5b" is reached, the hole will be completed as a temperature gradient hole by inserting 1 inch (1.D.) black steel pipe and filling the hole with drilling mud and laying a 100 foot plug both above and below the casing shoe. Then a ten foot cement surface plug will be added. If the hole is to be abandoned the 1 inch black steel pipe will not be placed in the hole.
- 8. Should cold artesian flow be encountered, the hole will be completed as a temperature gradient hole or abandoned as in item "6".

9. A 10'x10' sump will be dug on the drill site to provide adequate water for cooling and well control. Upon completion of the drilling operations, it will be filled in and the ground surface restored as near as practical to its original condition. Schematic Diagram Temperature Gradient Well and B.O.P.E.





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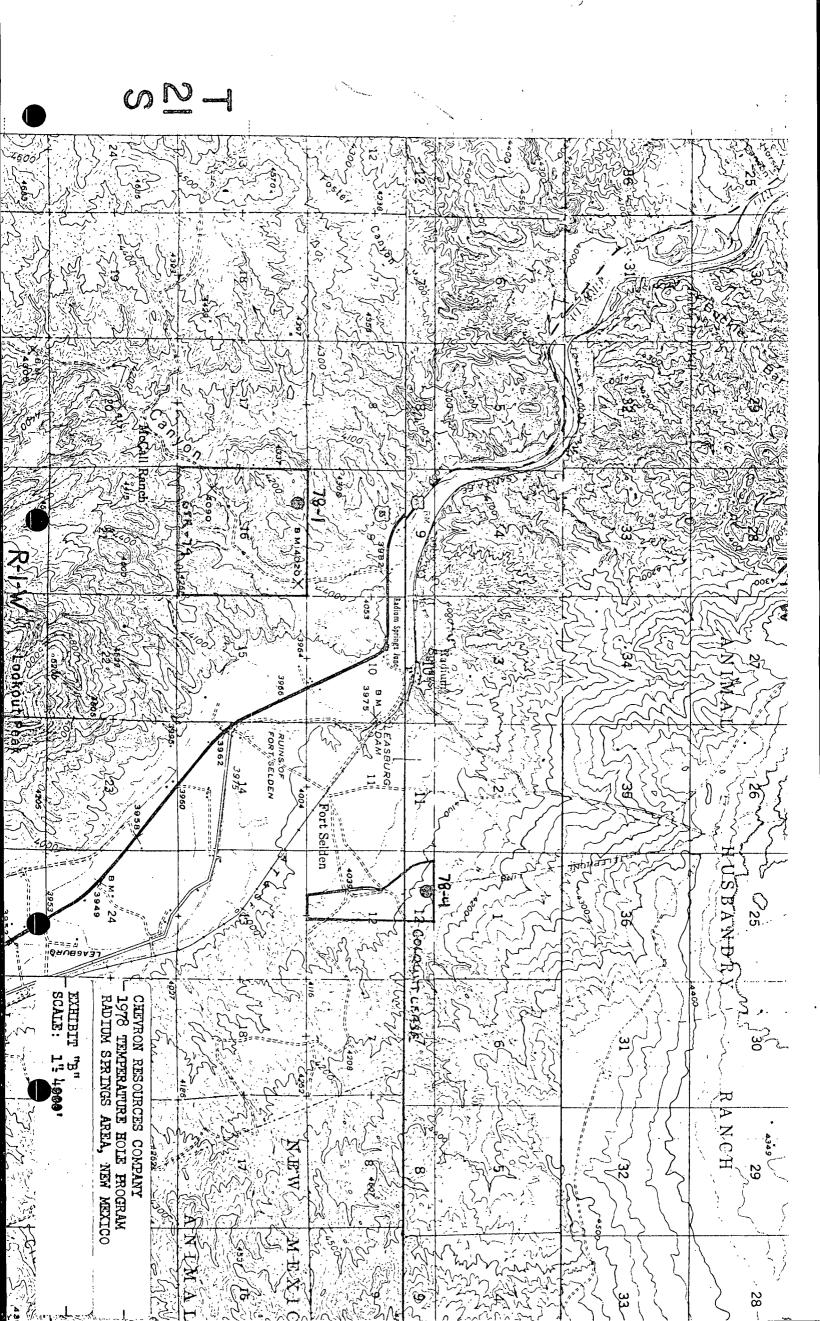
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1 GEOTHERMAL RESON 'ES WELL LOCATION AND ACREAGE DICATION PLAT

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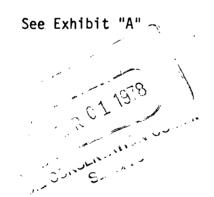
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17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.



18. Thereby certify that the information ab	ove is true and complete to the best of my knowledge and belie	f.
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CONDITIONS OF APPROVAL, IF ANY:

#### CHEVRON RESOURCES COMPANY

#### PLAN OF OPERATION

#### SHALLOW TEMPERATURE GRADIENT HOLES

EXHIBIT "A"

#### 1. Description of the Operation

The Shallow Temperature Observation Hole Program, as conducted by the Chevron Resources Company, requires the drilling of 250-500 foot holes with a diameter of 4-3/4 to 5-3/8 inches. The number of holes will vary with the size of the area to be evaluated. These holes will be drilled by a state licensed drilling contractor using a truck mounted drill rig. The mud-out temperature will be monitored continually during the actual drilling.

Once each hole is completed a 1 inch (I.D.) black steel pipe, sealed at the bottom, will be placed in the hole with the top being 8-12 inches from the ground surface. The pipe is then filled with water and capped. The hole is then back-filled with cuttings and/or drilling mud to within 10 feet of the surface. The remaining void is then filled with cement.

As necessary, the pipe is unearthed and a temperature probe is lowered to total depth. Once the series of temperature logs is completed, the pipe is then filled with cement and buried. The ground surface is then smoothed and returned to as nearly as practical to pre-drilling condition.

The drilling operations will be suspended if the mud-out temperature reaches 125°F and cannot be lowered or stabilized with the addition of well-head or cooling devices. The hole will then be completed as a temperature gradient hole or abandoned.

The drilling operations will also be suspended if flowing hot water or steam at 150°F or more is encountered. The hole will then be completed as a temperature gradient hole by placing 1 inch (I.D.), black, steel pipe to total depth and cementing from total depth to surface. If the hole is to be abandoned it will be plugged with cement from total depth to surface.

If cold artesian flow is encountered the hole will be completed or abandoned as described in the paragraph above.

The equipment for drilling, as well as the drill rig, consists of a water truck and a light pickup truck. The temperature probe consists of a thermometer or thermister device on the end of a wire line and a small tripod-mounted wheel for lowering the probe down the hole.

2. The following plan of operations as required by Section 270.34 of the Federal Regulations for Geothermal Operations on public acquired and

withdrawn lands, covering paragraphs (a) through (h), is submitted pursuant to Section 270.78:

- (a) The hole locations, lease numbers (Exhibit "B") and outline of a typical drill site layout (Exhibit "C") are attached.
- (b) No new roads will be constructed for this operation. Access to area of operations will be along existing roads.
- (c) No water sources on federally administered lands will be developed and no road building material will be used.
- (d) Campsites, airstrips or other supporting facilities will not be required.
- (e) Minimal access scars, limited mainly to tire impressions, may occur during the course of drilling the hole. All such disturbances will be restored as nearly as possible to pre-drilling condition. All materials will be removed from the area once the hole is completed.
- (f) Topographic features of the drill site areas and drainage can be observed from the attached map (Exhibit "B").
- (g) If drilling mud or foam are used they will be contained by portable steel containers. When the hole is completed, the mud residue will be dried and spread on the ground surface.
- (h) The Chevron Resources Company will use all reasonable precautions to prevent waste of geothermal resources and other natural resources found in the area. At all times during operations the following precautions will be taken:

Traffic will be light and only when necessary. Light pickups will be used whenever possible. To the extent possible, only existing roads, fence lines or jeep trails will be used.

Site preparation will be limited to driving the truck-mounted drill rig to the site and setting it up for drilling.

Since the topography is not severe, the construction of drill pads will not be required.

All vehicles will be equipped with spark arresters and will carry the required fire-fighting equipment and all adequate fire protection measures will be taken to prevent any damage from fire.

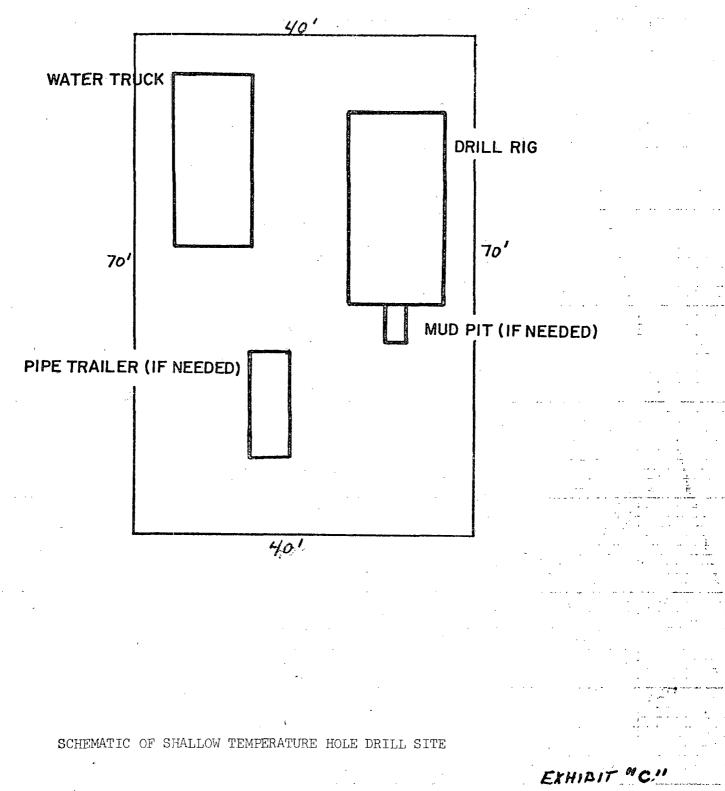
No water or other material will be pumped onto the surface of the ground which might result in soil erosion. Appropriate care will be taken so that natural drainage will not be affected and so that no pollution can occur to surface or ground water.

Geothermal operations will have no material impact on fish and the

disturbance of wildlife and vegetation in the area will be minor due to the short duration of operations and the limited number of personnel comprising the field crews. No significant damage or destruction of vegetation will occur and unavoidable dislocation of wildlife will be short term only.

Mufflers and other available devices will be used on all vehicles to control noise pollution. Minor air pollution will occur from vehicle exhaust, but all feasible measures will be used to control this pollution, in compliance with applicable laws, rules and regulations. Minor air pollution will occur from dust caused by vehicle traffic on dirt roads. Since this pollution is dependent upon natural road conditions and is temporary it therefore has no significant affect on the areas environment.

There will be very little hazard to public health and safety due to the lack of population in the area. All such hazard is confined to the crew or the rig. All appropriate safety measures and equipment will be utilized.



#### ADDITION TO PLAN OF OPERATION (EXHIBIT "A") SHALLOW TEMPERATURE GRADIENT HOLES DEEPER THAN 500 FEET

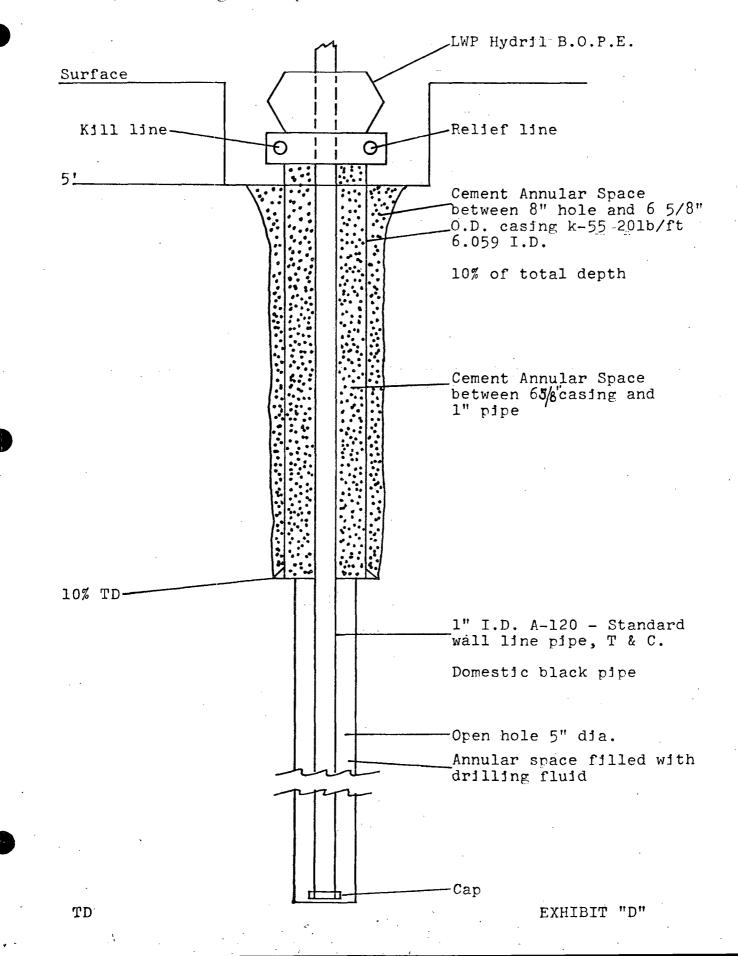
The normal drilling procedures (Exhibit "A") will be changed to adhere to U.S.G.S. requirements when drilling shallow temperature gradient holes deeper than 500 feet. The logistical and environmental factors will remain the same since the drilling equipment is identical. The changes for the holes deeper than 500 feet are as follows:

- An 8 3/4 inch hole will be drilled to 10 % of proposed total depth and 6 5/8 inch (0.D.) welded, steel casing will be lowered into the hole and cemented into place. The cement will be allowed to set for a minimum of 24 hours.
- 2. A small cellar will then be dug to allow for the blowout preventer and flange to be attached to the surface casing beneath the truck-mounted drill rig.
- 3. A bag or ram type blow-out prevention unit will be bolted into place. The blow-out equipment will conform to U.S.G.S. requirements.
- 4. The remaining hole to proposed total depth will be completed as a temperature gradient hole as described in Exhibit "A".
- 5. Drilling operations will be suspended immediately if:
  - a. Mud-out temperature reaches 175<sup>o</sup>F and cannot be lowered or stabilized by the addition of cooling devices or materials.
  - b. Flowing steam or hot water at or greater than 175°F is encountered.
- 6. If the temperature limit as described in item "5a" is reached, the hole will be completed as a temperature gradient hole or abandoned as described in Exhibit "A".
- 7. If the temperature limit as described in "5b" is reached, the hole will be completed as a temperature gradient hole by inserting 1 inch (1.D.) black steel pipe and filling the hole with drilling mud and laying a 100 foot plug both above and below the casing shoe. Then a ten foot cement surface plug will be added. If the hole is to be abandoned the 1 inch black steel pipe will not be placed in the hole.
- 8. Should cold artesian flow be encountered, the hole will be completed as a temperature gradient hole or abandoned as in item "6".

9. A 10'x10' sump will be dug on the drill site to provide adequate water for cooling and well control. Upon completion of the drilling operations, it will be filled in and the ground surface restored as near as practical to its original condition.

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Schematic Diagram Temperature Gradient Well and B.O.P.E.



- (f) Topographic features of the drill site areas and drainage can be observed from the attached map (Exhibit "A").
- (g) If drilling mud is used, it will be contained by an 8' x 3' x 3-1/2' steel mud pit. When the hole is completed the mud residue will be dried and spread on the ground surface.
- (h) The Chevron Resources Company will use all reasonable precautions to prevent waste of geothermal resources and other natural resources found in the area. At all times during operations the following precautions will be taken:

Traffic will be light and only when necessary. Light pickups will be used whenever possible. To the extent possible only existing roads, fence lines or jeep trails will be used.

Site preparation will be limited to driving the truck-mounted drill rig to the site and setting it up for drilling.

Since the topography is not severe, the construction of drill pads will not be required.

All vehicles will be equipped with spark arresters and will carry the required fire-fighting equipment and all adequate fire protection measures will be taken to prevent any damage from fire.

No water or other material will be pumped onto the surface of the ground which might result in soil erosion. Appropriate care will be taken so that natural drainage will not be affected and so that no pollution can occur to surface or ground water.

Geothermal operations will have no material impact on fish and the disturbance of wildlife and vegetation in the area will be minor due to the short duration of operations and the limited number of personnel comprising the field crews. No significant damage or destruction of vegetation will occur and unavoidable dislocation of wildlife will be short term only.

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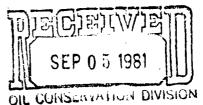
# WATER TRUCK DRILL RIG MUD PIT (IF NEEDED) PIPE TRAILER (IF NEEDED) SCHEMATIC OF SHALLOW TEMPERATURE HOLE DRILL SITE

EXHIBIT "B"



### **Chevron Resources Company**

A Division of Chevron Industries, Inc. 595 Market Street, San Francisco, California Mail Address: P.O. Box 3722, San Francisco, CA 94119



SANTA FE

August 31, 1981

Mr. Carl Ulvog New Mexico Oil and Gas Commission P.O. Box 2088 Sante Fe, New Mexico 87501

Dear Mr. Ulvog:

Chevron Resources respectfully submits well completion reports for the following shallow temperature observation wells in Dona Ana and Hidalgo Counties, New Mexico:

McKibbin #786 and Wamel #179

Chevron did not drill and requests that the permits be cancelled for the following proposed holes:

Radium Springs Area, Dona Ana Co. <u>State Lease 781</u>, Colquitt 784 Lordsburg Area, Hidalgo Co. Evans 279, Davis 379, Evans 479

Should you have any questions regarding these matters, please feel free to contact me at (415) 894-2508.

Thank you for your time and consideration regarding this request.

Respectfully,

Wach Schoe

Mark Kehoe Permit Representative

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2. Name of Operator Chevron U.S.A.	The		8. Farm or Lease Name
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3. Address of Operator P.O. Box 3722	San Francisco, CA	94119	9. Well No. 3-77
4. Location of Well L Unit Letter	500 W	1450 Line andFeet From	10. Field and Pool, or Wildcat
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proposed work) SEE RULE 203.			

Drilling was canceled

18 Thereby certify that the information above is true and c SIGNED	omplete to th	e best of my knowledge and belief. Attorney in Fact	DATE11-8-77
APPROVED BY Carl Ulwog	TITLE _	SENIOR PETROLEUM GEOLOGIST	DATE 12-5-77

CONDITIONS OF APPROVAL, IF ANY:

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## CHEVRON RESOURCES COMPANY PLAN OF OPERATION SHALLOW TEMPERATURE OPERATION HOLES

#### 1. Description of the Operation

The Shallow Temperature Observation Hole Program, as conducted by the Chevron Resources Company, requires the drilling of 250-500 foot holes with a diameter of 4-3/4 to 5-3/8 inches. The number of holes will vary with the size of the area to be evaluated. These holes will be drilled by a state licensed drilling contractor using a truck mounted drill rig.

Once each hole is completed a 1 inch (I.D.) black steel pipe, sealed at the bottom, will be placed in the hole with the top being 8-12 inches from the ground surface. The pipe is then filled with water and capped. The hole is then back-filled with cuttings and/or drilling mud to within 10 feet of the surface. The remaining void is then filled with cement.

As necessary, the pipe is unearthed and a temperature probe is lowered to total depth. Once the series of temperature logs are completed, the pipe is then filled with cement and buried. The ground surface is then smoothed and returned to as nearly as practical to pre-drilling condition.

The equipment for drilling, as well as the drill rig, consists of a water truck and a light pickup truck. The temperature probe consists of a thermometer or thermister device on the end of a wire line and a small tripod-mounted wheel for lowering the probe down the hole.

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# WATER TRUCK

# PIPE TRAILER (IF NEEDED)

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SCHEMATIC OF SHALLOW TEMPERATURE HOLE DRILL SITE

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DRILL RIG - 2

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# MUD PIT (IF NEEDED)

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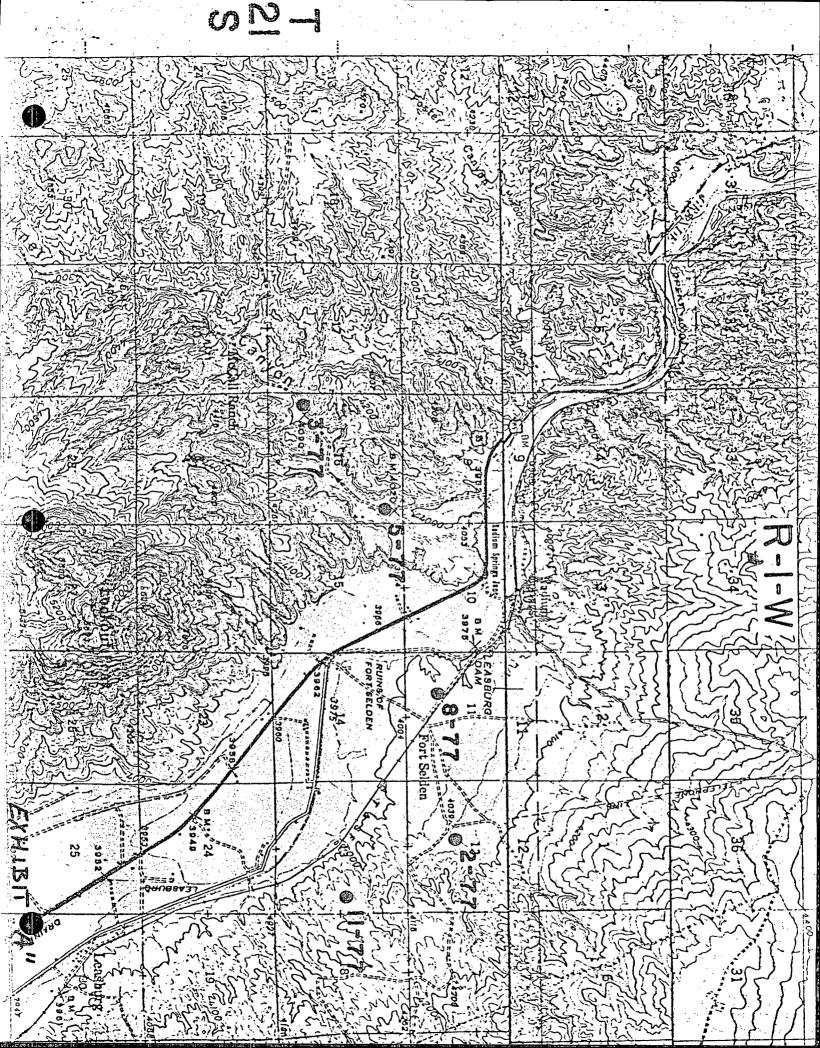
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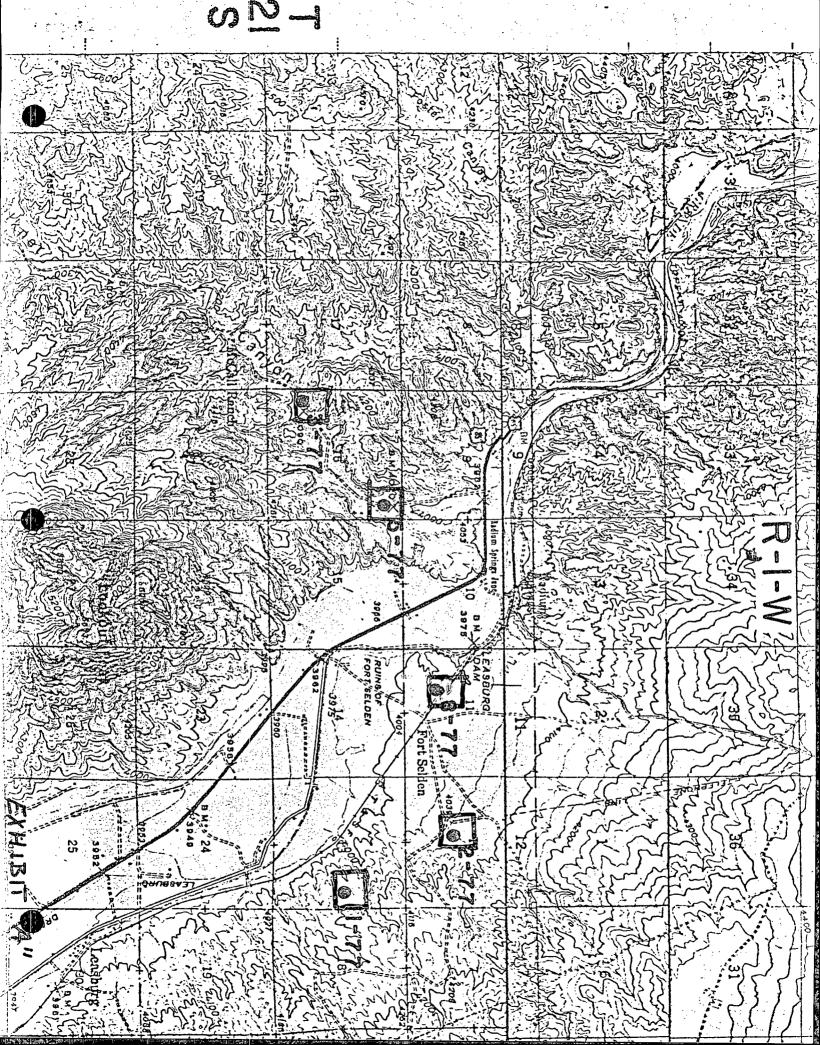
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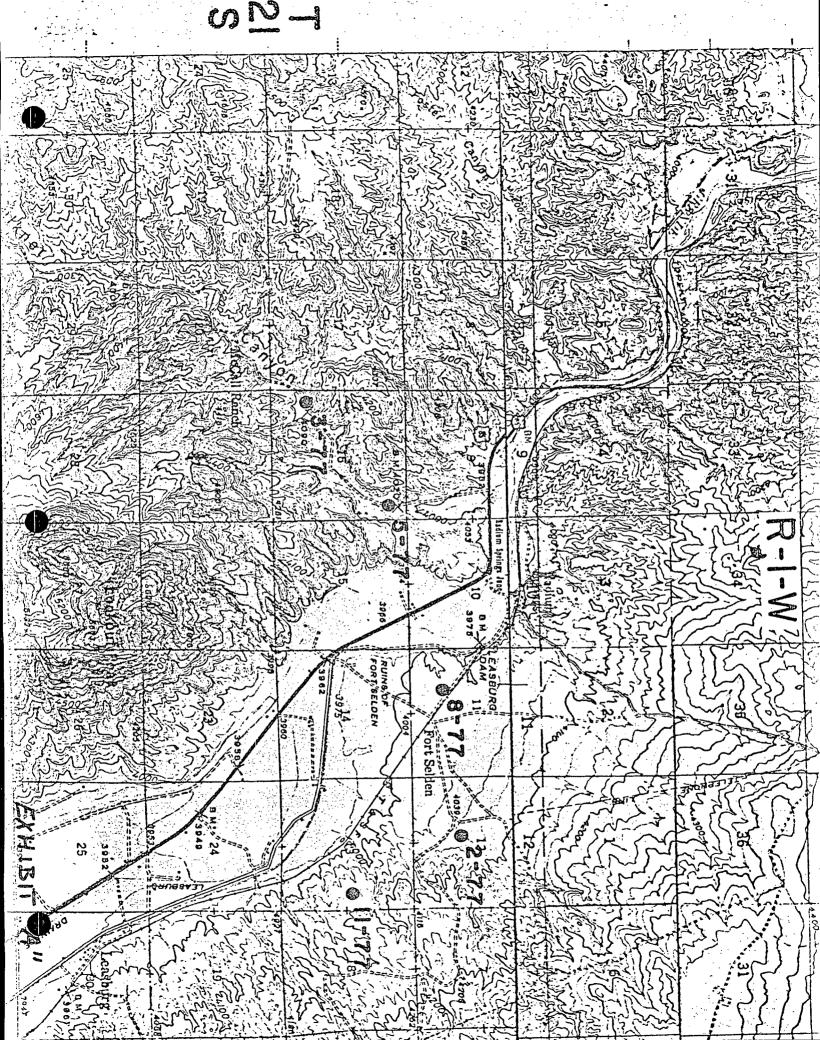
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