

6L02351



UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
Area Geothermal Supervisor's Office
Conservation Division, MS 92
345 Middlefield Road
Menlo Park, CA 94025

FC
USGS
AGSO
Memo to
NV
Persh. &
Churchill Co.
11/23/77

NOV 23 1977

Memorandum

To: INTERESTED PARTIES

From: *Acting* Area Geothermal Supervisor

Subject: Plan of Operation, Republic Geothermal, Inc., Federal Leases N-17281 and N-17282, Dixie Valley KGRA, Pershing and Churchill Counties, Nevada

Republic Geothermal, Inc., has submitted a Plan of Operation in accordance with 30 CFR 270.78(b)(5) to drill three (3) 2000' temperature gradient holes on Federal leases N-17281 and N-17282, Dixie Valley KGRA, Pershing and Churchill Counties, Nevada. A copy of the Plan of Operation is attached for your review and files.

An Environmental Analysis (EA#102) will be prepared by the Office of the Area Geothermal Supervisor for the proposed action. A field inspection will not be held per se, but interested parties are encouraged to inspect the site at their own convenience. Any inquiries should be directed to Mr. Bernie Moroz, District Geothermal Supervisor, 63 Keystone Avenue, Suite 102, Reno, Nevada (Telephone 702-784-5676, FTS 470-5676).

All comments concerning the proposed action must be received no later than December 6, 1977, by:

Area Geothermal Supervisor
USGS, Conservation Division
345 Middlefield Road, MS 92
Menlo Park, California 94025
Tel: 415-323-8111, Ext. 2848 (FTS: 467-2848)

We urge you to send written commentary and will appreciate hearing from you even if you are of the opinion that the existing regulations, lease terms, and operational orders provide adequate environmental protection.

UNIVERSITY OF UTAH
RESEARCH INSTITUTE
EARTH SCIENCE LAB.

Further, we solicit your comments and suggestions on the proposed action. All comments will be given serious consideration in the preparation of the Environmental Analysis and any subsequent conditions of approval.

The Area Geothermal Supervisor's Office will not send a draft Environmental Analysis to interested parties for review for the proposed action. Certain parties however, such as the surface managing agency, the lessee, GEAP, and USFWS will receive a copy of the completed EA. Other interested parties will not receive a copy of the final EA unless such parties comment on the proposed action in writing or request a copy of the particular EA pursuant to the Freedom of Information Act. Copies of Environmental Analyses are available for inspection during normal business hours at the Area Geothermal Supervisor's Office, the Reno District Geothermal Supervisor's Office, and the Carson City and Winnemucca BLM District Manager's Offices.

Barry A Boudreau

INTERESTED PARTIES

REPUBLIC GEOTHERMAL, INC.; FEDERAL LEASES N-17281, N-17282
PLAN OF OPERATION: THREE (3) 2000' TGH's (EA #102)
DIXIE VALLEY KGRA, PERSHING & CHURCHILL COUNTIES, NV

USGS-Conservation Division
Conservation Manager, Western Region
Attn: Environmental Staff
345 Middlefield Road, MS 80
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FTS: 467-2093

USGS-Conservation Division
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Geothermal Environmental Advisory Panel
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FTS: 598-5451

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1050 E. William Street, Suite 335
Carson City, NV 89701
(702) 882-1631
FTS: 470-5911 ask for 882-1631

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Geothermal Specialist
Attn: Ted Holland
Denver Federal Center, Bldg. 50 (D-310)
Denver, CO 80225
(303) 234-5098
FTS: 234-5098

U.S. Fish and Wildlife Service
Office of Biological Services
Geothermal Advisor, Region 1
Attn: L.A. Mehrhoff
4620 Overland Road, Room 210
Boise, ID 83705
(208) 834-1931
FTS: 554-1931

U.S. Fish and Wildlife Service
Regional Director, Region 1
Attn: Kahler Martinson
P.O. Box 3737
Portland, OR 97208
(503) 429-4050
FTS: 429-5263

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2800 Cottage Way, Room E-2727
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U.S. Bureau of Reclamation
Attn: Lloyd Osbourne
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Carson City, NV 89701
(702) 882-3436

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REPUBLIC GEOTHERMAL, INC. (EA #102)

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Nevada Operations Office
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Nevada Dept. of Fish & Game
Attn: Dale Lockhard
P.O. Box 10678
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(702) 784-6214

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Attn: Ray Corlett, Regional Manager
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(702) 423-3171

State of Nevada
Nevada State Museum
Attn: Mary Rusco, Archaeologist
600 N. Carson Street
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Churchill County Commissioner
Attn: Beale E. "Skip" Cann, Chairman
Churchill County Courthouse
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Planning Director, Pershing County
Attn: E.L. Spencer
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(702) 273-2636

Phillips Petroleum Company
Attn: R. T. Forest
Energy Minerals Division
P.O. Box 10566
Reno, NV 89510
(702) 786-2273

Phillips Petroleum Company
Attn: R.L. Wright
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(213) 483-2285

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Sunoco Energy Development Co.
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(415) 524-9242

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(805) 399-2961

Chevron USA, Inc.
Attn: J.G. Turner
P.O. Box 3722
San Francisco, CA 94119
(415) 894-2726

Gulf Mineral Resources Company
Attn: E.W. Westrick
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Denver, CO 80222
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Republic Geothermal, Inc.
Attn: Dwight Carey
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(213) 945-3661

Republic Geothermal, Inc.
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(415) 897-7833

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(202) 785-3440

Union Oil Company of California
Geothermal Division
Attn: Neil J. Stefanides
Union Oil Center, Box 7600
Los Angeles, CA 90051
(213) 486-7740

Dresser Industries
MAGCOBAR Division
Attn: Jim Fox
475 17th Street, Suite 1600
Denver, CO 80202

Occidental Geothermal, Inc.
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Bakersfield, CA 93309
(805) 327-7351

AMAX Exploration
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4704 Harlan Street
Denver, CO 80212
(303) 433-6151

Thermal Power Company
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601 California Street
San Francisco, CA 94108
(415) 981-5700

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Richardson, Texas 75080

Univ. of Utah Research Institute
Attn: Phillip Wright
391 Chipeta Way
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(801) 581-5226

Anadarko Production Company
Attn: John Syptak
P.O. Box 1330
Houston, Texas 77001
(713) 526-5421

State of Nevada
Div. of Historic Preservation &
Archeology
Attn: Kimberly Wood, SHPO
201 South Fall St. Capitol Complex
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~~NOV 23 1977~~
Revised
Dec 9, 1977

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PLAN OF OPERATIONS

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:

The operation will consist of drilling three, 2000' temperature gradient holes to be denominated RDV-5, RDV-6 and RDV-7. They will be located on N-17281 and N-17282.

- (a) The holes will be positioned according to the attached map, "Drawing Number 255-5". This map also indicates a typical drill site for a temperature-gradient hole.
- (b) No new roads will be constructed for this operation. Access to the site will be gained through the use of existing roads.
- (c) No water sources will be developed on Federal lands for this operation, such water as will be used will be obtained from an authorized source. No road building material will be used.
- (d) There will be no campsites, air-strips or other supporting facilities.
- (e) Slight access scars, such as tire impressions, may occur during the course of drilling the hole. All such disturbances, as well as drill pad sites, will be restored as nearly as practicable to pre-drilling condition.
- (f) Topographic features of the land and the drainage patterns may be observed on the attached map referred to above.
- (g) Waste drilling mud (non-toxic) will be deposited in an 8'x8'x3½' steel mud tank. When the holes are completed the mud will be dried and the residue spread on the surface of the ground in such a manner so that the residue will not exceed 6" in thickness.
- (h) Best efforts will be made to minimize the environmental impact upon the area. Traffic will be light, and wherever possible only light vehicles will be used. To the extent possible only existing roads and trails will be used. If it is necessary to construct a temporary drilling pad, best efforts will be made to promptly restore the area to pre-drilling condition upon completion of the exploration operation.

Access to the exploration site will be located to minimize disturbance of perennial woody vegetation, and the site will be cleared only to the extent needed for proper operation.

Natural drainage pathways will be changed as little as possible and drill and accessory sites will be situated in such a manner as to cause minimum disturbance to natural drainage. If vegetation is stripped from the exploration site, best efforts will be used to promptly return the site to its natural condition upon completion of the operation.

Surface and ground waters will not be used or disturbed. There will be no hazard of water pollution or any harmful effect upon the fish of the area.

Disturbance of the wildlife and vegetation in the lease area will be minor due to the short duration and limited number of personnel used in the exploration operations (estimated to be 3 - 5 persons). No significant damage or destruction of vegetation will occur, and unavoidable dislocation of wildlife in the immediate area will be short-term only.

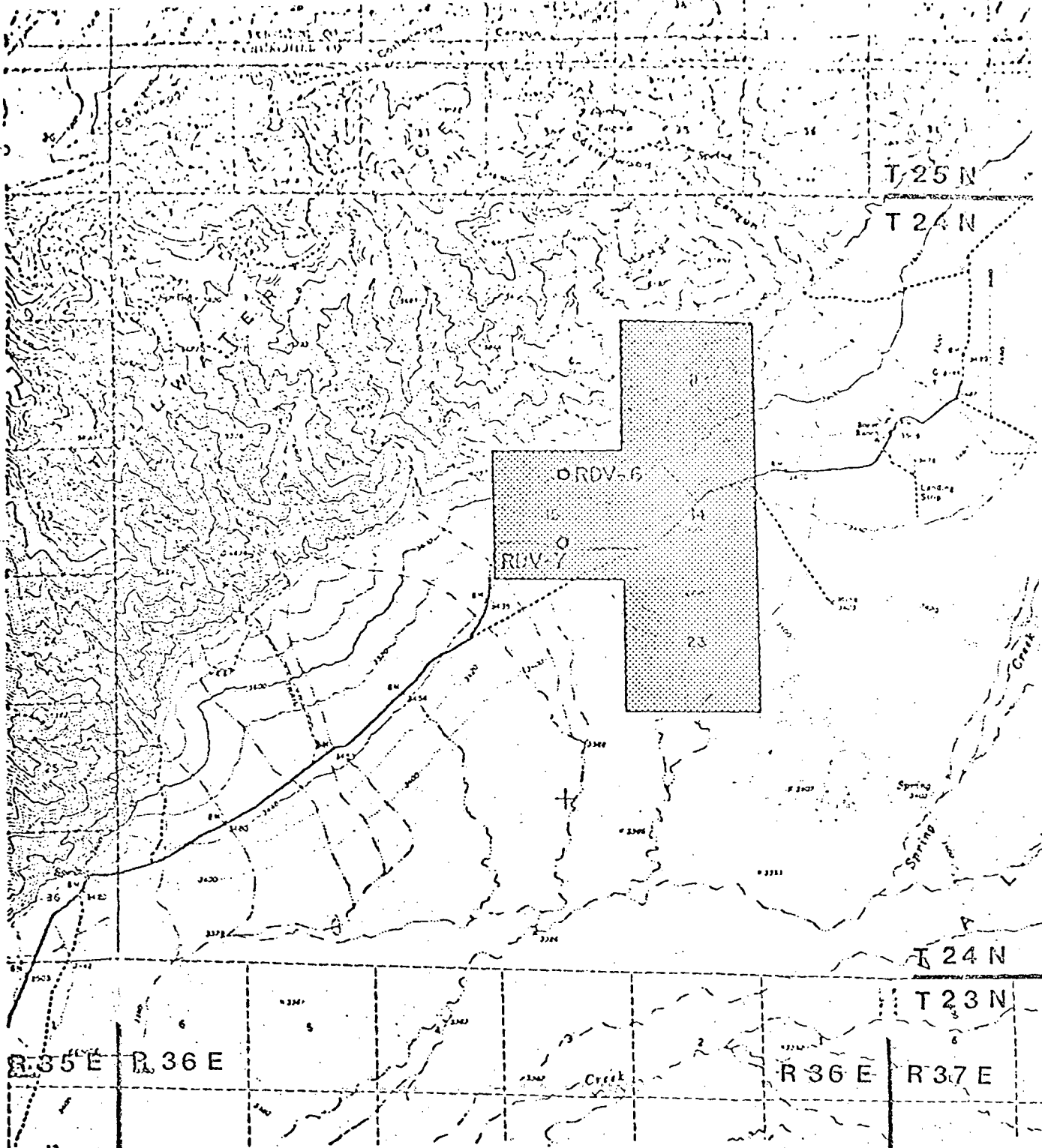
Minor air pollution will occur from vehicle exhausts, but will be maintained within legal standards. Other equipment will be monitored to insure that excess emissions are kept to a minimum. Additional air pollution may occur from dust due to vehicle traffic, but this is largely dependent on the condition of the roads and trails.

It is not expected that noise levels will exceed 65 DBA at a distance of 1,500 feet from their source; however, should this occur, proper muffling devices will be promptly installed.

All local, state and federal fire protection standards applicable to the activities will be observed. All required fire-fighting equipment will be kept on the site during operations.

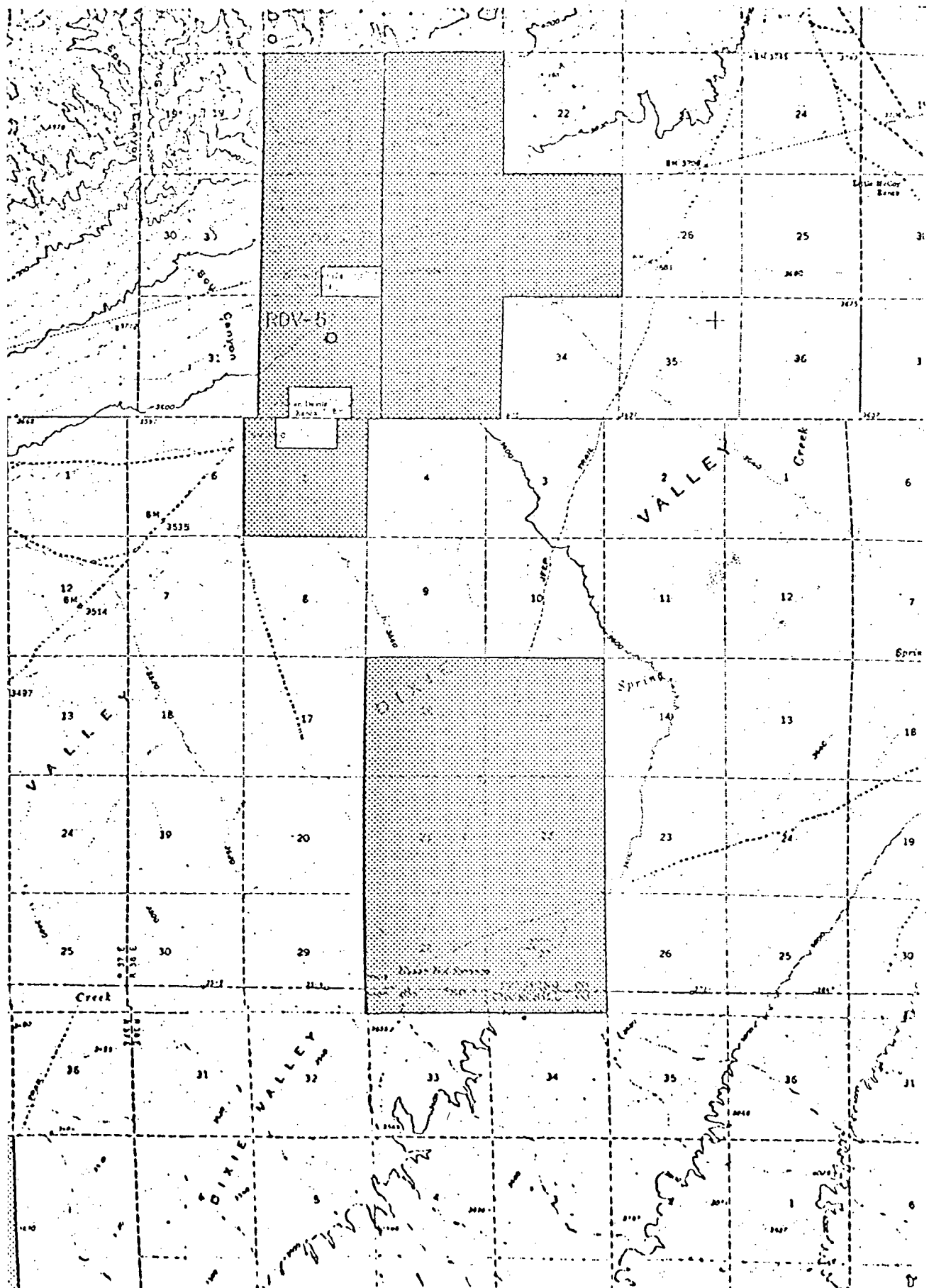
There will be very little impact on the public due to the lack of population in and around the lease area. All operations will be carried out in such a manner as to ensure the safety of everyone in the area. All Occupational Safety and Health Act Standards relating to this operation will be enforced by the lessee and all applicable State of Nevada Safety Orders will be followed.





R 37 E | R 38 E

R 38 E | R 39 E

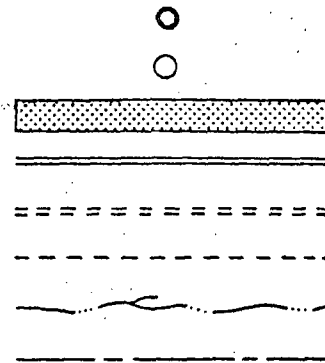


T 26 N
T 25 N

T 25 N
T 24 N

LEGEND

PROPOSED TEMP. GRADIENT WELL - BLM LANDS
PROPOSED TEMP. GRADIENT WELL - PRIVATE LANDS
R.G.I. FEDERAL LEASE LANDS
ROAD, IMPROVED SURFACE
ROAD, UNIMPROVED SURFACE
TRAIL
SMALL WASH
COUNTY BOUNDAR LINE



DATUM COMPILED USING U.S.G.S. 15 MIN. SERIES

CAIN MTN., NEV. DTD. 1961.

SHOSHONE MEADOWS, NEV. DTD. 1966.

CONTOUR INTERVALS - 40'

SUPPLEMENTARY INTERVALS - 20'

FENCEMAKER, NEV. DTD. 1961

CONTOUR INTERVALS - 40'

SUPPLEMENTARY INTERVALS - 10'

HUMBOLDT SALT MARSH, NEV. DTD. 1966

CONTOUR INTERVALS - 80'

SUPPLEMENTARY INTERVALS - 20'

DATUM IS MEAN SEA LEVEL.

DIXIE VALLEY, NEV

REQUIRED INFORMATION PURSUANT TO
GEOHERMAL RESOURCES OPERATIONAL ORDER #1, SECTION E

1. Approximate location of holes - See attached map.
2. The drilling rig is a Franks Keystone 50.
3. Procedure to Drill RDV-5, RDV-6 and RDV-7

Temperature observation wells scheduled to be drilled to 2000'.

(All depth measurements refer to ground).

T.D.: 2000'

Location: Dixie Valley, Nevada

Tubular Goods Required:

Casing Program: 200' of 7 inch 20# H-40 casing (20' joints) or equivalent.
2000' of 1" 1.6#/ft. sch 40 galvanized pipe (20' joints with special API long couplings)

Mud Program: Use lightweight fresh water, low solids, native or bentonite mud system from surface to T.D.

Weight: 8.8 - 9.0#/gal.

Vis.: as required by hole conditions
30-60 sec marsh funnel

Water Loss: No control

Procedure:

1. Move in, rig up.
2. Drill 8-3/4" hole to a depth of 200 feet.
3. Set 200 feet of 7" H-40 casing on bottom, cement to surface with 40 cu. ft. of Portland cement (calculated with 10% excess).
4. Install 6", 1000 psi hydraulic blowout preventer and spool on casing head per attached drawing.
5. Drill 6-5/8" hole to a depth of 2000 feet.
6. Run 2000 feet of 1" A-120 Schedule 40 foreign galvanized pipe with API long couplings capped on bottom.
7. Backfill hole from 2000 feet to 200 feet with 205 cu. ft. of cuttings, native materials and mud, and cement 1" pipe from 200 feet to surface with 36 cu. ft. of Portland cement (calculated with 10% excess).
8. Fill pipe with water, cap.
9. Rig down, clean site, move out.

4. There will be no drilling sump. Instead, an 8'x8'x3½' steel mud tank will be used. When the holes are completed, the mud will be dried and the residue spread on the surface of the ground.
5. The holes will be allowed to equalize for approximately two to four weeks from the time of completion and then will be observed for one year.
6. The method of abandonment will be determined by the temperatures encountered, as per Geothermal Resources Operational Order #1, and will consist of either:
 - a. Filling the holes with drilling mud from total depth to 10' below the surface and cement to the surface thereafter, or
 - b. Plugging with cement from total depth to surface.

BLOWOUT PREVENTION EQUIPMENT
FOR TEMPERATURE GRADIENT HOLES RDV-5, RDV-6 and RDV-7

