

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

ORDER NO. 82-2

WASTE DISCHARGE REQUIREMENTS  
FOR  
REPUBLIC GEOTHERMAL, INC.  
10 MW (Net) GEOTHERMAL BINARY POWER PLANT  
CONTAINMENT BASINS  
East Mesa Area - Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. Republic Geothermal, Inc. (hereinafter also referred to as the discharger), P.O. Box 3388, Santa Fe Springs, CA 90670, submitted a report of waste discharge, dated October 9, 1981.
2. The discharger proposes to construct three containment basins as follows:
  - a. A firewater containment basin with a capacity of approximately 250,000 gallons which would receive approximately 75,000 gph of filtered, residual geothermal fluid (1,890 mg/l, TDS). This water would be used for cooling tower water make-up and would also be available for firefighting.
  - b. A settling basin with a capacity of about 275,000 gallons which would receive approximately 20,000 gph of cooling tower water blowdown (6,800 mg/l, TDS), about 4,000 gph of backwash fluids (1,890 mg/l, TDS), and solids from the injection filters.
  - c. Overflow from the above settling basin would enter a surge basin which would have a capacity of about 150,000 gallons. This basin would receive approximately 23,000 gph (6,170 mg/l, TDS), and the water would be pumped from the surge basin through a filtering system for subsurface injection.
3. An average of approximately fifteen pounds per hour of solids would be deposited in the settling basin. These solids, consisting almost entirely of formation sands, silts and clays, would be removed and taken to an approved disposal site.

*Superseded  
by 86-19  
3/19/82*

4. Wastewater from the above basins would be injected subsurface by four injection wells. These wells are subject to waste discharge requirements contained in Board Orders No. 76-35 and No. 76-64 (Revised).
5. The containment basins would be located in the SE 1/4, NE 1/4, SW 1/4, Section 30, T15S, R17E, SBB&M.
6. The Water Quality Control Plan for the West Colorado River Basin Region was adopted on April 10, 1975. The Basin Plan contains water quality objectives for Imperial Hydrologic Unit.
7. Two shallow groundwater monitoring wells located near the SW corner of Section 30, T15S, R17E, SBB&M have TDS reported at 1600 and 1700 mg/l. Seven other shallow monitoring wells located south of the discharger's area (Sections 5 & 6, T16S, R17E, SBB&M), have TDS reported to range from 1,100 to 14,000 mg/l.
8. Imperial County Planning Department, on August 9, 1978, certified Environmental Impact Report EA-EIR 99-100 (SCH No. 78071842) for a proposed 10 MW (gross) flash-steam power plant at this site. USGS issued the final EA-EIR on September 8, 1978, (the EA-EIR was jointly prepared by these two agencies). On May 1, 1979, USGS issued a supplement to the above EA-EIR 99-100 (SCH No. 78071842) for an enlarged 48 MW (net) flash-steam power plant. The Regional Board approved on January 27, 1982, a supplemental EIR 99-100 (SCH No. 78071842) for a change to a 10 MW (net), 19 MW (gross), binary power plant. The Board determined there will be no substantial adverse effect on the environment as a result of this project.
9. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge.
10. The Board in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, Republic Geothermal, Inc. shall comply with the following:

A. Discharge Specifications

1. Neither the treatment nor the discharge of wastes shall create a pollution or a nuisance as defined in Division 7 of the California Water Code.
2. Geothermal fluids and other wastes shall not enter any canals, drainage channels, or drains (including subsurface drainage systems) which could provide flow to Salton Sea, except as allowed under an appropriate NPDES permit.

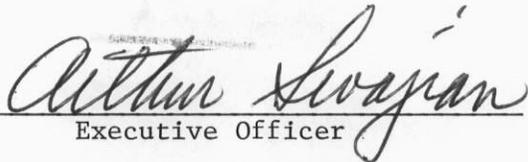
3. Temporary discharge and/or storage of geothermal fluids or wastes other than into containment basins or other containers having a lining permeability of  $1 \times 10^{-6}$  cm/sec, or less, is prohibited, and the fluids contained therein shall not penetrate through the lining during the containment period.
4. Permanent disposal of any waste at this site is prohibited; and also, storage of geothermal fluids or wastes with a total dissolved solids concentration exceeding 2,000 mg/l for longer than one year, other than into containment basins or other containers having a lining permeability of  $1 \times 10^{-8}$  cm/sec, or less, is prohibited, and the fluids contained therein shall not penetrate through the lining during the containment period.
5. Materials discharged to and/or stored in containment basins shall not overflow said basins.
6. Adequate protective works and maintenance shall be provided to assure that each containment basin shall not become eroded or otherwise damaged by floods occurring during the project life of said basins.
7. Prior to the disposal of any materials removed from containment basins other than by subsurface injection, the discharger shall inform the Executive Officer concerning the nature and volume of the materials and the proposed location of disposal. Said materials shall only be disposed at a location approved by the Regional Board.
8. A minimum freeboard of two feet shall be maintained in each containment basin at all times.
9. Final disposal of residual wastes and cleanup of containment basins shall be accomplished upon abandonment of operations.
10. Geothermal fluids discharged by subsurface injection shall be discharged into the zone of extraction, or zones that contain a total dissolved solids content which is equal to or greater than that contained in the zone of extraction.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 82-2", and future revisions thereto, as specified by the Executive Officer.

2. Prior to the discharge of wastewater to any newly constructed containment basin, the discharger shall submit to the Regional Board a technical report on the construction of said basin, and a certificate signed by a California Registered Civil Engineer stating that the basin and attendant facilities are constructed to meet the requirements of this Order.

I, Arthur Swajian, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on January 27, 1982.

Subscribing to Water Quality Control  
  
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 82-2  
FOR  
REPUBLIC GEOTHERMAL, INC.  
10 MW (Net) GEOTHERMAL BINARY POWER PLANT  
CONTAINMENT BASINS  
East Mesa Area - Imperial County

MONITORING

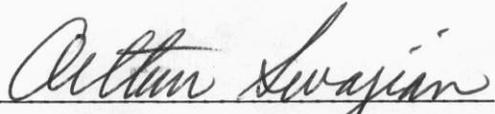
1. Prior to the disposal of any materials removed from containment basins other than by subsurface injection, Republic Geothermal, Inc. shall inform the Executive Officer concerning the nature and volume of the materials and the proposed location of disposal.
2. At least 20 days prior to the discharge of any wastewater to a newly constructed containment basin, the discharger shall submit to the Regional Board a technical report on the construction of said basin, and a certificate signed by a California Registered Civil Engineer stating that the basin and attendant facilities are constructed to meet the requirements contained in Board Order No. 82-2.

REPORTING

Mail reports:

California Regional Water Quality Control Board  
Colorado River Basin Region  
73-271 Highway 111, Suite 21  
Palm Desert, CA 92260

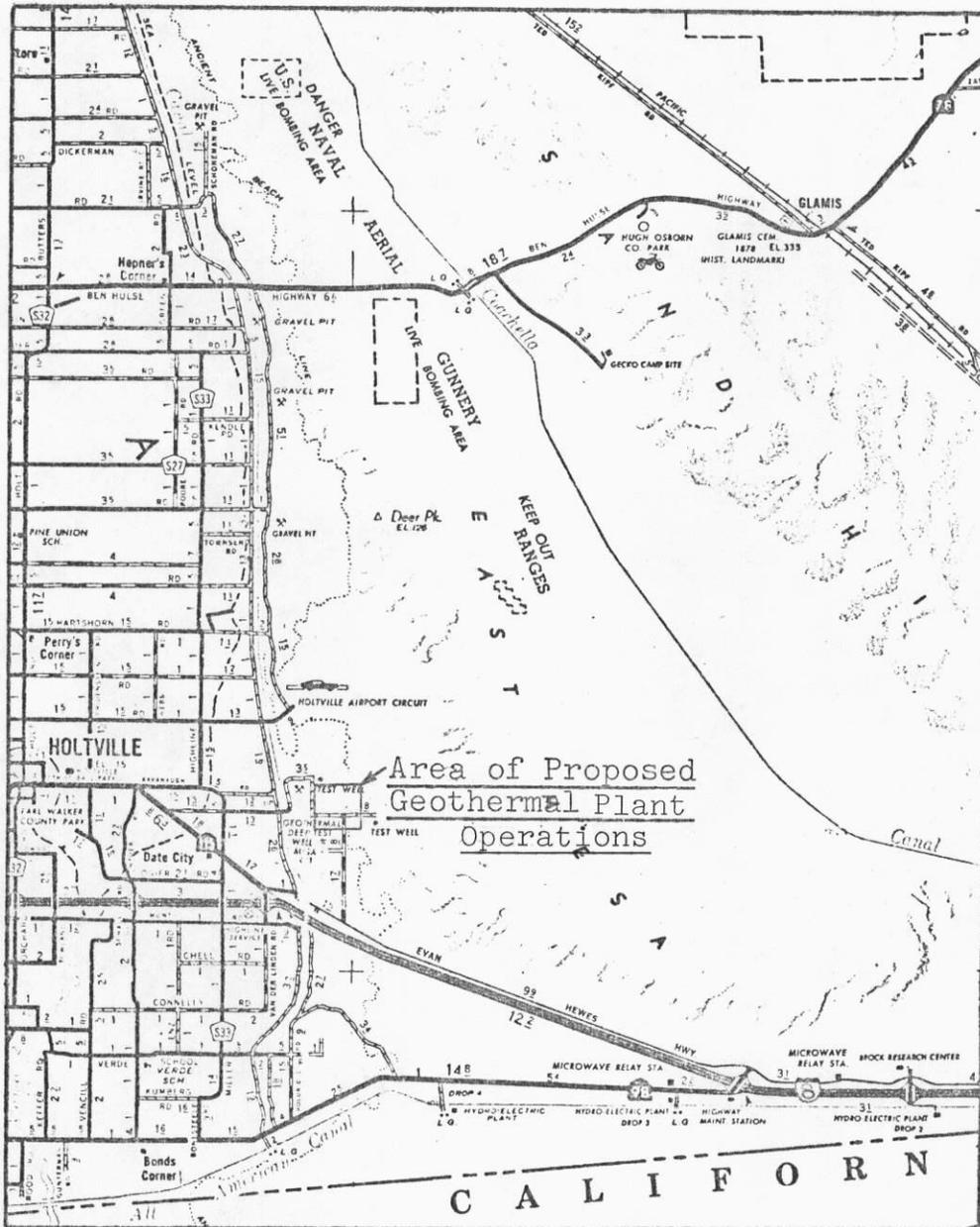
ORDERED BY:

  
Executive Officer

January 27, 1982

Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - 7



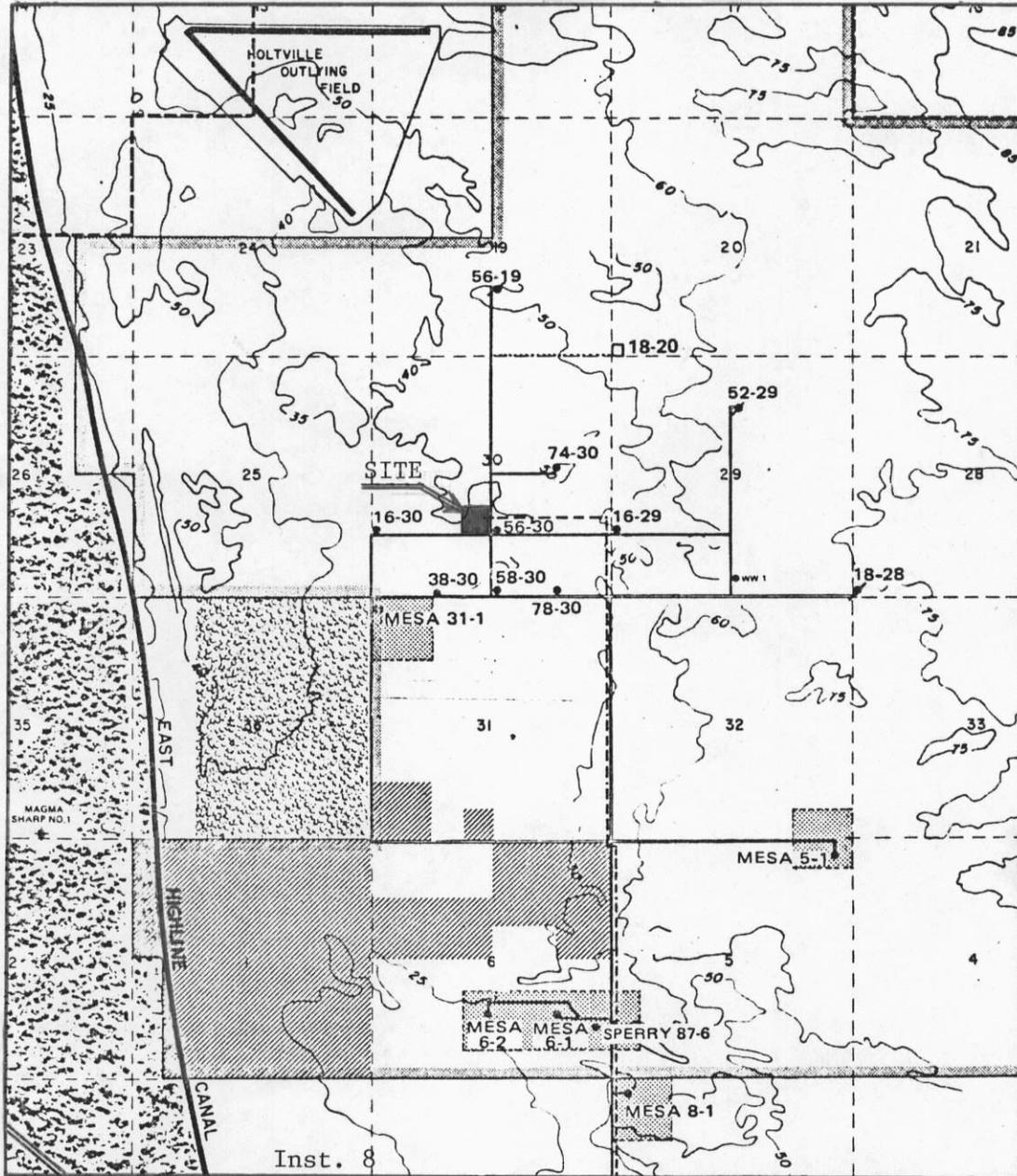
Scale:

1" = 4.5 mi.

SITE MAP No. 1

REPUBLIC GEOTHERMAL, INC.  
10 MW (Net) GEOTHERMAL BINARY POWER PLANT  
East Mesa Area - Imperial County

Order No. 82-2



Scale:  
1" = 4,000'

SITE MAP No. 2

REPUBLIC GEOTHERMAL, INC.  
10 MW (Net) GEOTHERMAL BINARY POWER PLANT  
EVAPORATION BASINS  
East Mesa Area - Imperial County  
SE 1/4, NE 1/4, SW 1/4 of Section 30, T15S, R17E, SBB&M