

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 81-6

WASTE DISCHARGE REQUIREMENTS
FOR
MAGMA POWER COMPANY
East Mesa Area - Imperial County

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

1. Magma Power Company (hereinafter also referred to as the discharger) 631 So. Witmer Street, Los Angeles, CA 90017, submitted a Report of Waste Discharge dated October 23, 1980.
2. The discharger proposes to drill two development geothermal wells in the East Mesa area at the following locations:

<u>Well</u>	<u>Location</u>
84-7	SE 1/4, SE 1/4, NE 1/4, of Section 7, T16S, R17E, SBB&M
88-7	SE 1/4, SE 1/4, SE 1/4 of Section 7, T16S, R17E, SBB&M

3. An impervious lined mud sump, 125 feet by 50 feet by 5 feet deep, with an approximate capacity of 234,000 gallons would be constructed at each well site. Each site would utilize about one acre of surface area.
4. The discharger proposes to discharge into each mud sump a maximum of 176,000 gallons of drilling mud and drill cuttings. Following some evaporation, the residual mud would be removed from the sumps and discharged at a solid waste disposal site approved by the Regional Board to receive this waste.
5. The drilling mud components which may be used are:

Bentonite	Phosphates
Lignite	Bicarbonate of soda
Caustic Soda (NaOH)	Salt
Barite (Barium Sulfate)	Soda Ash

*Superseded
1/27/88
by order #
88-12
12*

6. The discharger proposes to discharge into each mud sump or into impervious storage tanks 40,000 gallons of cleanout fluid. Final disposal of this fluid would be by subsurface reinjection, or after some evaporation, the residual fluid would be discharged at a Class I or Class II-1 solid waste disposal site approved by the Regional Board to receive this waste.
7. Fluids from flow testing and production testing of these geothermal wells would be either discharged into impervious tanks and injected subsurface, or injected subsurface directly.
8. Geothermal brines in portions of Imperial County are known to contain certain constituents which are classified as hazardous by the Department of Health Services, Hazardous Materials Management Section. Said hazardous wastes must be discharged at approved Class I or Class II-1 disposal sites.
9. The Water Quality Control Plan for the West Colorado River Basin was adopted on April 10, 1975. The Basin Plan contains water quality objectives for the Imperial Hydrologic Unit.
10. There are no surface waters in the vicinity of the discharge. Shallow groundwaters are of marginal quality and presently are not beneficially used. Deep groundwaters are being tested for potential geothermal power production.
11. The Regional Board approved on January 28, 1981, a Negative Declaration for these wells in accordance with California Environmental Quality Act and State Guidelines. The Board determined that there will be no substantial adverse effect on the environment as a result of this project.
12. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge.
13. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, Magma Power Company 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 rivers, canals, drainage channels, or drains (including subsurface drainage systems), which could provide flow or seepage to Salton Sea.
3. Temporary discharge and/or storage of drilling mud, drill cuttings and cleanout fluid other than in mud sumps or other containers having a lining coefficient of permeability of 1×10^{-6} cm/sec., or less, is prohibited, and the fluids contained within shall not penetrate through the lining during the containment period.
4. Long term storage and/or discharge of geothermal wastes for longer than one year, other than in containers having a lining coefficient of permeability of 1×10^{-8} cm/sec., or less, is prohibited, and the fluids contained within shall not penetrate through the lining during the containment period.
5. Adequate protective works and maintenance shall be provided to assure that mud sumps will not become eroded or otherwise damaged during the project period, and/or until all well drilling and well cleanout materials are removed.
6. A minimum freeboard of at least two feet shall be maintained in mud sumps.
7. Permanent disposal of drilling muds or any wastes is prohibited at the well sites.
8. Fluids discharged by subsurface injection shall not be discharged into any subsurface zone which has a total dissolved solids concentration of less than 10,000 mg/l, unless the total dissolved solids concentration of the injection water is less than or equal to that of the receiving water.
9. Saline drilling muds, with extractable water containing a total dissolved solids concentration exceeding 6,000 mg/l, and brine and salt wastes, shall be discharged at a Class I or Class II-1 disposal site approved by the Regional Board to receive said waste.
10. Non-saline drilling muds, with extractable water containing a total dissolved solids concentration which is less than 6,000 mg/l, and not containing hazardous wastes* may be disposed at a Class II-2 disposal site approved by the Regional Board to receive said wastes.

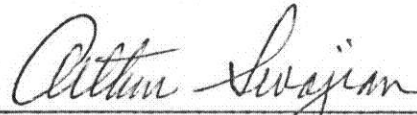
*See Attachment A

11. Final disposal of residual wastes in accordance with Specifications No. 8, 9, and 10 above, and cleanup of all contents, shall be accomplished upon abandonment of operations. Lack of construction or operational activity on the site for a period of one year shall constitute abandonment for the purposes of this Order.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 81-6" and "General Provisions for Monitoring and Reporting", and future revisions thereto, as specified by the Executive Officer.
2. At least 5 days prior to the discharge of any materials into a mud sump, the discharger shall submit to the Regional Board a technical report showing the construction of said sump, and a certificate signed by a California Registered Civil Engineer stating that the sump and attendant facilities are constructed to meet the requirements of this Order.

I, Arthur Swajian, Executive Officer, do hereby certify that 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 28, 1981.



Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ATTACHMENT A

Threshold Limit Concentrations for Persistent
and Bioaccumulative Toxic Substances

Drilling mud, cuttings, and other geothermal wastes containing the following substances having concentrations equal to or greater than those listed below are designated as hazardous by the State of California Department of Health Services.

	<u>Soluble Threshold Limit mg/kg</u>	<u>Total Threshold Limit net weight mg/kg</u>
1. Arsenic and compounds	5	50
2. Barium (excluding barite) and compounds	100	1,000
3. Lead compounds, inorganic	5	50
4. Lead compounds, organic	—	13
5. Manganese compounds	100	1,000
6. Zinc compounds	17	170

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 81-6
FOR
MAGMA POWER COMPANY
East Mesa Area - Imperial County

Location: Section 7, T16S, R17E, SBB&M

MONITORING

Magma Power Company shall report monitoring data to the Regional Board in accordance with the following schedule:

<u>Constituents</u>	<u>Units</u>	<u>Reporting Frequency</u>
1. Volume of geothermal wastes contained in each sump.	Gallons	Monthly
2. Volume of saline drilling mud and salt and brine waste hauled to a Class I or Class II-1 solid waste disposal site, and name of site.	Gallons	Monthly
3. Volume and total dissolved solids concentration of non-saline drilling mud hauled to a Class II-2 solid waste disposal site, and name of site.	Gallons and mg/l	Monthly
4. Total dissolved solids concentration of waste fluid injected into each injection well.	mg/l	Monthly
5. Total dissolved solids concentration of groundwater contained in strata receiving waste fluid injection.	mg/l	At least 10 days prior to commencement of injection.
6. Representative samples of drilling mud, cuttings and geothermal fluid proposed to be discharged at Class II-2 solid waste disposal sites shall be analyzed for the following constituents and the results reported to the Regional Board.		5 days prior to discharge.
a. Arsenic and compounds	mg/kg	
b. Barium (excluding barite) and compounds	mg/kg	

<u>Constituents</u>	<u>Units</u>
c. Lead compounds, inorganic	mg/kg
d. Lead compounds, organic	mg/kg
e. Manganese compounds	mg/kg
f. Zinc compounds	mg/kg
7. At least 5 days prior to the discharge of any drilling mud or geothermal materials into a mud sump or other container, the discharger shall submit to the Regional Board a technical report on the construction of said container, and a certificate signed by a California Registered Civil Engineer stating that the container and attendant facilities are constructed to meet the requirements contained in Board Order No. 81-6.	
8. At least 10 days before the initial discharge of any geothermal fluids from each well, the discharger shall report said initial discharge to the Board.	
9. Immediate reporting of any accidental spillage or release of waste material, and plan for immediate measures being taken to correct same and to limit detrimental effects.	
10. Report of completion of removal of all geothermal wastes from mud sumps - reported within one week following completion of work.	
11. At least 10 days prior to destruction of a sump, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.	

REPORTING

The above monitoring program shall be implemented immediately upon commencement of discharge at each site.

Monthly reports shall be submitted to the Regional Board by the 15th day of the following month. Reports for Item 9 (above) shall be forwarded immediately, and if at all possible, shall be preceded by phone communication to the Regional Board's office (714) 346-7491. Copies of the reports submitted to the Board pursuant to this Monitoring and Reporting Program shall be maintained at the operations site, and shall also be made available to the staff of the Regional Board upon request.

Mail reports to:

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

Ordered by

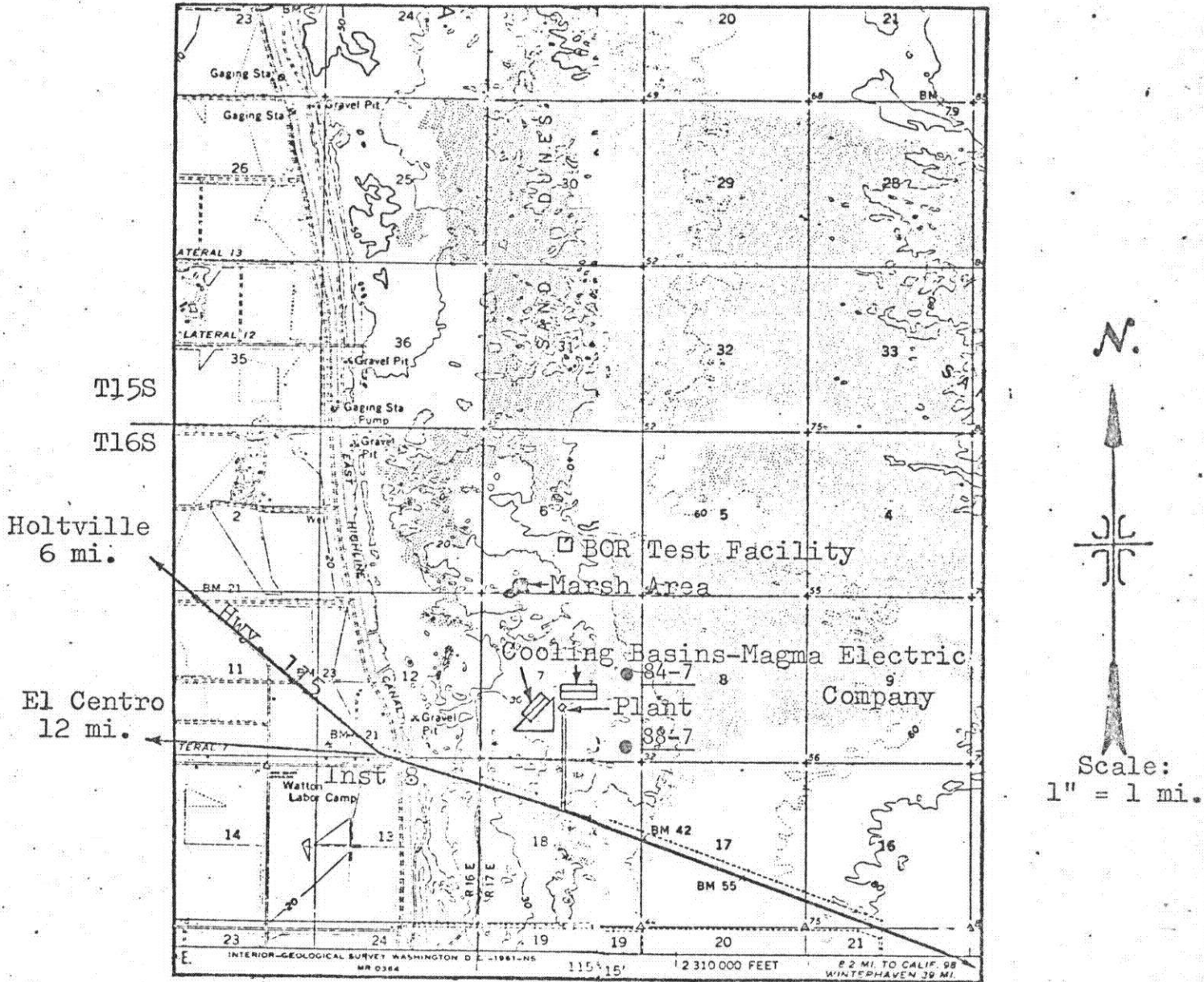
Arthur Sevjan

Executive Officer

January 28, 1981

Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD-7



SITE MAP

MAGMA POWER COMPANY
GEOHERMAL WELLS

East Mesa Area - Imperial County

SE 1/4, NE 1/4, and SE 1/4, SE 1/4 of Section 7, T16S, R17E, SBB&M
USGS Holtville and Glamis 15 min. Topographic Maps

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