

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. 00-044

FOR
HEBER GEOTHERMAL COMPANY, FACILITY OWNER
U.S. TRUST COMPANY OF NEW YORK, LAND OWNER
OGDEN GEOTHERMAL OPERATIONS, INC., OPERATOR
HEBER GEOTHERMAL PLANT
EVAPORATION AND HOLDING BASINS
South of Heber – Imperial County

Location of Discharge: SW1/4, SW1/4, Section 34, T16S, R14E, SBB&M

A. Monitoring General

1. The reporting responsibilities of the discharger are specified in the California Water Code. This self-monitoring program is issued in accordance with Provision No. 1 of Regional Board Order No. 00-044. The principal purpose of this Monitoring Program is:
 - a. To document compliance with the Waste Discharge Requirements adopted by the California Regional Water Quality Control Board.
 - b. To facilitate a self-policing by the discharger in the prevention and abatement of pollution arising from the discharge.
 - c. To conduct water quality analyses.
2. All sampling methods, not specified below or in the Monitoring and Reporting Program shall be conducted in accordance with U.S. Environmental Protection Agency approved procedures. Analyses shall be conducted by a laboratory certified by the California Department of Health Services to perform the required analyses, unless a field analysis is specified.
3. The Regional Board's Executive Officer may reduce or change the monitoring parameters and/or the monitoring frequency during the course of this monitoring program.

B. MONITORING REPORTS AND OBSERVATION SCHEDULE

"Reporting Period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. The reporting period for the monitoring program is semi-annual. An annual report, which is a summary of all the monitoring during the previous year, shall also be submitted to the Regional Board. The submittal dates for each reporting period shall be as follows:

1. Semi-annual Monitoring Reports
 - a. First Semi Annual (January 1, through June 30) - report due by July 31
 - b. Second Semi-Annual (July 1 through December 31) - report due February 15

2. Annual Summary Report

January 1 through December 31 - report due on March 15 of the following year.

C. REPORTS TO BE FILED WITH THE BOARD

A written "Detection Monitoring Report" shall be submitted twice annually, in addition to an "Annual Summary Report". The report shall be submitted by the above-specified date. The following information/data should be included in each report:

1. Semi - Annual Monitoring Report Requirements:

a. General Information

The following shall be included:

1. Estimated volume of fluid discharged, if any, in each evaporation and holding basin.
2. Estimated volume of fluid contained in each evaporation and holding basin.
3. The general conditions of the evaporation ponds and holding basin including any observation of erosion.
4. If any maintenance has been provided to the evaporation ponds and holding basin, a description of subject maintenance shall be included.
5. If there is a any spill/leak during the reporting period, a summary report transmitting the essential points of the cause of the spill/leak, estimated volumes of liquid/geothermal fluid or solid waste, and a description of the management practices of the spill/leak waste shall be reported for each incident in the semi-annual report.
6. Description of any detected liquid leaving or entering the WMU, including estimated size of affected area, and flow volume.
7. Letter of Transmittal. A letter transmitting the essential points shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the discharger has previously submitted a detailed time schedule for correcting the violations, a reference to the correspondence transmitting the schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer, at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The

letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

b. Evaporation and Holding Basins Monitoring:

The evaporation and holding basins monitoring system consists of a number solid and liquid waste monitoring approach. The solid and liquid waste monitoring sampling assists in determining whether the ground water has been or might be impacted by the discharge operation. The monitoring frequency is quarterly. The reporting frequency semi-annual and annually. The following are the monitoring and reporting requirements:

1. Pre-sampling for Samples Obtained From the Basins: For each monitoring point addressed by the report, a description of the calibration of the field equipment, method and time of water level measurement, the placement of the sampler in the basin, method of rinsing the equipment, methods used to monitor field pH, temperature, conductivity, turbidity testing, and the method of disposing of the rinse water;
2. Sampling: For each monitoring point addressed by the report, a description of the type of sampler - or other device - used and its placement for sampling, and detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and times of sampling, the names and qualifications of the person actually taking the samples, and any other observations)
3. Water samples shall be collected once per quarter from each basin, if any, and shall be analyzed for the following constituents: suspended solid, total dissolved solids, pH, specific conductance, carbonate, sulfate, iron, and oil and grease.
4. Water samples also shall be collected once per year from each basin, if any, by November/December of each year following adoption of this Board Order, and analyze for the following constituents: arsenic, antimony, cadmium, lead, total chromium, copper, manganese, barium, zinc, and total petroleum hydrocarbons.
5. If the basins are dry by the sampling time and liquid or solid waste has been discharged during the year to the basins, soil samples shall be collected and analyze for the following constituents: suspended solid, total dissolved solids, pH, specific conductance, carbonate, sulfate, iron, and oil and grease, arsenic, antimony, lead, total chromium, cadmium, manganese, copper, barium, zinc, and total petroleum hydrocarbons.

2. Annual Summary Report

The discharger shall submit an annual report in March of the following year to the Regional Board covering the previous monitoring year. The reporting period ends December 31 of each year. This report shall contain:

- a. All monitoring analytical data obtained during the previous two six-month Reporting Periods should be presented in tabular form.
- b. A comprehensive discussion of compliance record, and the result of any corrective actions taken or planned which may be needed to bring the discharge into full compliance with the waste discharge requirements;
- c. A written summary of water or solid waste analyses, indicating any changes, if any, made since the previous annual report.

3. Contingency Reporting

- a. The discharger shall report by telephone concerning any release of waste material from the designated area within 48 hours after it is discovered. A written report shall be filed with the Regional Board within seven (7) days, containing at least the following information:
 1. A map showing the location(s) of the discharge;
 2. A description of the nature of the discharge (e.g., all pertinent observation and analyses); and
 3. Corrective measures under way or proposed.
- b. Should a release be tentatively identified, the discharger shall notify within 48 hours the Regional Board verbally as to the monitoring point(s) and constituents or parameter(s) involved, shall provide written notification within seven days of such determination, and shall carry out a discrete retest. If the retest confirms the existence of a release, the discharger shall carry out the requirements of C.d. below. In any case, the discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.
- c. If either the discharger or the Regional Board determines that there is significant physical evidence of a release, the discharger shall immediately notify the Regional Board of this fact (or acknowledge the Regional Board's determination) and shall carry out the requirements of C.d. below for all potentially-affected monitored media.
- d. If the discharger concludes that a release has been discovered:
 1. If this conclusion is not based upon "direct monitoring" of the of the Constituent of Concern, then the discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Point and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the discharger shall notify the Regional Board, of the concentration of all Constituents of Concern at each Monitoring Point.

2. The discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program.
 3. The discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study for remediation.
- e. Any time the discharger concludes - or the Regional Board Executive Officer concludes - that a liquid - or gaseous -phase release from the Unit has proceeded beyond the facility boundary, the discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (affected persons).
1. Initial notification to affected persons shall be accomplished within seven days of making this conclusion and shall include a description of the discharger's current knowledge of the natural extend of the release; and
 2. Subsequent to initial notification, the discharger shall provide updates to all Affected Persons - including any newly Affected Persons - within seven days of concluding there has been any material change in the natural or extent of the release.

D. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagent used;
5. Calculation of the results; and
6. Result of analyses, and the Maximum Detection Limit (MDL) for each analysis

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS

C.(1.)(a). General Information

<u>Parameters</u>	<u>Unit</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
1. Estimated volume of fluid/solid discharged to the evaporation ponds and holding basin.	Gallons	-----	Semi-annual
2. Estimated volume of fluid/solid contained.	Gallons	-----	Semi-annual.
3. Condition of the evaporation ponds and holding basin.	-----	-----	Semi-annual
4. Description of maintenance provided	-----	-----	Semi-annual
5. A summary report of spill/leak, if any.	-----	-----	Semi-annual
6. Description of any detected liquid leaving or entering the WMU, including affected area, and flow volume.	-----	-----	Semi-annual
7. Letter of transmittal	-----	-----	Semi-annual

C.(1.)(b). Evaporation and holding Basins Monitoring

<u>Parameters</u>	<u>Unit</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
1. Description of pre-sampling for samples obtained from the basins.	----	Quarterly	Semi-annual
2. Description of sampling procedure	-----	Quarterly	Semi-annual
3. Water samples	-----	Quarterly	Semi- annual
1. Suspended solids	mg/L	Quarterly	Semi-annual
2. Total dissolved solid	mg/L	Quarterly	Semi-annual
3. pH	#	Quarterly	Semi-annual
4. Specific conductance	:mohs/cm	Quarterly	Semi-annual
5. Carbonate	mg/L	Quarterly	Semi-annual
6. Sulfate	mg/L	Quarterly	Semi-annual
7. Iron	mg/L	Quarterly	Semi-annual
8. Oil and grease	mg/L	Quarterly	Semi-annual
4. Water samples			
1. Arsenic	mg/L	Annually	Annually
2. Antimony	mg/L	Annually	Annually

3.	Lead	mg/L	Annually	Annually
4.	Total chromium	mg/L	Annually	Annually
5.	Copper	mg/L	Annually	Annually
6.	Barium	mg/L	Annually	Annually
7.	Zinc	mg/L	Annually	Annually
8.	Cadmium	mg/L	Annually	Annually
9.	Manganese	mg/L	Annually	Annually
10.	Total petroleum hydrocarbon	mg/L	Annually	Annually

5. Solid waste samples (if basin is dry by the sampling time and liquid or solid has been discharge)

1.	Suspended solids	mg/L	Annually	Annually
2.	Total dissolved solid	mg/L	Annually	Annually
3.	pH	#	Annually	Annually
4.	Specific conductance	:mohs/cm	Annually	Annually
5.	Carbonate	mg/L	Annually	Annually
6.	Sulfate	mg/L	Annually	Annually
7.	Carbonate	mg/L	Annually	Annually
8.	Iron	mg/L	Annually	Annually
9.	Oil and grease	mg/L	Annually	Annually
10.	Arsenic	mg/L	Annually	Annually
11.	Antimony	mg/L	Annually	Annually
12.	Lead	mg/L	Annually	Annually
13.	Total chromium	mg/L	Annually	Annually
14.	Copper	mg/L	Annually	Annually
15.	Barium	mg/L	Annually	Annually
16.	Zinc	mg/L	Annually	Annually
17.	Total petroleum hydrocarbon	mg/L	Annually	Annually

C.(2.) Annual Summary Report ----- Annual

C.(3.) Contingency Reporting ----- Within 48 hr.

REPORTING

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.
2. Record of monitoring information shall include:
 - a. The date, exact places, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The result of such analyses.
3. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

4. A duly authorized representative of the discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board's Executive Officer.
5. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
6. Semi-annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule:

First Semi-annual (January 1 through June 30) - due July 31
Second Semi-annual (July 1 through December 31) - due February 15

7. Annual summary report shall be submitted to the Regional Board by March 15 of each year.
8. Submit Monitoring Reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
730720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Ordered by: Original signed by
Executive Officer

May 10, 2000
Date