CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 81-24 (REVISION NO. 2)

WASTE DISCHARGE REQUIREMENTS
FOR
IMPERIAL THERMAL PRODUCTS, INC.
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

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

1. Imperial Thermal Products, Inc., 110 North Wacker Drive, Chicago, IL 60606, has utilized earthen basins to receive brine from geothermal wells under active Board Resolution No. 67-1; and Imperial Thermal Products informs the Board that it has entered into assignments and agreements with Southern Pacific Land Company, Union Oil Company of California, and Mono Power Company, for these containment basins and facilities.

   All of the above are hereinafter jointly and severally referred to as the discharger.

2. The Board finds that Imperial Irrigation District is the fee owner/lessor of the subject property. Imperial Thermal Products has informed the Board that it has entered into assignments and agreements with Imperial Irrigation District.

3. A brief of recent correspondence between the Board's Executive Officer and Imperial Thermal Products, Inc., pertaining to this discharge is as follows. Letter dated:

   a. April 16, 1980. The Executive Officer informed Imperial Thermal Products that subject geothermal operation appears to be abandoned, and requested a report by not later than May 15, 1980, in accordance with Waste Discharge Requirement B.5. of Resolution-No. 67-1. Said report was to set forth a program for maintenance of the basins and final disposition of the materials being contained therein.

   b. May 13, 1980. Imperial Thermal Products, Inc., stated that it had entered into assignments and agreements with Imperial Irrigation District, Southern Pacific Land Company, Union Oil Company of California and Mono Power Company, that said assignments and agreements are not subject to termination until September 7, 1982, and that Union Oil Company is designated as the operator.

Rescinded 9/19/84 - 84-103

c. June 13, 1980. Orlando B. Foote, Counsel for Imperial Thermal Products, Inc., submitted copies of said assignments and agreements for review by Board Counsel.

d. July 11, 1980. Executive Officer requested an updated Report of Waste Discharge.

e. September 8, 1980. Imperial Thermal Products, Inc., expressed puzzlement as to the need for submitting a Report of Waste Discharge.

f. September 17, 1980. Executive Officer explained that new updated requirements are needed to clearly identify responsibility for the geothermal wastes contained in the basins.

g. October 27, 1980. Imperial Thermal Products, Inc., stated that it cannot file a Report of Waste Discharge because:

(1) The site of the containment basins has not been changed;

(2) There has been no discharge into the basins for a number of years and none is currently being made;

(3) The basins have not been abandoned, and there are certain contingent potentials for renewed utilization in the future.

3. Geothermal fluids produced in this area contain the substances Manganese, Arsenic, Lead, Zinc and Barium, which in sufficient concentration, are classified as hazardous waste by the State Department of Health Services, Hazardous Materials Management Branch in Title 22, Chapter 30, Article 9, California Administrative Code. Four samples of salt waste obtained by the Regional Board from the containment basins, and analyzed by the Department of Health Services laboratory at Los Angeles, show Arsenic, Lead, Zinc and Barium at concentrations sufficient for classification of the materials as hazardous.

4. The existing containment basins have compacted clay dikes separating the basins from Salton Sea. When initially constructed, these basins were about a quarter of a mile from Salton Sea. However, Salton Sea has risen and, according to U.S. Geological Survey, land subsidence in this area occurs at a rate of about two inches per year. The result is that Salton Sea is now at the dikes, and the low point on the dikes is approximately three and one-half feet above the surface of Salton Sea. Some seepage is observed to be occuring beneath one dike, from Salton Sea into the salt containment basin.

5. The following are locations and areas of existing containment basins as reported by Imperial Thermal Products on January 26, 1982:

a. 120-acres of containment basins in SE 1/4, S14, T11S, R13E, SBB&M; and

b. 98-acres of containment basins in NW 1/4, S23, T11S, R13E, SBB&M."

6. The basins presently contain an estimated 262,000 tons of salt.

7. The materials contained in these basins constitute Group 1 wastes under the State Water Resources Control Board's regulations relating to Waste Disposal to Land as set forth in Title 23, Subchapter 15, Article 3, Section 2520, California Administrative Code. However, the location and containment basins do not qualify as a site approved for permanent storage of Group 1 wastes.

8. 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 the Imperial Hydrologic Unit.

9. The beneficial uses to be protected by this Order are as follows:

   a. Groundwater

      (1) Shallow groundwaters at the discharge location are saline and are not beneficially used.

      (2) Deep groundwaters are saline and are being investigated for geothermal development.

   b. Salton Sea

      (1) Recreation: water and nonwater-contact sports.

      (2) Saline water habitat for fish and wildlife.

      (3) Reservoir to receive and store agricultural drainage and seepage water.

10. In correspondence dated January 5, 1982, Robert B. Gerri, Vice President of both Imperial Thermal Products, Inc., and of its parent company MortonNorwich Products, Inc., submitted both MortonNorwich's and ITP's approval and acceptance of inclusion of the following statement in addendums to both Order No. 81-24 and Resolution No. 67-1:

> "Adequate financial assurances regarding cleanup and closure will be provided by Imperial Thermal Products, Inc. upon approval of the Board of a plan submitted by Imperial Thermal Products, Inc., and to the extent that Imperial Thermal Products, Inc. itself is unable to supply adequate financial

assurances, provisions for such adequacy will be supplied by its parent corporation, MortonNorwich Products, Inc., a Delaware corporation, a copy of whose annual report for the fiscal year ended June 30, 1981 has heretofore been filled with the staff of the Board under date December 15, 1981."

11. The Board has notified the discharger and interested agencies and persons of its intent to update waste discharge requirements for the discharge.

12. The Board in a public meeting heard and considered all comments pertaining to the discharge.

13. At the Board's public meeting on November 18, 1981, Imperial Thermal Products, Inc. submitted the following time schedule which the Company proposes for removal of all salt, brine and other wastes from the existing containment basins:

EXHIBIT B
(Revised)

PROPOSED SCHEDULE FOR INVESTIGATION OF
ALTERNATIVES AND ULTIMATE DISPOSAL OF ALL GEOTHERMAL
BRINES FROM EXISTING IMPOUNDMENTS
IMPERIAL THERMAL PRODUCTS, INC.
IMPERIAL COUNTY, CALIFORNIA

A phased study will be undertaken culminating in the final disposal of all geothermal brines and salts included under California Regional Water Quality Control Board Order No. 81-24 and adopted Addendum No. 1 to Regional Board Resolution No. 67-1.

The study will (1) evaluate the security of the existing impoundments and develop a plan of corrective work, if needed, (2) determine the quantity and quality of the geothermal wastes, (3) investigate, evaluate, and design alternate disposal solutions, and (4) develop a detailed plan of remedial action and disposal.

Various tasks will be implemented concurrently and all work will be accomplished in compliance with the following task descriptions and schedules:

TASK 1 - EXISTING IMPOUNDMENT INVESTIGATON

A two phase geotechnical investigation of the existing levee system has been undertaken to determine corrective work necessary to ensure that the system will contain the wastes. The initial phase has been completed, and the result thereof, in report form, was submitted to the Board Staff on October 29, 1981. First phase levee construction work, as described in the report, is underway. This work is intended to provide interim protection, during the Second Phase of the geotechnical investigation. In the Second Phase, information will be developed concerning corrective work necessary to ensure that the levee system will contain wastes during the period of performance of remedial work/disposal of the impounded wastes. A report of the Second Phase investigation containing plans for further corrective work determined to be necessary during the disposal period, will be submitted for review and approval of the Board.

Necessary corrective work following the Second Phase investigation will commence forthwith upon Board approval.

Schedule	Performance Date
First Phase Investigation	Completed
Commence First Phase Corrective Work	October, 1981
Commence Second Phase Investigation	November, 1981
Complete First Phase Corrective Work	January, 1982
Complete Second Phase Investigation	January, 1982
Commence Implementation of Second Phase of Corrective Work (subject to Board approval)	May, 1982

TASK 2 - REINJECT THE IMPOUND WASTES INTO THE GEOTHERMAL FORMATION

The feasibility of redissolving the accumulated salts and disposal of the brine by reinjection into the geologic formations will be investigated based on existing data. Potential injection zones and confining beds will be identified and their suitability evaluated. Water needs and sources will be assessed and a conceptual injection system will be designed.

0 Collect and review data on subsurface geology, hydrogeology, and existing deep and shallow wells.	October,1981
0 Evaluate suitability of availability of water supply.	November, 1981
0 Determine general suitability of geologic environment for injection well disposal.	December, 1981
0 Evaluate regulatory constraints and environmental impacts of injection well disposal.	December, 1981
0 Complete conceptual design of injection well system.	February, 1982

TASK 3 - REMEDIAL ACTION DISPOSAL SITE

A study will be undertaken to locate and conceptually design suitable alternative sites for disposal of the impounded geothermal salts.

Potentially suitable site for permanent, environmentally secure encapsulation of the geothermal solids will be located by a review of published hydrogeologic, engineering, and land use data. Based on the results of the exploration and environmental evaluation, a plan of disposal site cleanup plan will be developed.

Schedule	
0 Commence collection and review of data.	October, 1981

0	Commence subsurface investigation.	November, 1981
0	Complete remedial disposal plan.	March, 1982

TASK 4 - COMPARATIVE EVALUATION OF ALTERNATIVES

0	Evaluate, compare and rate alternatives with respect to technical feasibility, cost, logistical considerations and environmental significance.	July, 1982
0	Complete report evaluating alternatives and remedial plan for site cleanup and disposal of salts.	September, 1982

TASK 5 - APPROVAL/PERMIT PROCESS

0	Submit completed report (Task 4) to Regional Water Quality Control Board.	September, 1982
0	Following Regional Board approval of disposal plan, initiate permitting procedures, as necessary, to implement approved plan.	December, 1982

TASK 6 - IMPLEMENT APPROVED CLEANUP PLAN

0	Upon completion of approval procedures, including permitting as necessary, commence detailed design and engineering work.	December, 1984*
0	Complete site cleanup and final disposal of accumulated salts.	July, 1988

NOTE: *The uncertainties of the permitting process may require an adjustment of this date.

14. These containment basins constitute an ongoing project in accordance with provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and Title 23, California Administrative Code, Chapter 3, Subchapter 17, Section 2715, because the governmental approvals on or after April 5, 1973 do not involve a greater degree of responsibility or control over such activity than the governmental approvals received prior to that date.

IT HEREBY ORDERED, the discharger shall comply with the following:

A. Discharge Specifications for Existing Brine Containment Basins

1. The discharge of additional geothermal fluids into the existing earthen containment basins, is prohibited.

2. Adequate protective works and maintenance shall be provided to assure that containment basins will not become eroded or otherwise damaged until all geothermal wastes are removed therefrom.

3. The permanent disposal on site of the wastes presently contained in these basins is prohibited.

4. Geothermal wastes contained in earthen basins shall be removed and discharged by subsurface injection, or at an approved Class 1 or Class II-1 disposal site, or by other approved means, by not later than July 31, 1988.

5. 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 contained in the injection water is less than or equal to that of the receiving water.

6. 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.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 81-24", and future revisions thereto, as specified by the Executive Officer.

2. Immediate measures shall be taken to correct the deficiencies stated in Finding No. 4.

3. The discharger shall submit, by the 15th day of each month, a report on the condition of all dikes, said report shall be signed by a responsible officer of the company; and any condition warranting immediate repair shall be reported by phone as soon as possible.

4. By not later than January 31, 1983, Imperial Thermal Products, Inc. shall submit assurances guaranteed by the Board of Directors of MortonNorwich Products, Inc.,that monies are available in an amount sufficient to ensure cleanup and closure of the containment basin site in a manner that will not pose an adverse threat to the environment, and as approved by the Regional Board.

5. Compliance with Discharge Specification A.4. shall be completed in accordance with the submitted time schedule set forth in Finding No. 13, except that "Task 6 - Implement Approved Cleanup Plan" shall commence by not later than December 1984, and reports thereon shall be submitted quarterly.

6. This Order supersedes this Board's Order No. 81-24 (Revised) and also, Addendum No. 1 to Board Resolution No. 67-1.

7. In response to a request of Imperial Irrigation District, the Board hereby deletes the District as a named discharger from this Order at this time. The Board further finds that the Imperial Irrigation District, a public agency, may have certain responsibilities as a landowner which are not intended to be affected by this deletion, and accordingly, the Board may add Imperial Irrigation District to an order concerning subject property at a later date.

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.

Arthur Swajian
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 81-24 (REVISION NO. 2)
FOR
IMPERIAL THERMAL PRODUCTS, INC.
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

Location: NW 1/4, S23, T11S, R13E, SBB&M
SE 1/4, and E 1/2 of SW 1/4 S14, T11SS, R13E, SBB&M
SW 1/4, S13, T11S, R13E, SBB&M

MONITORING AND REPORTING

1. At least 10 days prior to the destruction of a containment basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.

2. Reporting for removal of salt from containment basins shall be in accordance with Finding No. 13 and Provision B.5, and quarterly progress reports shall be submitted not later than Jan 15, April 15, July 15 and Oct. 15 of each year..

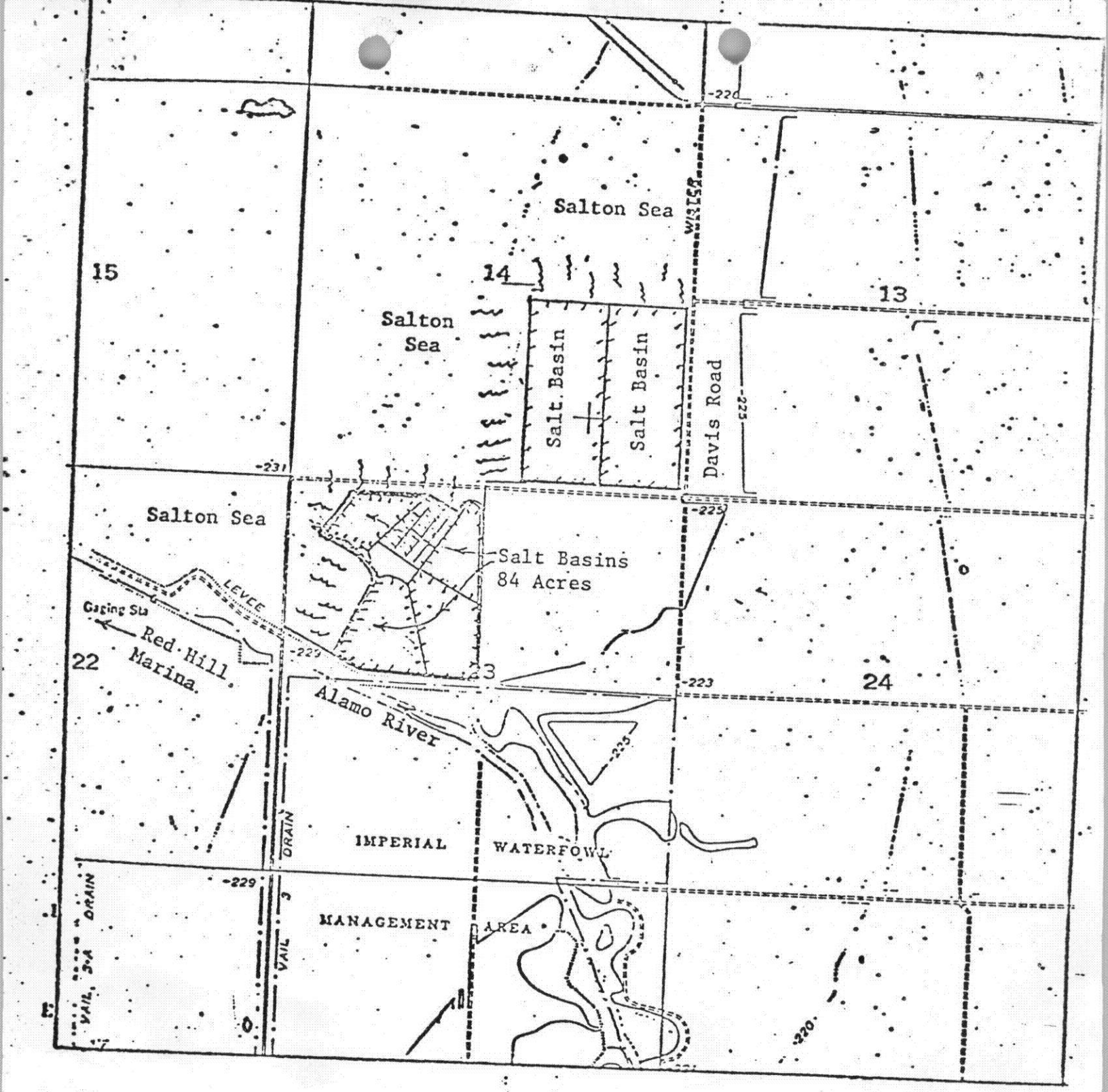
3. Monthly reports shall be submitted in accordance with Provision B.3.

Mail reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-271 Highway 111, Suite 21
Palm Desert, CA 92260
(PHONE: 714-346-7491)

Ordered by Arthur Levajian
Executive Officer

January 27, 1982
Date

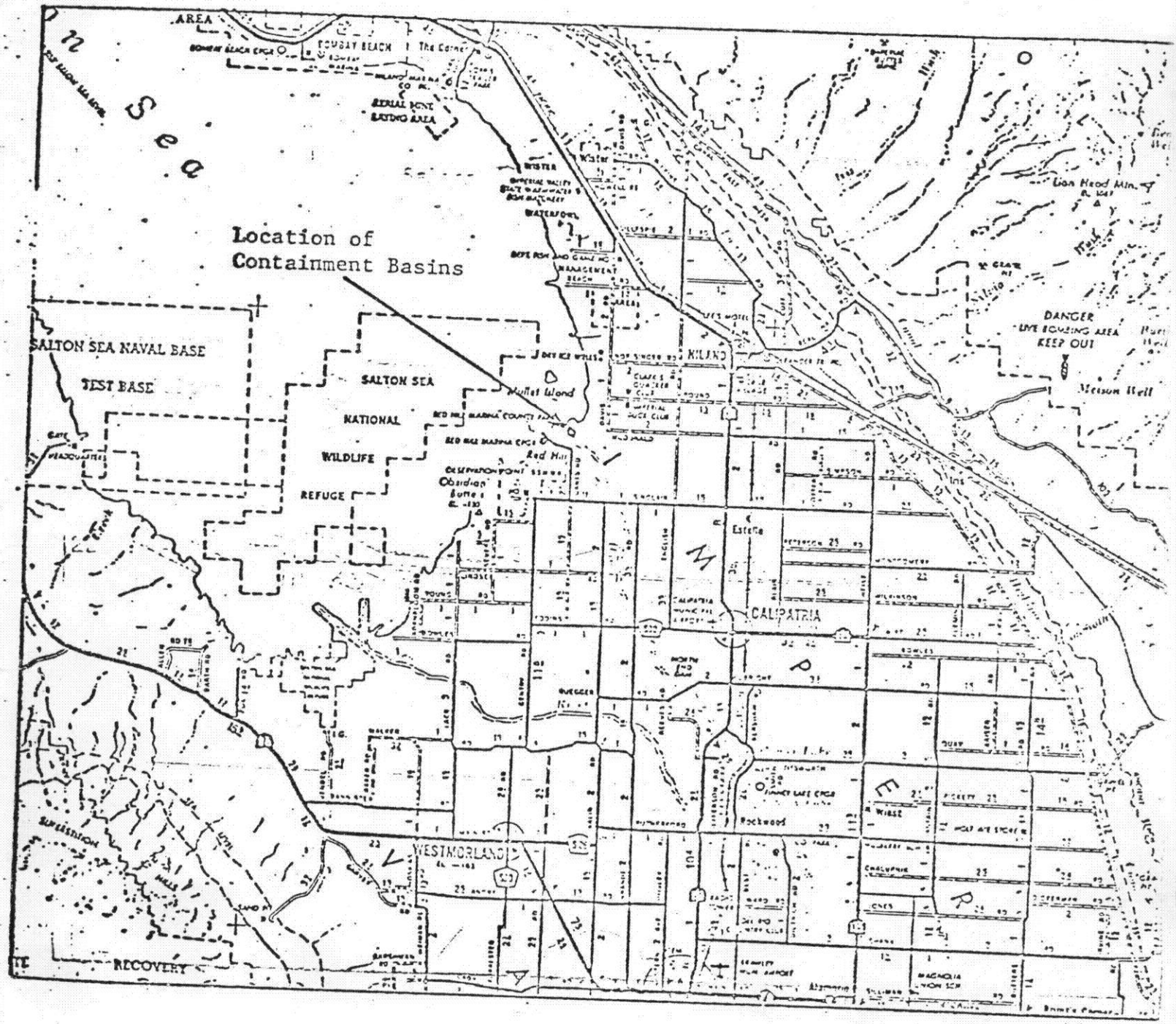


SITE MAP NO. 1
IMPERIAL THERMAL PRODUCTS, INC. ET. AL.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County
NW 1/4, Section 23, T11S, R13E, SBB&M
SE 1/4, Section 14, T11S, R13E, SBB&M
USGS Niland 7.5' Topographic Map

N

Scale:
1" = 2000

Order No. 81-24



SITE MAP NO. 2
IMPERIAL THERMAL PRODUCTS, INC., ET AL.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County

N

Order No. 81-24

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 81-24(Revised)

WASTE DISCHARGE REQUIREMENTS
FOR
IMPERIAL THERMAL PRODUCTS, INC.
IMPERIAL IRRIGATION DISTRICT
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

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

1. Imperial Thermal Products, Inc., 110 North Wacker Drive, Chicago, IL 60606, utilizes earthen basins to receive brine from geothermal wells under active Board Resolution No. 67-1; and Imperial Thermal Products informs the Board that it has entered into assignments and agreements with Imperial Irrigation District, Southern Pacific Land Company, Union Oil Company of California, and Mono Power Company, for these containment basins and facilities.

   All of the above are hereinafter jointly and severally referred to as the discharger.

2. A brief of recent correspondence between the Board's Executive Officer and Imperal Thermal Products, Inc., pertaining to this discharge is as follows. Letter dated:

   a. April 16, 1980. The Executive Officer informed Imperial Thermal Products that subject geothermal operation appears to be abandoned, and requests a report by not later than May 15, 1980, in accordance with Waste Discharge Requirement B.5. of Resolution-No. 67-1. Said report is to set forth a program for maintenance of the basins and final disposition of the materials therein.

   b. May 13, 1980. Imperial Thermal Products, Inc., stated that it has entered into assignments and agreements with Imperial Irrigation District, Southern Pacific Land Company, Union Oil Company of California and Mono Power Company, and that said assignments and agreements are not subject to termination until September 7, 1982, and that Union Oil Company has been designated as the operator.

   c. June 13, 1980. Orlando B. Foote, Counsel for Imperial Thermal Products, Inc., submitted copies of assignments and agreements for review by Board Counsel.

Superseded by 81-24 Revision 2 1/27/82

d. July 11, 1980. Executive Officer requested an updated Report of Waste Discharge.

e. September 8, 1980. Imperial Thermal Products, Inc., expressed puzzlement as to the need for submitting a Report of Waste Discharge.

f. September 17, 1980. Executive Officer explained that new updated requirements are needed to clearly identify responsibility for the geothermal wastes contained in the basins.

g. October 27, 1980. Imperial Thermal Products, Inc., stated that it cannot file a Report of Waste Discharge because:

(1) The site of the containment basins has not been changed;

(2) There has been no discharge into the basins for a number of years and none is currently being made;

(3) The basins have not been abandoned, and there are certain contingent potentials for renewed utilization in the future.

3. Geothermal fluids produced in this area contain the substances Manganese, Arsenic, Lead, Zinc and Barium, which in sufficient concentration, are classified as hazardous waste by the State Department of Health Services, Hazardous Materials Management Section. Four samples of salt waste obtained by the Regional Board from the containment basins, and analyzed by the Department of Health Services laboratory at Los Angeles, show Arsenic, Lead, Zinc and Barium at concentrations sufficient for classification of the materials as hazardous.

4. The existing containment basins have compacted clay dikes separating the basins from Salton Sea. When initially constructed, these basins were about a quarter of a mile from Salton Sea. However, Salton Sea has continued to rise and, according to U.S. Geological Survey, land subsidence in this area occurs at a rate of about two inches per year. The result is that Salton Sea is now at the dikes, and the low point on the dikes is approximately three and one-half feet above the surface of Salton Sea. Some seepage has been observed to be occuring beneath one dike, from Salton Sea into the salt containment basin.

5. The following are locations of containment basins as set forth in Resolution No. 67-1:

a. 60-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
b. 10-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
c. 14-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
d. 240-acre basin located in SE 1/4, and E 1/2 of SW 1/4 of S14, T11S, R13E, SBB&M.
e. Two 10-acre basins located in SW 1/4, S13, T11S, R13E, SBB&M.

6. The basins presently contain an estimated 262,000 tons of salt.

7. The materials contained in these basins constitute Group 1 wastes under the State Board's regulations relating to Waste Disposal to Land. However, the present wastes location and containment basins do not qualify as a site approved for permanent storage of Group 1 wastes.

8. 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.

9. Beneficial uses to be protected by this Order are as follows:

   a. Groundwater

      (1) Shallow groundwaters at the discharge location are saline and are not beneficially used.

      (2) Deep groundwaters are saline and are being investigated for geothermal development.

   b. Salton Sea

      (1) Recreation-water and nonwater-contact sports.

      (2) Saline water habitat for fish and wildlife.

      (3) Reservoir to receive and store agricultural drainage and seepage water.

10. The Board has notified the discharger and interested agencies and persons of its intent to update waste discharge requirements for the discharge.

11. The Board in a public meeting heard and considered all comments pertaining to the discharge.

12. These containment basins constitute an ongoing project in accordance with provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.) and Title 23, California Administrative Code, Chapter 3, Subchapter 17, Section 2715, because the governmental approvals on or after April 5, 1973 do not involve a greater degree of responsibility or control over such activity than the governmental approvals received prior to that date.

IT IS HEREBY ORDERED, the discharger shall comply with the following:

A. Discharge Specifications for Existing Brine Containment Basins

1. The discharge of additional geothermal fluids into the existing earthen containment basins, is prohibited.

2. Adequate protective works and maintenance shall be provided to assure that containment basins will not become eroded or otherwise damaged until all geothermal wastes are removed therefrom.

3. The permanent disposal on site of the wastes presently contained in these basins is prohibited.

4. Geothermal wastes contained in earthen basins shall be removed and discharged by subsurface injection or at an approved Class 1 or Class II-1 disposal site by not later than July 1, 1983.

5. 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 contained in the injection water is less than or equal to that of the receiving water.

6. 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.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 81-24, and future revisions thereto, as specified by the Executive Officer.

2. Immediate measures shall be taken to correct the deficiencies stated in Finding No. 4.

3. By not later than September 15, 1981, the discharger shall submit the following items to the Regional Board:

   a. Immediate protective measures for compliance with Specification No. A.2. (above).
   b. A schedule for removal of all materials contained in existing basins, and possible intended method(s) and location(s) of final disposal.
   c. Assurances that monies are available in an amount sufficient to ensure cleanup and closure of the containment basin site in a manner that will not pose an adverse threat to the environment.

4. Compliance with Discharge Specification A.4. shall be completed in accordance with the following time schedule:

Task	Completion Date	Report of Compliance Due
Progress Report	Dec. 1, 1981	Dec. 15, 1981
Commence Removal of Salt	March 1, 1982	March 15, 1982
Progress Report	July 1, 1982	July 15, 1982
Progress Report	Nov. 1, 1982	Nov. 15, 1982

Task	Completion Date	Report of Compliance Due
Progress Report	March 1, 1983	March 15, 1983
Complete Removal of Salt	July 1, 1983	July 15, 1983

5. This Order supersedes this Board's Order No. 81-24.

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 July 8, 1981.

Arthur Swajian
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 81-24(Revision No. 1)
FOR
IMPERIAL THERMAL PRODUCTS, INC.
IMPERIAL IRRIGATION DISTRICT
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

Location: NW 1/4, S23, T11S, R13E, SBB&M
SE 1/4 and E 1/2 of SW 1/4, S14, T11S, R13E, SBB&M
SW 1/4, S13, T11S, R13E, SBB&M

MONITORING AND REPORTING

1. At least 10 days prior to the destruction of a containment basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.

2. Reporting for removal of salt from containment basins shall be in accordance with Provision B.4.

3. Progress reports submitted in accordance with Provision B.4. shall contain at least the following information:

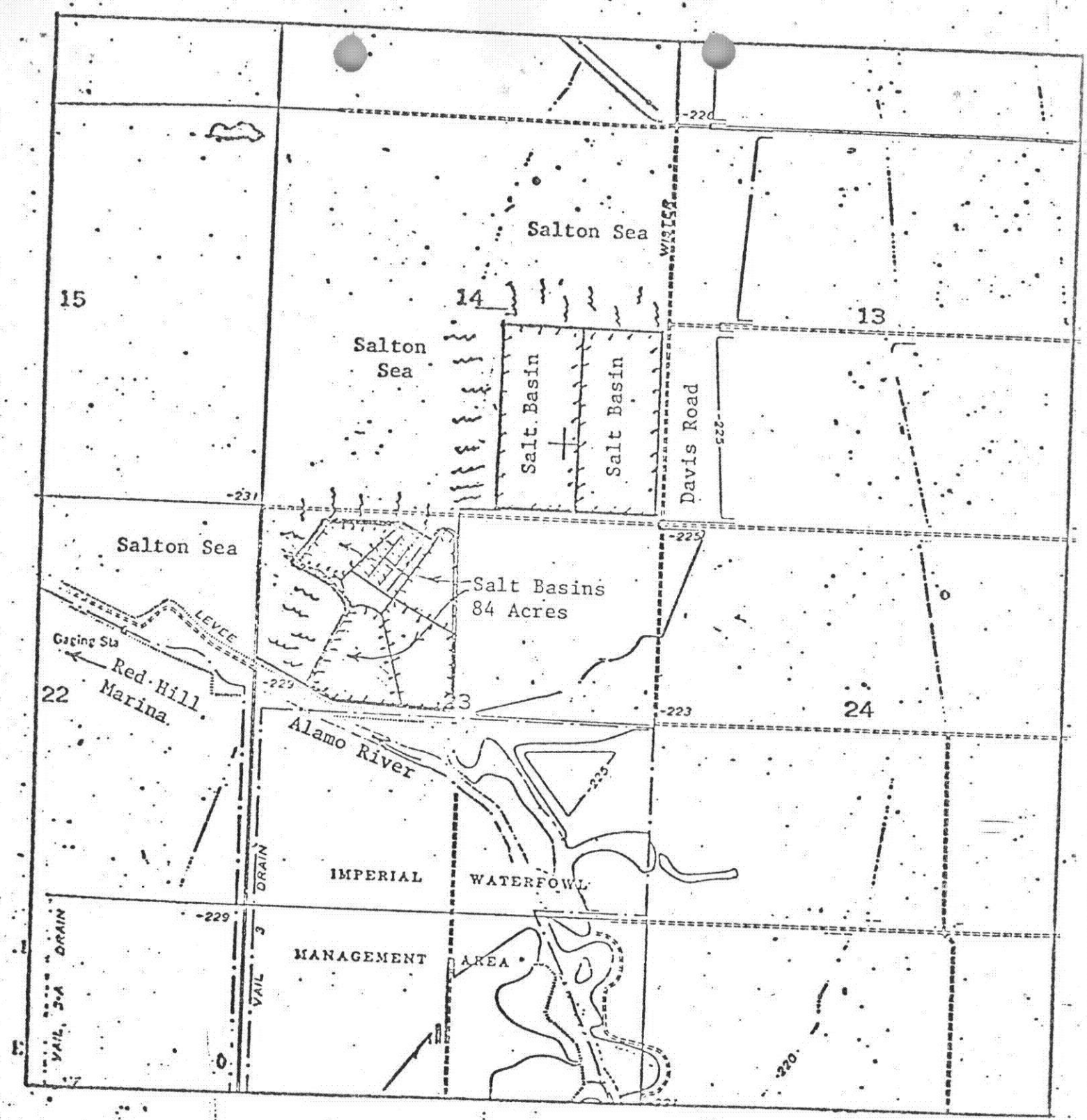
   a. Amount of salt removed from basins at date of report.
   b. Amount of salt remaining in basins at date of report.
   c. Equipment and manpower being utilized to remove salt.
   d. Location of salt disposal.

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 _____
Executive Officer

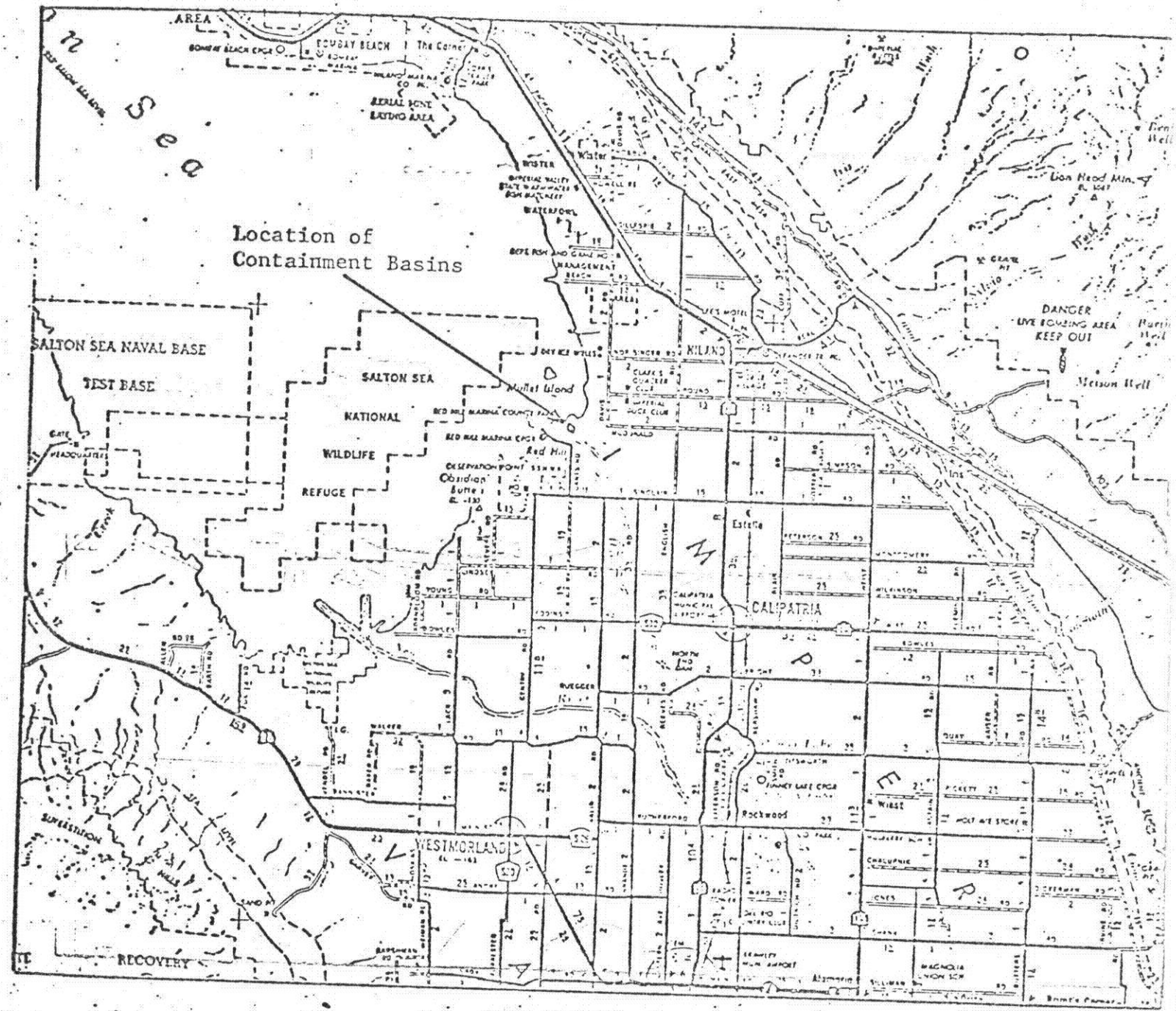
July 8, 1981
Date



SITE MAP NO. 1
IMPERIAL THERMAL PRODUCTS, INC.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County
NW 1/4, Section 23, T11S, R13E, SBB&M
SE 1/4, Section 14, T11S, R13E, SBB&M
USGS Niland 7.5' Topographic Map

Scale:
1" = 2000

Order No. 81-24



SITE MAP NO. 2
IMPERIAL THERMAL PRODUCTS, INC.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 81-24

WASTE DISCHARGE REQUIREMENTS
FOR
IMPERIAL THERMAL PRODUCTS, INC.
IMPERIAL IRRIGATION DISTRICT
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

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

1. Imperial Thermal Products, Inc., 110 North Wacker Drive, Chicago, IL 60606, utilizes earthen basins to receive brine from geothermal wells under active Board Resolution No. 67-1; and Imperial Thermal Products informs the Board that it has entered into assignments and agreements with Imperial Irrigation District, Southern Pacific Land Company, Union Oil Company of California, and Mono Power Company, for these containment basins and facilities.

   All of the above are hereinafter jointly and severally referred to as the discharger.

2. A brief of recent correspondence between the Board's Executive Officer and Imperal Thermal Products, Inc., pertaining to this discharge is as follows. Letter dated:

   a. April 16, 1980. The Executive Officer informed Imperial Thermal Products that subject geothermal operation appears to be abandoned, and requests a report by not later than May 15, 1980, in accordance with Waste Discharge Requirement B.5. of Resolution-No. 67-1. Said report is to set forth a program for maintenance of the basins and final disposition of the materials therein.

   b. May 13, 1980. Imperial Thermal Products, Inc., stated that it has entered into assignments and agreements with Imperial Irrigation District, Southern Pacific Land Company, Union Oil Company of California and Mono Power Company, and that said assignments and agreements are not subject to termination until September 7, 1982, and that Union Oil Company has been designated as the operator.

   c. June 13, 1980. Orlando B. Foote, Counsel for Imperial Thermal Products, Inc., submitted copies of assignments and agreements for review by Board Counsel.

Superseded by 81-24R 7/15/81

d. July 11, 1980. Executive Officer requested an updated Report of Waste Discharge.

e. September 8, 1980. Imperial Thermal Products, Inc., expressed puzzlement as to the need for submitting a Report of Waste Discharge.

f. September 17, 1980. Executive Officer explained that new updated requirements are needed to clearly identify responsibility for the geothermal wastes contained in the basins.

g. October 27, 1980. Imperial Thermal Products, Inc., stated that it cannot file a Report of Waste Discharge because:

(1) The site of the containment basins has not been changed;

(2) There has been no discharge into the basins for a number of years and none is currently being made;

(3) The basins have not been abandoned, and there are certain contingent potentials for renewed utilization in the future.

3. Geothermal fluids produced in this area contain the substances Manganese, Arsenic, Lead, Zinc and Barium, which in sufficient concentration, are classified as hazardous waste by the State Department of Health Services, Hazardous Materials Management Section. Four samples of salt waste obtained by the Regional Board from the containment basins, and analyzed by the Department of Health Services laboratory at Los Angeles, show Arsenic, Lead, Zinc and Barium at concentrations sufficient for classification of the materials as hazardous

4. The existing containment basins have compacted clay dikes separating the basins from Salton Sea. When initially constructed, these basins were about a quarter of a mile from Salton Sea. However, Salton Sea has continued to rise and, according to U.S. Geological Survey, land subsidence in this area occurs at a rate of about two inches per year. The result is that Salton Sea is now at the dikes, and the low point on the dikes is approximately three and one-half feet above the surface of Salton Sea. Some seepage has been observed to be occuring beneath one dike, from Salton Sea into the salt containment basin.

5. The following are locations of containment basins as set forth in Resolution No. 67-1:

a. 60-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
b. 10-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
c. 14-acre basin located in NW 1/4, S23, T11S, R13E, SBB&M;
d. 240-acre basin located in SE 1/4, and E 1/2 of SW 1/4 of S14, T11S, R13E, SBB&M.
e. Two 10-acre basins located in SW 1/4, S13, T11S, R13E, SBB&M.

6. The basins presently contain an estimated 262,000 tons of salt.

7. The materials contained in these basins constitute Group 1 wastes under the State Board's regulations relating to Waste Disposal to Land. However, the present wastes location and containment basins do not qualify as a site approved for permanent storage of Group 1 wastes.

8. 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.

9. Beneficial uses to be protected by this Order are as follows:

   a. Groundwater

      (1) Shallow groundwaters at the discharge location are saline and are not beneficially used.

      (2) Deep groundwaters are saline and are being investigated for geothermal development.

   b. Salton Sea

      (1) Recreation-water and nonwater-contact sports.

      (2) Saline water habitat for fish and wildlife.

      (3) Reservoir to receive and store agricultural drainage and seepage water.

10. The Board has notified the discharger and interested agencies and persons of its intent to update waste discharge requirements for the discharge.

11. The Board in a public meeting heard and considered all comments pertaining to the discharge.

12. These containment basins constitute an ongoing project in accordance with provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.) and Title 23, California Administrative Code, Chapter 3, Subchapter 17, Section 2715, because the governmental approvals on or after April 5, 1973 do not involve a greater degree of responsibility or control over such activity than the governmental approvals received prior to that date.

IT IS HEREBY ORDERED, the discharger shall comply with the following:

A. Discharge Specifications for Existing Brine Containment Basins

1. The discharge of additional geothermal fluids into the existing earthen containment basins, is prohibited.

2. Adequate protective works and maintenance shall be provided to assure that containment basins will not become eroded or otherwise damaged until all geothermal wastes are removed therefrom.

3. The permanent disposal on site of the wastes presently contained in these basins is prohibited.

4. Geothermal wastes contained in earthen basins shall be removed and discharged by subsurface injection or at an approved Class 1 or Class II-1 disposal site by not later than July 1, 1983.

5. 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 contained in the injection water is less than or equal to that of the receiving water.

6. 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.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 81-24, and future revisions thereto, as specified by the Executive Officer.

2. By not later than October 15, 1981, the discharger shall submit the following items to the Regional Board:

   a. A report describing methods and procedures for removal of all materials contained in existing basins, and intended method(s) and location(s) of final disposal.

   b. Assurances that monies are available in an amount sufficient to ensure cleanup and closure of the containment basin site in a manner that will not pose an adverse threat to the environment.

3. Compliance with Discharge Specification A.4. and Provision B.2. shall be completed in accordance with the following time schedule:

Task	Completion Date	Report of Compliance Due
Submit plan for removal of salt from basins and also, financial assurances that monies are available.	Sept. 30, 1981	Oct. 15, 1981
Progress Report	Dec. 1, 1981	Dec. 15, 1981

Task	Completion Date	Report of Compliance Due
Commence Removal of Salt	March 1, 1982	Mar 15, 1982
Progress Report	July 1, 1982	July 15, 1982
Progress Report	Nov. 1, 1982	Nov. 15, 1982
Progress Report	March 1, 1983	March 15, 1983
Complete Removal of Salt	July 1, 1983	July 15, 1983

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 May 20, 1981.

Arthur Swajian
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 81-24
FOR
IMPERIAL THERMAL PRODUCTS, INC.
IMPERIAL IRRIGATION DISTRICT
SOUTHERN PACIFIC LAND COMPANY
UNION OIL COMPANY OF CALIFORNIA
MONO POWER COMPANY
FOR
BRINE CONTAINMENT BASINS
North of Westmorland - Imperial County

Location: NW 1/4, S23, T11S, R13E, SBB&M
SE 1/4 and E 1/2 of SW 1/4, S14, T11S, R13E, SBB&M
SW 1/4, S13, T11S, R13E, SBB&M

MONITORING AND REPORTING

1. At least 10 days prior to the destruction of a containment basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.

2. Reporting for removal of salt from containment basins shall be in accordance with Provision B.3.

3. Progress reports submitted in accordance with Provision B.3. shall contain at least the following information:

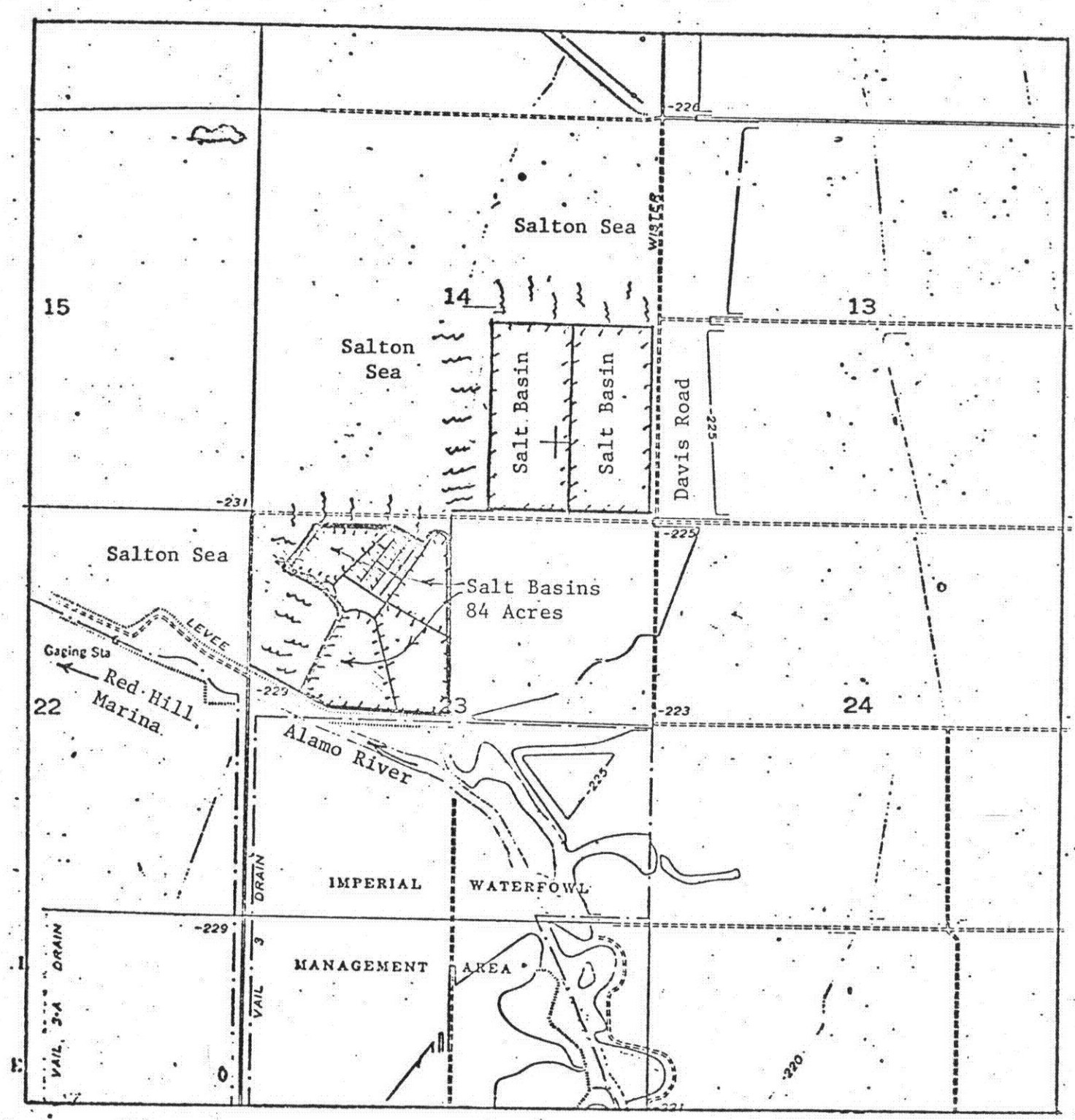
   a. Amount of salt removed from basins at date of report.
   b. Amount of salt remaining in basins at date of report.
   c. Equipment and manpower being utilized to remove salt.
   d. Location of salt disposal.

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 Swajian
Executive Officer

May 20, 1981
Date

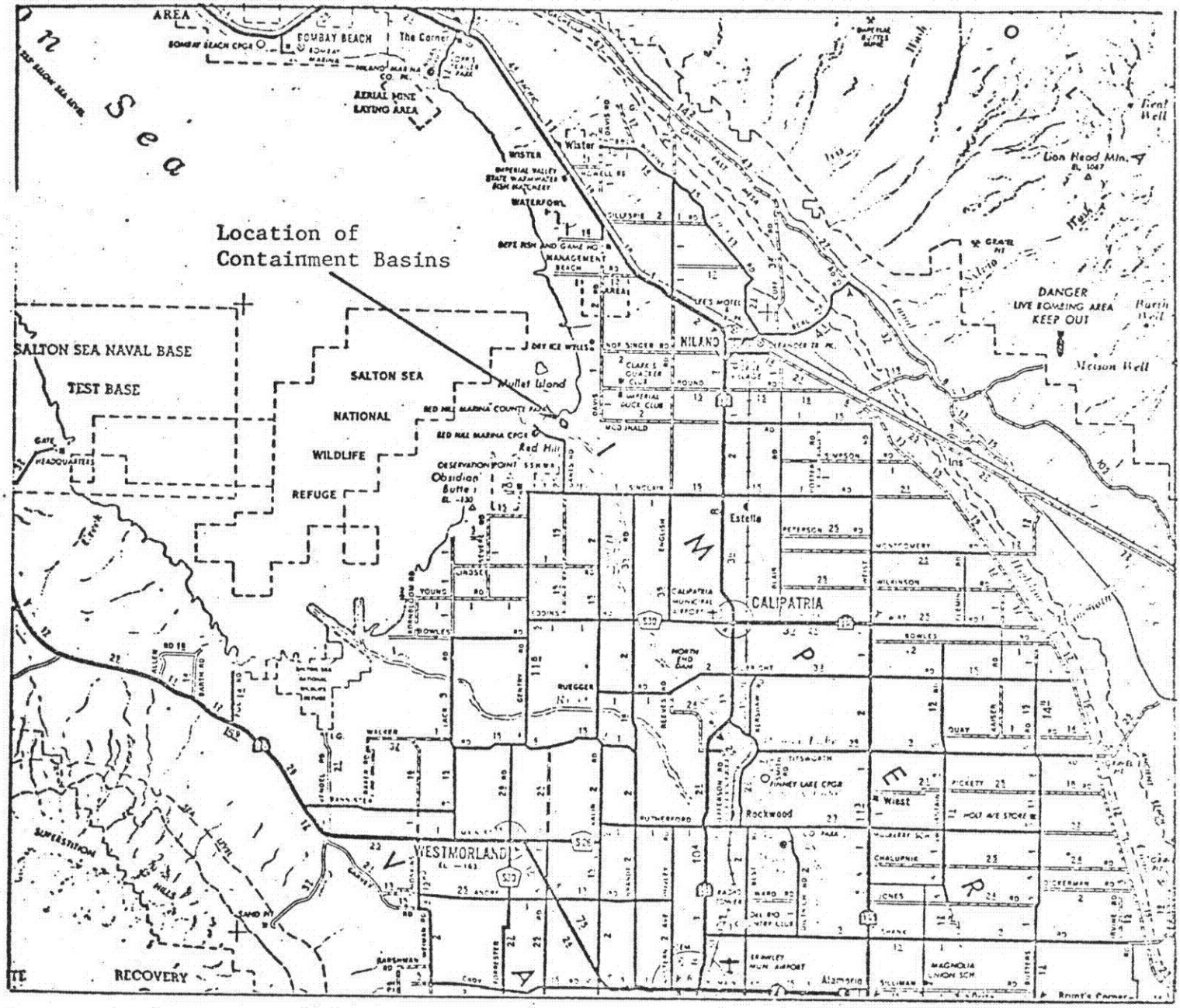


SITE MAP NO. 1
IMPERIAL THERMAL PRODUCTS, INC.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County
NW 1/4, Section 23, T11S, R13E, SBB&M
SE 1/4, Section 14, T11S, R13E, SBB&M
USGS Niland 7.5' Topographic Map

N

Scale:
1" = 2000'

Order No. 81-24



SITE MAP NO. 2
IMPERIAL THERMAL PRODUCTS, INC.
GEOTHERMAL BRINE CONTAINMENT BASINS
South End of Salton Sea - Imperial County