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To: Dockets

From: Craig Hoffman

Date April 16, 2010

RE: Information provided to the Regional Water Quality Control Board – Lahontan Region for Report of Waste Discharge application

The following information has been provided to James Brathovde and the Regional Water Quality Control Board – Lahontan Region by Abengoa Solar. This information is part of the application for a Report of Waste Discharge and will be used by the Regional Board to provide the CEC conditions of approval.

The following documents are included:

- Preliminary Land Treatment Unit Closure Plan
- Corrective Action Plan
- Detection Monitoring Program
- Map: Surface Impoundment / Land Treatment Monitoring Locations - Alpha field
- Map: Surface Impoundment / Land Treatment Monitoring Locations - Beta field
- Preliminary Evaporation Pond Closure Plan

Preliminary Land Treatment Unit Closure Plan

Mojave Solar Project

Harper Dry Lake

San Bernardino County, California

Prepared for:

Mojave Solar LLC

1.0 Introduction

This document presents a Preliminary Closure Plan for the two land treatment units (LTUs) for the proposed Mojave Solar Project (MSP or Project), located near Harper Dry Lake in San Bernardino County, California. Mojave Solar LLC, a Delaware limited liability company (herein "Mojave Solar"), is proposing to construct, own and operate the MSP. The MSP is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site. Mojave Solar proposes to use two LTUs as part of the MSP. The LTUs will be used to receive, temporarily store, and treat soil contaminated with heat transfer fluid (HTF) released from the process to the environment. This Closure Plan is specific to the LTUs associated with the Project.

A notice to terminate will be sent to the Regional Water Quality Control Board (RWQCB) 60 days prior to closing the LTUs. The notice will include the final closure activities. The LTUs will be closed using the schedule of actions explained below.

1.1 Purpose

This plan is intended to fulfill the requirements of the Report of Waste Discharge application for the Project, in accordance with the California Integrated Waste Management Board (CIWMB) Title 27 Regulations, Division 2, Subdivision 1, Chapter 4, Subchapter 4, Section 21769; State Water Resources Control Board Closure; and Post-Closure Maintenance Plan Requirements.

The procedures described for closure are designed to ensure public health and safety, environmental protection, and compliance with applicable regulations. It is assumed that closure would begin 30 years after the commercial operation date of the solar plant. It is also assumed that closure of the facility would occur in a phased sequential manner. That is, closure of the LTUs would begin after the adjacent evaporation ponds have been closed. A Certification of Closure will be submitted for approval to the RWQCB to ensure the LTUs have been closed in accordance with the approved final Closure Plan.

1.2 Objectives

The Project goals for LTUs facility closure are as follows:

- Remove all improvements within 3 feet of final grade; and
- Restore the lines and grades in the disturbed area of the Project Site to match the natural gradients.

The proposed implementation strategy to achieve the goals for site facility closure is as follows:

- Use industry standard demolition means and methods to decrease personnel and environmental safety exposures by minimizing time and keeping personnel from close proximity to actual demolition activities to the extent practical;
- Plan each component of the closure such that personnel and environmental safety are maintained while efficiently executing the work;
- Specify in detail how each major effort will be performed and integrated to achieve the Project goals;
- Train field personnel for decommissioning actions to be taken in proportion to the personnel, Project, or environmental risk for those actions;
- Evaluate the execution of the decommissioning and restoration plan through Project oversight and quality assurance; and
- Document implementation of the plan and compliance with environmental requirements.

2.0 Site Background

The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site in San Bernardino County, California. The Project will use well-established parabolic trough solar thermal technology to produce electrical power using steam turbine generators fed from solar steam generators (SSGs). The energy for steam generation in the SSGs is from HTF heated by solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun.

The Project proposes to use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing will be supplied from on-site groundwater wells, which will also be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). A packaged water treatment system will be used to treat the water to meet potable standards. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater.

The Project cooling water blowdown will be piped to lined, on-site evaporation ponds. The ponds will be sized to retain all solids generated during the life of the plant. However, if required for maintenance, dewatered residues from the ponds will be sent to an appropriate off-site landfill as non-hazardous waste. The LTUs will be used to receive, temporarily store, and treat soil contaminated with HTF released from the process to the environment, in concentrations deemed non-hazardous by the California Department of Toxic Substances Control (DTSC).

2.1 Land Treatment Units

The LTUs will not incorporate a liner containment system or leak detection and removal system, but will be constructed with a prepared base consisting of a minimum of 2 feet of compacted, low permeability, lime-treated native material. This base will serve as a competent platform for land treatment activities, and will serve to slow the rate of surface water infiltration in the treatment area. The compacted and native soil beneath the LTU is designated as a "treatment zone" to a depth of 5 feet. Although the LTU will be taking vehicle traffic, no hard surface will be required, as there is no liner system to protect.

The LTU will be surrounded on all sides by 2-feet high reinforced concrete walls. These walls will control and prevent potential inflow (run-on) of surface storm water into the LTU or runoff of stormwater from the unit.

3.0 Closure Strategy

The closure for the LTU consists of the following major elements:

- Documentation and establishment of health and safety procedures;
- Prior to initial facility operation, collecting samples from the compacted lime-treated native soil for laboratory analysis;
- Conducting pre-closure activities such as final closure and restoration planning that addresses the "as found" site conditions at the start of the Project;
- Demolishing the above-ground structures (dismantling and removing of improvements and materials) in a phased approach while still using some items until the end of the Project;
- Demolishing and removing of below-ground facilities as needed to meet the closure goals;
- Cleaning up of soils, if needed, with special attention applied to the LTU to ensure that clean closure is achieved;
- Disposing of materials in appropriate facilities for treatment/disposal or recycling (if needed); and
- Re-contouring lines and grades to match the natural gradient and function.

Although various types of closure/demolition equipment will be utilized to dismantle each type of facility, dismantling will proceed according to the following general staging process. The first stage consists of demolishing the adjacent evaporation ponds in accordance with their Closure Plan. The final stage will be to close the LTU, by removing the reinforced concrete walls, analyzing and handling the soil as appropriate, and contouring the area to return it to near original conditions while disturbing as little of the other areas as is practical.

3.1 Health and Safety Procedures

The health and safety procedures to be established prior to decommissioning are listed below:

- Review general safety and hazard responsibilities;
- An effective hazard communications program;
- Task hazard analysis and control;
- Personal protection equipment requirements;
- Occupational and environmental monitoring requirements;
- Medical and other emergency procedures;
- Operational issues;
- Personnel training;
- Incident reporting; and
- Self audit and compliance procedures.

3.2 Land Treatment Units Closure Schedule of Actions

3.2.1 Baseline Sampling

Baseline sampling will be conducted in the compacted lime-treated native materials prior to the initiation of LTU activities. Samples will be collected on 50-foot by 50-foot grid spacing. Laboratory analysis will include total petroleum hydrocarbons, Title 22 metals, biphenyl, diphenyl oxide, and general chemistry based upon the project constituents of concern for the LTU.

3.2.2 Soil Segregation

If contaminated soil remains in the LTU when it is time to close the LTU, the contaminated soil may be at various stages of treatment, depending on length of time in each unit. In order to properly handle and dispose of the contaminated soil, representative soil samples will be collected from the LTU to determine HTF concentrations. Soil will be segregated based on the following criteria:

- For concentrations below 100 milligrams per kilograms (mg/kg) of HTF, the soil will be used as backfill material on site.
- For concentrations below the DTSC-determined hazardous limit of HTF but above 100 mg/kg, the soil will be stored and treated in the LTU until concentrations are below 100 mg/kg of HTF.
- Although not expected, any soil with concentrations above the DTSC-determined hazardous limit of HTF will be collected and containerized pending disposal at a Class I hazardous waste disposal facility.

The LTU soils will continue to be managed, maintained, monitored, and reported as outlined in the Waste Discharge Report for the LTU. Once soil concentrations are below 100 mg/kg, the soil will be used as fill material on the property.

3.2.3 Site Restoration

The LTU will be backfilled with soil to grade. Removal of the concrete retaining walls will be required. Native soil incorporated into the LTU construction will be leveled and used as the primary backfill material.

4.0 Additional Information

Additional Plan information, as required per the CIWMB Title 27 is detailed in the following sections.

4.1 Contingency in the Event of a Release

For unauthorized discharges of hazardous material, or for public health or environmental emergencies caused by a discharge or threatened waste discharge, local emergency responders and the Office of Emergency Services will be notified. For all other unauthorized discharges or threatened discharges that are not an immediate threat to public health or the environment, notification will be made to the RWQCB by telephone within 24 hours of an adverse condition. An adverse condition includes a discharge or threatened discharge, such as:

- Release of wastewater outside a lined area;
- Suspected or actual evaporation pond liner leak; and
- Violation of discharge specifications.

Written notification to the RWQCB will occur within seven business days of an unauthorized discharge. The RWQCB Lahontan Region's guidance document titled Reporting Unauthorized Waste Discharges (Spills and Leaks) dated October 23, 2002 will be followed.

An evaluation monitoring program may be required, pursuant to Section 20425 of Title 27 to evaluate evidence of a release if detection monitoring and/or verification procedures indicate evidence of a release. A corrective action plan to remediate released wastes from the evaporation ponds has been prepared pursuant to Section 20430 of Title 27 and is included as part of the ROWD.

4.2 Financial Responsibility

The waste management unit (i.e., LTU) is considered Class II. At Class II units for which the CIWMB does not require a closure fund, the RWQCB requires the establishment of an irrevocable closure fund (or provide other means) pursuant to the CIWMB-promulgated sections of Title 27, Chapter 6 but with the RWQCB named as beneficiary, to ensure closure of each classified unit in accordance with an approved plan meeting all applicable State Water Resources Control Board-promulgated requirements of Title 27, Chapter 6, Subchapter 2.

4.3 Cost Analysis

A detailed cost estimate to close the LTU will be determined prior to the introduction of HTF to the project. Unit costs will be based on RS Means Building Construction Cost Data 2001 Western Version and adjusted by ENR Historical Cost Index to obtain present value unit costs. A letter of credit will be used to demonstrate financial assurance for the closure costs.

4.4 Closure Schedule

A closure schedule will be determined at a future date under separate cover of the Final Closure Maintenance Plan.

4.5 Final Treatment Procedures

All waste and contaminated materials will be removed off site and all facilities will be remediated in accordance with Section 3.2 detailed previously. Additional post closure monitoring will be satisfied with the requirements identified in the Post Closure Maintenance Plan.

4.6 Land Use of Closed Unit

The land use of the closed unit after closure has not been determined. The facilities will be left as vacant, nonirrigated open land that has been remediated. Any future improvements will be permitted, as required, under separate cover.

Corrective Action Plan

Mojave Solar Project

Harper Dry Lake

San Bernardino County, California

Prepared for:

Mojave Solar LLC

1.0 Introduction

Mojave Solar, LLC, a Delaware limited liability company (herein "Mojave Solar"), is proposing to construct, own and operate the Mojave Solar Project (herein "Project"). The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site near Harper Dry Lake in San Bernardino County, California. Mojave Solar proposes to use four evaporation ponds and two land treatment units (LTUs) as part of the Project. The evaporation ponds are the facilities that will receive and store process wastewater from operations at the Project. The LTUs will be used to receive, temporarily store, and treat soil contaminated with heat transfer fluid (HTF) released from the process to the environment.

This Corrective Action Plan (CAP) was developed as part of the Report of Waste Discharge (ROWD) application for the proposed Project. The monitoring requirements for the Project's waste facilities are specified under California Code of Regulations (CCR) Title 27 Chapter 3, Subchapter 3, Article 1, Sections 20380 through 20435 (CCR Title 27, Sections 20380 through 20435). Article 1 includes provisions for a CAP (CCR Title 27, Section 20385). The objective of the CAP is to ensure the contaminants of concern (COCs) achieve their respective concentration limits at all monitoring points and throughout the zone affected by the release, including any portions thereof that extend beyond the facility boundary, by removing the waste constituents or treating them in place.

This document describes the elements of the CAP and is intended to fulfill the requirements of the ROWD application.

1.1 Site Background

The Project is a concentrating solar electric generating facility proposed on an approximately 1,765 - acre site in San Bernardino County, California. The Project will use well-established parabolic trough solar thermal technology to produce electrical power using steam turbine generators fed from solar steam generators (SSGs). The SSGs receive heated HTF from solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun.

The Project proposes to use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing will be supplied from on-site groundwater wells, which also will be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). A packaged water treatment system will be used to treat the water to meet potable standards. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater.

Project cooling water blow down will be piped to lined, on-site evaporation ponds. The ponds will be sized to retain all solids generated during the life of the plant. However, if required for maintenance, dewatered residues from the ponds will be sent to an appropriate off-site landfill as non-hazardous waste.

1.2 Waste Handling Facilities

The waste storage and treatment units include four evaporation ponds and two LTUs for HTF-contaminated soils as described below.

1.2.1 Evaporation Ponds

The waste storage units include four evaporation ponds. The evaporation ponds will receive process wastewater from the circulating water blow down from the cooling tower and from waste water (e.g. reverse-osmosis system reject water) generated from treatment of water for use at the plant. The project wastewater stream included in the ROWD provides an estimate of the concentrations of various chemicals/metals that will be present in the wastewater stored in the evaporation ponds.

The four 5-acre (total combined pond top area of 20 acres) evaporation ponds have an average proposed design depth of 8 feet which incorporates 6 feet of depth for operations and storage of residual solids and 2 feet of freeboard.

The containment design for the evaporation ponds, from the surface of the evaporation ponds downwards, consists of the following:

- A primary 60 mil high density polyethylene (HDPE) liner;
- An interstitial leak detection and removal system (LCRS) comprising a geomembrane geonet and collection piping;
- A secondary 40 mil HDPE liner;
- A base layer consisting of 2 feet of on-site screened material or a 6" sand layer will underlie the liners to prevent punctures;
- A leak detection system consisting of continuous carrier pipes installed at the sides and low point of each pond at a depth of approximately 5 feet below the secondary liner (WP, 2009). A neutron probe will be pulled through the pipes to assess the moisture content of the soil. The background moisture content and subsequent action level that will indicate a leak will be established after the evaporation ponds have been constructed, but prior to any liquids being placed in the ponds; and
- A groundwater monitoring network (GMN), consisting of three monitoring wells located immediately adjacent to each pair of evaporation ponds and adjoining LTU,
- Additional production wells located in the power islands will be used to monitor the regional groundwater aquifer, which is the first water encountered under the Project Site.

1.2.2 On-site Land Treatment Unit

The LTUs will not incorporate a liner containment system or LDRS, but will be constructed with a prepared base consisting of 2 feet of compacted, low permeability, lime-treated native material. This base will serve as a competent platform for land treatment activities, and will serve to slow the rate of surface water infiltration in the treatment area. The compacted and native soil beneath the LTU is designated as a "treatment zone" to a depth of 5 feet. The LTU will be surrounded on all sides by 2-feet high reinforced concrete walls. These walls and site grading will control and prevent potential inflow (run on) of surface stormwater into the LTU or runoff of stormwater from the unit.

Contaminated soil will remain in the LTU until concentrations are reduced to less than an average concentration of 100 milligrams per kilograms (mg/kg); the remediated soil is expected to be used as fill material on the site. Soils with initial HTF concentrations less than 100 mg/kg will be used as fill material on the site, with no treatment required.

Vadose zone leak detection at the LTU consists of the collection of soil samples from 1 foot below the compacted soil base at the LTU. The soils will be analyzed for HTF using modified Environmental Protection Agency (EPA) Method 8015 or EPA Method 1625B, as required, to verify that HTF is not migrating below the 5-foot treatment zone underlying the LTU. In addition, the GMN will monitor the water table of the regional aquifer for LTU COCs.

2.0 Corrective Action Plan Standards

Standards for a Corrective Action Plan (CAP) include requirements that a corrective action achieves the following goals: to remediate release from the Unit and to ensure compliance with the Water Standard adopted under section 20390 for the Unit. If evidence of a release has occurred, this standard specifies notification requirements to the RWQCB and sampling and analytical protocols to further evaluate releases from the waste storage unit including reporting schedules and deadlines.

The monitoring requirements for the Project's waste facilities are specified under CCR Title 27 Chapter 3, Subchapter 3, Article 1, Sections 20380 through 20435 (CCR Title 27, Sections 20380

through 20435). These standards include requirements for a Detection Monitoring Plan (DMP) to establish background values for monitoring parameters, conduct sampling and analyses for monitoring parameters, set forth monitoring schedules (both quarterly and annual basis), and perform statistical analysis of data to determine if evidence of a significant release has occurred. If evidence of a release has occurred, these standards specify notification requirements to the RWQCB as well as specify sampling and analytical protocols to further evaluate releases from the waste storage unit including reporting schedules and deadlines.

Standards for a DMP are specified in CCR Title 27, Chapter 3, Subchapter 3: Water Monitoring. Under Subchapter 3, Article 1, the general applicability for water quality monitoring and response programs for solid waste management units are addressed in section 20380 (CCR Title 27, Section 20380). Required monitoring programs such as a DMP, Evaluation Monitoring, and CAP are defined in CCR Title 27, Section 20385.

Establishment of Water Quality Protection Standards (Water Standard) for each waste unit is required under CCR Title 27, Section 20390. CCR Title 27, Section 20395 addresses Constituents of Concern (COCs) to which the Water Standard applies. The COC list includes all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the evaporation ponds and LTUs.

CCR Title 27, Section 20400 requires the establishment of concentration limits for each COC including the determination of background values. Monitoring Points and Point of Compliance (CCR Title 27, Section 20405) specify the downgradient (horizontal) extent to which groundwater will be monitored. The compliance period is defined in CCR Title 27, Section 20410, which is typically the number of years equal to the active life of the waste unit plus the closure period. The compliance period is the minimum time period during which Mojave Solar will conduct a groundwater quality monitoring program subsequent to a release from a waste unit.

General Water Quality Monitoring and System Requirements are addressed in CCR Title 27, Section 20415 which defines the elements of a groundwater monitoring system for a DMP, Evaluation Program, or a CAP.

Provisions for monitoring well standards, surface water monitoring systems, and unsaturated zone monitoring systems as well as descriptions of statistical data analysis methods are addressed in CCR Title 27, Section 20415.

Required elements of a DMP are specifically addressed in CCR Title 27, Section 20420. This includes requirements to establish the following: background values, monitoring parameters, routine monitoring, monitoring schedules, data recording format, and data analysis. This standard also provides response provisions in the event that a release is indicated.

If evidence of a significant release from an evaporation pond or the LTU is determined based upon the background and monitoring criteria set forth in the DMP, then an Evaluation Monitoring Program (EMP) pursuant to CCR Title 27, Section 20425 will be implemented to assess if groundwater has been impacted. If groundwater has been impacted above the RWQCB thresholds, then the measures described in the CAP (pursuant to CCR Title 27, Section 20430) will be implemented.

Finally, Unsaturated Zone Monitoring and Response Provisions for LTUs are addressed in CCR Title 27, Section 20435.

3.0 Corrective Action Plan

This CAP is designed to address releases from the evaporation ponds and the LTUs that are confirmed by either physical evidence of a release or a "measurably significant" evidence of a release from the evaporation ponds or LTU during a DMP. An estimated cost analysis and financial assurances to perform the corrective actions will be prepared and submitted to the RWQCB prior to discharge of waste to the evaporation ponds and LTUs.

3.1 Vadose Zone Corrective Actions

3.1.1 Evaporation Ponds

The following sections provide a description of the corrective actions to be taken should a release occur from the evaporation ponds.

As described in Section 1.2.1, the evaporation ponds are constructed with a leak detection layer and sump between the primary 60 mil HDPE geomembrane liner and the secondary 40 mil HDPE geomembrane liner.

Underlying the base of the ponds is a moisture detection system consisting of a network of carrier pipes installed at the sides and low point of each pond that a neutron probe is pulled through to measure the moisture content of the soil beneath the ponds.

If water is detected accumulating in the sump at a higher rate than the Action Leakage Rate (ALR), defined in the DMP, the following steps will be implemented:

- Water will be pumped out of the evaporation pond that exhibits the high ALR and placed in the other evaporation pond(s);
- The residue at the bottom of the pond will either be removed or placed in a corner of the pond, allowing the liner to be inspected;
- Once the location of the leak is determined, the 60 mil HDPE primary liner will be repaired using new HDPE liner material and welded onto the primary HDPE liner;
- Within 24 hours of the leak being detected, the RWQCB will be verbally notified of the leak and a written notification via certified mail will be sent within seven days of determining there was a release.

If the moisture detection system located below the ponds detects the presence of moisture above the set action limit determined after initial background monitoring and testing, the following steps will be implemented:

- Water will be pumped out of the evaporation pond that exhibits the high moisture content and placed in the other evaporation ponds;
- The residue at the bottom of the pond will either be removed or placed in a corner of the pond of the pond, allowing the liner to be inspected;
- The location of the leak can be determined by visual inspection or the location may be determined by the location of the neutron probe;
- The leak detection HDPE geonet drainage media will be removed to expose the secondary HDPE geomembrane liner. If encountered, the sand backfill and leak detection piping will be removed;
- The damaged section of the 40 mil secondary HDPE liner will be removed, the underlying base layer will be examined and if needed, wet soil will be removed;
- Soil samples will be collected from the native material to a depth of 5 feet below the base layer and analyzed for the COCs associated with the evaporation ponds;
- If required, soil will be excavated to the depth of the sampling;
- Clean fill will be used to backfill the excavation of the native soil and will be compacted, the base layer will be replaced and compacted;

- New 40 mil HDPE material will be welded to the secondary liner, sand backfill and leak detection piping will be reinstalled, and HDPE geonet drainage media will be replaced;
- New 60 mil HDPE material will be welded to the primary line; and
- Within 24 hours of the release being detected, the RWQCB will be verbally notified of the release and a written notification via certified mail will be sent within seven days of determining there was a release.

If a release from the evaporation ponds occurs due to overtopping of the berms by stormwater or overfilling the ponds, the following will be carried out:

- The area outside berm will be assessed using visual means and soil samples will be collected and analyzed for COCs associated with the evaporation ponds, if the visual impacts are not readily evident;
- The impacted soil will be excavated and placed in the LTU staging area and treated in the LTU if necessary;
- If the confirmation soil samples show non-detectable levels of evaporation pond COCs, the excavation will be backfilled with native material; and
- Within 24 hours of the release being detected, the RWQCB will be verbally notified of the release and a written notification via certified mail will be sent within seven days of determining there was a release.

3.1.2 Land Treatment Unit

As described in Section 1.2.2, the LTU does not have a dedicated vadoze zone leak detection system. The nature of the HTF is such that it will be in a solid form below 53.6 degrees Fahrenheit, is relatively insoluble in water (solubility approximately 25 milligrams per liter), combustible and has relatively low volatility (Solutia, 2006). Therefore, the potential for HTF to migrate through the base of the LTU is considered very small. The annual sampling and analysis of the soil beneath the base of the LTU, for COCs associated with the LTU has been judged to be sufficient at similar sites.

Should HTF be detected in the soil beneath the LTU, the following steps will be implemented:

- Soil will be removed from the vicinity of the sample location where the HTF was detected;
- The compacted base layer will be excavated;
- Native material will be excavated to the depth of the soil sample. Additional soil excavation, not to exceed a depth of 5 feet beneath the compacted base, will be performed if excessive moisture is encountered;
- The excavation will be backfilled and compacted with native material;
- The compacted base layer will be reinstalled; and
- Within 24 hours of the release being detected, the RWQCB will be verbally notified of the release and a written notification via certified mail will be sent within seven days of determining there was a release.

The LTU is designed to contain site runoff from a 100-year event. Should a severe storm event occur that fills up the LTU and allows water to overtop the wall, the following steps will be implemented:

- Standing water in the LTU will be inspected for the presence of HTF product or sheen. If none is present, the water will be pumped to the evaporation ponds. If HTF product or sheen is present, the water will be pumped to a temporary holding tank or on-site facilities designed for collecting potentially HTF-contaminated stormwater, characterized for recycle or disposal and transported to a properly permitted facility;
- The area outside the wall will be assessed using visual means and soil samples will be collected and analyzed for COCs associated with the LTUs, if the visual impacts are not readily evident;
- The impacted soil will be excavated and placed in the LTU staging area and treated in the LTU if necessary;

- If the confirmation soil samples are non-detect for LTU COCs, the excavation will be backfilled with native material; and
- Within 24 hours of the release being detected, the RWQCB will be verbally notified of the release and a written notification via certified mail will be sent within seven days of determining there was a release.

3.2 Groundwater Corrective Actions

As described in Section 1.2.1, a GMN has been proposed for the evaporation ponds and the LTU. The DMP presents the sampling schedule, analyses and reporting requirements for the Site under CCR Title 27, Section 20420.

For a CAP under CCR Title 27, Section 20430: 1) a sufficient number of monitoring points need to be installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance and at other locations in the uppermost aquifer to provide the data needed to evaluate the effectiveness of the CAP; 2) a sufficient number of monitoring points and background monitoring points need to be installed at appropriate locations and depths to yield ground water samples from portions of the zone of saturation, including other aquifers, not monitored pursuant to CCR Title 27, Section 20420, to provide the data needed to evaluate the effectiveness of the CAP; and 3) a sufficient number of monitoring points and background monitoring points need to be installed at appropriate locations and depths to yield groundwater samples from zones of perched water to provide the data needed to evaluate the effectiveness of the corrective action program.

3.2.1 Perched Groundwater

The DMP states that the potential presence for perched aquifers beneath the Project Site will be evaluated during installation of the proposed monitoring wells. If perched groundwater is encountered during the installation of the proposed water table monitoring wells, then additional wells may be installed to evaluate the perched groundwater under the DMP.

If any of the vadose zone release scenarios described above occur and perched groundwater zone(s) are identified at the Project Site, the need for perched groundwater monitoring wells would be assessed and would be dependant on the results of confirmation soil samples. If the confirmation soil samples indicated the COCs for the evaporation ponds and LTU were not detected in the samples, no perched zone wells would be installed. If confirmation soil samples contained detectable concentrations of evaporation pond and LTU COCs, additional perched monitoring wells would be installed if the existing wells did not adequately monitor the release area.

3.2.2 Regional Groundwater

Regional groundwater will be monitored through the proposed well locations as outlined in the Groundwater Monitoring Network (GMN), defined in the DMP. The GMN consists of three proposed wells immediately adjacent to each of the evaporation ponds/LTU locations. These wells will be sampled prior to any wastewater being placed in the ponds or soil being placed in the LTU to establish background concentrations for evaporation pond and LTU COCs.

When operations commence at the Site, the groundwater pumping from the production wells may create a "groundwater sink" under the evaporation ponds and the LTU. Should production well pumping produce a cone of depression extending to the monitoring wells, the production wells will become a point of compliance for the evaporation ponds and the LTU.

If a release is detected through physical evidence or statistical analyses performed on the data collected under the DMP and soil excavation indicates that "clean closure" (i.e. no COCs detected in confirmation soil samples) has not been achieved, groundwater monitoring will continue as set forth

in the DMP and the production well(s) will be sampled on the same schedule set forth for the monitoring wells in the DMP. This sampling will allow for evaluation, compliance, and performance monitoring of the success of the corrective action. This sampling program will be considered to be the Evaluation Monitoring Program (EMP).

Detection Monitoring Program

Mojave Solar Project

Harper Dry Lake

San Bernardino County, California

Prepared for:

Mojave Solar LLC

1.0 Introduction

Mojave Solar, LLC, a Delaware limited liability company (herein "Mojave Solar"), is proposing to construct, own and operate the Mojave Solar Project (herein "MSP" or "Project"). The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site in San Bernardino County, California. Mojave Solar proposes to use four surface impoundment units (i.e., evaporation ponds) and two adjacent land treatment units (LTUs) as part of the Project. The surface impoundments are the facilities that will receive and store process wastewater from operations at the Project. The LTU will be used to receive, temporarily store, and treat soil contaminated with heat transfer fluid (HTF) released from the process to the environment.

This Detection Monitoring Program (DMP) was developed as part of the Report of Waste Discharge (ROWD) application for the proposed Project. The monitoring requirements for the Project's waste facilities are specified under California Code of Regulations (CCR) Title 27 Chapter 3, Subchapter 3, Article 1, Sections 20380 through 20435 (CCR Title 27, Sections 20380 through 20435). Article 1 includes provisions for a Detection Monitoring Program (CCR Title 27, Section 20385). The objective of the DMP is to determine if a release has occurred from the waste management and land treatment units, and if groundwater quality is being degraded.

This document describes the elements of the DMP and supplements other elements of the ROWD application.

1.1 Site Background

The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site in San Bernardino County, California. The Project will use well-established parabolic trough solar thermal technology to produce electrical power using steam turbine generators (STGs) fed from solar steam generators (SSGs). The SSGs receive heated HTF from solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun.

The Project proposes to use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing will be supplied from on-site groundwater wells, which also will be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). A packaged water treatment system will be used to treat the water to meet potable standards. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater.

Project cooling water blow down and process wastewater (e.g. reverse-osmosis system reject water) generated from treatment of water for use at the plant will be piped to lined, on-site evaporation ponds. The ponds will be sized to retain all solids generated during the life of the plant. However, if required for maintenance, dewatered residues from the ponds will be sent to an appropriate off-site landfill as non-hazardous waste.

1.2 Waste Handling Facilities

The waste storage and treatment units include four evaporation ponds and two nearby Land Treatment Units (LTUs) for HTF-contaminated soils as described below.

1.2.1 Evaporation Ponds

The four 5-acre (total combined pond top area of 20 acres) evaporation ponds have an average proposed design depth of 8 feet which incorporates 6 feet of depth for operations and storage of residual solids and 2 feet of freeboard.

The containment design for the evaporation ponds, from the surface of the evaporation ponds downwards, consists of the following:

- A primary 60 mil high density polyethylene (HDPE) liner;
- An interstitial leak detection and removal system (LCRS) comprising a geomembrane geonet and collection piping;
- A secondary 40 mil HDPE liner;
- A base layer consisting of 1 foot of on-site screened soil below the lower liner, which contains no particles larger than ¼ inch and which is compacted to 95 percent of the maximum dry density per ASTM D1557 or a 6" sand layer will underlie the liners to prevent punctures;
- A leak detection system consisting of continuous carrier pipes installed at the sides and low point of each pond at a depth of approximately 5 feet below the secondary liner. A neutron probe will be pulled through the pipes to assess the moisture content of the soil. The background moisture content and subsequent action level that will indicate a leak will be established after the evaporation ponds have been constructed, but prior to any liquids being placed in the ponds; and
- A groundwater monitoring network (GMN), consisting of three monitoring wells located immediately adjacent to each pair of evaporation ponds and adjacent LTU,
- Additional production wells located in the power islands will be used to monitor the regional groundwater aquifer, which is the first water encountered under the Project Site.

1.2.2 Land Treatment Unit

The LTU will be used to treat HTF-affected soil at various concentrations potentially ranging from 100 to a California Department of Toxic Substances Control (DTSC)-determined limit of milligrams per kilogram (mg/kg). In general, contaminated soil in the staging area will be covered with plastic sheeting to prevent contact with stormwater and to control potential odors and emissions. HTF (Therminol VP-1 or equivalent) is a synthetic oil that consists of a mixture of biphenyl and diphenyl oxide that is solid at temperature below 54 degrees Fahrenheit (12 degrees Celsius), is relatively insoluble in water (solubility of approximately 25 milligrams per liter), combustible, and has relatively low volatility (Solutia, 2006). The components of HTF are reported to biodegrade relatively rapidly in the environment, have slight toxicity to tested terrestrial species, higher toxicity to tested aquatic species, and a potential to bio-accumulate (IPCS, 1999; JECFA, 2003; SOCMA Biphenyl Working Group, 2003).

Spills of HTF will be cleaned up within 48 hours and affected soil will be moved to a staging area in the LTU where it will be placed on plastic sheeting. Samples of excavated HTF-affected soil will be collected in accordance with the Environmental Protection Agency's (EPA's) current version of the manual – "Test Methods for Evaluating Solid Waste" (SW-846) and analyzed for HTF using modified EPA Method 8015, or EPA Method 1625B, as required. The soil stockpile will then be covered with plastic sheeting pending receipt of analytical results. Soil characterized as containing HTF at concentrations above the DTSC-determined limit will be transported from the Site by a licensed hazardous waste hauler for disposal at a licensed hazardous waste landfill. Soil characterized as containing more than 100 mg/kg HTF but less than the DTSC determined limit will be spread in the LTU for treatment. Once soil has been treated to a concentration less than 100 mg/kg HTF it will be moved from the LTU to another portion of the Site until it is reused at the facility as fill material.

Based on experience at the existing Solar Electric Generating System (SEGS) facilities, the California Department of Toxic Substances Control (DTSC) has determined that soil contaminated with HTF in concentrations less than 10,000 mg/kg is classified as a non-hazardous waste. A final determination for the project site will be made by DTSC upon initial sampling of site contaminated soils. Based on available operation data from other sites, it is anticipated that approximately 750 cubic yards (on average) of HTF-affected soil may be treated per year. Larger or smaller quantities could be generated during some years, depending on the frequency and size of leaks and spills.

The LTU will not incorporate a liner containment system or LDRS, but will be constructed with a prepared base consisting of 2 feet of compacted, low permeability, lime-treated native material. This base will serve as a competent platform for land treatment activities, and will serve to slow the rate of surface water infiltration in the treatment area. The compacted and native soil beneath the LTU is designated as a "treatment zone" to a depth of 5 feet.

The LTU will be surrounded on all sides by 2-feet high reinforced concrete walls. These walls and site grading will control and prevent potential inflow (run-on) of surface storm water into the LTU or runoff of stormwater from the unit.

2.0 Detection Monitoring Program Standards

The monitoring requirements for the Project's waste facilities are specified under CCR Title 27 Chapter 3, Subchapter 3, Article 1, Sections 20380 through 20435 (CCR Title 27. Sections 20380 through 20435). These standards include requirements to: establish background values for monitoring parameters, conduct sampling and analyses for monitoring parameters, set forth monitoring schedules (both quarterly and annual basis), and perform statistical analysis of data to determine if evidence of a significant release has occurred. If evidence of a release has occurred, these standards specify notification requirements to the RWQCB as well as specify sampling and analytical protocols to further evaluate releases from the waste storage unit including reporting schedules and deadlines.

Standards for a DMP are specified in CCR Title 27, Chapter 3, Subchapter 3: Water Monitoring. Under Subchapter 3, Article 1, the general applicability for water quality monitoring and response programs for solid waste management units are addressed in Section 20380 (CCR Title 27, Section 20380). Required monitoring programs such as a DMP, Evaluation Monitoring, and Corrective Action programs are defined in CCR Title 27, Section 20385.

Establishment of Water Quality Protection Standard (Water Standard) for each waste unit is required under CCR Title 27, Section 20390. CCR Title 27, Section 2395 addresses Constituents of Concern (COC) to which the Water Standard applies. The COC list includes all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the evaporation ponds and LTUs.

CCR Title 27, Section 20400 requires the establishment of concentration limits for each COC including the determination of background values. Monitoring Points and Point of Compliance (CCR Title 27, Section 20405) specify the downgradient (horizontal) extent to which groundwater will be monitored. The compliance period is defined in CCR Title 27, Section 20410, which is typically the number of years equal to the active life of the waste unit plus the closure period. The compliance period is the minimum time period during which Mojave Solar Project will conduct a groundwater quality monitoring program subsequent to a release from a waste unit.

General Water Quality Monitoring and System Requirements are addressed in CCR Title 27, Section 20415 which defines the elements of a groundwater monitoring system for a DMP, Evaluation Program, or a corrective action plan. Provisions for monitoring well standards, surface water monitoring systems, and unsaturated zone monitoring systems as well as descriptions of statistical data analysis methods are addressed in CCR Title 27, Section 20415.

Required elements of a DMP are specifically addressed in CCR Title 27, Section 20420. This includes requirements to establish the following: background values, monitoring parameters, routine monitoring, monitoring schedules, data recording format, and data analysis. This standard also provides provisions in the event that a release is indicated.

If evidence of a significant release from an evaporation pond or the LTU is determined, then an Evaluation Monitoring Program pursuant to CCR Title 27, Section 20425 will be implemented to assess if groundwater has been impacted. If groundwater has been impacted above the RWQCB

thresholds, then the measures described in the Corrective Action Plan (CAP) pursuant to CCR Title 27, Section 20430) will be implemented.

Finally, Unsaturated Zone Monitoring and Response Provisions for Land Treatment Units are addressed in CCR Title 27, Section 20435.

3.0 Waste Unit Inspection, Sampling, and Maintenance Programs

The DMP encompasses inspection of the evaporation ponds and LTU as well as periodic sampling of waste unit contents and a maintenance program to ensure that the waste units operate as designed. The following section outlines the inspection and maintenance requirements for the evaporation pond system and LTUs.

The Action Leak Rate (ALR) monitoring system will be field tested at the commencement of the evaporation pond operation. On the first day of operation, the pump, piping and control switches will be checked to ensure they are in proper working condition per the manufacturers' specifications.

3.1 Waste Unit Inspection Program

3.1.1 Evaporation Pond Liner and Dike Areas

The exposed area of the evaporation ponds shall be inspected on a monthly basis. This includes the liner system, observations for displaced or degradation of the hard/protective layer, and observations for eroded areas within the berm systems. The pond inlet (when visible) should also be inspected monthly to ensure it is in good repair and free of debris.

3.1.2 Evaporation Pond Leak Detection System

The detection monitoring program for the impoundments consists of monitoring the LCRSs, lysimeters, and monitoring wells for the presence of liquid and/or constituents of concern. The monitoring of leaked water is achieved through the addition of vertical monitoring wells that are hydraulically isolated with the leak detection layer. The flow totalizers, which quantify flow and the potential leakage that may occur between containment layers in the monitoring wells, will be monitored weekly for flow and monthly (quarterly after the first six months) to check for build up of material or degradation of the system.

3.1.3 Evaporation Pond Residue Inspections and Removal

Monthly inspections of the evaporation pond inlets and all associated facilities will be conducted for residue including sediment and debris accumulation. If residue appears to be impeding flow into the pond, maintenance actions will be scheduled for cleaning these areas as soon as possible. Residue removal activities will be conducted on an as-needed basis depending upon the inspection results.

3.1.4 Land Treatment Units Inspection

Inspection of the LTUs will be conducted monthly. The inspection will involve visual observation to identify the potential presence of cracks or subsidence in uncovered areas of the base soil layer that would allow penetration of contaminants. The perimeter concrete walls will be inspected to ensure they are in good repair and that these areas are free of debris and accumulated sediment. Inspection of the effectiveness of general housekeeping, run-on controls, and the soil piles for odors and fugitive dust may be required for regular maintenance.

3.2 Waste Unit Sampling Program

Samples of wastewater, residue and LTU soil will be collected periodically over the operational life of each unit. This section describes the sampling program. Samples will be properly documented and a written record of the chain-of-custody will be kept. The chain-of-custody record will track the samples from the field to the laboratory. This form documents the time, date, sample location, person collecting the sample, and names and signatures of all persons who are maintaining custody of the samples from the time the samples are collected in the field to their arrival at the laboratory.

3.2.1 Evaporation Pond – Process Wastewater

Process wastewater sources to the evaporation ponds include cooling tower blow down water and process wastewater (e.g. reverse-osmosis system reject water) generated from treatment of water for use at the plant, which will be pumped to the evaporation ponds. The project waste stream included in the Report of Waste Discharge lists the predicted chemistry of the wastewater stream.

The evaporation ponds will be sampled at the commencement of operation, and then on a semi-annual basis thereafter to document constituent concentrations. Wastewater samples from each pond collected semi-annually will be composited into one sample by the state-certified laboratory and analyzed.

Grab samples of wastewater will also be collected from each pond at the start of operation, and then on an annual basis, from each pond will be analyzed by a state-certified laboratory. The annual samples will be collected in the last quarter of each year.

In addition, quarterly water quality testing of selenium concentrations and TDS will be undertaken in conjunction with qualitative behavioral and avian health monitoring. Individual water samples will be taken from each pond. Should bird mortality occur, an additional water grab sample will be collected from the ponds for analysis at the time of discovery. Because water quality is difficult to tie directly to ecological risk by implementation of numeric standards, selenium and TDS concentrations will not trigger remedial action; however, the data will be collected to assess potential long-term correlations between water quality, as well as the pond water level, pond salinity, and temperature data, and bird behaviors and mortality, if any.

3.2.2 Evaporation Pond – Residue

Annually, in the last quarter of each year, two representative grab samples of the bottom residue in each pond if present, will be collected, composited and analyzed.

3.2.3 Land Treatment Unit – Runoff

The LTU and surrounding grading will be designed to limit storm runoff from the LTU. The LTUs will be designed to contain storm runoff from the 100-year event within the soil treatment area; therefore, no runoff should occur.

3.2.4 Land Treatment Unit – Soil

Representative soil samples will be collected for every batch of HTF contaminated soil undergoing treatment in the LTU and composited according to methods specified in EPA SW-846. The samples will be analyzed for HTF constituents using EPA Method 8015, or EPA Method 1625B, as required. Results of the samples will be reported semiannually.

Annually, soil samples will be collected at a depth of 1 foot below the compacted soil base at the LTUs (approximately 3 feet below ground level) and analyzed for HTF using modified EPA Method

8015, or EPA Method 1625B, as required, to verify that HTF is not migrating below the 5-foot treatment zone underlying the unit. If the laboratory results indicate that the HTF concentrations are greater than the laboratory detection limit, additional soil samples will be collected at successively deeper depths (using 1-foot intervals) until laboratory analytical results show that concentrations are less than the laboratory detection limit.

If HTF concentrations above the laboratory detection limit are found below the 5-foot treatment zone, the Facility will implement the CAP and submit a letter to the RWQCB highlighting the "evidence of a release." Results of sample analysis will be reported annually.

3.3 Maintenance Program

3.3.1 Evaporation Pond Clean Out

The ponds are designed to hold the accumulated residue/precipitated solids for the 30-year operational life of the facility. Pond clean out is therefore not proposed as a regular part of maintenance activities; however, clean out could be required to support unscheduled maintenance, repairs or contingency responses.

Before water can be pumped out of the pond for maintenance, the capacity of the other evaporation ponds will be assessed to verify that sufficient capacity exists to contain wastewater from continued operation for a sufficient amount of time to allow planned maintenance activities. Preliminary design estimates indicate that if one pond is undergoing clean out activities, the remaining ponds can operate effectively for up to one year.

A manually placed pumping system will be used to transfer the water into an adjacent evaporation pond. During pond drainage, the flow rates from the pumps will be monitored to ensure that the outflow is not negatively impacting the receiving evaporation pond. Details of this pumping system will be provided by the manufacturer.

The appropriate time of year and ideal weather conditions to undertake the clean out activities will be evaluated. Dust generated during the activities will need to be controlled as required. Health and safety issues for the clean out activity include potentially slipping or falling into the pond. Employees will be trained on how to undertake the clean out activities in a safe manner, which may include having ropes and ladders accessible at the evaporation ponds.

3.3.2 Evaporation Pond Residue Removal

If the pond is being drained for liner maintenance or due to excessive storm water volumes, the sediment and residue in the pond will be evaluated and removed, if necessary. The general requirements for undertaking residue and sediment removal for evaporation ponds are outlined below.

The removal activities should only be conducted on an as-needed basis depending upon the inspection of the system. The inspections will include estimating the volume of residue, assessing if the residue or sediment is impeding flows into the pond and impacting on the evaporation rate or capacity of the system. The evaporation ponds are design to hold up to 2 feet of residue built up over the 30 year life span.

The residue shall be removed by a pumping or vacuum system if in a fluid state, or may be dried and removed using conventional excavation and loading equipment light enough to reduce the potential for damage to the liner system. If necessary, the residue will be sampled and analyzed to meet the waste profiling requirements of the disposal facility. The waste characteristics of the residue will determine the transportation and disposal methodology.

3.3.3 Land Treatment Unit Maintenance

Maintenance involved with the LTU will include general housekeeping and drainage system maintenance. General housekeeping within the LTU includes the following measures:

- Keeping soil piles tidy and contained;
- Clearing the unit of debris that may have been accumulated during operation;
- Re-applying plastic sheeting on soil piles as needed; and
- Moisture conditioning and fertilizing the soil piles as needed.

Drainage system maintenance will include the following measures:

- Re-grading of the base of the LTU as needed; and
- Repair of concrete walls as needed.

3.3.4 Evaporation Pond Unsaturated Zone Moisture Detection Monitoring

A check for the presence of excessive moisture or liquids beneath the 60 mil and 40 mil HDPE geomembranes will be undertaken semi-annually using a neutron probe. This sampling method must be undertaken by a trained, certified and licensed technician as the neutron probe uses radioactive material.

Moisture in the soil is detected by the speed that the neutrons move and scatter when emitted. The soil causes neutrons to slow however if the soil is dry, the cloud of neutrons will be less dense and extend further from the probe and if the soil is wet, the neutron cloud will be more dense and extend a shorter distance (http://sanangelo.tamu.edu/agronomy/sorghum/neutron.htm). The density of the cloud is measured by a detector and results are displayed electronically on the front panel.

Prior to the discharge of any process wastewater into the evaporation ponds, soil moisture measurements will be taken to establish background soil moisture levels. Neutron probe measurements will be taken beneath each pond at least four times in order to determine a value that is statistically representative of background moisture conditions.

Once the evaporation ponds become operational and wastewater is discharged to the ponds, moisture detection monitoring will be performed on a semi-annual basis. For each monitoring event neutron probe measurements will be performed beneath each pond. A statistical analysis will be performed comparing the results to the background soil moisture level using the statistical methods described in Section 4.1.3.2. If the moisture content is statistically significantly higher than the background value, then field verification testing will be performed and the RWQCB will be notified with a report of physical evidence of a release. Field verification testing may consist of a combination of the following measures: additional neutron analysis, laboratory analysis of liquids drawn from the neutron probe casing, and visual observation to verify existence of a release.

3.3.5 Avian Monitoring

Avian monitoring at the evaporation ponds will be conducted by the Mojave Solar Project Designated Biologist twice monthly for the first two years of project operation. The MSP Environmental Compliance Manager (ECM) will continue monitoring after the first two years, under the direction of the MSP Designated Biologist, at least twice a month for the life of the project. The monitor (biologist or ECM) would identify bird species and/or functional groups (e.g., waterfowl, waders, shorebirds, upland shorebirds) utilizing the ponds, record the behavior of the birds (e.g., feeding, swimming, wading, nesting), and note any mortalities or physical infirmities (e.g., birth defects or reduced growth) associated with any bird observed on or adjacent to the evaporation ponds. Any dead bird that can be safely retrieved from the evaporation ponds would be collected by the biologist or ECM and sent to a qualified laboratory to determine if the mortality was directly related to selenium poisoning or salt toxicosis or encrustation. Documented mortality resulting from

selenium poisoning or salt toxicosis or encrustation would result in corrective measures implemented in coordination with the agencies.

4.0 Groundwater Monitoring Network

In accordance with CCR Title 27, Chapter 3, Subchapter 3, Article 1, Section 20380, a groundwater monitoring network (GMN) will be established at the Site to monitor groundwater for impacts from potential releases from the four proposed evaporation ponds and the two associated land treatment units (LTUs). The proposed GMS will consist of three proposed monitoring wells located adjacent to each evaporation pond / LTU site.

4.1.1.1 Groundwater Monitoring Network Layout for Regional Groundwater

The proposed GMN layout includes the use of monitoring wells which are located adjacent to the evaporation ponds and LTU.

4.1.1.2 Groundwater Monitoring Network Layout for Shallow (Perched) Groundwater

If perched groundwater is encountered during the installation of the proposed water table monitoring wells, then additional wells may be installed to evaluate the perched groundwater. The criteria for adding wells will include the areal and vertical extent of the perched groundwater and the temporal nature of the perched groundwater. The decision to install the shallow wells would be made after the three proposed wells have been completed and well logs can be reviewed.

4.1.1.3 GMN Well Installation Activities

The GMN is based on using three new monitoring wells (one well up gradient and two wells down gradient) adjacent to each pair of evaporation ponds and associated land treatment unit. The GMN installation will be comprised of installation of six new proposed monitoring wells. The steps associated with this activity are described below.

<u>New Monitoring Well Installation</u>

1. Well installation permits will be obtained from San Bernardino County Environmental Health Department;

2. Well locations will be cleared for utilities, by notifying Underground Service Alert and having a third party underground utility locator perform a utility clearance geophysical survey;

3. Wells will be installed using air/mud rotary drilling methods in accordance with all local and state regulations and requirements. The pilot boring will be advanced to a minimum of 50 feet bgs and a maximum of 100 feet bgs using the air rotary drilling method. During advancement of the borehole using air rotary methods, the drilling shall be logged by an on-site registered geologist or registered civil engineer. If a potential perched zone is identified, drilling will be suspended and the following activities performed: a) the borehole will be cleaned of cuttings; b) the drill rod will be removed from the borehole; c) the borehole will be allowed to sit for between 30 (gravel sand lithology) and 60 (silt to clay lithology) minutes to allow free water to enter the borehole, if present; and d) a water level sounder will be lowered into the borehole to check for free water. Air rotary drilling methods will be halted if water is required to aid in cleaning the borehole;

4. After air rotary drilling is halted, mud rotary drilling methods will be utilized to complete the advancement of the pilot boring to depths of approximately 60 feet below the top of the regional water table;

5. The monitoring wells will be constructed with 4-inch Schedule 80 PVC or low carbon steel well casing. The screen interval for each monitoring well will be sufficient to allow for monitoring of the regional groundwater under both static and dynamic (pumping) conditions. The screen opening (slot size) will be based on the screen interval lithology. The monitoring well will be centered in the borehole using centralizers placed every 40 feet along the well casing and screen interval;

6. Filter pack material will be placed in the annular space between the well screen and borehole using a tremie pipe. As with the screen opening, the filter pack material will be dependant on the lithology and the chosen screen opening. The filter pack will extend a minimum of 5 feet above the screen interval;

7. An annular seal, consisting of a ten sack sand/cement grout, will be placed between the well casing and the borehole to within 5 feet of the surface using a tremie pipe;

8. The monitoring well surface completion will consist of a traffic-rated, flush-mount well box set into a concrete cap that extends to the top of the grout seal; and,

9. Following the surface completion, the monitoring well will be developed to remove drilling mud from the borehole, filter pack and surrounding formation, remove fines from the filter pack, and to ensure proper groundwater connection to the surrounding formation.

After the monitoring well has been developed, a dedicated pump will be placed in the well. The pump will be set so that the pump intake is between 5 and 6 feet below the top of the water table. Should production well pumping produce a cone of depression extending to the monitoring wells, once the depressed water table stabilizes, the pumps in monitoring well that are within the cone of depression will be lowered to 5 to 6 feet below the depressed water table.

4.1.1.4 Monitoring Well Sampling

Groundwater samples will be analyzed to establish background water quality concentrations. Following this, groundwater samples will be analyzed on a quarterly basis. All monitoring wells will be sampled using dedicated pumps and low-flow sampling techniques.

4.1.1.5 Background Groundwater Monitoring

Initial background sampling will be performed that will consist of four quarterly groundwater sampling and analysis. All four samples will be collected prior to the discharge of wastes into the evaporation ponds and LTU. This data will represent existing or static (non-pumping) hydrogeologic conditions. When the facility becomes operational and groundwater is pumped to provide process water, the hydrogeologic conditions beneath the Site will become dynamic and the condition will remain dynamic for the life of the facility. For this reason, groundwater samples from the first quarterly sampling under the pumping conditions will be evaluated and with prior RWQCB concurrence, may also be considered background. Background groundwater data will be evaluated statistically using the methods described in Section 4.1.3.

During project site construction activities, groundwater will be used for dust suppression and other construction uses. When this water use occurs, construction groundwater monitoring and sampling will be performed. Depending on the projected time-frame for construction water use, it is anticipated that up to three additional rounds of groundwater sampling will be performed. The first construction sampling would occur approximately one week after groundwater pumping

commenced, the second round of sampling would be near the middle of the groundwater pumping and the final sampling event would occur approximately two days prior to pumping ceasing.

4.1.1.6 Routine Groundwater Monitoring

Groundwater will be sampled and analyzed from each monitoring well on a quarterly basis. After water levels are measured in each well, each well will be purged and sampled using low-flow groundwater sampling techniques. Groundwater samples from the first, second and third quarterly events will be analyzed. The fourth quarter monitoring event is also referred to as the "Annual" monitoring event and groundwater from this event will be analyzed.

4.1.2 Land Treatment Unit Soil Sampling

Representative soil samples will be collected for every batch of HTF contaminated soil undergoing treatment in the LTU and composited according to methods specified in EPA SW-846. Results of the samples will be reported semiannually.

Annually, soil samples will be collected at a depth of 1 foot below the compacted soil base at the LTUs (approximately 3 feet below ground level) and analyzed for HTF using modified EPA Method 8015, or EPA Method 1625B, as required, to verify that HTF is not migrating below the 5-foot treatment zone underlying the unit. If results of sample analysis indicate HTF concentrations greater than the laboratory detection limit, additional soil samples will be collected at successively deeper depths (at 1-foot intervals) until laboratory analytical results show that concentrations are less than the laboratory detection limit. If HTF concentrations above the laboratory detection limit are found below the 5-foot treatment zone, the Facility will implement the Contingency Plan and submit a letter to the RWQCB highlighting the "evidence of a release." Results of sample analysis will be reported annually.

Soil samples will be analyzed for the Land Treatment Unit constituents of concern as outlined in the ROWD.

4.1.3 Data Evaluation

Using approved statistical or non-statistical data analysis methods approved in Board Order No. 6-98-74, the Project will, for each monitoring event, compare the concentration of each monitoring parameter with its respective concentration limit to determine if there has been a release from the evaporation ponds. Monitoring will be completed as follows:

- Consistent with the CCR Title 22, Section 66264.97(e), the groundwater monitoring report, described in Section 5 of this DMP, will include a graphical and statistical trend analysis of the groundwater monitoring data.

4.2 Monitoring Constituents of Concern

A. Wastewater Monitoring

Composite effluent grab samples shall be collected and analyzed for the following parameters:

Parameter	Units
Calcium	mg/l
Magnesium	mg/l
Sodium	mg/l
Potassium	mg/l
Selenium	mg/l
Chromium	mg/l
Hydroxide	mg/l

Carbonate	mg/l
Bicarbonate	mg/l
Sulfate	mg/l
Chloride	mg/l
Fluoride	mg/l
Nitrate	mg/l
Silica	mg/l
Temperature	°F or °C
pH	pH units

B. Sludge Monitoring

Representative grab samples of the bottom sludge in each pond, if present, shall be collected, composited, and analyzed for the following constituents:

Parameter	Units
Title 22 Metals	mg/l
Biphenyl, diphenyl oxide	mg/l

C. Detection Monitoring

Ground Water Monitoring

Water samples in Monitoring Wells MW-1A, MW-2A, MW-3A, MW-1B, MW-2B, and MW-2C shall be collected and analyzed for the following parameters:

Parameter	Units
Calcium	mg/l
Magnesium	mg/l
Sodium	mg/l
Potassium	mg/l
Selenium	mg/l
Chromium	mg/l
Hydroxide	mg/l
Carbonate	mg/l
Bicarbonate	mg/l
Sulfate	mg/l
Chloride	mg/l
Fluoride	mg/l
Nitrate	mg/l
Silica	mg/l
Temperature	°F or °C
pH	pH units

Heat Transfer Fluid (HTF) Contaminated Soil – Landfarm

Soil samples shall be collected at a depth of one foot below native ground surface grade and analyzed for the monitoring parameters listed below: If results of sample analysis indicated that monitoring parameter concentrations greater than background, repeat samples collection shall be made at one foot intervals until laboratory analytical results show that concentrations are less than background.

Monitoring Parameter	Units
Biphenyl, diphenyl oxide (Therminol)	mg/l
Nitrogen	mg/l
Phosphate	mg/l
Other nutrients added to HTF contaminate Soil (if used)	mg/l

5.0 Reporting

The "General Provisions for Monitoring and Reporting," dated September 1, 1994, will be followed for all submittals to the RWQCB.

5.1 Record Keeping and Reporting Requirements

5.1.1 Scheduled Reports Filed with the RWQCB

A detection monitoring report will be submitted on a quarterly basis to the RWQCB with reports submitted on April 30th, July 30th, October 31st and January 31st of each year. Each report will include the following information:

- Results of sampling analysis, including statistical limits for each monitoring point;
- A description and graphical presentation of the flow rate and direction of groundwater flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report;
- A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points;
- An evaluation of the effectiveness of the leakage monitoring and control facilities, and of the runoff/run-on control facilities; and
- A letter transmitting the essential points in each report, including a discussion of any permit excursions found since the last report was submitted and actions taken or planned for correcting those excursions. If a detailed time schedule for correcting permit excursions has been previously submitted, a reference to the correspondence transmitting this schedule will be satisfactory. If no excursions have occurred since the last submittal, this will be stated in the letter of transmittal.

5.1.2 Unscheduled Reports Filed with the Regional Board

Incidents that result in implementation of the Corrective Action Plan (CAP) will be reported to the appropriate agencies. If such incidents threaten to result in an off-site discharge or may present a potential threat to human health or the environment, immediate verbal notification shall be made as specified in the CAP. A record of such verbal communications will be maintained in the operating record. As specified by State and Federal regulations, a written report describing the incident and the implementation of the CAP will be prepared and submitted to LEA and RWQCB within 15 days. Additional reporting may be required under the Waste Discharge Requirements and Monitoring and Reporting Program established by the RWQCB. Further discharge situations are outlined in the following sections.

5.1.2.1 Physical or Statistically Significant Evidence of a Release from the Impoundment

The Facility Manager shall immediately notify the RWQCB verbally whenever a determination is made that there is a physical or statistically significant evidence of a release from the evaporation ponds. A written notification, via certified mail, shall be undertaken within seven days of such determination. The notification shall include the following information:

- Evaporation pond that may have released/be releasing;
- General information including the date, time, location and cause of the release;
- An estimate of the flow rate and volume of the waste involved;
- A procedure for collecting samples and description of laboratory tests to be conducted;
- Identification of any water bearing media affected or threatened; and
- A summary of proposed corrective actions.

In addition, for a statistically significant evidence of a release, monitoring parameters and/or constituents of concern that have indicated statistically significant evidence of a release from the evaporation pond must be outlined. For physical evidence of a release, physical factors that indicate physical evidence of a release must be described.

Upon notification, the MSP may initiate verification procedures or demonstrate that source other than the evaporation ponds, caused the evidence of a release. Written notification to the RWQCB will be undertaken with seven days of the initial notification. A supporting technical report must be provided to the RWQCB within 90 days demonstrating the different source of the discharge.

5.1.2.2 Exceeding the Action Leakage Rate

Exceeding the Action Leakage Rate (ALR) contained in Section II.C.1. (Board Order No. 6-98-74) is an Adverse Condition. The ALR is the allowable leakage from the primary liner system. According to Title 40, Section 264.222 of the Code of Federal Regulations, the ALR is defined as the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot. The ALR must also include an adequate safety margin to allow for variability in the containment system design (e.g. liner and collection pipe slope, interstitial fill hydraulic conductivity, thickness of drainage material). The final ALR will be determined for the evaporation ponds upon approval.

If the ALR is exceeded, the RWQCB will be notified within 24 hours of the determination. The verbal notification shall be followed by a written notification via certified mail, within seven days of such determination.

This written notification shall be followed by a technical report via certified mail within thirty days of such determination. The technical report shall describe the actions taken to address the adverse condition, and shall describe any proposed future actions to abate the adverse condition.

Evaluation Monitoring

Within 90 days of determining a release, an amended Report of Waste Discharge proposing an evaluation monitoring program will be submitted to the RWQCB.

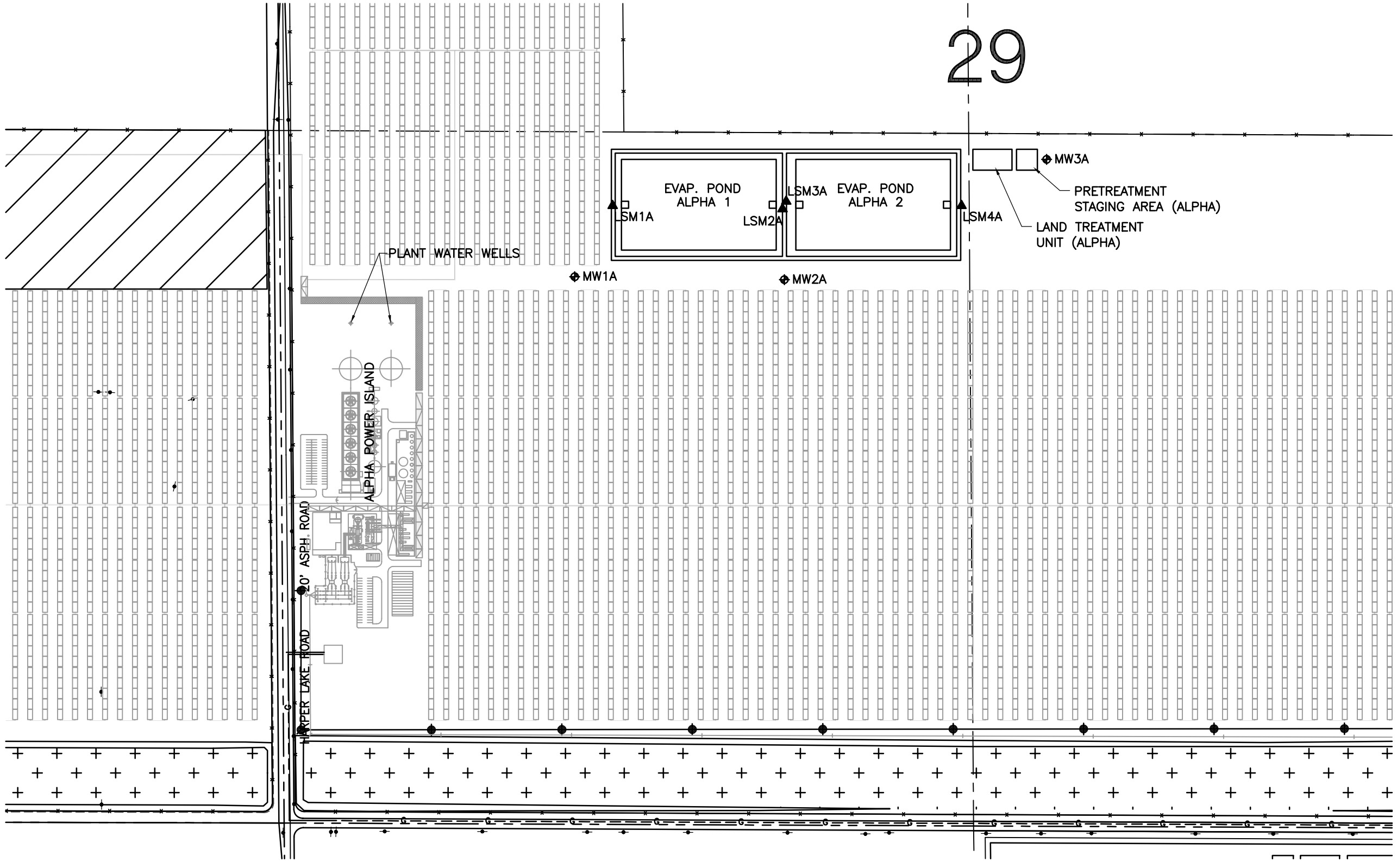
Preliminary Engineering Feasibility Study Report

Within 180 days of discovering the release, a Preliminary Engineering Feasibility Study for corrective action will be submitted to the RWQCB.

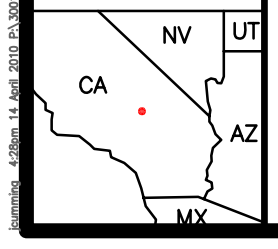
5.1.2.3 HTF Spill or Leak Reporting

HTF spill or leak reporting requirements for the Facility will be as follows:

- Facility personnel will be required to submit an internal report detailing a HTF spill, regardless of size.
- A release of 20 gallons is reportable to the CEC.
- A release of 25 gallons is reportable to the RWQCB.
- A release of 42 gallons is a reportable quantity (RQ) to the National Response Center.



MAP LOCATION



LEGEND

MW1A ◈ MONITORING WELL LOCATION AND DESIGNATION

LSM1A ▲ LYSIMETER LOCATION AND DESIGNATION

□ LEAKAGE COLLECTION SUMP LOCATION

MOJAVE SOLAR PROJECT

SURFACE IMPOUNDMENT / LAND TREATMENT MONITORING LOCATIONS ALPHA FIELD

0 200' 400' 600'

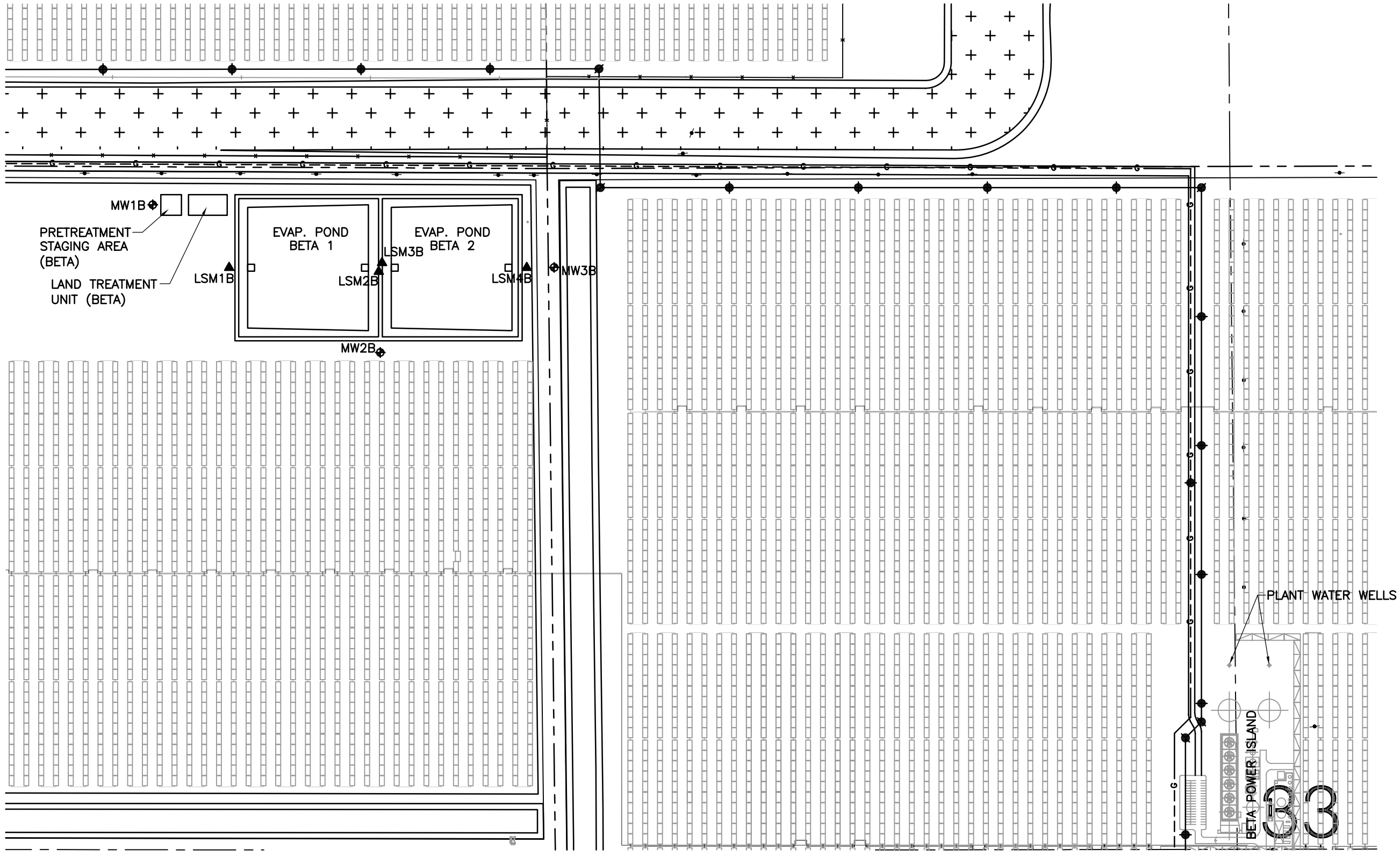
SCALE: 1" = 400'

MOJAVE SOLAR LLC

Merrell-Johnson Engineering, Inc.

PROJECT:

DATE: 04/14/10



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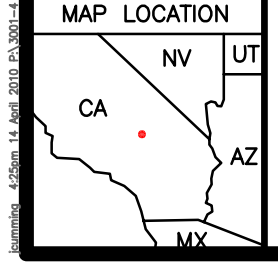

LEGEND

MW1B ◆ MONITORING WELL LOCATION AND DESIGNATION

LSM1B ▲ LYSIMETER LOCATION AND DESIGNATION

□ LEAKAGE COLLECTION SUMP LOCATION

MOJAVE SOLAR PROJECT

SURFACE IMPOUNDMENT / LAND TREATMENT MONITORING LOCATIONS BETA FIELD

0 200' 400' 600'

SCALE: 1" = 400'

MOJAVE SOLAR LLC

Merrell-Johnson Engineering, Inc.

PROJECT:

DATE: 04/14/10

Preliminary Evaporation Pond Closure Plan

Mojave Solar Project

Harper Dry Lake

San Bernardino County, California

Prepared for:

Mojave Solar LLC

1.0 Introduction

This document presents a Preliminary Closure Plan for the evaporation ponds for the proposed Mojave Solar Project (herein "Project"), located near Harper Dry Lake in San Bernardino County, California. Mojave Solar, LLC, a Delaware limited liability company (herein "Mojave Solar"), is proposing to construct, own and operate the Project. The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site. Mojave Solar proposes to use four evaporation ponds and two adjacent land treatment units (LTUs) as part of the Project. The evaporation ponds are the facilities that will receive and store wastewater from operations at the Project. This Closure Plan is specific to the surface impoundments (i.e. evaporation ponds) associated with the Project.

A notice to terminate will be sent to the Regional Water Quality Control Board (RWQCB) 60 days prior to closing the evaporation ponds. The notice will include the final closure activities. The evaporation ponds will be closed using the schedule of actions described in this plan.

1.1 Purpose

This plan is intended to fulfill the requirements of the Report of Waste Discharge application for the Project, in accordance with the California Integrated Waste Management Board (CIWMB) Title 27 Regulations, Division 2, Subdivision 1, Chapter 4, Subchapter 4, Section 21769, State Water Resources Control Board Closure and Post-Closure Plan Requirements.

The procedures described for closure are designed to ensure public health and safety, environmental protection, and compliance with applicable regulations. It is assumed that closure would begin 30 years after the commercial operation date of the solar plant. It is also assumed that closure of the facility would occur in a phased sequential manner. That is, work would start at the first pond, followed by similar work at the second, third, and fourth ponds. A Certification of Closure will be submitted for approval to the RWQCB to ensure the site has been closed in accordance with the approved final Closure Plan.

1.2 Objectives

The project goals for closure of the evaporation ponds are as follows:

- Remove all improvements within 3 feet of final grade; and
- Restore the lines and grades in the disturbed area of the Project Site to match the natural gradients.

The proposed implementation strategy to achieve the goals for closure of these facilities is as follows:

- Use industry standard demolition means and methods to decrease personnel and environmental safety exposures by minimizing time and keeping personnel from close proximity to actual demolition activities to the extent practical;
- Plan each component of the closure such that personnel and environmental safety are maintained while efficiently executing the work;
- The final closure plan will specify in detail how each major effort will be performed and integrated to achieve the Project goals;
- Train field personnel for decommissioning actions to be taken in proportion to the personnel, project or environmental risk for those actions;
- Evaluate the execution of the decommissioning and restoration plan through project oversight and quality assurance; and
- Document implementation of the plan and compliance with environmental requirements.

2.0 Site Background

The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site in San Bernardino County, California. The Project will use well-established parabolic trough solar thermal technology to produce electrical power using steam turbine generators fed from solar steam generators (SSGs). The energy for steam generation in the SSGs is from heat transfer fluid heated by solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun.

The Project proposes to use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing will be supplied from on-site groundwater wells. On-site wells will also be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). A packaged water treatment system will be used to treat the water for employee use to meet potable standards. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater.

The Project cooling water blowdown will be piped to lined, on-site evaporation ponds. The ponds will be sized to retain all solids generated during the life of the plant. However, if required for maintenance, dewatered residues from the ponds will be sent to an appropriate off-site landfill as non-hazardous waste.

2.1 Evaporation Ponds

The waste storage units include four evaporation ponds. The four 5-acre (total combined pond top area of 20 acres) evaporation ponds have an average proposed design depth of 8 feet which incorporates 6 feet of depth for operations and storage of residual solids and 2 feet of freeboard.

The containment design for the evaporation ponds, from the surface of the evaporation ponds downwards, consists of the following:

- A primary 60 mil high density polyethylene (HDPE) liner;
- An interstitial leachate collection and removal system (LCRS) comprising a geomembrane geonet and collection piping;
- A secondary 40 mil HDPE liner;
- A base layer consisting of 2 feet of on-site screened material or a 6" sand layer will underlie the liners to prevent punctures;
- A leak detection system consisting of continuous carrier pipes installed at the sides and low point of each pond at a depth of approximately 5 feet below the secondary liner. A neutron probe will be pulled through the pipes to assess the moisture content of the soil. The background moisture content and subsequent action level that will indicate a leak will be established after the evaporation ponds have been constructed, but prior to any liquids being placed in the ponds; and
- A groundwater monitoring network (GMN), consisting of three monitoring wells located immediately adjacent to each pair of evaporation ponds and adjoining LTU,
- Additional wells located near the facility boundaries will be used to monitor the regional groundwater aquifer, which is the first water encountered under the Project Site.

3.0 Closure Strategy

The closure for the evaporation ponds consists of the following major elements:

- Documenting and establishing health and safety procedures;
- Prior to facility installation, collection of samples from the directly-underlying native materials for laboratory analysis;

- Conducting pre-closure activities, such as final closure and restoration planning, that addresses the "as-found" site conditions at the start of the project;
- Demolishing the above-ground structures (dismantling and removing of improvements and materials) in a phased approach while still using some items until the end of the project;
- Demolishing and removing of below-ground facilities as needed to meet the closure goals;
- Cleaning up of soils, if needed, with special attention applied to the evaporation ponds to ensure that clean closure is achieved;
- Disposing of materials in appropriate facilities for treatment/disposal or recycling; and
- Re-contouring lines and grades to match the natural gradient and function.

Although various types of closure/demolition equipment will be utilized to dismantle each type of facility, dismantling will proceed according to the following general staging process. The first stage consists of demolition of above-ground structures and below-ground facilities. The second stage consists of concrete removal as needed to ensure that no concrete materials remain within 3 feet of final grade. The third stage consists of removal of materials to off-site recycling, remediation, or waste facilities. The fourth stage is excavation and removal of soils, and final site contouring to return the disturbed area of the site to near original conditions while disturbing as little of the other site areas as is practical.

3.1 Health and Safety Procedures

The health and safety procedures to be established prior to decommissioning are listed below:

- General safety and hazard responsibilities;
- An effective hazard communications program;
- Task hazard analysis and control;
- Personal protection equipment requirements;
- Occupational and environmental monitoring requirements;
- Medical and other emergency procedures;
- Operational issues;
- Personnel training;
- Incident reporting; and
- Self audit and compliance procedures.

3.2 Evaporation Ponds Closure Schedule of Actions

3.2.1 Baseline Sampling

Baseline sampling will be conducted on the base layer of the evaporation pond liner system prior to the placement of the 40 mil HDPE geomembrane. Samples will be collected from each pond footprint on 100-foot by 100-foot grid spacing. Laboratory analysis will include Title 22 metals, biphenyl, diphenyl oxide, and general chemistry based upon the project constituents of concern for the surface impoundments.

3.2.2 Wastewater Disposal/Use

Wastewater will be consolidated into one evaporation pond or until that one pond is full (i.e., minimum 2 feet of freeboard as required). Wastewater remaining in the other evaporation ponds will be allowed to evaporate to atmosphere. As long as liquids remain in the evaporation ponds, the monitoring and reporting requirements included in the licensing requirements will be followed. Wastewater that is not evaporated will be characterized and profiled prior to disposal.

The characterized wastewater will be loaded in appropriate containers, handled, and transported by a licensed waste hauler to an approved disposal facility following all federal, state, and local requirements.

3.2.3 Solids/Residue Disposal

Three residue samples will be collected from each of the evaporation ponds to characterize and create a waste profile prior to disposal. Once characterized, the residue will be handled by a licensed waste hauler. The waste hauler will load the waste in the appropriate containers, transport the waste, and dispose of the waste at an approved disposal facility following all federal, state, and local requirements.

3.2.4 HDPE Liners and Monitoring Equipment

The HDPE liners, sand layers, and monitoring equipment will be removed at each evaporation pond. Wherever feasible, materials will be sent for recycling. When materials are identified as unrecyclable, they will be disposed of at approved disposal facilities.

3.2.5 Base Layer

Confirmation sampling will be conducted on the base layer of the evaporation pond liner system after the removal of the 40 mil HDPE geomembrane. Samples will be collected from each of the former pond footprints on 100-foot by 100-foot grid spacing. Laboratory analysis will include Title 22 metals, biphenyl, diphenyl oxide, and general chemistry.

3.2.6 Site Restoration

The evaporation ponds will be backfilled with native soil to grade. The berm surrounding each evaporation pond and the washed granular material will be the primary backfill material. All non-native materials from the evaporation ponds will be removed from the property and disposed of or recycled in accordance with all federal, state, and local regulations.

4.0 Additional Information

Additional Plan information, as required per the CIWMB Title 27, Subchapter 4, Section 21769, is detailed in the following sections.

4.1 Contingency in the Event of a Release

For unauthorized discharges of hazardous material, or for public health or environmental emergencies caused by a discharge or threatened waste discharge, local emergency responders and the Office of Emergency Services will be notified. For all other unauthorized discharges or threatened discharges that are not an immediate threat to public health or the environment, notification will be made to the RWQCB by telephone within 24 hours of an adverse condition. An adverse condition includes a discharge or threatened discharge, such as:

- Release of wastewater outside a lined area;
- Suspected or actual evaporation pond liner leak; and
- Violation of discharge specifications.

Written notification to the RWQCB will occur within seven business days of an unauthorized discharge. The RWQCB Lahontan Region's guidance document titled Reporting Unauthorized Waste Discharges (Spills and Leaks) dated October 23, 2002 will be followed.

An evaluation monitoring program may be required, pursuant to Section 20425 of Title 27 to evaluate evidence of a release if detection monitoring and/or verification procedures indicate evidence of a release. A corrective action plan to remediate released wastes from the evaporation ponds has been prepared pursuant to Section 20430 of Title 27 and is included as Appendix I of the ROWD.

Wastewater Release

Leaks and/or spills may occur during closure activities or unexpected system failures. In the event of a release of wastewater, the magnitude of the leak will be evaluated and reported to the RWQCB. The defective equipment will be isolated and repaired. Corrective measures will be implemented to repair leaks and preventive measures will be followed to minimize the likelihood of future releases. Preventive measures include a Drainage, Erosion and Sediment Control Plan (DESCP), Storm Water Pollution Prevention Plan inspections, system or equipment tests, and predictive and preventive equipment maintenance.

The DESCP addresses the requirements of Title 27 California Code of Regulations Section 21600(b)(8)(F) and will describe the management and control of storm water runoff at the site and will specify site-specific best management practices for erosion and sediment control.

Liner Leak

In the event there is a liner leak, the magnitude of the leak will be evaluated and the facility manager will immediately notify the RWQCB verbally. A written notification, via certified mail, will be undertaken within seven days of the verbal notification. The notification will include the following:

- Evaporation pond that may have released/be releasing;
- General information including the date, time, location and cause of the release;
- An estimate of the flow rate and volume of the waste involved;
- A procedure for collecting samples and description of laboratory tests to be conducted;
- Identification of any water bearing media affected or threatened; and
- A summary of proposed corrective actions.

The evaporation pond with a liner leak will be taken out of service so repairs can be made. The remaining evaporation pond will be used to keep the Project operational while repairs are completed.

As a contingency during emergency pond repair, the use of cooling tower blowdown for dust suppression may be required. This is intended for short term use only, with prior notifications to RWQCB to be used in conjunction with a liner repair schedule. A request may be submitted to the RWQCB to use cooling tower blowdown for dust suppression in the event of extreme drought conditions to reduce the use of well water on a temporary basis with prior approval by the RWQCB.

4.2 Financial Responsibility

The waste management units (i.e., four evaporation ponds) are considered Class II. At Class II units for which the CIWMB does not require a closure fund, the RWQCB requires the establishment of an irrevocable closure fund (or provide other means) pursuant to the CIWMB-promulgated sections of Title 27, Chapter 6 but with the RWQCB named as beneficiary, to ensure closure of each classified unit in accordance with an approved plan meeting all applicable State Water Resources Control Board-promulgated requirements of Title 27, Chapter 6, Subchapter 2.

4.3 Cost Analysis

A detailed cost estimate to close the evaporation ponds will be determined prior to the introduction of HTF to the project. Unit costs will be based on RS Means Building Construction Cost Data 2001 Western Version and adjusted by ENR Historical Cost Index to obtain present value unit costs. A letter of credit will be used to demonstrate financial assurance for the closure costs.

4.4 Closure Schedule

A closure schedule will be determined at a future date under separate cover of the Final Closure Plan.

4.5 Final Treatment Procedures

All waste and contaminated materials will be removed off site and all facilities will be remediated in accordance with Section 3.2 detailed previously. Additional post closure monitoring will be satisfied with the requirements identified in the Post Closure Maintenance Plan.

4.6 Land Use of Closed Unit

The land use of the closed unit after closure has not been determined. The facilities will be left as vacant, nonirrigated open land that has been remediated to the accepted conditions. Any future improvements will be permitted, if required under separate cover.