

**San Joaquin Solar (08-AFC-12)
Data Request Workshop Action Items Response**

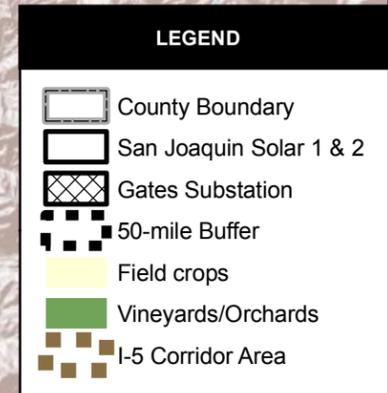
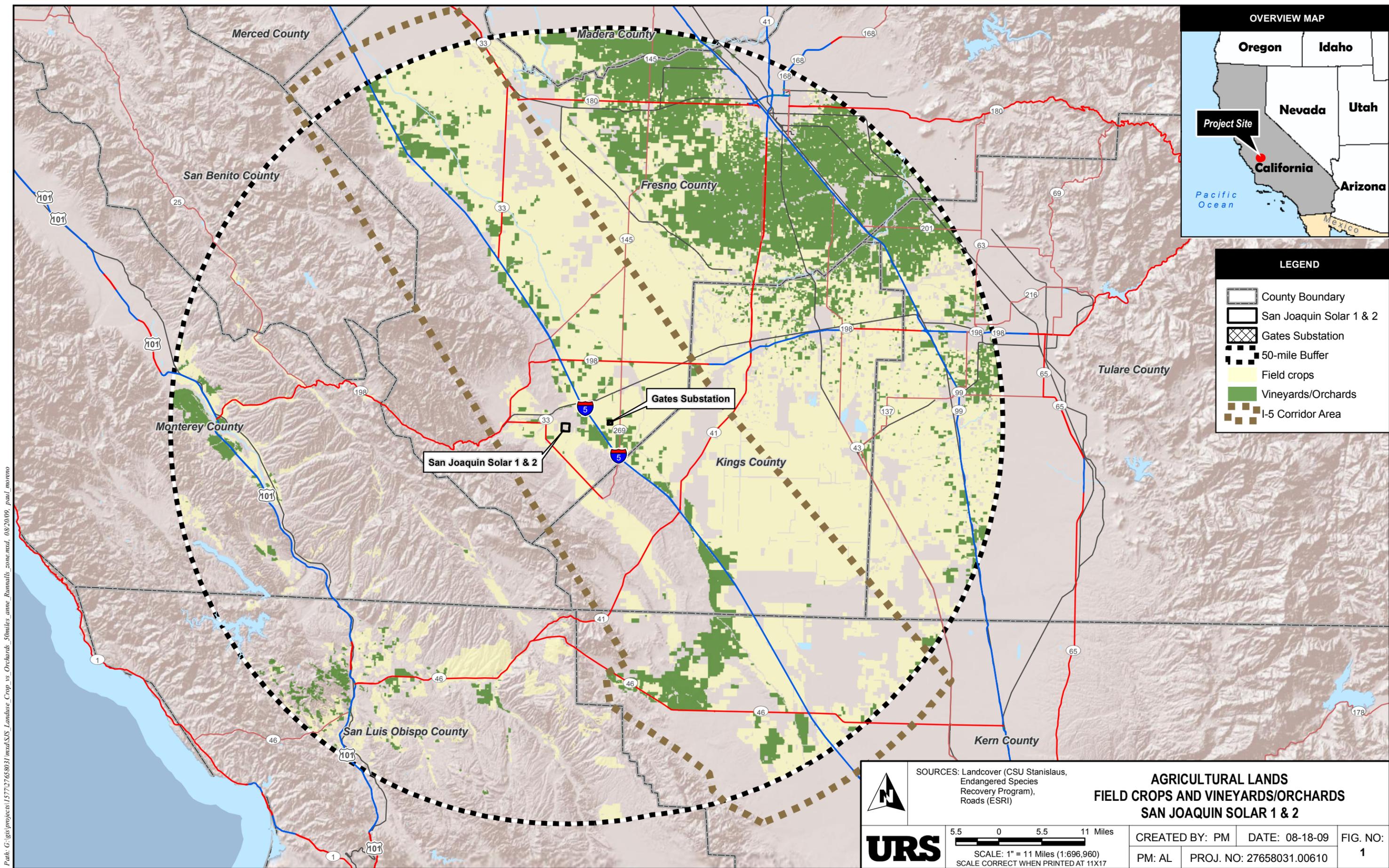
| Discipline Area | Action Item | Status |
|-----------------|---|---|
| Air Quality | Provide ERC discussion to SJVAPCD and send a copy to CEC staff. | ERC package was submitted to SJVAPCD on Aug 21, 2009. |
| Air Quality | Prepare a figure (land use map) with crop distribution or type to confirm the delivery distance and provide to CEC. | The attached Figure 1 presents the acreage of vineyards and orchards within a 50 mile radius of the Project in green. While the majority of the biomass fuel sources are located in the eastern portion of this area, there are over 135,000 acres of orchards and vineyards along the I-5 corridor within 50 miles of the plant which potentially produce an average of five million bone dry tons of biomass waste annually. This amount is more than ten times the total fuel requirements of SJS 1&2. This supports our expectation that the average one-way delivery distance of agricultural biomass will be 35 miles. |
| Air Quality | Provide an analysis of commissioning overlap with operations. | Modeling is in process; expect to submit results by Aug 25, 2009. |
| Air Quality | Provide the latest WSAC TDS, cycles and associated PM emissions. | The TDS content of the make-up water for the WSAC presented in the AFC was determined from an onsite well. Grey water from the Coalinga waste water treatment center will also be used for make-up water in the WSAC. Recent data have been obtained that identify that the resulting mixed stream from these water sources, after being treated onsite, will contain a TDS of as high as 1850 ppm. The SJS1&2 water treatment facility will remove most of the hardness from the water and ensure a TDS content of no more than 1850 ppm. The particulate matter emissions from the WSACs have been revised to incorporate the maximum TDS level of 1850 ppm expected in the make-up water, 5 cycles of concentration, a slightly higher daily maximum circulating water rate, and a reduced drift rate due to a stricter eliminator control of 0.0002%. Particulate emissions from all WSACs associated with SJS1&2 were estimated to be 15.9 lb/day and 2.5 ton/year. The attached Table 1 presents these revised emissions and the data integral to these calculations. |

| Discipline Area | Action Item | Status |
|------------------|---|---|
| Haz Mat handling | Identify the storage location and manner for the HTF impacted soil. | The HTF impacted soil will be temporarily stored within a laydown area shown on the revised Figure 5.2-2 in Detail A (previously provided in the Response to Data Request and also attached). The temporary storage area will include a concrete slab with eight foot concrete walls on three sides. Impacted soil will be stored in this containment area until it is transported to an approved disposal facility. |
| Land Use | Provide schedule and documentation of the Williamson Act cancellation process. | Complete. |
| Public health | Provide copies of back up (source) documents for TAC emission factors. | The combustor engineers, EPI, calculated the hydrogen chloride and ammonia emissions from the combustors using a proprietary model. This model was developed using control efficiencies observed in practice, control efficiencies provided by equipment vendors, and source test data. The ammonia emissions are primarily based on data from the SCR vendor performance information. The hydrogen chloride emissions incorporate emission reductions from the dry scrubber, baghouse, SCR system, and wet scrubber. Mr. Mike Murphy of EPI provided the hydrogen chloride and ammonia emission data and would be happy to discuss his data. He can be reached at 208-765-1611 or mimurphy@energyproducts.com . |
| Public health | Research if dioxins and furans in the fly ash from wood burners are significant or even present. | Expect to submit by Aug 25, 2009. |
| Public health | Research whether pesticides on agricultural wood contribute to the generation of dioxins when the wood is combusted. | Expect to submit by Aug 25, 2009. |
| Public health | Provide contact name at SJVAPCD for TAC Emission factors, Leland's contact info. | Complete. |
| Public health | Provide emission factor spreadsheets from Leland. | Complete. |
| Public health | Provide a qualitative analysis of diesel particulate matter in the I-5 corridor. URS will obtain the paper Dr Greenberg provided and see if it is relevant. | Expect to submit by Aug 25, 2009. |

| Discipline Area | Action Item | Status |
|------------------------|---|--|
| Public health | Coordinate with CARB or SJVAPCD to document evidence of absence of dioxins and furan in ash. | Expect to submit by Aug 25, 2009. |
| Visual | Prepare and analyze a new KOP the southern route transmission line crossing I-5. A new visual simulation will not be necessary. | Expect to submit by Aug 25, 2009. |
| Visual | Characterize the biomass handling for visual resources. | Attached is Table 5.13-4 Revised, Major Component Design Characteristics. |
| Visual | Identify the purpose of the preserve located north of Jayne Avenue (i.e. public use) for glint/glare consideration. | The reserve area to the north of the SJS 1&2 site (across Jayne Avenue) is part of the Guiharral Hills Unit of the Pleasant Valley Ecological Reserve. Some Ecological Reserves offer tours, hiking, informational kiosks, etc., but this one has no such services listed on the CDFG website. It is only identified as a wildlife viewing area and deer hunting area on the CDFG website. Currently the site consists of non-native grassland and atriplex shrubland that is similar to the adjacent habitat. |
| Water Resources | Provide copies of SWPPP, construction SWPPP, and DESP to CEC. | The requested documents are attached. |
| Water Resources | Update (with more detail) the existing water use table to include daily max and average water use for operations and construction (including hydrostatic testing etc.). | Attached is Table 5.5-6 Revised, Water Usage Rates |
| Water Resources | Provide further information on water supply: reliability. | Expect to submit by Aug 25 |
| Water Resources | Provide the CEC with contact information for RWQCB. | Contact Information for Central Valley Regional Water Quality Control Board: Lonnie Wass. Lonnie's phone number is 559-445-5116, and email is lwass@waterboards.ca.gov. Contact for lined evaporation ponds is Shelton Gray. |
| Waste/Worker Safety | Provide further characterization of the site (limited Phase II Site Assessment) | Coordination has begun with DTSC. A conference call between the applicant, DTCS and CEC was conducted on Aug 20, 2009. |

| Discipline Area | Action Item | Status |
|------------------------|---|---|
| Worker Safety | Confirm a second access for emergency vehicles. | SJS will have two access gates on Jayne Avenue as mentioned in the AFC Sections 3.6.1.2, 5.13.2.2, and 5.17.1. Both gates will be used for entry and egress during construction. During plant operation, the gate located on Jayne Avenue at the northeastern corner will be the main entry gate, but the northwestern gate will be available for service vehicles. |

Attachments



**AGRICULTURAL LANDS
FIELD CROPS AND VINEYARDS/ORCHARDS
SAN JOAQUIN SOLAR 1 & 2**

SOURCES: Landcover (CSU Stanislaus, Endangered Species Recovery Program), Roads (ESRI)

CREATED BY: PM DATE: 08-18-09 FIG. NO: 1

PM: AL PROJ. NO: 27658031.00610

UR S

5.5 0 5.5 11 Miles

SCALE: 1" = 11 Miles (1:696,960)
SCALE CORRECT WHEN PRINTED AT 11X17

Path: G:\gs\projects\157727658031\mxd\SIS_Landuse_Crop_vs_Orchards_50miles_anno_Runnals_zone.mxd, 08/20/09, paul_morano

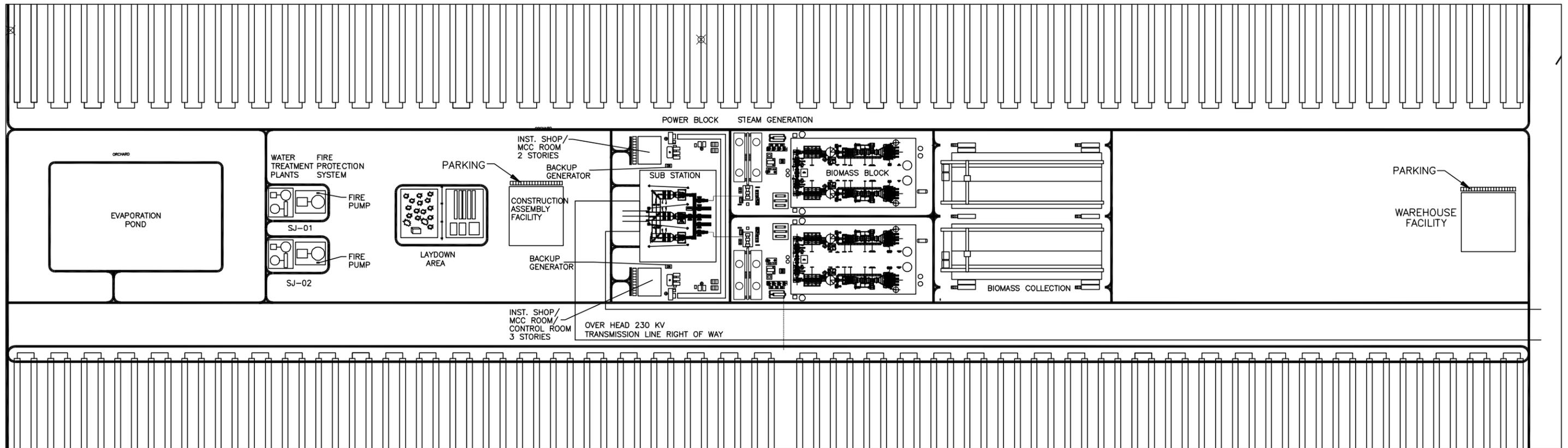
Table 1 WSAC Drift Calculation

Total Project SJS 1&2

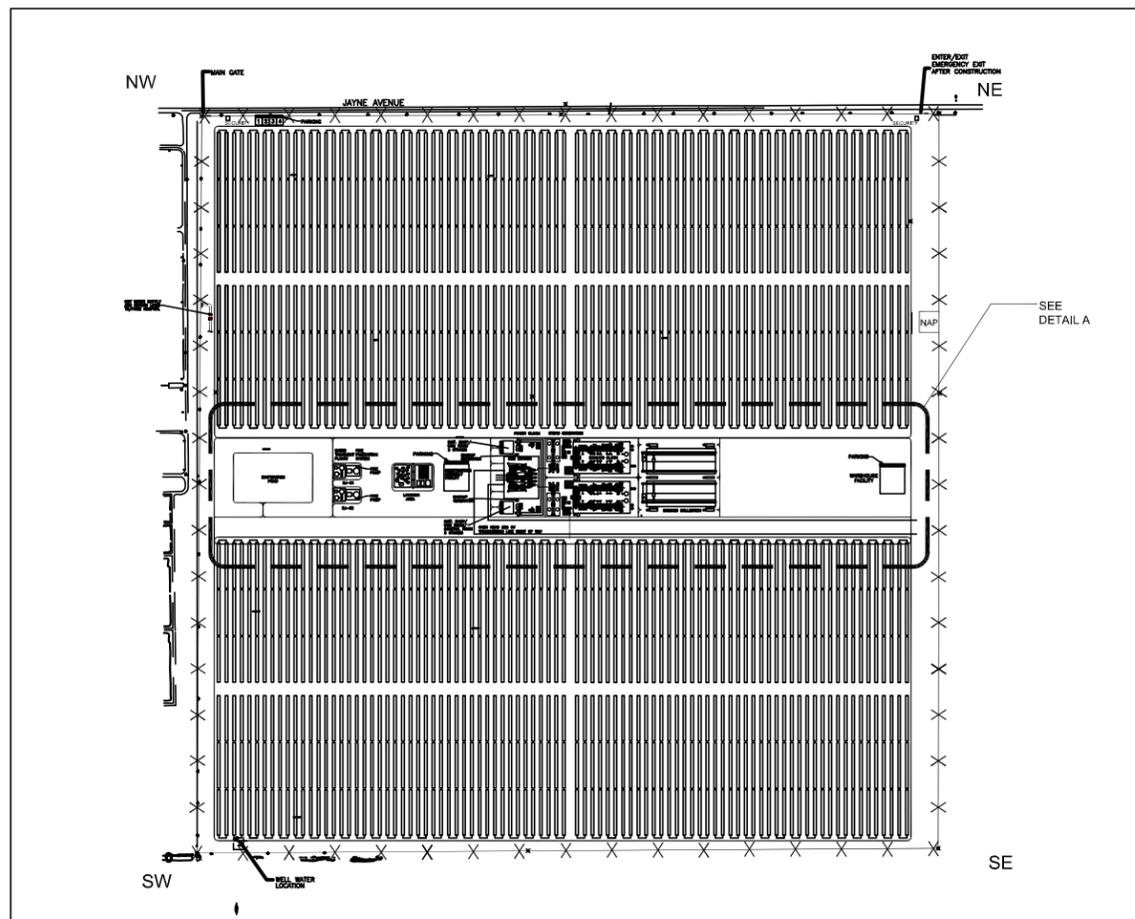
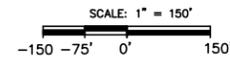
| | | | |
|--|----------|--------|-----------------|
| Annual average design circulating water rate | | 61,000 | gallons/min |
| Maximum daily design circulating water rate | | 71,680 | gallons/min |
| Cycles of concentration | | 5 | |
| TDS | | 1850 | mg/liter |
| | | 15.44 | lb/1000 gallons |
| Drift Eliminator Control | 0.000002 | = | 0.0002 % |
| Operating hours per year | | 8760 | hr/yr |
| number of WSACs | | 2 | |
| Number of cells in each WSAC | | 4 | |

| | Total SJS 1&2 | Each WSAC | each cell | each cell (g/s) |
|-------------------------------------|--------------------------|------------------|------------------|------------------------|
| Annual PM emissions (ton/year) | 2.47 | 1.24 | 0.309 | 0.00891 |
| Maximum daily PM emissions (lb/day) | 15.93 | 7.97 | 1.992 | 0.01047 |

Note: Drift Eliminator Control guaranteed by Chuck Marchetta of Niagara Blower, Wet Surface Air Cooler Division



DETAIL A



SITE PLAN

LEGEND

- FENCE LINE/PROPERTY BOUNDARY
- UTILITY ROAD
- ON-SITE GROUNDWATER WELL

SOURCE:
Ford, Davis and Bacon (drawing 2009)

(REVISED) SITE PLAN
SAN JOAQUIN SOLAR 1 & 2



NO SCALE

CREATED BY: CM

DATE: 06-29-09

FIG. NO:

PM: AR

PROJ. NO: 27658031

5.2-2

**Table 5.13-4 Revised
Major Component Design Characteristics**

| Component | Height (feet) | Size (feet) | Color/Materials |
|---|---------------|-------------|---|
| Power Block | | | |
| Scrubber | 95.17 | 30DIA | Corrugated steel; natural shades of beige and brown |
| Biomass Heater | 61.3 | 32 x 40 | Corrugated steel; natural shades of beige and brown |
| Biomass Exhaust Stack | 100 | 6.834DIA | Corrugated steel; natural shades of beige and brown |
| Control and Administration Building (North) | 22 | 60 x 75 | Corrugated steel; natural shades of beige and brown |
| Control and Administration Building (South) | 33 | 60 x 75 | Corrugated steel; natural shades of beige and brown |
| Steam Turbine Generator (STG) | 60 | 50 x 200 | Corrugated steel; natural shades of beige and brown |
| Wet Surface Air Cooler (WSAC) Condensers Building | 20 | 36.5 x 163 | Corrugated steel; natural shades of beige and brown |
| Wet Surface Air Cooler (WSAC) Condensers Stack | 36 | 26DIA | Corrugated steel; natural shades of beige and brown |
| Warehouse and Shop Building | 15 | 180 x 190 | Corrugated steel; natural shades of beige and brown |
| Take-Off, Dead End, and Buss Structures | 40 | 30 x 35 | Corrugated steel |
| Transmission System, In Line | 85 | -- | Wood Poles |
| Raw Water-Fire Water Tank (2,000,000 Gallons) | 45 | 40 DIA | Corrugated steel; natural shades of beige and brown |
| Demineralized Water Tank (40,000 Gallons) | 28 | 17 DIA | Corrugated steel; natural shades of beige and brown |
| Reflector Line | 15.5 | 19 x 1,000 | Low iron glass with composite steel backing |
| Baghouse | 54 | 30 x 40 | Corrugated steel; natural shades of beige and brown |
| Steam Drum | 12 DIA | 60 | Corrugated steel; natural shades of beige and brown |
| Steam Drum Support Structure | 58 | 15 x 40 | Corrugated steel; natural shades of beige and brown |
| Biomass Handling Area | 20 | 500 | Concrete wall; natural shades of beige and brown |
| Biomass Storage Piles | 70 | 420 x 140 | Wood chips; natural shades of brown |
| Biomass Storage Silo | 90 | 30 DIA | Corrugated steel; natural shades of beige and brown |

**Table 5.5-6 (Revised 08-21-2009)
Water Usage Rates¹**

| Water Use | Average Annual (gpm) ² | Average Daily (gpm) ³ | Maximum Daily (gpm) ⁴ |
|--|--------------------------------------|-------------------------------------|-------------------------------------|
| EQUIPMENT MAKEUP WATER REQUIREMENTS | | | |
| Steam Cycle Makeup | 20 | 21 | 26 |
| Mirror Wash Water (60,000 gallons each month) | 4 | 4 | 4 |
| Biomass Facilities | 174 | 174 | 232 |
| WSAC Makeup | 1,115 | 1,163 | 1,482 |
| City Water Treatment Makeup | 60 | 80 | 100 |
| Potable Water ⁵ | 70 | 80 | 120 |
| Total Equipment Makeup Requirements | 1,443 | 1,522 | 1,964 |
| Recovered Water | | | |
| Condenser Blowdown, Boiler Continuous and Intermittent Blowdown | 146 | 152 | 154 |
| Estimated One-Half of Potable Water Use | 35 | 40 | 60 |
| Total Recovered Water | 181 | 192 | 214 |
| NET RAW WATER REQUIREMENT DURING OPERATION | | | |
| | 1,262 | 1,330 | 1,750 |
| WATER REQUIREMENTS DURING CONSTRUCTION⁶ | | | |
| Initial Construction Grading - 2 to 3 months | - | 15-20 | 25 |
| Dust suppression after initial grading - 12 months | - | 15 | - |
| Concrete Batch Plant requirements - 12 months | - | 5-8 | - |
| Construction Clean-up (equipment, personnel, etc.) - 12 months | - | 2 | - |
| Hydrostatic Water Line Testing - (Periodic and short term testing for specific water line systems) | - | - | - |
| Potable Water (bottled or trucked) | - | - | - |

Notes:

1. Values listed are for the combined water use of SJS 1 and SJS 2 listed in the original AFC and supplemental filings.
2. "Average Annual" (gpm) is based on the amount of Mwh produced in one year.
3. "Average Daily" (gpm) is the combined Annual Average times the ratio of total hours in year versus the total hours of operation in one year. (Assumes 8,400hrs/year of operation and 8,760 total hours in year.)

4. "Maximum Daily" is the worst case daily condition when either Solar or Biomass plants are operating in an upset condition.

5. Potable water during operations includes water used for drinking, sanitation, safety showers and laboratory.

6. Construction water use rates were provided in Water Resources Data Adequacy Request Response 8:

During the first two to three months of the project the largest quantity of construction water will be required. This water will be used for compaction and dust suppression for the cut and fill required to create the three terraces of SJS 1&2. It is estimated that 150,000 to 200,000 gallons per week will be required to perform this activity (15 to 20 gallons per minute [gpm] assuming constant groundwater pumping). After the initial grading is completed on the project, approximately 50,000 gallons of water a week (15 gpm) will continue to be used for dust suppression. In addition to this another 50,000 to 75,000 gallons per week (5 to 7.5 gpm) will be used in a concrete batch plant during the six months of civil work. Finally about 2,000 gallons per week (2 gpm) will be used for construction cleanup purposes (i.e. equipment cleaning, personnel clean up etc). It is assumed that bottled or trucked potable water will be used during construction. With these various requirements, it is estimated that the maximum water use during construction would be approximately 25 gpm. Daily water usage rates in gallons per minute would likely exceed this rate, but based upon an average daily basis this rate would be less than during long term operations.

Hydrostatic water line testing water requirements are not currently considered to be a significant component of water use during the 15 month construction period when considering average daily usage. Hydrostatic water line testing may increase the maximum daily usage during construction for a period of time in which hydrostatic waterline testing is conducted. Note that the construction water usage during construction is anticipated to be an order of magnitude lower than during operation.

Note: Power Plant Factors do not apply to Mirror Wash, or Potable Water use.

DRAFT INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN AND MONITORING AND REPORTING PLAN

SAN JOAQUIN SOLAR 1 & 2 HYBRID POWER PLANT
FRESNO COUNTY, CA

Prepared for

Martifer Renewables Solar Thermal LLC
12555 High Bluff Drive, Suite 100
San Diego, CA 92130

WDID No.: To Be Determined

June 19, 2009



1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
Phone: 619-294-9400

W:\27658033\20090707-DR Set1\FB&D Review of SJS Industrial SWPPP.doc

SAN JOAQUIN SOLAR 1&2 LLC
CERTIFICATION OF STORM WATER POLLUTION PREVENTION PLAN

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(Signature)

Plant Manager

TABLE OF CONTENTS

| <u>SECTION</u> | <u>PAGE</u> |
|--|-------------|
| 1.0 INTRODUCTION..... | 1-1 |
| 1.1 Organization of the SWPPP and MRP..... | 1-1 |
| 1.1.1 SWPPP..... | 1-1 |
| 1.1.2 MRP..... | 1-1 |
| 1.2 Storm Water Regulatory Framework..... | 1-1 |
| 1.3 Fundamental Requirements of the General Permit..... | 1-2 |
| 1.4 Compliance with the General Permit..... | 1-2 |
| 1.5 Availability of the SWPPP and MRP..... | 1-3 |
| 1.6 Authorized Representative and Certification of the SWPPP..... | 1-3 |
| 1.7 Review and Revision of the SWPPP and MRP..... | 1-3 |
| 2.0 SITE DESCRIPTION..... | 2-1 |
| 2.1 Facility Description..... | 2-1 |
| 2.1.1 Facility Activities..... | 2-1 |
| 2.2 Other Relevant Facility Plans..... | 2-2 |
| 2.3 Significant Leaks and Spills – Historical..... | 2-2 |
| 2.4 Pollution Prevention Team..... | 2-2 |
| 2.5 Training for Facility Personnel..... | 2-3 |
| 3.0 FACILITY INDUSTRIAL ACTIVITIES AND MATERIALS..... | 3-1 |
| 3.1 Industrial Activities..... | 3-1 |
| 3.2 Significant Materials..... | 3-2 |
| 3.3 Non -Storm Water Discharges..... | 3-6 |
| 4.0 FACILITY SPECIFIC BEST MANAGEMENT PRACTICES..... | 4-7 |
| 4.1 Pollution Prevention through BMPs..... | 4-7 |
| 4.2 Source Control BMPs..... | 4-7 |
| 4.2.1 Source Control BMP #1 - Good Housekeeping..... | 4-7 |
| 4.2.2 Source Control BMP #2 - Preventive Maintenance..... | 4-8 |
| 4.2.3 Source Control BMP #3 - Proper Materials Handling and Storage..... | 4-8 |
| 4.2.4 Source Control BMP #4 - Proper Waste Handling..... | 4-9 |
| 4.2.5 Source Control BMP #5 - Spill Prevention and Response..... | 4-9 |
| 4.2.6 Source Control BMP #6 – Staff Training..... | 4-10 |
| 4.3 Treatment Control BMPs..... | 4-10 |
| 4.4 BMP Implementation Examples..... | 4-11 |
| 4.4.1 BMP Implementation..... | 4-11 |
| 5.0 ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION..... | 5-1 |

| | | |
|--|---|------------|
| 6.0 | MONITORING AND REPORTING PLAN | 6-1 |
| 6.1 | Objectives | 6-1 |
| 6.2 | Non-Storm water Discharge Visual Observations..... | 6-2 |
| 6.3 | Storm Water Discharge Visual Observations | 6-2 |
| 6.4 | Storm Water Sampling and Analysis | 6-3 |
| 6.4.1 | Storm Water Sampling Location | 6-3 |
| 6.4.2 | Storm Event Selection Criteria | 6-3 |
| 6.4.3 | Storm Water Discharge Analytical Parameters | 6-4 |
| 6.5 | Sampling Procedures and Equipment | 6-4 |
| 6.5.1 | Grab Sampling | 6-4 |
| 6.5.2 | Manual Grab Sampling Procedures | 6-5 |
| 6.5.3 | Quality Assurance Field Procedures..... | 6-5 |
| 6.5.4 | Clean Sampling Techniques | 6-6 |
| 6.5.5 | Sample Preservation and Holding Times..... | 6-6 |
| 6.5.6 | Chain-of-Custody Forms | 6-7 |
| 6.6 | Laboratory Analysis..... | 6-7 |
| 6.7 | Reporting and Record Keeping Procedures..... | 6-7 |
| 6.8 | Annual Report..... | 6-8 |
| 6.8.1 | Laboratory Test Results | 6-8 |
| APPENDIX A | | 6-1 |
| SITE MAP | | 6-1 |
| APPENDIX B | | 6-1 |
| SWPPP CHECKLIST | | 6-1 |
| APPENDIX C | | 6-1 |
| ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION FORM..... | | 6-1 |
| APPENDIX D | | 4 |
| ANNUAL REPORT | | 4 |
| List of Tables | | |
| Table 2-1. | Contact List | 2-3 |
| Table 3-1. | List of Significant Materials | 3-2 |
| Table 3-2. | List of Accumulated Waste | 3-5 |
| Table 3-3. | List of Stored Hazardous Materials | 3-6 |
| Table 4-2. | Identification of Potential Pollutant Sources and List of Current BMPs..... | 4-12 |
| Table 6-1. | Chemical Constituents for Storm Event Sampling..... | 6-4 |
| Table 6-2. | Detection Limits | 6-9 |
| Table 6-3. | Storm Water Quality Data Form | 6-10 |

List of Acronyms and Abbreviations

| | |
|----------|---|
| BAT | Best Available Technology |
| BCT | Best Conventional Technology |
| BMP | Best Management Practice |
| CFR | Code of Federal Regulations |
| EPA | Environmental Protection Agency |
| HCE | Heat Collection Elements |
| HMBP | Hazardous Materials Business Plan |
| HTF | Heat Transfer Fluid |
| LLC | Limited Liability Company |
| LORS | Laws, Ordinances, and Regulations |
| mg/L | milligrams per Liter |
| MRP | Monitoring and Reporting Program |
| MW | MegaWatt |
| NOI | Notice of Intent |
| NOx | Nitrous Oxide |
| NPDES | National Pollutant Discharge Elimination System |
| O&G | Oil and Grease |
| pH | potential of Hydrogen |
| QA/QC | Quality Assurance/Quality Control |
| RWQCB | Regional Water Quality Control Board |
| SCR | Selective Catalytic Reduction |
| SCNR | Selection Non-Catalytic Reduction |
| SIC | Standard Industrial Classification |
| SPCC | Spill Prevention Control and Countermeasure |
| SWPPP | Storm Water Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| TOC | Total Organic Carbon |
| TSS | Total Suspended Solids |
| umhos/cm | micro mhos per centimeter |
| WDID | Waste Discharge Identification Number |

1.0 INTRODUCTION

This document is the preliminary Storm Water Pollution Prevention Plan (SWPPP) and the Monitoring and Reporting Plan (MRP) developed for the San Joaquin Solar 1 & 2 LLC facility in Fresno County along Jayne Avenue adjacent to the Coalinga State Hospital, to meet the requirements of the California General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit). As of the date of writing, San Joaquin Solar 1 & 2 LLC has not submitted a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) to comply with the General Permit. An NOI will be submitted to the SWRCB prior to operations.

1.1 ORGANIZATION OF THE SWPPP AND MRP

1.1.1 SWPPP

Section 1 provides information regarding storm water regulation, the regulatory framework, the requirements of the General Permit, review and revision of the SWPPP, availability of the SWPPP as a public document, and certification of the SWPPP.

Section 2 describes the San Joaquin Solar 1 & 2 LLC pollution prevention team responsible for compliance with the General Permit and other environmental programs that indirectly support compliance with the General Permit.

Section 3 provides a description of the industrial activities to be conducted, potential pollutants and contains the definition and categories for both authorized and unauthorized non-storm water discharges.

Section 4 provides a general discussion of Best Management Practices (BMPs) and identifies those BMPs that are implemented throughout the facility and the measures taken to eliminate or reduce the discharge of pollutants to storm water drainage systems. Implementation examples are also included.

Section 5 describes the process of conducting an Annual Comprehensive Site Compliance Evaluation, the results of which must be reported annually to the Central Valley Regional Water Quality Control Board (Central Valley Regional Board).

1.1.2 MRP

Section 6 describes the objectives to be achieved through storm water monitoring as well as the procedures for properly collecting samples from all drainage areas that represent the quality and quantity of the facility's storm water discharges to a surface water body during a storm event.

1.2 STORM WATER REGULATORY FRAMEWORK

In 1972 the Federal Water Pollution Control Act (known as the Clean Water Act) was amended to effectively prohibit discharge of pollutants to "waters of the United States" from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The U.S. Environmental Protection Agency (EPA) has delegated administration of the NPDES program

within California to the State of California. California's Porter Cologne Act gives the SWRCB and the nine Regional Water Quality Control Boards (Regional Boards) the authority to administer the NPDES program.

The 1987 amendments of the Clean Water Act added Section 402(p), which established the framework for regulating discharges of storm water from industrial activities and municipal separate storm sewer systems. The EPA's enacting regulations require operators of certain categories of industry¹ including manufacturing facilities, especially if materials or activities are exposed to storm water, to obtain coverage under an NPDES permit for runoff from their facilities to a storm water drainage system or directly to surface waters.

The SWRCB adopted the General Permit on April 17, 1997 (Order No. 97-03-DWQ). Although often referred to "storm water regulations" what is actually being regulated by the General Permit is the discharge of pollutants into a storm water drainage system or a surface water body, whether those pollutants are transported by storm water runoff or some other flow (a non-storm water discharge).

1.3 FUNDAMENTAL REQUIREMENTS OF THE GENERAL PERMIT

There are four fundamental requirements of the General Permit. Industrial facility operators must:

- ◆ Eliminate unauthorized non-storm water discharges;
- ◆ Develop and implement a SWPPP;
- ◆ Perform monitoring of storm water discharges and non-storm water discharges; and
- ◆ Report annually to the appropriate Regional Board.

While the General Permit authorizes storm water discharges and conditionally² authorizes some specific non-storm water discharges from facilities, discharges of substances or materials other than storm water and authorized non-storm water discharges are prohibited. Furthermore, storm water discharges and authorized non-storm water discharges must be managed such that they do not cause or threaten to cause pollution, contamination, or nuisance. Prohibited discharges (also referred to as unauthorized discharges) must be either eliminated or permitted by a separate NPDES permit or Waste Discharge Requirements. Section 3.0 of this SWPPP addresses the topic of non-storm water discharges in greater detail.

1.4 COMPLIANCE WITH THE GENERAL PERMIT

An industrial facility must implement BMPs that meet best available technology economically achievable (BAT) or best conventional pollutant control technology (BCT) for the elimination or minimization of pollutants discharged with storm water or authorized non-storm water discharges. The San Joaquin Solar 1 & 2 LLC facility does not have effluent limitations applicable to its storm water discharges.

¹ These general categories of industry are define by Standard Industrial Classification (SIC) code in 40 Code of Federal Regulations Section 122.26(b)(14).

² The General Permit provides that authorized non-storm water discharges must meet specified conditions. These conditions are described in Section 3.0.

Industrial Storm Water Pollution Prevention Plan

Development and implementation of a SWPPP that complies with the requirements in Section A of the General Permit and that includes BMPs that achieve BAT and BCT constitute compliance with the requirement of reducing or preventing pollutants associated with industrial activity in storm water and authorized non-storm water discharges. A completed SWPPP checklist indicating the location in the SWPPP of required information is included in Appendix B.

1.5 AVAILABILITY OF THE SWPPP AND MRP

The SWPPP and MRP are public documents pursuant to Section 308(b) of the Clean Water Act. The SWPPP and MRP must be retained on-site and made available upon request to a representative of the SWRCB, Central Valley Regional Board, EPA or local agency. Further, a copy of the SWPPP and MRP should be readily available at the San Joaquin Solar 1 & 2 LLC facility office.

1.6 AUTHORIZED REPRESENTATIVE AND CERTIFICATION OF THE SWPPP

The SWPPP and MRP must be certified by a responsible corporate officer or duly authorized representative. A person is a duly authorized representative only if:

- ◆ The written authorization is made by a responsible corporate officer (e.g., president, vice president, chief financial officer, treasurer) or the facility manager if authority to sign documents has been assigned or delegated to the facility manager in accordance with corporate procedures; and
- ◆ The authorization specifies either an individual or position having responsibility for the overall operation of the facility, such as the position of manager, operator, superintendent, or a position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the facility.

For San Joaquin Solar 1 & 2 LLC, the duly authorized representative will be provided in the SWPPP prior to certification. Prior to certification, this SWPPP and MRP will be assessed by the facility manager for compliance with the General Permit. Compliance is based on the implementation of BMPs, both structural and non-structural, to reduce or eliminate pollutants in discharges from the storm water drainage system via storm water runoff or authorized non-storm water flows. Selected site environmental and safety personnel shall ensure that the elements of this SWPPP and MRP are implemented. The executed certification statement appears as the first page following the title page of this SWPPP and MRP.

1.7 REVIEW AND REVISION OF THE SWPPP AND MRP

The SWPPP and MRP will be reviewed at least annually to determine if any revision is necessary. The SWPPP and MRP will be revised to reflect changes in industrial activities that:

- ◆ May significantly increase the quantities of pollutants in storm water runoff;
- ◆ Cause a new area of industrial activity at the facility to be exposed to storm water or authorized non-storm water discharges; or
- ◆ Start-up of an industrial activity that would introduce a new pollutant source at a facility.

Industrial Storm Water Pollution Prevention Plan

In determining if revision of the SWPPP and MRP is necessary, the Plant Manager will review the quarterly reports for storm water and non-storm water visual observations and the Annual Comprehensive Site Compliance Evaluation (See Appendix B). Review and revision of the SWPPP and MRP will be documented in the table on the page that follows the Certification Statement, which immediately follows the title page of this SWPPP.

2.0 SITE DESCRIPTION

2.1 FACILITY DESCRIPTION

The San Joaquin Solar 1 & 2 LLC facility is located on West Jayne Avenue; approximately 6 miles east of Coalinga and approximately 3 miles west of Interstate 5, in an agricultural area of Fresno County, California. The Facility will be situated on one section of land, approximately 640 acres. The Project site is located in an area zoned for agricultural uses as specified in the Fresno County General Land Use Plan. Surrounding land uses include agricultural fields to the north, agricultural lands to the south, the Gujarral Hills Oil Field to the east, and the Coalinga State Hospital to the west.

The Project includes the construction, operation and maintenance of two 53.4 MW net solar hybrid power stations and ancillary systems. The two components of each Plant are the solar field and the biomass facilities. Each solar field has the heat-generating capacity to fully load its respective turbine to produce the net 53.4 MW. Each biomass facility will be used to maximize the turbine's energy output during shoulder solar hours (as the sun rises and sets) and will operate at night to produce up to 40 MW of energy.

The solar field design will use parabolic solar collectors to concentrate the sun's radiant energy on Heat Collection Elements (HCEs) that contain a circulating Heat Transfer Fluid (HTF). Hot HTF is then conveyed to heat exchangers to produce steam in a conventional reboiler for expansion in a reheat steam turbine generator. The biomass facility will use fluidized bed combustion technology to burn orchard waste and municipal greenwaste. The biomass component will run up to 24 hours a day in winter months when solar intensity is less. During summer, the biomass plant will start up as the sun approaches the horizon, run all night, then ramp down as the sun rises the next day. Incorporating the biomass facility in this manner increases the power plant's total energy output and maximizes turbine use. The biomass combustion process will produce ash equal to approximately 5% of the biomass consumed.

Ancillary facilities will include buildings and facilities for assembly, maintenance and operations, as well as the gathering lines required to transmit electricity from the field to the substation.

There is no storm drain infrastructure in the vicinity.

2.1.1 Facility Activities

Activities at the San Joaquin Solar 1 & 2 LLC facility, that may affect storm water runoff water quality, include:

- ◆ Raw Material storage;
- ◆ General Waste storage;
- ◆ Hazardous Material storage;
- ◆ Evaporation pond;
- ◆ Equipment storage;

- ◆ Loading and off loading of trucks;
- ◆ Parking of trucks and equipment.

The Standard Industrial Classification code for the San Joaquin Solar 1 & 2 LLC facility is 4911 (1987 SIC) or 221119 (2002 NAICS) – Other Electric Power Generation/ Power Generation , Solar Electric.

The site map provided in Appendix A illustrates key features relevant to the storm water drainage system and the industrial activities conducted onsite, including potential pollutant sources that may be exposed to precipitation, storm water runoff, or non-storm water discharges, drainage patterns (surface flow and storm drains), discharge locations, discharge sampling locations, and structural control features.

2.2 OTHER RELEVANT FACILITY PLANS

In addition to this SWPPP and MRP, the San Joaquin Solar 1 & 2 LLC facility may also be required to develop and implement a Hazardous Materials Business Plan (HMBP) and/or Spill Prevention Control and Countermeasure Plan (SPCC Plan) that complements the goal of reducing and preventing pollutant discharges. The SPCC Plan would include the material handling procedures, storage requirements, and procedures for clean up of any spill or leak.

2.3 SIGNIFICANT LEAKS AND SPILLS – HISTORICAL

The San Joaquin Solar 1 & 2 LLC facility location has historically been used for agricultural purposes. The completed facility has not reported any spills or leaks that have resulted in significant quantities of spilled or leaked materials being discharged in storm water or non-storm water discharges. The policies, plans, and procedures in place at San Joaquin Solar 1 & 2 LLC facility provide that even small spills and leaks are contained and cleaned-up as quickly as possible. If the clean-up of spilled or leaked material is not completed prior to a forecasted precipitation event, precautions are taken to assure that precipitation and runoff do not contact the remaining spilled or leaked material.

2.4 POLLUTION PREVENTION TEAM

The environmental manager and appointed delegates are responsible for implementing the SWPPP and MRP and for the administrative responsibilities associated with the SWPPP and MRP. These responsibilities include:

- ◆ Implementing, administering and revising the SWPPP and MRP;
- ◆ Conducting weekly undocumented walk-throughs to ensure that BMPs are appropriate and being implemented consistently throughout the facility;
- ◆ Conducting monthly documented inspections utilizing the Evaluation Checklist inspection report;
- ◆ Conducting the Annual Comprehensive Site Compliance Evaluation;
- ◆ Ensuring that all reporting and sampling requirements are met, including the filing of the Annual Report to the State Water Resources Control Board. The current web site location for the Annual Report is http://www.waterboards.ca.gov/water_issues/programs/stormwater/annualreport.shtml
- ◆ Conducting the storm water and non-storm water visual observations;

Industrial Storm Water Pollution Prevention Plan

- ◆ Ensuring that sampling kits are prepared for sampling;
- ◆ Implementing the Emergency Response Plan and Procedures (part of the Hazardous Waste Management Program);
- ◆ Conducting storm water training for facility personnel; and
- ◆ Maintaining the necessary records and files.

Other facility personnel may also have implementation responsibilities for the SWPPP and MRP, when delegated.

Storm water samplers (Site Environmental Coordinator, Team Leaders or trained designees) responsibilities include:

- ◆ Collecting storm water samples in accordance with the MRP during their respective shifts.

In addition to the personnel listed above, other employees at the San Joaquin Solar 1 & 2 LLC facility are trained in storm water issues and play an important role in the detection and prevention of pollution via the storm water drainage system. Table 2-1 includes contact information in case of a spill or other emergency. Table 2-1 will be updated with the appropriate contact information prior to finalizing the Industrial SWPPP.

Table 2-1. Contact List

| Contact Title | Contact Name | Contact Number | Emergency Contact Number |
|-------------------------------------|--------------|----------------|--------------------------|
| Facility Manager | | | |
| Assistant Facility Manager | | | |
| Facility Environmental Coordinator | | | |
| Assistant Environmental Coordinator | | | |

2.5 TRAINING FOR FACILITY PERSONNEL

The Environmental and Safety Manager coordinates training related to storm water management on at least an annual basis and for new hires to inform those with specific responsibilities in this SWPPP and MRP what their responsibilities are and how to accomplish those tasks, including implementation of BMPs. This training typically occurs in late summer or early fall, shortly before the start of the wet season (October 1 through April 30).

Additionally, general awareness training is provided annually to all employees whose activities may impact storm water discharges. The purpose of this training is to educate workers on activities that can impact storm water discharges, and to help in the implementation of BMPs.

The training records are kept for a period of no less than five years.

3.0 FACILITY INDUSTRIAL ACTIVITIES AND MATERIALS

This section presents the industrial activities that are performed and the materials that are stored on this site and may affect the storm water runoff water quality.

3.1 INDUSTRIAL ACTIVITIES

The manufacturing activities in this section present those known at the time of document preparation. If manufacturing processes change, either increasing or decreasing the amount of outdoor activities, this section should be revised along with the appropriate BMPs found in Section 4.0.

Industrial Processes

Maintenance activities are limited to preventative and corrective maintenance of equipment which is done by facility personnel or subcontractor. These activities include equipment fabrication, oil changes, topping off coolant, greasing fittings, etc. All coolant and oil waste material is stored and disposed of in accordance with applicable waste laws and regulations. A forklift may be utilized on site. Waste removal is part of the contract.

Material Handling and Storage Areas

Trucks delivering raw materials, including biomass materials are unloaded onsite on the eastern side of the facility of the site and moved for storage to the site's warehouse. Other raw materials included general supplies, replacement parts and solar panels. These raw materials are temporarily stored within a covered structure.

Dust and Particulate Generating Activities

The plant facilities are considered an active industrial site. All of the activities at the site produce minimal dust. The most significant pollutant at this facility is windborne materials (silt and debris) that collects on the plant from the surrounding panel farm and surrounding agricultural areas that collect on the plant structures. During rainy periods, this material washes off the structures into the storm water drainage paths. The solar mirrors will have scheduled washing using specialized spray equipment.

Significant Spills and Leaks

Spills and/or leaks of asphalt, oil and lubricants can occur outdoors during repairs and maintenance. Spills and/or leaks can also occur in and around the chemical storage areas during the transfer of materials.

Non-Storm Water Discharges

There are no non-storm water discharges from this facility to storm water conveyance system. This plant will be recycling all of its wastewater for re-use in the power generation process. Waste water from the demineralization/reverse osmosis process will be stored in evaporation ponds.

Soil Erosion

Large portions of the site will be partially developed with solar panels however not paved with asphalt or cement surfaces. Sedimentation and erosion control measures may be applicable at this facility.

3.2 SIGNIFICANT MATERIALS

A number of materials are stored and used, or stored, on-site. The following table summarizes these materials, their maximum allowable quantities and how they are received or stored at this facility. This table should be verified each year to confirm materials types, quantities and locations.

Table 3-1. List of Significant Materials

| Material Name | Use | Maximum Quantity On-Site | Location(s) Found | Storage Type |
|--|---|---|---|---|
| Aqueous ammonia ([19%] NH ₄ (OH)) | NOx emissions control | 40,000 gallons for each plant | SCR Unit | Aboveground tank |
| Heat Transfer Fluid (Therminol VP-1) | Transfers energy from solar field and biomass system to power block | 185,000 gallons for each plant | Plant System, Power Block Area | Vessels within the plant circulation loop system |
| Chlorine | Water treatment | 500 gallons for each plant | Water Treatment Area | Tank |
| Hydrochloric Acid | Water treatment | TBD | Water Treatment Area | Tank |
| Cation and Anion Beads | Water treatment | TBD | Water Treatment Area | TBD |
| Diesel Fuel | Firewater pump driver | 300 gallons for each plant | Firewater Skid | Tank |
| Cleaning Chemicals/Detergents | Periodic cleaning | 500 liters for each plant | Warehouse/shop area | 55-gallon drums and small containers |
| Water treatment Chemicals | Oxygen scavenger | 10,000 gallons for each plant | Water Treatment Building | Tank |
| Lubricating Oil | Lubricate rotating equipment (e.g., STG lube oil systems) | 1,585 gallons each plant 3,170 gallons total | Contained in storage tanks on equipment skids | Tanks |
| Laboratory Reagents | Water laboratory analysis | 4 liters | Water Treatment Building | Small containers |
| Mineral Transformer Insulating Oil | Generator Step-Up (GSU) transformers | 11,000 gallons per GSU 22,000 gallons total | Transformer Area | Contained within transformers and electrical switches |
| Mineral Transformer Insulating Oil | Standby Transformer | 4,000 gallons | Standby Transformer Area | Contained within transformers and electrical switches |
| Acetylene, Oxygen, Other Welding Gases | Maintenance Welding | TBD | Shop/warehouse | Cylinders of various volumes |

Source: Project Description

Notes: All numbers are approximate.

STG = steam turbine generator

Wastes from the facility are stored in designated containers and/or areas, and are disposed of in accordance with applicable local, state, and federal regulations. Tables 3-2 and 3-3 summarize the types, quantities and location of hazardous materials used and hazardous wastes generated on site.

Non-Hazardous Solid Waste

SJS 1&2 will produce maintenance and plant wastes typical of solar hybrid power generation operations. The following types of non-hazardous solid waste may be generated: paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes, including typical refuse generated by workers. Office paper, newsprint, aluminum cans, wood, insulation, yard debris, concrete, gravel, scrap metal, cardboard, glass, plastic containers, and other non-hazardous waste materials will be segregated and recycled to the extent practical, and the remainder will be regularly removed by a certified waste-handling contractor for disposal at a Class III landfill.

The Project will burn a combination of locally available biomass fuels. The fluidized bed combustion process will include blending limestone with fresh fuel in the combustor. Limestone is added primarily to absorb SO₂ and trace amounts of chlorides that might be present in the fuel, and also provides many beneficial characteristics to the ash.

Fly ash will be collected using a combination of mechanical collectors and bag houses. All ash will be accumulated in ash storage vessels, and then loaded on trucks for removal. The ash produced from burning biomass has several uses other than acid-scrubbing in the gasification process. It will contain several beneficial nutrients (10% P₂O₅, 12% K₂O, 13.5% Ca, and 5% Mg) and may have use as a soil amendment or fertilizer for agricultural crops. Typically, ash generated by existing biomass facilities in California is sold into the marketplace for a variety of purposes, including supplements for the manufacture of aggregate and concrete, soil mineral supplements and bedding material for livestock pens. All of the ash produced from the facility is anticipated to be marketable for these purposes.

If the ash is characterized as non-hazardous or hazardous waste, it will be disposed of in accordance with applicable LORS in either a Class I or Class III Landfill, respectively.

Non-recyclable inert wastes will be stored in covered trash bins in accordance with local ordinances and picked up by an authorized local trash hauler on a regular basis for transport to and disposal in a suitable landfill.

Liquid Wastes

Industrial wastewater will consist of solar thermal system blowdown, solar thermal washdown, air-cooled condenser washdown, and oil/water separator effluent. Industrial wastewater will be routed to the Water Treatment System. Area drains will be located near mechanical equipment where it is determined that oil could mix with rainwater or other water sources. Water collected by these drains will go to the oil/water separator, which separates out any oil before the effluent goes to the sewer line. Oil-contaminated fluid will be pumped out by a vacuum truck on an as-needed basis and disposed of at a facility specifically qualified to handle such waste.

Industrial Storm Water Pollution Prevention Plan

Hazardous containments will not have drains but will be pumped out by vacuum pump if hazardous materials are present. Rainwater will be pumped to the storm drain system after first confirming that no hazardous materials are present. The plant site will consist of paved roads, paved parking areas, and graveled areas. Stormwater will be diverted from the paved surfaces to the solar field for evaporation/soil absorption. Sanitary waste will be discharged into a sanitary leach field, and will be designed to meet RWQCB guidelines.

Hazardous Waste

Hazardous waste generated will include used oils from equipment maintenance and oil-contaminated materials, such as spent rags, or other cleanup materials. Used oil generated will be recycled. Hazardous waste that can not be recycled will be disposed of in a Class I waste disposal facility. Table 3-3, Summary of Operation Waste Streams and Management Methods, summarizes the hazardous waste to be generated during plant operation.

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a licensed hazardous waste facility. Hazardous wastes will be transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, destruction certifications, etc., will be kept on site and made accessible for inspection for 3 years. Land disposal restriction notices/certificates will be kept on site and accessible for inspection for 5 years.

The amount of contaminated soil that may result from HTF spills or leaks should not exceed 20 cubic yards in a 3-month period. A 2-acre parcel of land in the SJS 1&2 common area will be used for temporary storage of contaminated soil until it is transported off site. The maximum spill that would occur would result from a rupture of one of the expansion vessels. The potential impact has been minimized by designing a containment pit under the vessels of sufficient size to hold the spill. Shutoff valves are also located on the end of every Solar Collector row to isolate HCE breakage or leaks. Major HTF flow lines will all have isolation valves in strategic locations.

Accumulated wastes and hazardous materials are stored in designated containers and/or areas only.

Industrial Storm Water Pollution Prevention Plan

Table 3-2. List of Accumulated Waste

| Material Name | Type | Maximum Quantity On-Site | Location(s) Stored | Storage Type or Method of Disposal |
|---|---|--|--|---|
| Spent batteries – Lead Acid, Alkaline | Hazardous Waste | Intermittent | Hazardous Waste Storage Area | Batteries stored in waste storage area |
| Oily Absorbent | Hazardous Waste | 55 gallons per month for each plant | Hazardous Waste Storage Area | Drum |
| Waste Oil/Sludge – from Oil/Water separator | Hazardous Waste | 500 gallons for each plant | Hazardous Waste Storage Area | Oil/Water Separator |
| Used Hydraulic Fluid, Oils and Grease, Oily Filters – Hazardous, recyclable | STG and other users of hydraulic actuators and lubricants | 5.3 gallons for each plant 10.6 gallons total | Hazardous Waste Storage Area | Temporarily stored onsite and then disposed of properly offsite or recycled |
| Spent batteries – Hazardous, recyclable | Lead Acid, | 5/year, Total 10/yr | Store <90 days Hazardous Waste Storage Area | Batteries stored temporarily in waste storage area then recycled |
| | Alkaline | 400/year for each plant, Total 800/year | Hazardous Waste Storage Area | Batteries stored temporarily in waste storage area then recycled |
| Oily Rags – Non-hazardous | STG and other users of hydraulic actuators and lubricants | 55 gallons from each plant 110 gallons total | Store <90 days in appropriate container onsite | Launder at authorized facility. |
| Oily Absorbent – Hazardous | STG and other users of hydraulic actuators and lubricants | 55 gallons from each plant 110 gallons total | Store <90 days Hazardous Waste Storage Area | Dispose to authorized waste disposal facility. |
| Waste Oil/Sludge – Hazardous, recyclable | Oil/water separator | 500 gallons from each plant 1000 gallons total | Store <90 days Hazardous Waste Storage Area | Dispose to authorized waste recycle facility. |
| Fly Ash | Biomass Combustion | 10,000 – 25,000 tons from each plant 20,000 - 50,000 tons total | Collected and stored in ash storage vessels | Reuse, sellable or characterize and dispose at a non-hazardous landfill. |

Notes: All numbers are approximate.
STG = steam turbine generator

Table 3-3. List of Stored Hazardous Materials

| Material | Container Type/Quantity | Spill/Leak Prevention BMP |
|---|--|---|
| Aqueous ammonia ([19%] NH ₄ (OH)) | Above ground tanks/ 40,000 gallons for each plant | Spill containment berm or equivalent secondary containment method. |

Aqueous ammonia would be present in sufficient quantity and concentration to be a state regulated substance that would require the development of a RMP. Aqueous ammonia would be used in the Selective Non-Catalytic Reduction (SNCR) and Selective Catalytic Reduction (SCR) units to reduce NO_x emissions. The 19.1 percent aqueous ammonia solution would be stored in two storage tanks for each Plant that each hold a maximum of 20,000 gallons.

3.3 NON -STORM WATER DISCHARGES

A non-storm water discharge is any discharge or flow to a storm water drainage system that is not composed entirely of storm water runoff. There are both authorized and unauthorized non-storm water discharges. On this site, it is possible to have the following **authorized** non-stormwater discharges:

- ◆ Monthly Fire hydrant flushing;
- ◆ Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems. On this site they include eye wash and shower stations, which are checked monthly;
- ◆ Drinking fountain water; and
- ◆ Landscape watering.

Other than the landscape watering, most authorized discharges are only performed on an annual basis. It is important to confirm that when these authorized discharges occur the flows do not come in contact with pollutant sources.

Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions provided in the General Permit Special Conditions D.1.b are prohibited. Typical examples of prohibited non-storm water discharges for this facility include, but are not limited to:

- ◆ Floor wash water;
- ◆ Dumpster Cover/Waste container drainage;

These discharges need to be either maintained on site, or mitigated through a BMP that has been selected to provide pollutant reduction.

4.0 FACILITY SPECIFIC BEST MANAGEMENT PRACTICES

4.1 POLLUTION PREVENTION THROUGH BMPs

It is important to have an understanding of what BMPs are and what pollutants they do or don't remove. On this site, there are multiple types of BMPs implemented. The BMPs on this site include practices, procedures, policies, prohibitions, schedules of activities, structures or devices that are implemented to prevent or minimize pollutants coming in contact with precipitation, storm water runoff, or non-storm water flows. For purposes of discussion, BMPs are often categorized as either "source control" BMPs or "treatment control" BMPs.

Source control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep storm water from contacting pollutants in the first place. Source control BMPs are generally simple, low-maintenance, cost-effective and are broadly applicable. They may be categorized as either non-structural or structural. For this site, the primary source control BMP is good housekeeping.

In contrast to source control BMPs, treatment control BMPs are methods of treating storm water runoff to remove pollutants. More importantly, treatment control BMPs are typically not as effective as source control BMPs, and the ineffectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and effective under certain conditions. However, treatment control BMPs typically do not remove all pollutants from storm water runoff and should not be regarded as disposal systems. An example of a treatment control BMP on this site would include the use of filtration units within the catch basins.

There are also structural BMPs on this site that assist with flow control, debris containment and raw and waste material storage. These types of BMPs including curbs, berms, v-ditches and trash container covers are all adequate and maintainable for the intended uses at this Facility.

The following sections present the site specific BMPs for the San Joaquin Solar 1 & 2 LLC facility, beginning with source control BMPs.

4.2 SOURCE CONTROL BMPs

The first and typically most effective BMPs are source control based. At the San Joaquin Solar 1 & 2 LLC facility, source control BMPs are encouraged for all outdoor activities and storage. The following list of common source control BMPs may be implemented for all current and future activities and storage locations.

4.2.1 Source Control BMP #1 - Good Housekeeping

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent storm water quality problems from occurring. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good

housekeeping is a day-to-day activity that does not require a large expenditure of time or expense, and should be implemented on an ongoing basis. For this site, required good housekeeping practices include:

- ◆ Tools and materials are returned to designated storage areas after use;
- ◆ Waste materials are collected and properly disposed after the completion of each job, shift, or day as appropriate;
- ◆ All outdoor work areas are kept neat and clean;
- ◆ Outdoor work areas are washed on occasion. In such cases, all wash waters are contained, collected, and properly disposed; and
- ◆ Outdoor waste or trash receptacles are covered and emptied regularly and the adjacent areas inspected for misplaced or wind-blown litter.

4.2.2 Source Control BMP #2 - Preventive Maintenance

As previously stated, good housekeeping practices include activities that are intended to keep equipment in good working order to prevent storm water quality problems from occurring. On this site, preventive Maintenance BMPs include regular inspections and maintenance of any of the equipment or machinery which are located outside. To reduce the likelihood of breakdown or failure, major outdoor equipment should have a preventive maintenance schedule for inspection and replacement or repair of fluids (e.g., hydraulic, lubricating, cooling), greases, seals, hoses, filters, pressure gauges, piping, etc. Paved driveways and storage areas should not be allowed to degrade to the point where they erode and contribute pollutants to runoff. Leaky roofs, broken doors, cracked pavement and berms, and any other enclosure or structural defects that may impact the quality of storm water runoff should be promptly repaired.

4.2.3 Source Control BMP #3 - Proper Materials Handling and Storage

Materials handling and storage BMPs relate to controlling the potential for leaks, spills and losses of materials delivered, used, and stored at a facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in storm water runoff or authorized non-storm water discharges. Examples of appropriate materials handling and storage BMPs are:

Materials Use

- ◆ Only obtain the amount of materials needed to finish a particular task;
- ◆ Limit waste production by keeping good records and reviewing activities;
- ◆ Recycle materials whenever possible;
- ◆ Read and follow manufacturer directions for use of materials and review the associated Material Safety Data Sheet;

Materials Storage

- ◆ Store materials indoors or in a covered area where exposure to storm water is minimized;
- ◆ Store lead-acid batteries indoors and within secondary containment;

- ◆ Use a hazardous materials storage container with spill containment or flammable materials lockers when appropriate;
- ◆ Locate storage areas away from vehicle and equipment paths to reduce the potential for accident-related leaks;
- ◆ Do not store drums or other containers close to discharge points to receiving waters;
- ◆ Provide informational signing, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment for all hazardous material storage areas or container units; and
- ◆ Conduct regular inspections for leaks and other pollutant discharges.

4.2.4 Source Control BMP #4 - Proper Waste Handling

Waste handling BMPs relate to properly controlling, collecting, storing, and disposing of wastes that are generated at a facility. All facility personnel should be aware that disposing any waste (including wash waters) into a storm drain inlet or storm water conveyance is considered illegal dumping. Likewise, disposing of waste (including wash waters) onto a paved or unpaved surface such that it may be carried to a storm drain inlet or storm water conveyance is also considered illegal dumping. Examples of appropriate waste handling BMPs are:

- ◆ Sweep or vacuum (dry methods) work areas to collect particulates and debris frequently;
- ◆ Limit waste production by keeping good records and reviewing activities;
- ◆ Recycle materials whenever possible;
- ◆ Separate and segregate different types of wastes;
- ◆ Store waste materials indoors or in a covered area where exposure to storm water is minimized. Arrange for regular waste disposal;
- ◆ Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- ◆ Locate the waste storage area away from vehicle and equipment paths to reduce the potential for accident-related releases;
- ◆ Provide informational signage, labels, restricted access, inventory controls, overhead coverage, and secondary containment for all hazardous material storage areas or container units; and
- ◆ Conduct regular inspections for leaks and pollutant discharges.

4.2.5 Source Control BMP #5 - Spill Prevention and Response

Spill clean-up can be labor-intensive and costly, involving expenses to contain the spill, collect the spilled substance, dispose of materials properly, and to file reports with regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of water pollution and are, in most cases, avoidable.

Spill prevention and control procedures include:

- ◆ Placing containment features around areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- ◆ Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment waiting repair;
- ◆ Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- ◆ Providing training for proper use of materials and equipment used during operations and maintenance activities;
- ◆ Providing training for proper use of spill response equipment and supplies;
- ◆ Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills;
- ◆ Blocking nearby storm drain inlets or closing valves in storm drains when conducting maintenance or fluid transfers.

Spill prevention, control, and cleanup applies to all materials and wastes—not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials—for example, biodegradable soaps, litter, and debris, among others—can also greatly impact water quality.

4.2.6 Source Control BMP #6 – Staff Training

Training/educating personnel regarding the importance of the immediate clean up of accumulated trash and the proper handling and disposal of hazardous materials and waste. Additionally, general awareness training is provided annually to all employees whose activities may impact storm water discharges. The purpose of this training is to educate workers on activities that can impact storm water discharges, and to help in the implementation of BMPs.

4.3 TREATMENT CONTROL BMPs

At the San Joaquin Solar 1 & 2 LLC facility, there are no existing treatment control BMPs that are used treating runoff. Absorbent pads, socks or other spill containment materials are recommended for use when accidental spills occur during delivery or other activities.

If additional treatment control BMPs are installed at this facility, the design, specifications and maintenance requirements for these recommended BMPs are to be included into this SWPPP document. When installed and implemented these BMPs will also need to be included into the inspection program. Structural BMPs.

As previously discussed, structural BMPs are included in the existing site design. These BMPs include the following:

- ◆ Drainage swales/ditches
- ◆ Main facility drive and roadways are paved or stabilized
- ◆ Other items to be determined during final site design

Since the facility is not paved, the potential for on-site contribution of sediment to the storm water flow during storm events is moderate. Drainage features should be routinely inspected during both the dry and rainy season and recorded on inspection forms. Corrective measures are promptly initiated if evidence of erosion is identified

4.4 BMP IMPLEMENTATION EXAMPLES

Typically, mitigating a particular activity for preventing pollutant runoff means implementing multiple BMPs. For example, minor equipment repairs and maintenance activities occur onsite. These activities can contribute oil, lubricants, heavy metals, acidic and basic liquids to potential storm water pollutants. To manage this pollutant source, the following BMPs would be used:

- ◆ Good housekeeping;
- ◆ Maintenance is performed in a designated area only;
- ◆ Drip pans and absorbent mats are placed under all equipment undergoing repairs/maintenance;
- ◆ Yard is inspected daily for signs of spills;
- ◆ Personnel are trained in proper equipment handling, spill prevention and response procedures;
- ◆ Spill clean up material is containerized in the waste oil and hazardous materials storage areas;
- ◆ All spills are immediately cleaned by personnel trained in spill response procedures;
- ◆ Waste material is managed and disposed of in accordance with applicable waste laws and regulations;
- ◆ Emergency Plan and Procedures are implemented.

4.4.1 BMP Implementation

At the San Joaquin Solar 1 & 2 LLC facility, all chemicals and wastes will be clearly labeled and stored in containment structures and the waste oil storage tank respectively. These storage areas are anticipated to be located at the eastern portion of the property. The storage areas can be a source of many pollutants (See Tables 3-2 and 3-3). In order to reduce/eliminate these potential sources of storm water pollution, the following BMPs are anticipated:

- ◆ Good housekeeping;
- ◆ Secondary containment structures;
- ◆ Personnel are trained in proper maintenance, cleaning and spill response procedures;
- ◆ Spill clean up material is placed in the waste oil, hazardous materials and diesel fuel storage areas;
- ◆ Areas are routinely inspected for signs of spills or leaks;
- ◆ Spills and leaks are cleaned immediately by personnel trained in spill response procedures; and
- ◆ Materials are recycled whenever possible.

Industrial Storm Water Pollution Prevention Plan

The following table should be used as a reference to provide facility staff recommended BMPs for particular facility activities and locations. Table 4-2 presents the general location, activity, pollutant source, pollutant type and applicable BMP.

Table 4-2. Identification of Potential Pollutant Sources and List of Current BMPs

| Location on- Site | Activity | Pollutant Source | Pollutant | BMPs | |
|------------------------------|--------------------------|---|--|--|---|
| Maintenance/ Storage Area | Maintenance | Windblown sediment on ground and plant surfaces | Sediment | <ol style="list-style-type: none"> 1. Since maintenance is critical to preventing leaks and spills, routine monthly inspections are performed to check for : <ul style="list-style-type: none"> • External corrosion and structural failure; • Spills and overfills due to operator error; • Failure of piping system; • Leaks or spills during pumping of liquids from storage containers to equipment. 2. Chemical storage tanks are kept on an concrete slabs and surrounded by an 8 in. concrete block wall; 3. Waste oil storage tank is kept on a concrete slab and surrounded by an 8 in concrete curb; 4. Good housekeeping; 5. Outdoor work areas are walked through daily for signs of spills; 6. Spill clean up material is kept by the waste oil storage tank (the west side of vat, maintenance area and mixer tank areas) and the diesel fuel tank and a sign indicating its location is posted ; 7. Personnel are trained in proper equipment handling, spill prevention and chemical transfer and spill response procedures. 8. All spills are immediately cleaned by personnel trained in spill response procedures; 9. An Emergency Response Plan and Procedures are in place to ensure proper emergency or spill control measures are maintained. | |
| | | Petroleum based chemicals and lubricants | Organics | | |
| | | Spills and leaks during delivery/Spills caused by overfilling | Petroleum hydrocarbons/ Soaps/surfactants | | <ol style="list-style-type: none"> 1. Maintenance performed in designated maintenance area. 2. Drip pans and absorbent mats are used when draining fluids or storing leaking equipment 3. Waste material is managed and disposed of in accordance with applicable waste laws and regulations. 4. Implement proper Emergency Response Plan and Procedures with preventative maintenance program. 5. Train employees on proper maintenance, clean-up, and spill response techniques. |
| | | Leak from chemical storage | Petroleum hydrocarbons/ Soaps/surfactants | | |
| | | Rainfall run on or runoff areas | Petroleum hydrocarbons/ Soaps/surfactants | <ol style="list-style-type: none"> 1. Waste oil stored in designated area within secondary containment. 2. Good housekeeping practices in-place. 3. Employees are trained in proper maintenance, clean-up, and spill response techniques. A sign stating "Clean Up All Spills With Absorbent" is posted at the Waste Oil Storage location. 4. A spill kit is kept in the Waste Oil Storage area and a sign indicating its location is posted. 5. Outdoor work areas are w aily for signs of spills or leaks. 6. Spills and leaks are cleaned immediately by personnel trained in spill response procedures. | |
| Waste Oil Storage | Lubrication of equipment | Petroleum hydrocarbons | | | |

Industrial Storm Water Pollution Prevention Plan

| Location on- Site | Activity | Pollutant Source | Pollutant | BMPs |
|--------------------------------------|--------------------------------------|---|---|---|
| | Hazardous Material Storage Container | Leaking containers | Petroleum hydrocarbons, Soaps/surfactants | <ol style="list-style-type: none"> 1. Hazardous material stored in designated area. 2. Good housekeeping practices in-place. 3. Secondary containment structures are provided. 4. Employees are trained in proper maintenance, clean-up, and spill response techniques. A sign stating "Clean Up Spills with Absorbent" is posted at the hazardous material storage location. 5. A spill kit is kept in the Hazardous Material Storage area and a sign indicating its location is posted. 6. Area is inspected daily for signs of spills or leaks. 7. Spills and leaks are cleaned immediately by personnel trained in spill response procedures. 8. Waste products are recycled whenever possible. |
| | | Opened containers | Petroleum hydrocarbons, Soaps/surfactants | |
| | | Poor housekeeping or management of containers | Petroleum hydrocarbons, Soaps/surfactants | |
| Facility-Wide | Plant | Leaking containers | Petroleum hydrocarbons, lead/soaps/surfactants | <ol style="list-style-type: none"> 1. Storage area graded to minimize storm water runoff and/or run on. 2. Runoff is directed towards depressed areas to allow for settling of silt when possible. 3. Drip pans used when draining fluids or storing leaking equipment. 4. Equipment leaks repaired as soon as possible. 5. Equipment regularly inspected and maintained. |
| | | Opened containers | Petroleum hydrocarbons, Coolant | |
| | | Poor housekeeping or management of containers | Petroleum hydrocarbons, lead/soaps/surfactants | |
| | | Leaking oil from motor units / lubricants / grease | Petroleum hydrocarbons | |
| | | Heavy metals from rusting equipment | Heavy metals | |
| | | Litter/ Dust / Sediment exposure to storm water and subsequent runoff | Litter, sediment, biodegradable organic materials (i.e., BOD and COD) | |
| | Entrance/Exit | Sediment exposure to storm water and subsequent runoff | Sediment | <ol style="list-style-type: none"> 1. Catch basin, and other drainage features are routinely inspected during both dry and rainy seasons for signs of erosion and excessive sediment. 2. Roadways and parking areas are located in low-lying areas to minimize run on and runoff. 3. Gravel bags are placed around the catch basin prior to rain events to help prevent sediment from entering. |
| Sediment tracked onto public roadway | | Sediment | | |

5.0 ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION

The General Permit requires the performance of an Annual Comprehensive Site Compliance Evaluation (See Appendix B) for each industrial facility. The evaluation must be documented and a copy of the Annual Comprehensive Site Compliance Evaluation must be submitted as part of the Annual Report to the Central Valley Regional Board by July 1st of each year.

The evaluation must include:

- ◆ Visual inspection of all potential sources of pollutants that may enter the storm water drainage system via storm water or non-storm water discharges;
- ◆ A review and assessment of all BMPs to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed;
- ◆ Visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, drip pans, brooms or vacuum sweepers, or containers for used absorbents; and
- ◆ Review of all visual observation records, inspection records, maintenance records, records for draining of secondary containment, and sampling and analysis results.

Documentation of the Annual Comprehensive Site Compliance Evaluation must include:

- ◆ Identification of personnel performing the evaluation;
- ◆ The date(s) of the evaluation;
- ◆ Findings of the evaluation;
- ◆ Recommended modifications of the SWPPP;
- ◆ Schedule for implementing SWPPP revisions; and
- ◆ Any incidents of non-compliance and the corrective actions taken.

Following the evaluation, revisions to the SWPPP and MRP will be completed within 90 days.

6.0 MONITORING AND REPORTING PLAN

6.1 OBJECTIVES

The General Permit lists four specific objectives to be achieved through storm water monitoring. These objectives, each followed by a more detailed discussion, are:

- a. *Ensure that storm water discharges are in compliance with the Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations specified in the General Permit.*

The monitoring provisions of the General Permit are intended to support prohibitions of discharge of material other than storm water either directly or indirectly to surface water bodies. Applicable water quality standards for receiving waters³ are also intended to be achieved through implementation of the monitoring provisions of the General Permit.

- b. *Ensure practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges are evaluated and revised to meet changing conditions.*

Monitoring is intended to provide information that can eventually be used to reflect changes in storm water discharges that may result from a change in facilities, operational procedures, or materials handled.

- c. *Aid in the implementation and revision of the SWPPP.*

A monitoring plan has three major components that are intended to aid in the implementation of the SWPPP: (1) non-storm water visual observations, (2) storm water discharge visual observations, and (3) storm water sampling and analysis. Non-storm water discharge observations are intended to identify non-storm water discharges that must either be eliminated or verified to be allowable non-storm water discharges. The SWPPP requires a certification that prohibited non-storm water discharges⁴ have been eliminated. Storm water discharge visual observations and storm water sampling and analysis are intended to provide an objective measurement of storm water quality. As storm water quality data are accumulated and assessed, the SWPPP may be modified to reflect the conclusions drawn from these data.

- d. *Measure the effectiveness of BMPs to prevent or reduce pollutants in storm water discharges and authorized non-storm water discharges.*

The SWPPP requires implementation of BMPs that are selected on a site-specific basis to reduce storm water pollutants from identified potential sources. Evaluation of sources and selecting BMPs should be performed prior to the wet season. Thus, some decisions are made without the benefit of visual observations and analytical results. In addition, implementation of some BMPs may not result in the anticipated reduction in pollutant concentrations. Analytical and visual monitoring may eventually provide a means for evaluating the effectiveness of selected BMPs. Information gained from analytical data and visual observations may result in improved implementation of BMPs, modification of BMPs in place, or the selection of different BMPs.

³ “Applicable water quality standards for receiving waters” are the desired characteristics of surface water bodies that make them acceptable to various uses such as drinking water supply, agricultural supply, navigation, water contact recreation, commercial and sport fishing, wetland habitat, etc.

⁴ Also referred to as “unauthorized non-storm water discharges.”

The MRP includes five components: (1) non-storm water discharge visual observations, (2) storm water discharge visual observations, (3) storm water sampling and analysis, (4) recordkeeping, and (5) annual reporting.

6.2 NON-STORM WATER DISCHARGE VISUAL OBSERVATIONS

The non-storm water discharge visual observation is an assessment of drainage areas at the San Joaquin Solar 1 & 2 LLC facility for the presence of any authorized or unauthorized non-storm water discharges and their sources. The visual observations required above shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours⁵. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. The quarterly visual observations shall be conducted within 6-18 weeks of each other.

The non-storm water discharge visual observations shall document the presence of any discolorations, stains, odors, floating materials as well as the source of any discharge. When inspecting for unauthorized non-storm water discharges, any evidence of prior unauthorized non-storm water discharges shall also be recorded. Records shall be maintained of the visual observation dates, locations observed, the observation, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. SWRCB Annual Report, Appendix C, includes forms (Forms 2 and 3) to be used for recording authorized and non-authorized non-storm water discharge visual observations.

6.3 STORM WATER DISCHARGE VISUAL OBSERVATIONS

The storm water visual observation is a visual, qualitative assessment of the storm water quality of selected discharge locations at the San Joaquin Solar 1 & 2 LLC facility. With the exception of those facilities as described in Section B.4.d. of the General Permit, the storm water discharge visual observations shall be conducted at each storm water sampling location from one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release. Visual observations are only required of storm water discharges that occur during daylight hours that are preceded by at least three (3) working days without storm water discharges and that occur during scheduled facility operating hours.

Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in storm water discharges. SWRCB Annual Report, Appendix C, includes a form (Forms 4) to be used for recording authorized and non-authorized non-storm water discharge visual observations.

⁵ "Scheduled facility operating hours" are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

6.4 STORM WATER SAMPLING AND ANALYSIS

6.4.1 Storm Water Sampling Location

The General Permit requires that samples be collected from all drainage areas that represent the quality and quantity of the facility's storm water discharges to a surface water body (specifically to “waters of the United States”) from a storm event. The San Joaquin Solar 1 & 2 LLC facility will be assessed to identify representative storm water sampling locations. Storm water discharge locations will be identified which are representative of the quality and quantity of the storm water discharged from the San Joaquin Solar 1 & 2 LLC facility. At this time, the sampling locations are to be determined.

6.4.2 Storm Event Selection Criteria

The General Permit requires that during each wet season (October 1 to April 30), industrial facilities collect and analyze storm water runoff samples from the first storm event and at least one other storm event during the wet season. At a minimum, two storm events must be sampled during each wet season. If sampling is not conducted during the first storm event, the reason must be provided in the Annual Report. For example, if there is no discharge from the catch basin, this should be noted.

Storm water sampling kits are pre-assembled with instructions and sampling equipment and are located in the processing yard's main office. The plant manager is responsible for recognizing a storm event and taking storm water samples. The Site Manager, Environmental Manager and or Team Leaders will act as backup if the Plant Manager is unable to carry out the sampling activities.

In accordance with the General Permit, a facility is only required to collect storm water samples and perform visual observations if storm water discharges commence during scheduled facility operating hours. As previously noted, if there is no discharge from the facility, it is not necessary to sample. Scheduled facility operating hours are defined as “the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.” The General Permit also requires that at least 3 working days (72 hours) without storm water discharge precede any storm water sampling event. However, the 3 working days may be separated by non-working days such as weekends and holidays, provided that no storm water discharges occurred during the 3 working days and the non-working days. For example, at a facility that does not have scheduled facility hours on Saturday and Sunday, if there is no storm water discharge on Thursday or Friday, no storm water discharge on Saturday and Sunday, and no storm water discharge on Monday, then storm water samples could be collected on Tuesday.

Since samples must be collected within the first hour of runoff, the decision on whether or not to mobilize for sampling a storm event should be based on a weather prediction of the volume and duration of the storm.

6.4.3 Storm Water Discharge Analytical Parameters

All industrial facilities with coverage under the General Permit are required to analyze storm water samples for total suspended solids (TSS), pH, specific conductance, and total organic carbon (TOC). However, an analysis for oil and grease (O&G) may be substituted for TOC. The General Permit also requires that laboratory analysis be conducted for toxic chemicals and other pollutants that are likely to be present in storm water discharges in significant quantities⁶. Industrial facilities are also required by the General Permit to have storm water samples analyzed for specified potential constituents based upon the facility Standard Industrial Classification (SIC) code as provided in Table D of the General Permit. Since the SIC code for the San Joaquin Solar 1 & 2 LLC facility is 4911 (1987 SIC) or 221119 (2002 NAICS) – Other Electric Power Generation/ Power Generation, Solar Electric additional sampling analytical parameters are not expected.

Based upon its SIC code and an evaluation of the types and quantities of significant materials used at the facility, location and use of significant materials, and the BMPs implemented, storm water samples collected at the San Joaquin Solar 1 & 2 LLC facility are analyzed for the parameters listed in Table 6-1.

Table 6-1. Chemical Constituents for Storm Event Sampling

| Analytical Parameter | EPA Method No. | Target Detection Limit | Holding Times (from time of collection) | Sample Preservation Requirements |
|--|----------------|---|---|--|
| Conventional Parameters as Required By the General Permit | | | | |
| Total Suspended Solids (TSS) | 160.2 | 1.0 milligrams per liter (mg/L) | 7 days | Cool to 4°C |
| pH | 150.1 | pH units | Immediately upon laboratory receipt | Cool to 4°C |
| Specific Conductance | 120.1 | micromhos per centimeter (µmhos/cm) units | Immediately upon laboratory receipt | Cool to 4°C |
| Total Organic Carbon (TOC) | 415.1 | 0.5 mg/L | 28 days | Cool to 4°C, phosphoric acid (H ₃ PO ₄) |
| Oil & Grease | 413.1 | 1.0 milligrams per liter (mg/L) | | Cool to 4°C |
| Total Petroleum Hydrocarbons | 418.1 | 1.0 milligrams per liter (mg/L) | | Cool to 4°C |

6.5 SAMPLING PROCEDURES AND EQUIPMENT

6.5.1 Grab Sampling

Manual grab samples are collected at the specified sampling point for all monitored storm events. A grab sample is an individual sample collected at one specific site at one point in time. Analysis of a grab sample provides a snapshot of storm water quality. All of the sample bottles provided by the analytical

⁶ “Significant quantities” is defined as the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.

laboratory for the sampling location should be contained within a separate sample cooler. The facility staff responsible for collecting storm water samples should have an equipment box that contains all the equipment and materials necessary for storm water sample collection, other than the sample bottles provided by the analytical laboratory. Appendix E, SWRCB Annual Report, includes the form (Form 1) that should be used for recording the date and time of sample collection and the approximate time that storm water discharge started. When the analytical results are received from the laboratory, Form 1 should be completed with corresponding analytical data.

6.5.2 Manual Grab Sampling Procedures

The manual grab sampling procedures are as follows:

- A. The appropriate number of sample containers, sample container labels, blank chain of custody forms, and sample preservation instructions are obtained from the analytical laboratory.
- B. The testing laboratory will receive samples within 48 hours of the physical sampling. The samples are either delivered to or picked up by the laboratory.
- C. Only the sample containers provided by the laboratory to collect and store samples are used. Use of any other type of containers could contaminate the samples.
- D. To prevent sample contamination, the sample containers will not be touched nor will anything be put into them before collecting storm water samples.
- E. The sample containers will not be overfilled. Overfilling can change the analytical results.
- F. The cap for each sample container are tightly screwed without stripping the threads of the cap.
- G. A label is completed and attached to each sample container. The label will identify the date and time of sample collection, the person taking the sample, and the sample collection location or discharge point. The label will also identify any sample containers that have been preserved.
- H. The sample containers are carefully packed into an ice chest. Samples are kept at as close to 4° C (39° F) as possible until arriving at the laboratory. The samples will not be frozen.
- I. A chain of custody form for each set of samples are completed. The chain of custody form shall include the name, address, and phone number of the facility, identification of each sample container and the sample collection point, person collecting the samples, the date and time each sample container was filled, and the analysis that is required for each sample container.
- J. Before shipping, the sample containers are packed to prevent breakage during shipment. Frozen ice packs are placed into the shipping container. The sample containers are kept cool during shipment.
- K. Upon shipping/delivering the sample containers, both the signatures of the persons relinquishing and receiving the sample containers are obtained.
- L. Personnel are designated and trained to collect, maintain, and ship samples in accordance with the above sample protocols and good laboratory practices.

6.5.3 Quality Assurance Field Procedures

Manual grab sampling procedures are relatively simple, but it is crucial that no mistakes are made or shortcuts taken. To avoid mistakes that might contaminate samples, the field person must:

- ◆ Wear clean latex or nitrile gloves when handling all sampling equipment, and should change gloves frequently;
- ◆ Collect the sample from the surface of the flow;
- ◆ Secure bottle lids to prevent leakage;
- ◆ Completely and promptly label sample bottles with sample type, location, date, time, and initials;
- ◆ Place filled sample bottles into a cooler and surround each bottle with ice to keep the samples cool and prevent breakage;
- ◆ Do not increase the chance of sample contamination by leaving any sampling equipment or supplies exposed; and
- ◆ Complete the appropriate Chain-of-Custody form and have a second person verify that each bottle in the cooler is listed on the Chain-of-Custody form before submitting the cooler with samples to the analytical laboratory.

6.5.4 Clean Sampling Techniques

Clean sampling collection techniques should be followed during the collection of storm water samples to reduce the potential for contamination and permit target analytes to be detected at lower concentrations. Extreme care must be taken during all sampling activities to minimize the exposure of the sample to human, atmospheric, and other source of contamination. Sample collection personnel must adhere to the following rules while collecting storm water samples:

- ◆ No smoking, eating or drinking during sample collection;
- ◆ Do not park vehicles in the immediate sample collection area;
- ◆ Always wear clean, powder-free nitrile or latex gloves when handling sample bottles or equipment;
- ◆ Never touch the inside surface of a sample bottle or lid, even with a gloved hand;
- ◆ Never allow the inside surface of a sample bottle or lid to be touched by any material other than sample water;
- ◆ Do not permit any object to fall into or contact the collected sample water; and
- ◆ Avoid allowing rain water to drip from rain gear or other surfaces into sample bottles.

6.5.5 Sample Preservation and Holding Times

Table 6-1, which lists all of the parameters for laboratory analysis, also includes the required sample preservation methods for all analytes in the San Joaquin Solar 1 & 2 LLC facility. Sample preservation typically includes a reduction in temperature and no exposure to sunlight, but may also include the addition of chemical preservatives which are provided by the analytical laboratory. The temperature of all storm water samples should be reduced to 4°C from the time of sample collection until delivery to the analytical laboratory. In the field, manual grab samples collected should be placed on ice in a designated sampling cooler. The ice should be checked regularly to insure that the samples are kept at the proper temperature. Once samples have reached the analytical laboratory, the sample temperature should continue to be held constant at 4°C by reliable refrigeration equipment. In addition to keeping storm

water samples at the proper temperature, it is important to reduce the exposure of the samples to direct sunlight. Sunlight may cause biochemical transformation of the sample resulting in unreliable analytical outcomes. Therefore, samples should be placed in their designated cooler with lid closed immediately. Certain analytes require the addition of chemical preservatives including hydrochloric acid (HCl), sulfuric acid (H₂SO₄), or nitric acid (HNO₃).

The holding times for all analytes are also listed in Table 6-1. For example, the holding time for a sample to be analyzed for TSS is 7 days. It is important that all samples be analyzed within the maximum holding times specified by the laboratory analytical methods. To minimize the risk of exceeding holding time requirements, samples should be transferred to the analytical laboratory as soon as possible after the sample collection has been completed. Therefore, field personnel are responsible for coordinating delivery of the samples to the analytical laboratory so that these holding time limits are not exceeded. If holding times are exceeded, the exceedances must be noted and flagged in the laboratory analytical reports.

6.5.6 Chain-of-Custody Forms

Chain-of-Custody forms provided by the laboratory must be filled out by field personnel for all samples submitted to the analytical laboratory. The purpose of the Chain-of-Custody form is to keep a record of the transfer of sample custody and requested analyses. Sample date, sample location and analyses requested should be noted on each Chain-of-Custody form. All analyses specified in the monitoring plan should be included on the Chain-of-Custody form. Laboratory QA/QC requirements, such as laboratory duplicates and matrix spikes, should be noted on the appropriate Chain-of-Custody form as well.

6.6 LABORATORY ANALYSIS

Laboratory analyses of storm water samples shall be conducted using the analytical methods in accordance with 40 CFR Part 136, as listed in Table 6-1. The analytical methods for conventional parameters and selected metals are described in the EPA documents *Methods for the Chemical Analysis of Water and Wastes* (EPA 600/4-79-020, 1979) and *Methods for the Determination of Metals in Environmental Samples, Supplement I* (EPA 600/R-94/III, 1994).

6.7 REPORTING AND RECORD KEEPING PROCEDURES

All records and information related to the San Joaquin Solar 1 & 2 LLC facility SWPPP and MRP, including laboratory analytical data from storm water samples, are maintained onsite for a period of at least five years from the date of sample, observation, measurement, evaluation, or report. Any non-compliance is reported in accordance with the General Permit requirements. These records or storm water monitoring information shall include:

- ◆ The date, place, and time of facility compliance evaluations, storm water sampling, visual observations, and/or measurements;
- ◆ The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;

- ◆ The date and approximate time of analyses;
- ◆ The laboratory and individual(s) who performed the analyses;
- ◆ Analytical results, method detection limits, the analytical techniques or methods used, and QA/QC records and results;
- ◆ Non-storm water discharge visual observations, non-storm water discharge investigation, and storm water discharge visual observation records;
- ◆ Visual observation and sample collection exception records;
- ◆ All Sampling and Analysis Exemption and Reduction certifications and supporting documentation found at <http://www.swrcb.ca.gov/stormwtr/docs/smanlrdc.doc> for the Sampling and Analysis Reduction Certification form;
- ◆ The records of any corrective actions and follow-up activities that resulted from the visual observations or facility compliance evaluations.

6.8 ANNUAL REPORT

The San Joaquin Solar 1 & 2 LLC facility will submit an Annual Report by July 1 of each year to the Executive Officer of the Central Valley Regional Board. The report shall include a summary of visual observations and sampling results, an evaluation of the visual observation and sampling and analysis results, laboratory reports, and the Annual Comprehensive Site Compliance Evaluation Report required in Section A.9 of the General Permit. The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit." The Annual Report shall be signed and certified in accordance with the Standard Provisions in Section C of the General Permit. The San Joaquin Solar 1 & 2 LLC facility will prepare and submit their Annual Report using the current annual report form developed by the SWRCB (available on the internet and mailed to each facility each year before the due date).

6.8.1 Laboratory Test Results

The results of the laboratory analysis shall be presented in the Annual Report. This would include a comparison of the actual test results and the analytical parameter limits presented in Table 6-1. If all of the test results are below the parameter limits, there is no further explanation necessary. If there are test results that are above a parameter limits, then additional explanation and review is necessary. Explanation details would include:

- Probable or possible pollutant source for each parameter over the limit
- Specific event or activity which caused pollutant discharge (if applicable)
- Proposed BMP to be implemented to prevent repeat discharge
- Proposed changes in activities to prevent repeat discharge (if applicable)

If the test results show repeated discharge levels for the same parameter over multiple seasons or years, then additional analysis or review should be performed to delineate the specific issues involved with the situation.

If a pollutant discharge is due to an accident or disaster, a description of the event including date, time, methods for spill clean-up and other related information would be included into the Annual Report.

Changes or improvements to BMPs and implementation procedures must be documented in the SWPPP at the appropriate sections of the document.

For comparison purposes, the following watershed limits have been included. It is important to update this section annually as watershed management is developed.

Table 6-2. Detection Limits

| Analytical Parameter | EPA Method No. | Target Detection Limit | Watershed Limit |
|------------------------------|----------------|---|-----------------------------------|
| Total Suspended Solids (TSS) | 160.2 | 1.0 milligrams per liter (mg/L) | 45 mg/l |
| pH | 150.1 | pH units | 6.5 – 8.5 |
| Specific Conductance | 120.1 | micromhos per centimeter (µmhos/cm) units | <100 µmhos/cm |
| Total Organic Carbon (TOC) | 415.1 | 0.5 mg/L | Does not have an associated limit |
| Oil & Grease | 413.1 | 1.0 milligrams per liter (mg/L) | 40 mg/l |
| Total Petroleum Hydrocarbons | 418.1 | 1.0 milligrams per liter (mg/L) | .5 mg/l |

Monitoring and Reporting Plan

The following form may be used to summarize laboratory data results.

Table 6-3. Storm Water Quality Data Form

| Constituent Tested | Analytical Method | Units | Sample Date: xx/xx/07 Analytical Results |
|------------------------------------|-------------------|----------|---|---|---|---|---|
| pH | 150.1 | pH Units | | | | | |
| Total Suspended Solids (TSS) | 160.2 | mg/l | | | | | |
| Specific Conductance (SC) | 120.1 | umho/cm | | | | | |
| Total Organic Carbon (TOC) | 415.1 | mg/l | | | | | |
| Oil & Grease | 413.1 | mg/l | | | | | |
| Total Petroleum Hydrocarbons (TPH) | 418.1 | mg/l | | | | | |

Abbreviations: ND = No Detect; NR = Not Reported

APPENDIX A
SITE MAP

APPENDIX B
SWPPP CHECKLIST

The SWPPP checklist presented on the following pages is a required summary checklist by the State Water Resources Control Board. This checklist has been completed as part of the original SWPPP document. This checklist should be updated with any changes made to the main SWPPP document or plans. Also note that changes are also to be recorded on the Review and Revision sheet found at the beginning of the SWPPP document.

Changes are to be dated and initialed.

**Storm water Pollution Prevention Plan Checklist
General Industrial Activities Storm water Permit**

FACILITY NAME: San Joaquin Solar 1 & 2 LLC Facility; WDID No. TBD

| FACILITY CONTACT | |
|------------------|-----------------------------|
| Name | |
| Title | Plant Manager |
| Company | San Joaquin Solar 1 & 2 LLC |
| Street Address | |
| City, State | |
| Zip | |
| | |

| CONSULTANT CONTACT | |
|--------------------|--|
| Name | |
| Title | |
| Company | |
| Street Address | |
| City, State | |
| Zip | |
| Phone | |

| Storm water Pollution Prevention Plan | Not Applicable | SWPPP Page # or Reference Location | Date Implemented or Last Revised |
|---|----------------|--|----------------------------------|
| Signed Certification (C.9 and C.10) | | Follows cover page | |
| Pollution Prevention Team (A.3.a) | | Sec. 2.3, pg. 2-2 | |
| Existing Facility Plans (A.3.b) | | Sec. 2-5, pg. 2-6 | |
| Facility Site Map(s) | | Appendix A | |
| Facility boundaries (A.4.a) | | Figure 1 | |
| Drainage areas (A.4.a) | | Figure 1 | |
| Direction of flow (A.4.a) | | Figure 1 | |
| On-site water bodies (A.4.a) | X | | |
| Areas of soil erosion (A.4.a) | X | | |
| Nearby water bodies (A.4.a) | X | Sec. 2.1, p 2-1 | |
| Municipal storm drain inlets (A.4.a) | | Figure 1 | |
| Point of discharge (A.4.b) | | Figure 1 | |
| Structural control measures (A.4.b) | | Figure 1 | |
| Impervious areas (A.4.c) (paved areas, buildings, covered areas, roofed areas) | | Figure 1 | |
| Location of directly exposed materials (A.4.d) | | Figure 1 | |
| Locations of significant spills and leaks (A.4.d) | X | | |
| Storage areas / Storage tanks (A.4.e) | | Figure 1 | |
| Shipping and receiving areas (A.4.e) | X | | |
| Fueling areas (A.4.e) | X | | |
| Vehicle and equipment storage and maintenance (A.4.e) | | Sec. 4.3, pp 4-7, 4-8, Figure 1 | |
| Material handling / Material processing (A.4.e) | | Figure 1 | |
| Waste treatment / Waste disposal (A.4.e) | | Sec. 2.4.5, p 2-4, 2-5, Sec. 4.2, p 4-4, 4-5, Sec. 4.3, p 4-7, 4-8 | |
| Dust generation / Particulate generation (A.4.e) | X | | |
| Cleaning areas / Rinsing areas (A.4.e) | | Sec. 4.2, p 4-2, Sec. 4.3, p 4-9 | |

| Storm water Pollution Prevention Plan | Not Applicable | SWPPP Page # or Reference Location | Date Implemented or Last Revised |
|--|-------------------|---------------------------------------|--|
| Other areas of industrial activities (A.4.e) | | N/A | |
| List of Significant Materials (A.5) | | | |
| For each material listed: | | | |
| Storage location | | Table 4-1, pg. 4-1 | |
| Receiving and shipping location | | Table 4-1, pg. 4-1 | |
| Handling location | | Table 4-1, pg. 4-1 | |
| Quantity | | Table 4-1, pg. 4-1 | |
| Frequency | | Table 4-1, pg. 4-1 | |
| Description of Potential Pollution Sources (A.6) | | | |
| Industrial processes (A.6.a.i) | | Sec. 4.2, pg. 4-2 | |
| Material handling and storage areas (A.6.a.ii) | | Sec. 4.2, pg. 4-2 | |
| Dust and particulate generating activities (A.6.a.iii) | X | | |
| Significant spills and leaks (A.6.a.iv) | X | | |
| Non-storm water discharges (A.6.a.v) | | Sec. 4.2, pg. 4-2 | |
| Soil erosion (A.6.a.vi) | X | | |
| Assessment of Potential Pollutant Sources (A.7) | | | |
| Areas likely to be sources of pollutants (A.7.a.i) | | Table 4-2, pg. 4-3, 4-4, 4-5, 4-6 | |
| Pollutants likely to be present (A.7.a.ii) | | Table 4-2, pg. 4-3, 4-4, 4-5, 4-6, | |
| Storm water Best Management Practices (A.8) | | | |
| <i>Non-structural BMPs (A.8.b)</i> | | | |
| Good housekeeping (A.8.a.i) | | Sec. 2.4.2, pg. 2-3 | |
| Preventative maintenance (A.8.a.ii) | | Sec. 2.4.3, pg. 2-3, 2-4 | |
| Spill response (A.8.a.iii) | | Sec. 2.4.6, pg. 2-5, 2-6 | |
| Material handling and storage (A.8.a.iv) | | Sec. 2.4.4, pg. 2-4, 2-5 | |
| Employee training (A.8.a.v) | | Sec. 2.6, pg. 2-6 | |
| Waste handling / Waste recycling (A.8.a.vi) | | Sec. 2.4.5, pg. 2-4, 2-5 | |
| Recordkeeping and internal reporting (A.8.a.vii) | | Sec. 6.7, pg. 6-7, 6-8 | |
| Erosion control and site stabilization (A.8.a.viii) | | Sec. 4.2, pg. 4-3 | |
| Inspections (A.8.a.ix) | | Sec. 6.3, pg. 6-2 | |
| Quality assurance (A.8.a.x) | | Sec. 6.5.3, pg. 6-6 | |
| <i>Structural BMPs (A.8.c)</i> | | | |
| Overhead coverage (A.8.b.i) | | Sec. 4.3, Table 4-2 | |
| Retention ponds (A.8.b.ii) | X | | |
| Control devices (A.8.b.iii) | | Sec. 4.3, pg. 4-10 | |
| Secondary containment structures (A.8.b.iv) | | Sec. 4.3, Table 4-2 | |
| Treatment (A.8.b.v) | | | |
| Industrial Activity BMP/ Pollutant Summary (A.8.d) | | Table 4-2 | |
| Annual Comprehensive Site Compliance Evaluation (A.9) | | | |
| Review of visual observations inspections, and sampling analysis (A.9.a) | | Sec. 5.0, pg. 5-1 | |
| Visual inspection of potential pollution sources (A.9.b) | | Sec. 6.2 & 6.3, pg. 6-2 | |
| Review and evaluation of BMPs (A.9.c) | | Sec. 6.1, pg. 6-1 | |
| Evaluation report (A.9.d) | | Sec. 6.8, pg. 6-8 | |

APPENDIX C
ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION FORM

**Storm Water Management Program
Annual Comprehensive Site Compliance Evaluation**

1. Name of Building or Operation: _____

2. Operation Representative: _____

Position: _____

Phone No.: _____

| | <u>Yes</u> | <u>No</u> | <u>Not Applicable</u> |
|---|------------|-----------|---------------------------|
| 3. Facility's Storm water Pollution Prevention Plan (SWPPP) easily accessible in each building? | _____ | _____ | _____ |
| 4. Awareness of SWPPP by facility personnel? (Random survey of employees of site.) | _____ | _____ | _____ |
| 5. Facility's Emergency Response Plan and Procedures easily accessible in each building? | _____ | _____ | _____ |
| 6. Awareness of Emergency Response Plan | | | |
| 7. And Procedures by facility personnel? (Random survey of employees on site) | _____ | _____ | _____ |
| 8. Evaluation Checklist (page 2 of 2) completed? | _____ | _____ | _____ |
| 9. Was any storm water pollution prevention training conducted during the year? | _____ | _____ | _____ |
| 9. Were non-storm water discharge visual observations conducted? List Dates: _____ | _____ | _____ | _____ |
| 10. Were storm water discharge visual observations conducted? List Dates: _____ | _____ | _____ | _____ |
| 11. Were storm water discharge samples collected for two storm events? List Dates: _____ | _____ | _____ | _____ |

Evaluation Notes: _____

Corrective Measures Recommended: _____

Evaluation Conducted By: _____ Date: _____

This completed evaluation was reviewed with me on: _____
Date

Operation Representative: _____
Signature

Appendix C

Evaluation Checklist

| Activities – Check each activity present at the site. | Implemented | | Corrective Action or comment |
|---|--|--|------------------------------|
| | YES | NO | |
| <p>Equipment Fueling, Repair and Maintenance</p> <ol style="list-style-type: none"> 1. Monthly inspections of yard for signs of spills. 2. Routine daily walk-throughs checking asphalt storage tank for external corrosion and structural failure, spills and overfills, failure of piping system, and leaks or spills during pumping of asphalt from truck to storage tank. 3. Maintenance performed in designated areas only. 4. Drip pans used when draining fluids or storing leaking equipment. 5. Waste material is managed and disposed of in accordance with applicable waste laws and regulations. 6. Good housekeeping. 7. Personnel trained in proper equipment handling, spill prevention and asphalt transfer and spill response procedures. 8. All spills immediately cleaned by personnel trained in spill response procedures. 9. Clearly labeled clean-up materials strategically placed in the yard. 10. Implement an Emergency Response Plan and Procedures. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| <p>Hazardous Material Container and Waste Oil Storage</p> <ol style="list-style-type: none"> 1. Hazard communication program in place. 2. Hazardous material/waste oil stored in designated areas only. 3. Good housekeeping practices in place. 4. Secondary containment structures provided. 5. Employees trained in proper maintenance, cleaning, and spill response procedures. 6. Spill kits kept in both storage areas. 7. Areas inspected daily for signs of spills or leaks. 8. Spills and leaks are cleaned immediately by personnel trained in spill response procedures. 9. Materials recycled whenever possible. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| <p>Vehicle/equipment and portable storage areas</p> <ol style="list-style-type: none"> 1. Storage area graded to minimize storm water runoff and/or run on. 2. Drip pans used when draining fluids or storing of leaking equipment. 3. Equipment leaks repaired as soon as possible. 4. Equipment regularly inspected and maintained. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |

Appendix C

| Activities – Check each activity present at the site. | Implemented | | Corrective Action or comment |
|---|--|--|---------------------------------|
| | YES | NO | |
| Dumpster 1. Trash can lids are closed at all times. 2. Dumpster lid closed as often as is practical and always during storm events. 3. Dumpster and trash cans emptied by a licensed hauler. 4. Dumpster and trashcans replaced if it is deteriorating to the point where leakage is occurring. 5. Good housekeeping practices to ensure trash is kept inside dumpster at all times. 6. Employees aware of the importance of keeping dumpster covered and free from leaks. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| General Site 1. Drainage system, catch basin, and other drainage features are routinely inspected during both dry and rainy seasons. | <input type="checkbox"/> | <input type="checkbox"/> | |
| Entrance/Exit 1. Sweep the entire parking area of the facility as needed | <input type="checkbox"/> | <input type="checkbox"/> | |

APPENDIX D
ANNUAL REPORT

NO ANNUAL REPORTS CURRENTLY AVAILABLE FOR THIS DRAFT SWPPP

**DRAFT EROSION AND SEDIMENT
CONTROL PLAN**

SAN JOAQUIN SOLAR 1 & 2 HYBRID
POWER PROJECT
FRESNO COUNTY

PREPARED FOR:
Martifer Renewables Solar Thermal LLC
12555 High Bluff Drive, Suite 100
San Diego, CA 92130

URS Project No. 27658033

JUNE 30, 2009

DRAFT REPORT

**DRAFT DRAINAGE, EROSION &
SEDIMENT CONTROL PLAN FOR SAN
JOAQUIN SOLAR HYBRID 1 & 2**

Prepared for

Martifer Renewables Solar Thermal LLC
12555 High Bluff Drive, Suite 100
San Diego, CA 921301

URS Project No. 27658033

Matthew C. Moore, PE, CPESC, CPSWQ
Project Engineer

June 30, 2009

URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4314
619.294.9400 Fax: 619.293.7920

TABLE OF CONTENTS

| | | |
|------------------|--|------------|
| Section 1 | Introduction..... | 1-1 |
| | 1.1 Objectives | 1-1 |
| | 1.2 Project Description | 1-3 |
| | 1.3 Project Schedule | 1-3 |
| Section 2 | Drainage | 2-1 |
| | 2.1 Drainage Patterns and Flooding..... | 2-1 |
| | 2.2 Drainage Calculations..... | 2-2 |
| Section 3 | Clearing and Grading..... | 3-1 |
| | 3.1 Foundations..... | 3-1 |
| | 3.2 Groundwater | 3-1 |
| | 3.3 Solar Field Construction | 3-1 |
| | 3.4 Offsite Facilities Construction | 3-2 |
| | 3.5 Management and Disposal of Hazardous Materials | 3-3 |
| Section 4 | Construction BMPs..... | 4-1 |
| | 4.1 Implementation Schedule | 4-1 |
| | 4.2 Material and Equipment Staging Area..... | 4-3 |
| | 4.3 Construction Traffic..... | 4-4 |
| | 4.4 Temporary Soil Stabilization (Erosion Control)..... | 4-4 |
| | 4.5 Temporary Sediment Control | 4-5 |
| | 4.6 Wind Erosion Control..... | 4-6 |
| | 4.7 Tracking Control..... | 4-6 |
| | 4.8 Maintenance of Construction BMPs..... | 4-7 |
| | 4.9 Soil and Wind Erosion Calculations..... | 4-13 |
| Section 5 | Post-Construction BMPs..... | 5-1 |
| | 5.1 Infiltration Areas..... | 5-1 |
| Section 6 | References | 6-1 |

List of Tables, Figures, and Appendices

Tables

- Table 1. Onsite Runoff Coefficients
- Table 2. Hazardous Materials Used and Stored During Construction
- Table 3. Anticipated Project Schedule Major Milestones
- Table 4. Estimated Daily Construction Traffic
- Table 5. Maintenance Program of Construction BMPs
- Table 6. Soil and Wind Erosion Results

Figures

- Figure 1. Vicinity Map
- Figure 2. Site Delineation Map
- Figure 3. Water Courses and Critical Areas Map
- Figure 4. Off-Site Topographic Map
- Figure 5. Clearing and Grading Limits Map
- Figure 6. Construction BMP Plan

Appendices

- Appendix A Calculations
- Appendix B Construction Stormwater Pollution Prevention Plan

List of Acronyms and Abbreviations

| | |
|--------------------|---|
| af | acre-feet |
| AFC | Application for Certification |
| afy | acre-feet per year |
| BFE | Base Flood Elevation |
| bgs | below ground surface |
| BMP | Best Management Practices |
| CAISO | CAISO |
| CEC | California Energy Commission |
| SJSHP (or Project) | San Joaquin Solar 1 & 2 Hybrid Project |
| cf | cubic feet |
| cfs | cubic feet per second |
| CWA | Clean Water Act |
| cy | cubic yard |
| DESCP | Drainage Erosion and Sediment Control Plan |
| FEMA | Federal Emergency Management Agency |
| FIRM | Flood Insurance Rate Map |
| ft | Feet |
| GPS | Global Positioning System |
| HCE | Heat Collection Elements |
| HTF | Heat Transfer Fluid |
| in/hr | inch per hour |
| kV | kilovolt |
| MSL | Mean Sea Level |
| NFF | National Flood Frequency |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| OWS | Oil Water Separator |
| PG&E | Pacific Gas & Electric |
| ROW | Right-of-Way |
| RUSLE2 | Revised Universal Soil Loss Equation 2 |
| RWQCB | Regional Water Quality Control Board |
| SCA | Solar Collector Assemblies |
| SWPPP | Stormwater Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |
| USGS | United States Geological Survey |
| WDID | Waste Discharge Identification |
| WUS | Water of the United States |
| yr | Year |

SECTION 1 INTRODUCTION

1.1 OBJECTIVES

This is a preliminary draft Drainage, Erosion & Sediment Control Plan (DESCP) that will be finalized when the final project design is complete.

This DESCP was prepared in response to data requests from the California Energy Commission (CEC) and has three main objectives:

- Discuss site drainage and clearing/grading operations;
- Provide specific details pertaining to: temporary soil stabilization, temporary sediment control, wind erosion control and tracking control;
- Discuss the maintenance schedule of temporary soil stabilization, temporary sediment control, wind erosion control and tracking control; and
- Identify measures that are proposed to prevent erosion and sedimentation in the completed condition of the project.

This project involves a site disturbance of one acre or greater, so it shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The Applicant shall submit a Notice of Intent (NOI) to comply with the General Permit for Construction Activity with the State Water Resources Control Board (SWRCB) and complete construction and industrial phase Stormwater Pollution Prevention Plans prior to construction and operation. The Applicant shall provide the County with the Waste Discharge Identification Number (WDID No.) or with verification that an exemption has been granted by the Regional Water Quality Control Board (RWQCB).

1.1.1 CEC Data Request

Following are the data requests provided by the CEC for preparation of this DESCP:

- **Vicinity Map** – A map(s) at a minimum scale 1"=100' indicating the location of all project elements (construction site, laydown area, pipelines, etc.) with depictions of all significant geographic features including watercourses, washes, drainage channels, swales, storm drains, and sensitive areas (See Figure 1).
- **Site Delineation** – All areas subject to soil disturbance (project site, laydown area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities (See Figure 2).
- **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including washes, drainage channels, swales, storm drains, and drainage ditches. Indicate the proximity of those features to the construction, laydown, and landscape areas and all transmission and pipeline construction corridors (See Figure 3).

- **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain. This map will be provided as part of the final design.
- **Drainage of Project Site Narrative** - The DESCP shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage measures. The hydraulic analysis should be used to support the selection of Best Management Practices (BMPs) and structural controls to divert off-site and on-site drainage around or through the construction and laydown areas. To be provided as part of the final design.
- **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography. These plans will be provided as part of the final design.
- **Clearing and Grading Narrative** - The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the project (project site, laydown area, transmission corridors, and pipeline corridors) whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported. To be provided as part of the final design.
- **Project Schedule** – The DESCP shall identify on the topographic site map the location of the site specific BMPs to be employed during each phase of construction (initial grading, project elements excavation and construction, and final grading/stabilization). Implementation schedules shall be provided for each project element for each phase of construction. To be provided as part of the final design.
- **Best Management Practices Plan** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading/demolition, project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to prevent wind and water erosion. These plans will be provided as part of the final design.
- **Best Management Practices Narrative** - The DESCP shall show the location, timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, for all project elements (site, pipelines, etc.) related to excavations and construction, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs, or a statement provided when such information will be available. Be sure to include provisions for wet-season work. To be provided as part of the final design.

Note that the maps provided in this plan maybe smaller than the requested 1"=100' scale due to the size of the project.

1.2 PROJECT DESCRIPTION

The San Joaquin Solar 1 & 2 Hybrid (SJSHP) facility is located along West Jayne Avenue in an unincorporated area of southwestern Fresno County, east of the City of Coalinga and southwest of Huron, California. The Project site is located on West Jayne Avenue; approximately 6 miles east of Coalinga and approximately 3 miles west of Interstate 5, in an agricultural area of Fresno County, California. The Facility will be situated on one section of land, approximately 640 acres. The Project site is located in an area zoned for agricultural uses as specified in the Fresno County General Land Use Plan. Surrounding land uses include agricultural fields to the north, agricultural lands to the south, the Gujarral Hills Oil Field to the east, and the Coalinga State Hospital to the west.

The Project includes the construction, operation and maintenance of two 53.4 MW net solar hybrid power stations and ancillary systems. The two components of each Plant are the solar field and the biomass facilities. Each solar field has the heat-generating capacity to fully load its respective turbine to produce the net 53.4 MW. Each biomass facility will be used to maximize the turbine's energy output during shoulder solar hours (as the sun rises and sets) and will operate at night to produce up to 40 MW of energy.

The solar field design will use parabolic solar collectors to concentrate the sun's radiant energy on HCEs that contain a circulating HTF. Hot HTF is then conveyed to heat exchangers to produce steam in a conventional reboiler for expansion in a reheat steam turbine generator. The biomass facility will use fluidized bed combustion technology to burn orchard waste and municipal green waste. The biomass component will run up to 24 hours a day in winter months when solar intensity is less. During summer, the biomass plant will start up as the sun approaches the horizon, run all night, then ramp down as the sun rises the next day. Incorporating the biomass facility in this manner increases the power plant's total energy output and maximizes turbine use. The biomass combustion process will produce ash equal to approximately 5% of the biomass consumed.

Ancillary facilities will include buildings and facilities for assembly, maintenance and operations, as well as the gathering lines required to transmit electricity from the field to the substation.

There is no existing storm drain infrastructure in the vicinity.

1.3 PROJECT SCHEDULE

Based on the CEC Committee Schedule, the date for granting of the Commission Decision has not been determined. Project construction will likely commence in the fourth quarter 2010. In addition to the onsite facilities, a transmission line and a water line will be constructed in corridors outside the 640-acre square. A general construction schedule is detailed in section 4.1 Implementation Schedule.

SECTION 2 DRAINAGE**2.1 DRAINAGE PATTERNS AND FLOODING****2.1.1 Existing Drainage Patterns**

The nearest mapped surface drainages are Zapato Chino Creek approximately 2,000 feet southeast, and Los Gatos Creek approximately one mile north and northwest of the site. The nearest mapped surface water includes the wastewater treatment ponds located at the adjacent Coalinga State Hospital property to the west, and an irrigation canal located approximately 100 feet from the southwestern corner of the site. Surface water runoff from the site and the surrounding land generally flows toward the southwest into Zapato Chino Creek (EDR, 2008).

According to the FEMA floodplain panel maps for the site vicinity the northwestern boundary of a 100-year flood event zone lies within one-quarter mile southeast of the site boundary. The site is not located in a coastal zone.

2.1.2 Proposed Drainage Patterns**2.1.2.1 Onsite Drainage**

Onsite drainage design has not been finalized at this time. Final drainage design is contingent on final site design. The onsite stormwater conveyance systems will be designed in accordance with the Fresno County drainage standards for swales, pipes, infiltration basins, etc. Fresno County has a draft hydrology/hydraulic design manual that will be utilized to design and protect facilities from damage from 100-year flooding. The currently proposed design will sheet flow accumulated runoff through each of the four main pad areas. Flows may be concentrated at select locations including: roadside swales, road cross culverts, terrace downdrains, and at the entrance to the infiltration area in the southwest corner of the site. The infiltration area will be designed to accept and infiltrate annual runoff volumes to reduce post project flows to at or below existing levels. Accumulated runoff that cannot be stored and infiltrated will be discharged out of the basin in a controlled method to prevent erosion at the outlet and receiving water.

As indicated in the AFC, site grades will be established to minimize the amount of earthwork required to construct the facilities and to maintain control of stormwater runoff. All areas disturbed during construction will be graded to a concrete for road base and gravel for other facility area surfaces). Finish grading will be performed to conform to the finished design elevations for surface drainage and to prepare the areas for the specified surface finishes. Rainfall from vehicle parking and paved areas in the power block will be collected and directed to an oil/water separator prior to discharge to the raw water tank for recovery. The solar field is designed with a slight berm on the exterior edges to contain collected rain water in the field for natural infiltration and evaporation. The power island is 1 foot higher than the solar field so that runoff travels to the solar fields and infiltrates or evaporates.

Rainfall from each plant's solar field will continue to be drained by sheet flow. Drainage and erosion will be controlled through infiltration basins to allow the rainfall to be absorbed into the ground replenishing local ground water levels and designed to match existing runoff rates to offsite areas.

Stormwater discharges from construction activities are subject to BMPs designed and implemented for construction activities. From a temporary construction perspective, groundwater is not expected to be encountered during construction phases; however, if necessary, appropriate construction phase BMPs will be used to minimize impacts to both surface water and groundwater quality. Although there will be minimal changes in absorption rates, drainage patterns, or the rate or amount of surface runoff due to the surface paving and the presence of new structures, surface water runoff will be conveyed, contained, and allowed to evaporate, percolate, or drain similar to existing conditions. The site is relatively flat so there is not a significant risk for accelerated erosion after implementation of temporary construction control BMPs and post-construction control BMPs.

2.1.2.2 Offsite Drainage

Offsite drainage is not considered to be a significant contributor to drainage patterns and runoff through the site.

2.2 DRAINAGE CALCULATIONS

The site is located in an unincorporated area of Fresno County, therefore, Fresno County hydrology and hydraulic standards were used for onsite stormwater calculations.

Table 1 provides the onsite proposed condition runoff values calculated using the rational method. The runoff generated onsite will be captured onsite within multiple detention/infiltration areas. These areas will allow the stormwater to infiltrate into the ground and be evaporated.

**Table 1.
Onsite Runoff Coefficients**

| | | |
|---|------|-------|
| Total site area (including construction laydown area) | 640 | acres |
| Percentage impervious area before construction | <1 | % |
| Runoff coefficient before construction | 0.38 | |
| Percentage impervious area after construction* | <5 | % |
| Runoff coefficient after construction | 0.40 | |

Note:

* Percentage impervious conservatively assumes entire power block, access road, and parking areas are impervious. Areas under the reflectors are pervious.

The current estimate of average annual site runoff is approximately 152 acre-feet (AF), assuming 7.5 inches of annual rainfall over the 640 acre site and using a runoff coefficient of 0.38. Although the Project would increase runoff coefficients in localized areas onsite (site facilities area), the Project drainage design, along with the proposed infiltration areas in the solar field will allow percolation and evaporation to match the current runoff rates to downstream offsite areas. Additional information and calculations for the drainage and runoff calculations onsite will be provided during the design process.

SECTION 3 CLEARING AND GRADING

Grades will be established to minimize the amount of earthwork including clearing and grubbing required to construct the proposed facility improvements and to maintain control of stormwater runoff. All areas disturbed during construction will be graded to a relatively smooth surface. Selected areas will be covered with appropriate material, as conditions require (e.g., gravel, asphalt concrete, or concrete). Finish grading will be performed to conform to the finished design elevations for surface drainage and to prepare the areas for the specified surface finishes.

In general, rainfall runoff from the solar fields will continue to be drained via sheet flow.

3.1 FOUNDATIONS

Based on preliminary geotechnical investigations, it is expected that lightly loaded equipment and structures such as the solar reflectors and receivers will be supported on shallow footings. Shallow foundations will be a combination of shallow drilled shafts, continuous strip and isolated spread footings. The solar field Receivers and Reflectors will be supported on shallow drilled shaft foundations of reinforced concrete or individual spread footings.

The SCAs in the solar field will be supported on pile foundations. Excavations for foundations would be made with power drilling equipment. A vehicle-mounted power auger would be used to excavate for the SCA foundations. Footings would be installed by placing reinforcing steel and an anchor bolt cage into each foundation hole, positioning the bolt cage, and encasing it in concrete. Spoil material would be used for fill where suitable.

Foundation excavations will be prepared as required for the power block, biomass facilities, transformers and other heavy equipment. Prior to excavation, underground structures will be located and protected or removed. Deep foundations may be required in limited locations within the power block and biomass facilities to support heavy equipment with large overturning moments (e.g., exhaust stacks). Cast indrilled-hole (CIDH) or precast-prestressed concrete piles may be used, as determined by the final geotechnical investigation and foundation design.

3.2 GROUNDWATER

SJSHP does not anticipate encountering ground water and does not expect to have to dewater. If groundwater is encountered and dewatering is required, then approved BMPs (e.g., NS-2 Dewatering Operations from the California Stormwater Quality Association (CASQA) Best Management Practices Manual) will be employed.

3.3 SOLAR FIELD CONSTRUCTION

During the construction, temporary site services will be in place. Power will be provided by mobile diesel generators. Water will be available at points around the site, as well as on a series of mobile equipment.

Construction will generally progress from the northern boundary towards the south through each block. As a result of this simultaneous construction, construction within the solar field, construction of linears, and associated earth moving operations will occur throughout the majority of the 15 month construction period.

3.4 OFFSITE FACILITIES CONSTRUCTION

3.4.1 Transmission Line

The transmission line will be an approximately 6 miles long 230 kV (AFC-C7). The lines will begin in the middle of the Project site at each dead-end structure just beyond the turbine/generator and the 13.8 to 230 kV step-up transformer. The transmission lines travels to the east site boundary then either north or south to the respective site corner, then due east for 5 miles before it travels north to Gates Substation. It then connects to an existing 230 kV bus in the substation.

The overhead 230 kV transmission conductors to the physical connection with the existing Gates Substation will be supported by a dead-end structure in each Plant's switchyard and multiple H frame using 85-foot 230 kV type A wood poles (three sets of insulators in horizontal configuration with a spacing of about 6.7 m (22 feet) between the phases).

Construction of the SJSHP transmission line includes the following elements:

- Yards: Staging areas for trailers, office personnel, equipment, material staging, and employee parking will be provided in a disturbed area within the boundary of the site.
- Road Work: As needed, dirt roads will be cleared for access along the transmission line route to provide access to the tower locations.
- Foundations: Each pole will have a foundation installed that will require curing prior to the pole installation. These pole foundations will be installed in locations that avoid sensitive environmental resources identified in Project environmental surveys.
- Pole Erection: Each pole will be assembled onsite and welded together, and then insulators and conductor hardware will be installed.
- Conductors: From pulling sites, the conductors will be installed, sagged, and permanently connected to the insulators.
- Pulling Sites: There are only two pulling sites required to install the conductors along this segment of the transmission line. The sites will be on existing access roads or access roads that will be installed as part of the transmission line installation.
- Communication System: The overhead ground/fiber optic communications optical ground wire (OPGW) cable will be installed using the same pulling sites as were used for the conductor installation.
- Cleanup: Although cleanup will be ongoing as the work proceeds, once construction is completed, a final cleanup of the entire site will be performed to clear the area of any remaining construction-related debris.

3.4.2 Water Line

The proposed water supply line from the proposed Coalinga Waste Water Treatment Facility will be constructed primarily within existing disturbed areas and will require typical construction phase BMPs for erosion and sediment control.

3.5 MANAGEMENT AND DISPOSAL OF HAZARDOUS MATERIALS

During the construction of the proposed Project, a collection of hazardous materials will be utilized onsite during the construction phase. Hazardous materials to be used during the construction phase include gasoline, diesel fuel, oil, and small amounts of lubricant cleaners, solvents and adhesives. There are no feasible alternatives to these materials for construction or operation of construction vehicles and equipment. No acutely hazardous materials (AHM) will be used or stored on site during construction utilizing appropriate BMPs to reduce the potential of discharge of these materials from the project site. Further, no storage of hazardous materials is planned outside of the Plant sites. A summary of hazardous materials to be used and stored for construction of the proposed Project is provided in Table 2 (Hazardous Materials Used and Stored During Construction).

**Table 2.
Hazardous Materials Used and Stored During Construction**

| Material | Purpose | Storage Location | Maximum Stored | Storage Type |
|--|---|---|-----------------------------------|---------------------------|
| Diesel Fuel | Refueling Truck | Laydown Area/Mobile | 1,320 gallons | Truck |
| Gasoline | Refueling construction vehicles and equipment | Laydown Area | 1,000 gallons | Truck |
| Clearing Chemicals/Detergents | Periodic cleaning | Warehouse/Shop Area | 132 gallons | Drums or small containers |
| Lubricating Oil | Lubricate rotating equipment (e.g., STG lube oil systems) | Contained in storage tanks on equipment skids | 1,500 gallons | Tanks |
| Hydraulic Oil | Lubricating equipment parts | Warehouse/Shop Area | TBD | Tanks |
| Grease | Lubricating equipment parts | Warehouse/Shop Area | TBD | Drum |
| Glycol | Coolants | Warehouse/Shop Area | TBD | Tanks |
| Acetylene | Welding | Warehouse/Shop Area | TBD | Cylinders |
| Oxygen | Welding | Warehouse/Shop Area | TBD | Cylinders |
| Waste Solvents, used oils, paint, oily rags, adhesives | Construction Hazardous Waste | Hazardous waste storage area | 176 gallons removed every 90 days | 55-gallon drums |

Table 2
Hazardous Materials Used and Stored During Construction
(Continued)

| Material | Purpose | Storage Location | Maximum Stored | Storage Type |
|---|------------------------------|------------------------------|--|--|
| Spent Batteries - lead, acid, alkaline type | Construction Hazardous Waste | Hazardous waste storage area | 40 batteries disposed of every 4 years | Spent battery stored in hazardous waste storage area |

Notes:

¹All numbers are appropriate.

STG = steam turbine generator.

SECTION 4 CONSTRUCTION BMPS

This DESC includes erosion control measures that shall be implemented on this project and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of access roads. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities. The intent of erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse, or onto adjacent properties.

Stormwater discharges from construction activities are subject to BMPs designed and implemented for construction activities. Approved BMPs appropriate to the site and specific conditions will be selected from the California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook – Construction. Selected BMPs may include, but are not limited to, the following, as appropriate:

- Erosion Control (Temporary Soil Stabilization) techniques such as scheduling construction sequences to minimize land disturbance during the rainy and non-rainy seasons and employing BMPs appropriate for the season; preservation of existing vegetation by marking areas of preservation with temporary orange propylene fencing; use of geotextiles, mats, plastic covers or erosion control blankets to stabilize disturbed areas and protect soil stockpiles from erosion by wind or water; use of earth dikes, drainage swales and lined ditches to intercept stormwater flows, divert and convey stormwater runoff to prevent erosion; use of outlet protection devices and velocity dissipation devices at pipe outlets to prevent scour and erosion from stormwater flows.
- Sediment Control techniques including use of silt fences, straw bales, and/or fiber rolls to intercept and reduce the flow of sediment laden stormwater runoff to facilitate the settling of sediment before stormwater runoff discharges from the Project site.
- Wind Erosion Control techniques may include the application of water or dust palliatives as necessary to prevent or alleviate wind blown dust from the Project site.
- Tracking Control techniques may include the creation of stabilized points of ingress and egress from the Project site. Tracking Control BMPs will help to limit the tracking of sediment from the Project site. Also, the construction of stabilized roadways can also help reduce the amount of sediment from the Project site.

4.1 IMPLEMENTATION SCHEDULE

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

The Project construction, from site preparation and grading to full commercial operation, is expected to take approximately 15 months. Heavy construction will be scheduled between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Based upon the latest status of the environmental permitting process the anticipated major milestones are presented below in Table 3 (Project Schedule Major Milestones).

**Table 3.
Anticipated Project Schedule Major Milestones**

| Activity | Date |
|---|------------------------------|
| Begin Construction | 4 th Quarter 2010 |
| Start Up and Commissioning: SJS 1 Plant | 4 th Quarter 2011 |
| Start Up and Commissioning: SJS 2 Plant | 1 st Quarter 2012 |

Site facilities and amenities will be established during the first month of the solar field build out. The majority of these will be located in the construction laydown area located in the center of the Project site that will be illustrated on the project SWPPP. These will consist of site offices, restroom facilities, meal rooms, parking areas, vehicle storage/maintenance areas, and construction material/equipment storage areas. Construction power to the temporary site facilities will be provided by mobile diesel-driven generator sets.

The final Stormwater Pollution Prevention Plan (SWPPP) shall provide a graphical project schedule. The schedule shall clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The schedule shall contain an adequate level of detail to show major activities sequenced with implementation of construction site BMPs, including:

- Project start and finish dates.
- Rainy season dates.
- Annual certifications.
- Mobilization dates.
- Mass clearing and grubbing/roadside clearing dates.
- Major grading/excavation dates.
- Permit specific dates named in other permits such as Fish and Game and Army Corps of Engineers Permits.
- Dates for submittal of SWPPP Amendments required by the contract documents.

- Annual submittal of rainy season implementation schedule if required by the Owner or Permittee.
- Dates for implementation of pre-rainy season temporary soil stabilization and temporary sediment control BMPs, if required by the contract documents.
- Rainy season implementation schedule.
 - Deployment of temporary soil stabilization BMPs.
 - Deployment of temporary sediment control BMPs.
 - Deployment of wind erosion control BMPs.
 - Deployment of tracking control BMPs.
 - Deployment of non-stormwater BMPs.
 - Deployment of waste management and materials pollution control BMPs.
- Non-rainy season implementation schedule.
 - Deployment of temporary soil stabilization BMPs.
 - Deployment of temporary sediment control BMPs.
 - Deployment of wind erosion control BMPs.
 - Deployment of tracking control BMPs.
 - Deployment of non-stormwater BMPs.
 - Deployment of waste management and materials pollution control BMPs.
- Paving, saw-cutting, and any other pavement related operations.
- Major planned stockpiling operations.
- Dates for other significant long-term operations or activities that may plan non-stormwater discharges.
- Final stabilization activities staged over time for each area of the project.

4.2 MATERIAL AND EQUIPMENT STAGING AREA

The construction laydown and parking areas will be located near the center of the Project site. The primary construction laydown area is nearly level and thus requires little grading. Pads will be prepared for setting the trailers housing the temporary construction facilities (offices, restrooms, meal rooms, meeting and conference rooms, etc.). The soil in the laydown area will be covered with protective gravel along the access roadways, parking, and vehicle storage/maintenance areas so that soil losses will be negligible.

4.3 CONSTRUCTION TRAFFIC

Construction traffic should commence in the fourth quarter of 2010 and continue through the 15-month construction schedule. Traffic should peak during the third quarter of 2010. The estimated construction traffic is summarized in Table 4 (Estimated Daily Construction Traffic).

Table 4.
Estimated Daily Construction Traffic

| Vehicle Type | Average Daily Round Trips | Peak Daily Round Trips |
|-------------------------|---------------------------|------------------------|
| Construction Personnel | 375 | 744 |
| Delivery Trucks | 12 | 21 |
| Heavy Vehicles & Trucks | 12 | 21 |
| Total | 399 | 768 |

4.4 TEMPORARY SOIL STABILIZATION (EROSION CONTROL)

The following measures will be used in the project for erosion control.

4.4.1 Preservation of Existing Vegetation

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees (if any), vines, shrubs, and grasses that protect soil from erosion. Preservation of existing vegetation is suitable for use on most projects. Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where local, state, and federal government require preservation, such as drainage features. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

4.4.2 Earth Dikes/Drainage Swales & Lined Ditches

Earth dikes and drainage swales are suitable for use, individually or together, where stormwater runoff needs to be diverted from one area and conveyed to another. An earth dike is a temporary berm or ridge of compacted soil used to divert stormwater runoff or channel water to a designated location. A drainage swale is a shaped and sloped depression in the soil surface used to divert stormwater runoff to a specified location. Earth dikes and drainage swales are used to divert stormwater runoff around the construction site, around disturbed areas and discharge into sediment basins, traps or off site.

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert stormwater to a sediment trapping device or a stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off site and from undisturbed areas away from disturbed areas and to divert sheet flows away from unprotected slopes. The swales will redirect off-site stormwater runoff around the site to ensure off-site flows will not impact the on-site development.

4.4.3 Outlet Protection/Velocity Dissipation Devices

Outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated, high velocity flows. Outlet protection is utilized when discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This includes temporary diversion structures to divert run-on during construction. If velocity dissipation devices are used, they will be identified on project grading plans or temporary erosion control plans.

4.4.4 Erosion Control Blankets and Geotextiles

The overall existing and proposed site is relatively flat, at an elevation of approximately 590 feet MSL. The power block area will be graded to provide a level site area. In order to help reduce wind and water erosion discharges, Rolled Erosion Control blankets/materials can be used at limited areas throughout the Project site. Geotextiles, mats, plastic covers or erosion control blankets/materials will be considered for use on slopes steeper than 3 to 1 (including stockpiles) to protect soil slopes and stockpiles.

4.5 TEMPORARY SEDIMENT CONTROL

The following measures will be used in the project for sediment control.

4.5.1 Linear Sediment Barriers (Silt Fence, Fiber Rolls, or Straw Bales)

A linear sediment control barrier is a temporary sediment barrier consisting of silt fence, fiber rolls, or straw bales used to trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the barrier.

Linear sediment barriers are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They should also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion. Linear sediment barriers are generally *ineffective* in locations where the flow is concentrated and are only applicable for sheet or overland flows. Linear sediment barriers are most effective when used in combination with erosion controls.

4.5.2 Sediment Trap

A sediment trap is a temporary basin formed by excavation or by constructing an embankment so that sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is discharged.

Sediment traps may be suitable for use on larger projects with sufficient space for construction. Sediment traps should be considered for use:

- Where sediment-laden water may enter the drainage system or watercourses.
- On construction projects with disturbed areas during the rainy season.
- At the outlet of disturbed watersheds up to 5 acres.
- In association with dikes, temporary channels, and pipes used to convey runoff from disturbed areas.

4.5.3 Street Sweeping and Vacuuming

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters. Sweeping and vacuuming are suitable BMPs where sediment is tracked from the Project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

4.6 WIND EROSION CONTROL

The following measures will be used in the project for wind erosion control.

Wind erosion or dust control consists of applying water or other dust palliatives as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

Fresno County typically has short wet seasons and long hot dry seasons that allow the soils to thoroughly dry out. Typically, during these dry seasons, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment.

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. For heavily traveled and disturbed areas, wet suppression (watering), gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Preventive measures would include minimizing surface areas to be disturbed, limiting onsite vehicle traffic speed, and controlling the number and activity of vehicles on a site at any given time.

Wind Erosion control will be applied throughout the project site, especially where areas have been regraded to expose bare soils.

4.7 TRACKING CONTROL

The following measures will be used in the project for tracking control.

4.7.1 Stabilized Construction Entrance/Exit

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust. Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

4.7.2 Stabilized Construction Roadway

Access roads, parking areas, and other onsite vehicle transportation routes should be stabilized immediately after grading and frequently maintained to prevent erosion and provide dust control.

Areas that are graded for construction vehicle transport and parking purposes are especially susceptible to erosion and dust control. The exposed soil surface is continually disturbed, leaving no opportunity for vegetative stabilization. Such areas also tend to collect and transport runoff waters along their surfaces. During wet weather, they often become sources of sediment that may be transported offsite on the wheels of construction vehicles. Efficient construction road stabilization not only reduces onsite erosion but also can significantly speed onsite work, avoid instances of immobilized machinery and delivery vehicles, and generally improve site efficiency and working conditions during adverse weather.

4.8 MAINTENANCE OF CONSTRUCTION BMPS

The following table lists guidelines for the maintenance of the BMPs projected to be used on this project. Inspection records/logs will be filed in the Construction Stormwater Pollution Prevention Plan (SWPPP) that will be stored onsite. Annual or more frequent reporting requirements to the State and Regional Water Quality Control Board will be identified in the Construction SWPPP.

**Table 5.
Maintenance Program of Construction BMPs**

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---------------------------------------|---|---|
| TEMPORARY EROSION CONTROL BMPs | | |
| Scheduling | Daily during construction | <ul style="list-style-type: none"> - Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions. - Amend the schedule when changes are warranted. - Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs. |
| Preservation of Existing Vegetation | Daily during construction | <ul style="list-style-type: none"> - Fill trenches and tunnels as soon as possible. Careful filling and tamping will eliminate air spaces in the soil, which can damage roots. - Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization. |
| Earth Dikes & Drainage Swales | <ul style="list-style-type: none"> - Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. - Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur. | <ul style="list-style-type: none"> - Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed. - Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment and repair linings and embankments as needed. - Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction. |
| Velocity Dissipation Devices | <ul style="list-style-type: none"> - Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. - Inspect BMPs subjected to non-stormwater discharges daily while non-stormwater discharges occur. | <ul style="list-style-type: none"> - Inspect apron for displacement of the riprap and damage to the underlying fabric. Repair fabric and replace riprap that has washed away. If riprap continues to wash away, consider using larger material. - Inspect for scour beneath the riprap and around the outlet. Repair damage to slopes or underlying filter fabric immediately. - Temporary devices should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction. |

**Table 5
Maintenance Program of Construction BMPs
(Continued)**

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|---|--|
| TEMPORARY SEDIMENT CONTROL BMPs | | |
| Linear Sediment Barriers (Silt Fence, Fiber Rolls, and Straw Bales) | Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. | <ul style="list-style-type: none"> - Repair undercut barriers. - Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months. - Sediment barriers that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed of, and replaced with new barriers. - Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location. - Sediment barriers should be left in place until the upstream area is permanently stabilized. Until then, the barrier must be inspected and maintained. - Holes, depressions, or other ground disturbance caused by the removal of the barriers should be backfilled and repaired. |

**Table 5
Maintenance Program of Construction BMPs
(Continued)**

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|---|---|
| Sediment Trap | Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. | <ul style="list-style-type: none"> - Examine basin banks for seepage and structural soundness. -Check inlet and outlet structures and spillway for any damage or obstructions. -- Repair damage and remove obstructions as needed. -Check inlet and outlet area for erosion and stabilize if required. -Check fencing for damage and repair as needed. -Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage volume. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at appropriate locations. - Remove standing water from basin within 72 hours after accumulation. -To minimize vector production: remove accumulation of live and dead floating vegetation in basins during every inspection. - Remove excessive emergent and perimeter vegetation as needed or as advised by local or state vector control agencies. |

**Table 5
Maintenance Program of Construction BMPs
(Continued)**

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|--|--|
| Check Dam | Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. | <ul style="list-style-type: none"> - Replace missing rock, bags, bales, etc. Replace bags or bales that have degraded or have become damaged. - If the check dam is used as a sediment capture device, sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. - Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. - Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location. - If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade. - Remove accumulated sediment prior to permanent seeding or soil stabilization. - Remove check dam and accumulated sediment when check dams are no longer needed. |
| Street Sweeping and Vacuuming | <ul style="list-style-type: none"> - Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season. - When actively in use, points of ingress and egress must be inspected daily. | <ul style="list-style-type: none"> - When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions. - Be careful not to sweep up any unknown substance or any object that may be potentially hazardous. - Adjust brooms frequently; maximize efficiency of sweeping operations. - After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite. |

**Table 5
Maintenance Program of Construction BMPs
(Continued)**

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---------------------------------------|--|--|
| WIND EROSION CONTROL BMPs | | |
| Wind Erosion Control | <ul style="list-style-type: none"> - Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. - While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation. | <p>Check areas protected to ensure coverage.</p> <p>Most dust control measures require frequent, often daily, or multiple times per day attention.</p> |
| TRACKING CONTROL BMPs | | |
| Stabilized Construction Entrance/Exit | <ul style="list-style-type: none"> - Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. - While activities associated with the BMPs are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation. - Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment. | <ul style="list-style-type: none"> - Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment. - Keep all temporary roadway ditches clear. - Check for damage and repair as needed. - Replace gravel material when surface voids are visible. - Remove all sediment deposited on paved roadways within 24 hours. - Remove gravel and filter fabric at completion of construction. |
| Stabilized Construction Roadway | <ul style="list-style-type: none"> - Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. - While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation. | <ul style="list-style-type: none"> - Keep all temporary roadway ditches clear. - When no longer required, remove stabilized construction roadway and re-grade and repair slopes. - Periodically apply additional aggregate on gravel roads. - Active dirt construction roads are commonly watered three or more times per day during the dry season. |

4.9 SOIL AND WIND EROSION CALCULATIONS

The CEC requested a discussion of how much soil will be lost from wind and water erosion, and to quantify the values with and without the proposed BMPs, both during construction and operations. Soil erosion due to water was estimated using the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Revised Universal Soil Loss Equation 2 (RUSLE2) computer program. Wind erosion was estimated using the USDA/NRCS Wind Erosion Prediction System (WEPS) computer model. Results of the erosion calculation estimates are provided in Table 6. The proposed condition soil erosion due to water (runoff) on the operations area is 0.25 ton/ac/yr, which is less than the existing condition due to terracing within the operations area which will collect runoff into a series of distributed infiltration areas. These calculations will need to be updated based on the final project design.

**Table 6.
Soil and Wind Erosion Results**

| | Existing Condition (ton/ac/yr) | Proposed Condition during Construction without BMPs (ton/ac/yr) | Proposed Condition during Construction with BMPs (ton/ac/yr) | Proposed Condition during Operation (ton/ac/yr) |
|--|-----------------------------------|--|---|--|
| Water Soil Erosion | 0.9 | 1.0 | 0.5 | 0.5 |
| Wind Erosion | 1 to 33 | 39 | < 1 | < 1 |
| Note: Erosion rates are listed in tons per acre per year (ton/ac/yr). | | | | |

SECTION 5 POST-CONSTRUCTION BMPs

Site soil stabilization will occur following construction; however, several alternatives are being considered to determine which solution best achieves the desired effect to: minimize wind erosion, prevent water erosion, minimize weed and undesired vegetation growth, as well as providing a suitable work surface.

The best way to mitigate stormwater impacts from new developments is to use practices to treat, store, and infiltrate runoff onsite before it can affect water bodies downstream. Innovative site designs that reduce imperviousness and smaller-scale low impact development practices dispersed throughout a site are excellent ways to achieve the goals of reducing flows and improving water quality.

Post-construction stormwater runoff from new development and redevelopments typically includes developing: strategies to implement a combination of structural and non-structural BMPs; and, a program to ensure adequate long-term operation and maintenance of BMPs.

5.1 INFILTRATION AREAS

An infiltration area or basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration areas use the natural filtering ability of the she soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems.

Infiltration areas perform better in well-drained permeable soils. Infiltration basins in areas of low permeability can require more frequent inspections and maintenance. Spill response procedures and controls should be implemented to prevent spills from reaching the infiltration system. The solar area will be graded such that any runoff/volume generated on-site will be captured, via sump locations, and infiltrate to recharge the aquifer.

SECTION 6 REFERENCES

The following documents were used in the preparation of this DESCP:

California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook Construction, 2003.

San Joaquin Solar 1 & 2 Hybrid Project Application for Certification.

San Joaquin Solar Hybrid Soil Erosion Analysis Summary.

State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity (General Permit).

State Water Resources Control Board Resolution No. 2001- 046, Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (General Permit).

State Water Resources Control Board Resolution No. 2001-155, Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (General Permit) to include Small Construction Activity (One to Five Acres).

State Water Resources Control Board (State Water Board) Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit) Waste Discharge Requirements (WDRs) for Discharges of Stormwater Associated with Industrial Activities Excluding Construction Activities.

Figure 1. Vicinity Map

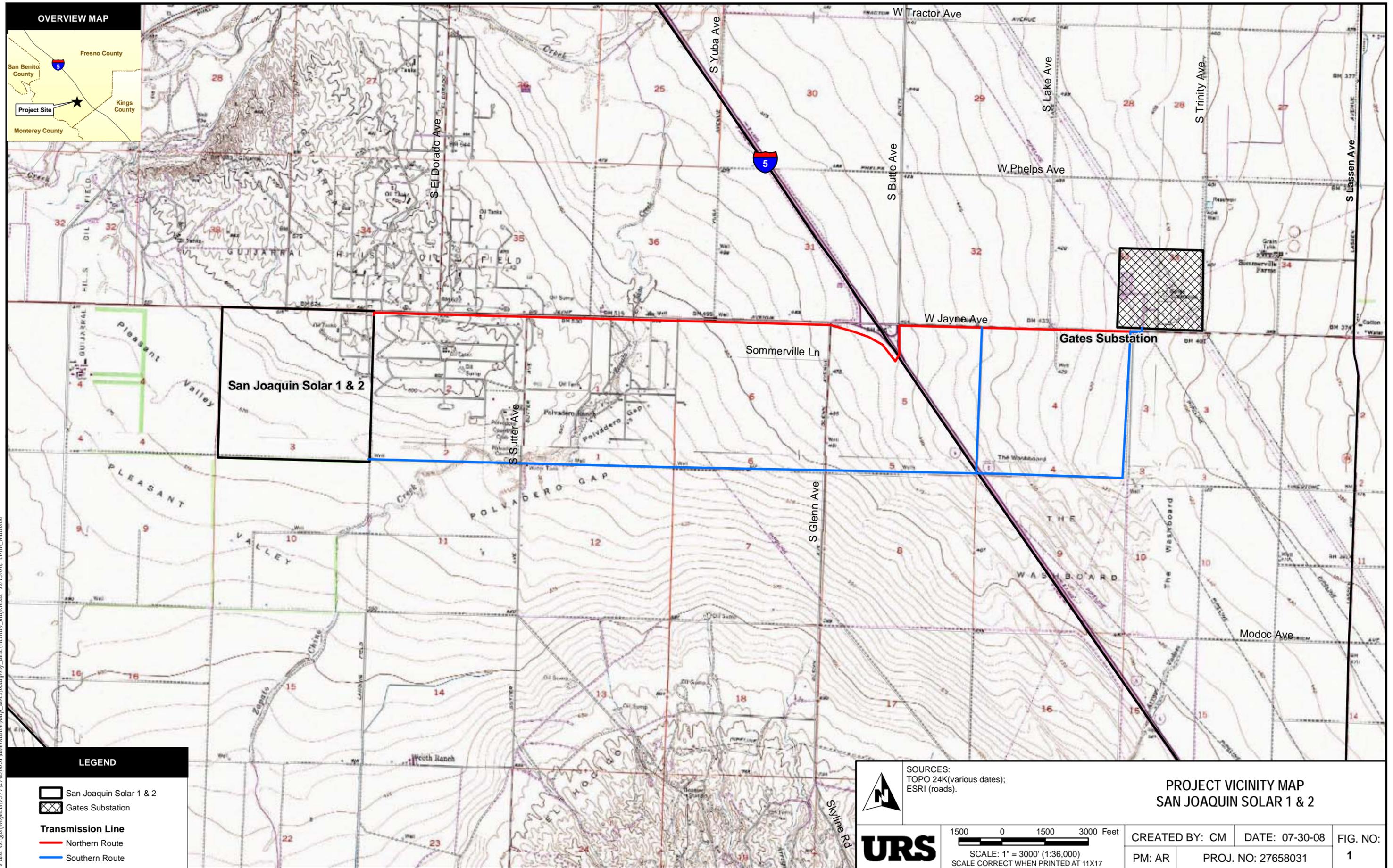
Figure 2. Site Delineation Map

Figure 3. Water Courses and Critical Areas Map

Figure 4. Off-Site Topographic Map

Figure 5. Clearing and Grading Limits Map

Figure 6. Construction BMP Plan



LEGEND

- San Joaquin Solar 1 & 2
- Gates Substation
- Transmission Line**
- Northern Route
- Southern Route

SOURCES:
 TOPO 24K (various dates);
 ESRI (roads).

PROJECT VICINITY MAP
SAN JOAQUIN SOLAR 1 & 2

UR S

1500 0 1500 3000 Feet
 SCALE: 1" = 3000' (1:36,000)
 SCALE CORRECT WHEN PRINTED AT 11X17

| | | |
|----------------|--------------------|----------|
| CREATED BY: CM | DATE: 07-30-08 | FIG. NO: |
| PM: AR | PROJ. NO: 27658031 | 1 |

Path: G:\gis\projects\137727658031\alternative\map_docs\map\proj_desc\vicinity_map.mxd, 11/13/08, colin_mattison



San Joaquin Solar 1 & 2

Gates Substation

LEGEND

-  San Joaquin Solar 1 & 2
-  Gates Substation



SOURCES:
 USDA FSA Aerial Photography Field Office (aerial 2005); CNDDB (Mar. 2008); ESRI (roads).



1500 0 1500 3000 Feet
 SCALE: 1" = 3000' (1:36,000)
 SCALE CORRECT WHEN PRINTED AT 11X17

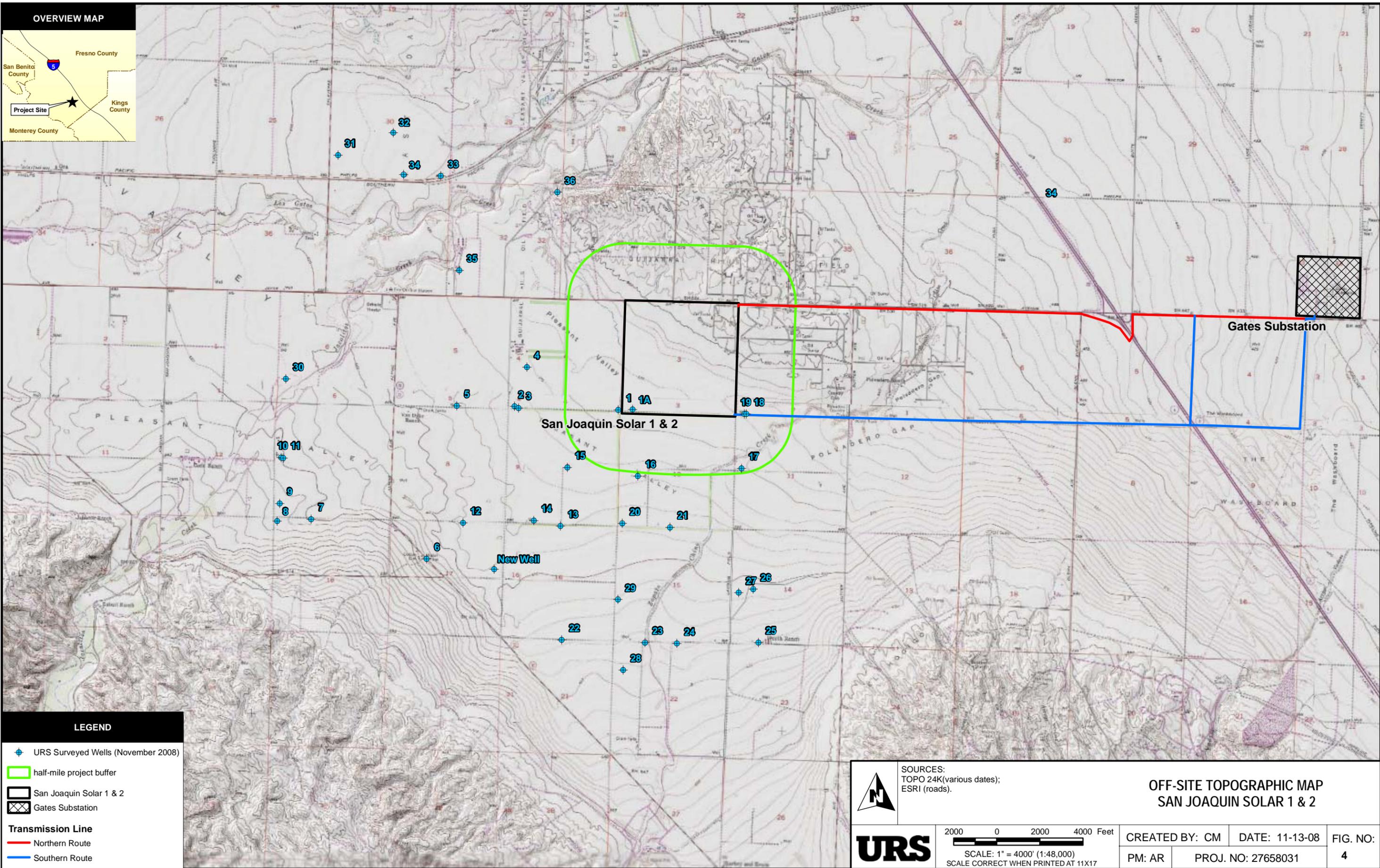
**Project Watershed Map
 SAN JOAQUIN SOLAR 1 & 2**

| | | |
|----------------|--------------------|--------------|
| CREATED BY: CM | DATE: 07-02-08 | FIG. NO: |
| PM: AR | PROJ. NO: 27658031 | 3.2-3 |

Path: G:\gis\projects\137727658031\alternative\map_docs\map\proj_desc\location_map.mxd, 11/13/08, colin_mattison

California NAIP aerial imagery is freely distributed by The California Spatial Information Library (CaSIL). CaSIL, the California Resources Agency, and the State of California are 2005 California NAIP Imagery funding partners.

OVERVIEW MAP



LEGEND

- ◆ URS Surveyed Wells (November 2008)
- half-mile project buffer
- San Joaquin Solar 1 & 2
- Gates Substation
- Transmission Line**
- Northern Route
- Southern Route



SOURCES:
 TOPO 24K (various dates);
 ESRI (roads).

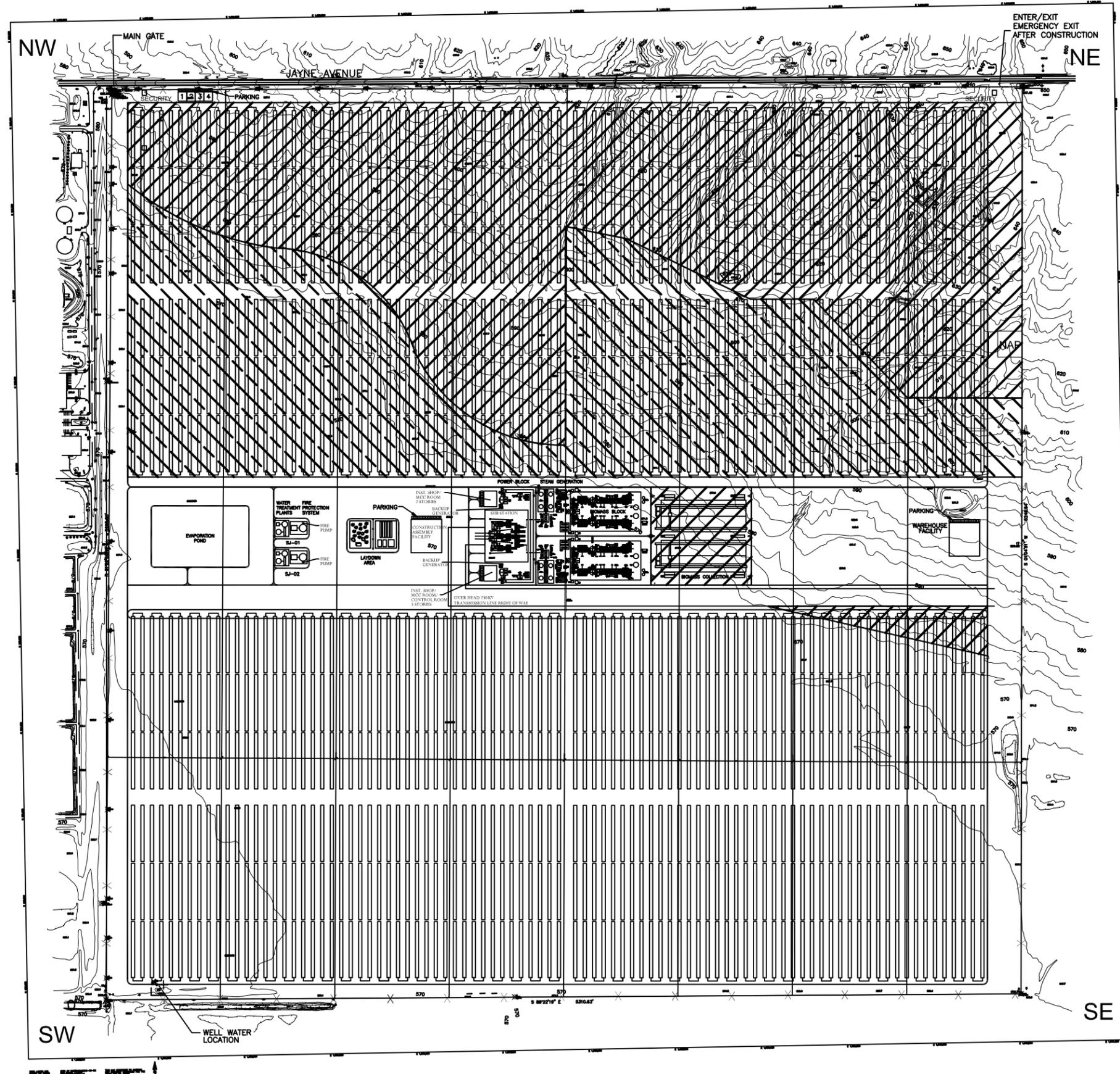


2000 0 2000 4000 Feet
 SCALE: 1" = 4000' (1:48,000)
 SCALE CORRECT WHEN PRINTED AT 11X17

**OFF-SITE TOPOGRAPHIC MAP
 SAN JOAQUIN SOLAR 1 & 2**

| | | |
|----------------|--------------------|----------|
| CREATED BY: CM | DATE: 11-13-08 | FIG. NO: |
| PM: AR | PROJ. NO: 27658031 | 4 |

Path: G:\gis\projects\157727658031\alternative\map_docs\mudwater\water_wells.mxd, 11/18/08, colin_mattison



SCALE: 1" = 300'
 -300 -150' 0' 300'

OPEN REVISION
 05/18/09

NOTES:

LEGEND

- BUILDING 1- VISITOR'S CENTER
- BUILDING 2- GENERAL OFFICES
- BUILDING 3- ADMINISTRATIVE OFFICES
- BUILDING 4- TECHNICAL TRAINING BUILDING

- FENCE LINE
- UTILITY ROAD
- ⊙ NOT PART OF THIS PROJECT
- ⊕ WELL WATER / DIESEL ENGINE LOCATION
- DIESEL FUEL TANK LOCATION
- ▨ GREATER THAN 3'-0" CUT
- ▩ GREATER THAN 3'-0" FILL

| REV | DATE | DRWN BY | CHKD BY | APVD BY | DESCRIPTION |
|-----------|------|---------|---------|---------|-------------|
| REVISIONS | | | | | |
| | | | | | |
| | | | | | |



CONFIDENTIAL
 THIS GRAPHIC OR OTHER MATERIAL IS THE EXCLUSIVE AND CONFIDENTIAL PROPERTY OF FORD, BACON & DAVIS, LLC AND MUST NOT BE REPRODUCED, DISTRIBUTED, PUBLISHED, OR USED IN ANY OTHER MANNER IN THE ABSENCE OF THE PRIOR WRITTEN CONSENT OF AN AUTHORIZED REPRESENTATIVE OF FORD, BACON & DAVIS, LLC.

SPINNAKER

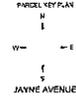
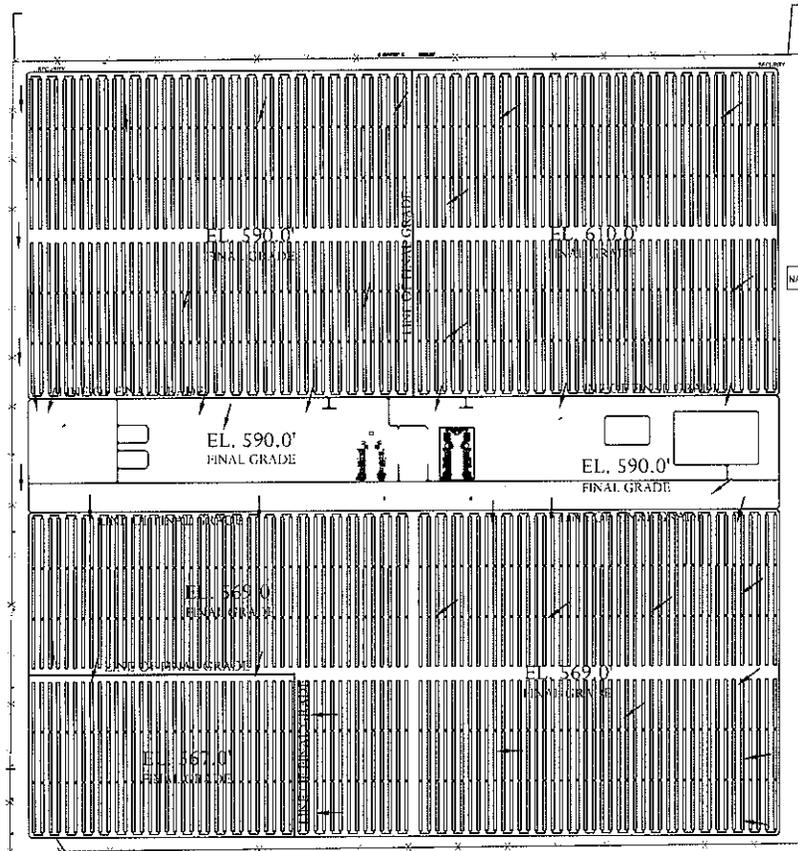
SJS 1&2
 PRELIMINARY CUT AND FILL PLAN

| | | |
|------------------------|-------|-----------|
| FBAD JOB NUMBER: Z5007 | C-001 | REV. X |
| SCALE: 1"=300'-0" | | |
| DATE: 10/24/2008 | | |
| DRAWN BY: K.SCRUGGS | | |

FIGURE 5

NW

NE

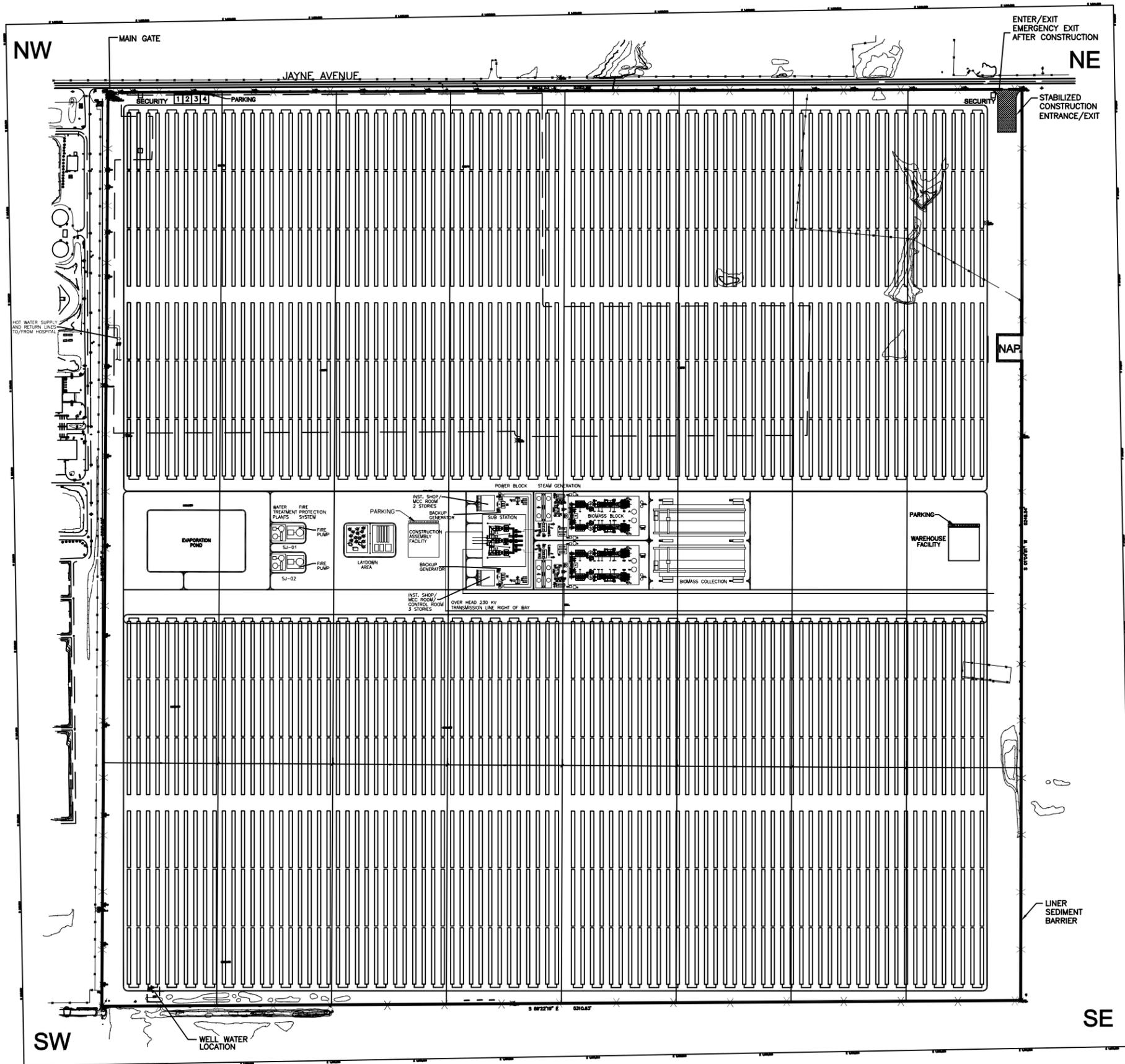


SW

SE

- FENCE LINE
- UTILITY ROAD
- NAP
- ⊥ WELL WATER / DIESEL ENGINE LOCATION
- ⊥ DIESEL FUEL TANK LOCATION





NOTES:

- TRACKING CONTROL
- STABILIZED CONSTRUCTION ROADWAY
- TEMPORARY SEDIMENT CONTROL
- LINEAR SEDIMENT BARRIER (SILT FENCE, FIBER ROLLS, AND STRAW BALES)
- SEDIMENT TRAP
- TEMPORARY EROSION CONTROL
- WIND EROSION CONTROL

LEGEND

- BUILDING 1- VISITOR'S CENTER
- BUILDING 2- GENERAL OFFICES
- BUILDING 3- ADMINISTRATIVE OFFICES
- BUILDING 4- TECHNICAL TRAINING BUILDING

- FENCE LINE
- UTILITY ROAD
- NAP NOT PART OF THIS PROJECT
- WELL WATER/DIESEL ENGINE LOCATION
- DIESEL FUEL TANK LOCATION

| REV | DATE | DRWN BY | CHKD BY | APVD BY | DESCRIPTION |
|-----|----------|---------|---------|---------|-------------------------|
| A | 11/21/08 | KRS | GAG | DCG | ISSUED FOR FEL 3 REPORT |



CONFIDENTIAL
 THIS GRAPHIC OR OTHER MATERIAL IS THE EXCLUSIVE AND CONFIDENTIAL PROPERTY OF FORD, BACON & DAVIS, LLC AND MUST NOT BE REPRODUCED, DISTRIBUTED, PUBLISHED, OR USED IN ANY OTHER MANNER IN THE ABSENCE OF THE PRIOR WRITTEN CONSENT OF AN AUTHORIZED REPRESENTATIVE OF FORD, BACON & DAVIS, LLC.

SPINNAKER

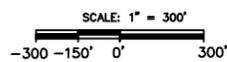
OVERALL GENERAL ARRANGEMENT PRELIMINARY CONSTRUCTION BMP PLAN

FB&D JOB NUMBER: 25007
 SCALE: 1"=300'-0"
 DATE: 10/24/2008
 DRAWN BY: K.SORUGGS

GA-001
 FIGURE 06

REV. X

OPEN REVISION
 05/22/09



**SAN JOAQUIN SOLAR HYBRID
SOIL EROSION ANALYSIS SUMMARY**

Wind Erosion Analysis

The San Joaquin project site is approximately 640 acres and comprised of five different soil types. The soils are:

| Soil Symbol | Soil | Area (acres) |
|-------------|---|-----------------|
| 435 | Lethent clay loam, 0 to 1 percent slopes | 287 |
| 462 | Ciervo, wet-Ciervo complex, saline-sodic, 0 to 1 percent slopes | 61 |
| 587 | Mugatu fine sandy loam, 0 to 5 percent slopes | 122 |
| 588 | Mugatu fine sandy loam, 5 to 30 percent slopes | 171 |

The USDA-Agricultural Research Services, in cooperation with the USDA-Natural Resources Conservation Service, the USDI-Bureau of Land Management, and the Environmental Protection Agency, developed technology to help predict wind erosion. The Wind Erosion Prediction System (WEPS) is a daily simulation model which outputs average soil loss and deposition values for selected areas and periods of time. It is applicable to just one field, or can be applied to a few adjacent fields.

The wind erosion analysis is based on existing condition, construction phase without wind erosion control Best Management Practices (BMPs), construction phase with BMPs, and operation phase. Existing condition is based upon a fallow condition with non-irrigated annual weeds and grasses. Construction phase assumes grading over the entire site. Operation phase assumes final grading and stabilization. The amount of soil loss is correlated with the phase that the land is in and the BMPs employed. The table below illustrates the predicted annual soil loss for each phase in tons per acre per year.

| Soil Symbol | Existing Condition | Construction (without BMPs) | Construction Phase with BMPs (Mulch) | Operation Phase with BMPs |
|-------------|----------------------------|-----------------------------|--------------------------------------|----------------------------|
| | Soil Loss (tons/acre/year) | Soil Loss (tons/acre/year) | Soil Loss (tons/acre/year) | Soil Loss (tons/acre/year) |
| 435 | Trace | 11.2 | Trace | Trace |
| 462 | Trace | 6.6 | Trace | Trace |
| 587 | Trace | 26.4 | Trace | Trace |
| 588 | Trace | 26.5 | Trace | Trace |

Water Erosion Analysis

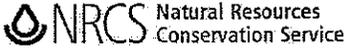
The Revised Universal Soil Loss Equation 2 computer program (RUSLE2) is an advanced software model that predicts long-term, average-annual erosion by water. RUSLE2 was developed primarily to guide conservation planning, inventory erosion rates and estimate sediment delivery. Values computed by RUSLE2 are supported by accepted scientific knowledge and technical judgment, are consistent with sound principles of conservation planning, and result in good conservation plans.

This water erosion analysis is based on existing condition, construction phase without BMPs, construction phase with BMPs and operation phase with BMPs. The amount of soil loss is correlated with the phase that the land is in. The table below illustrates the predicted annual soil loss per each phase in tons per acre per year.

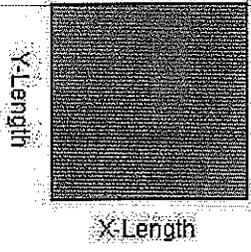
| Soil Symbol | Existing Condition | Construction Phase, No BMPs | Construction Phase, with BMPs | Operation Phase with BMPs |
|-------------|----------------------------|-----------------------------|-------------------------------|---------------------------|
| | Soil Loss (tons/acre/year) | Soil Loss (tons/acre/year) | Soil Loss (tons/acre/year) | Soil Loss (tons/acre) |
| 435 | 1.5 | 1.8 | 0.73 | 0.44 |
| 462 | 1.1 | 1.3 | 0.56 | 0.33 |
| 587 | 1.1 | 1.5 | 0.52 | 0.34 |
| 588 | 1.1 | 1.5 | 0.52 | 0.34 |

The analyses illustrate the effectiveness of using wind and water erosion and sediment control BMPs to reduce the amount of potential increase in soil loss on a yearly basis. With proper implementation of wind and water erosion control BMPs and final site soil stabilization, soil erosion from the site will be minimized and is anticipated to be less than existing site land use conditions.

WEPS Run Summary



Client San Joaquin
Farm No 405 **Tract No** 2 Acres **Field No** Existing
Run Name Ex_405
Run Location C:\temp\Projects\27658031-Bethel\Ex_588.wjr
Management Barley, orchard middles, disk to establish CMZ 34
Soil Polvadero_405_55_SL



Simulation & Site Information

Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 295.28 ft **Elevation** : 669.29 ft
Y-Length : 295.28 ft **Orientation** : 0 °
Area : 2 ac

Weather Station / Files

Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

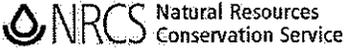
| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|------------------------------|----------------------|
| May 15, 01 | Shredder, flail or rotary | |
| Oct 14, 01 | Disk, tandem light finishing | |
| Oct 14, 01 | Roller, corrugated packer | |
| Oct 15, 01 | Planting, broadcast seeder | Wheat, winter cover |
| Oct 15, 01 | Add mulch | weed residue; 0-3 mo |

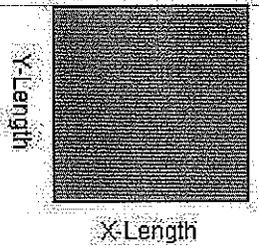
Run specific information:

<Run notes last modified on Fri Jul 25 12:25:08 PDT 2008>

WEPS Run Summary



Client San Joaquin
Farm No 405 **Tract No** 2 Acres **Field No** Construction
Run Name Cnst_405
Run Location C:\temp\Projects\27658031-Bethel\Cnst_405.wjr
Management Const., disturbed
Soil Polvadero_405_55_SL



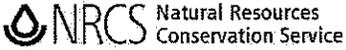
Simulation & Site Information
Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 295.28 ft **Elevation** : 669.29 ft
Y-Length : 295.28 ft **Orientation** : 0 °
Area : 2 ac
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | | |
|-------------|------|---------------------------|--------------------------------------|------------|------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 | |
| Rot. yr: 1 | | 5.7 | 5.7 | 4.59 | 1.07 | 0.032 |
| Ave. Annual | | 5.7 | 5.7 | 4.59 | 1.07 | 0.032 |

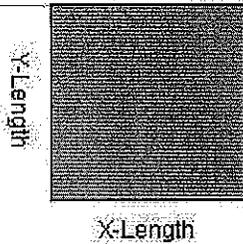
| Date | Operation | Crop |
|------------|-----------------------------|------|
| Feb 01, 01 | Bulldozer, filling-leveling | |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 405 **Tract No** 2 Acres **Field No** Ersn
Run Name Ersn_405
Run Location C:\temp\Projects\27658031-Bethel\Ersn_405.wjr
Management Mulch
Soil Polvadero_405_55_SL



Simulation & Site Information

Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 295.28 ft **Elevation** : 669.29 ft
Y-Length : 295.28 ft **Orientation** : 0 °
Area : 2 ac

Weather Station / Files

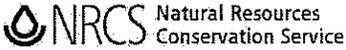
Cligen Station : COALINGA
Wingen Station : LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

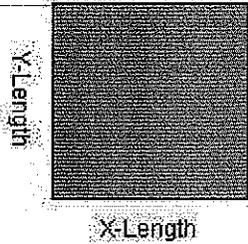
| Date | Operation | Crop |
|------------|-----------|-------------------|
| Feb 01, 01 | Add mulch | small grain straw |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 435 **Tract No** 287 Acres **Field No** Existing
Run Name Ex_435
Run Location C:\temp\Projects\27658031-Bethel\Ex_435.wjr
Management Barley, orchard middles, disk to establish CMZ 34
Soil Lethent_435_90_CL



Simulation & Site Information

Mode : NRCS **Soil Loss T**: 3 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 3535.76 ft **Elevation** : 669.29 ft
Y-Length : 3535.76 ft **Orientation** : 0 °
Area : 287 ac

Weather Station / Files

Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

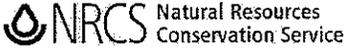
| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|------------------------------|----------------------|
| May 15, 01 | Shredder, flail or rotary | |
| Oct 14, 01 | Disk, tandem light finishing | |
| Oct 14, 01 | Roller, corrugated packer | |
| Oct 15, 01 | Planting, broadcast seeder | Wheat, winter cover |
| Oct 15, 01 | Add mulch | weed residue; 0-3 mo |

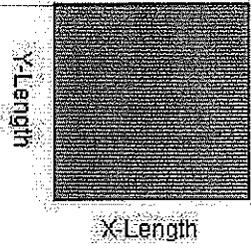
Run specific information:

<Run notes last modified on Fri Jul 25 12:41:59 PDT 2008>

WEPS Run Summary



Client San Joaquin
Farm No 435 **Tract No** 287 Acres **Field No** Construction
Run Name Cnst_435
Run Location C:\temp\Projects\27658031-Bethel\Cnst_435.wjr
Management Const., disturbed
Soil Lethent_435_90_CL



Simulation & Site Information
Mode : NRCS **Soil Loss T**: 3 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information
X-Length : 3535.76 ft **Elevation** : 669.29 ft
Y-Length : 3535.76 ft **Orientation** : 0 °
Area : 287 ac

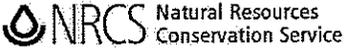
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | | |
|-------------|------|---------------------------|--------------------------------------|------------|------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 | |
| Rot. yr: 1 | | 11.2 | 11.2 | 3.67 | 7.55 | 0.348 |
| Ave. Annual | | 11.2 | 11.2 | 3.67 | 7.55 | 0.348 |

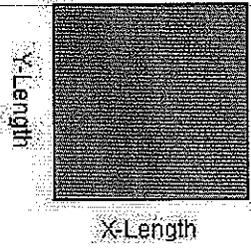
| Date | Operation | Crop |
|------------|-----------------------------|------|
| Feb 01, 01 | Bulldozer, filling-leveling | |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 435 **Tract No** 287 Acres **Field No** Ersn
Run Name Ersn_435
Run Location C:\temp\Projects\27658031-Bethel\Ersn_435.wjr
Management Mulch
Soil Lethent_435_90_CL



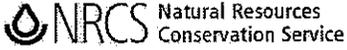
Simulation & Site Information
Mode : NRCS **Soil Loss T:** 3 T/ac/yr
State : California **Latitude :** 36.131344 °N
County : Fresno **Longitude :** 120.223413 °W
Field Dimension Information
X-Length : 3535.76 ft **Elevation :** 669.29 ft
Y-Length : 3535.76 ft **Orientation :** 0 °
Area : 287 ac
Weather Station / Files
Cligen Station : COALINGA
Wingen Station : LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

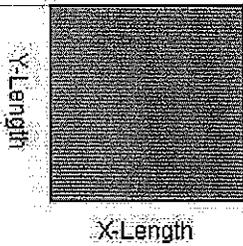
| Date | Operation | Crop |
|------------|-----------|-------------------|
| Feb 01, 01 | Add mulch | small grain straw |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 462 **Tract No** 61 Acres **Field No** Existing
Run Name Ex_462
Run Location C:\temp\Projects\27658031-Bethel\Ex_462.wjr
Management Barley, orchard middles, disk to establish CMZ 34
Soil Ciervo_462_50_C



Simulation & Site Information
Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 1629.92 ft **Elevation** : 669.29 ft
Y-Length : 1629.92 ft **Orientation** : 0 °
Area : 60.99 ac
Weather Station / Files
Cligen Station : COALINGA
Wingen Station : LEMOORE (NAS)

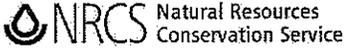
| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|------------------------------|----------------------|
| May 15, 01 | Shredder, flail or rotary | |
| Oct 14, 01 | Disk, tandem light finishing | |
| Oct 14, 01 | Roller, corrugated packer | |
| Oct 15, 01 | Planting, broadcast seeder | wheat, winter cover |
| Oct 15, 01 | Add mulch | weed residue; 0-3 mo |

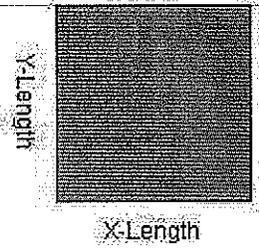
Run specific information:

<Run notes last modified on Fri Jul 25 12:43:37 PDT 2008>

WEPS Run Summary



Client San Joaquin
Farm No 462 **Tract No** 61 Acres **Field No** Construction
Run Name Cnst_462
Run Location C:\temp\Projects\27658031-Bethel\Cnst_462.wjr
Management Const., disturbed
Soil Ciervo_462_50_C



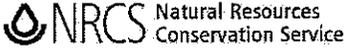
Simulation & Site Information
Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 1629.92 ft **Elevation** : 669.29 ft
Y-Length : 1629.92 ft **Orientation** : 0 °
Area : 60.99 ac
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | | |
|-------------|------|---------------------------|--------------------------------------|------------|------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 | |
| Rot. yr: 1 | | 6.6 | 6.6 | 2.93 | 3.63 | 0.128 |
| Ave. Annual | | 6.6 | 6.6 | 2.93 | 3.63 | 0.128 |

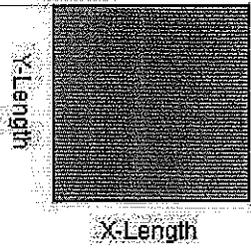
| Date | Operation | Crop |
|------------|-----------------------------|------|
| Feb 01, 01 | Bulldozer, filling-leveling | |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 462 **Tract No** 61 Acres **Field No** Ersn
Run Name Ersn_462
Run Location C:\temp\Projects\27658031-Bethel\Ersn_462.wjr
Management Mulch
Soil Ciervo_462_50_C



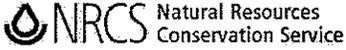
Simulation & Site Information
Mode : NRCS **Soil Loss T**: 5 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 1629.92 ft **Elevation** : 669.29 ft
Y-Length : 1629.92 ft **Orientation** : 0 °
Area : 60.99 ac
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|-----------|-------------------|
| Feb 01, 01 | Add mulch | small grain straw |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 587 **Tract No** Fence **Field No**
Run Name EX_587
Run Location Exercise
Management Barley, orchard middles, disk to establish CMZ 34
Soil Mugatu_587_85_FSL

Simulation & Site Information

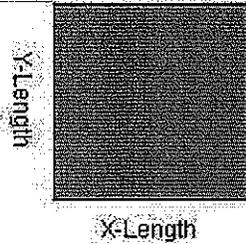
Mode :.NRCS **Soil Loss T:** 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 2305.12 ft **Elevation** : 669.29 ft
Y-Length : 2305.12 ft **Orientation** : 0 °
Area : 121.98 ac

Weather Station / Files

Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

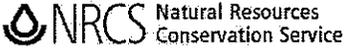


| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

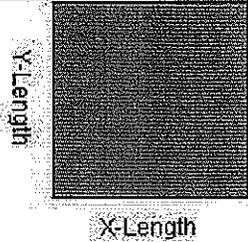
| Date | Operation | Crop |
|------------|------------------------------|----------------------|
| May 15, 01 | Shredder, flail or rotary | |
| Oct 14, 01 | Disk, tandem light finishing | |
| Oct 14, 01 | Roller, corrugated packer | |
| Oct 15, 01 | Planting, broadcast seeder | Wheat, winter cover |
| Oct 15, 01 | Add mulch | weed residue; 0-3 mo |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 587 **Tract No** Ccnt_587 **Field No**
Run Name Cnst_587
Run Location Exercise
Management Const., disturbed
Soil Mugatu_587_85_FSL



Simulation & Site Information

Mode : NRCS **Soil Loss T** : 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 2305.12 ft **Elevation** : 669.29 ft
Y-Length : 2305.12 ft **Orientation** : 0 °
Area : 121.98 ac

Weather Station / Files

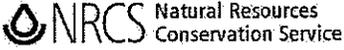
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 | |
| Rot. yr: 1 | | 26.4 | 26.4 | 8.33 | 18.06 | 0.834 |
| Ave. Annual | | 26.4 | 26.4 | 8.33 | 18.06 | 0.834 |

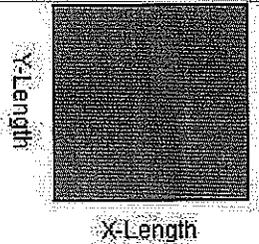
| Date | Operation | Crop |
|------------|-----------------------------|------|
| Feb 01, 01 | Bulldozer, filling-leveling | |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 587 **Tract No** Post_587 **Field No**
Run Name Mulch_587
Run Location Exercise
Management mulch
Soil Mugatu_587_85_FSL



Simulation & Site Information
Mode : NRCS **Soil Loss T**: 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information
X-Length : 2305.12 ft **Elevation** : 669.29 ft
Y-Length : 2305.12 ft **Orientation** : 0 °
Area : 121.98 ac

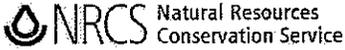
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|------------|-------------------|
| Jan 01, 01 | Land plane | |
| Jan 01, 01 | Add mulch | small grain straw |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 588 **Tract No** 171 Acres **Field No** Existing
Run Name Ex_588
Run Location C:\temp\Projects\27658031-Bethel\Ex_588.wjr
Management Barley, orchard middles, disk to establish CMZ 34
Soil Mugatu_588_85_FSL

Simulation & Site Information

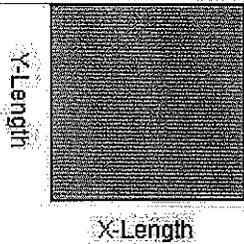
Mode : NRCS **Soil Loss T** : 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 2729.33 ft **Elevation** : 669.29 ft
Y-Length : 2729.33 ft **Orientation** : 0 °
Area : 171.01 ac

Weather Station / Files

Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

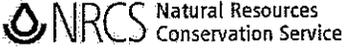


| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

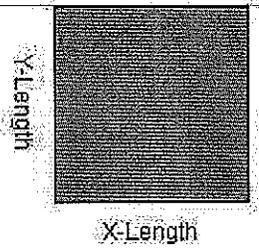
| Date | Operation | Crop |
|------------|------------------------------|----------------------|
| May 15, 01 | Shredder, flail or rotary | |
| Oct 14, 01 | Disk, tandem light finishing | |
| Oct 14, 01 | Roller, corrugated packer | |
| Oct 15, 01 | Planting, broadcast seeder | Wheat, winter cover |
| Oct 15, 01 | Add mulch | weed residue; 0-3 mo |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 588 **Tract No** 171 Acres **Field No** Construction
Run Name Cnst_588
Run Location C:\temp\Projects\27658031-Bethel\Cnst_588.wjr
Management Const., disturbed
Soil Mugatu_588_85_FSL



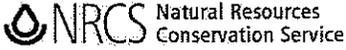
Simulation & Site Information
Mode : NRCS **Soil Loss T**: 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W
Field Dimension Information
X-Length : 2729.33 ft **Elevation** : 669.29 ft
Y-Length : 2729.33 ft **Orientation** : 0 °
Area : 171.01 ac
Weather Station / Files
Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 | |
| Rot. yr: 1 | | 26.5 | 26.5 | 7.23 | 19.27 | 0.895 |
| Ave. Annual | | 26.5 | 26.5 | 7.23 | 19.27 | 0.895 |

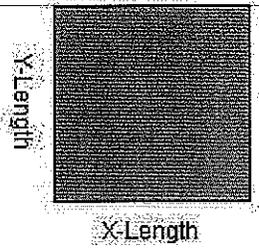
| Date | Operation | Crop |
|------------|-----------------------------|------|
| Feb 01, 01 | Bulldozer, filling-leveling | |

Run specific information:

WEPS Run Summary



Client San Joaquin
Farm No 588 **Tract No** 171 Acres **Field No** Ersn
Run Name Ersn_588
Run Location C:\temp\Projects\27658031-Bethel\Ersn_588.wjr
Management Mulch
Soil Mugatu_588_85_FSL



Simulation & Site Information

Mode : NRCS **Soil Loss T**: 4 T/ac/yr
State : California **Latitude** : 36.131344 °N
County : Fresno **Longitude** : 120.223413 °W

Field Dimension Information

X-Length : 2729.33 ft **Elevation** : 669.29 ft
Y-Length : 2729.33 ft **Orientation** : 0 °
Area : 171.01 ac

Weather Station / Files

Cligen Station :COALINGA
Wingen Station :LEMOORE (NAS)

| Period | Crop | Gross Loss (tons/acre) | Net Soil Loss From Field (tons/acre) | | |
|-------------|------|---------------------------|--------------------------------------|------------|-------|
| | | | Total Creep/Salt. | Suspension | PM10 |
| Rot. yr: 1 | | Trace | Trace | Trace | Trace |
| Ave. Annual | | Trace | Trace | Trace | Trace |

| Date | Operation | Crop |
|------------|-----------|-------------------|
| Feb 01, 01 | Add mulch | small grain straw |

Run specific information:

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin EXISTING SOIL 405

Inputs:

Location: Fresno at point
 Soil: POLVADERO sandy loam 55%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| Fallow | | | |

Contouring: d standard contouring 10% rel row grd
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.3 t/ac/yr
 Detachment on slope: 1.3 t/ac/yr
 Soil loss for cons. plan: 1.3 t/ac/yr
 Sediment delivery: 1.3 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 1/1/0 | basic/general\no operation | | 0 |
| 4/15/0 | Cropland\moldboard plows\moldboard plow | | 0 |
| 4/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 4/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 5/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 5/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 6/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 6/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 7/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 7/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 8/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 8/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 9/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 9/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin EXISTING SOIL 435

Inputs:

Location: Fresno at point
 Soil: LETHENT clay loam 90%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| Fallow | | | |

Contouring: d standard contouring 10% rel row grd

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.5 t/ac/yr

Detachment on slope: 1.5 t/ac/yr

Soil loss for cons. plan: 1.5 t/ac/yr

Sediment delivery: 1.5 t/ac/yr

Crit. slope length: 200 ft

Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 1/1/0 | basic/general/no operation | | 0 |
| 4/15/0 | Cropland\moldboard plows\moldboard plow | | 0 |
| 4/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 4/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 5/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 5/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 6/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 6/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 7/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 7/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 8/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 8/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 9/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 9/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin EXISTING SOIL 462

Inputs:

Location: Fresno at point
 Soil: CIERVO clay 50%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| Fallow | | | |

Contouring: d standard contouring 10% rel row grd

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.1 t/ac/yr

Detachment on slope: 1.1 t/ac/yr

Soil loss for cons. plan: 1.1 t/ac/yr

Sediment delivery: 1.1 t/ac/yr

Crit. slope length: 200 ft

Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 1/1/0 | basic/general/no operation | | 0 |
| 4/15/0 | Cropland/moldboard plows/moldboard plow | | 0 |
| 4/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 4/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |
| 5/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 5/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |
| 6/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 6/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |
| 7/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 7/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |
| 8/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 8/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |
| 9/15/0 | Cropland/disks/disk, tandem secondary op. | | 0 |
| 9/15/0 | Cropland/harrows/harrow, spike tooth | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin EXISTING SOIL 587

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| Fallow | | | |

Contouring: d standard contouring 10% rel row grd
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.1 t/ac/yr
 Detachment on slope: 1.1 t/ac/yr
 Soil loss for cons. plan: 1.1 t/ac/yr
 Sediment delivery: 1.1 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 1/1/0 | basic/general\no operation | | 0 |
| 4/15/0 | Cropland\moldboard plows\moldboard plow | | 0 |
| 4/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 4/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 5/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 5/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 6/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 6/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 7/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 7/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 8/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 8/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 9/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 9/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin EXISTING SOIL 588

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| Fallow | | | |

Contouring: d standard contouring 10% rel row grd
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.1 t/ac/yr
 Detachment on slope: 1.1 t/ac/yr
 Soil loss for cons. plan: 1.1 t/ac/yr
 Sediment delivery: 1.1 t/ac/yr

Crit. slope length: 200 ft

Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 1/1/0 | basic/general\no operation | | 0 |
| 4/15/0 | Cropland\moldboard plows\moldboard plow | | 0 |
| 4/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 4/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 5/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 5/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 6/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 6/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 7/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 7/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 8/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 8/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |
| 9/15/0 | Cropland\disks\disk, tandem secondary op. | | 0 |
| 9/15/0 | Cropland\harrow\harrow, spike tooth | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction no BMPs SOIL 405

Inputs:

Location: Fresno at point
 Soil: POLVADERO sandy loam 55%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| | | | |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.7 t/ac/yr
 Detachment on slope: 1.7 t/ac/yr
 Soil loss for cons. plan: 1.7 t/ac/yr
 Sediment delivery: 1.7 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy\offset disk | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction no BMPs - SOIL 435

Inputs:

Location: Fresno at point
 Soil: LETHENT clay loam 90%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| | | | |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.8 t/ac/yr
 Detachment on slope: 1.8 t/ac/yr
 Soil loss for cons. plan: 1.8 t/ac/yr
 Sediment delivery: 1.8 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 4/15/0 | Highly disturbed land/heavy/offset disk | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction no BMPs - SOIL 462

Inputs:

Location: Fresno at point

Soil: CIERVO clay 50%

Horiz. overland flow path length: 200 ft

Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| | | | |

Contouring: default

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.3 t/ac/yr

Detachment on slope: 1.3 t/ac/yr

Soil loss for cons. plan: 1.3 t/ac/yr

Sediment delivery: 1.3 t/ac/yr

Crit. slope length:

Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 4/15/0 | Highly disturbed land/heavy/offset disk | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction no BMPs - SOIL 587

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| | | | |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.5 t/ac/yr
 Detachment on slope: 1.5 t/ac/yr
 Soil loss for cons. plan: 1.5 t/ac/yr
 Sediment delivery: 1.5 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy/offset disk | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction no BMPs - SOIL 588

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|------------|------------|-------------|--------------------|
| | | | |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.5 t/ac/yr
 Detachment on slope: 1.5 t/ac/yr
 Soil loss for cons. plan: 1.5 t/ac/yr
 Sediment delivery: 1.5 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|------------|-----------------------------|
| 4/15/0 | Highly disturbed land/heavy/offset disk | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction with BMPs - SOIL 435

Inputs:

Location: Fresno at point
 Soil: POLVADERO sandy loam 55%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|--|-------------|--------------------|
| Highly disturbed land\silt fence\silt fence half retardance | Highly disturbed land\silt fence half retardance | lb | 50.0 |

Contouring: default
 Strips/barriers: silt fence half retardance
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.7 t/ac/yr
 Detachment on slope: 1.7 t/ac/yr
 Soil loss for cons. plan: 1.7 t/ac/yr
 Sediment delivery: 0.60 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|--|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy/offset disk | | 0 |
| 1/1/1 | basic/general\begin growth | Highly disturbed land\silt fence half retardance | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction with BMPs - SOIL 435

Inputs:

Location: Fresno at point
 Soil: LETHENT clay loam 90%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|--|-------------|--------------------|
| Highly disturbed land\silt fence\silt fence half retardance | Highly disturbed land\silt fence half retardance | lb | 50.0 |

Contouring: default
 Strips/barriers: silt fence half retardance
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.8 t/ac/yr
 Detachment on slope: 1.8 t/ac/yr
 Soil loss for cons. plan: 1.8 t/ac/yr
 Sediment delivery: 0.73 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|--|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy\offset disk | | 0 |
| 1/1/1 | basic\general\begin growth | Highly disturbed land\silt fence half retardance | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction with BMPs - SOIL 462

Inputs:

Location: Fresno at point
 Soil: CIERVO clay 50%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|--|-------------|--------------------|
| Highly disturbed land\silt fence\silt fence half retardance | Highly disturbed land\silt fence half retardance | lb | 50.0 |

Contouring: default
 Strips/barriers: silt fence half retardance
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.3 t/ac/yr
 Detachment on slope: 1.3 t/ac/yr
 Soil loss for cons. plan: 1.3 t/ac/yr
 Sediment delivery: 0.56 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|--|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy/offset disk | | 0 |
| 1/1/1 | basic/general\begin growth | Highly disturbed land\silt fence half retardance | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction with BMPs - SOIL 587

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|--|-------------|--------------------|
| Highly disturbed land\silt fence\silt fence half retardance | Highly disturbed land\silt fence half retardance | lb | 50.0 |

Contouring: default
 Strips/barriers: silt fence half retardance
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.5 t/ac/yr
 Detachment on slope: 1.5 t/ac/yr
 Soil loss for cons. plan: 1.5 t/ac/yr
 Sediment delivery: 0.52 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|--|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy/offset disk | | 0 |
| 1/1/1 | basic/general\begin growth | Highly disturbed land\silt fence half retardance | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin construction with BMPs - SOIL 588

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 200 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|--|-------------|--------------------|
| Highly disturbed land\silt fence\silt fence half retardance | Highly disturbed land\silt fence half retardance | lb | 50.0 |

Contouring: default
 Strips/barriers: silt fence half retardance
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 1.5 t/ac/yr
 Detachment on slope: 1.5 t/ac/yr
 Soil loss for cons. plan: 1.5 t/ac/yr
 Sediment delivery: 0.52 t/ac/yr

Crit. slope length: 200 ft
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|---|--|-----------------------------|
| 4/15/0 | Highly disturbed land\heavy\offset disk | | 0 |
| 1/1/1 | basic/general\begin growth | Highly disturbed land\silt fence half retardance | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin operation with terraces - SOIL 405

Inputs:

Location: Fresno at point
 Soil: POLVADERO sandy loam 55%
 Horiz. overland flow path length: 500 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|-----------------------------|-------------|--------------------|
| Highly disturbed land\long term vegetation\weeds, blade cut | Highly disturbed land\weeds | lbs | 1000 |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: 1 - 0.5% grade terrace in middle
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 0.39 t/ac/yr
 Detachment on slope: 0.39 t/ac/yr
 Soil loss for cons. plan: 0.39 t/ac/yr
 Sediment delivery: 0.38 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|--|-----------------------------|-----------------------------|
| 5/15/0 | basic/general\begin growth | Highly disturbed land\weeds | 0 |
| 5/15/5 | Highly disturbed land\kill remove vegetation, blade cut material | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin operation with terraces - SOIL 435

Inputs:

Location: Fresno at point
 Soil: LETHENT clay loam 90%
 Horiz. overland flow path length: 500 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|-----------------------------|-------------|--------------------|
| Highly disturbed land\long term vegetation\weeds, blade cut | Highly disturbed land\weeds | lbs | 1000 |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: 1 - 0.5% grade terrace in middle
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 0.44 t/ac/yr
 Detachment on slope: 0.44 t/ac/yr
 Soil loss for cons. plan: 0.44 t/ac/yr
 Sediment delivery: 0.44 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|--|-----------------------------|-----------------------------|
| 5/15/0 | basic/general\begin growth | Highly disturbed land\weeds | 0 |
| 5/15/5 | Highly disturbed land\kill remove vegetation, blade cut material | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin operation with terraces - SOIL 462

Inputs:

Location: Fresno at point
 Soil: CIERVO clay 50%
 Horiz. overland flow path length: 500 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|-----------------------------|-------------|--------------------|
| Highly disturbed land\long term vegetation\weeds, blade cut | Highly disturbed land\weeds | lbs | 1000 |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: 1 - 0.5% grade terrace in middle
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 0.33 t/ac/yr
 Detachment on slope: 0.33 t/ac/yr
 Soil loss for cons. plan: 0.33 t/ac/yr
 Sediment delivery: 0.33 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|--|-----------------------------|-----------------------------|
| 5/15/0 | basic/general\begin growth | Highly disturbed land\weeds | 0 |
| 5/15/5 | Highly disturbed land\kill remove vegetation, blade cut material | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin operation with terraces - SOIL 587

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 500 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|-----------------------------|-------------|--------------------|
| Highly disturbed land\long term vegetation\weeds, blade cut | Highly disturbed land\weeds | lbs | 1000 |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: 1 - 0.5% grade terrace in middle
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 0.34 t/ac/yr
 Detachment on slope: 0.34 t/ac/yr
 Soil loss for cons. plan: 0.34 t/ac/yr
 Sediment delivery: 0.34 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|--|-----------------------------|-----------------------------|
| 5/15/0 | basic/general\begin growth | Highly disturbed land\weeds | 0 |
| 5/15/5 | Highly disturbed land\kill remove vegetation, blade cut material | | 0 |

RUSLE2 Profile Erosion Calculation Record

Info: Profile is default that RUSLE2 uses when you have not specified a profile.

File: profiles\San Juaquin operation with terraces - SOIL 588

Inputs:

Location: Fresno at point
 Soil: MUGATU fine sandy loam 85%
 Horiz. overland flow path length: 500 ft
 Avg. slope steepness: 1.0 %

| Management | Vegetation | Yield units | Yield (# of units) |
|---|-----------------------------|-------------|--------------------|
| Highly disturbed land\long term vegetation\weeds, blade cut | Highly disturbed land\weeds | lbs | 1000 |

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: 1 - 0.5% grade terrace in middle
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial

Outputs:

Soil loss erod. portion: 0.34 t/ac/yr
 Detachment on slope: 0.34 t/ac/yr
 Soil loss for cons. plan: 0.34 t/ac/yr
 Sediment delivery: 0.34 t/ac/yr

Crit. slope length:
 Surf. cover after planting: 0 %

| Date | Operation | Vegetation | Surf. res. cov. after op, % |
|--------|--|-----------------------------|-----------------------------|
| 5/15/0 | basic/general\begin growth | Highly disturbed land\weeds | 0 |
| 5/15/5 | Highly disturbed land\kill remove vegetation, blade cut material | | 0 |

Storm Water Pollution Prevention Plan

For:

San Joaquin Solar Hybrid 1 & 2 Power Plant Project

Prepared For:

Martifer Renewables Solar Thermal, LLC

12555 High Bluff Drive, Suite 100

San Diego, CA 92130



Contractor:

Not assigned at this time

Project Site Location/ Address:

Along West Jayne Avenue

Unincorporated (southwest) of Fresno County

City of Coalinga

Contractor's Storm Water Pollution Prevention Manager

<Pending SWPPPM>

SWPPP Prepared By:



URS Corporation

1615 Murray Canyon Road, Suite 1000

San Diego, CA 92108-4314

(619) 294-9400

SWPPP Preparation Date:

July 14, 2009

Estimated Project Dates:

Start of Construction:

X

Completion of Construction:

X

WDID No.: <Pending>

Table of Contents

Section 100 SWPPP Certifications and Approval

- 100.1 SWPPP Certification by Preparer
- 100.2 Owner Approval and Certification of SWPPP
- 100.3 Annual Compliance Certification

Section 200 SWPPP Amendments

- 200.1 SWPPP Amendment Certification and Approval
- 200.2 SWPPP Amendment Log

Section 300 Introduction and Project Description

- 300.1 Introduction and Project Description
- 300.2 Unique Site Features
- 300.3 Construction Site Estimates
- 300.4 Project Schedule/ Water Pollution Schedule
- 300.5 Contact Information/ List of Responsible Parties

Section 400 References

Section 500 Body of SWPPP

- 500.1 Objectives
- 500.2 Vicinity Map
- 500.3 Pollutant Source Identification and BMP Selection
 - 500.3.1 Inventory of Materials and Activities that May Pollute Storm Water
 - 500.3.2 Existing(Pre-construction)Control Measures
 - 500.3.3 Nature of Fill Material and Existing Data Describing Soil
 - 500.3.4 Erosion Control
 - 500.3.5 Sediment Control
 - 500.3.6 Tracking Control
 - 500.3.7 Wind Erosion Control
 - 500.3.8 Non-Storm Water Control
 - 500.3.9 Waste Management and Materials Pollution Control
 - 500.3.10 Cost Breakdown for Water Pollution Control
- 500.4 Water Pollution Control Drawings (WPCDs)
- 500.5 Construction BMP Maintenance, Inspection, and Repair

- 500.6 Post-Construction Storm Water Management
 - 500.6.1 Post Construction Control Practices
 - 500.6.2 Operation/Maintenance after Project Completion
- 500.7 Training
- 500.8 List of Subcontractors
- 500.9 Other Plans/Permits

Section 600 Monitoring Program and Reports

- 600.1 Site Inspections
- 600.2 Non- Compliance Reporting
- 600.3 Record Keeping and Reports
- 600.4 Sampling and Analysis Plan for Sediment
 - 600.4.1 Scope of Monitoring Activities
 - 600.4.2 Monitoring Strategy
 - 600.4.3 Monitoring Preparation
 - 600.4.4 Sample Collection and Handling
 - 600.4.5 Sample Analysis
 - 600.4.6 Quality Assurance/Quality Control
 - 600.4.7 Data Management and Reporting
 - 600.4.8 Data Evaluation
 - 600.4.9 Change of Conditions
 - 600.4.10
- 600.5 Sampling and Analysis Plan for Non-Visible Pollutants
 - 600.5.1 Scope of Monitoring Activities
 - 600.5.2 Monitoring Strategy
 - 600.5.3 Monitoring Preparation
 - 600.5.4 Analytical Constituents
 - 600.5.5 Sample Collection and Handling
 - 600.5.6 Sample Analysis
 - 600.5.7 Quality Assurance/Quality Control
 - 600.5.8 Data Management and Reporting
 - 600.5.9 Data Evaluation
 - 600.5.10 Change of Conditions

SWPPP Attachments

- Attachment A Vicinity Map
- Attachment B Water Pollution Control Drawings
- Attachment C BMP Consideration Checklist
- Attachment D Computation Sheet for Determining Runoff Coefficients

| | |
|--------------|--|
| Attachment E | Computation Sheet for Determining Run-On Discharges |
| Attachment F | Notice of Intent (NOI) |
| Attachment G | Program for Maintenance, Inspection, and Repair of Construction Site BMPs |
| Attachment H | Storm Water Quality Construction Site Inspection Checklist |
| Attachment I | Trained Contractor Personnel Log |
| Attachment J | Subcontractor Notification Letter and Log |
| Attachment K | Notice of Non-Compliance |
| Attachment L | SWPPP and Monitoring Program Checklist |
| Attachment M | Annual Certification of Compliance Form |
| Attachment N | Other Plans/Permits |
| Attachment O | Water Pollution Control Cost Breakdown |
| Attachment P | Notice of Termination |
| Attachment Q | BMPs Selected for the Project |
| Attachment R | Sampling Activity Log |
| Attachment S | Construction Material and Pollutant Testing Guidance Table - Non-Visible Pollutants |
| Attachment T | Discharge Reporting Log |

Figures

- Figure 1. Vicinity Map
- Figure 2. Site Delineation Map
- Figure 3. Water Courses and Critical Areas Map
- Figure 4. Off-Site Topographic Map
- Figure 5. Clearing and Grading Limits Map
- Figure 6. Construction BMP Plan

Tables

- Table 1. Onsite Runoff Coefficients
- Table 2. Hazardous Materials Used and Stored During Construction
- Table 3. Anticipated Project Schedule Major Milestones
- Table 4. Estimated Daily Construction Traffic
- Table 5. Maintenance Program of Construction BMPs
- Table 6. Soil and Wind Erosion Results

Section 100

SWPPP Certifications and Approval

100.1 SWPPP Certification by Preparer

Project Name: San Joaquin Solar Hybrid 1 & 2 Power Plant Project

Project Number: 27658033

“I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Preparer's Signature

Date

Preparer's Name and Title

Telephone Number

100.2 Owner Approval and Certification of SWPPP

Owner's (Or Authorized Representative)
Approval and Certification of the
Storm Water Pollution Prevention Plan

Project Name: Joaquin Solar Hybrid 1 & 2 Power Plant Project

Project Number: _____

“I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Owner (or Authorized Rep.) Signature

Date

Name and Title

Telephone Number

100.3 Annual Compliance Certification

By July 1 of each year, the Owner shall submit an Annual Certification of Compliance stating compliance to the appropriate Regional Water Quality Control Board (RWQCB) [Central Valley Region (5F)], stating compliance with the terms and conditions of the General Construction Permit and the Storm Water Pollution Prevention Plan (SWPPP). The blank Annual Certification of Compliance Form included in Attachment M. Completed Annual Certifications of Compliance and Approvals can be found in the following pages.

Section 200

SWPPP Amendments

200.1 SWPPP Amendment Certification and Approval

This SWPPP shall be amended:

- Whenever there is a change in construction or operations which may affect the discharge of pollutants to surface water, groundwater(s), or a municipal separate storm sewer system (MS4); or
- If any condition of the Permits is violated or the general objective of reducing or eliminating pollutants in storm water discharges has not been achieved. If the RWQCB determines that a Permit violation has occurred, the SWPPP shall be amended and implemented within 14-calendar days after notification by the RWQCB;
- Annually, prior to the defined rainy season; and
- When deemed necessary by Owner.

The following items will be included in each amendment:

- Who requested the amendment.
- The location of proposed change.
- The reason for change.
- The original BMP proposed, if any.
- The new BMP proposed.

The amendments for this SWPPP, along with Owner's Certification and the approval, can be found in the following pages. Amendments are listed in the Amendment Log in section 200.2

Although this SWPPP reflects the current General Construction Permit (Order No. 99-08-DWQ), the State Water Resources Control Board (SWRCB) is currently in the process of adopting a new General Construction Permit that will supersede the current permit. The proposed General Construction Permit will require SWPPPs to be based on a risk assessment approach. The risk assessment will be based on the beneficial uses; 303(d) list of impaired water bodies and receiving water channel stability. The new permit will require the development of a Rain Even Action Plan (REAP) and Construction Site Monitoring Plan (CSMP). Construction Site Monitoring will require self monitoring and photographic documentation. Further, effluent monitoring and reporting will be based on

technology based Numeric Action Levels (NALs) and Numeric Effluent Limitations (NELs). In addition, each site will need to be evaluated for Post Construction Best Management Practices (BMPs) such as Treatment Control BMPs. This SWPPP may require modifications to reflect requirements within the proposed construction permit.

SWPPP Amendment No.

Project Name: San Joaquin Solar Hybrid 1 & 2 Power Plant Project

Project Number: _____

Preparer Certification of the Storm Water Pollution Prevention Plan Amendment

“I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Preparer's Signature

Date

Preparer's Name and Title

Telephone Number

Owner (or Owner's Authorized Representative) Approval of the Storm Water Pollution Prevention Plan Amendment

“I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Owner (or Authorized Rep.) Signature

Date

Name and Title

Telephone Number

Section 300

Introduction and Project Description

300.1 Introduction and Project Description

The San Joaquin Solar 1 & 2 Hybrid (SJSHP) facility is located along West Jayne Avenue in an unincorporated area of southwestern Fresno County, east of the City of Coalinga and southwest of Huron, California. The Project site is located on West Jayne Avenue; approximately 6 miles east of Coalinga and approximately 3 miles west of Interstate 5, in an agricultural area of Fresno County, California. The Facility will be situated on one section of land, approximately 640 acres. The Project site is located in an area zoned for agricultural uses as specified in the Fresno County General Land Use Plan. Surrounding land uses include agricultural fields to the north, agricultural lands to the south, the Gujarral Hills Oil Field to the east, and the Coalinga State Hospital to the west.

The Project includes the construction, operation and maintenance of two 53.4 MW net solar hybrid power plant stations and ancillary systems. The two components of each Plant are the solar field and the biomass facilities. Each solar field has the heat-generating capacity to fully load its respective turbine to produce the net 53.4 MW. Each biomass facility will be used to maximize the turbine's energy output during shoulder solar hours (as the sun rises and sets) and will operate at night to produce up to 40 MW of energy.

The solar field design will use parabolic solar collectors to concentrate the sun's radiant energy on Heat Collection Elements (HCEs) that contain a circulating Heat Transfer Fluid (HTF). Hot HTF is then conveyed to heat exchangers to produce steam in a conventional reboiler for expansion in a reheat steam turbine generator. The biomass facility will use fluidized bed combustion technology to burn orchard waste and municipal green waste. The biomass component will run up to 24 hours a day in winter months when solar intensity is less. During summer, the biomass plant will start up as the sun approaches the horizon, run all night, then ramp down as the sun rises the next day. Incorporating the biomass facility in this manner increases the power plant's total energy output and maximizes turbine use. The biomass combustion process will produce ash equal to approximately 5% of the biomass consumed. Ancillary facilities will include buildings and facilities for assembly, maintenance and operations, as well as the gathering lines required to transmit electricity from the field to the substation.

300.2 Unique Site Features

The Facility will be situated on one section of land, approximately 640 acres. The Project site is located in an area zoned for agricultural uses as specified in the Fresno County General Land Use Plan. Surrounding land uses include agricultural fields to the north, agricultural lands to the south, the Gujarral Hills Oil Field to the east, and the Coalinga State Hospital to the west.

Existing Drainage Patterns

The nearest mapped surface drainages are Zapato Chino Creek approximately 2,000 feet southeast, and Los Gatos Creek approximately one mile north and northwest of the site. The nearest mapped surface water includes the wastewater treatment ponds located at the adjacent Coalinga State Hospital property to the west, and an irrigation canal located approximately 100 feet from the southwestern corner of the site. Surface water runoff from the site and the surrounding land generally flows toward the southwest into Zapato Chino Creek (EDR, 2008).

According to the FEMA floodplain panel maps for the site vicinity the northwestern boundary of a 100-year flood event zone lies within one-quarter mile southeast of the site boundary. The site is not located in a coastal zone.

Proposed Drainage Patterns

Onsite drainage design has not been finalized at this time. The final drainage design is contingent upon the final site design. The onsite stormwater conveyance systems will be designed in accordance with the Fresno County drainage standards for swales, pipes, infiltration basins, etc. Currently, the proposed design will sheet flow accumulated runoff through each of the four main pad areas. Stormwater flows may be concentrated at select locations including: roadside swales, road cross culverts, terrace downdrains, and at the entrance to the infiltration area in the southwest corner of the site.

Site grades will be established to minimize the amount of earthwork required to construct the facilities and to maintain control of stormwater runoff. All areas disturbed during construction will be graded to a concrete for road base and gravel for other facility area surfaces). Finish grading will be performed to conform to the finished design elevations for surface drainage and to prepare the areas for the specified surface finishes. Rainfall from vehicle parking and paved areas in the power block will be collected and directed to an oil/water separator prior to discharge to the raw water tank for recovery. The solar field is designed with a slight berm on the exterior edges to contain collected rain water in the field for natural infiltration and evaporation. The power island is 1 foot higher than the solar field so that runoff travels to the solar fields and infiltrates or evaporates.

Rainfall from each plant's solar field will continue to be drained by sheet flow. Drainage and erosion will be controlled through infiltration basins to allow the rainfall to be absorbed into the ground replenishing local ground water levels and designed to match existing runoff rates to offsite areas.

Stormwater discharges from construction activities are subject to BMPs designed and implemented for construction activities. From a temporary construction perspective, groundwater is not expected to be encountered during construction phases; however, if necessary, appropriate construction phase BMPs will be used to minimize impacts to both surface water and groundwater quality. Although there will be minimal changes in absorption rates, drainage patterns, or the rate or amount of surface runoff due to the surface paving and the presence of new structures, surface water runoff will be conveyed, contained, and allowed to evaporate, percolate, or drain similar to existing conditions. The site is relatively flat so there is not a significant risk for accelerated erosion after implementation of temporary construction control BMPs and post-construction control BMPs.

300.3 Construction Site Estimates

The site is located in an unincorporated area of Fresno County, therefore, Fresno County hydrology and hydraulic standards were used for onsite stormwater calculations. The runoff generated onsite will be captured onsite within multiple detention/infiltration areas. These areas will allow the stormwater to infiltrate into the ground and be evaporated.

The current estimate of average annual site stormwater runoff is approximately 152 acre-feet (AF), assuming 7.5 inches of annual rainfall over the 640 acre site and using a runoff coefficient of 0.38. Although the Project would increase runoff coefficients in localized areas onsite (site facilities area), the Project drainage design, along with the proposed infiltration areas in the solar field will allow percolation and evaporation to match the current stormwater runoff rates to downstream offsite areas. Additional information and calculations for the drainage and runoff calculations onsite will be provided during the design process.

The following are estimates of the construction site:

| | |
|---|---------------------|
| Construction site area | <u>640 acres</u> |
| Percentage impervious area before Construction | <u>< 1 %</u> |
| Runoff coefficient before construction ⁽¹⁾ | <u>0.38</u> |
| Percentage impervious area after construction | <u>< 5 %</u> |
| Runoff coefficient after construction ⁽¹⁾ | <u>0.42</u> |
| Anticipated storm water flow on to the Construction site ⁽²⁾ | <u>XX cfs (TBD)</u> |

**Percentage impervious conservatively assumes entire power block, access road, and parking areas are impervious. Areas under the reflectors are pervious.*

¹Calculations are shown in Attachment D

²Calculations are shown in Attachment E

300.4 Project Schedule/ Water Pollution Control Schedule

Although the project schedule has not been formally drafted and approved, a general schedule that illustrated the sequencing of construction activities and the implementation of Temporary Construction Best Management Practices (BMPs) has been included into this document.

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

The purpose of the Water Pollution Control Schedule is to schedule activities to help reduce the duration of time the soil is exposed to wind, stormdrain, stormwater runoff and vehicular tracking. The Water Pollution Control schedule depicts construction activities and control practices in accordance with applicable statutes and permits. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Based on the CEC Committee Schedule, the date for granting of the Commission Decision has not been determined. Project construction will likely commence in the fourth quarter of 2010. In addition to the onsite facilities, a transmission line and a water line will be constructed in corridors outside the 640-acre square.

The Project construction, from site preparation and grading to full commercial operation, is expected to take approximately 15 months. Heavy construction will be scheduled between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Based upon the latest status of the environmental permitting process the

anticipated major milestones are presented below in Table 3 (Anticipated Project Schedule Major Milestones).

Site facilities and amenities will be established during the first month of the solar field build out. The majority of these will be located in the construction laydown area located in the center of the Project site that will be illustrated on the project SWPPP. These will consist of site offices, restroom facilities, meal rooms, parking areas, vehicle storage/maintenance areas, and construction material/equipment storage areas. Construction power to the temporary site facilities will be provided by mobile diesel-driven generator sets.

Table 3.
Anticipated Project Schedule Major Milestones

| Activity | Date |
|---|------------------------------|
| Begin Construction | 4 th Quarter 2010 |
| Start Up and Commissioning: SJS 1 Plant | 4 th Quarter 2011 |
| Start Up and Commissioning: SJS 2 Plant | 1 st Quarter 2012 |

Implementation of Soil Stabilization schedule

BMPs will be deployed in a sequence to follow the progress of grading and other construction activities. As the locations of soil disturbance change, erosion and sedimentation controls will be adjusted accordingly to control storm water runoff at the downgrade perimeter and drain inlets. BMPs will be mobilized as follows:

Year-round:

- The water pollution prevention manager will monitor weather using the National Weather Service reports to track conditions and alert field crews to the onset of rainfall events.
- Disturbed areas will be stabilized with temporary soil stabilization or with permanent erosion control as soon as possible after grading or construction is complete.

During the rainy season:

- Disturbed areas will be stabilized with temporary or permanent soil stabilization (erosion control) before rain events.
- Disturbed areas that are substantially complete will be stabilized with permanent soil stabilization (erosion control)
- Prior to forecast storm events, temporary soil stabilization BMPs will be deployed and inspected.

During the non-rainy season:

- The project schedule will sequence construction activities with the installation of both soil stabilization and sediment control measures. The construction schedule will be arranged as much as practicable to leave existing vegetation undisturbed until immediately prior to grading.

Project Start

Anticipated Commencement Date: 4th Quarter of 2010

Project Finish

Anticipated Completion Date: 1st Quarter of 2012

Rainy Season

October 15th - March 15th

Annual Certifications

July 1st of each year

Pre-Construction

- Orientation - Review the SWPPP to become familiar with the goals, requirements, procedures and application of selected BMPs.
- List Responsible Parties - Establish list of individuals that will be responsible for implementing the SWPPP measures.
- Inventory - Inventory all materials and practices. Determine and describe appropriate BMPs.
- Training - Commence training of responsible parties on elements of the SWPPP (include documentation of training).
- Logistics - construction utilities and sanitary facilities.
- Rainy season implementation schedule.
 - Deployment of temporary soil stabilization BMPs.
 - Deployment of temporary sediment control BMPs.
 - Deployment of wind erosion control BMPs.
 - Deployment of tracking control BMPs.
 - Deployment of non-stormwater BMPs.
 - Deployment of waste management and materials pollution control BMPs.
- Non-rainy season implementation schedule.
 - Deployment of temporary soil stabilization BMPs.
 - Deployment of temporary sediment control BMPs.
 - Deployment of wind erosion control BMPs.

- Deployment of tracking control BMPs.
- Deployment of non-stormwater BMPs.
- Deployment of waste management and materials pollution control BMPs.

Mobilization & Initial Construction

- Construction facilities - Construct the established proposed construction entrance/exit, Materials Storage Areas, Equipment Storage & Maintenance Area, Vehicle Parking, Waste Disposal & Stockpile areas.
- Perimeter/Boundary Controls - Establish controls to protect the site from potential disturbance/pollution from off-site activities/events.
- Debris/Detention Basins - Ensure the integrity of the detention basins to accept anticipated stormwater flows.
- Anticipated Commencement Date: 1st Quarter of 2012

Material and Equipment Staging Area

- The construction laydown and parking areas will be located near the center of the Project site. The primary construction laydown area is nearly level and thus requires little grading. Pads will be prepared for setting the trailers housing the temporary construction facilities (offices, restrooms, meal rooms, meeting and conference rooms, etc.). The soil in the laydown area will be covered with protective gravel along the access roadways, parking, and vehicle storage/maintenance areas so that soil losses will be negligible.

Construction Traffic

- Construction traffic should commence in the fourth quarter of 2010 and continue through the 15-month construction schedule. Traffic should peak during the third quarter of 2010. The estimated construction traffic is summarized in Table 4 (Estimated Daily Construction Traffic).

**Table 4.
Estimated Daily Construction Traffic**

| Vehicle Type | Average Daily Round Trips | Peak Daily Round Trips |
|-------------------------|---------------------------|------------------------|
| Construction Personnel | 375 | 744 |
| Delivery Trucks | 12 | 21 |
| Heavy Vehicles & Trucks | 12 | 21 |
| Total | 399 | 768 |

Clearing & Grubbing

- Delineate limits of grading, protected areas, borrow pit areas, stockpiles and haul roads/access roads. Commence clearing and grubbing work, utilizing applicable BMPs.
- Anticipated Commencement Date: 4th Quarter of 2010
- Anticipated Completion Date: 1st Quarter of 2012

Rough and Precise Grading

- Rough grading of site for proposed project structures and drainage.
- Mass grading of slopes and culverts.
- Anticipated Commencement Date: 4th Quarter of 2010
- Anticipated Completion Date: 1st Quarter of 2012

Utility installation

- Paving, saw-cutting, and any other pavement related operations.
- Anticipated Commencement Date: 4th Quarter of 2010
- Anticipated Completion Date: 1st Quarter of 2012

Post Construction BMPs

- Stabilize infiltration areas.
- Stabilize cut/fill slopes.
- Installation of V-ditches, drainage channels at toe of slopes, culverts, etc.
- Final stabilization activities.
- Anticipated Commencement Date: 4th Quarter of 2010
- Anticipated Completion Date: 1st Quarter of 2012

The final Stormwater Pollution Prevention Plan (SWPPP) shall provide a graphical project schedule. The schedule shall clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The schedule shall contain an adequate level of detail to show major activities sequenced with implementation of construction site BMPs.

300.5 Contact Information/List of Responsible Parties

The Storm Water Pollution Prevention Manager (SWPPM) assigned to this project is:

Insert SWPPM's Name: <Pending>

Insert Telephone Number(s): <Pending>

Insert Contractor's Company Name: <Pending>

Insert Address: <Pending>

Insert City, State, Zip: <Pending>

The SWPPM shall have primary responsibility and significant authority for the implementation, maintenance, inspection, and amendments to the approved SWPPP. The SWPPM will be available at all times throughout the duration of the project. Duties of the SWPPM include but are not limited to:

- Ensuring full compliance with the SWPPP and the Permit
- Implementing all elements of the SWPPP, including but not limited to:
 - Implementation of prompt and effective erosion and sediment control measures
 - Implementing all non-storm water management, and materials and Waste management activities such as: monitoring discharges (dewatering, diversion devices); general site clean-up; vehicle and equipment cleaning, fueling and maintenance, spill control, ensuring that no material other than storm water are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems; etc.
- Pre-storm inspections
- Storm event inspections
- Post-storm inspections
- Routine inspections as specified in the project's specifications described in the SWPPP
- Updates/Amendments to the SWPPP, as needed

- Preparing annual compliance certification for Owner's, or Owner's Authorized Representative, Signature
- Ensuring elimination of all unauthorized discharges
- The SWPPM shall be assigned authority by the Contractor to mobilize crews in order to make immediate repair to the control measures
- Coordinate with the Contractor to assure all of the necessary corrections/ repairs are made immediately, and that the project complies with the SWPPP, the permit and approved plans at all times
- Submitting Notices of Discharge and reports of Illicit Connections or Illegal Discharges

Section 400 References

The following documents are made a part of this SWPPP by reference:

- San Joaquin Solar 1 & 2 Hybrid Project Application for Certification. California Energy Commission.
- San Joaquin Solar Hybrid Soil Erosion Analysis Summary.
- Draft Erosion and Sediment Control Plan (DESCP) San Joaquin Solar 1 & 2 Hybrid Power Project. June 30, 2009, URS.
- State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS00002, Water Discharge Requirements (WDRs) for Discharges of Storm Water Runoff associated with Construction Activity, 1999, SWRCB.
- State Water Resources Control Board Resolution No. 2001-046, Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (General Permit).
- State Water Resources Control Board (State Water Board) Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit) Waste Discharge Requirements (WDRs) for Discharges of Stormwater Associated with Industrial Activities Excluding Construction Activities.
- Stormwater Best Management Practice Handbook Construction, California Stormwater Quality Association, January 2003, CASQA.
- Stormwater Quality Handbooks Construction Site Best Management Practices (BMP) Manual. March 2003, Caltrans.

Section 500

Body of SWPPP

500.1 Objectives

This Storm Water Pollution Prevention Plan (SWPPP) has six main objectives:

- Identify all pollutant sources, including sources of sediment that may affect the quality of storm water discharges associated with construction activity (storm water discharges) from the construction site, and
- Identify non-storm water discharges.
- Identify, construct, implement in accordance with time schedule, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction, and
- Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).
- Identify a sampling and analysis strategy and sampling schedule for discharges from construction activity which discharges directly into water bodies listed on Attachment 3 of the Permit (Clean Water Act Section 303(d) [303(d)] Water Bodies listed for Sedimentation).
- For all construction activity, identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

This SWPPP conforms with the required elements of the General Permit No. CAS000002 issued by the State of California, State Water Resources Control Board (SWRCB). This SWPPP will be modified and amended to reflect and amendments to the Permit or any changes in construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwaters, or the municipal separate storm sewer system (MS4). The SWPPP will also be amended if it is in violation of any condition of the Permit or has not achieved the general objective of reducing pollutants in stormwater discharges. The SWPPP shall be readily available on-site for the duration of the project.

500.2 Vicinity Map

The construction project vicinity map showing the project location, surface water boundaries, limits of the project site, geographic features, construction site perimeter, and general topography, is located under Attachment A. The project's Title Sheet provides more detail regarding the project location and is also included on WPCDs under Attachment B. However, the project's construction plans and drawings can provide more details regarding specifics of the proposed project.

500.3 Pollutant Source Identification and BMP Selection

500.3.1 Inventory of Materials and Activities that may Pollute Storm Water

The following is a list of construction materials that will be used and activities that will be performed that will have the potential to contribute pollutants, other than sediment, to storm water runoff (control practices for each activity are identified in the Water Pollution Control Drawings (WPCDs) and/ or in Sections 500.3.4 through 500.3.9):

- Asphaltic emulsions associated with asphalt-concrete paving operations (Water and Reclamation Lines)
- Cement materials associated with buildings, retaining walls, drainage structures (culverts, V-ditches).
- Fertilizers, Herbicides and Pesticides
- Metals and plated products (parabolic reflector)
- Solvents, Thinners
- Vehicular fluids (Oils and Grease, Lubricants, Petroleum products)
- Wood products (false work, etc)

Construction activities that have the potential to contribute sediment to storm water discharges include:

- Clearing and Grubbing Activities
- Rough Grading and Precise Grading
- Soil Import/Export Activities
- Utility Installation (Excavation)

Attachment C lists all of the Best Management Practices (BMPs) that have been selected for implementation in this construction project. The implementation and location of

BMPs are shown on the WPCDs. Narrative descriptions of BMPs to be used during the project are listed by category in each of the following SWPPP sections. Attachment Q includes a list, and/ or copies of the fact sheets of all the BMPs selected for this project.

500.3.2 Existing (pre-construction) Control Measures

The proposed project involves the development of a solar field hybrid plant with associated site improvements. The following are existing (pre-construction) control measures encountered within the project site:

- Existing Vegetation (Soil Cover)
- Stabilized Roadways

All of these facilities are pre-existing and could help reduce the amount of pollutants being discharged from the Facility site during construction.

500.3.3 Nature of Fill Material and Existing Data Describing the Soil (Soil Stabilization/Erosion Control)

Grades will be established to minimize the amount of earthwork including clearing and grubbing required to construct the proposed facility improvements and to maintain control of sheet flow and stormwater runoff. All areas disturbed during construction will be graded to a relatively smooth surface. Selected areas will be covered with appropriate material, as conditions require (e.g., gravel, asphalt concrete, or concrete). Precise grading will be performed to conform to the finished design elevations for surface drainage and to prepare the areas for the specified surface finishes.

In general, rainfall runoff from the solar fields will continue to be drained via sheet flow.

Foundations

Based on preliminary geotechnical investigations, it is expected that lightly loaded equipment and structures such as the solar reflectors and receivers will be supported on shallow footings. Shallow foundations will be a combination of shallow drilled shafts, continuous strip and isolated spread footings. The solar field receivers and reflectors will be supported on shallow drilled shaft foundations of reinforced concrete or individual spread footings.

The Solar Collector Assemblies (SCAs) in the solar field will be supported on pile foundations. Excavations for foundations would be made with power drilling equipment. A vehicle-mounted power auger would be used to excavate for the SCA foundations. Footings would be installed by placing reinforcing steel and an anchor bolt cage into each foundation hole, positioning the bolt cage, and encasing it in concrete. Spoil material would be used for fill where suitable.

Foundation excavations will be prepared as required for the power block, biomass facilities, transformers and other heavy equipment. Prior to excavation, underground structures will be located and protected or removed. Deep foundations may be required in limited locations within the power block and biomass facilities to support heavy equipment with large overturning moments (e.g., exhaust stacks). Cast-in-drilled hole (CIDH) or precast-prestressed concrete piles may be used, as determined by the final geotechnical investigation and foundation design.

Water Line

The proposed water supply line from the proposed Coalinga Waste Water Treatment Facility will be constructed primarily within existing disturbed areas and will require typical erosion and sediment control BMPs.

500.3.4 Erosion Control (Soil Stabilization)

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in storm water runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles. Erosion control measures that shall be implemented on this project and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of access roads. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities. The intent of erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse, or onto adjacent properties.

This project will incorporate erosion control measures required by the contract documents, and other measures selected by Contractor, SWPPP Manager, or Owner. This project will implement the following practices for effective temporary and final erosion control during construction:

- Preserve existing vegetation where required and when feasible.
- Apply temporary erosion control to remaining active and non-active areas as required by the California Stormwater BMPs Handbook-Construction, and the contract documents. Reapply as necessary to maintain effectiveness.
- Implement temporary erosion control measures at regular intervals throughout the defined rainy season to achieve and maintain the contract's disturbed soil area requirements. Implement erosion control prior to the defined rainy season.
- Stabilize non-active areas as soon as feasible after the cessation of construction activities.

- Control erosion in concentrated flow paths by applying erosion control blankets and lining swales as required in contract documents.
- At completion of construction, apply permanent erosion control to all remaining disturbed soil areas.

Sufficient quantities of erosion control/temporary soil stabilization materials will be maintained on-site during the defined rainy season in order to protect non-stabilized disturbed soil areas prior to predicted rain events.

Erosion Control (Temporary Soil Stabilization) techniques such as scheduling construction sequences to minimize land disturbance during the rainy and non-rainy seasons and employing BMPs appropriate for the season; preservation of existing vegetation by marking areas of preservation with temporary orange propylene fencing; use of geotextiles, mats, plastic covers or erosion control blankets to stabilize disturbed areas and protect soil stockpiles from erosion by wind or water; use of earth dikes, drainage swales and lined ditches to intercept stormwater flows, divert and convey stormwater runoff to prevent erosion; use of outlet protection devices and velocity dissipation devices at pipe outlets to prevent scour and erosion from stormwater flows.

Implementation and location of temporary soil stabilization BMPs are shown on the WPCDs and described in this section. Stormwater discharges from construction activities are subject to BMPs designed and implemented for construction activities. Approved BMPs appropriate to the site and specific conditions will be selected from the California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook - Construction. Selected BMPs may include, but are not limited to, the following, as appropriate:

The BMP Consideration Checklist (Attachment C) indicates that the BMPs that will be implemented to control erosion on the construction site are the following:

- EC-1 - Scheduling
- EC-2 - Preservation of Existing Vegetation
- EC-5 - Soil Binders (Polyacrylamide)
- EC6 - Straw Mulch (for emergency purposes)
- EC7 - Geotextiles & Mats
- EC9 - Earth Dikes & Drainage Swales

Preservation of Existing Vegetation

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees (if any), vines, shrubs, and grasses that protect soil from erosion. Preservation of existing vegetation is suitable for use on most projects.

Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where local, state, and federal government require preservation, such as drainage features. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

Erosion Control Blankets & Geotextiles

The overall existing and proposed site is relatively flat, at an elevation of approximately 590 feet MSL. The power block area will be graded to provide a level site area. In order to help reduce wind and water erosion discharges, Rolled Erosion Control (REC) blankets/materials can be used at limited areas throughout the Project site. Geotextiles, mats, plastic covers or erosion control blankets/materials will be considered for use on slopes steeper than 3 to 1 (including stockpiles) to protect soil slopes and stockpiles.

500.3.5 Sediment Control

Sediment controls are structural measures that are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. This project will incorporate sediment control measures required by the contract documents, and other measures selected by the Contractor, SWPPP Manager or Owner.

Sufficient quantities of temporary sediment control materials will be maintained on-site throughout the duration of the project, to allow implementation of temporary sediment controls in the event duration of the project, and for rapid response to failures or emergencies, in conformance with the Permit requirements and as described in this SWPPP. This includes implementation requirements for active areas and non-active areas before the onset of rainfall.

Sediment Control techniques including use of silt fences, straw bales, and/or fiber rolls to intercept and reduce the flow of sediment laden stormwater runoff to facilitate the settling of sediment before stormwater runoff discharges from the Project site. Implementation and locations of temporary sediment control BMPs are shown in the Water Pollution Control Drawings (WPCDs). The BMP Consideration Checklist (Attachment C) indicates all the BMPs that will be implemented to control sediment on the construction site are the following:

- SE-1 Silt Fence
- SE-4 Check Dams
- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-7 Street Sweeping and Vacuuming
- EC-9 Earth Dikes and Drainage Swales
- EC-10 Velocity Dissipation Devices

Implementation of Temporary Sediment Controls

- Temporary sediment control BMPs will be deployed according to the schedule shown in section 300.4 (Project Schedule/Water Pollution Control Schedule).
- Temporary sediment controls will be implemented at the draining perimeter of disturbed soil areas, toe of slopes and outfall areas during the rainy season.
- As depicted on the WPCDs, silt fence and gravel bag perimeters will be placed at strategic locations throughout the project location.
- Temporary sediment controls will be ready for mobilization during the non-rainy season.

Earth Dikes/Drainage Swales Lined Ditches

Earth dikes and drainage swales are suitable for use, individually or together, where stormwater runoff needs to be diverted from one area and conveyed to another. An earth dike is a temporary berm or ridge of compacted soil used to divert stormwater runoff or channel water to a designated location. A drainage swale is a shaped and sloped depression in the soil surface used to divert stormwater runoff to a specified location. Earth dikes and drainage swales are used to divert stormwater runoff around the construction site, around disturbed areas and discharge into sediment basins, traps or off site.

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert stormwater to a sediment trapping device or a stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off site and from undisturbed areas away from disturbed areas and to divert sheet flows away from unprotected slopes. The swales will redirect off-site stormwater runoff around the site to ensure off-site flows will not impact the on-site development.

Outlet Protection

Outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated, high velocity flows. Outlet protection is utilized when discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This includes temporary diversion structures to divert run-on during construction. If velocity dissipation devices are used, they will be identified on the project grading plans or WPCDs.

Soil Tillage

Following final grading, some of the surface soils may be decompacted (if determined compacted) by ripping or disking to allow root development. Particular attention will be given to areas that may have become compacted through movement of heavy equipment or other construction operations.

500.3.6 Tracking Control

A major source of sediment discharge from construction sites can come from construction equipment tracking sediment off-site. Mud and dirt from tires and undercarriages of construction equipment that travel from the construction site onto public streets and jurisdictional properties must be prevented from discharging from the construction site and into storm drain systems. Controlling sediment tracking on construction sites is an important responsibility during the life of the construction project. The owner intends to use a BMP combined approach to handling sediment tracking. The

amount of ingress/egress access points will be limited, stabilized using appropriate materials (i.e. aggregate) and inspected on a regular basis.

The existing owner maintenance access roads will be used for the construction of the third main track. Equipment delivery and sediment hauling will be completed using the access roads. Points of ingress/egress and access roads will be identified on the WPCDs.

Stabilized Construction Roadway

Access roads, parking areas, and other on-site vehicle transportation routes should be stabilized immediately after grading and frequently maintained to prevent erosion and provide dust control.

Areas that are graded for construction vehicle transport and parking purposes are especially susceptible to erosion and dust control. The exposed soil surface is continually disturbed, leaving no opportunity for vegetative stabilization. Such areas also tend to collect and transport runoff waters along their surfaces. During wet weather, they often become sources of sediment that may be transported offsite on the wheels of construction vehicles. Efficient construction road stabilization not only reduces onsite erosion but also can significantly speed onsite work, avoid instances of immobilized machinery and delivery vehicles, and generally improve site efficiency and working conditions during adverse weather.

Inspect and Clean Roads

- Inspect roads near ingress/egress points on a daily basis; adjacent areas should also be inspected daily.
- Clean roads near ingress/egress points before every predicted rain event and when visibly accumulated sediment has been deposited.
- Clean roads upon which dirt is hauled daily.
- Clean roads using the appropriate BMPs (i.e. use sweepers equipped with vacuums or a mechanical means of collection and removal). Do not use mechanical equipment that pushes the sediment around.
- Do not use a water truck or other hydraulic means to flush accumulated sediment on the roads into the storm drain systems.
- Stabilize roadways to help reduce the amount of sediment that accumulates on vehicles.
- Use of chemical and soil stabilizers that have been successful in binding soil particles on haul roads to reduce sediment transport by vehicles, wind, or water (i.e. CASQA BMP EC-5 Soil Binders). Review manufacturer recommendations to ensure that the proper product is being considered. Refer to and Section 500.3.4 for further guidance.

Stabilized Construction Entrance/Exit

A stabilized construction entrance is typically a pad of aggregate underlain with filter cloth or large “shaker plates” located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust. Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

- Stabilize construction exits and roadways with aggregate, asphalt concrete or metal guardrails.
- Select the material used for stabilization based on the anticipated road longevity, performance, and site conditions.
- Construction equipment will use existing paved areas where feasible.
- For the installation of the solar panels and additional amenities, a stabilized roadway may be used to help reduce the amount of sediment that accumulates on vehicles. In addition, a stabilized construction entrance/exit will be installed to help reduce the tracking around the construction site and onto established roadways. Refer to the WPCDs for the specific locations.

Street Sweeping & Vacuuming

- Street sweeping roads will help reduce the tracking of sediment to public/private roads and from the construction site.

Vehicle & Equipment Cleaning; Entrance/Outlet Tire Wash

- For excessive Sediment Tracking use tire washes at entrances/exits to clean vehicle tires and undercarriages.

The following BMPs have been selected to reduce sediment tracking from the construction site onto private/public roads, jurisdictional lands:

- TC1 - Stabilized Construction Entrance/Exit
- TC2 - Stabilized Construction Roadway
- NS1 - Water Conservation Practices
- SE7 - Street Sweeping & Vacuuming
- NS8 - Vehicle & Equipment Cleaning

500.3.7 Wind Erosion Control

California’s Mediterranean climate, with short wet seasons and long hot dry seasons, allows the soils to thoroughly dry out. During these dry seasons disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment.

Wind erosion control BMPs shall be considered and implemented year-round during the life of the construction project on all disturbed soils on the project site that are subject to wind erosion and when significant wind and dry conditions are anticipated during construction. The objective of wind controls is to prevent the transport of soil from soil disturbed areas of the project site and offsite by winds.

Recently, the State Air Resources Control Board has, under the authority of the Clean Air Act, started to address air quality in relation to inhalable particulate matter less than 10 microns (PM-10). Approximately 90 percent of these small particles are considered to be dust. Existing dust control regulations by local agencies, municipal departments, public works department, and public health departments are in place in some regions within California. Many local agencies require dust control in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act.

The CEC requested a discussion of how much soil will be lost from wind and water erosion, and to quantify the values with and without the proposed BMPs, both during construction and operations. Soil erosion due to water was estimated using the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Revised Universal Soil Loss Equation 2 (RUSLE2) computer program. Wind erosion was estimated using the USDA/NRCS Wind Erosion Prediction System (WEPS) computer model. Results of the erosion calculation estimates are provided in Table 6. The proposed condition soil erosion due to water (runoff) on the operations area is 0.25 ton/ac/yr, which is less than the existing condition due to terracing within the operations area which will collect runoff into a series of distributed infiltration areas. These calculations will need to be updated based on the final project design.

Table 6.
Soil and Wind Erosion Results

| | Existing Condition (ton/ac/yr) | Proposed Condition during Construction without BMPs (ton/ac/yr) | Proposed Condition during Construction with BMPs (ton/ac/yr) | Proposed Condition during Operation (ton/ac/yr) |
|--------------------|---------------------------------------|--|---|--|
| Water Soil Erosion | 0.9 | 1.0 | 0.5 | 0.5 |
| Wind Erosion | 1 to 33 | 39 | < 1 | < 1 |

Note: Erosion rates are listed in tons per acre per year (ton/ac/yr).

The following BMPs have been selected to help control wind erosion and dust from the construction site:

- EC1 - Scheduling
- EC2 - Preservation of Existing Vegetation
- EC6 - Straw Mulch (for emergency purposes)
- EC7 - Geotextiles & Mats
- WE1 - Wind Erosion Control
- NS1 - Water Conservation Practices
- WM3 - Stockpile Management

BMPs will be deployed in a sequence to follow the progress of grading and construction activities. As the locations of soil disturbance change, erosion and sedimentation controls will be adjusted accordingly to control stormwater runoff at the down gradient perimeter of culverts and ditches. Sufficient quantities of wind/erosion control BMPs and temporary soil stabilization materials will be maintained on-site during the construction phase of this project. The location of temporary soil stabilization BMPs are shown on the WPCDs.

- The contractor will (if feasible) preserve any existing vegetation to help reduce both the erosion potential and the amount of open area.
- The contractor will (if feasible), apply temporary soil stabilization/erosion control to open/non-active slopes (areas) that may be necessary to help maintain structural stability.
- Control erosion in concentrated flow paths by applying erosion control blankets lining ditches and check dams.
- Potable water will be applied to disturbed areas of the project site to control dust and maintain optimum moisture levels for compaction. The water will be applied using watering trucks or other appropriate equipment. As approximated in the preliminary project schedule, project soils will be disturbed and exposed from approximately 4th quarter 2010 through 1st quarter 2012. Due to the geographic location and nature of the dry soils, water applications will be concentrated during the peak warm to hot; and windy days of construction.
- The contractor will implement WE-1 (Wind Erosion Control) and NS-1 (Water Conservation Practices) BMPs in order to help provide dust control and prevent discharges from dust control activities and water supply equipment. Water application rates will be adjusted and minimized as necessary to prevent runoff and ponding. Water leaks from equipment will be repaired immediately.

- The Water Pollution Control Manager will monitor weather conditions using a National Weather Service to track predicted conditions and alert field crews to the onset of rainfall.
- Forecasted or actual wind gusts that equal or exceed 25mph will trigger the application of dust control measures on all disturbed areas/slopes. This will help adequately address and minimize wind erosion during windy conditions.
- Stockpiles will be protected from erosive forces of wind by implementing BMP WM-3 Stockpile Management. Plastic covers or other appropriate material will be placed on top to help minimize the dispersal of sediment via wind.
- Any permanent erosion control to help source control such as sloughing of slopes and filling of drainages and culverts will be implemented as soon as practical.

500.3.8 Non-Storm Water Control

An inventory of pollutants and construction activities that have a potential to affect non-storm water discharges is provided in section 500.3.1. The BMP Consideration Checklist (Attachment C) and the following list indicate the BMPs that have been selected to control non-storm water pollution at the construction site. Implementation and locations of some non-storm water control BMPs are shown on the WPCDs.

The following non-stormwater BMPs are:

- NS-1 - Water Conservation Practices
- NS-2 - Dewatering Operations
- NS-6 - Illicit Connection/ Illegal Discharge Detection and Reporting
- NS-8 - Vehicle and Equipment Cleaning
- NS-9 - Vehicle and Equipment Fueling
- NS-10 - Vehicle and Equipment Maintenance
- NS-12 - Concrete Curing
- NS-13 - Concrete Finishing

Water Conservation Practices

- Conservation practices can help provide additional control over water sources that can transport sediment to the storm drain system and or jurisdictional lands. Maintain water equipment, including water trucks, water buffaloes, water lines, and water tanks in “leak-free” condition.

Site Development (Solar Field Construction, Transmission Lines)

- Water will be available at points around the site, as well as on a series of mobile equipment. During the construction of the solar field and transmission lines, water can be conserved utilizing CASQA BMP NS-1 Water Conservation Practices.

Groundwater

- The development of the San Joaquin Solar Power Plant does not anticipate encountering ground water and does not expect to have to dewater. If groundwater is encountered and dewatering is required, then approved BMPs (e.g., CASQA BMP NS-2 Dewatering Operations) will be employed.

Vehicle & Equipment Operations

- A variety of types of equipment will be used throughout the project site including, trains, graders, scrapers, excavators, loaders, backhoes, trucks, forklifts, and trailers. CASQA BMPs NS-8 - Vehicle and Equipment Cleaning, NS-9 - Vehicle and Equipment Fueling and NS-10 - Vehicle and Equipment Maintenance, will be used to help prevent discharges of fuel and other vehicular type fluids.

- Vehicles will be fueled in a contained area (bermed) by a mobile truck service. Neither gasoline nor diesel will be kept onsite for any long period of time.
- Each fueling truck will be equipped with absorbent spill clean-up kits and materials. Drip pans and or plastic sheeting will be used for all mobile fueling.
- All vehicle maintenance and mobile fueling operations will be conducted on level grade at least 50-feet away from any drainage facilities.

Transmission Line

The transmission line will be an approximately 6 miles long 230 kV (AFC-C7). The lines will begin in the middle of the Project site at each dead-end structure just beyond the turbine/generator and the 13.8 to 230 kV step-up transformer. The transmission lines travels to the east site boundary then either north or south to the respective site corner, then due east for 5 miles before it travels north to Gates Substation. It then connects to an existing 230 kV bus in the substation.

The overhead 230 kV transmission conductors to the physical connection with the existing Gates Substation will be supported by a dead-end structure in each Plant's switchyard and multiple H frame using 85-foot 230 kV type-A wood poles (three sets of insulators in horizontal configuration with a spacing of about 6.7 m (22 feet) between the phases).

Construction of the SJSHP transmission line includes the following elements:

- Yards: Staging areas for trailers, office personnel, equipment, material staging, and employee parking will be provided in a disturbed area within the boundary of the site.
- Road Work: As needed, dirt roads will be cleared for access along the transmission line route to provide access to the tower locations.
- Foundations: Each pole will have a foundation installed that will require curing prior to the pole installation. These pole foundations will be installed in locations that avoid sensitive environmental resources identified in Project environmental surveys. The waste materials from the foundations activities will be disposed using CASQA BMPs NS-12 Concrete Curing, NS-13 Concrete Finishing, WM-8 Concrete Waste Management and WM-5 Solid Waste Management. TC-2 Stabilized Construction Roadway will be used throughout the transmission line installation alignment.
- Pole Erection: Each pole will be assembled onsite and welded together, and then insulators and conductor hardware will be installed.
- Conductors: From pulling sites, the conductors will be installed, sagged, and permanently connected to the insulators.
- Pulling Sites: There are only two pulling sites required to install the conductors along this segment of the transmission line. The sites will be on existing access roads or access roads that will be installed as part of the transmission line installation. Access roads will be installed per CASQA BMP TC-2 Stabilized Construction Roadway during the transmission line installation.

- Communication System: The overhead ground/fiber optic communications optical ground wire (OPGW) cable will be installed using the same pulling sites as were used for the conductor installation.
- Cleanup: Although cleanup will be ongoing as the work proceeds, once construction is completed, a final cleanup of the entire site will be performed to clear the area of any remaining construction-related debris.

500.3.9 Waste Management and Materials Pollution Control

An inventory of construction activities, materials, and wastes is provided in Section 500.3.1. The BMP Consideration Checklist (Attachment C) and the following list indicates the BMPs that have been selected to handle materials and control construction site wastes.

- WM-1 - Material Delivery and Storage
- WM-2 - Material Use
- WM-3 - Stockpile Management
- WM-4 - Spill Prevention and Control
- WM-5 - Solid Waste Management
- WM-6 - Hazardous Waste Management
- WM-8 - Concrete Waste Management
- WM-9 - Sanitary/ Septic Waste Management

Solar Field Construction

During the construction, temporary site services will be in place. Power will be provided by mobile diesel generators. Construction will generally progress from the northern boundary towards the south through each block. As a result of this simultaneous construction, construction within the solar field, construction of linears, and associated earth moving operations will occur throughout the majority of the two year construction period.

Management and Disposal of Hazardous Materials

During the construction of the proposed Project, a collection of hazardous materials will be utilized onsite during the construction phase. Hazardous materials to be used during the construction phase include gasoline, diesel fuel, oil, and small amounts of lubricant cleaners, solvents and adhesives. There are no feasible alternatives to these materials for construction or operation of construction vehicles and equipment. No acutely hazardous materials (AHM) will be used or stored on site during construction utilizing appropriate BMPs to reduce the potential of discharge of these materials from the project site. Further, no storage of hazardous materials is planned outside of the Plant site. A

summary of hazardous materials to be used and stored for construction of the proposed Project is provided in the following Table 1. (Hazardous Materials Used and Stored During Construction).

Table 1: Hazardous Materials Used and Stored During Construction

| Material | Purpose | Storage Location | Maximum Stored | Storage Type |
|--|---|---|--|--|
| Diesel Fuel | Refueling Truck | Laydown Area/Mobile | 1,320 gallons | Truck |
| Gasoline | Refueling construction vehicles and equipment | Laydown Area | 1,000 gallons | Truck |
| Clearing Chemicals/Detergents | Periodic cleaning | Warehouse/Shop Area | 132 gallons | Drums or small containers |
| Lubricating Oil | Lubricate rotating equipment (e.g., STG lube oil systems) | Contained in storage tanks on equipment skids | 1,500 gallons | Tanks |
| Hydraulic Oil | Lubricating equipment parts | Warehouse/Shop Area | TBD | Tanks |
| Grease | Lubricating equipment parts | Warehouse/Shop Area | TBD | Drum |
| Glycol | Coolants | Warehouse/Shop Area | TBD | Tanks |
| Acetylene | Welding | Warehouse/Shop Area | TBD | Cylinders |
| Oxygen | Welding | Warehouse/Shop Area | TBD | Cylinders |
| Waste Solvents, used oils, paint, oily rags, adhesives | Construction Hazardous Waste | Hazardous waste storage area | 176 gallons removed every 90 days | 55-gallon drums |
| Spent Batteries - lead, acid, alkaline type | Construction Hazardous Waste | Hazardous waste storage area | 40 batteries disposed of every 4 years | Spent battery stored in hazardous waste storage area |

Notes:

1 All numbers are appropriate.
STG = steam turbine generator.

500.3.10 Cost Breakdown for Water Pollution Control

A cost breakdown itemizing the contract lump sum for water pollution control has been developed for this project and included in Attachment O. The cost breakdown reflects the items of work, quantities and costs for BMPs and permanent BMPs shown in the SWPPP, except for those constructions site BMPs and permanent BMPs that are shown on the project plans and for which there is a contract item of work.

500.4 Water Pollution Control Drawings (WPCDs)

The Water Pollution Control Drawings can be found under Attachment B. The WPCDs show both the Army Corps of Engineers and California Department of Fish & Game approximate location and sizes of jurisdictional areas. Please refer to the supplemental Jurisdictional report (dated xx) for more details.

500.5 Construction BMP Maintenance, Inspection, and Repair

A program for Maintenance, Inspection and Repair of BMPs is provided in Attachment G. Below is a summary of general inspection guidelines for inspecting BMPs during rainy events:

- BMPs will be inspected prior to a forecast storm.
- BMPs will be inspected post a rain event that causes runoff from the construction site.
- BMPs will be inspected at 24-hour intervals during extended rain events.
- BMPs will be inspected at any other time(s) or intervals of time specified by the contractor/owner.

Completed inspection checklists will be kept with the SWPPPP.

A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs. A program for Maintenance, Inspection and Repair of BMPs is shown in Attachment G.

500.6 Post-Construction Storm Water Management

500.6.1 Post-Construction Control Practices

Site soil stabilization will occur following construction; however, several alternatives are being considered to determine which solution best achieves the desired effect to: minimize wind erosion, prevent water erosion, minimize weed and undesired vegetation growth, as well as providing a suitable work surface.

The best way to mitigate stormwater impacts from new developments is to use practices to treat, store, and infiltrate runoff onsite before it can affect water bodies downstream. Innovative site designs that reduce imperviousness and smaller-scale low impact development practices dispersed throughout a site are excellent ways to achieve the goals of reducing flows and improving water quality.

Post-construction stormwater runoff from new development and redevelopments typically includes developing: strategies to implement a combination of structural and non-structural BMPs; and, a program to ensure adequate long-term operation and maintenance of BMPs.

Infiltration Areas

An infiltration area or basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration areas use the natural filtering ability of the she soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems.

Infiltration areas perform better in well-drained permeable soils. Infiltration basins in areas of low permeability can require more frequent inspections and maintenance. Spill response procedures and controls should be implemented to prevent spills from reaching the infiltration system. The solar area will be graded such that any runoff/volume generated on-site will be captured, via sump locations, and infiltrate to recharge the aquifer.

The following are post-construction BMPs that are to be used at this construction site after all construction is complete:

The site will include an infiltration area that will be designed to accept and infiltrate annual stormwater runoff volumes to help reduce the post project flows to at or below existing levels. Accumulated stormwater runoff that cannot be stored and infiltrated will be discharged out of a proposed basin in a controlled method to help prevent erosion at the outlet and receiving water.

- Drainage swales and dikes will be concrete lined.
- Outlet protection/velocity dissipation devices at culvert outlets. Appropriately sized rip-rap will be installed at the outlets of various culverts and drainage ditches to help prevent structural damage from large magnitude rainfall events.

- Pesticides used to control weeds will be limited to chemicals approved by the USEPA (i.e. glyphosate). If a surfactant is used it should be nontoxic to mammals, birds, and fish. However, restrictions may be placed to spraying herbicides March 15 to September 15 (bird breeding season). Any applied herbicide solution will contain an agricultural dye. Application of pesticides will be performed by or under the supervision of a licensed pest control applicator at recommended rates.

500.6.2 Operation/ Maintenance after Project Completion

The post-construction BMPs that are described above will be funded and maintained by Owner.

500.7 Training

Informal training will include tailgate briefings to be conducted bi-weekly. Personnel attending the tailgate training will be documented using (Attachment I). The following topics will be addressed during the tailgate sessions:

- Erosion Control BMPs
- Sediment Control BMPs
- Non-Storm Water BMPs
- Waste Management and Materials Pollution Control BMPs
- Emergency Procedures specific to the construction site storm water management

If formal training sessions are necessary, one will be selected from one of these recognized organizations:

- USEPA sponsored training
- State of California Water Quality Control Board
- Professional Organization: CASQA (California Stormwater Quality Association)

The person whom is responsible for implementing the SWPPP as the Storm Water Pollution Prevention Manager (SWPPM) is identified in section 300.1. This person has received the following training:

- *TBD*

This SWPPP was prepared by URS Corporation, under the direction of Mathew C. Moore, a registered Professional Engineer in the State of California. Mr. Moore is also a Certified Professional in Stormwater Quality, and a Certified Professional in Sediment and Erosion Control.

500.8 List of Subcontractors

All contractors/subcontractors will be notified of the requirements depicted in the Storm Water Pollution Prevention Plan. A list of contractors will be maintained and included in the SWPPP. If subcontractors change during the phase of the project, the list will be updated accordingly. The subcontractor notification letter and log is included as Attachment J.

500.9 Other Plans/Permits

Attachment N includes copies of other local, state, and federal plans and permits. Following is a list of the plans and permits included in Attachment N:

Section 600

Monitoring Programs and Reports

600.1 Site Inspections

The SWPPM will inspect the site prior forecasted storm events, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events and as specified in the contract documents. The results of all inspections and assessments will be documented. Copies of the completed inspection checklists will be maintained with the SWPPP. Site inspections conducted for monitoring purposes will be performed using the inspection checklist as shown in Attachment H.

The Name(s) and Contact Number(s) of the assigned inspection personnel are listed below:

Assigned inspector: <Pending>

Contact Phone: <Pending>

600.2 Non-Compliance Discharge Reporting

If a discharge occurs or if the project receives a written notice of non-compliance, owner will immediately file a written report within 7 days of the discharge or notice. owner will be responsible for filing a written report to the both Regional Water Quality Controls Board (Central Valley Region) within 30-days of identification of non-compliance. Corrective measures will be implemented immediately following the discharge. A sample Notice of Non- Compliance (NONC) is provided as Attachment K. All discharges will be documented on a Discharge Reporting Log using the example form in Attachment T.

The report to the RWQCB will contain the following items:

- The date, time, location of the incident.
- Nature of operation, and type of unauthorized discharge, including the cause or nature of the notice or order,
- The control measures (BMPs) deployed before the discharging event, or prior to receiving notice or order,
- The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence, and
- An implementation and maintenance schedule for any affected BMPs

600.3 Record Keeping and Reports

Records shall be retained for a minimum of three years for the following items:

- Site inspections
- Annual Compliance Certifications
- Discharge reports
- Approved SWPPP document and amendments

600.4 Sampling and Analysis Plan for Sediment

This project does not have the potential to discharge directly to a body of water listed as impaired due to Sedimentation/ Siltation and/ or Turbidity pursuant to Clean Water Act, Section 303 (d) List of Water Quality Limited Segments.

600.4.1 Scope of Monitoring Activities

This project does not directly discharge to any receiving water bodies listed as impaired on the 303(d) List of Water Quality Limited Segments, pursuant to Clean Water Act. A sampling and Analysis Plan (SAP) has been prepared pursuant to the requirements of the General Permit (including Resolution 2001-046). The SAP describes the sampling and analysis strategy and schedule for monitoring effluent constituent levels caused by storm water discharges from the project site.

600.4.2 Monitoring Strategy

Sampling Schedule

Upstream, downstream, discharge, and run-on samples (if applicable) shall be collected to determine whether the BMPs employed and maintained on site are effective in preventing the potential pollutants from coming in contact with storm water and causing or contributing to an exceedance of water quality objectives in the receiving waters. Samples shall be collected at all discharge locations which drain the areas identified by the visual observations and which can be safely accessed. For sites where sampling and analysis is required, trained personnel in water quality sampling procedures shall collect storm water samples. A sufficiently large sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site shall be collected for comparison with the discharge sample.

Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff. All storm events that occur during daylight hours will be sampled up to a maximum of four rain events within a 30-day period. In conformance with the U.S. Environmental Protection Agency definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

The uncontaminated sample shall be compared to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, Specific Conductance, Temperature, Dissolved Oxygen, Total Hardness. Laboratory analysis, field sampling and sample preservation must be conducted according to testing procedures as indicated in 40 CFR Part 136.

Portable field discharge samplers and portable meters shall be utilized according to the manufacturer specifications (i.e. calibration). All visual inspections, reports and analytical data shall be kept in the SWPPP document. The SWPPP document shall remain at the construction site at all times until a Notice of Termination has been submitted to the State Water Quality Control Board and approved.

Sampling Locations

Sampling locations are based on proximity to identified discharge or run-on location(s), accessibility for sampling, personnel safety, and other factors in accordance with the applicable requirements in the General Construction Permit. Sampling locations may move with the dynamic nature of the project. Potential monitoring locations are listed below:

- A sampling location (Upstream of the Construction site (background)) will be used for upstream sampling of all direct discharges from the construction site. The collection of a control sample will be analyzed to help show the prevailing

condition of the receiving water without any influence from the construction site. The control sample will be used to determine the background levels.

- The following sampling locations identified as (X) will be used to identify samples of run-off/run-on to the project site with the potential to combine with discharges from the construction site to the receiving waterbody. These samples will identify potential contaminants that originate off the project site and contributes to direct storm water discharges from the construction site.

600.4.3 Monitoring Preparation

Samples on the project site will select one of the following Contractor sampling personnel:

<Pending>

Alternate: <Pending>

Prior to the rainy season, all sampling personnel and alternatives will review the SAP. Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I.

An adequate stock of supplies and equipment for monitoring will be available on the project site or provided by <Pending> prior to a sampling event. Monitoring supplies and equipment will be stored in a cool- temperature environment that will not come in contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule.

Supplies maintained at the project site will include, but will not be limited to, surgical gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain of Custody (COC) forms. The Contractor will obtain and maintain field-testing instruments, as identified in Section 600.4.5, for analyzing samples in the field by Contractor sampling personnel. Safety practices for sample collection will be in accordance with owner Health and Safety plan for the project.

Samples on the project site will be collected by the following:

Company Name: <Pending>

Address: <Pending>

Telephone Number: <Pending>

Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I. The SWPPM will contact <Pending> [48] hours prior to a predicted rain event to ensure that adequate sample collection personnel, supplies, and field test equipment for monitoring inorganic constituents are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule.

SWPPM will obtain and maintain the field-testing instruments, as identified in Section 600.4.5, for analyzing samples in the field by their sampling personnel.

600.4.4 Sample Collection and Handling

Grab samples will be collected and preserved in accordance with the methods identified in Table 600-1, "Sample Collection, Preservation, and Analysis as provided in Section 600.4.5. Only personnel trained in proper water quality sampling will collect samples.

Upstream samples will be collected to represent the condition of the waterbody up gradient of the construction site. Downstream samples will be collected to represent the water body mixed with direct flow from the construction site. Samples will not be collected directly from ponded, sluggish or stagnant water.

Upstream and downstream samples will be collected using one of the following methods:

- Placing a sample bottle directly into the stream flow in or near the main current upstream of sampling personnel, and allowing the sample bottle to fill completely.

Or,

- Placing a decontaminated or 'sterile' bailer or other 'sterile' collection device in or near the main current to collect the sample, and then transferring the collected water to appropriate sample bottles, allowing the bottles to fill completely. Run-on samples (if applicable) will be collected to identify potential contaminants that originates off the project site and contributes to direct discharges from the construction site to the water body.

- Run-on samples will be collected down gradient and within close proximity of the point of run-on to the project by pooling or ponding water and allowing the ponded water to spill over into sample bottles directly in the stream of water.

To maintain sample integrity and prevent cross-contamination, sampling collection personnel will:

- Wear a clean pair of nitrile gloves prior to the collection and handling of each sample at each location.
- Not contaminate the inside of any sample bottle by not allowing it to come into contact with any material other than the water sample.
- Discard sample bottles or sample lids that have been dropped onto the ground prior to the sample collection.
- Not leave the cooler lid open for an extended period of time once samples are placed inside.
- Not touch the exposed end of a sampling tube, if applicable.
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles.
- Not eat, smoke, or drink during sample collection.
- Not sneeze or cough in the direction of an open sample bottle.
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final rinse with distilled water.
- Dispose of decontamination water/soaps appropriately; i.e., not discharge to the storm drain system or receiving water.

Sample Handling Procedures

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, documented on a Chain of Custody (COC) form provided by the analytical laboratory, sealed in a re-sealable plastic bag, placed in an ice-chilled cooler, at as near 4 degrees Celsius as practicable, and delivered within 24 hours to the following California state-certified laboratory.

Laboratory Name: <Pending>

Address: <Pending>

Telephone Number: <Pending>

Immediately following collection, samples for field analysis will be tested in accordance with the field instrument manufacturer's instructions and results recorded on the Sampling Activity Log.

Sample Documentation Procedures

All original data documented on sample bottle identification labels, Chain of Custody forms, Sampling Activity Logs, and Inspection Checklists, will be recorded using waterproof ink. These will be considered accountable documents. If an error is made on an accountable document, the individual will make corrections by lining through the error and entering the correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated. Copies of the Sampling Activity Log and Chain of Custody form are provided in Attachment R. Sampling and field analysis activities will be documented using the following:

- **Sample Bottle Identification Labels:** Sampling Personnel will attach and identification label to each sample bottle. At a minimum, the following information will be recorded on the label, as appropriate:
 - Project Name
 - Project Number
 - Unique sample identification number and location.
 - [Project Number]-[six digit sample collection date]-[location]
 - (Example: 0G5304-081801-Upstream).
 - Quality assurance/quality control (QA/QC) samples shall be identified similarly using a unique sample number or designation.
 - (Example: 0G5304-081801-DUP1).
 - Collection Date/ time (No time applied to QA/QC samples)
 - Analysis constituent

- **Sampling Activity Logs:** A log of sampling events will identify:
 - Sampling date
 - Separate times for sample collection of upstream, downstream, run-on, and QA/QC samples recorded to the nearest minute.
 - Unique sample identification number and location
 - Analysis constituent
 - Names of sampling personnel
 - Weather conditions (including precipitation amount)
 - Field analysis results
 - Other pertinent data

- **Chain of Custody (COC) forms:** All samples to be analyzed by a State certified laboratory. Samples will be accompanied by a COC form provided by the laboratory. Only the sample collectors will sign the COC form(s) over to the laboratory. COC procedures will be strictly adhered to for QA/QC purposes.

- **Storm Water Quality Construction Inspection Checklists:** The SWPPM will document on the checklist that samples were taken during a rain event.

600.4.5 Sample Analysis

Samples will be analyzed for the applicable constituents using analytical methods identified in Table 600-1, “Sample Collection, Preservation and Analysis for Monitoring Sediment and other Visible Pollutants” in this section. Refer to Attachment S (Pollutant Testing Guidance Table).

Table 600-1
Sample Collection, Preservation and Analysis for Monitoring Sediment and other Visible Pollutants

| Constituent(1) | Analytical Testing Method | Sample Preservation | Minimum Sample Volume | Sample Bottle | Maximum Holding Time | Reporting Limit |
|---|---------------------------------|---------------------------|---|---------------|----------------------|-----------------|
| (a) Total Suspended Solids (TSS) | EPA 160.2 Std Method 2540(d) | Store at 4° C (39.2°F) | 100L | 100L | 7-days | 1.0 mg/L |
| (b) Turbidity | EPA 180.1 Std Method 2130(b) | Store at 4° C (39.2°F) | 500mL | 500mL | 48-hours | 0.2 NTU |
| (c) Oil & Grease | EPA Std Method 413.2 | Store at 4° C (39.2°F) | 500mL | 500mL | 7-days | 1 mg/L |
| µg/L - Micrograms per liter. mg/L - Milligrams per liter mL - Milliliters L - Liters NTU - Nephelometric Turbidity Unit | | | °C - Degrees Celsius °F - Degrees Fahrenheit ASTM - American Society for Testing and Materials Examination of Water and Wastewater, 20 TH Edition, American Water Works Association | | | |

For samples collected for field analysis, collection, analysis and equipment calibration will be in accordance with the field instrument manufacturer’s specifications. A Water Quality kit will be used to sample visible pollutants. The following is a list of instruments to measure these pollutants:

| Field Instrument | Constituent |
|-------------------------|--------------------|
| (TBD) | (TBD) |

- The instrument(s) will be maintained in accordance with manufacturer’s instructions.
- The instrument(s) will be calibrated before each sampling and analysis event.
- Maintenance and calibration records will be maintained with the SWPPP.

600.4.6 Quality Assurance/ Quality Control

For an initial verification of laboratory or field analysis, duplicate samples will be collected at a rate of 10 percent or 1 duplicate per sampling event. The duplicate sample will be collected, handled, and analyzed using the same protocols as primary samples, and will be collected where contaminants are likely, and not on the upstream sample. A duplicate sample will be collected immediately after the primary sample has been collected. Duplicate samples will not influence any evaluations or conclusions; however, they will be used as a check on laboratory quality assurance.

600.4.7 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data will be included in the on-site SWPPP within 5 days of sampling (for field analysis) and within 30 days of sampling (for laboratory analysis). Lab reports and COCs will be reviewed for consistency between lab methods, sample identifications, dates, and times for both primary samples and QA/QC samples. All data, including COC forms and Sampling Activity Logs, shall be kept with the SWPPP document.

600.4.8 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, the water quality analytical results, and the QA/QC data for every event that samples are collected, will be included in the on-site SWPPP. Should the downstream sample concentrations exceed the upstream sample concentrations, the Storm Water Pollution Prevention Manager or other personnel will evaluate the BMPs , site conditions, surrounding influences (including the run-on sample analysis), and other site factors to determine the probable cause for the increase.

As determined by the date and project evaluation, appropriate BMPS will be repaired or modified to mitigate increases in sediment concentrations in the water body. Any revisions to the BMPs will be recorded as an amendment to the SWPPP.

600.4.9 Change of Conditions

Whenever SWPPP monitoring, pursuant to Section B of the General Permit, indicates a change in site conditions that might affect the appropriateness of sampling locations, testing protocols will be revised accordingly. All such revisions will be recorded as amendments to the SWPPP.

600.5 Sampling and Analysis Plan for Non-Visible Pollutants

This Sampling and Analysis Plan (SAP) for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in storm water discharges from the project site and off-site activities directly related to the project, in accordance with the requirements of Section B of the General Permit, including SWRCB Resolution 2001-046.

600.5.1 Scope of Monitoring Activities

The following construction materials, wastes or activities, as identified in Section 500.3.1, are potential sources of non-visible pollutants to storm water discharges from the project. Storage, use, and operational locations are shown on the WPCDs.

- Construction Staging Areas
- Pesticide/Herbicide application locations

The following existing site features, as identified in Section 500.3.3, are potential sources of non-visible pollutants to storm water discharges from the project. Locations of existing site features contaminated with non-visible pollutants are discussed in the SWPPP document.

- Adhesives
- Acids
- Pesticide/Herbicide application locations
- Sealants
- Treated Wood products

Soil amendments have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil and will be used on the project site. If soil amendments are necessary (on emergency basis) proposed locations of soil amendment applications will be determined in the field and amended in the SWPPP document.

Sampling for non-visible pollutants will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is a potential for discharge of non-visible pollutants to surface waters or drainage system.

600.5.2 Monitoring Strategy

Sampling Schedule

Samples for the non-visible pollutant(s) and a sufficiently large uncontaminated background sample shall be collected during the first two hours of discharge from rain events that result in a sufficient discharge for sample collection. Samples shall be collected during daylight hours (sunrise to sunset) and shall be collected regardless of the time of year, status of the construction site, or day of the week.

In conformance with the U.S. Environmental Protection Agency definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

Collection of discharge samples for non-visible pollutant monitoring will be triggered when any of the following conditions are observed during the required inspections conducted before or during rain events:

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents storm water contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- An operational activity, including but not limited to those in Section 600.5.1, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) applicable BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to the surface waters or a storm sewer system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Storm water runoff from an area contaminated by historical usage of the site has been observed to combine with storm water runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.

Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use; accessibility for sampling, personnel safety; and other factors in accordance with the applicable requirements in the Permit. Since the project is dynamic and two crews will start from each end and meet in the center, monitoring points will move with the construction crews. The SWPPP text identifies general planned sampling locations:

- X (X) sampling locations have been identified for the collection of samples of runoff that drain areas where construction activities may impact the receiving waters.
 - Sites located throughout project
- No sampling locations have been identified for the collection of samples of runoff that drain areas contaminated by historical usage of the site
- X (X) sampling locations have been identified for the collection of samples of run-on to the project site with the potential to combine with discharges being sampled for non-visible pollutants. These samples are intended to identify sources of potential non-visible pollutants that originate off the project site.
 - Upstream of the Construction site (background)
- A location has been identified for the collection of an uncontaminated sample of runoff as a background sample for comparison with the samples being analyzed for non-visible pollutants. This location was selected such that the sample will not have come in contact with (1) operational or storage areas associated with the materials, wastes, and activities identified in Section 500.3.1; (2) potential non-visible pollutants due to historical usage of the site as identified in Section 500.3.3; (3) areas in which soil amendments that will have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied; or (4) disturbed soils areas.
 - Upstream of the Construction site (background)
 - Sites located throughout project

If an operational activity or storm water inspection conducted 24 hours prior to or during a rain event identifies the presence of a material storage, waste storage, or operations area with spills or the potential for the discharge of non-visible pollutants to surface waters or a storm sewer system that was an unplanned location and has not been identified on the WPCDs, sampling locations will be selected using the same rationale as that used to identify planned locations.

600.5.3 Monitoring Preparation

Samples on the project site will be collected by the following Contractor sampling personnel:

Company Name: <Pending>

Address: <Pending>

Telephone Number: <Pending>

Prior to the rainy season, all sampling personnel and alternates will review the SAP. Qualifications of designated Contractor personnel describing environmental sampling training and experience are provide in Attachment I.

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool-temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule.

Supplies maintained at the project site will include, but are not limited to, surgical gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain of Custody (COC) forms. The Contractor will obtain and maintain the field-testing instruments, as identified in Section 600.5.6, for analyzing samples in the field by Contractor sampling personnel.

Safety practices for sample collection will be in accordance with the State General Construction Stormwater Permit and SWPPP.

Samples on the project site will be collected by the following:

Company Name: <Pending>

Address: <Pending>

Telephone Number: <Pending>

Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I.

The SWPPM will contact <TBD> if one of the triggering conditions is identified during inspection before, during, or after a storm event to ensure that adequate sample collection personnel, supplies, and field test equipment for monitoring non-visible pollutants are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule. <Staff TBD> will collect and analyze Analytical will obtain and maintain the field-testing instruments, as identified in Section 600.5.6, for analyzing samples in the field by their sampling personnel.

600.5.4 Analytical Constituents

Identification of Non-Visible Pollutants

Table 600-2 lists the specific sources and types of potential non-visible pollutants on the project site and the applicable water quality indicator constituent(s) for that pollutant.

Table 600-2
Potential Non-Visible Pollutants and Water Quality Indicator Constituents

| Pollutant Source | Non-visible Pollutant | Water Quality Indicator Constituent |
|---|--|--|
| Asphalt | Black solid material | None |
| Cleaning products | Acids, bleaches, detergents | pH, chlorine |
| Masonry products, curing compounds, Acids | Acidity/Alkalinity | pH, Temperature |
| Sealants | Methyl Methacrylate | Metals, Volatile Organic Compounds |
| Herbicides, Pesticides | Alkalinity | pH, Dissolved Oxygen, Toxicity |
| Paints | Volatile Organic Compounds | Volatile Organic Compounds, Toxicity |
| Soil amendments | Organic Nitrogen, Biological Oxygen Demand, Chemical Oxygen Demand, Dissolved Organic Carbon, Nitrate, Sulfate | Dissolved Oxygen, Toxicity |
| Strippers, Thinners, Adhesives | Volatile Organic Compounds, Phenols, Soluble Volatile Organic Compounds | Chemical Oxygen Demand, Phenols, Semi Volatile Organic Compounds |
| Treated wood products | Arsenic, Chromium, Copper, Copper Naphthenate | Metals, Toxicity |
| Vehicle Batteries | Sulfuric Acid, Lead, Alkalinity | pH, Dissolved Oxygen, Toxicity |

600.5.5 Sample Collection and Handling

Sample Collection Procedures

Samples of discharge will be collected at the designated sampling locations shown on the WPCDs for observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical usage areas that triggered the sampling event.

Grab samples will be collected and preserved in accordance with the methods identified in the Table 600-2, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants," provided in Section 600.5.6. Only personnel trained in proper water quality sampling will collect samples.

Samples will be collected by placing a separate lab-provided sample container directly into a stream of water down gradient and within close proximity to the potential non-visible pollutant discharge location. This separate lab-provided sample container will be used to collect water, which will be transferred to sample bottles for laboratory analysis. The up gradient and uncontaminated background samples shall be collected first prior to collection the down gradient to minimize cross-contamination. The sampling personnel will collect the water up gradient of where they are standing. Once the separate lab-provided sample container is filled, that water sample will be poured directly into sample bottles provided by the laboratory for the analyte(s) being monitored.

To maintain sample integrity and prevent cross-contamination, sampling collection personnel will:

- Wear a clean pair of nitrile gloves prior to collection and handling of each sample at each location.
- Not contaminate the inside of the sample bottle by not allowing it to come in contact with any material other than the water sample
- Discard sample bottles or sample lids that have been dropped on the ground prior to sample collection.
- Not leave the cooler lid open for an extended period of times once samples are placed inside.
- Not sample near a running vehicle where exhaust fumes may impact the sample.
- Not touch the exposed end of a sampling tube, if applicable.
- Avoid allowing rainwater to drip from raingear or other surfaces into sample bottles.
- Not eat, smoke, or drink during sample collection.
- Not sneeze or cough in the direction of an open sample bottle.
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final water rinse with distilled water.
- Dispose of decontamination water/ soaps appropriately; i.e., not discharge to the storm drain system or receiving water.

Sample Handling Procedures

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, documented on a Chain of Custody form provided by the analytical laboratory, sealed in a re-

sealable storage bag, placed in an ice-chilled cooler, at as near to 4 degrees Celsius as practicable, and delivered within 24 hours to the following California state-certified laboratory:

Company Name: <Pending>

Address: <Pending>

Telephone Number: <Pending>

Immediately following collection, samples for field analysis will be tested in accordance with the field instrument manufacturer's instructions and results recorded on the Sampling Activity Log.

Sample Documentation Procedures

All original data documented on sample bottle identification labels, Chain of Custody forms, Sampling Activity Logs, and Inspection Checklists will be recorded using waterproof ink. These will be considered accountable documents. If an error is made on an accountable document, the individual will make corrections by lining through the error and entering the correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated. Copies of the Sampling Activity Log and Chain of Custody form are provided in Attachment R.

Sampling and field analysis activities will be documented using the following:

- **Sample Bottle Identification Labels:** Sampling personnel will attach an identification label to each sample bottle. At a minimum, the following information will be recorded on the labels, as appropriate:
 - Project Name
 - Project Title/Number
 - Unique sample identification number and location:
[Project Number]- [Six digit sample collection date]-[Location] (Example: 00000-101507-Culvert743.1).
 - Quality assurance/ quality control (QA/QC) samples shall be identified similarly using a unique sample number or designation (Example: 00000-101507-DUP1).
 - Collection date/time (No time applied to QA/QC samples)
 - Analysis constituent

- **Sampling Activity Logs:** A log of sampling events will identify:
 - Sampling date
 - Separate times for collected samples and QA/QC samples recorded to the nearest minute.
 - Unique sample identification and location
 - Analysis constituent

- Name(s) of sampling personnel
 - Weather conditions (including precipitation amount)
 - Field analysis results
 - Other pertinent data
- **Chain of Custody (COC) forms:** All samples to be analyzed by a laboratory will be accompanied by COC form provided by the laboratory. Only the sample collectors will sign the COC form over to the lab. COC procedures will be strictly adhered to for QA/QC purposes.
 - **Storm Water Quality Construction Inspection Checklists:** The Storm Water Inspector will document on the checklist whether samples are for visible or non-visible pollutants. :

600.5.6 Sample Analysis

Samples will be analyzed for the applicable constituents using the analytical methods identified in Table 600-2, “Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants” in this section.

Table 600-2

Sample Collection, Preservation and Analysis for Monitoring Inorganic Constituents/Non-Visible Pollutants

| Constituent(1) | Analytical Testing Method | Sample Preservation | Minimum Sample Volume | Sample Bottle | Maximum Holding Time | Reporting Limit |
|---|---------------------------|------------------------|---|---------------|----------------------|-----------------|
| pH | EPA Std Method 150.1 | Store at 4° C (39.2°F) | 25mL | 25mL | Analyze immediately | 0.01 units |
| Total Inorganic Nitrogen | EPA Std Method 351.3 | Store at 4° C (39.2°F) | 500mL | 500mL | 28-days | 2.0 mg/L |
| Specific Conductance | EPA Std Method 120.1 | Store at 4° C (39.2°F) | 100mL | 100mL | 28-days | 1 µmho/cm |
| Dissolved Oxygen | EPA Std Method 360.1 | Store at 4° C (39.2°F) | 500mL | 500mL | Analyze immediately | 0.05 mg/L |
| Temperature | EPA Std Method 170.1 | None | 100mL | 100mL | Analyze immediately | .01 °C/°F |
| Total Hardness | EPA Std Method 130.2 | Store at 4° C (39.2°F) | 100mL | 100mL | 6-months | 10 mg/L |
| µg/L - Micrograms per liter. mg/L - Milligrams per liter mL - Milliliters L - Liters mL/hr - Milliliters per liter per hour | | | °C - Degrees Celsius °F - Degrees Fahrenheit NTU - Nephelometric Turbidity Unit ASTM - American Society for Testing and Materials Examination of Water and Wastewater, 20 TH Edition, American Water Works Association | | | |

For samples collected for field analysis using a Water Quality kit, collection, analysis and equipment calibration will be in accordance with the field instrument manufacturer’s specifications.

For samples collected for field analysis, collection, analysis and equipment calibration will be in accordance with the field instrument manufacturer’s specifications. A Water Quality kit will be used to sample inorganic and non-visible pollutants. The following is a list of instruments to measure these pollutants:

| Field Instrument | Constituent |
|------------------|-------------|
| (TBD) | (TBD) |

- The instrument(s) will be maintained in accordance with manufacturer’s instructions.
- The instrument(s) will be calibrated before each sampling and analysis event.
- Maintenance and calibration records will be maintained with the SWPPP.

600.5.7 Quality Assurance/ Quality Control

For an initial verification of laboratory or field analysis, duplicate samples will be collected at a rate of 10 percent or one duplicate per sampling event. The duplicate sample will be collected, handled, and analyzed using the same protocols as primary samples. A duplicate sample will be collected at each location immediately after the primary sample has been collected. Duplicates will be collected where contamination is likely, not on the background sample. Duplicate samples will not influence any evaluations or conclusions; however, they will be used as a check on laboratory quality assurance.

600.5.8 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data will be included in the on-site SWPPP within 5 days of sampling (for field analysis) and within 30 days (for laboratory analysis).

Lab reports and COCs will be reviewed for consistency between lab methods, sample identifications, dates, and times for both primary samples and QA/QC samples. All data, including COC forms and Sampling Activity Logs, shall be kept with the SWPPP.

600.5.9 Data Evaluation

An evaluation of the water quality sample analysis results, including figures with sample locations, that water quality analytical results, and the QA/QC data, will be included in the on-site SWPPP document. Should the runoff / down gradient sample show increased level of the tested analyte(s) relative to the background sample(s), the BMPs, site conditions and surrounding influences will be assessed to determine the probable cause for the increase. As determined by the site and data evaluation, appropriate BMPs will be repaired or modified to mitigate discharges of pollutant concentrations. Any revisions to the BMPs will be recorded and documented in the SWPPP as an amendment.

600.5.10 Change of Conditions

Whenever SWPPP monitoring, pursuant to Section B of the General Permit, indicates a change in site conditions that might affect the appropriateness of sampling locations or introduce additional non-visible pollutants of concern, testing protocols will be revised accordingly. All such revisions will be recorded as amendments to the SWPPP.

Attachment A

Vicinity Map

Attachment B

Water Pollution Control Drawings (WPCDs)



Attachment C

BMP Consideration Checklist

| CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST | | | | | |
|--|-------------------------------------|------------------------|---------------|-------------------|---|
| The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used. | | | | | |
| EROSION CONTROL BMPs | | | | | |
| BMP No. | BMP | CONSIDERED FOR PROJECT | CHECK IF USED | CHECK IF NOT USED | IF NOT USED, STATE REASON |
| EC-1 | Scheduling | ✓ | ✓ | | |
| EC-2 | Preservation of Existing Vegetation | ✓ | ✓ | | |
| EC-3 | Hydraulic Mulch | ✓ | ✓ | | For emergencies or stabilizing stockpiles. |
| EC-4 | Hydroseeding | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |
| EC-5 | Soil Binders | ✓ | ✓ | | For emergencies or stabilizing stockpiles. |
| EC-6 | Straw Mulch | ✓ | ✓ | | |
| EC-7 | Geotextiles & Mats | ✓ | ✓ | | For stockpiles |
| EC-8 | Wood Mulching | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |
| EC-9 | Earth Dikes & Drainage Swales | ✓ | ✓ | | |
| EC-10 | Velocity Dissipation Devices | ✓ | ✓ | | |
| EC-11 | Slope Drains | ✓ | | ✓ | Not necessary, using different BMPs to provide the same protection. |
| EC-12 | Streambank Stabilization | ✓ | | ✓ | Not anticipated on the project site. |
| EC-13 | Polyacrylamide | ✓ | ✓ | | For emergencies or stabilizing stockpiles. |

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.

SEDIMENT CONTROL BMPs

| BMP No. | BMP | CONSIDERED FOR PROJECT | CHECK IF USED | CHECK IF NOT USED | IF NOT USED, STATE REASON |
|---------|-------------------------------|------------------------|---------------|-------------------|--|
| SE-1 | Silt Fence | ✓ | ✓ | | If necessary |
| SE-2 | Sediment Basin | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |
| SE-3 | Sediment Trap | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |
| SE-4 | Check Dam | ✓ | ✓ | | |
| SE-5 | Fiber Rolls | ✓ | ✓ | | |
| SE-6 | Gravel Bag Berm | ✓ | ✓ | | |
| SE-7 | Street Sweeping and Vacuuming | ✓ | ✓ | | |
| SE-8 | Sand Bag Barrier | ✓ | ✓ | | |
| SE-9 | Straw Bale Barrier | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |
| SE-10 | Storm Drain Inlet Protection | ✓ | ✓ | | Will be used as necessary as the stormdrain infrastructure is built. |
| SE-11 | Chemical Treatment | ✓ | | ✓ | Not necessary. |

WIND EROSION CONTROL BMPs

| | | | | | |
|------|----------------------|---|---|--|--|
| WE-1 | Wind Erosion Control | ✓ | ✓ | | |
|------|----------------------|---|---|--|--|

TRACKING CONTROL BMPs

| | | | | | |
|------|---------------------------------------|---|---|---|---|
| TC-1 | Stabilized Construction Entrance/Exit | ✓ | ✓ | | |
| TC-2 | Stabilized Construction Roadway | ✓ | ✓ | | |
| TC-3 | Entrance/Outlet Tire Wash | ✓ | | ✓ | Not necessary; using different BMPs to provide the same protection. |

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.

NON-STORM WATER MANAGEMENT BMPs

| BMP No. | BMP | CONSIDERED FOR PROJECT | CHECK IF USED | CHECK IF NOT USED | IF NOT USED, STATE REASON |
|---------|---------------------------------------|------------------------|---------------|-------------------|--|
| NS-1 | Water Conservation Practices | ✓ | ✓ | | |
| NS-2 | Dewatering Operations | ✓ | ✓ | | |
| NS-3 | Paving and Grinding Operations | ✓ | ✓ | | |
| NS-4 | Temporary Stream Crossing | ✓ | | ✓ | Not anticipated. |
| NS-5 | Clear Water Diversion | ✓ | | ✓ | Not anticipated. |
| NS-6 | Illicit Connection/ Discharge | ✓ | ✓ | | |
| NS-7 | Potable Water/Irrigation | ✓ | ✓ | | |
| NS-8 | Vehicle and Equipment Cleaning | ✓ | ✓ | | |
| NS-9 | Vehicle and Equipment Fueling | ✓ | ✓ | | |
| NS-10 | Vehicle and Equipment Maintenance | ✓ | ✓ | | |
| NS-11 | Pile Driving Operations | | | ✓ | Not anticipated. |
| NS-12 | Concrete Curing | ✓ | ✓ | | |
| NS-13 | Concrete Finishing | ✓ | ✓ | | |
| NS-14 | Material and Equipment Use Over Water | | | ✓ | Not anticipated. |
| NS-15 | Demolition Adjacent to Water | | | ✓ | Not anticipated. |
| NS-16 | Temporary Batch Plants | ✓ | ✓ | | Maybe necessary due to remote location of development. |

**CONSTRUCTION SITE BMPs
CONSIDERATION CHECKLIST**

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.

WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs

| BMP No. | BMP | CONSIDERED FOR PROJECT | CHECK IF USED | CHECK IF NOT USED | IF NOT USED, STATE REASON |
|----------------|----------------------------------|-------------------------------|----------------------|--------------------------|---|
| WM-1 | Material Delivery and Storage | ✓ | ✓ | | |
| WM-2 | Material Use | ✓ | ✓ | | |
| WM-3 | Stockpile Management | ✓ | ✓ | | |
| WM-4 | Spill Prevention and Control | ✓ | ✓ | | |
| WM-5 | Solid Waste Management | ✓ | ✓ | | |
| WM-6 | Hazardous Waste Management | ✓ | ✓ | | |
| WM-7 | Contaminated Soil Management | ✓ | | ✓ | Not anticipated on the construction site. |
| WM-8 | Concrete Waste Management | ✓ | ✓ | | |
| WM-9 | Sanitary/Septic Waste Management | ✓ | ✓ | | |
| WM-10 | Liquid Waste Management | ✓ | ✓ | | |

Attachment D

Computation Sheet for Determining Runoff Coefficients

$$\text{Total Site Area} = \underline{\quad 620 \text{ Acres} \quad} \quad (\text{A})$$

Existing Site Conditions

$$\text{Impervious Site Area}^1 = \frac{(6.20 \text{ Ac})}{< 1\% \text{ Acres}} \quad (\text{B})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{\quad 1.0 \quad} \quad (\text{C})$$

$$\text{Pervious Site Area}^3 = \underline{\quad 634 \text{ Acres} \quad} \quad (\text{D})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{\quad 0.38 \quad} \quad (\text{E})$$

$$\text{Existing Site Area Runoff Coefficient} \frac{(B \times C) + (D \times E)}{(A)} = \underline{\quad 0.40 \quad} \quad (\text{F})$$

Proposed Site Conditions (after construction)

$$\text{Impervious Site Area}^1 = \frac{(32 \text{ Acres})}{< 5\% \text{ Acres}} \quad (\text{G})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{\quad 1.0 \quad} \quad (\text{H})$$

$$\text{Pervious Site Area}^3 = \underline{\quad 608 \text{ Acres} \quad} \quad (\text{I})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{\quad 0.42 \quad} \quad (\text{J})$$

$$\text{Proposed Site Area Runoff Coefficient} \frac{(G \times H) + (I \times J)}{(A)} = \underline{\quad 0.46 \quad} \quad (\text{K})$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
 2. Use 0.95 unless lower or higher runoff coefficient can be verified.
 3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
 4. Refer to local Hydrology Manual for typical C values.
-

Attachment E

Computational Sheet for Determining Run-on Discharges

Existing Site Conditions

Area Runoff Coefficient = _____ X (A)

Area Rainfall Intensity = _____ X in/hr (B)

Drainage Area = _____ X Acres (C)

Site Area Run-on Discharge (A) x (B) x (C) = _____ X ft³/sec (D)



Attachment F

Notice of Intent (NOI)



State Water Resources Control Board
NOTICE OF INTENT
 TO COMPLY WITH THE TERMS OF THE
 GENERAL PERMIT TO DISCHARGE STORM WATER
 ASSOCIATED WITH CONSTRUCTION ACTIVITY (WQ ORDER No. 99-08-DWQ)



C. . . NOI STATUS (SEE INSTRUCTIONS)

| | | | |
|--------------------|--|---|--|
| MARK ONLY ONE ITEM | 1. <input type="checkbox"/> New Construction | 2. <input type="checkbox"/> Change of Information for WDID# | |
|--------------------|--|---|--|

C. . . PROPERTY OWNER

| | | | |
|-----------------|----------------|-----|-------|
| Name | Contact Person | | |
| Mailing Address | Title | | |
| City | State | Zip | Phone |

C. . . DEVELOPER/CONTRACTOR INFORMATION

| | | | |
|----------------------|----------------|-----|-------|
| Developer/Contractor | Contact Person | | |
| Mailing Address | Title | | |
| City | State | Zip | Phone |

C. . . CONSTRUCTION PROJECT INFORMATION

| | | | |
|---|--|---|------------------------|
| Site/Project Name | Site Contact Person | | |
| Physical Address/Location | Latitude | Longitude | County |
| City (or nearest City) | Zip | Site Phone Number | Emergency Phone Number |
| A. Total size of construction site area: _____ Acres B. Total area to be disturbed: _____ Acres (% of total 75) | C. . . Percent of site imperviousness (including rooftops): Before Construction: _____% After Construction: _____% | D. Tract Number(s): _____ E. Mile Post Marker: _____ | |
| C. . . Is the construction site part of a larger common plan of development or sale? <input type="checkbox"/> YES <input type="checkbox"/> NO | G. Name of plan or development: | | |
| H. Construction commencement date : _____ | J. Projected construction dates: Complete grading: Complete project: | | |
| I. % of site to be mass graded: _____ | | | |
| K. Type of Construction (Check all that apply): 1. <input type="checkbox"/> Residential 2. <input type="checkbox"/> Commercial 3. <input type="checkbox"/> Industrial 4. <input type="checkbox"/> Reconstruction 5. <input type="checkbox"/> Transportation 6. <input type="checkbox"/> Utility Description: _____ 7. <input type="checkbox"/> Other (Please List): _____ | | | |

C. . . BILLING INFORMATION

| | | | |
|--|-----------------|----------------|-----|
| SEND BILL TO: <input type="checkbox"/> OWNER (as in II. Above) | Name | Contact Person | |
| <input type="checkbox"/> DEVELOPER (as in III. Above) | Mailing Address | Phone/Fax | |
| <input type="checkbox"/> OTHER (enter information at right) | City | State | Zip |

VI. REGULATORY STATUS

C. Has a local agency approved a required erosion/sediment control plan?.....(401 Permit and WQ Report) YES NO

Does the erosion/sediment control plan address construction activities such as infrastructure and structures?..... YES NO
 Name of local agency: _____ Phone: (____) _____ -- _____

C. Is this project or any part thereof, subject to conditions imposed under a CWA Section 404 permit of 401 Water Quality Certification?..... YES NO

If yes, provide details: 401 Permit has been applied for; 404 Permit is near completion.

VII. RECEIVING WATER INFORMATION

A. Does the storm water runoff from the construction site discharge to (Check all that apply):

1. **Indirectly to waters of the U.S.**

2. **Storm drain system – Enter Owner’s name:** _____

3. **Directly to waters of U.S. (e.g. , river, lake, creek, stream, bay, ocean, etc.)**

C. Name of receiving water: (river, lake, creek, stream, bay, ocean): Cajon Creek

VIII. IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

C. **STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (check one)**

A SWPPP has been prepared for this facility and is available for review: Date Prepared: ____/____/____ Date Amended: ____/____/____

A SWPPP will be prepared and ready for review by (enter date): _____

A tentative schedule has been included in the SWPPP for activities such as grading, street construction, home construction, etc.

C. **MONITORING PROGRAM**

A monitoring and maintenance schedule has been developed that includes inspection of the construction BMPs before anticipated storm events and after actual storm events and is available for review.

If checked above: A qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections to identify effectiveness and necessary repairs or design changes..... YES NO

Name: _____ Phone: _____

C. **PERMIT COMPLIANCE RESPONSIBILITY**

A qualified person has been assigned responsibility to ensure full compliance with the Permit, and to implement all elements of the Storm Water Pollution Prevention Plan including:

C. Preparing an annual compliance evaluation..... YES NO

Name: _____

2. Eliminating all unauthorized discharges..... YES NO

C. **VICINITY MAP AND FEE (must show site location in relation to nearest named streets, intersections, etc.)**

Have you included a vicinity map with this submittal? YES NO

Have you included payment of the annual fee with this submittal?..... YES NO

X. CERTIFICATIONS

“I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. In addition, I certify that the provisions of the permit, including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan will be complied with.”

Printed Name: _____

Signature: _____ **Date:** _____

Title: _____

Attachment G

Program for Maintenance, Inspection, and Repair of Construction Site BMPs

| The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP | | |
|---|--|---|
| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
| TEMPORARY EROSION CONTROL BMPs | | |
| <ul style="list-style-type: none"> ■ EC- 1 Scheduling | <ul style="list-style-type: none"> ■ Daily during Construction Activities | <ul style="list-style-type: none"> ■ Verify that work is progressing in accordance with the Erosion/Sediment Control schedule Section 500.3.4. If progress deviates, take corrective actions (i.e. update SWPPP to reflect overall progress). ■ Amend the schedule when changes are warranted. ■ Amend the Erosion/Sediment Control schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs. |
| <ul style="list-style-type: none"> ■ EC-2 Preservation of Existing Vegetation | <ul style="list-style-type: none"> ■ Daily during Construction Activities | <ul style="list-style-type: none"> ■ Retain soil cover for future use onsite. ■ Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization. |
| <ul style="list-style-type: none"> ■ EC-6 Straw Mulch | If used: <ul style="list-style-type: none"> ■ Bi-weekly during the rainy season ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site | <ul style="list-style-type: none"> ■ Utilized in times of emergencies in order to help stabilize exposed soil slopes and reduce erosion during the rainy season. ■ Protect stockpiles and exposed soil slopes from wind erosion and surface runoff erosion. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|--|--|
| <ul style="list-style-type: none"> ■ EC-7 Geotextiles & Mats | <ul style="list-style-type: none"> ■ Bi-weekly during the rainy season ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site | <ul style="list-style-type: none"> ■ Utilize Geotextiles, Mats and plastic sheeting to help stabilize steep exposed slopes or stockpiles. ■ Protect stockpiles and exposed soil slopes from wind erosion and surface runoff erosion ■ Remove, replace and dispose damaged or torn sections |
| <ul style="list-style-type: none"> ■ EC-9 Earth Dikes & Drainage Swales | <p>If used:</p> <ul style="list-style-type: none"> ■ Bi-weekly during the non-rainy season ■ Prior to forecasted storms; ensure check dams are in place ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site ■ Prior to forecasted storms ensure check dams are in place | <ul style="list-style-type: none"> ■ Remove any accumulated debris ■ Repair any failed/collapsing side slopes. ■ Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed. ■ Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment and repair linings and embankments as needed. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|---|--|
| TEMPORARY SEDIMENT CONTROL BMPs | | |
| <p>Linear Sediment Barriers:</p> <ul style="list-style-type: none"> ■ SE-1 Silt Fence ■ SE-5 Fiber Rolls ■ SE-6 Gravel Bag Berm ■ SE-9 Straw Bale Barrier ■ (Silt Fence, Fiber Rolls, Gravel Bag Berm, Straw Bales) | <ul style="list-style-type: none"> ■ Bi-weekly during the non-rainy season ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site | <ul style="list-style-type: none"> ■ Repair undercut barriers. ■ Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months. ■ Sediment barriers that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed of, and replaced with new barriers. ■ Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location. ■ Sediment barriers should be left in place until the upstream area is permanently stabilized. Until then, the barrier must be inspected and maintained. ■ Holes, depressions, or other ground disturbance caused by the removal of the barriers should be backfilled and repaired. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|--|--|
| <ul style="list-style-type: none"> ■ SE-4 Check Dam | <ul style="list-style-type: none"> ■ Bi-weekly during the rainy season. ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site | <ul style="list-style-type: none"> ■ Replace missing rock, bags, bales, etc. Replace bags or bales that have degraded or have become damaged. ■ If the check dam is used as a sediment capture device, sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. - Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. ■ Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location. ■ If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade. ■ Remove accumulated sediment prior to permanent seeding or soil stabilization. ■ Remove, replace and dispose of damaged or torn sand/gravel bags |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|--|---|
| <ul style="list-style-type: none"> ■ SE-10 Storm Drain Inlet Protection | <ul style="list-style-type: none"> ■ Bi-weekly during the rainy season. ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site | <ul style="list-style-type: none"> ■ Install protection of storm drain line throughout the phases of construction. ■ Remove, replace torn gravel/sand bags or bags that have become damaged. ■ Remove accumulated sediment that has been captured and reaches one-third the height of the sand/gravel bags. |
| <ul style="list-style-type: none"> ■ EC-10 Velocity Dissipation Devices | <p>If used:</p> <ul style="list-style-type: none"> ■ Bi-weekly during the rainy season. ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site ■ Two-week intervals during the non-rainy season | <ul style="list-style-type: none"> ■ Inspect apron for displacement of the riprap and damage to the underlying fabric. Repair fabric and replace riprap that has washed away. If riprap continues to wash away, consider using larger material. ■ Inspect for scour beneath the riprap and around the outlet. Immediately repair any damage to slope surfaces or underlying filter fabric. ■ Temporary devices should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|--|---|
| <ul style="list-style-type: none"> ■ SE-7 Street Sweeping & Vacuuming | <ul style="list-style-type: none"> ■ Monthly ■ Prior to forecasted storms ■ At 24-hour intervals during extended rain events ■ After a rain event that causes runoff from the construction site ■ Daily to ensure equipment is working properly ■ Stabilized Construction Roadway Inspect and verify that activity based BMPs are in place prior to the commencement of associated activities. ■ While activities associated with the BMP is under way, impact weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation. | <ul style="list-style-type: none"> ■ Maintain sweeper and vacuum equipment in good working order. ■ Fix equipment immediately. ■ Remove accumulated sediment ■ When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions. ■ Be careful not to sweep up any unknown substance or any object that may be potentially hazardous. ■ Adjust brooms frequently; maximize efficiency of sweeping operations. ■ After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|---|--|
| WIND EROSION CONTROL BMPs | | |
| <ul style="list-style-type: none"> ■ WE-1 Wind Erosion Control | <ul style="list-style-type: none"> ■ Daily ■ Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. ■ While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation. | <ul style="list-style-type: none"> ■ Check areas protected to ensure coverage. ■ Most dust control measures require frequent, often daily, or multiple times per day attention. ■ Main water trucks and water distribution equipment in good order and fix leaks immediately. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|---|--|
| TRACKING CONTROL BMPs | | |
| <ul style="list-style-type: none"> ■ TC-1 Stabilized Construction Entrance/Exit | <ul style="list-style-type: none"> ■ Weekly Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment. ■ Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. ■ While activities associated with the BMPs are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation. | <ul style="list-style-type: none"> ■ Replace gravel as necessary ■ Remove accumulated sediment ■ Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment. ■ Keep all temporary roadway ditches clear. ■ Check for damage and repair as needed. ■ Replace gravel material when surface voids are visible. ■ Remove all sediment deposited on paved roadways within 24 hours. ■ Remove gravel and filter fabric at completion of construction. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|--|--|
| <ul style="list-style-type: none"> ■ TC-2 Stabilized Construction Roadway (if necessary) | <ul style="list-style-type: none"> ■ Monthly ■ Stabilized Construction Roadway - Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. ■ While activities associated with the BMP are under way, impact weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation. | <ul style="list-style-type: none"> ■ Replace gravel as necessary ■ Remove accumulated sediment ■ Keep all temporary roadway ditches clear. ■ When no longer required, remove stabilized construction roadway and re-grade and repair slopes. ■ Periodically apply additional aggregate on gravel roads. ■ Active dirt construction roads are commonly watered three or more times per day during the dry season. |
| NON-STORM WATER MANAGEMENT BMPs | | |
| <ul style="list-style-type: none"> ■ NS-1 Water Conservation | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Repair or replace water lines and/or equipment that leak upon discovery. |
| <ul style="list-style-type: none"> ■ NS-6 Illicit Connection/Illegal Discharge and Reporting | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Inspect site during construction phase for evidence of illicit discharges or illegal dumping. ■ Observe site perimeter for evidence or potential for illicitly discharged or illegally dumped material which may enter the construction site. ■ Notify owner of any illicit discharged or illegal dumping incidents at the time of discovery. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|---|--|
| <ul style="list-style-type: none"> ■ NS-8 Vehicle and Equipment Cleaning ■ NS-9 Vehicle and Equipment Fueling ■ NS-10 Vehicle and Equipment Maintenance | <ul style="list-style-type: none"> ■ Weekly ■ During maintenance activities | <ul style="list-style-type: none"> ■ Remove vehicles and/or equipment that leaks. ■ Replace drip pans or adsorbent materials as needed. ■ Restock spill materials. ■ Clean the vehicle and equipment maintenance area regularly. ■ Store fueling containers in a proper storage area (if any) with secondary containment. |
| <ul style="list-style-type: none"> ■ NS-12 Concrete Curing | <ul style="list-style-type: none"> ■ Daily during curing operations | <ul style="list-style-type: none"> ■ Protect inlets prior to application of compounds. ■ Collect cure water and dispose as approved by SWPCM. ■ Inspect cure containers for leaks and repair upon discovery. |
| <ul style="list-style-type: none"> ■ NS-13 Concrete Finishing | <ul style="list-style-type: none"> ■ Daily during finishing operations | <ul style="list-style-type: none"> ■ Protect inlets prior to application of finishes. ■ Direct water away from inlets and watercourses. ■ Remove and contain liquid and solid wastes from containment structures. ■ Inspect storage containers for leaks and repair upon discovery. |
| WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs | | |
| <ul style="list-style-type: none"> ■ WM-1 Material Delivery and Storage | <ul style="list-style-type: none"> ■ Weekly ■ Prior to forecasted storm ■ At 24-hour intervals during extended rain events. ■ After a rain event that causes runoff from the construction site. | <ul style="list-style-type: none"> ■ Keep storage areas clean, well organized and equipped with ample clean-up standards. ■ Repair and replace perimeter controls, containment structures, covers, liners as needed. ■ Remove and dispose accumulated rainwater from containment facilities. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|--|---|--|
| <ul style="list-style-type: none"> ■ WM-2 Material Use | <ul style="list-style-type: none"> ■ Weekly ■ Prior to forecasted storm ■ At 24-hour intervals during extended rain events. ■ After a rain event that causes runoff from the construction site. | <ul style="list-style-type: none"> ■ Keep storage areas clean, well organized and equipped with ample clean-up standards. ■ Repair and replace perimeter controls, containment structures, covers, liners as needed. ■ Remove and dispose accumulated rainwater from containment facilities. |
| <ul style="list-style-type: none"> ■ WM-3 Stockpile Management | <ul style="list-style-type: none"> ■ Weekly ■ Prior to forecasted storm ■ At 24-hour intervals during extended rain events. ■ After a rain event that causes runoff from the construction site. | <ul style="list-style-type: none"> ■ Repair and replace liners and perimeter sand/gravel bags as needed. ■ Remove and dispose accumulated sediment. |
| <ul style="list-style-type: none"> ■ WM-4 Spill Prevention & Controls | <ul style="list-style-type: none"> ■ Weekly ■ Prior to forecasted storm ■ At 24-hour intervals during extended rain events. ■ After a rain event that causes runoff from the construction site. | <ul style="list-style-type: none"> ■ Maintain stock of spill prevention kits, supplies on site (readily accessible). ■ Keep contractor's yard clean and well organized. |
| <ul style="list-style-type: none"> ■ WM-5 Solid Waste Management | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Maintain waste fluids in leak proof containers (secondary containment). ■ Repair/replace leaking dumpsters ■ Remove and dispose accumulated rainwater from containment facilities. ■ Provide timely removal of wastes to prevent dumpster from overflowing. ■ Schedule weekly pick-up of waste containers. |

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

| BEST MANAGEMENT PRACTICES (BMPs) | INSPECTION FREQUENCY (all controls) | MAINTENANCE/REPAIR PROGRAM |
|---|--|--|
| <ul style="list-style-type: none"> ■ WM-8 Concrete Waste Management | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Remove accumulated debris from concrete washouts as needed. ■ Replace lining and sand/gravel bags as needed. |
| <ul style="list-style-type: none"> ■ WM-9 Sanitary/Septic Waste Management | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Maintain waste in leak proof containers (secondary containment). ■ Repair or replace portable toilet that leak. ■ Provide timely removal of wastes to prevent portable toilet overflowing. ■ Schedule a weekly pick-up of containers. |
| <ul style="list-style-type: none"> ■ WM-10 Liquid Waste Management | <ul style="list-style-type: none"> ■ Weekly | <ul style="list-style-type: none"> ■ Maintain waste in leak proof containers (secondary containment). ■ Provide timely removal of wastes to prevent spills and leaks. ■ Schedule a weekly pick-up of containers. |

Attachment H

Storm Water Quality Construction Site Inspection Checklist

| GENERAL INFORMATION | | | | |
|---------------------------------------|---|---------------|---|--|
| Project Name | San Joaquin Solar 1 & 3 Hybrid Power Plant Project | | | |
| Contractor | | | | |
| Inspector's Name | | | | |
| Inspector's Title | | | | |
| Signature | | | | |
| Date of Inspection | | | | |
| Inspection Type (Check Applicable) | <input type="checkbox"/> Prior to forecast rain | | <input type="checkbox"/> After a rain event | |
| | <input type="checkbox"/> 24-hr intervals during extended rain | | <input type="checkbox"/> Other _____ | |
| Season (Check Applicable) | <input type="checkbox"/> Rainy | | <input type="checkbox"/> Non-Rainy | |
| Storm Data | Storm Start Date & Time: | | Storm Duration (hrs): | |
| | Time elapsed since last storm (Circle Applicable Units) | Min. Hr. Days | Approximate Rainfall Amount (inches) | |

| PROJECT AREA SUMMARY AND DISTURBED SOIL AREA (DSA) SIZE | |
|--|-------------|
| Total Project Area | _____ Acres |
| Field Estimate of Active DSAs | _____ Acres |
| Field Estimate of Non-Active DSAs | _____ Acres |

| INSPECTION OF BMPs | | | | |
|--|-----|----|-----|-------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Preservation of Existing Vegetation | | | | |
| Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned? | | | | |
| Location: | | | | |

| INSPECTION OF BMPs | | | | |
|---|-----|----|-----|-------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Location: | | | | |
| Location: | | | | |
| Location: | | | | |
| Erosion Control | | | | |
| Does the applied temporary erosion control provide 100% coverage for the affected areas? | | | | |
| Are any non-vegetated areas that may require temporary erosion control? | | | | |
| Is the area where erosion controls are used required free from visible erosion? | | | | |
| Location: | | | | |
| Temporary Linear Sediment Barriers (Silt Fence, Fiber Rolls, Sandbag Barriers, etc.) | | | | |
| Are temporary linear sediment barriers properly installed, functional and maintained? | | | | |
| Are temporary linear sediment barriers free of accumulated litter? | | | | |
| Is the built-up sediment less than 1/3 the height of the barrier? | | | | |
| Are cross barriers installed where necessary and properly spaced? | | | | |
| Location: | | | | |
| Storm Drain Inlet Protection | | | | |
| Are storm drain inlets internal to the project properly protected? | | | | |
| Are storm drain inlet protection devices in working order and being properly maintained? | | | | |
| Location: | | | | |
| Sediment Basins | | | | |
| Are basins designed in accordance with the requirements of the General Permit? | | | | |
| Are basins maintained to provide the required retention/detention? | | | | |
| Are basin controls (inlets, outlets, diversions, weirs, spillways, and racks) in working order? | | | | |

| INSPECTION OF BMPs | | | | |
|---|-----|----|-----|-------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Location: | | | | |
| Stockpiles | | | | |
| Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas? | | | | |
| Are stockpiles protected from run-on, run-off from adjacent areas and from winds? | | | | |
| Are stockpiles located at least 15 m from concentrated flows, downstream drainage courses and storm drain inlets? | | | | |
| Are required covers and/or perimeter controls in place? | | | | |
| Location: | | | | |
| Concentrated Flows | | | | |
| Are concentrated flow paths free of visible erosion? | | | | |
| Location: | | | | |
| Tracking Control | | | | |
| Is the entrance stabilized to prevent tracking | | | | |
| Is the stabilized entrance inspected daily to ensure that it is working properly | | | | |
| Are points of ingress/egress to public/private roads inspected and swept and vacuumed as needed? | | | | |
| Are all paved areas free of visible sediment tracking or other particulate matter? | | | | |
| Location: | | | | |
| Wind Erosion Control | | | | |
| Is dust control implemented? | | | | |
| Location: | | | | |
| Location: | | | | |
| Location: | | | | |

| INSPECTION OF BMPs | | | | |
|---|-----|----|-----|-------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Location: | | | | |
| Vehicle & Equipment Fueling, Cleaning, and Maintenance | | | | |
| Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material? | | | | |
| Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas? | | | | |
| If no, are drip pans used? | | | | |
| Are dedicated fueling, cleaning, and maintenance areas located at least 15 m away from downstream drainage facilities and watercourses and protected from run-on and runoff? | | | | |
| Is wash water contained for infiltration/ evaporation and disposed of appropriately? | | | | |
| Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)? | | | | |
| On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired? | | | | |
| Location: | | | | |
| Waste Management & Materials Pollution Control | | | | |
| Are material storage areas and washout areas protected from run-on and runoff, and located at least 15 m from concentrated flows and downstream drainage facilities? | | | | |
| Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies? | | | | |
| Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities? | | | | |
| Are bagged and boxed materials stored on pallets? | | | | |
| Are hazardous materials and wastes stored in appropriate, labeled containers? | | | | |
| Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas? | | | | |
| Are temporary containment facilities free of spills and rainwater? | | | | |
| Are temporary containment facilities and bagged/boxed materials covered? | | | | |
| Are temporary concrete washout facilities designated and being used? | | | | |
| Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system? | | | | |
| Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations? | | | | |
| Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities? | | | | |
| Are spills from mobile equipment fueling and maintenance properly contained and cleaned up? | | | | |

| INSPECTION OF BMPs | | | | |
|---|------------|-----------|------------|--------------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Is the site free of litter? | | | | |
| Are trash receptacles provided in the yard, field trailer areas, and at locations where workers congregate for lunch and break periods? | | | | |
| Is litter from work areas collected and placed in watertight dumpsters? | | | | |
| Are waste management receptacles free of leaks? | | | | |
| Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds? | | | | |
| Are waste management receptacles filled at or beyond capacity? | | | | |
| Location: | | | | |
| Illicit Connection/ Discharge | | | | |
| Is there any evidence of illicit discharges or illegal dumping on the project site? | | | | |
| If yes, has the Owner/Operator been notified? | | | | |
| Location: | | | | |
| Discharge Points | | | | |
| Are discharge points and discharge flows free from visible pollutants? | | | | |
| Are discharge points free of any significant sediment transport? | | | | |
| Location: | | | | |
| SWPPP Update | | | | |
| Does the SWPPP and Project Schedule adequately reflect the current site conditions and contractor operations? | | | | |
| Are all BMPs shown on the water pollution control drawings installed in the proper location(s) and according to the details in the SWPPP? | | | | |
| Location: | | | | |
| General | | | | |
| Are there any other potential concerns at the site? | | | | |
| Location: | | | | |

| INSPECTION OF BMPs | | | | |
|---|------------|-----------|------------|--------------------------|
| BMP | Yes | No | N/A | Corrective Action |
| Location: | | | | |
| Location: | | | | |
| Location: | | | | |
| Storm Water Monitoring | | | | |
| Does storm water discharge directly to a water body listed in the General Permit as impaired for sediment/sedimentation or turbidity? | | | | |
| If yes, were samples for sediment/sedimentation or turbidity collected pursuant to the sampling and analysis plan in the SWPPP? | | | | |
| Did the sampling results indicate that the discharges are causing or contributing to further impairment? | | | | |
| If yes, were the erosion/sediment control BMPs improved or maintained to reduce the discharge of sediment to the water body? | | | | |
| Were there any BMPs not properly implemented or breaches, malfunctions, leakages or spills observed which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water? | | | | |
| If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events? | | | | |
| If sampling indicated pollution of the storm water, were the leaks, breaches, spills, etc. cleaned up and the contaminated soil properly disposed of? | | | | |
| Were the BMPs maintained or replaced? | | | | |
| Were soil amendments (e.g., gypsum, lime) used on the project? | | | | |
| If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP? | | | | |
| If sampling indicated pollution of the storm water by the use of the soil amendments, is there a contingency plan for retention onsite of the polluted storm water? | | | | |
| Did storm water contact stored materials or waste and run off the construction site? (Materials not in watertight containers, etc.) | | | | |
| If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP? | | | | |

Attachment I

Trained Contractor Personnel Log

Storm Water Management Training Log

All employees will receive an appropriate level of training on storm water pollution prevention based on their work responsibilities. Most of the training programs will be integrated into existing training presented to staff, such as safety training. Depending on personnel involved, storm water training will occur at least quarterly or annually.

BMP Water Management Topic(s) covered:

- Cleaning & grubbing activities
- Non-point source discharges
- Other BMPs via the websites of the California Stormwater Quality Association website and the State Water Resources Control Board websites (<http://www.casqa.org/resourcelibrary/> and <http://www.swrcb.ca.gov/stormwtr/training.html>).

Project Name: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

Project Number/Location: Along West Jayne Avenue (County of Fresno)

Storm Water Management Topic: (check as appropriate)

- | | |
|---|---|
| <input type="checkbox"/> Erosion Control | <input type="checkbox"/> Sediment Control |
| <input type="checkbox"/> Wind Erosion Control | <input type="checkbox"/> Tracking Control |
| <input type="checkbox"/> Non-storm water management | <input type="checkbox"/> Waste Management and Materials Pollution Control |
| <input type="checkbox"/> Storm Water Sampling | |

Specific Training Objective: _____

Location: _____ Date: _____

Instructor: _____ Telephone: _____

Course Length (hours): _____

Attachment J

Subcontractor Notification Letter and Notification Log

SWPPP Notification

Company
Address
City, State, ZIP

Dear Sir/Madam,

Please be advised that the California State Water Resources Control Board has adopted the General Permit (General Permit) for Storm Water Discharges Associated with Construction Activity (CAS000002). The goal of these permits is prevent the discharge of pollutants associated with construction activity from entering the storm drain system, ground and surface waters.

The owner has developed a Storm Water Pollution Prevention Plan (SWPPP) in order to implement the requirements of the Permits.

As a subcontractor, you are required to comply with the SWPPP and the Permits for any work that you perform on site. Any person or group who violates any condition of the Permits may be subject to substantial penalties in accordance with state and federal law. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP and the Permits. A copy of the Permits and the SWPPP are available for your review at the construction office. Please contact me if you have further questions.

Sincerely,

Name
Title

SUBCONTRACTOR NOTIFICATION LOG

Project Name: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

Project Number/Location: Along West Jayne Avenue (County of Fresno)

| SUBCONTRACTOR COMPANY NAME | CONTACT NAME | ADDRESS | PHONE NUMBER | PAGER/ FIELD PHONE | DATE NOTIFICATION LETTER SENT | TYPE OF WORK |
|-------------------------------|-----------------|---------|-----------------|--------------------------|-------------------------------------|-----------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

USE ADDITIONAL PAGES AS NECESSARY

Attachment K

Notice of Non-Compliance

To: Martifer Renewables Solar Thermal, LLC/Central Valley RWQCB (5F)

Date: Insert Date

Subject: Notice of Non-Compliance

Project Name: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

Project

Number/Location: Along West Jayne Avenue (County of Fresno)

In accordance with the NPDES Statewide Permit for Storm Water Discharges Associated with Construction Activity, the following instance of discharge is noted:

Date, time, and location of discharge

Insert description and date of event

Nature of the operation that caused the discharge

insert description of operation

Initial assessment of any impact cause by the discharge

insert assessment

Existing BMP(s) in place prior to discharge event

list BMPs in place

Date of deployment and type of BMPs deployed after the discharge.

BMPs deployed after the discharge (with dates)

Steps taken or planned to reduce, eliminate and/or prevent recurrence of the discharge

insert steps taken to prevent recurrence

Implementation and maintenance schedule for any affected BMPs

insert implementation and maintenance schedule

If further information or a modification to the above schedule is required, notify the contact person below.

Name of Contact Person

Title

Company

Telephone Number

Signature

Date



Attachment L

Preliminary Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program Checklist - July 20, 2009

CONSTRUCTION PROJECT: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

PREPARER: _____

CONTRACT NO: _____

| SECTION A: STORM WATER POLLUTION PREVENTION PLAN (SWPPP) | | | | |
|--|---------------|--|------------------------|--|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| | 100 | SWPPP Certification and Approval | C.10 | Needs signature of owner |
| ✓ | 100.1 | SWPPP Certification | C.10 | |
| | 100.2 | SWPPP Approval | C.10 | Needs signature of owner |
| ✓ | 200 | SWPPP Amendments | A.4.a, A.16 | |
| ✓ | 200.1 | Amendment number and date entered into SWPPP – Amendment Log | A.4.a, A.16 | |
| ✓ | 200.2 | Amendment Certification and Approval | A.4.a, A.16 | |
| ✓ | 300 | Introduction/Project Description | | |
| ✓ | 300.1 | Project Description and Location (narrative) | A.5.a.1 | |
| ✓ | 300.2 | Unique Site Features (narrative) | A.5.a.1 | |
| ✓ | 300.4 | Project Schedule (narrative and graphical) | A.5.c.5 | Need graphical schedule/Gant Chart |
| ✓ | 400 | References | A.14 | |
| ✓ | 500.2 | Vicinity Map (narrative or graphic) | A.5.a.1 | Will be provided. |
| ✓ | 500.2 | Site perimeter | A.5.a.1 | Refer to WPCDs for greater details. |
| ✓ | 500.2 | Geographic Features | A.5.a.1 | Refer to WPCDs for greater details. |
| ✓ | 500.2 | General topography | A.5.a.1 | Refer to WPCDs for greater details. |
| ✓ | 500.4 | Water Pollution Control Drawings (WPCDs) (graphic or narrative) | A.5.a.2 | Refer to Attachment B. |
| ✓ | 500.4 | Site perimeter | A.5.a.2 | Refer to Attachment B. |
| ✓ | 500.4 | Existing and proposed buildings, lots, and roadways | A.5.a.2 | Refer to WPCDs or Site Plan for details. |

| SECTION A: STORM WATER POLLUTION PREVENTION PLAN (SWPPP) | | | | |
|---|-------------------|---|------------------------------------|---|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | <i>GENERAL PERMIT REF.</i> | COMMENTS |
| ✓ | 500.4 | Storm water collection and discharge points | A.5.a.2 | Indicated on WPCDs. |
| ✓ | 500.4 | General topography before and after construction | A.5.a.2 | Refer to WPCDs or Grading Plants for details. |
| ✓ | 500.4 | Anticipated discharge location(s) | A.5.a.2 | Indicated on WPCDs. |
| ✓ | 500.4 | Drainage patterns including the entire relevant drainage areas | A.5.a.2 | Indicated on WPCDs. |
| ✓ | 500.4 | Temporary on-site drainage(s) | A.5.a.2 | Indicated on WPCDs. |
| ✓ | 500.3 | <i>Pollutant Source and BMP Identification (narrate/ or indicate on site map)</i> | A.5.b | |
| | | <i>Drainage</i> | A.5.b.1 | |
| ✓ | 500.4 | Drainage patterns after major grading | A.5.b.1 | Refer to WPCDs or Grading Plants for details. |
| ✓ | 500.4 | Slopes after major grading | A.5.b.1 | Refer to WPCDs or Grading Plants for details. |
| ✓ | Attach. E | Calculations for storm water run-on | A.5.b.1 | |
| ✓ | 500.4 | BMPs that divert off-site drainage from passing through site | A.5.b.1 | |
| ✓ | 500.4 | <i>Storm Water Inlets</i> | A.5.b.2 | If any, refer to WPCDs |
| ✓ | 500.4 | Drainage patterns to storm water inlets or receiving water | A.5.b.2 | Indicated on WPCDs. |
| ✓ | 500.4 | BMPs that protect storm water inlets or receiving water | A.5.b.2 | If any, refer to WPCDs |
| | | <i>Site History (narrative; if possible, indicate location(s) on the Water Pollution Control Drawings)</i> | A.5.b | |
| ✓ | 500.3.3 | Nature of fill material and data describing the soil. Description of toxic materials treated, stored, disposed, spilled or leaked on site | A.5.b.3 | |
| ✓ | 500.3.8 & 500.3.9 | BMPs that minimize contact of contaminants with storm water | A.5.b.3 | |
| | | <i>Location of Areas Designated for:</i> | A.5.b.4 | |
| ✓ | 500.3.8 & 500.4 | Vehicle storage & service | A.5.b.4 | Indicated on WPCDs. |
| ✓ | 500.3.8 & 500.4 | Equipment storage, cleaning, maintenance | A.5.b.4 | Indicated on WPCDs. |
| ✓ | 500.3.9 & 500.4 | Soil or waste storage | A.5.b.4 | Indicated on WPCDs. |
| ✓ | 500.3.9 & 500.4 | Construction material loading, unloading, storage and access | A.5.b.4 | Indicated on WPCDs. |
| ✓ | 500.3.8 & 500.3.9 | Areas outside of physical site (yards, borrow areas, etc.) | | Indicated on WPCDs. |
| | | <i>BMP Locations or Descriptions for:</i> | A.5.b.5 | |
| ✓ | 500.3.9 & 500.4 | Waste handling and disposal areas | A.5.b.5 | Indicated on WPCDs. |
| ✓ | 500.3.9 & 500.4 | On-site storage and disposal of construction materials and waste | A.5.b.5 | Construction Staging Areas; Indicated on WPCDs. |

| SECTION A: STORM WATER POLLUTION PREVENTION PLAN (SWPPP) | | | | |
|--|--------------------------------|---|---------------------------|---|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| ✓ | 500.3.8, 500.3.9 & 500.4 | Minimum exposure of storm water to construction materials, equipment, vehicles, waste | A.5.b.5 | |
| ✓ | 500.6 | Post Construction BMPs | A.5.b.6 | I |
| ✓ | 500.6.1 | Listing or Description of Post-construction BMPs | A.5.b.6 | |
| ✓ | 500.4 | Location of post-construction BMPs | A.5.b.6 | Refer to WPCDs. |
| ✓ | 500.6.2 | Parties responsible for long-term maintenance | A.5.b.6 | |
| | | Additional Information | A.5.c | |
| ✓ | 500.3.1 | Description of other pollutant sources and BMPs | A.5.c.1 | |
| ✓ | 500.3.2 | Pre-construction control practices | A.5.c.1 | |
| ✓ | 500.3.1 | Inventory of materials and activities that may pollute storm water | A.5.c.2 | |
| ✓ | 500.3.8 & 500.3.9 | BMPs to reduce/eliminate potential pollutants listed in the inventory | A.5.c.2 | |
| ✓ | 300.4 | Runoff coefficient (before & after) | A.5.c.3 | |
| ✓ | 300.4 | Percent impervious (before & after) | A.5.c.3 | |
| ✓ | Attach. F | Copy of the NOT | A.5.c.4 | |
| ✓ | 300.3 | Construction activity schedule | A.5.c.5 | |
| ✓ | 300.5 | Contact information | A.5.c.6 | |
| ✓ | 500.4.1 | SOIL STABILIZATION (EROSION CONTROL) | A.6 | |
| | | The SWPPP shall include: | A.6.a-c | |
| ✓ | 500.4 | Areas of vegetation on site | A.6.a.1 | Indicated on WPCDs. |
| ✓ | 500.4 | Areas of soil disturbance that will be stabilized during rainy season | A.6.a.2 | Indicated on WPCDs/Project Grading Plans. |
| ✓ | 500.4 | Areas of soil disturbance which will be exposed during any part of the rainy season | A.6.a.3 | Indicated on Project Grading Plans. |
| ✓ | 300.4 | Implementation schedule for erosion control measures | A.6.a.4 | General schedule under 300.4. |
| ✓ | 500.3.4 | BMPs for erosion control | A.6.b | |
| ✓ | 500.3.7 | BMPs to control wind erosion | A.6.c | |
| ✓ | 500.3.5 | SEDIMENT CONTROL | A.8 | |
| ✓ | 500.3.5 & 500.4 | Description/Illustration of BMPs to prevent increase of sediment load in discharge | A.8 | |
| ✓ | 300.4, 500.3.5 | Implementation schedule for sediment control measures | A.8 | |

| SECTION A: STORM WATER POLLUTION PREVENTION PLAN (SWPPP) | | | | |
|---|----------------------|---|---------------------------|----------|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| ✓ | 500.3.6 | BMPs to control sediment tracking | A.8 | |
| ✓ | 500.3.8 & 500.3.9 | NON-STORM WATER MANAGEMENT | A.9 | |
| ✓ | 500.3.8 & 500.3.9 | Description of non-storm water discharges to receiving waters | A.9 | |
| ✓ | 500.3.8 & 500.3.9 | Locations of discharges | A.9 | |
| ✓ | 500.3.8 & 500.3.9 | Description of BMPs | A.9 | |
| ✓ | 300.5 | Name and phone number of person responsible for non-storm water management | A.9 | |
| N/A | 500.6 | <i>POST-CONSTRUCTION</i> | A.10 | |
| N/A | 500.6.1 | Description of post-construction BMPs | A.10 | |
| ✓ | 500.6.2 | Operation/Maintenance of BMPs after project completion (including short-term funding, long-term funding and responsible party) | A.10 | |
| ✓ | 500.5 | MAINTENANCE, INSPECTIONS, AND REPAIR | A.11 | |
| ✓ | 300.5, 600.1 | Name and phone number of person(s) responsible for inspections | A.11 | |
| ✓ | 600.1, Attach. H | Complete inspection checklist: date, weather, inadequate BMPs, visual observations of BMPs, corrective action, inspector's name, title, signature | A.11.a-f | |
| | | OTHER REQUIREMENTS | A.12-16 | |
| ✓ | 500.7 | Documentation of all training | A.12 | |
| ✓ | 500.8 | List of Contractors/Subcontractors | A.13 | |

| SECTION B: MONITORING AND REPORTING REQUIREMENTS | | | | |
|---|------------------|--|---------------------------|----------|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| ✓ | 600.1 | Description of Site Inspection Plans | B.3 | |
| ✓ | 100.3 | Compliance certification (annually 7/1) | B.4 | |
| ✓ | 600.2 | Discharge reporting | B.5 | |
| ✓ | 600.3 | Keep records of all inspections, compliance certifications, and noncompliance reports on site for a period of at least three years | B.6 | |
| ✓ | 600.4 | Sampling and Analysis Plan for Sediment | B.7 | |

| SECTION B: MONITORING AND REPORTING REQUIREMENTS | | | | |
|--|---------------|---|---------------------|----------|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| ✓ | 600.5 | Sampling and Analysis Plan for Non-Visible Pollutants | B.8 | |

| SECTION C: STANDARD PROVISIONS FOR CONSTRUCTION ACTIVITIES | | | | |
|--|---------------|----------------------------|---------------------|---|
| CHECK IF ADDRESSED N/A IF NOT APPLICABLE | SWPPP Section | ITEM | GENERAL PERMIT REF. | COMMENTS |
| ✓ | 100.1 | Signed SWPPP Certification | C.9,10 | Signature will be obtained once approved by Owner |

Attachment M

Annual Certification of Compliance Form

Project Name: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

Company Name: Martifer Renewables Solar Thermal, LLC

Address: 12555 High Bluff Drive, Suite 100 San Diego, CA 92130

Construction Start Date: <Pending> **Completion Date:** <Pending>

This project is in compliance with the General Permit and this SWPPP (check yes or no) **YES** **NO**

Description of Work:

| |
|---|
| Construction of two 53.4 MW net solar hybrid power plant stations and ancillary systems including (solar field and biomass) facilities. |
|---|

Work now in Progress:

| |
|--|
| |
|--|

Work Planned for Next 12 Months:

| |
|--|
| |
|--|

"I certify under penalty of law that, during the past 12 months, the construction activities are in compliance with the requirements of the General Permit and this SWPPP. This Certification is based upon the site inspections required in Section B, Item 3 of the General Permit. This document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Owner (or Authorized Representative) Signature

Date

Name and Title

Telephone Number

Attachment N

Other Plans and Permit

Attachment O

Water Pollution Control Cost Breakdown

Project Name: San Joaquin Solar 1 & 2 Hybrid Power Plant Project

| ITEM | ITEM DESCRIPTION | UNIT | ESTIMATED QUANTITY | VALUE | AMOUNT |
|-------|---------------------------------------|-----------------|--------------------|-------|--------|
| EC-3 | Hydraulic Mulch | FT ² | | | |
| EC-4 | Hydroseeding | FT ² | | | |
| EC-5 | Soil Binders | FT ² | | | |
| EC-6 | Straw Mulch | FT ² | | | |
| EC-7 | Geotextiles & Mats | FT ² | | | |
| EC-8 | Wood Mulching | FT ² | | | |
| EC-9 | Earth Dikes & Drainage Swales | FT | | | |
| EC-10 | Velocity Dissipation Devices | EA | | | |
| EC-11 | Slope Drains | EA | | | |
| EC-12 | Streambank Protection | LS | | | |
| EC-13 | Polyacrylamide | LS | | | |
| SE-1 | Silt Fence | FT | | | |
| SE-2 | Sediment Basin | EA | | | |
| SE-3 | Sediment Trap | EA | | | |
| SE-4 | Check Dam | EA | | | |
| SE-5 | Fiber Rolls | FT | | | |
| SE-6 | Gravel Bag Berm | FT | | | |
| SE-7 | Street Sweeping and Vacuuming | LS | | | |
| SE-8 | Sandbag Barrier | FT | | | |
| SE-9 | Straw Bale Barrier | FT | | | |
| SE-10 | Storm Drain Inlet Protection | EA | | | |
| WE-1 | Wind Erosion Control | LS | | | |
| TC-1 | Stabilized Construction Entrance/Exit | EA | | | |
| TC-2 | Stabilized Construction Roadway | EA | | | |
| TC-3 | Entrance/Outlet Tire Wash | EA | | | |
| NS-1 | Water Conservation Practices | LS | | | |
| NS-2 | Dewatering Operations | EA | | | |
| NS-3 | Paving and Grinding Operations | LS | | | |

| ITEM | ITEM DESCRIPTION | UNIT | ESTIMATED QUANTITY | VALUE | AMOUNT |
|-------|---------------------------------------|------|--------------------|-------|--------|
| NS-4 | Temporary Stream Crossing | EA | | | |
| NS-5 | Clear Water Diversion | EA | | | |
| NS-6 | Illicit Connection/ Discharge | LS | | | |
| NS-7 | Potable Water/Irrigation | LS | | | |
| NS-8 | Vehicle and Equipment Cleaning | LS | | | |
| NS-9 | Vehicle and Equipment Fueling | LS | | | |
| NS-10 | Vehicle and Equipment Maintenance | LS | | | |
| NS-11 | Pile Driving Operations | LS | | | |
| NS-12 | Concrete Curing | LS | | | |
| NS-13 | Material and Equipment Use Over Water | LS | | | |
| NS-14 | Concrete Finishing | LS | | | |
| NS-15 | Demolition Adjacent to Water | LS | | | |
| NS-16 | Temporary Batch Plants | LS | | | |
| WM-1 | Material Delivery and Storage | LS | | | |
| WM-2 | Material Use | LS | | | |
| WM-3 | Stockpile Management | LS | | | |
| WM-4 | Spill Prevention and Control | LS | | | |
| WM-5 | Solid Waste Management | LS | | | |
| WM-6 | Hazardous Waste Management | LS | | | |
| WM-7 | Contaminated Soil Management | LS | | | |
| WM-8 | Concrete Waste Management | LS | | | |
| WM-9 | Sanitary/Septic Waste Management | LS | | | |
| WM-10 | Liquid Waste Management | LS | | | |
| | | | TOTAL | | |

Attachment P

Notice of Termination



Linda S. Adams
Secretary for
Environmental Protection

State Water Resources Control Board

Division of Water Quality

1001 I Street • Sacramento, California 95814 • (916) 341-5537

Mailing Address: P.O. Box 1977 • Sacramento, California • 95812-1977

FAX (916) 341-5543 • Internet Address: <http://www.waterboards.ca.gov/stormwtr/index.html>



Arnold Schwarzenegger
Governor

To: Storm Water Permit Holder

RE: NOTICE OF TERMINATION OF COVERAGE UNDER THE GENERAL CONSTRUCTION STORM WATER PERMIT (GENERAL PERMIT)

In order for us to terminate your coverage under the General Permit, please complete and submit the enclosed Notice of Termination (NOT) your local Regional Water Quality Control Board (RWQCB). Refer to the last page of the NOT packet for RWQCB locations.

Submittal of a NOT does not guarantee termination and outstanding invoices are still valid. If your NOT is denied, you will be required to continue complying with the requirements of the General Permit and all outstanding invoice(s) are due. You will be notified of your NOT status by the RWQCB or State Water Resources Control Board. Approval of your Notice of Termination does not relieve you from paying any applicable outstanding invoices.

Should you have any questions regarding this matter, please contact your local RWQCB at the number listed on the back page of the NOT package, or the Storm Water Unit at (916) 341-5537.

Sincerely,

Storm Water Unit
Division of Water Quality

Enclosure

SEND TO YOUR LOCAL RWQCB FOR APPROVAL

State of California
State Water Resources Control Board

NOTICE OF TERMINATION

OF COVERAGE UNDER THE NPDES GENERAL PERMIT NO. CAS000002
FOR DISCHARGES OF STORM WATER
ASSOCIATED WITH CONSTRUCTION ACTIVITY

Submission of this Notice of Termination constitutes notice that the Owner (and his/her agent) of the site identified on this form is no longer authorized to discharge storm water associated with construction activity by NPDES General Permit No. CAS000002.

I. WDID NO.

II. OWNER

COMPANY NAME _____ CONTACT PERSON _____

STREET ADDRESS _____ TITLE _____

CITY _____ STATE _____ ZIP _____ PHONE _____

III. CONSTRUCTION SITE INFORMATION

A. DEVELOPER NAME _____ CONTACT PERSON _____

STREET ADDRESS _____ TITLE _____

CITY _____ CA _____ ZIP _____ PHONE _____

B. SITE ADDRESS _____ COUNTY _____

CITY _____ CA _____ ZIP _____ PHONE _____

IV. BASIS OF TERMINATION

_____ 1. The construction project is complete and the following conditions have been met.

- All elements of the Storm Water Pollution Prevention Plan have been completed.
- Construction materials and waste have been disposed of properly.
- The site is in compliance with all local storm water management requirements.
- A post-construction storm water operation and management plan is in place.

Date of project completion ____/____/____

_____ 2. Construction activities have been suspended, either temporarily _____ or indefinitely _____ and the following conditions have been met.

- All elements of the Storm Water Pollution Prevention Plan have been completed.
- Construction materials and waste have been disposed of properly.
- All denuded areas and other areas of potential erosion are stabilized.
- An operation and maintenance plan for erosion and sediment control is in place.
- The site is in compliance with all local storm water management requirements.

Date of suspension ____/____/____ Expected start up date ____/____/____

_____ 3. Site can not discharge storm water to waters of the United States (check one).

SEND TO YOUR LOCAL RWQCB FOR APPROVAL

_____ All storm water is retained on site.

_____ All storm water is discharged to evaporation or percolation ponds offsite.

_____ 4. Discharge of storm water from the site is now subject to another NPDES general permit or an individual NPDES permit.

NPDES Permit No. _____ Date coverage began ____/____/____

_____ 5. There is a new Owner of the identified site. Date of Owner transfer ____/____/____

Was the new Owner notified of the General Permit requirements? YES ____ NO ____

NEW OWNER INFORMATION

COMPANY NAME _____ CONTACT PERSON _____

STREET ADDRESS _____ TITLE _____

CITY _____ STATE _____ ZIP _____ PHONE _____

V. EXPLANATION OF BASIS OF TERMINATION (Attach site photographs - see instructions).

VI. CERTIFICATION:

I certify under penalty of law that all storm water discharges associated with construction activity from the identified site that are authorized by NPDES General Permit No. CAS000002 have been eliminated or that I am no longer the Owner of the site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under the general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an Owner from liability for any violations of the general permit or the Clean Water Act.

PRINTED NAME _____ TITLE _____

SIGNATURE: _____ DATE ____/____/____

REGIONAL WATER BOARD USE ONLY

This Notice of Termination has been reviewed, and I recommend termination of coverage under the subject NPDES general permit.

Printed Name _____ Region No. _____

Signature _____ Date ____/____/____

NOT effective date:
Date: ____/____/____

INSTRUCTIONS FOR COMPLETING NOTICE OF TERMINATION FOR CONSTRUCTION ACTIVITY

Who May File

Dischargers who are presently covered under NPDES General Permit No. CAS000002 for discharge of storm water associated with construction activity may submit a Notice of Termination when they meet one of the following criteria.

1. The construction project has been completed and the following conditions have been met: all elements of the Stormwater Pollution Prevention Plan have been completed; construction materials and equipment maintenance waste have been disposed of properly; the site is in compliance with all local storm water management requirements including erosion/sediment control requirements and the appropriate use permits have been obtained; and a post-construction storm water operation and management plan is in place.
2. Construction activities have been suspended, either temporarily or indefinitely and the following conditions have been: all elements of the Stormwater Pollution Prevention Plan have been completed; construction materials and equipment maintenance waste have been disposed of properly; all denuded areas and other areas of potential erosion are stabilized; an operation and maintenance plan for erosion and sediment control is in place; and the site is in compliance with all local storm water management requirements including erosion/sediment control requirements.
The date construction activities were suspended, and the expected date construction activities will start up again should be provided.
3. Construction site can not discharge storm water to waters of the United States. Please indicate if all storm water is retained on site or if storm water is collected offsite.
4. Discharge of construction storm water from the site is now subject to another NPDES general permit or an individual NPDES permit. The general permit or individual permit NPDES number and date coverage began should be provided.
5. There is a new Owner of the identified site. If Ownership or operation of the facility has been transferred then the previous Owner must submit a Notice of Termination and the new Owner must submit a Notice of Intent for coverage under the general permit. The date of transfer and information on the new Owner should be provided. Note that the previous Owner may be liable for discharge from the site until the new Owner files a Notice of Intent for coverage under the general permit.

Where to File

Submit the Notice of Termination to the Executive Officer of the Regional Water Quality Control Board responsible for the area in which the facility is located. See attached. Submittal of a NOT does not guarantee termination and outstanding invoices are still valid. If the Executive Officer, or his designated staff, agrees with the basis of termination, the Notice of Termination will be transmitted to the State Water Board for processing at which time it will be determined if any outstanding invoices are still valid. Approval of your Notice of Termination does not relieve you from paying any applicable outstanding invoices. If the Executive Officer, or his designated staff, does not agree with the basis of termination, the Notice of Termination will be returned. The Regional Water Board may also inspect your site prior to accepting the basis of termination.

LINE-BY-LINE INSTRUCTIONS

All necessary information must be provided on the form. Type or print in the appropriate areas only. Submit additional information, if necessary, on a separate sheet of paper.

SECTION I--WDID NO.

The WDID No. is a number assigned to each discharger covered under the General Permit. If you do not know your WDID No., please call the State Water Board or Regional Water Board and request it prior to submittal of the Notice of Termination.

SECTION II--OWNER

Enter the Owner of the construction site's official or legal name (This should correspond with the name on the Notice of Intent submitted for the site), address of the Owner, contact person, and contact person's title and telephone number.

SECTION III--CONSTRUCTION SITE INFORMATION

In Part A, enter the name of the developer (or general contractor), address, contact person, and contact person's title and telephone number. The contact person should be the construction site manager completely familiar with the construction site and charged with compliance and oversight of the general permit. This information should correspond with information on the Notice of Intent submitted for the site.

In Part B, enter the address, county, and telephone number (if any) of the construction site. Construction sites that do not have a street address must attach a legal description of the site.

SECTION IV--BASIS OF TERMINATION

Check the category which best defines the basis of your termination request. See the discussion of the criteria in the Who May File section of these instructions. Provide dates and other information requested. Use the space under Explanation of Basis of Termination heading.

SECTION V--EXPLANATION OF BASIS OF TERMINATION

Please explain the basis or reasons why you believe your construction site is not required to comply with the General Permit. To support your explanation, provide a site map and photograph of your site.

SECTION VI--CERTIFICATION

This section must be completed by the Owner of the site.

The Notice of Termination must be signed by:

For a Corporation: a responsible corporate officer

For a Partnership or Sole Proprietorship: a general partner or the proprietor, respectively.

For a Municipality, State, or other Non-Federal Public Agency: either a principal executive officer or ranking elected official.

For a Federal Agency: either the chief or senior executive officer of the agency.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS

NORTH COAST REGION (1)

5550 Skylane Blvd, Ste. A
 Santa Rose, CA 95403
 (707) 576-2220 FAX: (707)523-0135
<http://www.waterboards.ca.gov/rwqcb1>

SAN FRANCISCO BAY REGION (2)

1515 Clay Street, Ste. 1400
 Oakland, CA 94612
 (510) 622-2300 FAX: (510) 622-2640
<http://www.waterboards.ca.gov/rwqcb2>

CENTRAL COAST REGION (3)

895 Aerovista Place, Ste 101
 San Luis Obispo, CA 93401
 (805) 549-3147 FAX: (805) 543-0397
<http://www.waterboards.ca.gov/rwqcb3>

LOS ANGELES REGION (4)

320 W. 4th Street, Ste. 200
 Los Angeles, CA 90013
 (213) 576-6600 FAX: (213) 576-6640
<http://www.waterboards.ca.gov/rwqcb4>

LAHONTAN REGION (6 SLT)

2501 Lake Tahoe Blvd.
 South Lake Tahoe, CA 96150
 (530) 542-5400 FAX: (530) 544-2271
<http://www.waterboards.ca.gov/rwqcb6>

VICTORVILLE OFFICE (6V)

14440 Civic Drive, Ste. 200
 Victorville, CA 92392-2383
 (760) 241-6583 FAX: (760) 241-7308
<http://www.waterboards.ca.gov/rwqcb6>

CENTRAL VALLEY REGION (5S)

11020 Sun Center Dr., #200
 Rancho Cordova, CA 95670-6114
 (916) 464-3291 FAX: (916) 464-4645
<http://www.waterboards.ca.gov/rwqcb5>

FRESNO BRANCH OFFICE (5F)

685 E St.
 Fresno, CA 93706
 (559) 445-5116 FAX: (559) 445-5910
<http://www.waterboards.ca.gov/rwqcb5>

REDDING BRANCH OFFICE (5R)

415 Knollcrest Drive, Ste. 100
 Redding, CA 96002
 (530) 224-4845 FAX: (530) 224-4857
<http://www.waterboards.ca.gov/rwqcb5>

COLORADO RIVER BASIN REGION (7)

73-720 Fred Waring Dr., Ste. 100
 Palm Desert, CA 92260
 (760) 346-7491 FAX: (760) 341-6820
<http://www.waterboards.ca.gov/rwqcb7>

SANTA ANA REGION (8)

California Tower
 3737 Main Street, Ste. 500
 Riverside, CA 92501-3339
<http://www.waterboards.ca.gov/rwqcb8>

SAN DIEGO REGION (9)

9174 Sky Park Court, Ste. 100
 San Diego, CA 92123-4340
 (858) 467-2952 FAX: (858) 571-6972
<http://www.waterboards.ca.gov/rwqcb9>

STATE OF CALIFORNIA

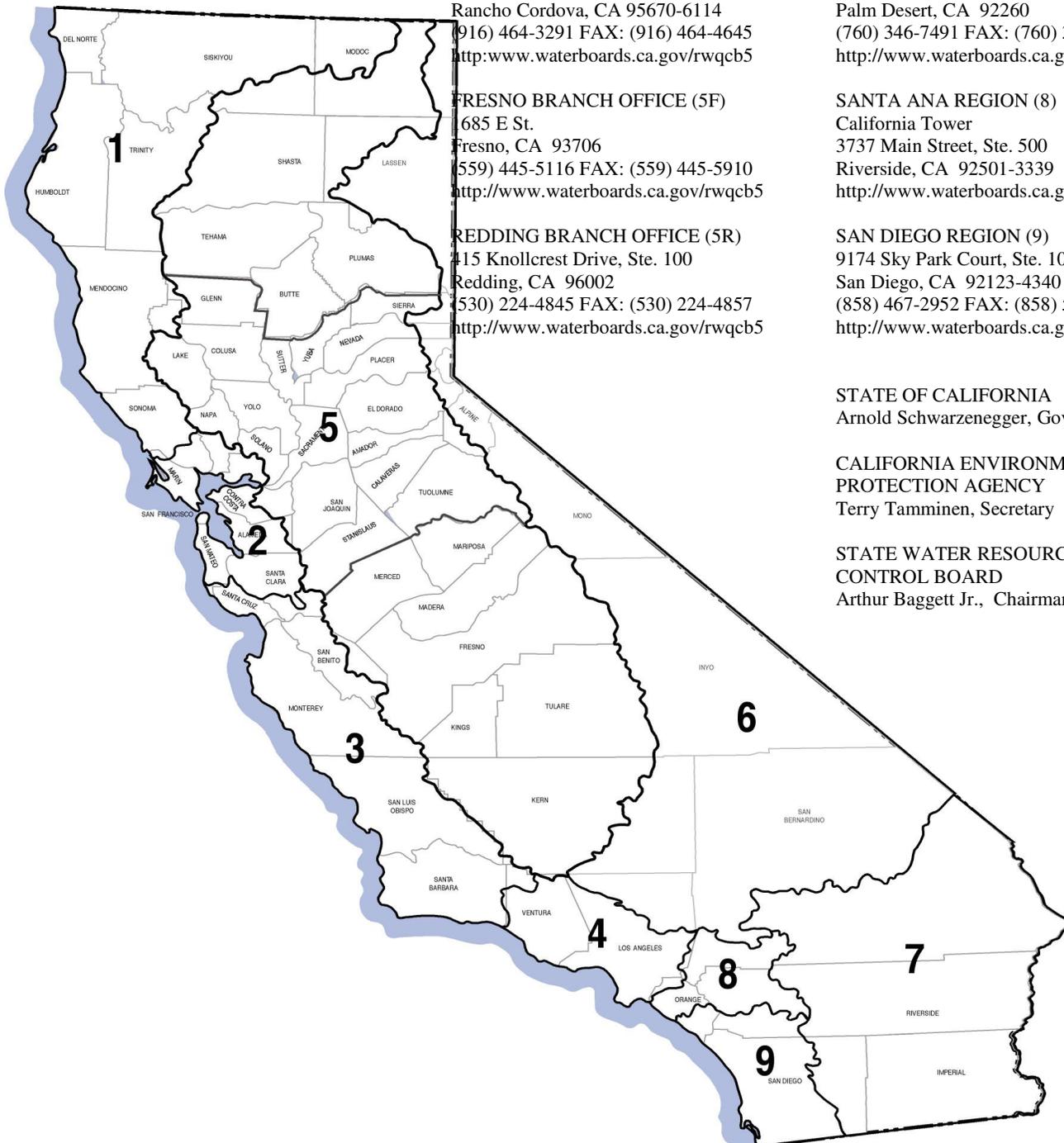
Arnold Schwarzenegger, Governor

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Terry Tamminen, Secretary

STATE WATER RESOURCES CONTROL BOARD

Arthur Baggett Jr., Chairman



Attachment Q

BMPs Selected for the Project

Attachment R

Sampling Activity Log

| RAIN EVENT GENERAL INFORMATION | | | | |
|--------------------------------|--|---------------|---|--|
| Project Name | San Joaquin Solar 1 & 2 Hybrid Power Plant Project | | | |
| Project Number | 27658033 | | | |
| Contractor | | | | |
| Sampler's Name | | | | |
| Signature | | | | |
| Date of Sampling | | | | |
| Season (Check Applicable) | <input type="checkbox"/> Rainy | | <input type="checkbox"/> Non-Rainy | |
| Storm Data | Storm Start Date & Time: | | Storm Duration (hrs): | |
| | Time elapsed since last storm (Circle Applicable Units) | Min. Hr. Days | Approximate Rainfall Amount (inches) | |

For rainfall information: <http://cdec.water.ca.gov/weather.html> or <http://www.wrh.noaa.gov/wrhq/nwspage.html>

| SAMPLE LOG | | |
|-----------------------|-----------------|---------------------------------|
| Sample Identification | Sample Location | Sample Collection Date and Time |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Specific sample locations descriptions may include: 100 ft upstream from discharge at eastern boundary, runoff from northern waste storage area, downgradient of inlet located near the intersection of A Street and B avenue, etc.

| FIELD ANALYSIS | | |
|--|------|--------|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Sample Identification | Test | Result |
| | | |
| | | |
| | | |
| | | |
| | | |

Attachment S

Pollutant Testing Guidance Table

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|-------------------|-----------------------------|---|--|---------------------------------------|------------------------------|
| Asphalt Products | Hot Asphalt | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | |
| | Asphalt Emulsion | | | | |
| | Liquid Asphalt (tack coat) | | | | |
| | Cold Mix | | | | |
| | Crumb Rubber | Yes – Black, solid material | Visually Observable - No Testing Required | | |
| | Asphalt Concrete (Any Type) | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | |
| Cleaning Products | Acids | No | pH Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride) | pH Meter Acidity Test Kit | EPA 150.1 (pH) |
| | | | | | SM 2310B (Acidity) |
| | | | | | EPA 300.0 (Anion) |
| | Bleaches | No | Residual Chlorine | Chlorine | SM 4500-CL G (Res. Chlorine) |
| | Detergents | Yes - Foam | Visually Observable - No Testing Required | | |
| | TSP | No | <i>Phosphate</i> | Phosphate | EPA 365.3 (Phosphate) |
| | Solvents | No | VOC | None | EPA 601/602 or EPA 624 (VOC) |
| SVOC | | | None | EPA 625 (SVOC) | |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|---|--|----------------------|---|---|---|
| Portland Concrete Cement & Masonry Products | Portland Cement (PCC) | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Masonry products | No | pH | pH Meter Alkalinity or Acidity Test Kit | EPA 150.1 (pH) |
| | | | Alkalinity | | SM 2320 (Alkalinity) |
| | Sealant (Methyl Methacrylate - MMA) | No | Methyl Methacrylate | None | EPA 625 (SVOC) |
| | | | Cobalt | | EPA 200.8 (Metal) |
| | | | Zinc | | |
| | Incinerator Bottom Ash Bottom Ash Steel Slag Foundry Sand Fly Ash Municipal Solid Waste | No | Aluminum Calcium Vanadium Zinc | Calcium Test | EPA 200.8 (Metal) EPA 200.7 (Calcium) |
| | Mortar | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Concrete Rinse Water | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Non-Pigmented Curing Compounds | No | Acidity | pH Meter Alkalinity or Acidity Test Kit | SM 2310B (Acidity) |
| | | | Alkalinity | | SM 2320 (Alkalinity) |
| pH | | | EPA 150.1 (pH) | | |
| VOC | | | EPA 601/602 or EPA 624 (VOC) | | |
| SVOC | | | EPA 625 (SVOC) | | |
| Aluminum Sulfate | No | Aluminum | TDS Meter | EPA 200.8 (Metal) | |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory | |
|-------------------|---|--------------------------------|---|---------------------------------------|---|--|
| | | | TDS | Sulfate | EPA 160.1 (TDS) | |
| | | | Sulfate | | EPA 300.0 (Sulfate) | |
| | Sulfur-Elemental | No | Sulfate | Sulfate | EPA 300.0 (Sulfate) | |
| | Fertilizers-Inorganic ⁴ | No | Nitrate | Nitrate | EPA 300.0 (Nitrate) | |
| | | | Phosphate | Phosphate | EPA 365.3 (Phosphate) | |
| | | | Organic Nitrogen | None | EPA 351.3 (TKN) | |
| | | | Potassium | None | EPA 200.8 (Metal) | |
| | Fertilizers-Organic | No | TOC | Nitrate | EPA 415.1 (TOC) | |
| | | | Nitrate | | EPA 300.0 (Nitrate) | |
| | | | Organic Nitrogen | | EPA 351.3 (TKN) | |
| | | | COD | | EPA 410.4 (COD) | |
| | Natural Earth (Sand, Gravel, and Topsoil) | Yes - Cloudiness and turbidity | Visually Observable - No Testing Required | | | |
| | Herbicide | No | Herbicide | None | Check lab for specific herbicide or pesticide | |
| | Pesticide | | Pesticide | | | |
| Lime | Alkalinity | | pH Meter Alkalinity or Acidity Test Kit | SM 2320 (Alkalinity) | | |
| | pH | | | EPA 150.1 (pH) | | |
| Painting Products | Paint | Yes | Visually Observable - No Testing Required | | | |
| | Paint Strippers | No | VOC | None | EPA 601/602 or EPA 624 (VOC) | |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|--------------------------------|--|--------------------------------------|---|---|------------------------------|
| | Resins | No | SVOC | None | EPA 625 (SVOC) |
| | | | COD | None | EPA 410.4 (COD) |
| | Sealants | No | SVOC | | None |
| | Solvents | No | COD | None | EPA 410.4 (COD) |
| | | | VOC | | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | | EPA 625 (SVOC) |
| | Lacquers, Varnish, Enamels, and Turpentine | No | COD | None | EPA 410.4 (COD) |
| | | | VOC | | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | | EPA 625 (SVOC) |
| | Thinners | No | VOC | None | EPA 601/602 or EPA 624 (VOC) |
| | | | COD | | EPA 410.4 (COD) |
| | Portable Toilet Waste Products | Portable Toilet Waste | Yes | Visually Observable - No Testing Required | |
| Contaminated Soil ⁵ | Aerially Deposited Lead ³ | No | <i>Lead</i> | None | EPA 200.8 (Metal) |
| | Petroleum | Yes – Rainbow Surface Sheen and Odor | Visually Observable - No Testing Required | | |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|--------------------------|--|--------------------------------------|---|---|------------------------------|
| | Other | No | Contaminant Specific | Contaminant Specific | Contaminant Specific |
| Line Flushing Products | Chlorinated Water | No | Total chlorine | Chlorine | SM 4500-CL G (Res. Chlorine) |
| Adhesives | Adhesives | No | COD | None | EPA 410.4 (COD) |
| | | | Phenols | Phenol | EPA 420.1 (Phenol) |
| | | | SVOC | None | EPA 625 (SVOC) |
| Dust Palliative Products | Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines) | No | Chloride | Chloride | EPA 300.0 (Chloride) |
| | | | TDS | TDS Meter | EPA 160.1 (TDS) |
| | | | Cations (Sodium, Magnesium, Calcium) | None | EPA 200.7 (Cations) |
| Vehicle | Antifreeze and Other Vehicle Fluids | Yes - Colored Liquid | Visually Observable - No Testing Required | | |
| | Batteries | No | Sulfuric Acid | None | EPA 300.0 (Sulfate) |
| | | | Lead | None | EPA 200.8 (Metal) |
| | | | pH | pH Meter Alkalinity or Acidity Test Kit | EPA 150.1 (pH) |
| | Fuels, Oils, Lubricants | Yes - Rainbow Surface Sheen and Odor | Visually Observable - No Testing Required | | |
| Soil Amendment/Stabili | Polymer/Copolymer ^{6, 7} | No | Organic Nitrogen | None | EPA 351.3 (TKN) |
| | | | BOD | None | EPA 405.1 (BOD) |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|-----------------------|--|----------------------|---|---|------------------------|
| zation Products | | | COD | None | EPA 410.4 (COD) |
| | | | DOC | None | EPA 415.1 (DOC) |
| | | | Nitrate | Nitrate | EPA 300.0 (Nitrate) |
| | | | Sulfate | Sulfate | EPA 300.0 (Sulfate) |
| | | | Nickel | None | EPA 200.8 (Metal) |
| | Straw/Mulch | Yes - Solids | Visually Observable - No Testing Required | | |
| | Lignin Sulfonate | No | Alkalinity | Alkalinity | SM 2320 (Alkalinity) |
| | | | TDS | TDS Meter | EPA 160.1 (TDS) |
| | Psyllium | No | COD | None | EPA 410.4 (COD) |
| | | | TOC | | EPA 415.1 (TOC) |
| | Guar/Plant Gums | No | COD | None | EPA 410.4 (COD) |
| | | | TOC | | EPA 415.1 (TOC) |
| | | | Nickel | | EPA 200.8 (Metal) |
| | Gypsum | No | pH | pH Meter Alkalinity or Acidity Test Kit | EPA 150.1 (pH) |
| | | | Calcium | Calcium | EPA 200.7 (Calcium) |
| | | | Sulfate | Sulfate | EPA 300.0 (Sulfate) |
| | | | Aluminum | None | EPA 200.8 (Metal) |
| | | | Barium | | |
| | | | Manganese | | |
| | | | Vanadium | | |
| Treated Wood Products | Ammoniacal-Copper-Zinc-Arsenate (ACZA) | No | Arsenic | Total Chromium | EPA 200.8 (Metal) |
| | | | Total Chromium | | |

Attachment S
Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|----------|----------------------------------|---|---|---------------------------------------|------------|
| | Copper-Chromium-Arsenic (CCA) | | Copper | | |
| | Ammoniacal-Copper-Arsenate (ACA) | | Zinc | | |
| | Copper Naphthenate | | | | |
| | Creosote | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | |

Notes:

1. 1 If specific pollutant is known, analyze only for that specific pollutant. See MSDS to verify.
2. For each construction material, test for one of the pollutant indicators. Bolded pollutant indicates lowest analysis cost or best indicator. However, the composition of the specific construction material, if known, is the first criterion for selecting which analysis to use.
3. See www.hach.com, www.lamotte.com, www.yei.com and www.chemetrics.com for some of the test kits
4. If the type of inorganic fertilizer is unknown, analyze for all pollutant indicators listed.
5. Only if special handling requirements are required in the contract documents for aerially deposited lead (ADL)
6. If used with a dye or fiber matrix, it is considered visually observable and no testing is required.
7. Based upon research conducted by the State of California Department of Transportation (Caltrans), the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is **not** required: Super Tak™, M-Binder™, Fish Stik™, Pro40dc™, Fisch-Bond™, and Soil Master WR™.



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *SAN JOAQUIN SOLAR UNITS 1 AND 2*
*LICENSING PROJECT***

**Docket No. 08-AFC-12

PROOF OF SERVICE
(Revised 7/23/2009)**

APPLICANT

Kent Larson
Project Manager
12555 High Bluff Drive
San Diego, CA 92130
kent.larsen@spinnakerenergy.net

Doug Wert, Chief Operating Officer
Martifer Renewables Solar Thermal
12555 High Bluff Drive, Suite 100
San Diego, CA 92130
Doug.wert@spinnakerenergy.net

APPLICANT'S CONSULTANTS

Anne Runnalls
URS
1615 Murray Canyon Road
Suite 1000
San Diego, CA 92108
anne_runnalls@urscorp.com

COUNSEL FOR APPLICANT

Christopher T. Ellison
Ellison, Schneider & Harris L.L.P.
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816-5905
cte@eslawfirm.com

Robert Joyce, Corporate Counsel
Joyce Law Group
7848 Ivanhoe Avenue
La Jolla, Ca 92037
E-mail Preferred
Robert_joyce@joycelawgroup.net

INTERESTED AGENCIES

California ISO
E-mail Preferred
e-recipient@caiso.com

INTERVENORS

**California Unions for Reliable Energy
(CURE)**
Elizabeth Klebaner
Tanya A. Gulesserian
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, # 1000
South San Francisco, CA 94080
E-mail Preferred
eklebaner@adamsbroadwell.com
tgulesserian@adamsbroadwell.com

ENERGY COMMISSION

JULIA LEVIN
Commissioner and
Presiding Member
jlevin@energy.state.ca.us

JAMES D. BOYD
Vice Chairman and
Associate Member
jboyd@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

Joseph Douglas
Project Manager
jdouglas@energy.state.ca.us

Lisa DeCarlo
Staff Counsel
ldecarlo@energy.state.ca.us

Robin Mayer
Staff Counsel
rmayer@energy.state.ca.us

Elena Miller
Public Adviser
publicadviser@energy.state.ca.us

Declaration of Service

I, Anne Runnalls, declare that on August 21, 2009, I served and filed copies of the attached Data Request Workshop Action Items Update. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [\[http://www.energy.ca.gov/sitingcases/sjsolar/index.html\]](http://www.energy.ca.gov/sitingcases/sjsolar/index.html). The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

For service to all other parties:

sent electronically to all email addresses on the Proof of Service list;

by personal delivery or by depositing in the United States mail at _____ with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-12

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.



Anne Runnalls