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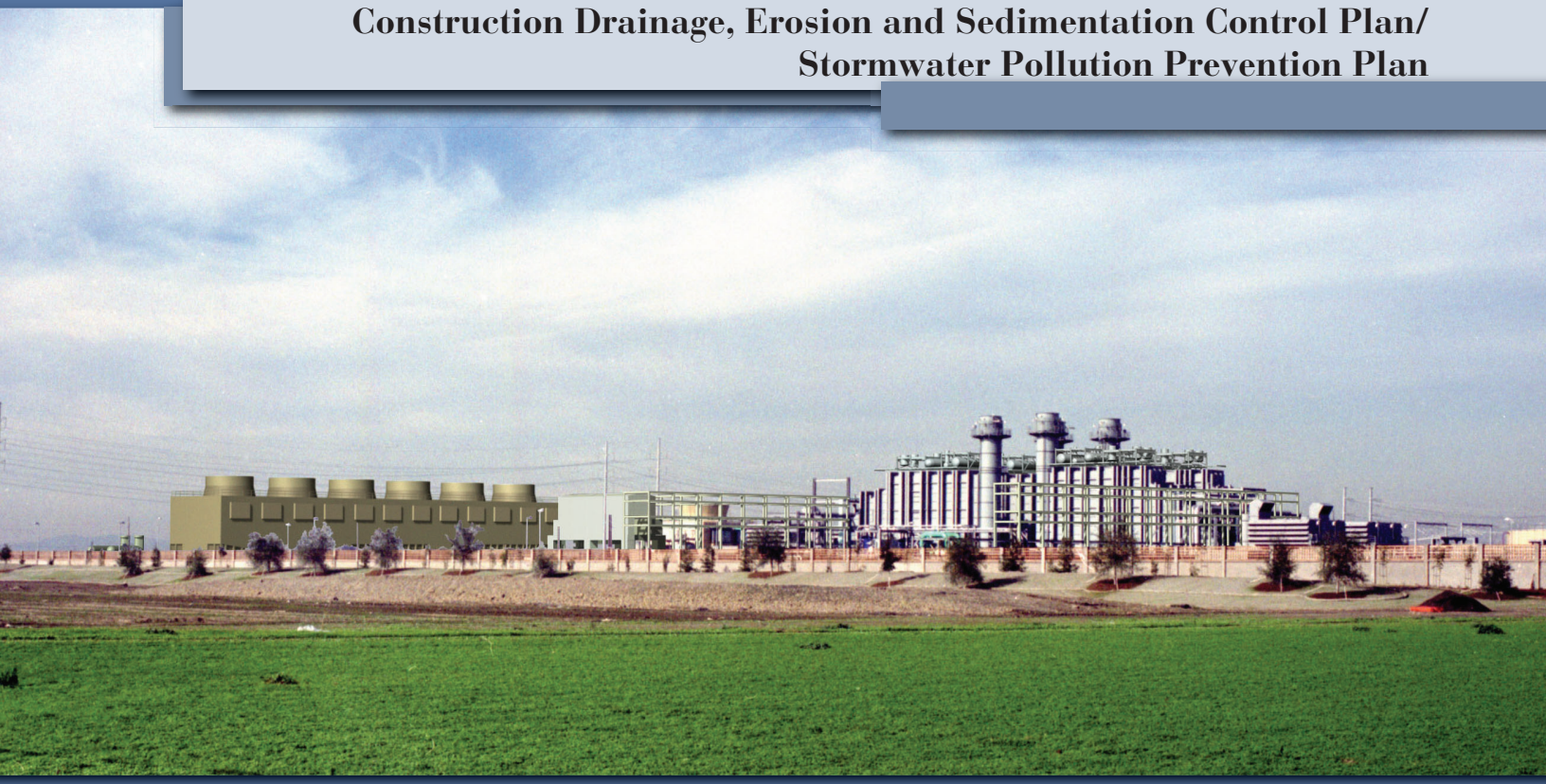
LOS ESTEROS CRITICAL ENERGY FACILITY: PHASE 2

Condition of Certification CIVIL-1, SOIL&WATER-1 AND SOIL&WATER-2 Construction Drainage, Erosion and Sedimentation Control Plan/ Stormwater Pollution Prevention Plan



February 2011

Prepared by

CH2MHILL®

Construction Drainage, Erosion and Sedimentation Control Plan / Stormwater Pollution Prevention Plan for the Los Esteros Critical Energy Facility: Phase 2

Prepared for

Los Esteros Critical Energy Facility, LLC

February 2011

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Redding, CA 96001

Construction Drainage, Erosion, and Sedimentation Control Plan/ Stormwater Pollution Prevention Plan

Project:
Los Esteros Critical Energy Facility: Phase 2

Project Site Location:
800 Thomas Foon Chew Way, San Jose, Santa Clara County, California

Construction Contractor:
To be determined

Construction Contractor's Qualified SWPPP Practitioner
To be determined

Construction SWPPP Prepared by:
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Construction SWPPP Preparation Date:
February 2011

Estimated Project Dates:
Start of Construction: 06/01/2011
Completion of Construction: 06/01/2013

WDID No.: To be determined

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Acronyms and Abbreviations

BAT	best available technology
BCT	best conventional technology
BMP	best management practice
CASQA	California Stormwater Quality Association
CDFG	California Department of Fish and Game
CEC	California Energy Commission
COC	chain-of-custody
CSMP	Construction Site Monitoring Program
DESCP	Drainage, Erosion, and Sedimentation Control Plan
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
General Permit	State Water Resources Control Board Order No. 2009-0009-DWQ National Pollutant Discharge Elimination System General Permit No. CAS000002 Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities
kV	kilovolt
LECEF	Los Esteros Critical Energy Facility II
LRP	Legally Responsible Person
MSDS	material safety data sheet
MW	megawatt
NAL	Numeric Action Level
NEL	Numeric Effluent Limitations
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OES	Office of Emergency Services

PCC	Portland cement concrete
PRD	Permit Registration Document
QA/QC	quality assurance/quality control
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
REAP	Rain Event Action Plan
RUSLE2	Revised Universal Soil Loss Equation
RWQCB	Regional Water Quality Control Board
RUSLE2	Revised Universal Soil Loss Equation
SMARTS	Stormwater Multi Application and Report Tracking System
SVP	Silicon Valley Power
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TBD	To be determined
TSP	total suspended particulate
USFWS	U.S. Fish and Wildlife Service
WDID	Waste Discharge Identification
WPCD	Water Pollution Control Drawing
yd^3	cubic yards

SECTION 1

SWPPP Certifications

1.1 SWPPP Certification by Qualified SWPPP Developer

Project Name: Los Esteros Critical Energy Facility II: Phase 2

Qualified Stormwater Pollution Prevention Plan Developer (QSD) Name: Mieke Sheffield

Telephone: (530)229-3349

Qualifying Professional Registration: CPSWQ #520

Date of SWPPP Preparation: February 2011

"I certify that this document and all attachments were prepared under my guidance, direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed Name of QSD: *Mieke Sheffield*

Signature: M. Sheffield

SECTION 2

Introduction

2.1 Introduction

This Construction Drainage, Erosion, and Sedimentation Control Plan/Stormwater Pollution Prevention Plan (DESCP/SWPPP) for the Los Esteros Critical Energy Facility, LLC (Project Owner) Los Esteros Critical Energy Facility (LECEF): Phase 2 (project) has been prepared to comply with the October 2006 California Energy Commission (CEC) Decision in 03-AFC-2 (CEC Decision) Condition of Certifications CIVIL-1, Soil and Water-1 and Soil and Water-2 and the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ (General Permit). A copy of the General Permit is located in Attachment A. A copy of the DESCP/SWPPP and the General Permit will be kept onsite for the duration of the project.

The DESCP/SWPPP was developed by, and will be amended or revised by a QSD, as defined under Section VII of the General Permit.

The DESCP/SWPPP was designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled.
2. Where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and either are eliminated, controlled, or treated.
3. Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard.
4. Calculations and design details as well as BMP controls for site run-on are complete and correct.
5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.
6. Post-construction BMPs as defined by General Permit Section XII are identified.
7. Methods to implement BMP inspection, visual monitoring, Rain Event Action Plan (REAP), and Construction Site Monitoring Program (CSMP) requirements are identified.

As required by the CEC, the following elements are included to demonstrate that construction activities associated with the project will not result in an increase in offsite

flooding potential or sedimentation and that the project will meet all local, state, and federal regulatory requirements associated with the protection of water quality and soil resources:

- A vicinity map showing the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas
- A detailed site delineation that includes the boundary lines of all areas subject to disturbance and the location of existing and project structures, pipelines, roads, and drainage facilities
- A description of watercourses and critical areas
- Site maps showing existing site drainage, interim and project drainage systems to protect the site and downstream facilities, and drainage area boundaries
- A narrative of the project site drainage including appropriate measures to be taken to protect the site and downstream facilities
- Clearing and grading plans including delineation of all areas to be cleared of vegetation and areas to be preserved, including contours and cross sections, elevations, slopes, locations, and the extent of all project grading
- The location of BMPs to be implemented during construction
- BMP Implementation Schedule

The DESCP/SWPPP applies to all areas that are directly related to the construction activity, including, but not limited to, staging areas, storage yards, and access roads. The DESCP/SWPPP will be implemented year-round throughout the duration of the construction project.

2.2 Permit Registration Documents

Permit Registration Documents (PRDs) were submitted electronically to SWRCB's Stormwater Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP) on February 28, 2011.

Copies of the following PRDs are included as Attachment B:

1. Waste Discharge Identification (WDID) confirmation
2. Notice of Intent (NOI)
3. Risk Assessment (Construction Site Sediment and Receiving Water Risk Determination)
4. Site Map
5. Annual Fee
6. Signed Certification Statement

2.3 DESCP/SWPPP Availability and Implementation

As required by Section XIV.C of the General Permit, the DESCP/SWPPP will be available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original

DESCP/SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original DESCP/SWPPP shall be made available via a request by radio/telephone. The DESCP/SWPPP shall be implemented concurrently with the start of ground-disturbing activities.

2.4 DESCP/SWPPP Amendments

This DESCP/SWPPP shall be amended:

- Whenever there is a change in construction or operations that may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system
- If any condition of the General Permit is violated or the general objective of reducing or eliminating pollutants in stormwater discharges has not been achieved
- Annually, prior to the defined rainy season, as needed
- When deemed necessary by the LRP

As required by Section XIV.A of the General Permit, the DESCP/SWPPP will be amended or revised by a QSD; the DESCP/SWPPP will include a listing of the date of initial preparation and the date of each amendment. Amendments will be signed by a QSD (General Permit Section VII.B.6). An amendment log will be kept throughout the duration of the project in Attachment C.

2.5 Retention of Records

As required by Sections I.J.69 and IV.G of the General Permit, a paper or electronic copy of all required records will be maintained for 3 years from the date generated or date submitted, whichever is last. These records will be available at the construction site until construction is completed. The Project Owner will furnish the RWQCB, SWRCB, or U.S. Environmental Protection Agency (EPA), within a reasonable time, any requested information to determine compliance with this General Permit.

Required records will be maintained at the facility.

2.6 Required Non-compliance Reporting

The Project Owner will properly document reportable discharges or other violations of the General Permit. Exceedances and violations will be reported using the SMARTS system and include the following:

- Self-reporting of any discharge violations or to comply with RWQCB enforcement actions
- Discharges that contain a hazardous substance in excess of reportable quantities established in 40 CFR 117.3 and 40 CFR 302.4, unless a separate NPDES Permit has been issued to regulate those discharges

Documentation of all reportable exceedances and other non-compliance events will be kept in Attachment D.

2.7 Annual Report

An Annual Report will be prepared, certified, and electronically submitted to SMARTS by the Project Owner no later than September 1 of each year. Reporting requirements are identified in Section XVI of the General Permit and include (but are not limited to) providing a summary of:

1. Sampling and analysis results including laboratory reports, analytical methods and reporting limits and chain of custody forms
2. Corrective actions and compliance activities, including those not implemented
3. Violations of the General Permit
4. Date, time, place, and name(s) of the inspector(s) for all sampling, inspections, and field measurement activities
5. Visual observation and sample collection exception records
6. Training documentation of all personnel responsible for General Permit compliance activities

2.8 Changes to Permit Coverage

The General Permit (Section II.C) allows a permittee to reduce or increase the total acreage covered under the General Permit when a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is sold to a different entity; or when new acreage is added to the project.

To change the acreage covered, the Project Owner will electronically file modifications to PRDs [revised NOI, site map, DESCP/SWPPP revisions as appropriate, and certification that new landowners have been notified of applicable requirements to obtain permit coverage (including name, address, phone number, and e-mail address of new landowner)] in accordance with requirements of the General Permit within 30 days of a reduction or increase in total disturbed area.

Any updates to PRDs submitted via SMARTS will be included in Attachment E of the DESCP/SWPPP. In addition, any related DESCP/SWPPP revisions /amendments (General Permit SectionII.C.2) will be documented in Attachment C.

2.9 Notice of Termination

To terminate coverage under the General Permit, a Notice of Termination (NOT), a “final site map,” and photos will be submitted electronically via SMARTS. Filing the NOT will certify that all General Permit requirements have been met.

The NOT will be submitted when the construction project is complete and within 90 days of meeting all General Permit requirements for termination and final stabilization (General Permit Section II.D) including:

- The site will not pose any additional sediment discharge risk than it did prior to construction activity.
- All construction related equipment, materials, and any temporary BMPs no longer needed are removed from the site.
- Post-construction stormwater management measures are installed and a long-term maintenance plan that is designed to address a time span that is a minimum of 5 years has been developed.

The NOT will demonstrate through photos, Revised Universal Soil Loss Equation (RUSLE) results, or results of testing and analysis that the project meets all of the requirements of Section II.D.1 of the General Permit by one of the following methods:

- 70 percent final cover method (no computational proof required)
- RUSLE/RUSLE2 method (computational proof required)
- Custom method (discharger demonstrates that site complies with final stabilization)

SECTION 3

Project Description

The LECEF Phase 1 project is an existing simple-cycle, natural-gas-fired power plant located at 800 Thomas Foon Chew Way in San Jose, Santa Clara County, California (Figures 1 and 2; all figures are included in Attachment F). As originally planned, there are two phases to convert the LECEF to a 320-megawatt (MW) combined-cycle operation. Phase 1 was constructed and became fully operational in March 2003.

Phase 2 (project) includes conversion of the existing LECEF Phase 1 project to a combined-cycle facility through the addition of a HRSG and associated evaporator drums and piping, HRSG duct burners, a nominal 140-MW steam turbine generator, a six-cell cooling tower, ancillary equipment, and a 230-kilovolt (kV) transmission interconnection with PG&E's substation (Figure 3).

The LECEF (both Phase 1 and Phase 2) is located within a 21-acre project site. The project site is contained within a 34-acre project parcel that also includes a vacant 13-acre parcel (construction laydown area) to the south of the project site that will be used for laydown and worker parking during the construction of Phase 2. The Project Owner constructed Phase 1 of LECEF on a 55-acre parcel of agricultural land. The power plant site required 21 acres to accommodate the generation facilities, including the storage tank areas, parking area, control/administration building, water treatment building, switchyard, emission control equipment, and generation equipment. Additional construction under Phase 2 will affect approximately 0.5 acre of the 21-acre site by adding equipment and support structures to the already constructed Phase 1 portion of the project. This SWPPP will cover the affected 1.0 acre on the existing LECEF site and the 13 acres of construction laydown located south of the existing facility.

The project parcel is immediately north of State Route 237 and east of Zanker Road. The project site is accessed via a permanent 2,700-foot-long, 2-lane road (Thomas Foon Chew Way). Primary access for Phase 2 will be provided by Thomas Foon Chew Way from Zanker Road. Emergency access is provided by the roadway constructed between Thomas Foon Chew Way and Alviso-Milpitas Road. Most of the LECEF site is paved or covered with gravel to provide internal access to all onsite equipment and buildings.

The operation of the Phase 1 LECEF site falls under an existing industrial SWPPP. Once Phase 1 and Phase 2 are both in operation, the existing industrial SWPPP will be updated and submitted in accordance with the provisions of CEC Decision Condition of Certification Soil & Water 3. A copy of the industrial SWPPP currently in place for the Phase 1 portion of the LECEF plant is provided as Attachment R.

3.1 Implementation Schedule

The phases of the LECEF Phase 2 construction as they pertain to storm water management are as follows:

- **Preparation –** Parking areas for construction workers and laydown areas for construction materials will be prepared. Straw wattles will be placed around the LECEF perimeter where no permanent drainage infrastructure already exists. All debris on the project site was previously removed and disposed of properly.
- **Site Grading –** Gradual slopes have already been established across the project area within the site perimeter during Phase 1. Straw wattles, or other temporary berm measure, will direct drainage toward constructed temporary and/or existing swales.
- **Foundation/Concrete Work –** All underground piping and wiring will be installed, followed by installation of the foundation for the new cooling tower and steam turbine generator structures. Sheet flow utilizing a combination of the storm water drains and underground conveyance piping constructed during Phase 1, augmented as needed by straw wattles and temporary swales will serve as the means of controlling storm water sediment transport.
- **Plant Construction/Mechanical Work –** The Phase 2 installation will be tied into storm water ditches and storm drains constructed around the perimeter of the site during Phase 1. Storm water from the lift station will be pumped to a new gravity outfall into the Coyote Creek low-flow channel.
- **Site Stabilization –** Permanent storm water management devices will replace any temporary items. Site re-seeding and re-landscaping will be conducted if needed.
- **Demobilization –** All temporary construction facilities will be removed. Stormwater will continue to be directed as before.

3.2 Unique Site Features

Most of the precipitation in the San Jose area falls in the November through April period. This is also characteristic of the project site. Monthly average rainfall near the project site is presented in Table 1. The total annual average rainfall is 14.42 inches.

TABLE 1
Average Monthly Rainfall near the Proposed Project Site (San Jose), 1950–1998

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Rainfall (in.)	2.78	2.16	2.58	1.17	0.26	0.05	0.06	0.12	0.24	0.9	2.11	1.99

3.2.1 Surface Waters

No waterways are present within the boundaries of the project site. Coyote Creek and the Coyote Creek bypass channel are located approximately 700 to 1,000 feet to the east of the LECEF site. Proximity of watercourses is shown in Figure 3.

3.2.2 Groundwater

The project site is situated within the Santa Clara Valley Groundwater Basin. Regional groundwater flow is northeast, toward San Francisco Bay.

The project site is characterized by a relatively high groundwater table at depths on the order of 5 to 7 feet below ground surface. Shallow groundwater at the site flows toward Coyote Creek.

3.2.3 Other Critical Areas

The LECEF Phase 2 project site is enclosed by 8-foot-tall walls and has been developed into the currently operational power plant. Inside the walls are the power plant equipment and related facilities. The entire area inside of the walls is covered either by equipment, buildings, pavement, or gravel. The only vegetation onsite includes alkali-mallow *(Malvella leprosa)* and bindweed *(Convolvulus* sp.) that grows between cracks in the graveled areas.

The project site does not afford habitat for sensitive plants or wildlife and no special status plant or wildlife species were observed during surveys. No wetlands occur on the LECEF project site. All new construction associated with the Phase 2 conversion to combined-cycle will occur at the LECEF project site within the facility fenceline. Construction will not cause any significant impacts to biological resources because no significant biological resources exist within the construction area of potential effects.

The 13-acre parcel construction laydown area will be grubbed.

3.3 Soils

The soil types within the project area are the Mocho clay loam (Mi), Mocho loam over Campbell- and Cropley-like soils (Mo), and Mocho loam (Mq) (Figure 4). A detailed description of the soils is provided in Table 2.

Due to the developed nature of the project site, it is possible that soil conditions could vary from those shown in the NRCS soil survey. Industrial development often entails significant mixing of local soils from grading and the import of construction fill soils beneath foundations and roadways. These imported soils would have to be suitable for engineered structures and roadways and would be expected to consist of well-graded materials containing a mix of particle sizes (ranging from silt to gravel and not anticipated to be smaller than 0.02 millimeters in size).

3.3.1 Historic Use

The LECEF site was previously developed as an orchard with at least one residence. The orchard was removed by 1980, after which additional residential structures and several plant nursery complexes were constructed.

Analysis of soil samples collected at the LECEF site measured elevated levels of residual pesticides, including total dichlorodiphenyltrichloroethane, dieldrin, endrin, lead, and arsenic. At the concentrations found, the residual pesticides on the project site are not a significant threat to human health in an industrial setting, if the soil remains in place.

During construction activities, however, workers could be exposed to pesticide residues or other contamination during excavation and grading activities. Where, as part of the construction process, onsite soil is removed from the site, additional characterization will be required prior to transport as discussed in the Soil Management Plan provided as COC WASTE-6.

Soils in the adjoining areas are not expected to be contaminated (for example, by past spills, leaks, or non-stormwater discharges).

3.4 Drainage

3.4.1 Pre-construction and Construction

The LECEF site is graded so that uncontained spills and releases, and stormwater are directed toward a collection sump near the northeast property border. Stormwater is then pumped via a pipeline to Coyote Creek (Figure 3). Surface areas of the facility upgradient to the discharge point are paved, gravel protected, or vegetated. Paved areas are equipped with curbs, berms, grass lined ditches, and swales that direct water south toward the collection sump. The grass lined ditches are periodically cleaned and inspected by LECEF staff for signs of contamination. Two 10-foot stormwater collection sumps collect the stormwater prior to discharge, where it can be sampled and visually inspected for signs of contamination. If there are no signs of contamination in the stormwater, the sump pumps can be turned on and the stormwater can discharge to Coyote Creek. If there is a spill, release, or sheen, the system will remain off and the stormwater will be pumped to an onsite oil/water separator or transported off-site by a licensed hauler for appropriate disposal. From the oil/water separator, the treated water is discharged to the San Jose/Santa Clara Water Pollution Control Plant via the sanitary sewer.

The construction laydown area drains overland to ditches along Zanker Road. These ditches discharge to the Water Pollution Control Plant drainage culverts near the sludge ponds, which ultimately discharge to Artesian Slough north of Los Esteros Road. Flows from Artesian Slough discharge to Coyote Creek near the Alameda County-Santa Clara County line.

3.4.2 Post-construction

Stormwater from the combined Phase 1 and Phase 2 LECEF site will continue to be discharged via the stormwater drain that connects to the existing 24-inch-diameter outfall located east of the site at the flood control channel adjacent to Coyote Creek.

Attachment G is a stormwater runoff analysis that addresses the potential for the project to increase stormwater runoff from Phase 2 LECEF by covering previously permeable areas with impermeable surfaces (cooling tower foundation, STG foundation, etc.). This analysis shows that the project will convert 31,900 square feet of gravel surface to concrete surface. Much of this area (62 percent), however, will contain the stormwater, rather than allowing it to run off. Because of this containment, stormwater runoff after Phase 2 installation is actually less than before. A stormwater drainage diagram is included as Figure 5.

After construction is completed, the construction laydown area will be restored to pre-construction drainage patterns.

TABLE 2
Soil Mapping Units Description and Properties[a]

Map Symbol	Soil Series	Texture	Slope (%)	Depth to Bedrock (ft)[b]	Drainage	Permeability (in/hr)[c]	Erodibility factor - K (tons/ac)	Erosion Hazard	Surface runoff rate	Revegetation Potential[d]	Storie Index	Land Capability[e]	Parent material	Prime Ag Land?
Mi	Mocho	Clay loam	0-1	ND	Well drained	Surface soil-moderate; subsoil-slow	0.15	Slight	Very slow	Free of alkali-very good; slight alkali-good; moderate alkali-fair; strong alkali-poor	Free of alkali-69; slight alkali-48; moderate alkali-28; strong alkali-7	IIw-2, IIs-7, IIs-7, or VIIw-7	Recent medium-textured alluvium from sedimentary rocks	Y
Mo	Mocho over Campbell or Cropley	Loam over clay loam	1-3	ND	Well drained	Surface soil-moderate; subsoil-moderate to slow	0.15	Slight	Slow	Very good	90	I	Recent medium-textured alluvium from sedimentary rocks	Y
Mq	Mocho	Loam	1-3	ND	Well drained	Surface soil-moderate; subsoil-moderate	0.15	Slight	Slow	Free of alkali-good; slight alkali-good	Free of alkali-100; slight alkali-90	I or IIs-7	Recent medium-textured alluvium from sedimentary rocks	Y

[a] All data, except revegetation potential obtained from NRCS publications and reports; ND = no data available.

[b] shallow soil over bedrock may limit normal excavation and trenching operations.

[c] Permeability ratings (units in inches per hour):

Very slow = < 0.06
Slow = 0.06 to 0.20
Moderately slow = 0.20 to 0.60
Moderate = 0.60 to 2.00
Moderately rapid = 2.00 to 6.00
Rapid = 6.00 to 20.00
Very rapid = > 20.00.

[d] Based on suitability for non-irrigated rangeland.

[e] Land capability class designations:

I = arable land with few or no limitations to productivity
II = arable land with limitations such as drainage, salinity, structure or slope
III = severely limited arable land with restricted range of suitable crops
IV = very severe limitations requiring careful management and plant selection
V = no erosion hazard but only suitable for pasture, range, woodland, or wildlife
VI = suitable for pasture, range, woodland, or wildlife, but severe problems with slope or soil
VII = similar to Class VI, but very severe limitations, some of which are uncorrectable
VIII = only suitable for wildlife or recreation.

Land capability subclass designations:

e = risk of erosion
w = wetness, drainage, or flooding problems
s = rooting zone limitations
c = climatic limitations

3.5 Clearing and Grading Narrative

Clearing and grading activities are anticipated to be minor. The LECEF project site is covered either by equipment, buildings, pavement, or gravel. Only approximately 0.5 acre of land associated with the plant site and other facilities will be disturbed. The construction laydown area is regularly disked.

Table 3, outlining the amount of cut and fill (if any) planned for specific components of the project, will be updated by the construction contractor when selected.

TABLE 3
Clearing and Grading **– TBD**

Description	Total Cut (yd^3)	Total Fill (yd^3)
Total		

yd^3 = cubic yards

3.5.1 Construction Laydown Area

The 13-acre construction laydown area will be used for worker parking. Any grubbing of this area is anticipated to be minor prior to it being covered with geotextile material and being graveled with rock to allow for wet season use and further minimize soil erosion potential. Construction materials and equipment will be stored inside the existing plant fenceline.

3.6 Stormwater Run-on from Offsite Areas

Stormwater run-on to the LECEF site is addressed by the existing onsite stormwater management system and shall collectively be in compliance with the effluent limitations in the General Permit.

Run-on to the construction laydown area is anticipated to be minor and will be addressed as needed with applicable BMPs.

3.7 Findings of the Construction Site Sediment and Receiving Water Risk Determination

3.7.1 Sediment Risk

The Individual Method was used to determine the project's Sediment Risk (refer to Attachment H).

The rate of sheet and rill erosion is 5.44 and 4.12 tons/acre, which is considered a low sediment risk.

3.7.2 Receiving Water Risk

The List of Sediment Sensitive Watersheds was used to determine the project's Receiving Water Risk.

Table 4 lists the pollutants for which Coyote Creek does not meet water quality objectives and proposed TMDL completion date.

TABLE 4
Clean Water Act Section 303(d) List of Water Quality Impairments—Coyote Creek

Pollutant/Stressor	Potential Sources	Proposed TMDL Completion
Diazinon	Urban Runoff/Storm Sewers	2007

Within the area of influence of the project area, Coyote Creek is not listed as impaired by sediment, nor does it have an applicable EPA-approved TMDL implementation plan for sediment.

Coyote Creek has the designated beneficial uses of SPAWN & COLD & MIGRATORY (LECEF, 2003), which is considered a high receiving water risk for discharge off the project site.

3.7.3 Site Risk Level

The Site Sediment Risk Factor is low.

The Receiving Water Risk is high.

The Site Risk Level is 2. The DESCP/SWPPP has been prepared to comply with Risk Level 2 – Attachment D of the General Permit.

3.8 Construction Schedule

Construction of the project is scheduled to last 24 months. A more detailed construction schedule that includes the phases of construction and associated BMP implementation will be included by the construction contractor in Attachment I. Major project milestones are listed in Table 5.

TABLE 5
Project Schedule Major Milestones

Activity	Date
Rainy season	October 15–April 15
Begin construction	May 16, 2011
End construction	June 1, 2013
Mobilization	May 16, 2011
Delineate and mark the boundaries of the construction zone	Prior to construction
Implement perimeter erosion and sediment controls; protect interior and down gradient inlets, waterways, and sensitive areas	Prior to construction
Stabilize construction entrance/exit and roadway (BMP TC-1 and BMP TC-2)	Prior to construction
Establish parking and staging areas for vehicle and equipment storage, maintenance, and fueling in accordance with BMPs NS-8, NS-9, and NS-10	Prior to construction
Establish laydown and parking area(s) for materials storage/staging in accordance with BMPs WM-1 through WM-6	Prior to construction
Establish concrete washout area in accordance with BMPs WM-8, NS-12, and NS-13	Prior to construction
Completion of construction	June 1, 2013
All Phases	
Inspect and maintain BMPs	All phases continuously
Store additional soil stabilization and sediment control products onsite	All phases continuously

3.9 Potential Construction Site Pollutant Sources

Following is a list of construction materials that will be used, or expected to be used, and activities to be performed that have potential to contribute pollutants other than sediment to stormwater runoff. These pollutants and potential pathways were considered when developing BMPs in accordance with General Permit requirements to reduce or prevent pollutants in discharges. The list will be reviewed by the construction contractor, once selected, and will be revised as necessary when the final construction materials inventory for the site has been developed.

Materials:

- Vehicle fluids, including oil, grease, petroleum, and coolants
- Asphaltic emulsions
- Cement materials
- Base and sub-base material
- Joint and curing compounds
- Concrete curing compounds
- Paints
- Mortar mix

- Solvents, thinners, acids
- Raw landscaping materials and wastes
- BMP materials
- Treated lumber (materials and waste)
- Adhesives
- Portland cement concrete (PCC), masonry rubble
- General litter

Activities:

- The storage, transport, and/or use of materials listed above
- Clear and grub operations
- Grading operations
- Trenching operations
- Paving operations
- Delivery/transportation operations
- Utility excavation and installation operations
- Foundation/structure construction operations
- Vehicle and equipment cleaning, fueling, and maintenance
- Landscaping operations
- Painting

3.10 Identification of Non-stormwater Discharges

Following is a list of non-stormwater discharges that apply to the site. The list will be reviewed by the construction contractor, once selected, and will be revised as needed. Non-stormwater discharges will be eliminated, controlled, or treated in accordance with General Permit requirements to minimize or eliminate the release of pollutants in stormwater.

Non-stormwater Discharges:

- Process water
- Non-contact cooling water
- Vehicle wash water
- Sanitary wastes
- Concrete washout water
- Paint wash water
- Pipe testing water

SECTION 4

Best Management Practices

The following narrative section provides a list and description of the BMPs that may be used onsite and offsite during construction activities. The Water Pollution Control Drawings (WPCD) in Appendix A show initial containment BMPs to minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges. The construction contractor will be responsible for the specific details of the BMPs to be used during construction, and for updating the BMP drawings at the start of and during project construction to reflect modified or new BMPs that are being implemented and maintained onsite in sequence with construction activities.

4.1 Schedule for BMP Implementation

Construction of the project is scheduled to last 24 months. Refer to Table 5 for a preliminary project construction schedule. The project schedule and associated deployment of BMPs will be updated by the construction contractor, once selected.

As needed, BMPs may be implemented to follow the progress of construction activities. As the location of soil disturbances change, erosion controls and sedimentation controls will be adjusted accordingly to control stormwater runoff at the downgrade perimeter. Downgradient drop-inlets will be protected with sediment control measures year-round. BMPs will be in place throughout the entire construction period.

Sufficient erosion control and sediment control materials will be maintained onsite to allow implementation in conformance with General Permit requirements and as described in this DESCP/SWPPP. This includes implementation requirements for active areas and non-active areas that require deployment before the onset of rain.

4.2 Erosion Control and Sediment Control

The site-specific combination of erosion controls and sediment controls to be used during construction will be selected from those listed below. Corresponding California Stormwater Quality Association (CASQA) *2009 Construction Handbook* fact sheets are included in Attachment J. As required by COC Soil & Water-1, this document will also be consistent with the standards required by the City of San Jose Grading and Excavation Permit.

4.2.1 Erosion Control

Erosion control, also referred to as soil stabilization, is a source control measure designed to prevent soil particles from detaching and becoming transported in stormwater runoff.

Erosion control BMPs protect the soil surface by covering or binding soil particles. The project will incorporate erosion control measures required by regulatory agency permits, contract documents, and other measures selected by the Project Owner or the construction contractor.

Project activities will incorporate the following practices, as needed:

- Existing vegetation will be preserved when feasible.
- Temporary erosion control measures will be implemented on active and non-active disturbed areas prior to and at regular intervals throughout the defined rainy season, and year-round prior to storm events.
- Concentrated water flows shall be channeled away from disturbed soil areas and stockpiles. Concentrated water flows shall be conveyed in a non-eroding fashion.
- Earth dikes or drainage swales shall be used, as needed, to direct stormwater run-on around the construction site and subsequently resume its regular flowpath.
- Non-active areas, and all finished slopes, open space, utility backfill, and completed lots, will be stabilized with effective soil cover (such as aggregate, paving, or vegetation) as soon as feasible after construction or disturbance is complete and no later than 14 days after construction or disturbance in that portion of the site has temporarily or permanently ceased.
- The use of plastic materials will be limited when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the plastic materials will be resistant to solar degradation.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable CASQA *2009 Construction Handbook* BMP factsheets.

A combination of the following list of erosion control measures, as determined practicable by the construction contractor, will be implemented during project construction:

- EC-1 Scheduling
- EC-2 Preservation of Existing Vegetation
- EC-3 Hydraulic Mulch
- EC-4 Hydroseeding
- EC-5 Soil Binders
- EC-6 Straw Mulch
- EC-7 Geotextiles and Mats
- EC-8 Wood Mulching
- EC-9 Earth Dikes and Drainage Swales
- EC-10 Velocity Dissipation Devices
- EC-11 Slope Drains
- EC-14 Compost Blankets
- EC-15 Soil Preparation/Roughening
- EC-16 Non-vegetative Stabilization

4.2.2 Sediment Control

Sediment controls 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. The project will incorporate sediment control measures

required by regulatory agency permits, contract documents, and other measures selected by the the Project Owner or the construction contractor.

Project activities will incorporate the following practices, as needed:

- Effective sediment perimeter controls will be established and maintained at locations where runoff discharges off the site.
- All storm drain inlets and perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits will be maintained and protected from activities that reduce their effectiveness.
- During the rainy season, temporary sediment controls will be implemented at the draining perimeter of disturbed soil areas, at the toe of slopes, and at outfall areas at all times. During the non-rainy season, temporary sediment controls will be implemented at the draining perimeter of disturbed soil areas.
- Linear sediment controls will be used along the toe and face of the slope and at the grade breaks of exposed slopes to comply with sheet flow lengths[1] in accordance with Table 6.
- Implementation and maintenance of BMPs will be according to measures outlined in the applicable CASQA *2009 Construction Handbook* BMP factsheets.

TABLE 6
Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Slope Percentage Sheet Not to Exceed
0–25%	20 feet
25–50%	15 feet
Over 50%	9 feet

A combination of the following list of sediment control measures, as determined practicable by the construction contractor, will be implemented during project construction:

- SE-1 Silt Fence
- SE-3 Sediment Trap
- SE-4 Check Dam
- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-7 Street Sweeping and Vacuuming
- SE-8 Sandbag Barrier
- SE-9 Strawbale Barrier
- SE-10 Storm Drain Inlet Protection
- SE-12 Temporary Silt Dike
- SE-13 Compost Socks and Berms
- SE-14 Biofilter Bags

[1] Sheet flow length is the length that shallow, low velocity flow travels across a site.

Onsite storm drain inlets and offsite downstream storm drainage structures having the potential to receive sediment-laden surface runoff[2] will be protected with sediment controls for the duration of the project. A combination of the following BMP inlet protection measures (or equivalent) may be implemented during project construction:

- Inlets in paved areas:
  - Temporary geotextile storm drain inserts
  - Gravel bag barrier
  - Fabric barrier around inlet entrance
  - Block and gravel filter
  - Biofilter Bag barrier
- Inlets in unpaved areas:
  - Temporary geotextile storm drain inserts
  - Gravel bag barrier
  - Silt fence
  - Fiber rolls
  - Excavated drop inlet sediment trap
  - Biofilter bag barrier

Inlets will be covered or runoff diverted around storm drain inlets during paving operations.

4.2.3 Tracking Control

All construction entrances and exits will be stabilized to minimize or eliminate soils from being tracked off the project site from vehicles or construction equipment.

Project activities will incorporate the following practices, as needed:

- At least the first 500 feet of any public roadway exiting the construction site will be inspected daily. At a minimum, any sediment or other construction activity-related materials that are deposited on the roads shall be removed (by vacuuming or sweeping) twice daily (or less during periods of precipitation) and before any rain event.
- Construction equipment tires will be inspected and washed as necessary to prevent offsite tracking of sediment.
- Construction activity traffic to and from the project will be limited to entrances and exits that employ effective controls to prevent offsite tracking of sediment.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks to provide at least 1 foot of freeboard.

[2] One storm drain inlet is located on Crows Landing Rd., 67 feet north from the entrance to the project's access road.

A combination of the following list of tracking control measures, as determined practicable by the construction contractor, will be implemented during project construction:

- TC-1 Stabilized Construction Entrance/Exit
- TC-2 Stabilized Construction Roadway
- TC-3 Entrance/Outlet Tire Wash

4.2.4 Wind Erosion Control

During construction of the project, dust erosion control measures would be implemented to minimize the wind-blown loss of soil from the site.

Project activities will incorporate the following practices:

- Disturbed soil areas of the project site will be regularly watered to control dust and to maintain optimum moisture levels for compaction as needed, but the areas will not be excessively watered so as to generate runoff. Sediment controls may be used at the edges of these areas as necessary to minimize sediment discharge.
- All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or treated with appropriate dust suppressant compounds.
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.
- No vehicle shall exceed 10 miles per hour within the construction site. The construction site entrances shall be posted with visible speed limit signs.

The following control method will be implemented for dust suppression, as necessary:

- WE-1 Wind Erosion Control

4.2.5 Non-stormwater Management

The project will comply with good engineering practices, applicable laws, and regulations for the storage and use of these materials to minimize the potential for a release of hazardous materials.

Project activities will incorporate the following practices, as needed:

- A dedicated fueling, maintenance, and vehicle storage area will be protected with berms and/or dikes to prevent run-on and runoff and to contain spills. The construction contractor will ensure that secondary containment around fuel/oil tanks (stationary or mobile) will meet the minimum requirements of EPA 40 CFR Part 112 with regard to secondary containment or more stringent state requirements, if applicable. Any spills will be contained and cleaned up immediately. Any soil impacted by fuel or oil spills will be removed and disposed of by a licensed hauler at an approved disposal site.
- Self-propelled vehicles will be fueled offsite or at the temporary fueling area. Fuel trucks will be used for onsite fueling, whether at the temporary fueling area or for mobile

fueling elsewhere on the site. Drip pans will be used for mobile fueling. Each fuel truck will be equipped with absorbent spill cleanup materials and a spill containment boom at all times. "Topping off' of fuel tanks will be discouraged.

- Drip pans or absorbent pads will be used for vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids.
- Vehicles will be washed in such a manner as to prevent non-stormwater discharges to surface waters or MS4 drainage systems.
- Vehicles and equipment will be inspected daily and before coming onsite for signs of leaks and will be on a regular maintenance schedule.
- Drip pans or absorbent materials will be placed under paving equipment when not in use; paving equipment will be parked over plastic to prevent soil contamination.
- If dewatering is needed during construction activities, the stormwater/groundwater will be pumped into a temporary storage tank located onsite. Samples will be taken and sent to a California State-certified analytical laboratory for testing of analytes associated with historical land use; additional analysis will be requested if any other contamination is detected via odors or visible sheens. Upon receipt of the analytical results, the stored stormwater/groundwater will be handled and properly disposed of in a manner consistent with federal, state, and local regulations.

A combination of the following list of non-stormwater management measures, as determined practicable by the construction contractor, will be implemented during project construction:

- NS-1 Water Conservation Practices
- NS-2 Dewatering Operations
- NS-3 Paving and Grinding Operations
- 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-12 Concrete Curing
- NS-13 Concrete Finishing

4.2.6 Waste Management and Materials Pollution Control

Waste management and materials pollution control BMPs are source control BMPs that prevent pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. These BMPs also involve day-to-day operations of the construction site, and are under the control of the construction contractor, and are additional "good housekeeping practices" which involve keeping a clean, orderly construction site.

Project activities will incorporate the following practices:

- Stockpiles shall be managed according to the type of material being stockpiled and the season, as follows:
  - Soil stockpiles shall be covered or protected with soil stabilization measures and perimeter sediment barriers during the rainy season, periods of heavy winds greater than 25 mph, and/or when inactive for longer than 10 days; and protected with perimeter sediment barriers during the non-rainy season.
  - Concrete/asphalt rubble, rock, and aggregate base and sub-base stockpiles shall be covered and protected with perimeter sediment barriers year-round unless actively being used.
  - Cold mix asphalt stockpiles shall be protected with perimeter sediment barriers and covered year-round unless actively being used.
  - Stockpiled waste material will be protected with perimeter sediment barriers and covered year-round unless actively being used.
- Exposure of construction materials (not including materials designed to be outside such as equipment pads) to precipitation will be minimized.
- Curbs and dikes will be provided around all chemical storage areas, hazardous waste products, areas with possibility of oil spill, and washout areas.
- No erodible landscape material (such as pesticides) will be applied within 2 days before a forecasted rain event or during periods of precipitation. Erodible landscape material will be applied at quantities and application rates according to manufacturer recommendations or based on written specifications by knowledgeable and experienced field personnel. Erodible landscape material will be stored on pallets and covering when not being used or applied.
- All hazardous materials will be handled and stored in accordance with applicable codes and regulations. The construction contractor shall establish contingencies for the proper disposal of contaminated soils (for example, use of licensed hauler, approved landfill) early in the construction period.

Good housekeeping practices listed below will be followed to reduce the risk of pollutants entering stormwater discharges. All construction personnel will be responsible for monitoring and maintaining housekeeping tasks and reporting potential problems to the construction contractor's site manager:

- Only enough products required for doing the job will be stored.
- All materials will be stored in a neat and orderly manner in the appropriate containers. Materials that may adversely impact stormwater, such as paint, oils, greases, sealers, etc., will be stored in covered areas such as temporary/permanent buildings or trailers. Secondary containment will be provided for the storage of hazardous materials.
- Temporary containment facilities for hazardous materials will provide for a spill containment volume able to contain precipitation from a 25-year storm event, plus 10 percent of the aggregate volume of all containers or 100 percent of the capacity of the

largest container within its boundary, whichever is greater. It will be impervious to the materials stored therein for a minimum contact time of 72 hours.

- Products will be kept in the original container with the original manufacturer's label.
- Products will not be mixed unless recommended by the manufacturer.
- Containers will be emptied prior to their disposal.
- Products will be used and disposed of according to the manufacturer's recommendations.
- When and where appropriate, posters, bulletin boards, or meetings will be used to remind and inform construction personnel of required good housekeeping, maintenance, and cleanup procedures.
- Rinse or wash waters or materials will be collected and disposed of offsite in accordance with applicable regulations.
- A licensed sanitary waste management contractor will collect all sanitary wastes from the portable units. The units will be serviced weekly, at a minimum. Portable units shall be placed on a flat area at least 25 feet from drain inlets. Portable units shall be anchored to prevent blowing or tipping over, and all leaks or spills shall be reported immediately.
- Waste disposal containers will be covered at the end of every business day and during a rain event. Drainage from the waste disposal containers, if any, will be captured and will not be allowed to enter the stormwater drainage system. Waste containers will be emptied a minimum of once per week, or more often if necessary, and the trash will be hauled to the local waste disposal facility. No construction waste will be buried onsite. All site personnel will be instructed regarding the correct procedure for waste disposal.
- Paint containers will be tightly sealed and properly stored to prevent leaks or spills. Excess paint will not be discharged to the stormwater system. Unused paints will be disposed of in labeled original containers according to applicable local, state, and federal laws and regulations. Spray painting will not occur on windy or rainy days, and a drop cloth will be used to collect and dispose of drips associated with painting activities. Paints will be mixed indoors or in a containment area. If water-based paints are used, equipment will be cleaned in a sink that is connected to the sanitary sewer.
- Concrete washout areas and other washout areas that may contain additional pollutants will be provided with an impermeable containment so there is no discharge into the underlying soil and onto the surrounding areas. Excess concrete and concrete washout slurries will be discharged to a temporary concrete washout facility. The washout facility will be maintained to provide adequate holding capacity with a minimum freeboard of 4 inches for above-grade facilities and 12 inches for below-grade facilities. The washout facility will be cleaned, or a new facility constructed once the washout is 75 percent full. Dried concrete shall then be removed and disposed of at an approved offsite location. No surplus concrete or drum wash water will be disposed of onto the ground surface.
- Operators and construction personnel will be asked to report unusual conditions to the appropriate personnel. If contaminated soil is encountered during construction, the area

and/or material will be properly contained during investigative actions. If soils require temporary stockpiling, piles will be placed on and covered with plastic sheeting or tarps that are secured safely with sand bags and bermed with fiber rolls or silt fencing to prevent runoff from leaving the area. Samples will be collected and sent to a certified analytical laboratory for characterization. If contamination is detected, the waste will be handled and properly disposed of in an authorized waste management facility. In addition, the appropriate local, state, and federal agencies will be notified.

- Regular inspections of the stormwater system and the material storage areas will be conducted. Preventive maintenance will include regular inspection and maintenance of structural stormwater controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

Spill prevention and cleanup practices will be as follows:

- Spill cleanup materials, material safety data sheets (MSDSs), a material inventory, and emergency contact numbers will be maintained at the laydown and parking area. A material inventory will be prepared by the construction contractor and inserted in Attachment K.
- Site personnel will be instructed on spill cleanup procedures and location of cleanup supplies, and the construction contractor will be responsible for implementing these practices.
- Materials and equipment for the cleanup of a relatively small spill will be kept in the laydown area. Cleanup equipment may include brooms, rags, gloves, shovels, goggles, sand, sawdust, absorbent, plastic or metal trash containers, and protective clothing.
- All containers will be labeled, tightly sealed, and stacked or stored neatly and securely.

Spill response procedures will be as follows:

- Step 1: Upon discovery of a spill, stop the source of the spill.
- Step 2: Cease all spill material transfer until the release is stopped and waste is removed from the spill site.
- Step 3: Initiate containment to prevent spill from reaching State waters.
- Step 4: Notify supervisor and construction contractor site manager of the spill.
- Step 5: Construction contractor's site manager will immediately notify the project site's emergency coordinator and coordinate further cleanup activities.
- Step 6: Any significant spill of hazardous material will be reported to the appropriate state and/or local agencies by the Project Owner personnel or the construction contractor. Table 7 lists the project's environmental emergency contacts.
- Step 7: Record a description of the spill, cause, and cleanup measures taken.
- Step 8: Review and amend the DESCP/SWPPP to address the violation if the general objective of reducing or eliminating pollutants in stormwater discharges has not been achieved.

TABLE 7
Environmental Emergency Telephone List

Company/Organization	Telephone Numbers
Primary Facility Emergency Coordinator:	To be determined
24-Hour Telephone Number:	To be determined
Alternate Facility Emergency Coordinator:	To be determined
Other Resources	
3E Company (MSDS by FAX):	(800) 451-8346
Chemtrec (emergency chemical information):	(800) 424-9300
Poison Control Center:	(800) 662-9886
Federal Agency	
U.S. Coast Guard/National Response Center:	(800) 424-8802
State Agencies	
California Office of Emergency Services (OES):	(800) 852-7550
California Department of Toxic Substances Control (DTSC)*:	(800) 852-7550
California Department of Fish and Game*:	(800) 852-7550
California State Lands Commission:	(562) 590-5201
Regional Water Quality Control Board (RWQCB)*:	(800) 852-7550
Local Contacts	
Santa Clara County Environmental Health Department:	(408) 918-3400
Fire:	911
Police:	911

*DTSC, RWQCB and California Department of Fish and Game have requested that emergency notifications to these offices be made through the OES 800 number.

A combination of the following list of waste management and materials pollution control measures, as determined practicable by the construction contractor, will be implemented during project construction:

- 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
- WM-8 Concrete Waste Management
- WM-9 Sanitary and septic Waste Management
- WM-10 Liquid Waste Management

4.3 Post-construction Stormwater Management

Stormwater from the LECEF site will continue to be discharged via the stormwater drain that connects to the existing 24-inch-diameter outfall located to the east of the site at the flood control channel adjacent to Coyote Creek.

If the gravel at the construction laydown area is removed at completion of project construction activities, the disturbed areas will be re-vegetated with a native erosion control seed mix and will be monitored until a minimum of 70 percent ground coverage has been established or the site will not pose any additional sediment discharge risk than it did prior to the commencement of construction activity. Areas where no vegetation grew will be reseeded. Once vegetation has established onsite and a NOT can be submitted to the RWQCB, temporary sediment and erosion control measures will be removed.

The Project Owner will operate and maintain the post-construction stormwater management system for the life of the facility.

SECTION 5

BMP Inspection, Maintenance, and Rain Event Action Plans

5.1 BMP Inspection and Maintenance

It is the responsibility of the Qualified SWPPP Practitioner (QSP) to be responsible for overall site management, including making site personnel aware of required data collection and reporting elements of the DESCP/SWPPP. The QSP is a certified individual assigned responsibility for the implementation of all elements of the DESCP/SWPPP, including non-stormwater and stormwater visual observations, and sampling and analysis.

All inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a QSP representing the Project Owner. The QSP may delegate any or all of these activities to an employee trained to do the tasks appropriately, but shall ensure adequate deployment.

The QSP or designated representative will monitor the weather daily using National Weather Service[3] reports to track conditions and alert crews to the onset of rainfall events.

The QSP or designated representative will perform weekly inspections and observations, before a forecast storm[4], after a qualifying rain event[5] that causes runoff from the project area, at 24-hour intervals during extended rain events to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended.

A blank inspection form that will be used to record results of the inspection and assessment is included in DESCP/SWPPP Attachment L. Completed inspection forms will be included in DESCP/SWPPP Attachment L or in an accompanying file/binder that is referenced in the DESCP/SWPPP and readily accessible onsite.

A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs; records will be included in DESCP/SWPPP Attachment L or in an accompanying file/binder that is referenced in the DESCP/SWPPP and readily accessible onsite. CASQA 2009 *Construction Handbook* BMP fact sheets in Attachment J will be referenced for inspection and maintenance measures for each selected BMP.

Corrective actions will be implemented within 72 hours for deficiencies identified during inspections. DESCP/SWPPP amendments will be prepared by the QSD if warranted by the problem encountered and corrective action required.

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[3] http://www.srh.noaa.gov/

[4] 50 percent or greater chance of producing precipitation in the project area.

[5] A qualifying rain event is any event that produces 0.5 inches or more precipitation with a 48-hour or greater period between rain events.

At a minimum, erosion and sediment controls should be cleaned, repaired, or replaced under these conditions:

- In advance of the rainy season and prior to a storm event
- When sediment or other debris has accumulated to greater than one-third the height of the barrier
- When sediment accumulation reaches one-third of the trap capacity
- When more than one-third of the cross section of a conveyance structure, such as a drainage swale or ditch, is plugged or blocked

The selection of BMPs can potentially change during project construction and Table 8 will be amended accordingly.

TABLE 8
Anticipated BMP Implementation and Maintenance Schedule (subject to revision during construction)

Best Management Practices	Implementation	Inspection Frequency	Maintenance
Silt fence	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Replace torn sections; repair up-rooted sections; clean out collected sediment when greater than 1/3 height of fence
Fiber rolls; coir logs; compost socks; biofilter bags	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Replace crushed sections; replace rotted sections; clean out collected sediment when greater than 1/3 height of roll
Check dams; velocity dissipation devices	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Replace degraded or missing rock, bags, etc.; clean out when collected soil greater than 1/3 of barrier height
Dikes and drainage swales; slope drains	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events and once each 24-hour period during extended storm events), weekly	Repair as needed
Non-stormwater and materials management	Planned prior to construction	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Dispose of waste materials weekly; contract with outside vendors as needed; keep material storage areas clean and orderly; train all employees on correct use of materials and spill response

TABLE 8
Anticipated BMP Implementation and Maintenance Schedule (subject to revision during construction)

Best Management Practices	Implementation	Inspection Frequency	Maintenance
Erosion control blankets (geotextiles); non-vegetative stabilization	In sequence with construction activities; prior to forecasted rain event	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair eroded areas; replace and repair geotextiles and mats as needed
Sandbags	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair, reshape, replace bags as necessary; replace bags exposed to sunlight every 2 to 3 months; clean out collected sediment when greater than 1/3 barrier height
Gravel bags	Two weeks prior to construction and in sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair, reshape, replace bags as necessary; replace bags exposed to sunlight every 2 to 3 months; clean out collected sediment when greater than 1/3 barrier height
Strom drain inlet protection	Two weeks prior to construction	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Clean and repair filters or fabric fence as needed; clean out collected sediment when greater than 1/3 barrier height
Hydraulic mulch	In sequence with construction activities; prior to forecasted rain event	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair eroded areas; re-apply on bare areas as needed
Mulch (straw, wood, organic); Soil binders	In sequence with construction activities; prior to forecasted rain event	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair eroded areas; re-apply on bare areas as needed
Hydroseeding; seeding	As soon as possible after disturbance has permanently or temporarily ceased, but in no case more than 14 days after the construction activity in an area has ceased (Except when construction activity will resume on that portion of the site within 21 days)	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly; (Monitored every May for the first 3 years following project completion)	Reseed areas that do not meet revegetation criteria

TABLE 8
Anticipated BMP Implementation and Maintenance Schedule (subject to revision during construction)

Best Management Practices	Implementation	Inspection Frequency	Maintenance
Aggregate surfacing	Completion of grading activities	Weekly	Keep all temporary roadway ditches clear; periodically apply additional aggregate as needed
Stabilized construction entrance/exit	Prior to grading of the project site	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Remove aggregate, separate and dispose of sediment when 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
Stockpile management	In sequence with construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly	Repair or replace perimeter controls and covers as needed
Street sweeping and vacuuming	Start of construction activities	Inspect before and after storm events (and once each 24-hour period during extended storm events); when actively in use, inspect points of ingress and egress daily, otherwise weekly	Remove tracked or spilled sediment outside the construction limits at a minimum daily
Post-construction revegetation	As soon as possible after disturbance has permanently or temporarily ceased, but in no case more than 14 days after the construction activity in an area has ceased (Except when construction activity will resume on that portion of the site within 21 days)	Inspect before and after storm events (and once each 24-hour period during extended storm events), weekly; (monitored every May for the first 3 years following project completion or until the site has been successfully revegetated to 70 percent coverage)	Areas that do not meet revegetation criteria will be reseeded

5.2 Rain Event Action Plans

Forty-eight hours prior to any likely precipitation event, a QSP will develop a REAP. A likely precipitation event is any weather pattern that is forecasted to have a 50 percent or greater probability of producing precipitation in the project area. The QSP will obtain a printed copy of precipitation forecast information from the National Weather Service Forecast Office (by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast). The REAP will be available onsite and be

implemented no later than 24 hours prior to the likely precipitation event. Copies of the REAPs will be maintained with the DESCP/SWPPP in Attachment M. A blank REAP form is included in Attachment M; however, the REAP will be tailored by the QSP for each construction phase and to each rain event.

A REAP will be developed for all phases of construction and areas of inactive construction.

The REAP will include, at a minimum, the following site information:

- Site address
- Calculated risk level (2)
- Site stormwater manager information, including the name, company, and 24-hour emergency telephone number
- Erosion and sediment control provider information, including the name, company, and 24-hour emergency telephone number
- Stormwater Sampling Agent information, including the name, company, and 24-hour emergency telephone number

In addition, the REAP, at a minimum, will include the following project phase information:

- Activities associated with each construction phase
- Trades active on the construction site during each construction phase
- Trade contractor information
- Suggested actions for each project phase

At a minimum, the REAP addressing inactive construction will include:

- Site address
- Calculated risk level (2)
- Site stormwater manager information, including the name, company, and 24-hour emergency telephone number
- Erosion and sediment control provider information, including the name, company, and 24-hour emergency telephone number
- Stormwater sampling agent information, including the name, company, and 24-hour emergency telephone number
- Trades active onsite during inactive construction
- Trade contractor information
- Suggested actions for inactive construction sites

SECTION 6

Training

Personnel at the site shall receive training appropriate for individual roles and responsibilities on the project. Appropriate personnel shall receive training on DESCP/SWPPP implementation, BMP inspection and maintenance, and record keeping. All training activities (formal and informal) will be documented on a training log (example is included in DESCP/SWPPP Attachment N); records will be included in DESCP/SWPPP Attachment N or in an accompanying file/binder that is referenced in the DESCP/SWPPP and readily accessible onsite.

All elements of the DESCP/SWPPP will be developed by a QSD and implemented by a QSP. The QSP may delegate tasks to trained employees provided adequate supervision and oversight is provided.

Documentation of all training for persons responsible for implementing the requirements of the General Permit will be provided in the Annual Report.

SECTION 7

Responsible Parties and Operators

7.1 Responsible Parties

A list of authorized representatives is provided in DESCP/SWPPP Attachment O, along with project site personnel who will be responsible for DESCP/SWPPP activities, including the QSD and QSP.

Attachment O includes the name and contact information for the individual, their role on the project, date of training, and date of recorded entry, as well as a copy of training certificates or other verification of training.

This list includes the names of the individuals granted authority to sign permit-related documents. Copies of the written authorizations for duly authorized representatives are retained Attachment O.

7.2 Contractor List

DESCP/SWPPP Attachment P includes a list of names of all contractors, subcontractors, and individuals who will be directed by the QSP. The list includes telephone numbers, work addresses, the specific areas of responsibility for each contractor, and emergency contact numbers. [6]

[6] This information will be included once the General Contractor has been selected.

SECTION 8

Construction Site Monitoring Program

The Construction Site Monitoring Program (CSMP) was developed and implemented to address the following objectives:

- To demonstrate that the site is in compliance with the Discharge Prohibitions and applicable Numeric Action Levels (NALs)/Numeric Effluent Limitations (NELs) of this General Permit.
- To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives.
- To determine whether immediate corrective actions, additional BMP implementation, or DESCP/SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges.
- To determine whether BMPs included in the DESCP/SWPPP–REAP are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

The CSMP will be revised as necessary to reflect project revisions.

8.1 Applicability of Permit Requirements

The CSMP identifies monitoring requirements for stormwater and non-stormwater visual observations; stormwater and non-stormwater sample collection; and receiving water monitoring for Risk Level 2.

8.2 Visual Monitoring for Qualifying Rain Events

The General Permit identifies a qualifying storm event for stormwater related observations and sample collection as well as permit-specified sampling/observation exemptions as any event that produces 0.5 inches or more precipitation with a 48-hour or greater period between rain events.

1. Within 2 business days (48 hours) prior to each qualifying rain event, the following will be inspected:
    a. All stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, appropriate corrective actions shall be implemented.
        i. The inspector shall observe for the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

b. Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

   i. The inspector shall observe for the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

c. All BMPs to identify whether they have been properly implemented in accordance with the DESCP/SWPPP and REAP. If needed, appropriate corrective actions shall be implemented.

2. Within 2 business days (48 hours) after each qualifying rain event, an inspection shall be conducted to:

   a. Identify whether BMPs were adequately designed, implemented, and effective, and
   b. Identify additional BMPs and revise the DESCP/SWPPP accordingly.

3. The discharge of stored or contained stormwater that is derived from and discharged subsequent to a qualifying rain event producing precipitation of 0.5 inch or more at the time of discharge will be inspected. Stored or contained stormwater that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

The time, date, and rain gauge reading of all qualifying rain events will be recorded on the Site Inspection Form included in DESCP/SWPPP Attachment L. Names of personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations will also be recorded.

8.2.1 Visual Monitoring Exemptions

Inspections do not need to be conducted under the following conditions:

1. During dangerous weather conditions such as flooding and electrical storms.
2. Outside of scheduled site business hours.

If no inspections were conducted due to these exceptions, an explanation will be included in the DESCP/SWPPP and in the Annual Report documenting why the inspections were not conducted.

8.2.2 Monitoring Locations

The entire project area will be observed as part of the inspections.

8.2.3 Safety

Inspections shall not occur during dangerous weather conditions, or outside of scheduled business hours. If no required inspections are conducted due to these exceptions, the inspector shall include an explanation in the DESCP/SWPPP and in the Annual Report.

Safety practices for sample collection will be in accordance with the construction contractor's Health and Safety Plan.

8.2.4 Visual Monitoring for Non-stormwater Discharges

One inspection will be conducted quarterly in each of the following periods: January–March, April–June, July–September, and October–December.

- The inspector will observe each drainage area for the presence of (or indications of prior) unauthorized and authorized non-stormwater discharges and their sources.
- The inspector will document the presence or evidence of any non-stormwater discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source.

Names of personnel performing the observations, the dates and approximate time each drainage area and non-stormwater discharge was observed, and the response taken to eliminate unauthorized non-stormwater discharges and to reduce or prevent pollutants from contacting non-stormwater discharges will be documented; records will be maintained in Attachment L.

Inspections are only required during daylight hours (sunrise to sunset).

8.3 Water Quality Sampling and Analysis

The purpose of sampling is to determine whether BMPs implemented on a construction site are effective in controlling potential construction site pollutants that come into contact with stormwater or non-stormwater, and to demonstrate compliance with the applicable regulations.

8.3.1 Potential Pollutant Sources

8.3.1.1 Sediment and Turbidity

Conditions or areas at a construction site that may cause sediment, silt, and/or turbidity in site runoff include:

- Exposed soil areas with inadequate erosion control measures
- Areas of active grading
- Poorly stabilized slopes
- Lack of perimeter sediment controls
- Areas of concentrated flow on unprotected soils
- Poorly maintained erosion and sediment control measures
- Tracking sediment onto roads and paved surfaces
- Unprotected soil stockpiles
- Failure of an erosion or sediment control measure

8.3.1.2 High pH

Conditions or areas at a construction site that may cause high pH in site discharges include:

- Concrete pours and curing
- Concrete waste management areas
- Soil amendments (such as fly ash and lime)
- Mortar and stucco mixing, application, and waste management areas

8.3.2 Monitoring Constituents by Risk Level

At a minimum, Risk Level 2 projects are required to collect water quality samples for:

- pH (during construction phases with a high risk of high pH discharge) during a qualifying rain event
- Turbidity (all phases) during a qualifying rain event
- Contained rainwater when it is released
- Samples of non-stormwater (authorized and unauthorized) to characterize the discharge

Additional monitoring may be required by the RWQCB. See Section 8.4 for sampling of non-visible constituents in stormwater.

At a minimum, three stormwater grab samples will be collected per day of the qualifying event. Samples will be representative of the runoff associated with construction activity from the entire project disturbed area. Sample locations representative of runoff in each drainage area will be considered to ensure adequate representation of the flow and characteristics of the site's discharges.

The grab samples will be collected of stored or contained stormwater discharges subsequent to a qualifying rain event (producing precipitation of 0.5 inch or more at the time of discharge) and will be representative of the flow and characteristics of the discharge.

Samples will not be collected during dangerous weather conditions such as flooding and electrical storms, or outside of scheduled site business hours. Explanations as to why sampling or observations were not conducted will be documented in the DESCP/SWPPP and in the Annual Report.

8.3.3 Effluent Sampling Locations

Sampling and analysis of stormwater discharges will be conducted to characterize discharges associated with construction activity from the entire project disturbed areas.

Effluent samples will be taken from the stormwater sump located at the east boundary of the project site and from stormwater runoff that drains the construction laydown area. Reference the WPCD in Appendix A for the sampling location. The construction laydown area sample location will be verified in the field by the construction contractor's QSD prior to sampling events and may change due to field conditions.

- The stormwater discharge collected and observed will represent the effluent in each drainage area based on visual observation of the water and upstream conditions.
- Site run-on from surrounding areas will be monitored and reported if there is reason to believe run-on may contribute to an exceedance of NALs.
- Effluent at all discharge points where non-stormwater and/or authorized non-stormwater is discharged will be sampled.

8.3.4 Collection and Handling Instructions

Analytical test methods will be in accordance with the information outlined in Table 9.

TABLE 9
Test Methods, Detection Limits, Reporting Units and Applicable NALs

Parameter	Test Method/Protocol	Discharge Type	Minimum Detection Limit	Reporting Units	Numeric Action Level
pH	Field test with calibrated portable instrument	Risk Level 2 discharges	0.2	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	EPA 0180.1 and/or field test with calibrated portable instrument	Risk Level 2 discharges other than ATS	1	NTU	250 NTU
		For ATS discharges	1	NTU	N/A

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, as close to 4°C as practicable; and delivered within 48 hours to the California-certified laboratory (unless otherwise required by the laboratory). Only the sample containers provided by the laboratory to collect and store samples will be used. Reference Attachment Q for a Sampling Activity Log. An example Chain of Custody form of the laboratory selected by the construction contractor will be inserted in Attachment Q.

Operable backup portable instruments for field tests will be available onsite.

All personnel designated to collect, maintain, and ship samples will be trained in accordance with the Surface Water Ambient Monitoring Program's 2008 Quality Assurance Program Plan (http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf).

8.3.5 Monitoring Methods

All sampling and sample preservation will be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a discharger's own field instruments for measuring pH and turbidity) will be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements.

All laboratory analyses will be conducted according to test procedures under 40 CFR 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. With the exception of in-field analysis of turbidity and pH, all analyses will be sent to and conducted at a laboratory certified for such analyses by the State Department of Health Services.

8.3.6 Analytical Methods

Table 9 will be referenced for test methods, detection limits, and reporting units. pH analysis shall be performed onsite with a calibrated pH meter or a pH test kit. pH monitoring results will be documented on paper and maintained with the DESCP/SWPPP.

Turbidity analysis will be performed onsite using a calibrated turbidity meter. The results will be recorded in the site logbook in Nephelometric Turbidity Units (NTU) and maintained with the DESCP/SWPPP.

8.4 NAL Exceedance Report

The project site is subject to a storm event average pH NAL of 6.5-8.5, and a storm event average turbidity NAL of 250 NTU.

Whenever the results from a storm event daily average indicate that the discharge is below the lower NAL for pH, exceeds the upper NAL for pH, or exceeds the turbidity NAL, the construction site and run-on will be evaluated to determine whether pollutant source(s) associated with the site's construction activity may have caused or contributed to the NAL exceedance and corrective actions will be implemented immediately, if they are needed.

The site evaluation shall be documented in the DESCP/SWPPP and specifically address whether the source(s) of the pollutants causing the exceedance of the NAL are related to the construction activities and whether additional BMPs are required to:

- Meet BAT/BCT requirements
- Reduce or prevent pollutants in stormwater discharges from causing exceedances of receiving water objectives
- What corrective action(s) were taken or will be taken and with a description of the schedule for completion

and/or:

- Are related to the run-on associated with the construction site location and whether additional BMPs measures are required to:
  - Meet BAT/BCT requirements
  - Reduce or prevent pollutants in stormwater discharges from causing exceedances of receiving water objectives
  - What corrective action(s) were taken or will be taken and with a description of the schedule for completion

The DESCP/SWPPP will be revised accordingly either to prevent pollutants and authorized non-stormwater discharges from contaminating stormwater, or to substantially reduce the pollutants to levels consistently below the NALs.

In the event that any effluent sample exceeds an applicable NAL, all storm event sampling results shall be submitted electronically to the SWRCB SMARTS system no later than 10 days after the conclusion of the storm event.

If the RWQCB requests a NAL Exceedance Report:

- Each NAL Exceedance Report will be certified in accordance with the Special Provisions for Construction Activity.
- An electronic or paper copy of each NAL Exceedance Report will be retained for a minimum of 3 years after the date the annual report is filed.
- The NAL Exceedance Report will include:
  - The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit")
  - The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation
  - A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken

8.5 Sampling and Analysis Plan for Non-visible Pollutants

This section describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in stormwater discharges from the project site and offsite activities directly related to the project.

8.5.1 Scope of Monitoring Activities

The following construction materials, wastes, or activities are potential sources of non-visible pollutants to stormwater discharges from a project.

- Vehicle batteries
- Concrete curing
- Sealants
- Adhesives
- Cleaning products
- Solvents; thinners
- Herbicides
- Dust palliatives
- Soil binders
- Painting products
- Line flushing products
- Masonry products

No soil amendments are anticipated to be used on the project site that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil.

Stormwater run-on to this site does not have the potential to contribute non-visible pollutants to stormwater discharges from the project.

Reference Section 3.3.1 for potential pollutants associated with historical use of the project site.

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 the potential for discharge of non-visible pollutants to surface waters or drainage system.

8.5.2 Monitoring Strategy

8.5.2.1 Sampling Schedule

Samples for the applicable non-visible pollutant(s) and a sufficiently large uncontaminated background sample will be collected during the first 2 hours of discharge from rain events that result in a sufficient discharge for sample collection. Samples will be collected during daylight hours (sunrise to sunset) and will be collected regardless of the time of year, status of the construction site, or day of the week.

In conformance with the EPA 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 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) storage protected by temporary cover and containment that prevents stormwater contact and run-off 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 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, malfunction, or be improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters.
- 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.
- Stormwater run-off from an area contaminated by historical usage of the site has been observed to combine with stormwater run-off from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system

8.5.2.2 Sampling Locations

Samples will be taken from the stormwater sump located at the east boundary of the project site or from stormwater runoff that drains the construction laydown area. In addition, a location will be identified for collection of a reference background sample.

8.5.3 Monitoring Preparation

Samples on the project site will be collected by the following construction contractor sampling personnel:

Name/Telephone Number: To be determined

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 contact 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 surgical gloves, sample collection equipment, coolers, an 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 forms. The construction contractor will obtain and maintain the field-testing instruments for analyzing samples in the field by sampling personnel.

Safety practices for sample collection will be in accordance with the construction contractor's Health and Safety Plan.

The QSP will contact sampling personnel 24 hours prior to a predicted rain event and if one of the triggering conditions is identified during an inspection before, during, or after a storm event. This will ensure that adequate sample collection personnel, supplies, and field test equipment for monitoring non-visible pollutants are available and mobilized to collect samples on the project site in accordance with the sampling schedule.

8.5.4 Analytical Constituents

8.5.4.1 Identification of Non-visible Pollutants

Table 10 lists specific sources and types of potential non-visible pollutants anticipated to be on the project site and the applicable water quality indicator constituent(s) for that pollutant.

TABLE 10
Potential Non-visible Pollutants and Water Quality Indicator Constituents

Pollutant Source	Pollutant	Water Quality Indicator Constituent
Batteries	Acid, lead	pH, lead, sulfuric acid
Cleaners	Acid, phosphate, solvents	pH, phosphate, VOC, SVOC
Painting Products	Paint strippers, solvents, thinners	COD, VOC, SVOC
Thinners	VOC, COD	COD, VOC
Sealant	Sealants	COD
AC and PCC	Curing compounds	pH, alkalinity, VOC, SVOC
Adhesives	Adhesives	COD, phenols, SVOC

8.5.5 Sample Collection and Handling

8.5.5.1 Sample Collection Procedures

Samples of discharge will be collected at the designated sampling locations for observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and/or historical site usage areas that triggered the sampling event.

Grab samples will be collected and preserved in accordance with the methods identified in Table 11. Only personnel trained in proper water quality sampling will collect samples.

TABLE 11
Sample Collection, Preservation, and Analysis for Monitoring Non-visible Pollutants

Constituent	Analytical Method	Minimum Sample Volume	Sample Bottle	Sample Preservation	Reporting Limit	Maximum Holding Time
VOCs-solvents	EPA 8260B	3 × 40 mL	VOA-glass	Store at 4°C, HCl to pH<2	1 µg/L	14 days
SVOCs	EPA 8270C	1 × 1 L	Glass-amber	Store at 4°C	10 µg/L	7 days
Pesticides	EPA 8081A	1 × 1 L	Glass-amber	Store at 4°C	0.1 µg/L	7 days
Herbicides	EPA 8151A	1 × 1 L	Glass-amber	Store at 4°C	Check lab	7 days
COD	EPA 410.4	1 × 250 mL	Glass-amber	Store at 4°C, H_2SO_4 to pH<2	5 mg/L	28 days
TDS	EPA 160.1 (TDS)	1 × 100 mL	Polypropylene	None	ppm	Immediate
pH	EPA 150.1	1 × 100 mL	Polypropylene	None	Unitless	Immediate
Alkalinity	SM 2320B	1 × 250 mL	Polypropylene	Store at 4°C	1 mg/L	14 days
Nitrate	EPA 353.2	1 × 125 mL	Polypropylene	Store at 4°C, H_2SO_4 to pH<2	Check lab	28 days
Phosphate	EPA 365.3	1 × 125 mL	Polypropylene	Store at 4°C	Check lab	28 days
Organic nitrogen	TKN – NH_3	1 × 1 L	Glass-amber	Store at 4°C, H_2SO_4 to pH<2	Check lab	28 days
TOC	EPA 415.1	1 × 250 mL	Glass	Store at 4°C, H_2SO_4 to pH<2	Check lab	28 days
Potassium	EPA 200.7	1 × 250 mL	Polypropylene	Store at 4°C, HNO_3 to pH<2	0.1 mg/L	6 months
Phenols	EPA 8270C	1 × 1 L	Glass-amber	Store at 4°C	Check lab	7 days
Metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, Se, Na, Th, Va, Zn)	EPA 6010B/7470A	1 × 250 mL	Polypropylene	Store at 4°C, HNO_3 to pH<2	0.1 mg/L	6 months
Metals (chromium VI)	EPA 7199	1 × 500 mL	Polypropylene	Store at 4°C	1 µg/L	24 hours

Notes:

°C = degree(s) Celsius
µg/L = microgram(s) per Liter
COD = chemical oxygen demand
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
HCl = hydrogen chloride
H_2SO_4 = hydrogen sulfide
HNO_3 = nitric acid
L = liter
mg/L = milligrams per liter
mL = milliliter(s)
ppm = parts per million
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic compound
TDS = total dissolved solids
VOA = volatile organic analysis
VOC = volatile organic compound

Samples will be collected by placing a separate lab-provided sample container directly into a stream of water downgradient and close 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 upgradient and uncontaminated background samples will be collected prior to collecting the downgradient sample to minimize cross-contamination. Sampling personnel will collect the water upgradient of where they are standing. Once the separate lab-provided sample container is filled, the 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 surgical gloves prior to the collection and handling of each sample at each location
- Prevent the inside of the sample bottle from contacting any material other than the water sample
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection
- Prevent the cooler lid from remaining open for an extended period of time once samples are placed inside
- Avoid sampling near a running vehicle where exhaust fumes may affect the sample
- Avoid touching the exposed end of a sampling tube, if applicable
- Prevent rainwater from rain gear or other surfaces from dripping into sample bottles
- Avoid eating, smoking, or drinking during sample collection
- Avoid sneezing or coughing 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; such as avoiding discharge to the receiving water

8.5.5.2 Sample Handling Procedures

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, and 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, as close to 4°C as practicable; and delivered within 24 hours to the California-certified laboratory:

- Laboratory Name: To be determined
- Address: To be determined
- Telephone Number: To be determined
- Point of Contact: To be determined

Immediately following collection, samples for field analysis will be tested in accordance with the field instrument manufacturer's instructions and results will be recorded on the Sampling Activity Log (Attachment Q).

8.5.5.3 Sample Documentation Procedures

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. Corrections will be initialed and dated.

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 label:
  - Project name
  - Project number
  - Unique sample identification number and location:
  - [Project Number]-[Six digit sample collection date]-[Location] (*Example:* 0G5304-081801-Inlet472)
  - Quality assurance/quality control (QA/QC) samples will be identified similarly using a unique sample number or designation (*Example:* 0G5304-081801-DUP1)
  - Collection date and 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 number and location
  - Analysis constituent
  - Names of sampling personnel
  - Weather conditions (including precipitation amount)
  - Field analysis results
  - Other pertinent data
- **Chain of Custody Forms:** Samples to be analyzed by a laboratory will be accompanied by a 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.

- **Stormwater Quality Construction Inspection Checklists:** When applicable, the construction contractor's stormwater inspector will document on the checklist that samples for non-visible pollutants were taken during a rain event.

8.5.6 Sample Analysis

Samples will be analyzed for the applicable constituents using the analytical methods identified in Table 11. For samples collected for field analysis, collection, analysis, and equipment calibration will be in accordance with the field instrument manufacturer's specifications.

8.6 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 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 evaluations or conclusions; however, they will be used as a check on laboratory quality assurance.

8.7 Data Management and Reporting

A copy of water quality analytical results and QA/QC data will be submitted to the Project Owner within 5 days of sampling (for field analyses) and within 30 days (for laboratory analyses).

Lab reports and chain-of-custody will be reviewed for consistency between lab methods, sample identifications, dates, and times for both primary samples and QA/QC samples. Data, including chain-of-custody forms and Sampling Activity Logs, shall be kept with the DESCP/SWPPP.

8.8 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, will be included in the onsite DESCP/SWPPP.

Should the run-off/downgradient sample show an increased level of the tested analyte relative to the background sample, 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 non-visual pollutant concentrations. Any revisions to the BMPs will be recorded as an amendment to the DESCP/SWPPP.

8.9 Change of Conditions

Whenever DESCP/SWPPP monitoring 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 DESCP/SWPPP.

8.10 Record Keeping and Reports

Records of all stormwater monitoring information and copies of all reports (including Annual Reports) will be retained for a period of at least 3 years from date of submittal or longer if required by the RWQCB. All records will be maintained onsite while construction is ongoing.

These records include:

- The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation
- The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements
- The date and approximate time of analyses
- The individual(s) who performed the analyses
- A summary of all analytical results from the last 3 years, the method detection limits and reporting units, the analytical techniques or methods used, and the chain of custody forms
- Rain gauge readings from site inspections
- Quality assurance/quality control records and results
- Non-stormwater discharge inspections and visual observation (inspections) and stormwater discharge visual observation records
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections
- Visual observation and sample collection exception records

SECTION 9

References

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

- California Stormwater Quality Association (CASQA) *2009 Construction Handbook*
- CH2M HILL. 2002. *Los Esteros Critical Energy Facility Construction Storm Water Pollution Prevention Plan*. June.
- Los Esteros Critical Energy Facility, LLC (LECEF). 2003. *Application for Certification for the Los Esteros Critical Energy Facility*. December.
- State Water Resources Control Board (SWRCB). 2009. Order No. 2009-0009-DWQ National Pollutant Discharge Elimination System General Permit No. CAS000002 Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities