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Project Title:	Carlsbad Energy Center - Compliance
TN #:	211682
Document Title:	Soil Management Plan (SMP)
Description:	<p>This SMP was developed to meet the following key objectives:</p> <ul style="list-style-type: none">• Summarize previous land use and environmental investigations• Provide listing and description of institutional controls that will apply to the Project• Identify and safely excavate soils within project areas. Appropriately manage any soil identified with chemicals of concern above DEH approved screening or cleanup levels.• Provide the names of responsible parties.• Provide an estimated amended CECP construction schedule.• Provide a framework for monitoring, sampling, reporting of excavation work, including large-scale soil excavation.• Detail methods and procedures which will allow data generated by the soil management process to be integrated into the DEH VAP for cleanup and assessment of the site.• Provide methods for dust control, stockpile management, and waste characterization.• Describe the reporting requirements.
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AMY HARBERT
ASSISTANT DIRECTOR

September 30, 2015

Ms. Sheila Henika
NRG Cabrillo Power Operations Inc.
4600 Carlsbad Boulevard
Carlsbad, CA 92008

Dear Ms. Henika:

VOLUNTARY ASSISTANCE PROGRAM CASE #H13941-004
CABRILLO POWER
4600 CARLSBAD BOULEVARD, CARLSBAD, CA 92008

Staff of the Department of Environmental Health (DEH) have reviewed the July 2, 2015 *Soil Management Plan* (SMP), prepared by The Source Group, Inc.

The SMP was developed for the Carlsbad Energy Center LLC (Project Owner) for redevelopment activities at the Encina Power Station (EPS) located at 4600 Carlsbad Boulevard, Carlsbad, California. The Project Owner has received a license from the California Energy Commission (CEC) to redevelop 23-acres of land within the 95-acre EPS facility. The redevelopment will consist of demolition and removal of aboveground fuel oil storage tanks and ancillary equipment, remediation of impacted soils, and construction of a natural-gas-fired generating facility with associated infrastructures.

This SMP was developed to meet the following key objectives:

- Summarize previous land use and environmental investigations
- Provide listing and description of institutional controls that will apply to the Project
- Identify and safely excavate soils within project areas. Appropriately manage any soil identified with chemicals of concern above DEH approved screening or cleanup levels.
- Provide the names of responsible parties.
- Provide an estimated amended CECP construction schedule.
- Provide a framework for monitoring, sampling, reporting of excavation work, including large-scale soil excavation.
- Detail methods and procedures which will allow data generated by the soil management process to be integrated into the DEH VAP for cleanup and assessment of the site.
- Provide methods for dust control, stockpile management, and waste characterization.

- Describe the reporting requirements.

DEH approves the SMP as a conceptual plan for the entire Site. Specific Community Health and Safety Plans for individual impacted areas must still be submitted and approved by DEH prior to excavation activities. If you have any questions, please call me at (858) 505-6969.

Sincerely,

JAMES CLAY, Environmental Health Specialist III
Site Assessment and Mitigation Program

cc: Mr. Timothy R. Sisk, NRG, Inc. (by email)
Mr. Steve Williams, ERM (by email)
Mr. George Piantka, NRG Energy, West Region

AMENDED CARLSBAD ENERGY CENTER PROJECT

SOIL MANAGEMENT PLAN CONDITION OF CERTIFICATION WASTE-11

**4600 Carlsbad Boulevard,
Carlsbad, California**

July, 2015

Prepared For:
Carlsbad Energy Center LLC
5790 Fleet Street, Suite 200
Carlsbad, CA 92008

Prepared By:



1962 Freeman Avenue
Signal Hill, California 90755

A handwritten signature in blue ink, appearing to read 'C. Seipel', with a large, looping flourish at the end.

DATE: 7-2-15
Christopher S. Seipel, CHG 823,
P.G. 7353, expires 12/31/15
Senior Hydrogeologist

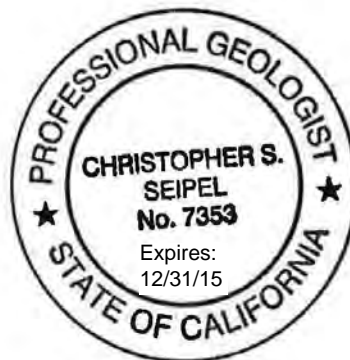


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1. INTRODUCTION

The Source Group, Inc. (SGI) has developed this Soil Management Plan (Plan) for the Carlsbad Energy Center LLC (Project Owner) for redevelopment activities at the Encina Power Station (EPS) located at 4600 Carlsbad Boulevard, Carlsbad, California. The Project Owner has received a license from the California Energy Commission (CEC) to redevelop 23-acres of land within the 95-acre EPS facility. The redevelopment will consist of demolition and removal of aboveground fuel oil storage tanks and ancillary equipment, remediation of impacted soils, and construction of a natural-gas-fired generating facility with associated infrastructures. The new generating facility will be a fast start, high-efficiency, natural-gas-fired facility that will support San Diego Gas & Electric (SDG&E) local load and provide overall system reliability. The final phase of redevelopment will include demolition to grade of the EPS power blocks 1 through 5 and ancillary equipment, and site stabilization.

The CEC amended Final Decision license 07-AFC-06 provides requirements for development in the Conditions of Certification (COCs) that the Project Owner must implement during site preparation, demolition, and construction. The COCs WASTE-1, -3, -4, -5, -7, -10, and -11 are included in the Final Decision to ensure that contaminated soil does not affect the public, and that potentially hazardous waste is properly characterized and managed. COC WASTE-11 requires the preparation and submittal of this Plan to the CEC compliance project manager for approval.

In addition to the CEC license, the Project Owner has entered into the Voluntary Assistance Program (VAP) with the County of San Diego, Department of Environmental Health (DEH) for environmental oversight and closure reporting. CAL-EPA Site Designation Process allows one agency to act as the administering agency with the ability to issue a Certificate of Completion (California Health and Safety Code, section 25264). DEH is currently, and has historically, acted as the administering agency at the EPS for environmental impact assessments and cleanup actions. The VAP process with DEH will provide agency consultation, project oversight, and technical or environmental report evaluation and concurrence. A summary of the VAP history at the Site is included in Appendix B.

This Plan was developed to meet the following key objectives:

- Summarize previous land use and environmental investigations
- Provide listing and description of institutional controls that will apply to the project

- Identify and safely excavate soils within project areas. Appropriately manage any soil identified with chemicals of concern above DEH approved screening or cleanup levels.
- Provide the names of responsible parties.
- Provide an estimated amended CECP construction schedule.
- Provide a framework for monitoring, sampling, reporting of excavation work, including large-scale soil excavation.
- Detail methods and procedures which will allow data generated by the soil management process to be integrated into the DEH VAP for cleanup and assessment of the site.
- Provide methods for dust control, stockpile management, and waste characterization.
- Describe the reporting requirements.

The Plan is intended to support ground disturbance activities and waste management. In consultation with DEH, the Project Owner expects to integrate relevant data generated under the VAP process and ground disturbance activities into a final SMP summary report, which will include all analytical data and other findings, and will be submitted once the earthwork has been completed.

This Plan addresses only native and non-native (e.g., previously imported fill) soil and soil-like materials present at CECP. It is not intended for use in managing concrete, equipment and piping, liquids, sludge's, or other non-soil materials or wastes. All other waste streams generated during the demolition and redevelopment are managed under the project specific Waste Management Plan prepared by CH2M HILL in 2014.

Site Location

The CECP site is located in Carlsbad, San Diego County, California (Figures 1 and 2). The site address is 4600 Carlsbad Blvd., Carlsbad, California 92008. The CECP site is part of the approximately 95-acre EPS located in Township 12 South, Range 4 West, Section 7, in San Diego County. Elevation of the site is approximately 50 feet above mean sea level. The CECP site is located within the northeastern portion of the existing EPS, which is bordered to the east by Interstate 5, to the south by the SDG&E switchyard, to the west by the Pacific Ocean, and to the north by the Agua Hedionda Lagoon. An existing railroad line runs north to south through the site, dissecting it east

from west. The predominant land use in the vicinity of the site is industrial. Residential, commercial, and open space land uses are also situated nearby.

The nearest significant natural habitat areas are the Pacific Ocean, approximately 0.3 mile west of the CECF site, and Agua Hedionda Lagoon, approximately 0.1 mile north and east of the CECF site, on the opposite side of Interstate 5 (CEC, 2012).

Site History

There are currently a total of five steam power generation units at the site totaling approximately 950 megawatts (MW). Construction of the EPS Unit 1-3 began in 1952 with operation of three power generation units beginning in 1954. In 1972 construction began on Unit 4, and Unit 5 was commissioned in 1978, respectively (FDGTI, 1998b). Initially, the power plant used three ASTs (1, 2, and 3) west of the North County Transit District rail line for fuel oil storage. Four additional ASTs (4, 5, 6, and 7) were constructed between 1971 and 1977 east of the rail line for fuel storage to support Units 4 and 5. Prior to 1984, the generating units were primarily fueled by No.6 fuel oil (FDGTI, 1998a). Natural gas has been the primary fuel used since 1984. An approximate 17-megawatt (MW) gas turbine unit is located to the northeast of the main power plant. The gas turbine is designed to operate in peak demand periods and is primarily fired with natural gas, but can also operate on No.2 diesel oil (FDGTI, 1998a). The No.2 diesel oil had been available to the gas turbine via underground pipelines from three horizontal ASTs. Tanker trucks would supply the No.2 diesel oil to these three ASTs. The three horizontal ASTs were removed in 2007.

The fuel oil ASTs and storage capacity was maintained on site per California Independent System Operator (Cal ISO) backup fuel requirements. The Cal ISO removed the fuel oil storage requirement in 2010. Since the requirement for reserve fuel oil storage no longer applies to the facility the storage tanks can be decommissioned and removed from the site. AST 3 was removed in 2013 for construction of the Poseidon desalinization plant. ASTs 5, 6, and 7 were cleaned and demolished between December 2014 and June 2015. ASTs 1, 2, and 4 remain at the site and will be demolished in preparation for the amended CECF.

The fuel oil piping system is no longer in operation and significant parts of the system have been removed to allow for the Poseidon desalinization plant. A 425-gallon pump pit slop fuel oil tank was located in the pump pit west of Tank 5 (E2 ManageTech, 2014), and was removed in April 2015. A complete description of the current storage locations for oil at EPS are described in detail in the SPCC Plan (E2 ManageTech, 2014).

Summary of Investigations

Various site assessments have been performed at the EPS dating back to at least 1995. The Phase I Environmental Site Assessment report prepared by The Source Group, 2014, provides a summary of all historical site conditions through 2014. Since 2014 EPS has engaged in an asset retire obligation (ARO) program to clean and remove former oil storage and handling systems at the site. Since 2014, EPS has cleaned and removed from service ASTs 5, 6, and 7, and various ancillary fuel oil piping equipment in compliance with Federal Spill Pollution Control and Countermeasures Rule requirements (40 CFR Part 112). The following paragraphs discuss findings from the 2014 Phase I, and progress made in subject Site area since 2014.

- Dudek Engineering conducted assessment and reporting in 1995.
- Groundwater Technology, Inc., (GTI) conducted a Phase I Environmental Site Assessment in 1998.
- A Phase II Environmental Site Assessment was conducted by Groundwater Technologies, Inc., (GTI) in 1998.
- GTI conducted a Supplemental Phase II Environmental Assessment in 1999.
- Haley and Aldrich conducted site assessment, remediation and closure reporting in 2004.
- RBF Consulting conducted a Phase I Environmental Site Assessment in 2006.
- CH2MHILL conducted a Phase I Environmental Assessment in 2007.
- E2 Management Tech conducted a Focused Site Investigation in 2011 and 2012 at Unit 5 transformer.
- Rincon, on behalf of Poseidon, conducted assessment and reporting in 2013 and 2014.
- ERM Group, Inc., Fuel Oil Storage Tanks 5, 6, and 7 Soil Assessment, 2015.

Previous Soil Remediation and Other Recognized Environmental Concerns

Previous remedial actions have been enacted at the EPS over the past 30 years related to either uncontrolled releases of petroleum hydrocarbons, or closure of industrial process equipment. The CECP proposes to redevelop the AST basin areas. Based on the history of the AST areas and main power block it can be expected that below grade residual contaminated soils will be encountered. The following summarizes Controlled Recognized Environmental Conditions (CRECs - past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority) and Recognized Environmental Condition (RECs - presence or

likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment) documented on the site in the 2014 Phase 1 prepared by SGI:

CRECs at the site include the three closed VAP cases (H13941-001, -002, and -003), which include assessment and remediation of a number of locations on the site including:

- Former diesel UST (closed VAP H13941-003),
- Tank 7 remediation,
- Excavation north of Tank 1,
- Prout's Pond,
- Transformer release in 2011/2012 in the area of power block Unit 5, (VAP H13941-005), and
- Tank 3 remediation.

By definition, RECs at the site include the open VAP case (H13941-004), which include assessment and remediation of a number of areas on the site including:

- Excavation within the desalination plant footprint where remediation is essentially complete and awaiting agency closure (VAP H13941-004). This area includes the locations of the following former structures: cutter oil tank, AST 3, three diesel ASTs, and wastewater treatment system (WWTS).
- Excavation outside of the desalination plant (where additional areas with diesel-containing soils are being defined, excavated, and monitored) (VAP H13941-004).

Other RECs at the site related to below grade conditions include the following areas:

- Former military reservation in southwest part of the site (circa later 1940's): This area has not been investigated for issues specifically associated with former military use and likely lies beneath power block Units 1 thru 5.
- Former rubber plant in southwest part of the site (after 1949): This area has not been investigated for issues specifically associated with former operations and likely lies beneath power block Units 1 thru 5.
- Power Block: Assessment in this area is incomplete due to the presence of active equipment in the area of concern (including Unit 5).
- Switchyard with PCB bushings.

- ASTs 1 & 2 (West Tank Farm): Removal of tank contents and oil-containing sand layer beneath tanks anticipated in the future. The ASTs were constructed on top of a six-inch thick, oil impregnated sand cushion that is surrounded by a reinforced concrete ring foundation below grade. The ring foundation supports the tank walls. The oil impregnated sand cushion is comprised of No.2 fuel oil thoroughly mixed with sand at a rate of 22 gallons per cubic yard of sand (PSE, 1970).
- ASTs 4, 5 and 6 (East Tank Farm): Removal of tank contents and oil-containing sand layer beneath tanks anticipated in the future.
- AST 7 (East Tank Farm): An estimated 12 cubic yards (cy) of hydrocarbon impact soil remains in place under an aboveground pipeline and 4 cubic yards of soil remain under concrete-lined v-ditch. Removal of the tank and an oil-containing sand layer beneath AST 7 are scheduled as part of the associated demolition and construction activities for the amended CECP, which is planned to occur in 2015.

2. INSTITUTIONAL CONTROLS

The amended CECP will comply with the state and local laws, ordinances, rules, and standards (LORS) to ensure that excavation work and/or remediation of contaminated soil does not affect the public, construction workers or the environment. CECP will follow state and federal regulations to ensure that waste is properly characterized and managed. The following is a list of regulations that will apply to the CECP:

- California Code of Regulations (CCR), Title 22, Article 3, Section 66261.20: Characteristics of Hazardous Waste.
- California 8 CCR § 5155, et seq. Requirements for use of respirators and for controlling employee exposure to airborne contaminants.
- California Health and Safety Code Section 25262: Designate administering agency. DEH authority to administer the VAP process.
- California State Water Resources Control Board, General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities Order No. 2010-0014-DWQ (NPDES No. CAS000002). Storm water, stockpile, and waste management controls.
- Carlsbad Municipal Code, Title 15, Grading and Drainage.
- Carlsbad Municipal Code, Title 15.12, Storm Water Management and Discharge Control
- San Diego Department of Environmental Health, 2004. San Diego County Site Assessment and Mitigation Manual (SAM Manual), February.
- U.S. EPA, 1986, EPA Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846. Third Edition and Final Updates.

3. ACTIVITIES REQUIRING SPECIAL PROCEDURES AND HAZARD COMMUNICATION

Ground disturbance activities will be required for the construction of the amended CECP generating units and ancillary equipment, including below grade utility locations. Ground disturbance in known contamination areas and areas where contaminated soils are identified will require special procedures. Prior to work activities for non-emergency excavation work, the DEH will be notified in advance of subsurface activities. In the case of an emergency, where the work is required to maintain power plant operation, work may proceed and DEH notification would follow.

Workers involved in excavating soil in any of the areas defined as an CREC or REC, past or present hazardous materials storage areas will be informed of the following:

- Excavation may expose soils containing petroleum hydrocarbons (TPH) throughout the site; volatile organic constituents (VOCs) and semi-volatile organic constituents (SVOCs) or polynuclear aromatics (PNAs) potentially co-located with TPH; and heavy metals including arsenic, nickel, and vanadium associated with heavy fuels.
- Known releases of metals from the wastewater treatment plant area have been found in soil.
- Excavated soil that is discolored (e.g., gray, black, green, or red) and/or has a petroleum odor and/or has elevated readings using a photo ionizing detector (PID) or similar hand held device, will be managed as potentially impacted above DEH action levels until laboratory testing is completed.
- Any soil within previously identified release area or CREC or REC area will require prior characterization to assess soil management requirements. Such REC areas may include fuel oil, hydraulic oil, and wastewater pipelines; sumps; hazardous materials and waste storage and accumulation areas; solvent-usage areas; paint and sand blasting booths; transformer areas; aboveground petroleum storage tanks (fuel oil and lube oil); and former UST area.

Soil Management

Soil management during ground disturbance activities related to the Amended CECP will be implemented by the construction management staff, EPS environmental specialist, and the remediation and construction contractors. The CECP construction management staff will be responsible for implementation of this SMP and reporting the CEC CPM. The EPS environmental specialist(s) is responsible for waste profiling, signing manifests as the generator, and direct reporting the local agencies such as the DEH, Certified Unified Program Agency (CUPA), and City of Carlsbad inspectors. The remediation and

construction contractors will be responsible for implementing soil management activities such as a stock piling soil, implementing best management practices (dust control, covering stockpiles, etc.) and providing properly trained personnel.

- CECF construction management staff: Tim Sisk, Manager, Environmental Business, Western Region, NRG Energy; and Christopher Seipel, P.G., CHg, Resume submitted and approved under WASTE-3.
- EPS Environmental Specialist: Sheila Henika, P.E., MBA, Environmental Specialist; and Ryan Goerl, Environmental Specialist
- Remedial and Construction contractor: To be determined.

4. MONITORING AND REPORTING

Per COC WASTE-4, the designated professional engineer or geologist (see WASTE-3) shall be available for consultation during site characterization, demolition, excavation, and grading activities. Per COC WASTE-4 if potentially contaminated soil is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the professional engineer or professional geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, authorized representatives of the SDCDEH, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the authorized representatives of the SDCDEH, and the CPM for guidance and possible oversight.

Reporting

Per COC WASTE-4 verification the Project Owner shall submit any final reports filed by the professional engineer or professional geologist to the authorized representatives of the SDCDEH, and the CPM for approval within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

Per COC WASTE-11 a final SMP summary report shall be prepared and submitted the CPM and the SDCDEH for review within 25 days of the completion of earthwork.

5. ESTIMATED CECP CONSTRUCTION SCHEDULE

The following is an estimated schedule of assessment and remediation activities associated with CECP.

Site assessment Tanks 5, 6, and 7

Action	Estimated Date Range
Tanks 5, 6, and 7 Soil Assessment	May to June 2015
Tanks 5, 6 and 7 Soil Remediation	August to October 2015
Tanks 1, 2, and 4 Soil Assessment	July-October 2015
Tanks 1, 2, and 4 Soil Remediation	November to December 2015
CECP Construction Mobilization	TBD
Site Grading	TBD
CECP Construction	TBD
CECP Commissioning	TBD
Retirement and decommissioning of the EPS	2018
Demolition of the EPS facility	2018 to 2020

6. SOIL TESTING

Known REC locations will have been investigated and remediated per WASTE-1 prior to construction of the CECP. All other area of excavated soils will be inspected for potential contamination before off-site disposal or for use as suitable backfill material. The following paragraphs are guidelines for soil testing.

It is important to know the source location of soil to be excavated, reused, or imported to the site, and the current and former land use of that location before ground disturbing activities occur. Excavations carried out in REC or former REC locations will follow the VAP requirements for the specific area.

A PID will be used to screen soils from visibly or know impacted areas. Soil monitored with a PID and reporting screening results greater than 50 parts per million (ppm) shall be segregated for further analytical testing. Any soil with PID screening results greater than 1,000 ppm shall be segregated into sealed containers, if possible, pending further sampling and analysis.

For soil excavated outside any known or active REC area and suspected of possible contamination based on visual observations, odors, or PID readings shall be tested, at a minimum, for the following:

- TPH-carbon chain C6-C36 by EPA Method 8015B;
- VOCs, including BTEX/MTBE/oxygenates, by EPA Method 8260B;
- Soil pH by EPA 9045D; and
- CCR Title 22 metals by EPA Method 6010B/7471A.

These tests should be performed on all soil proposed for offsite disposal (e.g., surplus soil from grading cut operations) at a minimum frequency of one sample every 1,000 cubic yards or per the requirements of the receiving facility.

If the total concentrations of any of metals in a given soil sample exceed 10 times the Soluble Threshold Limit Concentration (STLC), or 20 times the Total Concentration Leachable Potential (TCLP), the sample in question will be further tested for leachable concentrations of the suspect constituent.

7. POST-EXCAVATION SOIL MANAGEMENT

Soils should be managed on site, at minimum, by the following soils handling procedures. Soils may be managed by the project-specific Waste Management Plan (CECP, 2014) granted that the minimum testing, profiling, and manifesting procedures presented in this SMP are followed.

PPE Measures

Based on the review of previous investigation reports and a review of the Phase I (2014, SGI), no special personal protective equipment (PPE) measures are needed. Level D is believed to be adequate during investigations and implementation of management of potentially impacted soils during the site investigation, remediation, and construction activities. Requirements and site conditions to which the PPE may be upgraded should be based on consultation with the Construction Safety Supervisor (CSS), Project Manager and EPS site safety officer. A site specific health and safety manual should be consulted for the proper level of PPE. A job hazard analysis (JHA) should also be prepared prior to soil sampling and soil management during ground disturbance activities.

Soil Storage & Handling

Based on the numerous soils investigations previously conducted at the site, typical soil is brown to light grey, moist fine to medium sand. If darkly discolored or oily-appearing soil is encountered, at a minimum, soil should be stockpiled on an impermeable material, such as visqueen, and located away from drainage swales, wherever possible, until tested. The stockpiled material should also be protected with an impermeable cover and bermed to ensure control of the material until it has been adequately characterized. Alternatively, the material can be stored on site in chemically compatible Department of Transportation (DOT)-approved 55-gallon drums and 20 or 40 yard soil bins, provided that drums and soil bins are properly marked and labeled. Soil exhibiting different properties (e.g. discolored or not discolored) should be segregated whenever possible and tested separately. Stockpiled soils should not be stored in known or potential run-on or runoff water ways. In addition, any soil excavated from the site must be stored in protected areas in accordance with Storm Water Pollution Prevention Plan (Construction or Industrial SWPPP).

Construction debris including asphalt, concrete, scrap metal, and piping should be separated from all excavated soils.

Non-hazardous Soil

Excavated soil deemed non-hazardous by analytical testing for the above noted analytes, and below screening thresholds shown in Table 1 may be returned to the excavation, securely stored on-site for potential reuse as backfill material or transported to a municipal Class III landfill, approved by ESP.

Hazardous Soil

Excavated soil exceeding the hazardous threshold for the chemical parameters listed in Section 4.0, must be handled in accordance with current state and federal hazardous waste laws. The material must be stored in appropriate containers or stockpiled on-site not to exceed 90 days. It must be properly manifested, utilizing a State of California DTSC Uniform Hazardous Waste Manifest and transported off-site by a licensed hazardous waste transporter to an appropriate ESP approved, licensed treatment or Class I disposal facility.

Soil Screening Criteria

Potential options for handling of excavated soils on site are: (1) on-site reuse during routine operational and project trenching and excavations, (2) off-site soil recycling or off-site disposal at a Class III facility, and (3) off-site disposal at Class I hazardous waste facility. These options are dependent on the results of analytical testing, and approval of site-specific cleanup criteria by CECP and the lead regulatory agency. Soil screening criteria are provided in Appendix C table Risk Based Concentration Levels (ERM, 2015) to assist with determining soil acceptance in excavation areas and import soil quality to be used as fill or backfill. It should be noted that the DEH has previously approved cleanup goals for specific areas of the facility (CREC and RECs) through the VAP process. Any excavation in and around previously identified CREC or REC must consider previous remedial efforts and previously established cleanup goals.

If any single contaminant concentration in soil exceeds a screening limit listed in Appendix C then the soil **cannot** be reused and must be placed in containers or stockpiled, and prepared for shipment offsite. All waste material including construction debris, non-hazardous, and hazardous wastes must be profiled and manifested. The facility Environmental Specialist must sign all manifests prior to shipment off site.

Furthermore, soil samples used for waste profiling will be compared to Total Threshold Limit Concentrations (TTLC) and Soluble Threshold Limit Concentration (STLC) as described in CCR Title 22 Section 666261.20. Soil that is less than TTLC screening criteria, but greater than 10 times STLC limits or 20 times the TCLP limit will be further analyzed using the Waste Extraction Test (WET), or EPA 1311 extraction method,

respectively. If the result of the WET test is greater than the STCL limits, then the soil will be considered a California Hazardous Waste, and soil will be disposed of at a Class I facility. If the soil exceeds the TCLP limit then the soil must be profiled as a RCRA hazardous waste, and will require special handling and profiling.

Backfill Material Sampling

Excavations will be backfilled using excavated native soil material. However, in some instances, certified-clean imported fill material may be obtained from a local sand gravel quarry. If the locally obtained material is not pre-certified clean, samples will be collected from each imported material source prior to use. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) Information Advisory for Clean Imported Fill Material (DTSC, 2001) will be used as a guidance document to determine the sampling frequency, and analysis in the event that the quarry is unable to provide a certificate of analysis for the backfill material. If needed, all backfill material samples will be analyzed for the chemical parameters listed in the DTSC guidance document, depending on the location. In addition, a current certificate should be obtained from the quarry providing material to ensure that the material does not contain asbestos. If the facility cannot provide a certificate, then asbestos determination will be required.

Results from field screening of borrow site material should be evaluated against the same screening criteria above. Any detection of asbestos would deem the material unsuitable for use on the CECP facility.

8. REFERENCES

California Code of Regulations (CCR), 2003, Title 22, Division 4, Chapter 11, Article 3, Section 66261.20: Characteristics of Hazardous Waste, September.

CCR, Title 22 Chapter 11, Article 5 Categories of Hazardous Waste, Section 66261.113; Total Threshold Limit Concentration Values of Persistent and Bioaccumulative Toxic Substances in Extremely Hazardous Wastes.
http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Ch11.cfm

CCR, Title 22 Chapter 11, Article 3, Section 22261.24-1, Table III List of Organic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values.
http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Ch11.cfm

CCR, Title 22 Chapter 11, Appendix II; Waste Extraction Test (WET) Procedures.
http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Ch11.cfm

California Environmental Protection Agency, 2005 Use of California Human Health Screening Levels (CHHSLs) In Evaluation of Contaminated Properties, [updated September 23, 2010],

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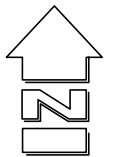
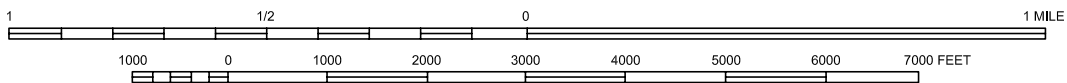
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FIGURES



SCALE 1:24000



**THE
Source Group, Inc.**

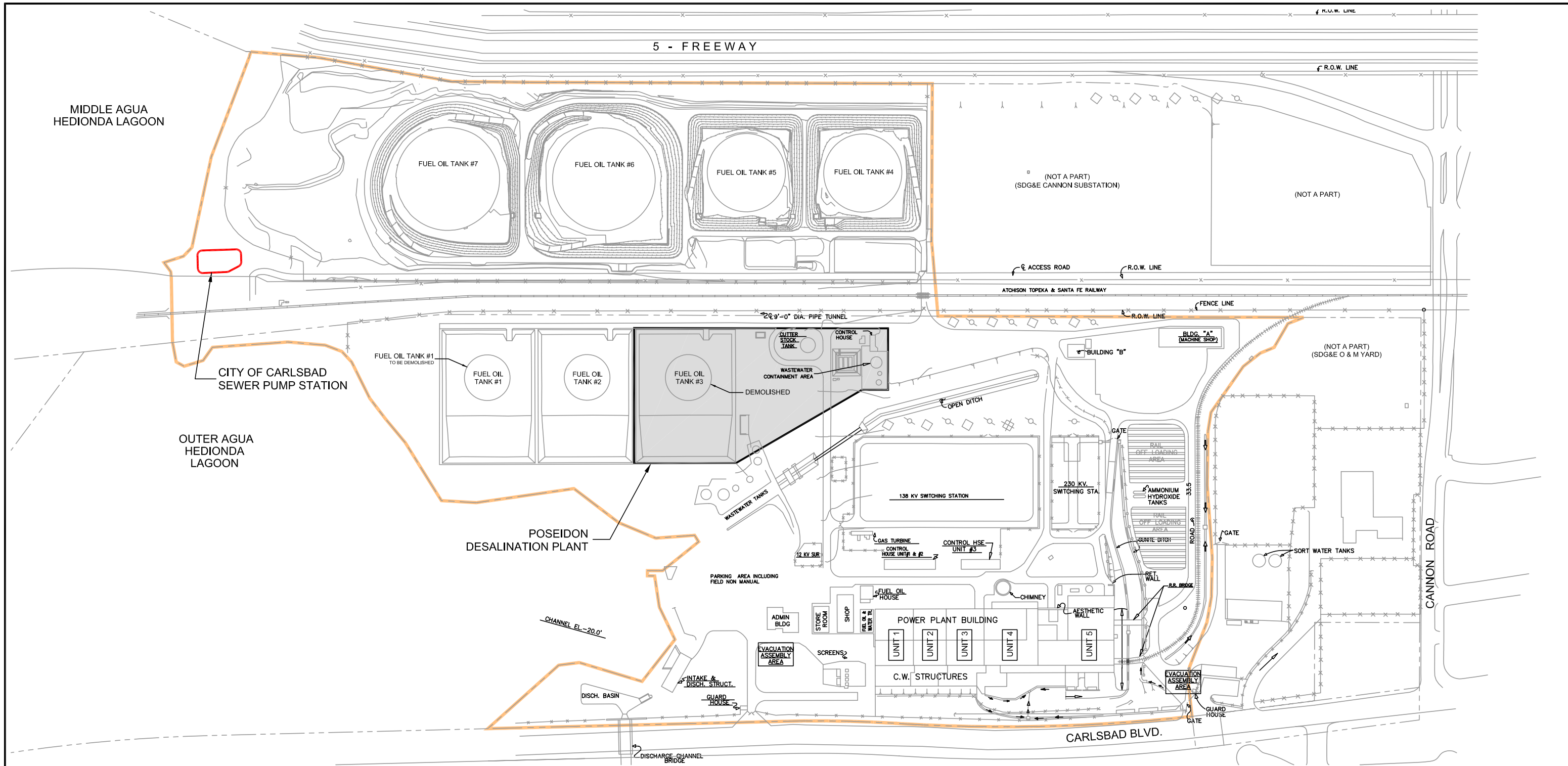
FILE NAME: NRG-SL
DATE: 06/2015
SOURCE: U.S.G.S. 7.5 MINUTE
TOPOGRAPHIC QUADRANGLE MAP
SAN LUIS REY, CA

SITE LOCATION MAP

ENCINA POWER STATION
4600 CARLSBAD BOULEVARD
CARLSBAD, CALIFORNIA

FIGURE

1



LEGEND

— SUBJECT SITE AREA

DATE: 06/2015	FILE NAME: NRG-ST3.DWG	SOURCE:
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SITE LAYOUT MAP

ENCINA POWER STATION
4600 CARLSBAD BOULEVARD
CARLSBAD, CALIFORNIA

SGI THE SOURCE GROUP, INC.
environmental

FIGURE

2

0 300 600
APPROXIMATE SCALE IN FEET



APPENDIX A

CALIFORNIA CODE OF REGULATIONS, TITLE 22, WASTE LIMITS

Article 3. Characteristics of Hazardous Waste**§66261.20. General.**

(a) A waste, as defined in section 66261.2, which is not excluded from regulation as a hazardous waste pursuant to section 66261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this article.

(b) A waste which is identified as a hazardous waste pursuant to one or more of the characteristics set forth in section 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23 or 66261.24(a)(1) is assigned the EPA Hazardous Waste Number set forth in this article for each characteristic that is applicable to that waste. These numbers shall be used in complying with the notification requirements of Health and Safety Code section 25153.6 and, where applicable, in the recordkeeping and reporting requirements under chapters 12 through 15, 18 and 20 of this division.

(c) Sampling and sample management of wastes and other materials for analysis and testing pursuant to this article shall be in accord with the sampling planning, methodology and equipment, and the sample processing, documentation and custody procedures specified in chapter nine of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 (incorporated by reference, see section 66260.11 of this chapter). In addition to the sampling methods in chapter nine of SW-846, the Department will consider samples obtained using any of the other applicable sampling methods specified in Appendix I of this chapter to be representative samples.

NOTE: Authority cited: Sections 208, 25141 and 25159, Health and Safety Code. Reference: Sections 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.20.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).

§66261.21. Characteristic of Ignitability.

(a) A waste exhibits the characteristic of ignitability if representative samples of the waste have any of the following properties:

(1) it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see section 66260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see section 66260.11), or as determined by an equivalent test method approved by the Department pursuant to section 66260.21;

(2) it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard;

(3) it is an ignitable compressed gas as defined in 49 CFR section 173.300 (as amended September 30, 1982) and as determined by the test methods described in that regulation or equivalent test methods approved by the Department pursuant to section 66260.21;

(4) it is an oxidizer as defined in 49 CFR section 173.151 (as amended May 31, 1979).

(b) A waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

NOTE: Authority cited: Sections 208, 25141 and 25159, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.21.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).

§66261.22. Characteristic of Corrosivity.

(a) A waste exhibits the characteristic of corrosivity if representative samples of the waste have any of the following properties:

(1) it is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either the EPA test method for pH or an equivalent test method approved by the Department pursuant to section 66260.21. The EPA test method for pH is specified as Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition and updates, (incorporated by reference, see section 66260.11);

(2) it is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition and updates (incorporated by reference, see section 66260.11) or an equivalent test method approved by the Department pursuant to section 66260.21;

(3) it is not aqueous and, when mixed with an equivalent weight of water, produces a solution having a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition and updates (incorporated by reference, see section 66260.11) or an equivalent test method approved by the Department pursuant to 66260.21;

(4) it is not a liquid and, when mixed with an equivalent weight of water, produces a liquid that corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined

by the test method specified in NACE Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition and updates (incorporated by reference, see section 66260.11) or an equivalent test method approved by the Department pursuant to 66260.21.

(b) A waste that exhibits the characteristic of corrosivity specified in subsection (a)(1) or (a)(2) of this section has the EPA Hazardous Waste Number of D002.

NOTE: Authority cited: Sections 25141, 25159, 58004 and 58012, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.22.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).
2. Amendment of subsections (a)(1)-(4) and NOTE filed 10-13-98; operative 11-12-98 (Register 98, No. 42).

§66261.23. Characteristic of Reactivity.

(a) A waste exhibits the characteristic of reactivity if representative samples of the waste have any of the following properties:

- (1) it is normally unstable and readily undergoes violent change without detonating;
- (2) it reacts violently with water;
- (3) it forms potentially explosive mixtures with water;
- (4) when mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;
- (5) it is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;
- (6) it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;
- (7) it is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure;
- (8) it is a forbidden explosive as defined in 49 CFR section 173.51 (as amended April 20, 1987), or a Class A explosive as defined in 49 CFR section 173.53 (as amended April 5, 1967) or a Class B explosive as defined in 49 CFR section 173.88 (as amended May 19, 1980).

(b) A waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

NOTE: Authority cited: Sections 208, 25141 and 25159, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.23.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).

§66261.24. Characteristic of Toxicity.

(a) A waste exhibits the characteristic of toxicity if representative samples of the waste have any of the following properties:

(1) when using the Toxicity Characteristic Leaching Procedure (TCLP), test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, third edition and Updates (incorporated by reference in section 66260.11 of this division), the extracts from representative samples of the waste contain any of the contaminants listed in Table I of this section at a concentration equal to or greater than the respective value given in that table unless the waste is excluded from classification as a solid waste or hazardous waste or is exempted from regulation pursuant to 40 CFR section 261.4. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purposes of this section;

(A) a waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the EPA Hazardous Waste Number specified in Table I of this section which corresponds to the toxic contaminant causing it to be hazardous;

(B) Table I - Maximum Concentration of Contaminants for the Toxicity Characteristic:

EPA Hazardous Waste Number	Contaminant	Chemical Abstracts Service Number	Regulatory Level Mg/l
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0

EPA Hazardous Waste Number	Contaminant	Chemical Abstracts Service Number	Regulatory Level Mg/l
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0 ¹
D024	m-Cresol	108-39-4	200.0 ¹
D025	p-Cresol	106-44-5	200.0 ¹
D026	Cresol		200.0 ¹
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0 ²

EPA Hazardous Waste Number	Contaminant	Chemical Abstracts Service Number	Regulatory Level Mg/l
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

¹ If o-, m- and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

² Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

(2) it contains a substance listed in subsections (a)(2)(A) or (a)(2)(B) of this section at a concentration in milligrams per liter of waste extract, as determined using the Waste Extraction Test (WET) described in Appendix II of this chapter, which equals or exceeds its listed soluble threshold limit concentration or at a concentration in milligrams per kilogram in the waste which equals or exceeds its listed total threshold limit concentration;

(A) Table II - List of Inorganic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration:

(STLC) and Total Threshold Limit Concentration (TTLC) Values.

Substance ^{a,b}	STLC mg/l	TTLC Wet-Weight mg/kg
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos		1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000 ^c
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium (III) compounds	5 ^d	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20

Substance ^{a,b}	STLC mg/l	TTLC Wet-Weight mg/kg
Molybdenum and/or molybdenum compounds	350	3,500 ^e
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

^aSTLC and TTLC values are calculated on the concentrations of the elements, not the compounds.

^bIn the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

^cExcluding barium sulfate.

^dIf the soluble chromium, as determined by the TCLP set forth in Appendix I of chapter 18 of this division, is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 66261.100, then the waste is a non-RCRA hazardous waste.

^eExcluding molybdenum disulfide.

(B) Table III - List of Organic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values:

Substance	STLC mg/l	TTLC Wet Weight mg/kg
Aldrin	0.14	1.4
Chlordane	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	--	13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10

- (3) it has an acute oral LD₅₀ less than 2,500 milligrams per kilogram;
- (4) it has an acute dermal LD₅₀ less than 4,300 milligrams per kilogram;
- (5) it has an acute inhalation LC₅₀ less than 10,000 parts per million as a gas or vapor;
- (6) it has an acute aquatic 96-hour LC₅₀ less than 500 milligrams per liter when measured in soft water (total hardness 40 to 48 milligrams per liter of calcium carbonate) with fathead minnows (*Pimephales promelas*), rainbow trout (*Salmo gairdneri*) or golden shiners (*Notemigonus crysoleucas*) according to procedures described in Part 800 of the "Standard Methods for the Examination of Water and Wastewater (16th Edition)," American Public Health Association, 1985 and "Static Acute Bioassay Procedures for Hazardous Waste Samples," California Department of Fish and Game, Water Pollution Control Laboratory, revised November 1988 (incorporated by reference, see section 66260.11), or by other test methods or test fish approved by the Department, using test samples prepared or meeting the conditions for testing as prescribed in subdivisions (c) and (d) of Appendix II of this chapter, and solubilized, suspended, dispersed or emulsified by the cited procedures or by other methods approved by the Department;
- (7) it contains any of the following substances at a single or combined concentration equal to or exceeding 0.001 percent by weight:

- (A) 2-Acetylaminofluorene (2-AAF);
- (B) Acrylonitrile;
- (C) 4-Aminodiphenyl;
- (D) Benzidine and its salts;
- (E) bis (Chloromethyl) ether (BCME);
- (F) Methyl chloromethyl ether;
- (G) 1,2-Dibromo-3-chloropropane (DBCP);
- (H) 3,3'-Dichlorobenzidine and its salts (DCB);
- (I) 4-Dimethylaminoazobenzene (DAB);
- (J) Ethyleneimine (EL);
- (K) alpha-Naphthylamine (1-NA);
- (L) beta-Naphthylamine (2-NA);
- (M) 4-Nitrobiphenyl (4-NBP);
- (N) N-Nitrosodimethylamine (DMN);
- (O) beta-Propiolactone (BPL);
- (P) Vinyl chloride (VCM);

(8) it has been shown through experience or testing to pose a hazard to human health or environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment.

(b) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have the property specified in subsection (a)(5) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and its head space vapor contains no such toxic materials in concentrations exceeding their respective acute inhalation LC₅₀ or their LC_{LO}. The head space vapor of a waste shall be prepared, and two milliliters of it shall be sampled using a five milliliter gas-tight syringe, according to Method 5020 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982 (incorporated by reference, see section 66260.11). The quantity in milligrams of each material, which exhibits the characteristic of toxicity because it has the property specified in subsection (a)(5) of this section, in the sampling syringe shall be determined by comparison to liquid standard solutions according to the appropriate gas chromatographic procedures in Method 8010, 8015, 8020, 8030 or 8240 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 (incorporated by reference, see section 66260.11). The concentration of each material in the head space vapor shall be calculated using the following equation:

		Q _A		29.8ml		1
C _A	=		x		x	
		MW		mmole		2 x 10 ⁻⁶ M ³

where C (in parts per million) is the concentration of material A in head space vapor, Q (in milligrams) is the quantity of material A in sampling syringe and MW (in milligrams per millimole) is the molecular weight of material A. Where an acute inhalation LC₅₀ is not available, an LC₅₀ measured for another time (t) may be converted to an eight-hour value with the following equation:

$$\text{Eight-hour LC}_{50} = (t/8) \times (t\text{-hour LC}_{50}).$$

(c) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have either of the properties specified in subsection (a)(3) or (a)(4) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and the calculated oral LD₅₀ of the waste mixture is greater than 2,500 milligrams per kilogram and the calculated dermal LD₅₀ is greater than 4,300 milligrams per kilogram by the following equation:

$$\text{Calculated oral or dermal } LD_{50} = \frac{100\%}{\sum_{x=1}^n \frac{\%A_x}{T_{A_x}}}$$

where %A_x is the weight percent of each component in the waste mixture and T_{A_x} is the acute oral or dermal LD₅₀ or the acute oral LD_{LO} of each component.

NOTE: Authority cited: Sections 25141, 25159, 58004 and 58012, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.24.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).
2. Amendment of table II filed 1-31-94; operative 1-31-94 (Register 94, No. 5).
3. Editorial correction of equation (Register 95, No. 36).
4. Amendment of subsection (a)(1) and NOTE filed 10-13-98; operative 11-12-98 (Register 98, No. 42).
5. Change without regulatory effect amending subsections (a)(3) and (c) filed 6—3—2004 pursuant to section 100, title 1, California Code of Regulations (Register 2004, No. 23).

APPENDIX B

COUNTY OF SAN DIEGO, DEPARTMENT OF ENVIRONMENTAL HEALTH, VOLUNTARY ASSISTANCE PROGRAM CASE DOCUMENTATION

GeoTracker - Windows Internet Explorer

http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608143454

Google

Favorites

SGI WebMail

http://www.epa.gov/airma...

theQuad

Concur

eTIME

Insider

Maximo

Aconex Log In

NRG Citrix

NRG Webmail

NRG ServiceDesk

HPRESS

GeoTracker

Skip to: [Content](#) | [Footer](#)

CA.GOV STATE WATER RESOURCES CONTROL BOARD GEOTRACKER

GeoTracker Home Tools Reports Information SWRCB Home

CABRILLO POWER (T0608143454) - (MAP)

[SIGN UP FOR EMAIL ALERTS](#)

4800 CARLSBAD BL
CARLSBAD, CA 920084301
SAN DIEGO COUNTY
CLEANUP PROGRAM SITE
[PRINTABLE CASE SUMMARY](#)

CLEANUP OVERSIGHT AGENCIES
SAN DIEGO COUNTY LOP ([LEAD](#)) - CASE #: H13941-001
SAN DIEGO RWQCB (REGION 9)

Summary Cleanup Action Report Regulatory Activities Environmental Data (ESI) Site Maps / Documents Community Involvement Related Cases

Regulatory Profile

CLEANUP STATUS - [DEFINITIONS](#)
COMPLETED - CASE CLOSED AS OF 10/28/1996 - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN
HEATING OIL / FUEL OIL

POTENTIAL MEDIA AFFECTED
SOIL

FILE LOCATION
LOCAL AGENCY

BENEFICIAL USE
GW - MUNICIPAL AND DOMESTIC SUPPLY, SW - AGRICULTURAL SUPPLY, SW - INDUSTRIAL SERVICE SUPPLY, SW - NON-CONTACT WATER RECREATION, SW - WARM FRESHWATER HABITAT, SW - WATER CONTACT RECREATION, SW - WILDLIFE HABITAT

Site History
No site history available

Internet | Protected Mode: Off

El Segundo 04-NRG-002

11:05 AM

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Region 4

245 West Broadway, Suite 350
Long Beach, CA 90802-4444

February 22, 1993

Mr. Lee R. McDonald
Environmental Services Administrator
San Diego Gas & Electric
P.O. Box 1831
San Diego, California 92112

SFH 310.2

Dear Mr. McDonald:

ACCEPTANCE OF SURFACE IMPOUNDMENTS CLOSURE CERTIFICATION: SAN DIEGO GAS & ELECTRIC, ENCINA PLANT, 4600 CARLSBAD BLVD, CARLSBAD, CALIFORNIA 92008 (EPA ID NO. CAT000618900)

The California Department of Toxic Substances Control (Department) has received the closure certification report dated June 1992 and certification statement by an independent registered engineer dated January 14, 1993 for the subject facility. We are also in receipt of a copy of Order No. 92-77 dated December 14, 1992 which was adopted by the Regional Water Quality Control (RWQCB), San Diego Region. The Order finds that San Diego Gas & Electric (SDG&E) has fulfilled its obligation under Cease and Desist Order No. 88-81 for the cleanup and closure of surface impoundments at the Encina Power Plant. We are also in receipt of a copy of order No. 92-81 dated December 14, 1992 which was adopted by the RWQCB. This order rescinds order No. 88-80, "Waste Discharge Requirement for San Diego Gas and Electric Company, Encina Power Plant, Class I Surface Impoundments, San Diego County."

Based on our previous correspondence with SDG&E, we understand that the surface impoundments were never used for managing RCRA regulated wastes. Thus, we agreed that the RWQCB will serve as the lead agency on this project. The Department's previous letters to SDG&E indicated that we will not conduct an independent review of the closure plan submitted and that we will make a determination on final closure based on the RWQCB's approval. The closure certification report certifies that all closure activities have been completed in accordance with the closure plan approved by the RWQCB. Therefore, the Department hereby accepts the closure certification and considers the surface impoundments at the subject facility closed.

This acceptance does not preclude the Department from requiring corrective action, should it later determine that a release of hazardous waste or constituents into the environment as occurred from the facility. The acceptance is also not a certification that your facility does not pose an environmental or public health threat, nor does it release the owner/operator from its responsibilities and liabilities under the law.




Mr. Lee R. McDonald
February 22, 1993
Page 2

SDG&E is no longer required to maintain financial assurance and liability coverage as required by California Code of Regulations, Title 22, Sections 66265.143 and 66265.147 for the closed portion of the subject facility.

If you have any question, please contact Mr. Sid Safieslamy at (310) 590-4888.

Sincerely,


Mohinder S. Sandhu, P.E., Chief
Facility Permitting Branch

cc: Ms. Paula Rasmussen, Chief
Surveillance and Enforcement Branch
Department of Toxic Substances Control
Region 4
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. John P. Anderson
Regional Water Quality Control Board
San Diego Region
9771 Clairmont Mesa Boulevard, Suite B
San Diego, California 92124-1331

Mr. Gary Stephany, Chief
Environmental Health Services
County of San Diego
P.O. Box 85261
San Diego, California 92186-5261

Mayor Bud Lewis
City of Carlsbad
1200 Carlsbad Village Drive
Carlsbad, California 92008

Ms. Joetta Nelson
Fees Unit
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

VAP -002

GeoTracker

geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608133917

CA.GOV **GEOTRACKER**

GeoTracker Home Tools Reports Information SWRCB Home

CABRILLO POWER (TD608133917) - (MAP)

4600 CARLSBAD BL
CARLSBAD, CA 92084301
SAN DIEGO COUNTY
CLEANUP PROGRAM SITE
[PRINTABLE PAGE SUMMARY / CNA \(01/01/07\)](#)

CLEANUP OVERSIGHT AGENCIES
SAN DIEGO COUNTY TOP AGENCIES CASE # H13941-002
CASEWORKER: [Paul Aguilar](#)
SAN DIEGO RWRCB (REGION 9)

Summary Cleanup Action Report Regulatory Activities Environmental Data (ES) Site Maps / Documents Community Involvement Disposal / Gen

Regulatory Profile
CLEANUP STATUS - DEFINITIONS
COMPLETED - CASE CLOSED AS OF 10/28/1996 - [CLEANUP STATUS HISTORY](#)
POTENTIAL CONTAMINANTS OF CONCERN
GASOLINE
FILE LOCATION
LOCAL AGENCY
DWR GROUNDWATER SUB-BASIN NAME

POTENTIAL MEDIA AFFECTED
SOIL
BENEFICIAL USE
GW - MUNICIPAL AND DOMESTIC SUPPLY, SW - AGRICULTURAL SUPPLY, SW - INDUSTRIAL SERVICE SUPPLY, SW - NON-CONTACT WATER RECREATION, SW - WARM FRESHWATER HABITAT, SW - WATER CONTACT RECREATION, SW - WILDLIFE HABITAT
R0 WATERSHED NAME
Carlsbad - Agua Hedionda - Los Monos (904.31)

Cleanup Status History

DATE	STATUS
10/28/1996	Completed - Case Closed
6/21/1996	Open - Case Begin Date

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H13941-003VA...pdf DEH2011-LSA...pdf

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County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-9933

www.sdcounty.ca.gov/deh/lwq

RICHARD HAAS
ASSISTANT DIRECTOR

March 18, 2005

Ms. Barbara Montgomery
San Diego Gas & Electric
6875 Consolidated Way
San Diego, CA 92121

Dear Ms. Montgomery:

VOLUNTARY ASSISTANCE PROGRAM, FILE H13941-003
SDG&E/SEMPRA ENCINA POWER PLANT
4600 CARLSBAD BLVD., CARLSBAD, CALIFORNIA

The Department of Environmental Health (DEH), Site Assessment and Mitigation Program (SAM), has reviewed the environmental investigation and remediation reports related to the above-referenced property, prepared by your environmental consultants. The reports summarize the site investigation and mitigation activities performed at the above-referenced location. Provided that the information presented to DEH/SAM was complete, accurate, and representative of existing site conditions, this agency concurs that the cleanup goals established for the subject site have been met.

Please be advised that this letter does not relieve the responsible party of any liability under the California Health and Safety Code or the Porter Cologne Water Quality Control Act. If previously unidentified contamination is discovered which may affect public health, safety and/or water quality, additional site assessment and cleanup may be necessary.

Changes in the proposed use of the above site as mixed residential/commercial may require reevaluation to determine if the change will pose a risk to public health.

Thank you for selecting the Department of Environmental Health as your lead agency to assist you with the progress of your environmental project. Please contact Nasser Sionit of the Site Assessment and Mitigation Program, at (619) 338-2239, if you require additional assistance.

Sincerely,

GEORGE McCANDLESS, Program Manager
Supervising Environmental Health Specialist
Site Assessment and Mitigation Program

GM:NS:kd

Enclosure

cc: John Anderson, Regional Water Quality Control Board

WP/H13941-003-305VAPCLO

Case Closure Summary Non-LOP or Voluntary Assistance Program

I. AGENCY INFORMATION

DATE: March 15, 2005

Agency Name: County of San Diego, Environmental Health, SAM	Address: P.O. Box 129261
City/State/ZIP: San Diego, CA 92112-9261	Phone: (619) 338-2222 FAX: (619) 338-2377
DEH Staff Person: NASSER SIONIT	Title: ENVIRONMENTAL HEALTH SPECIALIST III

II. CASE INFORMATION

Case No. H13941-003	RWQCB Case No. N/A
Site Name: SEMPRA/ ENCINA POWER PLANT	Site Address: 4600 CARLSBAD BL, CARLSBAD 92008-4301
Property Owner: SDG&E, Attn.: BARBARA MONTGOMERY	
Responsible/Requesting Parties SDG&E	Address 6875 CONSOLIDATED WAY SAN DIEGO, CA 92121
	Phone Number 858-547-3330
Type of Case: NON-TANK CASE	
Agency notification of DEH Oversight: October 20, 1999 to RWQCB and DTSC	

III. SITE CHARACTERIZATION AND/OR INFORMATION

Purpose of Investigation: SPILL DUE TO FACILITY'S OPERATION	Substances Investigated: DIESEL AND HEAVY METALS
Site Characterization complete? YES	
Monitoring Wells Installed? YES	Total Number: 16
Proper Screened Interval? YES	Number of decommissioned wells: 16
Range of groundwater levels on the site? 10 - 20 FEET (MEASURED)	Groundwater Flow Direction: WEST (ESTIMATED)
Most Sensitive Current Use: Beneficial Groundwater Use: None Designated EXISTING BENEFICIAL SURFACE WATER USE: MUN, AGR, IND, REC1, REC2	
Are Drinking Water Wells Affected? NO	RWQCB Basin Number: 904.31. Note 2: Aqua Hedlonda Lagoon-Los Monos Hydrologic Sub Area
Is Surface Water Affected? NO	Nearest Surface Water name: PACIFIC OCEAN, 1000 FT.
Off-Site Beneficial Use Impacts (addresses/locations): NONE OBSERVED	
TREATMENT AND DISPOSAL OF AFFECTED MATERIAL	
Material Contaminated soil	Amount (Include Units) 4,426 Cubic yards
Action (Treatment or Disposal) Transported to TPS Technologies for recycling	Date 1-15-04 to 2-10-04

Non-LOP - Underground Storage Tank Oversight handled outside the LOP
Non-Tank - Voluntary Assistance Program

Case Closure Summary **Non-LOP or Voluntary Assistance Program**

III. SITE CHARACTERIZATION AND/OR INFORMATION (Continued)

H13941-003

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS		
	MAXIMUM	REMAINING
SOIL		
Diesel	= 21000 mg/kg	= 530 mg/kg
Benzene	< 5 mg/kg	< 5 mg/kg
Toluene	< 5 mg/kg	< 5 mg/kg
Ethyl benzene	= 6.47 mg/kg	= 6.47 mg/kg
Xylene (Individual Isomers or total)	= 59.4 mg/kg	= 59.4 mg/kg
Lead	< 0.014 mg/kg	< 0.014 mg/kg
Polychlorinated Biphenyls (PCBs)	< 0.08 mg/kg	< 0.08 mg/kg
PAHs	< 20 mg/kg	< 20 mg/kg
WATER		
Diesel	= 2400 ug/l	= 2400 ug/l
Benzene	< 0.5 ug/l	< 0.5 ug/l
Toluene	< 0.5 ug/l	< 0.5 ug/l
Ethyl benzene	< 0.5 ug/l	< 0.5 ug/l
Xylene (Individual Isomers or total)	< 0.5 ug/l	< 0.5 ug/l
Arsenic	= 22 ug/l	= 22 ug/l
Zinc	= 27 ug/l	= 27 ug/l
<p>Comments: San Diego Gas and Electric is operating several fuel tank farms consisting of above ground storage tanks, power plants, and warehouses in approximately 125 acres of land at this location in the City of Carlsbad. As a part of the property transaction agreement, a detailed environmental investigation related to this operation was performed by several consulting companies. Contaminated soil with diesel and heavy metals were discovered at shallow depths below the surface. Groundwater had a low concentration of dissolved diesel and trace amounts of some heavy metals. Soil remediation in eight areas with TPH concentrations higher than 1,000 mg/kg was performed by excavation (4,426 cubic yards) and off-site disposal. Verification sampling and analysis showed non-detect to low levels of diesel and volatile organic compounds remained in the subsurface.</p>		

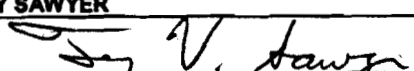
IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? YES
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? YES
Does corrective action protect public health for current land use? YES
Case review based on current/proposed use as: FUELTANK FARM OPERATIONS
Are there other issues DEH needs to follow up on: NO
<p>Site Management Requirements: Any contaminated soil excavated as part of subsurface construction work must be managed in accordance with the legal requirements at that time.</p>
Should corrective action be reviewed if land use changes? YES
List Enforcement Actions Taken: NONE
List Enforcement Actions Rescinded: NONE
Is this account up to date and current? YES

Case Closure Summary
Non-LOP or Voluntary Assistance Program

V. LOCAL AGENCY REPRESENTATIVE DATA

H13941-003

Name: TONY SAWYER	Title: HYDROGEOLOGIST
Signature: 	Date: 3-16-05

VI. RWQCB NOTIFICATION

Date Submitted to RWQCB: VAP CASE	RWQCB Response: --	
RWQCB Staff Name: --	Title: --	Date: --

VII. ADDITIONAL COMMENTS, DATA, ETC.

--

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

Sionit, Nasser

From: Sionit, Nasser
Sent: Wednesday, May 01, 2013 10:23 AM
To: 'Henika, Sheila'; Maschue, Manon E.
Cc: Carter, Jerry; Piantka, George; Sisk, Tim; Bergeron, Daniel W.; Sawyer, Tony
Subject: RE: Request for partial VAP H13941-004 closure

Hello Sheila:

I have completed my review of the report dated February 28, 2013 and prepared by SCS Engineers. The results of your investigation were discussed with our DEH Hydrogeologist. DEH concurs with the findings and with the conclusions as stated in the report. This email is to inform you that no further investigation will be needed in the subsurface at the location of the former WWT Facility. Please note that if in the future a new discovery of contamination is made at this location, further assessment of the contamination will be required.

Nasser Sionit, Ph.D.
VAP Program Coordinator
Environmental Health Specialist III
Site Assessment and Mitigation
Department of Environmental Health

From: Henika, Sheila [<mailto:Sheila.Henika@nrgenergy.com>]
Sent: Monday, April 22, 2013 11:34 AM
To: Sionit, Nasser; Maschue, Manon E.
Cc: Carter, Jerry; Piantka, George; Sisk, Tim; Bergeron, Daniel W.
Subject: Request for partial VAP H13941-004 closure

Nasser,

Recently, Cabrillo Power I LLC, Encina Power Station sent DEH - HMD a request for final closure of the Conditional Authorization for the wastewater treatment facility.

Cabrillo would like to ask DEH - SAM if we may obtain a partial closure of the H13941-004 Voluntary Assistance Program for the wastewater treatment facility (WWTF) only. Closure processes and parameters were discussed in the "November 2009 Closure Plan Prepared for the Wastewater Treatment Facilities at the Encina Power Station, Carlsbad, California, Cabrillo Power I LLC". On March 7, 2013 the final report addressing the former WWTF was presented to DEH - SAM with the soil sampling results, observations, and other parameters intended to meet VAP closure requirements, "Final Documentation and Assessment Report for the Decommissioning and Closure of the Conditionally Authorized Hazardous Wastewater Treatment System". All of the sampling results are below the CHHSL cleanup levels except for arsenic. The arsenic results are below the agreed upon 6mg/kg.

Please let us know if you require any further information in order to determine closure of the wastewater treatment facility portion of the VAP H13941-004. The oil portion of the VAP would be closed at a later date once all the sampling and evaluation of those areas is complete. Let us know if you require separate report review expediting funds or if invoicing to the VAP H13941-004 is sufficient.

Regards,
Sheila

Sheila Henika, P.E., MBA-TM
NRG Cabrillo Power Operations Inc.



JACK MILLER
DIRECTOR

County of San Diego

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS MATERIALS DIVISION

P.O. BOX 129261, SAN DIEGO, CA 92112-9261

Phone: (858) 505-6700 FAX: (858) 505-6786
1 (800) 253-9933

<http://www.sdcdeh.org>

August 1, 2013

Ms. Jenny Barnes, Chief
Financial Assurance Unit
Department of Toxic Substances Control
8800 Cal Center Drive, 3rd Floor
Sacramento, CA 95826-3200

Dear Ms. Barnes:

AUTHORIZATION TO RELEASE FINANCIAL ASSURANCE MECHANISM FOR CABRILLO POWER I, LLC, ENCINA POWER STATION, 4600 CARLSBAD BOULEVARD, CARLSBAD, CA 92008 EPA ID# CAT 000 618 900

The County of San Diego, Department of Environmental Health, Hazardous Materials Division (HMD) requests the Department of Toxic Substances Control to release the financial assurance mechanism submitted by Cabrillo Power I, LLC, Encina Power Station, located at 4600 Carlsbad Boulevard, Carlsbad, CA 92008 for the closure of their Conditionally Authorized (CA) treatment unit. The facility has completed closure according to the closure plan and has submitted the required closure certification. The HMD has received and reviewed the closure report for the CA water treatment unit that was once located at Cabrillo Power I, LLC, Encina Power Station. The HMD has also inspected the site and has verified that the treatment unit is closed. Since there is no longer a hazardous waste treatment unit, Cabrillo Power I, LLC, Encina Power Station, is no longer subject to the financial assurance requirements of the California Code of Regulations (CCR), Title 22, Section 67450.13.

If you have any questions, please call Manon Maschue, Environmental Health Specialist, HMD, at (858) 518-7390.

Sincerely,

J.M. VIZZIER, Chief
Hazardous Materials Division

JMV/mem

cc: Maryam Sedghi, Supervising Environmental Health Specialist, HMD
File # 113941

Sionit, Nasser

From: Sionit, Nasser
Sent: Tuesday, October 01, 2013 7:59 AM
To: 'Henika, Sheila'; Torin Snyder (tsnyder@rinconconsultants.com)
Cc: Sisk, Tim; 'Pcrain@poseidon1.com'; 'Brett.Lyall@kiewit.com'; 'Kent.obrien@ghd.com'
Subject: RE: Remediation Closure Report

Expires: Thursday, October 31, 2013 12:00 AM

Hi Sheila:

Last night I had a chance to discuss the case information with our Hydrogeologist. The information provided to DEH indicated that the cleanup goals established for the area under environmental investigation have been met for the proposed future site use. No further action is required within the area investigated. A closure document for the whole site will be issued pending completion of site assessment and remediation across the rest of the subject site. Please call me at 858-505-6795, should you have any questions or concerns.

Thank you,

Nasser Sionit, Ph.D.
VAP Program Coordinator
SAM Project Manager
Environmental Health Specialist III
Department of Environmental Health
County of San Diego

From: Henika, Sheila [<mailto:Sheila.Henika@nrgenergy.com>]
Sent: Monday, September 30, 2013 9:58 AM
To: Sionit, Nasser
Cc: Sisk, Tim
Subject: RE: GeoTracker

Understood. Please be aware that this request is only for partial closure of the large plot of land. The VAP was amended to include the waterfront areas that Poseidon is digging up. Thanks.

Sheila Henika, P.E., MBA-TM
Encina Power Station

From: Sionit, Nasser [<mailto:Nasser.Sionit@sdcounty.ca.gov>]
Sent: Wednesday, September 25, 2013 11:55 AM
To: Henika, Sheila; Sisk, Tim; Carter, Jerry
Subject: RE: GeoTracker

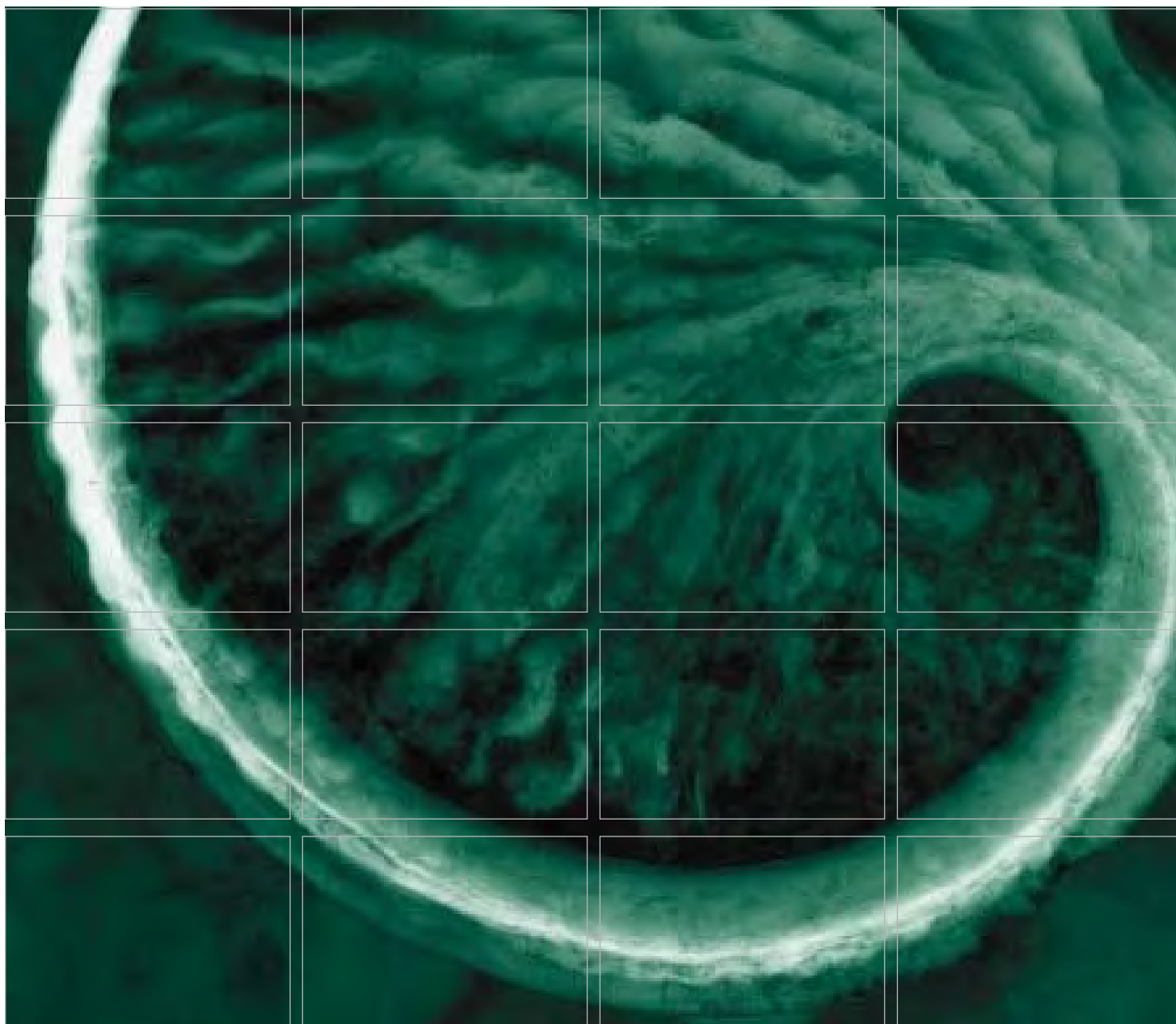
The site visit is pending on the approval of case closure. We can schedule that later.

Nasser

From: Henika, Sheila [<mailto:Sheila.Henika@nrgenergy.com>]
Sent: Wednesday, September 25, 2013 11:35 AM

APPENDIX C

SOIL SCREENING CRITERIA RISK BASED CONCENTRATION LEVELS ERM JUNE 2015



Soil Assessment Report

Encina Power Station
4600 Carlsbad Boulevard
Carlsbad, California 92008

July 2015

Prepared for:
Cabrillo Power I LLC

www.erm.com

The world's leading sustainability consultancy



Table 5
Summary of RBCs Used for Risk Evaluation
NRG Encina
Carlsbad, California

Chemical	Soil to Groundwater	Commercial Worker	Construction Worker	Vapor Intrusion	Screening Level for soil 0-10 feet bgs	Screening Level for Soil deeper than 10 feet bgs
Metals						
Chromium	NA	767,000	445,000	NA	100,000 (1)	100,000 (1)
Cobalt	NA	153	13	NA	13.3	153
Lead	NA	320	320	NA	320.0	320
Nickel	NA	10,000	225	NA	225.0	10,000
Vanadium	NA	2,560	221	NA	221.0	2,560
Polynuclear Aromatic Hydrocarbons						
1-Methylnaphthalene	NA	10	228	NA	10	10
2-Methylnaphthalene	NA	429	362	NA	362.0	429
Acenaphthene	NA	6,430	5,420	NA	5,420.0	6,430
Acenaphthylene	NA	6,430	5,420	NA	5,420.0	6,430
Anthracene	NA	32,100	27,100	NA	27,100.0	32,100
Chrysene	NA	2.5	55	NA	2.5	2.5
Fluorene	NA	4,290	3,620	NA	3,620.0	4,290
Naphthalene	1.6	16	47	0.253	0.253	0.253
Phenanthrene	NA	3,210	2,710	NA	2,710.0	3,210
Pyrene	NA	3,210	2,710	NA	2,710.0	3,210
Total Petroleum Hydrocarbons (TPH)						
TPH-D	10,000	11,004	1,324	NA	1,324.0	10,000.0
TPH as Motor Oil	14,000	276,672	151,751	NA	14,000.0	14,000.0
Volatile Organic Compounds						
Benzene	0.173	1.3	4.2	0.038	0.038	0.038
Ethylbenzene	2.7	23	76	0.44	0.44	0.44
Ethylbenzene - Tank 6	NA	NA	NA	2.14	2.14	2.14
m,p-Xylenes	59	2,290	261	40	40	40
o-Xylene	59	2,700	308	40	40	40
Toluene	8.7	4,870	602	119	8.7	8.7

Notes:

(1) Screening level for Chromium is based on San Diego DEH previously approved CHHSL Value (Rincon, August 9, 2013)

All results in milligrams per kilogram (mg/kg).

Commercial worker and construction worker RBCs calculated based on SAM Manual exposure parameters where available, USEPA defaults where SAM Manual values were not available, and Cal/EPA and USEPA toxicity criteria imported into the USEPA RSL calculator. Lead RBC based on Cal/EPA lead CHHSL.

Vapor intrusion RBCs based on USEPA J&E model for soil with site specific geotechnical data.

Soil to Groundwater values based on SAM Manual Table 5-8 for TPH (silty sand), SAM Table 6-6 for BTEX, and

Addendum No. 4 to the December 2009 Interim Remediation Work Plan and Addendum to VAP #113941-004 for the Encina Power Station, Carlsbad, California, Cabrillo Power I LLC, as approved by DEH on 9 April 2013.

Abbreviations:

NA = No screening value

TPH = Total petroleum hydrocarbons