



# California Regional Water Quality Control Board

## Los Angeles Region



Linda S. Adams  
Acting Secretary for  
Environmental Protection

320 W. Fourth Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Edmund G. Brown Jr.  
Governor

March 29, 2011

Mr. Justin Archuleta  
Citicorp North America, Inc.  
12731 W. Jefferson Boulevard  
Los Angeles, CA 90066

**SUBJECT: ENROLLMENT UNDER GENERAL WASTE DISCHARGE REQUIREMENTS TO INJECT POTASSIUM PERMANGANATE (ORDER NO. R4-2007-0019: SERIES NO. 138) TO TREAT SOIL AND GROUNDWATER,**

**SITE: O'NEIL DATA SYSTEMS, INC., 12655 BEATRICE STREET, LOS ANGELES, CALIFORNIA (SCP # 0882) (SITE ID # 2047F00) (FILE NO. 10-113)**

Dear Mr. Archuleta:

We have completed our review of your application for coverage under the General Waste Discharge Requirements to evaluate the effectiveness of potassium permanganate (KMnO<sub>4</sub>) addition into source area soils to de-chlorinate adsorbed phase chlorinated hydrocarbon contamination, through a network of injection points spread across the impacted area and thus reduce groundwater contamination.

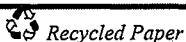
### BACKGROUND

The site is located in a mixed commercial, industrial, and residential area in the City of Los Angeles (Figure 1). It is improved with an office building, a warehouse for storage of reels of newsprint, and a large Warehouse Production Plant (WPP) where printing presses are located. The remainder of the site consists of asphalt paved parking and storage areas. The site is bordered to the north by a concrete-lined portion of Centinela Creek, and to the east, south and west by light industrial operations, commercial offices, and residential apartment buildings (Figure 2).

The site was formerly used for assembly/manufacturing of respirator products and assembly of computers. Currently, O'Neil Data Systems, which publishes the *Investors Business Daily* newspaper and other commercial documents, occupies the referenced site (Site) and has been using it for commercial printing, since 1992.

The chemicals that have been released at the site primarily include Perchloroethylene (PCE) and Trichloroethylene (TCE) and, to a lesser extent, 1,1-Dichloroethylene (1,1-DCE) and 1,1-Dichloroethane (1,1-DCA). PCE and/or TCE have subsequently dechlorinated significantly in the subsurface to cis 1,2-Dichloroethylene (cis-1,2-DCE) and, to a much lesser extent, trans 1,2-Dichloroethylene (trans-1,2-DCE). The release has impacted both soil and the uppermost semi-perched/semi-confined aquifer.

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## PROPOSED TREATMENT METHOD

On March 17, 2010, the Regional Board approved the "*Remedial Action Plan, (RAP)*" dated October 8, 2009.

As described in the RAP, the treatment method of addressing the residual soil and groundwater contamination would be in-situ chemical oxidation (ISCO), which involves the injection of treatment compounds into the subsurface to de-chlorinate adsorbed phase and dissolved phase contamination. Your consultants, Partner Engineering and Science, Inc. (Partner) estimated that approximately 2,700 cubic yards (4,000 tons) of impacted soil will require the ISCO treatment. The well locations across the site are shown in Figure 3.

## INJECTION ACTIVITIES

The KMnO<sub>4</sub> injections proposed by Partner will consist of the following activities:

- Injection of potassium permanganate solution into source area soils will be performed through a network of 16 injection points spread across the impacted area, with screen lengths ranging from 5 to 15 feet below ground surface (bgs) to a total depth of 30 feet bgs (Figure 2.2.2.1). Potassium permanganate will be delivered to the site in 5 gallon pails and batched mixed in stainless steel tanks to concentrations as high as 5%. Once mixed, the permanganate will be injected through a progressive cavity pump where pressure, flow and total flow will be continuously monitored.
- The ISCO injection process will be completed in two separate stages. The initial stage will consist of installing injection wells both along the outer perimeter, and directly beneath the previously identified soil contamination. In the second stage, potassium permanganate will be injected beginning at the lowest depths of each location while slowly raising the injection point toward the surface. This process will create a three dimensional pressure boundary around the entire contaminant plume as the reaction begins, forcing the contaminants in towards the center of the area to be treated. Once hydraulic control has been established, saturation of the source area soils will be completed by the same application technique. Due to the fine grained characteristics of the soils beneath this site, hydraulic fracturing of the soils will be required to ensure effective mixing and extend the radius of influence for the treatment. This will be achieved by applying the potassium permanganate through a specially fabricated nozzle at high pressure. The nozzle has a ring of outlet ports to force the solution out horizontally through and between the soil layers within the borehole. It is anticipated that 800 to 1,000 gallons of the ISCO solution will be required to treat the impacted soil. The injection process is expected to require four to five days on site for completing the application. The immediate result will be to initiate the breakdown of the contaminants into non toxic by-products, with the reaction continuing until all of the materials injected have reacted.

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- The equipment required to complete the ISCO process will consist of a full size, truck mounted, hollow stem auger drill rig, truck mounted bulk chemical tanks, mixing tanks, pump systems, and a support vehicle. The boreholes for injection will be advanced with the drill rig. Injection application rods and nozzles will be lowered into the bore holes, and later retracted utilizing the trucks winch system. Individual bulk chemicals will be loaded into the truck mounted tanks immediately prior to mixing and injection. All vehicles required for the ISCO process will be centrally located to service multiple injection points on site from as few points as possible to minimize re-mobilizations and down time.
- Confirmatory soil and groundwater sampling will be performed following completion of injection to determine if the ISCO process has been effective in reducing soil and groundwater contaminant concentrations to acceptable levels.

Regional Board staff has reviewed the information provided and has determined that the proposed discharge meets the conditions specified in Regional Board Order No. R4-2007-0019, "*Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites*," adopted by this Regional Board on March 1, 2007.

Enclosed are your Waste Discharge Requirements consisting of Regional Board Order No. R4-2007-0019 (Series No. 138), Monitoring and Reporting Program No. CI-9622.

The "Monitoring and Reporting Program" requires you to implement the monitoring and reporting program on the effective date of this enrollment (February 2011) under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board, per these requirements, please include a reference to "Compliance File No. CI-9622," which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Please submit each type of report as a separate document. We are including a copy of Order No. R4-2007-0019 for the applicant only. A copy of the order will be furnished to anyone who requests it.

A technical report documenting the effectiveness of the soil and groundwater remediation by the ISCO treatment shall be prepared and submitted to Regional Board staff after completion of injection operations. The technical report is to contain all data generated and materials used during this phase of the treatment. The technical report is also to include an evaluation of the cleanup technology and any modifications to the injection and monitoring system, which may be needed based on the findings from this phase of injection. The technical report shall contain the locations, number, and depths of additional injection points. This technical report is due in our office **no later than July 15, 2011**.

The above technical report is required to be submitted under the California Water Code (CWC) section 13267 Order. Please note that effective immediately, the Regional Board requires you to include a perjury statement in all workplans and reports submitted under the 13267 orders. The perjury statement

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Mr. Justin Archuleta  
O'Neil Data Systems, Inc.

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March 29, 2011

shall be signed by a senior authorized representative at Citicorp Inc., (and not by a consultant). The statement shall be in the following format:

"I [NAME], do hereby declare under penalty of perjury under the laws of California, that I am [JOB TITLE] for Citicorp Inc., that I am authorized to attest to the veracity of the information contained in the reports described herein, and that the information contained [NAME AND DATE OF REPORT] is true and correct, and that this declaration was executed at [PLACE], [STATE], on [DATE].

Pursuant to Section 13268 of the California Water Code, failure to submit the required report or document by the due dates may result in civil liability administratively imposed by the Regional Board in an amount up to one thousand dollars (\$1,000) for each day the report or document is not received.

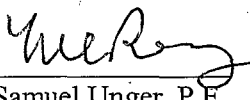
The State Water Resources Control Board (State Water Board) adopted regulations requiring the electronic submittals of information over the Internet using the State Water Board GeoTracker database. You are required not only to submit hard copy reports required in this Order but also to comply by uploading all reports and correspondence prepared to date and additional required data formats to the GeoTracker system. Information about GeoTracker submittals, including links to text of the governing regulations, can be found on the Internet at the following link:

[http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal)

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the General WDR in a separate letter, when your project is complete and the WDR is no longer needed. Please be aware that the annual fee covers the fiscal year billing period beginning July 1, and ending June 30, the following year. You will be required to pay the full annual fee if your request for termination is made after the beginning of the new fiscal year starting July 1.

**Should you have any questions related to this project, please contact Pinaki R. Guha-Niyogi of my staff at (213) 576-6731 ([pguha@waterboards.ca.gov](mailto:pguha@waterboards.ca.gov)).**


Sincerely,

*for*   
Samuel Unger, P.E.  
Executive Officer

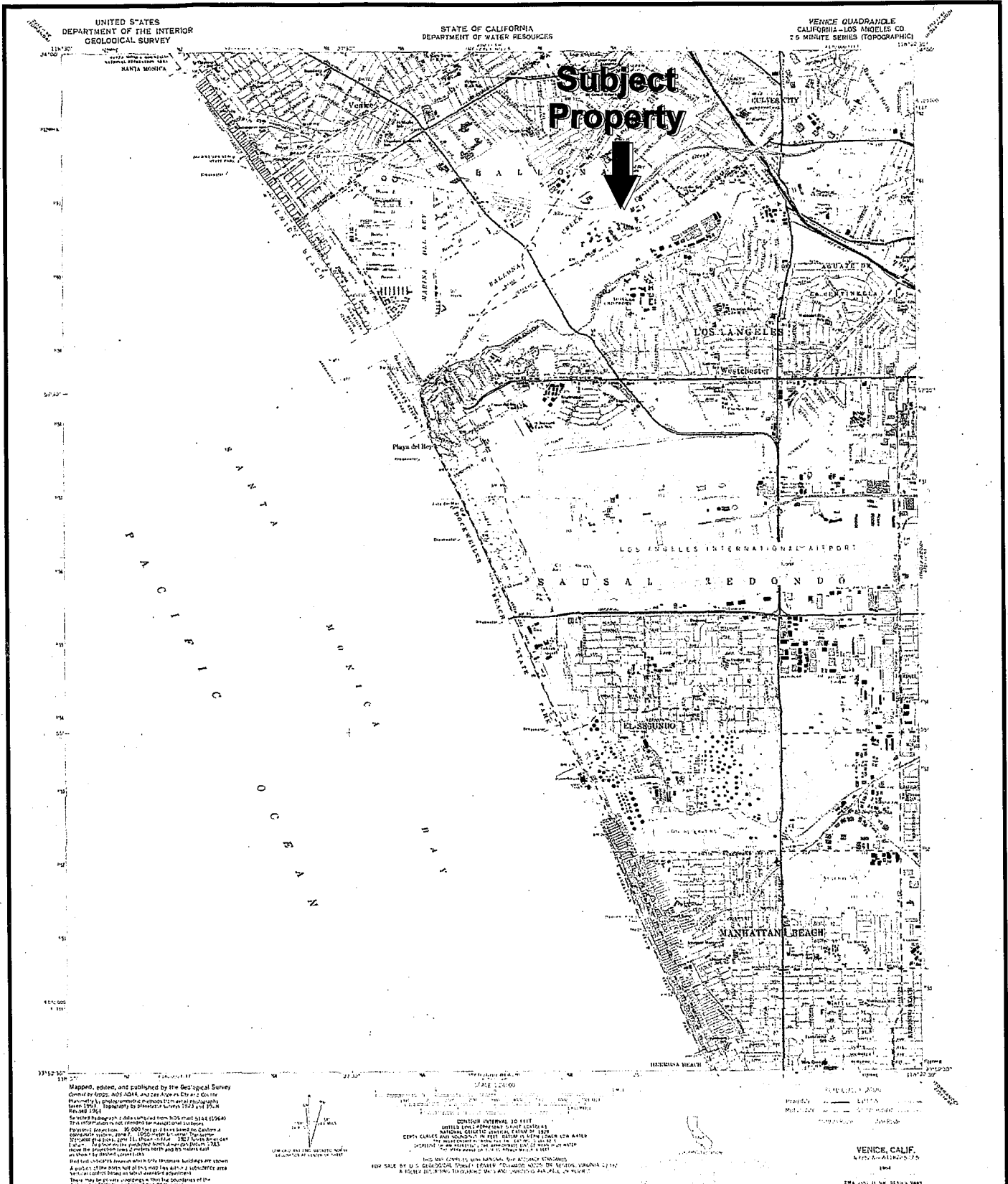
Enclosures:    1) *Figures 1,2, 2.2.2-1 & 3*  
                  2) *Regional Board Revised General WDR Requirements, Order No. R4-2007-0019*  
                  3) *Monitoring and Reporting Program No. CI-9622*

cc:           Mr. Thomas J. Bois II, Bois and Macdonald  
              Mr. Joe Derhake, Partner Engineering and Science, Inc.  
              Mr. Andrew Brack, Partner Engineering and Science, Inc.  
              Mr. Rodolfo Nadres, Partner Engineering and Science, Inc.

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 Recycled Paper

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**Site Vicinity Map**

Figure	Prepared By	Date
1	T. Men	April 2010

12655 Beatrice Street  
Los Angeles, California 90066



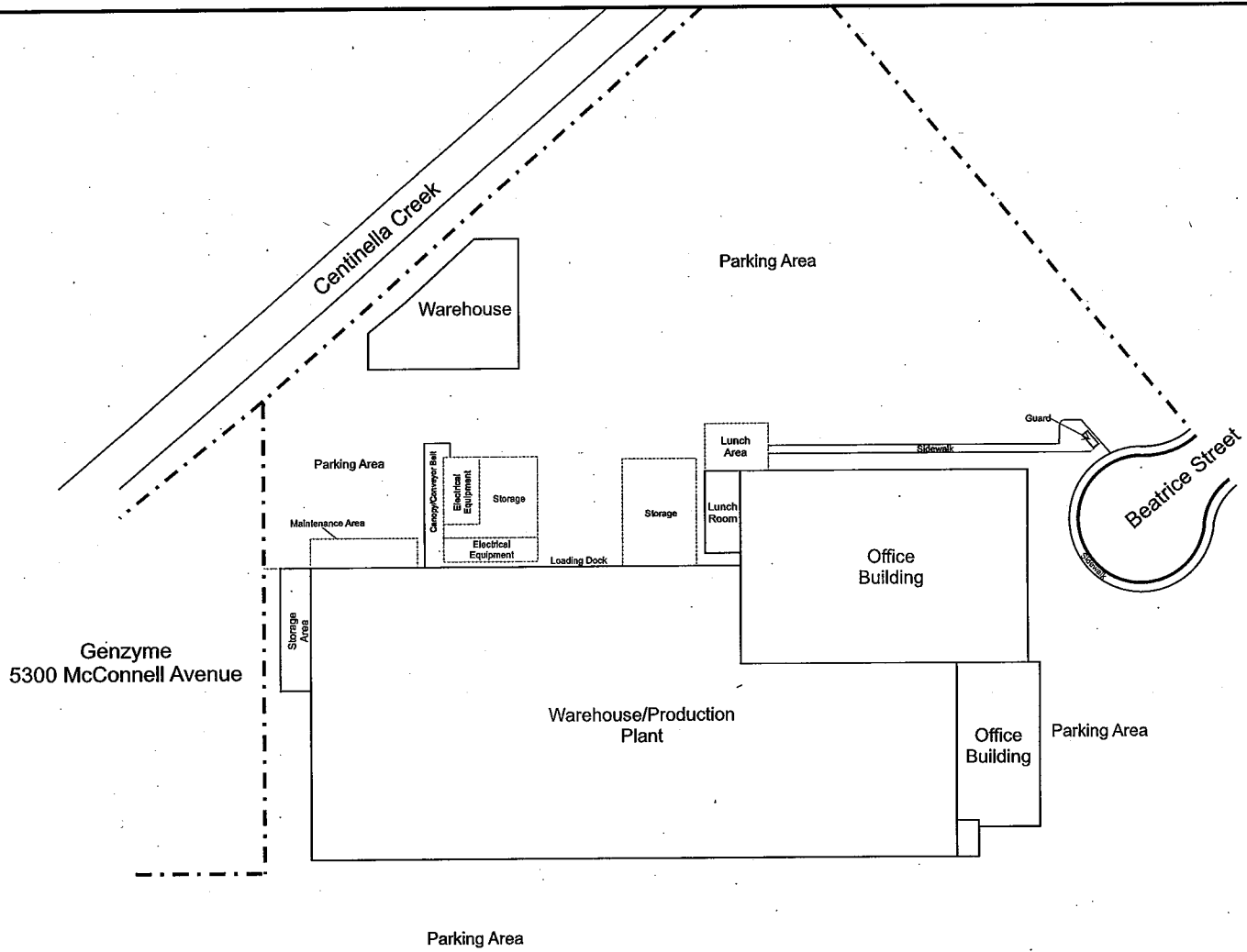
USGS Venice Quadrangle  
Version: 1964 Current as of: 1981

**PARTNER**

Engineering and Science, Inc.  
1990 East Grand Avenue, Suite 100  
El Segundo, California 90245

Project Number: 09-64269.3

Notes:  
Scale is approximate



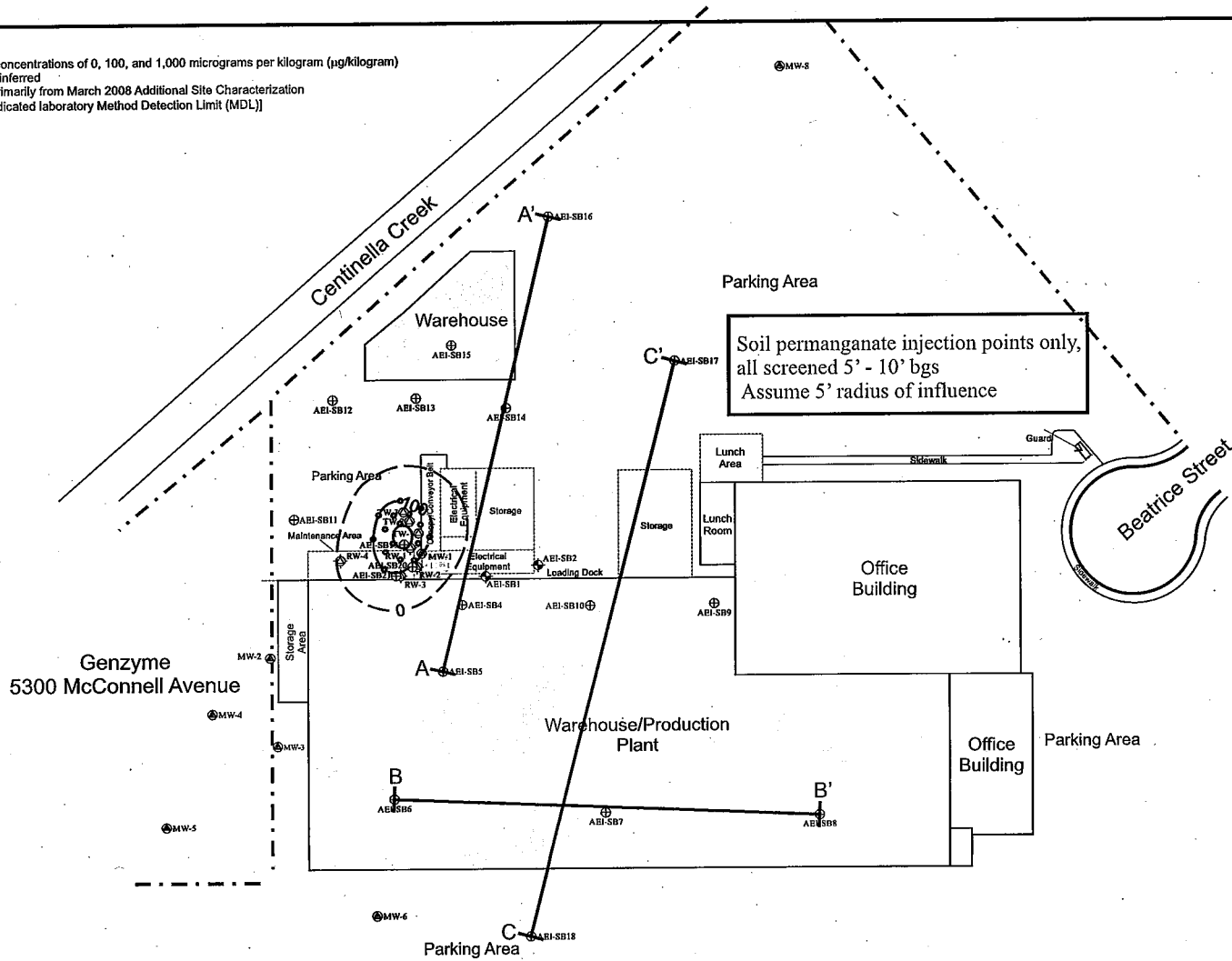
Site Plan		
Figure	Scale	Date
2	1" = 110'	April 2010
12655 Beatrice Street Los Angeles, California 90066		

Legend	
	Fence/Wall

**PARTNER**  
Engineering and Science, Inc.  
1990 East Grand Avenue, Suite 100  
El Segundo, California 90245  
Project Number: 09-64269.3

**Notes:**

- Scale is approximate
- Soil tetrachloroethene (PCE) Isoconcentrations of 0, 100, and 1,000 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ )
- Isoconcentrations dashed where inferred
- Isoconcentrations extrapolated primarily from March 2008 Additional Site Characterization
- AEI-SB4-10': < 2  $\mu\text{g}/\text{kg}$  [below indicated laboratory Method Detection Limit (MDL)]
- AEI-SB5-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB6-10': 7.1  $\mu\text{g}/\text{kg}$
- AEI-SB7-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB8-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB9-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB10-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB11-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB12-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB13-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB14-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB15-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB16-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB17-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB18-10': < 2  $\mu\text{g}/\text{kg}$
- AEI-SB19-10': 1,180  $\mu\text{g}/\text{kg}$
- AEI-SB20-10': 35.5  $\mu\text{g}/\text{kg}$
- AEI-SB21-10': 59.0  $\mu\text{g}/\text{kg}$

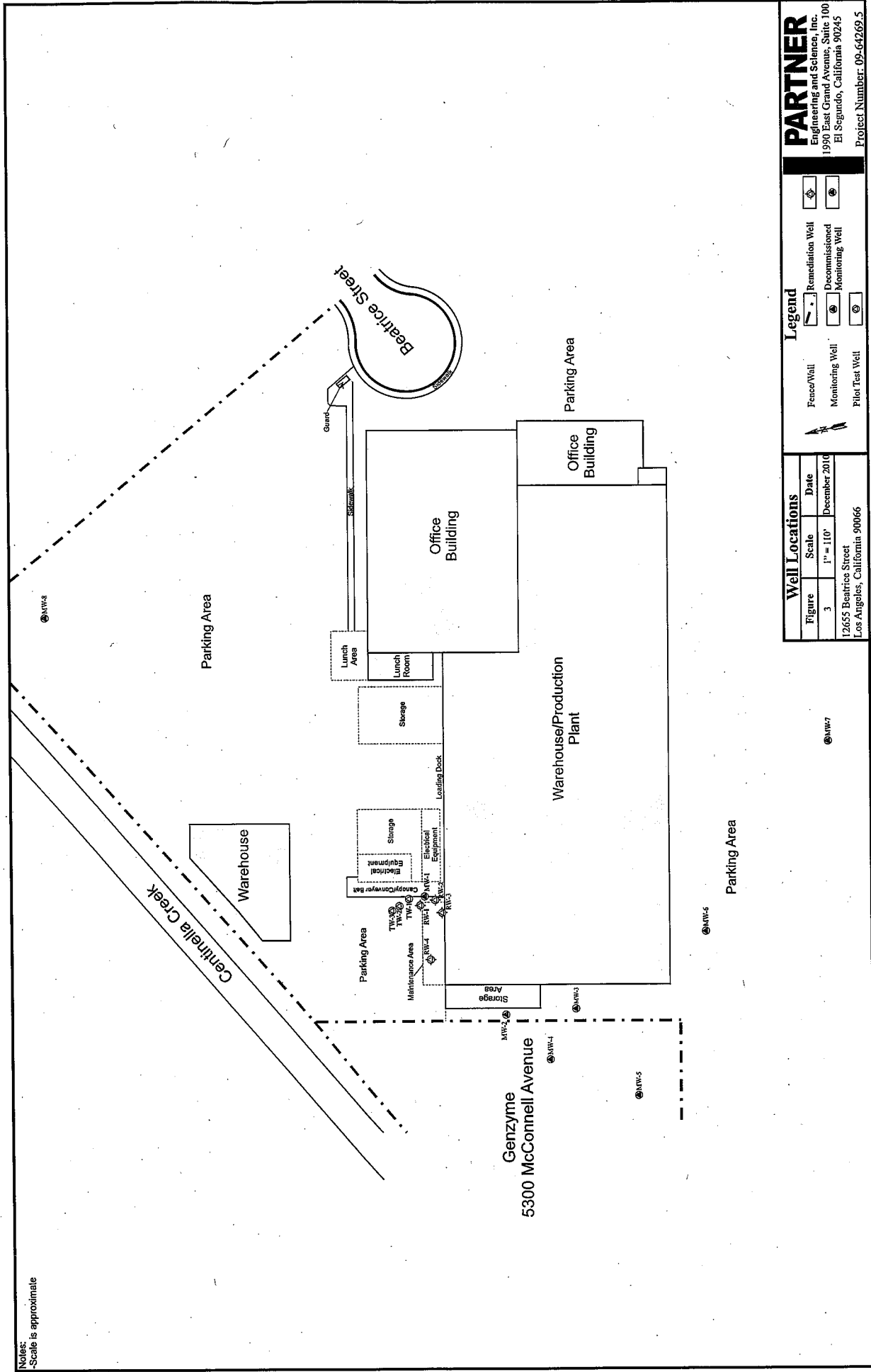


Soil Isoconcentration Plan Proposed Injection Points		
Figure	Scale	Date
2.2.2-1	1" = 109'	October 2009
12655 Beatrice Street Los Angeles, California 90066		

Legend	
	Fence/Wall
	Monitoring Well
	Pilot Test Well
	Remediation Well
	Former Tankhold Area
	PCE Isoconcentration

**PARTNER**  
 Engineering and Science, Inc.  
 1990 E. Grand Avenue, Suite 100  
 El Segundo, CA 90245  
 Project Number: 63601

Notes:  
 - Scale is approximate



Well Locations	
Figure	Date
3	December 2010
12655 Beatrice Street Los Angeles, California 90066	

Legend	
	Fence/Wall
	Monitoring Well
	Pilot Test Well
	Remediation Well
	Decommissioned Well
	Monitoring Well

**PARTNER**  
 Engineering and Science, Inc.  
 1890 East Grand Avenue, Suite 100  
 El Segundo, California 90245  
 Project Number: 09-64269.5

MW-7



**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**ORDER NO. R4-2007-0019  
REVISED GENERAL WASTE DISCHARGE REQUIREMENTS  
FOR  
GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL, VOLATILE  
ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES  
(FILE NO. 01-116)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

1. Pursuant to Division 7 of the California Water Code, this Regional Board at a public hearing held on January 24, 2002, adopted the General Waste Discharge Requirements (WDRs) (Order No. R4-2002-0030) relative to the groundwater remediation at petroleum hydrocarbon fuel and/or volatile organic compound impacted sites. Subsequent to adoption of the initial general waste discharge requirements (WDRs), these WDRs have been revised to include the use of ozone as a treatment compound and the application and use of trace materials.
2. Since then, however, at sites throughout Los Angeles County, monitoring and municipal production wells have become polluted with dissolved hexavalent chromium. From the Pacoima – Sunland area in the northeastern San Fernando Valley to the basin's narrows in City of Los Angeles and from the northern edge of Central Basin to Long Beach, hexavalent chromium releases have threatened or have directly impacted monitoring or municipal supply wells.
3. Table I (Attachment A) of Order R4-2007-0019 includes a list of materials that can be used for in-situ remediation purposes. Newly added remedial compounds for in-situ reduction are calcium polysulfide, ferrous sulfate, sodium dithionite, and bioremediation agents such as molasses, lactose, cheese whey or starch and emulsified oil have demonstrated that they can effectively convert hexavalent chromium to chromium III, a less toxic and more stable compound. In addition, activated persulfate (Klozur<sup>TM</sup>) for chemical oxidation has proven to be effective for the remediation of petroleum impacted sites. The revised general WDRs are to include the above to the list of materials approved for in-situ remediation zone treatment purposes and include a brief list of tracer materials that can be utilized at sites to aid in determination of the effectiveness of clean up material application.

4. The California Water Code (CWC), section 13260, subdivision (a)(1) requires that any person discharging wastes, or proposing to discharge wastes other than into a community waste water collection system, which could affect the quality of the waters of the State, shall file a Report of Waste Discharge with the Regional Board. The Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes.
5. Section 13263, subdivision (i) of the CWC provides that a Regional Board may prescribe general waste discharge requirements for discharges produced by similar operations, involving similar types of wastes, and requiring similar treatment standards.
6. The adoption of general WDRs for in-situ groundwater remediation/cleanup or the extraction of polluted groundwater with above ground treatment and the return of treated groundwater to the same aquifer zone would: a) simplify the application process for dischargers, b) allow more efficient use of Regional Board staff time, c) reduce Regional Board time by enabling the Executive Officer to notify the discharger of the applicability of the general WDRs, d) enhance the protection of surface water quality by eliminating the discharge of wastewater to surface waters, and e) provide a level of protection comparable to individual, site-specific WDRs.
7. Petroleum hydrocarbon fuel, volatile organic compound and hexavalent chromium contaminated groundwater at various sites throughout the Los Angeles region and cause or threaten to cause adverse impacts to existing and potential beneficial uses of the region's groundwater resources. Remediation/cleanup of groundwater at these sites includes the use and application of chemical, biological, and physical treatment processes, such as, chemical oxidation, chemical reduction, oxygen enhanced process, nutrient or chemical addition for enhanced biodegradation, or groundwater pump and treat technology with the return of treated groundwater to the same aquifer zone in some cases.
8. The application of any material to groundwater may result in unintended adverse impacts to groundwater quality. Any potential adverse water quality impacts that may result will be localized, of short-term duration, and will not impact any existing or prospective beneficial uses of groundwater. Groundwater quality will be monitored before addition of any materials, during treatment, and after treatment is completed to verify no long-term adverse impact to water quality.
9. The implementation of in-situ cleanup may require a small-scale pilot testing program or demonstration study prior to the design and implementation of a full-scale remediation project. The discharges from the pilot test programs or demonstration study are also covered under these general WDRs.

- 10 The Regional Board adopted a revised Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994. The Basin Plan contains water quality objectives and lists the beneficial uses of groundwater in the Los Angeles region. Beneficial uses of groundwater in the Los Angeles region include, among others: municipal and domestic supply, industrial service and process supply, agricultural supply and groundwater recharge. Beneficial uses for individual hydrologic sub-areas are specified in the Basin Plan. See Attachment B Table 3-10 water quality objectives for selected constituents in regional groundwaters.
- 11 The release of petroleum hydrocarbon fuel, volatile organic compounds and hexavalent chromium, at many sites within the Los Angeles region affects only shallow groundwater sources. Many of the shallow groundwater zones contain general mineral content (total dissolved solids, chloride, and sulfate, etc.) in concentrations, which are considered to be naturally occurring and not the result of pollution that may exceed Basin Plan Objectives for these constituents. Treated groundwater that exhibits general mineral content that are naturally occurring and exceeds Basin Plan Objectives may be returned to the same groundwater formations from which it is withdrawn, with concentrations not exceeding the original background concentrations for the site.
12. Treated groundwater that exhibits general mineral content that is naturally occurring and exceeds Surface Water Basin Plan Objectives must be treated if discharged into surface waters under a separate National Pollutant Discharge Elimination System (NPDES) Permit.
13. The general WDRs are applicable to groundwater remediation projects at, petroleum hydrocarbon fuel, volatile organic compound and hexavalent chromium impacted sites. Depending on the Report of Waste Discharge, the Executive Officer determines the annual fee based on the threat to water quality and complexity of the discharge. The general WDRs are to regulate groundwater discharges that have a threat to water quality of Category 3 and Complexity rating of A for a combined rating of 3-A.
14. Discharges with a rating of 3-A contain pollutants that could degrade water quality or cause a minor impairment of designated beneficial uses within the application area of the receiving groundwater. The discharges covered by these requirements will have a groundwater monitoring program to comply with requirements prescribed in this Order.
15. The requirements contained in this Order were established by considering, and are consistent with, all the water quality control policies, plans, and regulations mentioned above and, if they are met, will protect and maintain the existing beneficial uses of the receiving groundwater.
16. The permitted discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). The impact on

existing water quality will not be significant in comparison to individual WDRs, and the general WDRs will improve the quality of the affected groundwater.

17. These general WDRs are not intended to alter or supersede any existing restrictions or working arrangements relating to cleanup cases with local governmental agencies.
18. In accordance with the Governor's Executive Order requiring any proposed activity be reviewed to determine whether such activity will cause additional energy usage, this Regional Board has determined that implementation of these general WDRs will not result in a change in energy usage exceeding what would be used if site-specific WDRs were issued for cleanup at these sites.
19. The Regional Board has prepared an Initial Study and Mitigated Negative Declaration for the issuance of these general WDRs in accordance with the provisions of the California Environmental Quality Act (CEQA).
20. The Regional Board has notified interested agencies and persons of its intent to prescribe general WDR's for the discharges covered under these general WDRs, and has provided them with an opportunity to submit their written views and recommendations for the requirements.
21. The Regional Board, in a public meeting, heard and considered all comments pertaining to the tentative general WDRs.

**IT IS HEREBY ORDERED THAT** dischargers authorized under this Order shall meet the provisions contained in Division 7 of the California Water Code, and regulations adopted here under, by complying with the following:

**A. ELIGIBILITY**

1. A discharger may seek coverage under this Order for:
  - a. existing and future discharges to groundwater of remediation compounds from the cleanup of petroleum hydrocarbon fuel, volatile organic compound and/or hexavalent chromium impacted sites and similar discharges.
  - b. re-injection, percolation or infiltration of treated groundwater from a pump and treat remediation system(s).
2. To be covered under this Order, a discharge must meet the following criteria:
  - a. The Executive Officer must find, based on the Report of Waste Discharge submitted pursuant to Provision C, that the groundwater discharges for which coverage under this Order are sought have a threat to water quality of Category 3

and Complexity rating of A for a combined rating of 3-A, using the rating criteria noted (see on the Regional Board website at:

[http://www.waterboards.ca.gov/losangeles/html/permits/fee\\_schedule/fee%20schedules%20\(2004-005\).pdf](http://www.waterboards.ca.gov/losangeles/html/permits/fee_schedule/fee%20schedules%20(2004-005).pdf)

- b. The discharger must have an approved Remediation Action Plan (RAP). The discharger shall submit a copy of the approved RAP including any conditions of implementation with the Report of Waste Discharge for application of the general WDRs. At a minimum, the RAP shall include the following site-specific information:
- The background water quality of the aquifer of the groundwater remediation site(s) including contaminant types, total dissolved solids, sulfates, chlorides, nitrogen (NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>), chemical oxygen demand, biological oxygen demand, phosphorus, pH, dissolved metals, nutrients, dissolved oxygen, dissolved carbon dioxide, methane, temperature, iron, and oxidation-reduction potential;
  - Information on any potential adverse impacts to groundwater quality, and whether the impacts will be localized and short-term;
  - The results of any pilot testing performed for the treatment technology to be used;
  - Site-specific geology (lithology and physical parameters) and hydrogeologic parameters, hydrologic report;
  - Infiltration rate;
  - Characterization and extent of petroleum hydrocarbon fuel, volatile organic compound and hexavalent chromium plume(s);
  - Description of the treatment system(s);
  - Adequate groundwater monitoring network with historical groundwater monitoring report;
  - Description of the aerial extent of the application area and identification of monitoring wells to be used to determine water quality upgradient, within the application area, downgradient from the application area and identify the compliance point;
  - Material Safety Data Sheet (MSDS) information and other product technical information for any materials to be used for cleanup;
  - Application rate(s), material type(s) and applied concentrations; and
  - Evaluation of loading rates for nitrogen compounds, total dissolved solids, sulfate, and chloride compounds.

- c. The General Waste Discharge Requirements would allow the following materials to be used for in-situ remediation purposes:

**1. Oxidation/Aerobic Degradation Enhancement Compounds:**

- Fenton's reagent (hydrogen peroxide, ferrous iron catalyst, and pH buffer)
- Hydrogen peroxide
- Potassium or sodium permanganate
- Oxygen release compound (ORC) magnesium peroxide
- Ozone
- Activated Persulfate (Klozur™)

**2. Reducing/Reductive Degradation Enhancement Compounds (Table I):**

- Calcium Polysulfide (Inorganic)
- Ferrous Sulfate (Inorganic)
- Ferrous Chloride (Inorganic)
- Sodium Dithionite (Inorganic)
- Zero-valent iron (Inorganic)
- Bio-remediation (Organic) using:
  - Molasses,
  - Lactose,
  - Cheese Whey and/or
  - Starch
  - Sodium Lactate
  - Ethanol
  - Emulsified Oil
  - Corn Syrup
  - Hydrogen Release Compound (HRC)–{proprietary}

**3. Inorganics/Nutrients:**

- Nitrate, ammonia, phosphate, vitamins

**4. Carbon Sources/Electron Donors:**

- Acetate, lactate, propionate, benzoate, oleate, ethanol, propanol, methanol, glucose, complex sugars such as molasses or corn syrup, other food process byproducts such as milk whey or yeast extract, other complex organic material such as wood chips

**5. Study tracer compounds:**

- The tracer compounds shall be highly contrast and not reactive with current contaminants to be treated. The tracers may be chloride-based and bromide-based salts, such as sodium-flouroscein, calcium chloride, sodium chloride, calcium bromide, sodium bromide, potassium bromide, potassium iodide, Rhodamine WT, rhodamine (D), eosine, and fluoride salts, or similar materials as approved by the Executive Officer.
3. In applying these general WDRs, the monitoring program shall address changes in geochemistry that may alter the potential occurrence of transference of chromium (III) into chromium (VI), or vice versa, during the oxidation or reduction process in the in-situ remediation under these WDRs.
  4. For the purpose of renewal of existing individual requirements with these general WDRs, provided that all the conditions of these general WDRs are met, renewal is effective upon issuance of a notification by the Executive Officer and issuance of a new monitoring and reporting program.
  5. When the individual WDRs with more specific requirements are issued to a discharger, the applicability of this Order to that discharger is automatically terminated on the effective date of the individual WDRs.

**B. AUTHORIZATION**

To be authorized to discharge under this Order, the discharger must submit a Report of Waste Discharge in accordance with the requirements of Part C of this Order. Upon receipt of the application, the Executive Officer shall determine the applicability of this Order to such a discharge and the completeness of the application package. If the discharge is eligible, the Executive Officer shall notify the discharger that the discharge is authorized under the terms and conditions of this Order and prescribe an appropriate monitoring and reporting program. For new discharges, the discharge shall not commence until receipt of the Executive Officer's written determination and the discharger receives general WDRs to include a site specific monitoring and reporting program.

**C. REPORT OF WASTE DISCHARGE**

1. Deadline for Submission

- a. Renewal of permits of existing dischargers covered under individual WDRs that meet the eligibility criteria in Part A and have submitted Report of Waste Discharge will consist of a letter of determination from the Executive Officer of coverage under this Order.
  - b. New dischargers shall file a complete application to include all information identified in Items A1, A2 and as above at least 60 days before planned commencement of any discharge.
2. Forms for Report of Waste Discharge
- a. Dischargers shall use the appropriate forms (Standard Form 200) or equivalent forms approved by the State Water Resources Control Board or the Executive Officer of the Los Angeles Regional Board.
  - b. The discharger, upon request, shall submit any additional information that the Executive Officer deems necessary to determine whether the discharge meets the criteria for coverage under this Order, and/or in prescribing an appropriate monitoring and reporting program.
  - c. The Report of Waste Discharge shall be accompanied by the first annual fee (if appropriate) in accordance with the current version of California Code of Regulation, Title 23, Division 7, Chapter 9, Waste Discharge Report and Requirements Article 1 fees for a discharge. The check or money order shall be made payable to the "State Water Resources Control Board."

**D. DISCHARGE PROHIBITIONS**

1. The discharge of wastes other than those which meet eligibility requirements in Part A of this Order is prohibited unless the discharger obtains coverage under another general permit or an individual site specific permit that regulates the discharge of such wastes.
2. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.
3. Creation of a pollution, contamination, or nuisance, as defined by section 13050 of the California Water Code (CWC), is prohibited.
4. The surfacing as overflow of wastes from the treatment system at any time and at any location is prohibited.



5. The disposal of wastes in geologically unstable areas or so as to cause earth movement is prohibited.

**E. DISCHARGE LIMITATIONS**

1. The discharge of wastes shall not cause the pH of the receiving groundwater at the compliance point, downgradient outside the application area, beyond the range of 6.5 and 8.5.
2. The discharge of wastes shall not cause the mineral constituents of the receiving groundwater at the compliance point, downgradient outside the application area, in excess of applicable limits given in Attachment B. In the letter of determination, the Executive Officer shall indicate the groundwater limitations in Attachment B applicable to the particular discharge, and identify the compliance point(s) for the site.
3. The discharge of wastes shall not cause the concentrations of chemical constituents and radionuclides of the receiving groundwater designated for use as domestic or municipal supply at the compliance point, downgradient outside the application area, in excess of the Maximum Contaminate Levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (inorganic chemicals), Table 64431-B of section 64431 (fluoride), Table 64444-A of section 64444 (organic chemicals), and Table 4 of section 64443 (radioactivity). This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect.
4. Waste discharged shall not cause the concentration of coliform organisms over any seven days period greater than 1.1/100ml.
5. Waste discharged shall not contain salts, heavy metals, or organic pollutants at levels that would cause receiving groundwater at the compliance point, downgradient outside the application area, to exceed the water quality objectives for groundwater or groundwater that may be in hydraulic connection with surface waters designated for marine aquatic life or body contact recreation.
6. Waste discharged shall not cause the groundwater to contain concentrations of chemical substances or its by-products in amounts that adversely affect any designated beneficial use, outside the application area or treatment zone at the compliance point(s).

7. Waste discharged shall not cause the groundwater to contain residual taste or odor in concentrations that cause nuisance or adversely affect beneficial uses, outside the application area or treatment zone at the compliance point(s).
8. Waste discharged shall not cause the groundwater to contain in amounts that cause nitrogen as nitrate-nitrogen plus nitrite-nitrogen ( $\text{NO}_3\text{-N} + \text{NO}_2\text{-N}$ ), 45 mg/L as Nitrate ( $\text{NO}_3$ ), 10 mg/L as nitrate-nitrogen ( $\text{NO}_3\text{-N}$ ), or 1 mg/L as nitrite-nitrogen ( $\text{NO}_2\text{-N}$ ), outside the application area or treatment zone at the compliance point(s).

**F. PROVISIONS**

1. The Executive Officer may require any discharger authorized under this Order to apply for and obtain individual WDRs with specific requirements. The Executive Officer may require any discharger authorized to discharge under this permit to apply for individual WDRs only if the discharger has been notified in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application, and a statement that on the effective date of the individual requirements, the authority to discharge under this General WDRs are no longer applicable.
2. This Order includes the attached "Tentative Standard Provisions Applicable to Waste Discharge Requirements." (Attachment C) If there is any conflict between provisions stated herein before and the attached "Standard Provisions," those provisions stated herein shall prevail.
3. Adequate facilities shall be provided to divert surface and storm water away from the application area and/or treatment system and areas where any pollutants are stored.
4. The application of materials or the re-injection of treated groundwater shall only be at a site owned or controlled by the discharger.
5. All work must be performed by or under the direction of a registered civil engineer, registered geologist, or certified engineering geologist. A statement is required in all technical reports that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project.
6. The discharge of wastes to or infiltration to a surface water system must be covered by separate WDRs under the National Pollution Discharge Elimination System (NPDES) permit.

7. This Order does not alleviate the responsibility of discharger to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Additionally, the discharger shall notify the Native American Heritage Commission of any plans to disturb the soil in order to comply with California Environmental Quality Act (CEQA) guidelines as set forth in Section 15064.5(b)(c). Furthermore the discharger is required to provide local information prior to excavation to the California Historic Resources Information Center (CHRIS). This will serve as their due diligence record search to provide proximity to Native American historical and archeological resources. The discharger shall also be required to adhere to California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, CEQA Section 15064.5(d) and Section 15064.5 (f) to ensure that mitigation plan provisions are in-place to identify, evaluate and consult with your commission about the discovery and disposition of any recovered human remains or artifacts, should the occasion arise, during the remediation process overseen by this agency.
8. The discharger shall notify Regional Board staff by telephone within 24 hours, followed by written notification within one week; in the event it is unable to comply with any of the conditions of this Order due to:
  - a) Breakdown of waste treatment equipment,
  - b) Accident caused by human error or negligence,
  - c) Other causes such as acts of nature, or
  - d) Site construction or development operations.
9. Any discharger authorized under this Order may request to be excluded from coverage of this Order by applying for an individual permit.
10. In accordance with section 13263(e) of the California Water Code, these requirements are subject to periodic review and revision by the Regional Board within a five (5) year cycle.
11. In accordance with Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification. All discharges of waste into waters of the state are privileges, not rights.
12. The discharger shall develop a contingency plan and maintain it on site. The contingency plan shall detail appropriate actions to be taken in order to protect human health and the

environment in case of any spill or failure related to the operation or mis-operation of the treatment system.

**G. MONITORING AND REPORTING REQUIREMENTS**

1. The Executive Officer is hereby authorized to prescribe a Monitoring and Reporting Program for each authorized discharger. This program may include participation of the discharger in a regional monitoring program.
2. The discharger shall file with the Regional Board technical reports on self-monitoring work conducted according to the Monitoring and Reporting Program specified by the Executive Officer and submits other reports as requested by the Regional Board.
3. The discharger shall retain records of all monitoring information and data used to complete the Report of Waste Discharge and application for coverage under this Order for at least five years from the date of permit issuance. The retention period shall be extended during any unresolved litigation regarding the discharge or when requested by the Executive Officer.
4. The discharger shall maintain all sampling, measurement and analytical results, including the date, exact place, and time of sampling or measurement; individual(s) who did the sampling or measurement; the date(s) analyses were done; analysts' names; and analytical techniques or methods used.
5. All sampling, sample preservation, and analyses must be conducted according to test procedures under title 40 Code of Federal Regulations, section 136, unless other test procedures have been specified in this Order or by the Executive Officer.
6. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (CDHS-ELAP) or other state agency authorized to undertake such certification.
7. The discharger shall calibrate and maintain all monitoring instruments and equipment to insure accuracy of measurements, or shall insure that both activities will be conducted.
8. In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the date, constituents, and concentrations are readily discernible. The data shall be summarized to demonstrate compliance with waste discharge requirements. Laboratory

analytical data from any soil testing and/or groundwater monitoring shall be reported in Electronic Deliverable Format in accordance with California Water Code section 13195 et. seq. requirements, if applicable.

9. For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.
10. The discharger shall file a report of any material change or proposed change in the character, location or volume of the discharge.
11. The discharger shall notify this Regional Board within 24 hours by telephone of any adverse condition resulting from the discharge; such notification shall be affirmed in writing within five working days.
12. Whenever wastes, associated with the discharge under this Order, are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.
13. Each monitoring report must contain an affirmation in writing that:

"All analyses were conducted at a laboratory certified for such analyses by \_\_\_\_\_ and in accordance with current USEPA procedures or as specified in this Monitoring and Reporting Program."

14. Each report shall contain the following completed declaration:

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

Groundwater Remediation at  
Petroleum Hydrocarbon Fuel, Volatile Organic Compound  
And / or Hexavalent Chromium Impacted Sites.  
Order No. R4-2007-0019

File No. 01-116

Executed on the \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_

\_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Title)

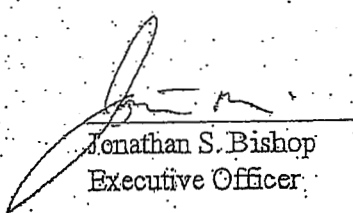
**H EXPIRATION DATE AND CONTINUATION OF THIS ORDER**

This Order expires on March 1, 2012; however, for those dischargers authorized to discharge under this Order, it shall continue in full force and effect until a new order is adopted.

**I REAUTHORIZATION**

Upon re-issuance of a new general permit Order, dischargers authorized under this Order shall file a new Report of Waste Discharge within 45 days of notification by the Executive Officer.

I, Jonathan S. Bishop, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on March 1, 2007.

  
Jonathan S. Bishop  
Executive Officer

STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-9622  
FOR  
O'NEIL DATA SYSTEMS, INC.

ENROLLMENT UNDER REGIONAL BOARD  
ORDER NO. R4-2007-0019 (Series No. 138)  
FILE NO. 10-113

I. REPORTING REQUIREMENTS

- A. O'Neil Data Systems, Inc. (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (October 21, 2010) under Regional Board Order No. R4-2007-0019. The first monitoring report under this Program is due by **July 15, 2011**.

Monitoring reports shall be received by the dates in the following schedule:

<u>Reporting Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15

- B. If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.
- C. By **March 1** of each year, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall explain the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements (WDRs).
- D. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with discharge requirements, as well as all excursions of effluent limitations.
- E. The Discharger shall comply with requirements contained in Section G of Order No. R4-2007-0019 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

II. POTASSIUM PERMANGANATE INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding injection activities:

1. Location Map showing the injection point for the sodium permanganate, and
2. Written summary defining:
  - Depth of injection point;
  - Volume and quantity of potassium permanganate injected.

III. GROUNDWATER MONITORING PROGRAM

A groundwater-monitoring program shall be designed to detect and evaluate impacts associated with the potassium permanganate injection activities. The following shall constitute the monitoring program for Monitoring Wells Nos. MW-1, RW-1, RW-2, RW-4 (source area wells) MW-2, MW-4, MW-6 (downgradient wells) and TW-3 (upgradient well) (Figure 3). These sampling stations shall not be changed and any proposed change of monitoring locations shall be identified and approved by the Regional Board Executive Officer (Executive Officer) prior to their use. The Discharger shall conduct baseline sampling one or two weeks prior to potassium permanganate injection and regular sampling with the required frequencies of the monitoring wells for the following constituents:

<u>CONSTITUENT</u>	<u>UNITS</u> <sup>1</sup>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Temperature <sup>1</sup>	<sup>0</sup> F	grab	Quarterly <sup>2</sup>
pH <sup>1</sup>	pH units	grab	Quarterly <sup>2</sup>
Oxidation-reduction potential <sup>1</sup>	millivolts	grab	Quarterly <sup>2</sup>
Specific conductivity <sup>1</sup>	µmhos/cm	grab	Quarterly <sup>2</sup>
Vinyl Chloride	µg/L	grab	Quarterly <sup>2</sup>
Tetrachloroethene (PCE)	µg/L	grab	Quarterly <sup>2</sup>
Trichloroethene (TCE)	µg/L	grab	Quarterly <sup>2</sup>
Cis-1,2-dichloroethene (Cis-1,2-DCE)	µg/L	grab	Quarterly <sup>2</sup>
Trans-1,2-dichloroethene (Trans-1,2-DCE)	µg/L	grab	Quarterly <sup>2</sup>
1,1-dichloroethene (1,1-DCE)	µg/L	grab	Quarterly <sup>2</sup>



1,2-dichloroethane (1,2-DCA)	µg/L	grab	Quarterly <sup>2</sup>
1,1,1-trichloroethane (1,1,1-TCA)	µg/L	grab	Quarterly <sup>2</sup>
Carbon tetrachloride	µg/L	grab	Quarterly <sup>2</sup>
1,2,4-trimethylbenzene	µg/L	grab	Quarterly <sup>2</sup>
1,1,2-trichloroethane	µg/L	grab	Quarterly <sup>2</sup>
Dissolved organic carbon	µg/L	grab	Quarterly <sup>2</sup>
Manganese	µg/L	grab	Quarterly <sup>2</sup>
Total iron	µg/L	grab	Quarterly <sup>2</sup>
Ferrous iron	µg/L	grab	Quarterly <sup>2</sup>
Alkalinity	µg/L	grab	Quarterly <sup>2</sup>
Total dissolved solids	mg/L	grab	Quarterly <sup>2</sup>
Sulfate	mg/l	grab	Quarterly <sup>2</sup>
Chloride	mg/L	grab	Quarterly <sup>2</sup>
Nitrate	mg/L	grab	Quarterly <sup>2</sup>
Carbon dioxide	mg/L	grab	Quarterly <sup>2</sup>
1,4-dioxane	µg/L	grab	One-time <sup>3</sup>
1,2,3-Trichloropropane	µg/L	grab	One-time <sup>3</sup>
Hexavalent Chromium	µg/L	grab	One-time <sup>3</sup>

Note: mg/L: milligrams per liter; µg/L: micrograms per liter; µmhos/cm: micromhos per centimeter; °F: degree Fahrenheit.

<sup>1</sup> Field instrument will be used to test for this constituent.

<sup>2</sup> Quarterly sampling events are required after the six months sampling event for monitoring wells MW-5, MW-8, MW-9, and MW-10.

<sup>3</sup> One time sampling event before the injection of treated groundwater is required for **all wells on and off site**. If detected, quarterly monitoring is required from the same monitoring wells.

All groundwater monitoring reports must include, at minimum, the following:

- a. Well identification, date and time of sampling;
- b. Sampler identification, and laboratory identification;
- c. Semi-annual observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

IV. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

V. GEOTRACKER REQUIREMENT

The Discharger shall submit all reports required under this MRP, including groundwater monitoring data, to the State Water Resources Control Board GeoTracker database, in addition to submitting hard copies to the Regional Board office. Once the Discharger demonstrates mastery of electronic submittal of reports for the Site to GeoTracker, the Discharger may request that the Regional Board waive the requirement of submitting hard copies of reports.

VI. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

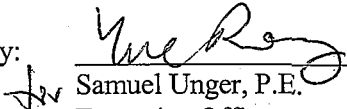
"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry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

Executed on the \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)"

All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger, will be treated as confidential.

Ordered by:   
Samuel Unger, P.E.  
Executive Officer

Date: March 29, 2011