



California Regional Water Quality Control Board

Los Angeles Region



320 W. 4th Street, Suite 200, Los Angeles, California 90013

Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Linda S. Adams
Acting Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

February 18, 2011

Mr. Phillip Tangalakis
Tach Properties
4264 Overland Avenue
Culver City, CA 90230

Mr. Dannie Cavanaugh
Cavanaugh Realtors
9352 Venice Boulevard
Culver City, CA 90232

SUBJECT: APPROVAL OF REQUEST FOR MODIFICATIONS TO GENERAL WASTE DISCHARGE REQUIREMENTS FOR APPLICATION OF HRC™ FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES

SITE: FORMER SUNSHINE CLEANERS, 11405 WEST JEFFERSON BOULEVARD, CULVER CITY, CALIFORNIA 90230

CASE FILE: SITE CLEANUP NO. 0864 AND SITE ID NO. 2046N00 [WDR FILE NO. 10-059 AND CI-9642]

Dear Messrs. Tangalakis and Cavanaugh:

We have received a *Supplemental Remedial Action Plan*, dated January 17, 2011, and a memo, dated January 25, 2010, from your consultant Bryant Geoenvironmental, Inc. (BGI), requesting amendments to the approved Interim Remedial Action Plan (IRAP) and the Waste Discharge Requirements (WDR) permit for the above-referenced site.

The general WDR was initially issued by the Regional Board on December 9, 2010 for direct application of Hydrogen Release Compound (HRC™) to groundwater after the completion of a remedial soil excavation in the source area at the site (see attached).

However, the information from recent groundwater monitoring well installation activities suggests that underlying groundwater will not likely be encountered to a depth of 13 feet bgs and is under confined conditions below clayey soils in the proposed excavation area. Direct application of HRC™ to groundwater for *in situ* treatment is thus impossible unless the depth of the excavation is further extended into the saturated zone, which raises issues of safety and stability to the building.

BGI requested amendments to the approved IRAP, involving the following:

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Mr. Phillip Tangalakis
Mr. Dannie Cavanaugh
Former Sunshine Cleaners

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February 18, 2011

1. Injecting HRC™ at designated injection locations adjacent to the proposed excavation area for *in situ* groundwater treatment, instead of directly applying to groundwater, which has been found to be infeasible due to the unfavorable confined conditions under which groundwater occurs beneath the site;
2. Applying RegenOx™ at the bottom and side walls of the proposed excavation for *in situ* treatment of impacted soil to be left in place. Application of RegenOx™ for soil treatment was not originally proposed.
3. Installing temporary injection/placement wells in selected locations in the excavation area for injection of RegenOx™ to treat the bottom and sidewalls of the excavation where relatively high PCE concentrations may be found.

The proposed modifications to the IRAP were approved by the Regional Board in a letter, dated February 8, 2011 (see attached).

Your request for modifications to the current WDR permit is approved with the following requirements:

1. Application of HRC™ and RegenOx™ for *in situ* groundwater and soil treatment shall be in accordance with the approved IRAP and the approved amendments to the IRAP. The discharge of any reagent or other materials not specifically regulated under this permit is prohibited.
2. The proposed use of RegenOx™ at the site warrants revision of the Monitoring and Reporting Program (MRP) No. CI-9642 for the WDR permit. Enclosed is a revised MRP No. CI-9642 for the general WDR permit, reflecting the additional monitoring requirements necessary for the proposed use of both RegenOx™ and HRC™.

All regulatory requirements stipulated in other components of the WDR permit package will remain the same.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this enrollment 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-9642", 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. Submit each type of report as a separate document.

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

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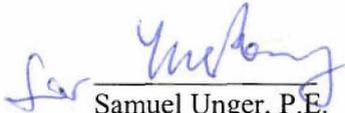
Mr. Phillip Tangalakis
Mr. Dannie Cavanaugh
Former Sunshine Cleaners

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February 18, 2011

If you have any questions regarding this letter, please contact Mr. Bizuayehu Ayele at (213) 576-6623 or by email at bayele@waterboards.ca.gov or Mr. Jeffrey Hu at (213) 576-6736 or by email at ghu@waterboards.ca.gov.

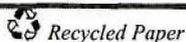
Sincerely,


Samuel Unger, P.E.
Executive Officer

- Enclosures:
1. *General WDR permit cover letter, dated December 9, 2010 with original MRP No. CI-9642*
 2. *Revised MRP No. CI-9642*
 3. *Regional Board's letter, dated February 8, 2011(w/o enclosures)*

cc: Mr. Mark E. Bryant, Bryant Geoenvironmental, Inc.
Mr. Alex Carlos, General Permitting Unit, Regional Board
Dr. Rebecca Chou, Groundwater Permitting and Landfills Section, Regional Board

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California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Agency Secretary

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Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

December 9, 2010

Mr. Phillip Tangalakis
Tach Properties
4264 Overland Avenue
Culver City, CA 90230

Mr. Dannie Cavanaugh
Cavanaugh Realtors
9352 Venice Boulevard
Culver City, CA 90232

GENERAL WASTE DISCHARGE REQUIREMENTS FOR DIRECT APPLICATION OF HRC[®] FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES - FORMER SUNSHINE CLEANERS, 11405 WEST JEFFERSON BOULEVARD, CULVER CITY, CALIFORNIA 90230 (SITE CLEANUP NO. 0864 AND SITE ID NO. 2046N00) [WDR FILE NO. 10-059 AND CI-9642]

Dear Messrs. Tangalakis and Cavanaugh:

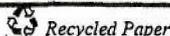
We have completed our review of your application for coverage under our General Waste Discharge Requirements (WDR) permit for direct application of Hydrogen Release Compound (HRC[®]) for *in situ* treatment of groundwater as part of an interim remedial action in the source area at the former Sunshine Cleaners (site) in Culver City, California.

The former Sunshine Cleaners is located on approximately 0.7 acres between Interstate 405 (I-405) Freeway and Sepulveda Boulevard, north of State Route 90, in Culver City. Successive owners of the former Sunshine Cleaners operated a dry cleaning plant in one of the units of the buildings from approximately 1968 to 1998. Dry cleaning operations ended in approximately 1998 and the unit is now occupied by Honey Baked Ham Company, a fast food restaurant.

Environmental site assessments conducted at the subject site since 1998 for property transaction and under the Regional Board's oversight indicated that the soil and groundwater beneath the site are impacted with volatile organic compounds (VOCs), particularly perchloroethylene (PCE). In addition, VOCs have been detected in the soil and groundwater beneath adjacent properties to the east and west.

The highest historical concentration of PCE in the soil matrix has been reported at 27,000 milligrams per kilogram (mg/kg) at a depth of 3 feet below ground surface (bgs) adjacent to the former location of the dry cleaning machine. And the highest historical concentration of PCE in groundwater has been reported at 160,000 µg/L micrograms per liter (µg/L). Moreover, the highest historical concentration of PCE has been reported at 1,300 µg/L in the sub-slab soil vapor beneath the building. The highest concentrations of PCE and other VOCs were detected at the soil matrix, soil vapor and groundwater sampling locations adjacent to or near the former location of the dry cleaning machine, which has been identified to be the source area for the soil and groundwater contamination.

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December 9, 2010

The consultant to the site owners, Bryant Geoenvironmental, Inc. (BGI), submitted a *Revised Work Plan - Interim Remedial Action* on December 22, 2009. An e-mail from BGI, dated January 21, 2010, modified the interim remedial action plan (IRAP) by eliminating the previously included proposal for the re-use of excavated soil impacted with PCE to backfill the excavation after Regional Board staff expressed disagreement on the proposal. The IRAP was approved by the Regional Board on March 25, 2010.

The IRAP proposes to conduct an interim soil remedial action involving a limited soil excavation in the source area to water table (11 to 13 feet bgs) and to facilitate a limited *in situ* groundwater treatment in the source area by direct application of HRC[®] at the bottom of the soil excavation. The excavation will be backfilled with filter sand and gravel covered with concrete or bentonite grout after infiltration of HRC[™] into the aquifer matrix.

It is expected that a volume of approximately 1,000 cubic feet to 2,000 cubic feet, or about 7,500-15,000 gallons, of HRC[®] will be placed at the bottom of the excavation. However, the total volume of HRC[®] may have to be reduced due to instability of the excavation and difficulty removing soil below the water table.

The product will be mixed/batched in 55-gallon drums or small tanks, and either placed in the open excavation with a backhoe or pumped/discharged into the desired location through a hose, as needed. The product will be mixed *in situ* within a series of small pot holes in the proposed excavation area if difficulties are encountered during the excavation and slotting procedures are instead applied. The overall goal would be to have an effective thickness of 1-2 feet of HRC[®] within the upper water-bearing zone covering as much of the excavation as possible.

To establish baseline conditions, all 11 groundwater monitoring wells will be gauged and sampled prior to the emplacement of HRC[®] at the bottom of the excavation. Groundwater samples will be analyzed and measured for constituents and parameters listed in the attached Monitoring and Reporting Program (MRP) No. CI-9642 (see attachment-2).

Regional Board staff has determined that the proposed discharge meets the conditions specified in 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 (General WDRs)*, adopted by the Regional Water Quality Control Board on March 1, 2007.

This WDR shall not be terminated until Regional Board staff determines the WDR is no longer needed for the site cleanup.

Enclosed are your Waste Discharge Requirements consisting of General WDRs Board Order No. R4-2007-0019, and Monitoring and Reporting Program No. CI-9642 stipulations along with Standard Provisions.

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

When you submit monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9642, which will assure that the reports are directed to the

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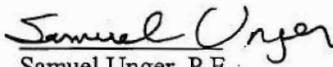
December 9, 2010

appropriate staff and file. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of the Order No. R4-2007-0019, only to the applicant. A copy of the Order will be furnished to anyone who requests it.

If you have any questions regarding this letter, please contact Mr. Bizuayehu Ayele at (213) 576-6747 or by email at bayele@waterboards.ca.gov or Mr. Jeffrey Hu at (213) 576-6736 or by email at ghu@waterboards.ca.gov.

Sincerely,



Samuel Unger, P.E.
Executive Officer

- Enclosures:
1. *Regional Board Order No. R4-2007-0019*
 2. *Monitoring and Reporting Program No. CI-9642*
 3. *Site Location Map*
 4. *Site Vicinity Map*
 5. *Site Plan Map showing Proposed Excavation Area and Groundwater Monitoring Wells*
 6. *Groundwater Contour Map for the Upper Water Bearing Zone (Zone I), June 12, 2010*
 7. *Groundwater Contour Map for the Lower Water Bearing Zone (Zone II), June 12, 2010*

cc: Mr. Mark E. Bryant, Bryant Geoenvironmental, Inc.

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STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
MONITORING AND REPORTING PROGRAM NO. CI-9642
FOR FORMER SUNSHINE CLEANERS
11405 WEST JEFFERSON BOULEVARD, CULVER CITY, CALIFORNIA 90230
(ORDER NO. R4-2007-0019, SERIES NO. 144)

I. REPORTING REQUIREMENTS

- A. Mr. Phillip Tangalakis and Mr. Dannie Cavanaugh (hereinafter Dischargers) shall implement this monitoring program on the effective date of Regional Board Order No. R4-2007-0019. The Quarterly Groundwater Remediation Progress and Discharge Monitoring Report for the First Quarter 2011 shall be received at the Regional Board by **April 15, 2011**. Subsequent reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring 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 1st of each year, the Dischargers 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 Dischargers 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. Laboratory analyses - all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.

- E. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Dischargers can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Dischargers shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.
- F. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Dischargers shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- G. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- H. 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 WDRs, as well as all excursions of effluent limitations.
- I. The Dischargers shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- J. If the Dischargers perform analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- K. In reporting the monitoring data, the Dischargers shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

II. DIRECT HRC® APPLICATION MONITORING REQUIREMENT

The quarterly reports shall contain the following information regarding direct HRC® application for *in situ*

groundwater treatment:

1. Location map showing location of excavation for HRC[®] emplacement:
2. Written summary defining:
 - Depth of HRC[®] emplacement
 - Total quantity of HRC[®] emplaced at the bottom of the excavation;

III. GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program shall be designed to detect and evaluate impacts associated with the HRC[®] emplacement activities. Both zone I and zone II groundwater monitoring wells shall be sampled regularly and the following shall constitute the monitoring program for groundwater monitoring wells in the treatment area (MW-9) and downgradient and upgradient of the treatment area (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10 and MW-11) [see Figure 3]. The Dischargers shall conduct baseline sampling prior to HRC[®] emplacement and regular sampling with the required frequencies from all the monitoring wells for the following groundwater parameters:

CONSTITUENT	UNITS ¹	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Ferrous iron	mg/L	In situ	Monthly ² /Quarterly ³
Dissolved Oxygen	mg/L	In situ	Monthly ² /Quarterly ³
Oxidation / Reduction Potential	mV	In situ	Monthly ² /Quarterly ³
pH	pH units	In situ	Monthly ² /Quarterly ³
Specific Conductivity	µmhos/cm	In situ	Monthly ² /Quarterly ³
Temperature	⁰ F	In situ	Monthly ² /Quarterly ³

¹ mg/L: milligrams per liter; mV: millivolt; µmhos/cm: micromhos per centimeter; ⁰F: degree Fahrenheit; µg/L: micrograms per liter

² Once before injection and monthly thereafter for two months.

³ Quarterly sampling events are required after the monthly sampling events have been completed.

Former Sunshine Cleaners Site Order No. R4-2007-0019
 Monitoring & Reporting Program No. CI-9642

Alkalinity	mg/L	In-situ	Monthly ² /Quarterly ³
Volatile Organic Compounds (VOCs)	µg/L	grab	Monthly ² /Quarterly ³
Major Anions (chloride, sulfate, nitrate, nitrite, and sulfide)	µg/L	grab	Monthly ² /Quarterly ³
Major Cations (calcium, magnesium, potassium, sodium)	µg/L	grab	Monthly ² /Quarterly ³
Methane, Ethene, Ethane, Carbon Dioxide	µg/L	grab	Monthly ² /Quarterly ³
Metabolic acids (lactic, pyruvic, acetic, propionic, butyric acids)	mg/L	grab	Monthly ² /Quarterly ³
Total Organic Carbon	µg/L	grab	Monthly ² /Quarterly ³

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

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

IV. MONITORING FREQUENCIES

Monitoring frequencies may be adjusted to a less frequent basis or parameters may be modified by the Executive Officer if the Dischargers make a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following 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.

Former Sunshine Cleaners Site Order No. R4-2007-0019
Monitoring & Reporting Program No. CI-9642

Executed on the _____ day of _____ at _____.

(Signature)

(Title)"

VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

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

Date: Dec. 10, 2010

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
MONITORING AND REPORTING PROGRAM NO. CI-9642 [Revised¹]
FOR FORMER SUNSHINE CLEANERS
11405 WEST JEFFERSON BOULEVARD, CULVER CITY, CALIFORNIA 90230
(ORDER NO. R4-2007-0019, SERIES NO. 144)

I. REPORTING REQUIREMENTS

- A. Mr. Phillip Tangelakis and Mr. Dannie Cavanaugh (hereinafter Dischargers) shall implement this monitoring program on the effective date of Regional Board Order No. R4-2007-0019. The Quarterly Groundwater Remediation Progress and Discharge Monitoring Report for the First Quarter 2011 shall be received at the Regional Board by **April 15, 2011**. Subsequent reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring 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 1st of each year, the Dischargers 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 Dischargers 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).

¹ The Monitoring and Reporting Program (MRP) No. CI-9642 was originally issued on December 10, 2010 for direct application of HRCTM for *in situ* groundwater treatment. The MRP is revised for application and injection of both HRCTM and RegenoxTM for soil and groundwater remediation, per the amendments to the Interim Remedial Action Plan approved by the Regional Board in a letter, dated February 8, 2011.

Former Sunshine Cleaners Site Order No. R4-2007-0019
Monitoring & Reporting Program No. CI-9642 [Revised]

- D. Laboratory analyses - all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.
- E. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Dischargers can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Dischargers shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.
- F. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Dischargers shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- G. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- H. 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 WDRs, as well as all excursions of effluent limitations.
- I. The Dischargers shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- J. If the Dischargers perform analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- K. In reporting the monitoring data, the Dischargers shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

- L. The Dischargers 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 Dischargers demonstrate mastery of electronic submittal of reports to GeoTracker for the Site, it may request that the Regional Board waive the requirement of submitting hard copies of reports.

II. HRC™ AND REGENOX™ INJECTION AND APPLICATION MONITORING REQUIREMENT

The quarterly reports shall contain the following information regarding HRC™ and Regenox™ injection:

1. Map showing the location(s) of wells used for HRC™ and Regenox™ injection and application;
2. Written and tabular summary of HRC™ and Regenox™ injection and application.
 - a. Total volume of Regenox™ solution applied for soil treatment;
 - b. Include injection well identifications, injection dates, solution concentrations (in percent), average solution injection rates (in gallons per minute), total solution injected (in gallons), and cumulative total volume of HRC™ and/or Regenox™ solutions, injected into the aquifer beneath the site.

III. GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program shall be designed to detect and evaluate subsurface impacts associated with HRC™ and Regenox™ injection. Both zone I and zone II groundwater monitoring wells shall be sampled regularly and the following shall constitute the monitoring program for groundwater monitoring wells in the treatment area (MW-9) and downgradient and upgradient of the treatment area (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10 and MW-11) [see Figure 3]. The Dischargers shall conduct baseline sampling prior to HRC™ and Regenox™ injection and regular sampling with the required frequencies from all the monitoring wells for the following groundwater parameters:

CONSTITUENT	UNITS ¹	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Ferrous iron	mg/L	In situ	Quarterly ²
Dissolved Oxygen	mg/L	In situ	Quarterly ²

Former Sunshine Cleaners Site Order No. R4-2007-0019
 Monitoring & Reporting Program No. CI-9642 [Revised]

CONSTITUENT	UNITS ¹	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Oxidation / Reduction Potential	mV	In situ	Quarterly ²
pH	pH units	In situ	Quarterly ²
Specific Conductivity	µmhos/cm	In situ	Quarterly ²
Temperature	⁰ F	In situ	Quarterly ²
Alkalinity	mg/L	In situ	Quarterly ²
Volatile Organic Compounds (VOCs)	µg/L	grab	Quarterly ²
Major Anions (chloride, sulfate, nitrate, nitrite and sulfide)	µg/L	grab	Quarterly ²
Major Cations (calcium, magnesium, potassium and sodium)	µg/L	grab	Quarterly ²
Metals (arsenic, cadmium, total chromium ³ , hexavalent chromium ³ , lead, manganese, nickel and total iron)	µg/L	grab	Quarterly ²
Methane, Ethene, Ethane and Carbon Dioxide	µg/L	grab	Quarterly ²
Metabolic acids (lactic, pyruvic, acetic, propionic and butyric acids)	mg/L	grab	Quarterly ²
Total Organic Carbon	µg/L	grab	Quarterly ²

¹ µg/L: micrograms per liter; mg/L: milligrams per liter; mV: millivolt; µmhos/cm: micromhos per centimeter; ⁰F: degree Fahrenheit

² Once before injection and quarterly thereafter.

³ The Discharger is required to monitor for total chromium and hexavalent chromium in the baseline, second and fourth quarterly sampling. If detected at any of these sampling events, the total chromium and hexavalent chromium must be monitored quarterly thereafter.

