

Los Angeles Regional Water Quality Control Board

July 19, 2013

Mr. Ed Morelan
Environmental Health Supervisor
Los Angeles Unified School District
Office of Environmental Health and Safety
333 South Beaudry Avenue, 28th Floor
Los Angeles, CA 90017

REVISED MONITORING AND REPORTING PROGRAM NO. CI-9579 – CARSON-GORE ACADEMY OF ENVIRONMENTAL STUDIES (FORMERLY CENTRAL REGION ELEMENTARY SCHOOL #13), 3200 WEST WASHINGTON BOULEVARD, LOS ANGELES, CALIFORNIA (FILE NO. 09-192, ORDER NO. R4-2007-0019, SERIES NO. 119, CI-9579, GLOBAL ID WDR100001770, DTSC SITE CODE 304490)

Dear Mr. Morelan:

On March 15, 2010, the Los Angeles Unified School District (LAUSD) (Discharger) Central Region Elementary School #13 was provided coverage under General Waste Discharge Requirements (WDR) No. R4-2007-0019, adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) on March 1, 2007. The application of the proprietary mix BIOX[®] as a pilot test for in-situ groundwater remediation was regulated under the WDR and its corresponding Monitoring and Reporting Program (MRP) CI-9579.

On October 14, 2010, Regional Board staff revised MRP CI-9579, authorizing the installation of monitoring well C13-GW3 as a substitute for previously proposed monitoring well C13-GW20A.

On August 5, 2011, Regional Board staff revised MRP CI-9579, authorizing the implementation of a pilot study consisting of injecting ozone within locations identified as “hot spots” in the A-zone groundwater underlying Area B1 of the site. The MRP was also modified to include additional A-zone groundwater monitoring wells (C13-GW1R, C13-GW3, C13-GW12A, C13-GW14A, C13-GW15A, C13-GW17A, C13-GW21A, C13-GW22A, C13-GW-23A, and C13-GW26A) surrounding the ozone injection area. In addition, C13-GW3, C13-GW12A, and C13-GW15A, which were previously utilized as the monitoring wells for the BIOX[®] over-spray, were also included in the monitoring program for the ozone injection activities.

On February 8, 2013, Regional Board staff revised MRP CI-9579, authorizing the removal of selected analytes from the analytical suite for quarterly site-wide monitoring and/or compliance and performance monitoring based on data collected as part of the BIOX[®] over-spray and ozone injection pilot studies. Regional Board staff also approved the request that all groundwater monitoring wells at the site be combined to create one site-wide set of wells for future monitoring, all to be monitored for the same analytical suite.

MARIA MEHRANIAN, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

Based on the results from the 2011 ozone pilot study, LAUSD proposes to install a remediation system in order to implement a full-scale groundwater remediation that consists of injecting (discharging) gaseous ozone into groundwater using numerous dedicated injection wells to be installed in the A1-, A- and B-groundwater zones underlying Areas B1 and B2 of the site. The proposed full-scale remediation has been approved by the California Department of Toxic Substances Control (DTSC) on June 28, 2013. As such, the MRP is hereby modified to monitor this full-scale ozone injection groundwater remediation under the existing General WDR.

The revised MRP, which incorporates the requested modifications, is enclosed. Quarterly monitoring will continue under DTSC's oversight, the lead agency for the remediation of the LAUSD Carson-Gore site.

All monitoring reports should be sent to the Regional Board. When submitting monitoring and technical reports to the Regional Board, please include a reference to "Compliance File No. CI-9579", which will assure 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.

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports and correspondence required under the MRP, including groundwater monitoring data, discharge location data, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100001770. ESI training video is available at:
<https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334b>

Please see Electronic Submittal for Geotracker Users, dated December 12, 2011, at:
<http://www.waterboards.ca.gov/losangeles/resources/Paperless/Paperless%20Office%20for%20GT%20Users.pdf>

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the general permit in a separate letter, when your project has been completed and the permit 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.

If you have any additional questions, please contact the Project Manager, Mr. David Koo at (213) 620-6155 (dkoo@waterboards.ca.gov) or the Unit Chief, Dr. Eric Wu at (213) 576-6683 (ewu@waterboards.ca.gov).

Sincerely,


Samuel Unger, P.E.
Executive Officer

Mr. Ed Morelan
Los Angeles Unified School District
Office of Environmental Health and Safety

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July 19, 2013

Enclosure: Monitoring and Reporting Program No. CI-9579 revised on date July 19, 2013

cc: Mr. Patrick Nejadian, Department of Public Health, County of Los Angeles
Mr. Amit Pathak, Department of Toxic Substances Control, Cypress
Mr. Anthony Lizzi, Los Angeles Unified School District, Office of Environmental
Health and Safety
Dr. Mehdi Bettahar, Parsons

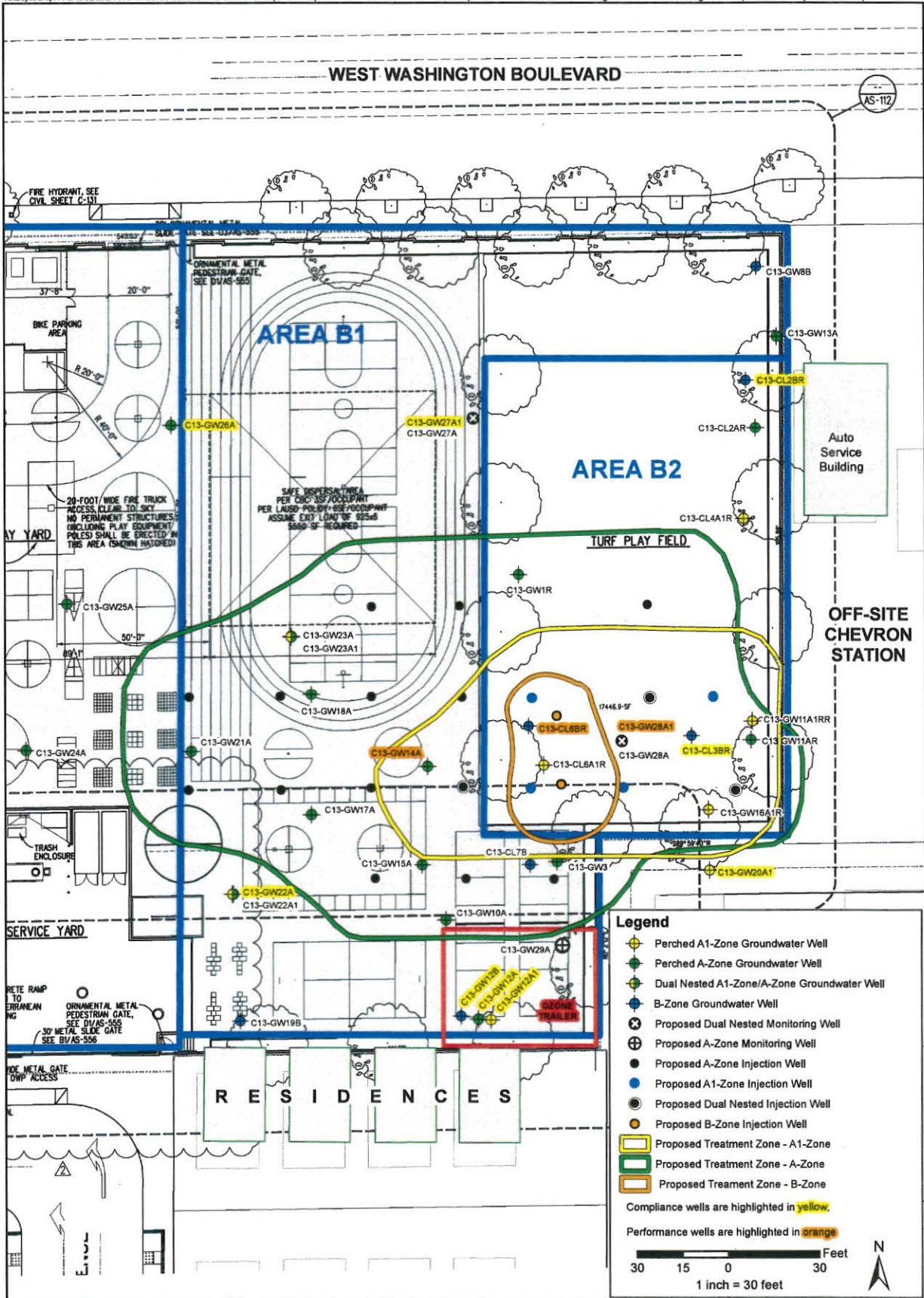


FIGURE 1	PROPOSED WDR MONITORING AND INJECTION WELL LOCATION NETWORK	LAUSD Former Central Region Elementary School #13	PARSONS Pasadena, CA	Job No. (440875)			
				Designed	1	07/30/2008	GLP
				Drawn	1	10/21/2009	RGB
REV 3				Revised	1	5/24/2013	RS
				Checked	1	5/24/2013	SO
				Reviewed	1	5/24/2013	MB
				Approved	1	5/24/2013	TW

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

REVISED MONITORING AND REPORTING PROGRAM NO. CI-9579
FOR

CARSON-GORE ACADEMY OF ENVIRONMENTAL STUDIES
(FORMERLY CENTRAL REGION ELEMENTARY SCHOOL #13)
FOR LOS ANGELES UNIFIED SCHOOL DISTRICT
3200 WEST WASHINGTON BOULEVARD
LOS ANGELES, CALIFORNIA 90018

(GROUNDWATER REMEDIATION
USING *IN-SITU* CHEMICAL OXIDATION)
FILE NO. 09-192, DTSC NO. 304490

ORDER NO. R4-2007-0019
SERIES NO. 119

I. REPORTING REQUIREMENTS

- A. Los Angeles Unified School District (hereinafter Discharger) shall implement this revised monitoring program on the effective date (July 19, 2013) of Regional Board Order No. R4-2007-0019. The Quarterly Groundwater Remediation Progress and Discharge Monitoring Report for the Third Quarter 2013 shall be received at the Regional Board by **October 15, 2013**. 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.
- C. By March 1st 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).

5th Revision July 19, 2013
4th Revision February 8, 2013
3rd Revision August 7, 2012
2nd Revision August 5, 2011
1st Revision October 14, 2010
March 14, 2010

- D. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health 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 groundwater analyses shall be lower than the limits for the permit analytical methods established for a given parameter, unless the Discharger 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 Discharger 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 Discharger 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 exclusions of effluent limitations.
- I. The Discharger 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 Discharger performs 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 Discharger 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. IN-SITU CHEMICAL OXIDATION (ISCO) MONITORING REQUIREMENT

A full-scale groundwater remediation implementation consisting of injecting gaseous ozone into groundwater using dedicated injection wells to be installed in the A1-zone, A-zone and B-zone groundwater underlying Areas B1 and B2 of the Site is proposed. These wells are depicted on Figure 1. Monitoring shall be conducted to evaluate the effectiveness of this remediation and secondary effects. A report shall be submitted quarterly documenting the results of the pre- and post-injection monitoring. The reports must include the results of baseline parameters in groundwater prior to the application of ozone. The quarterly reports are due according to the schedule listed in Section IA.

The report(s) shall contain the following information regarding the remediation implementation activities:

1. Map showing the location(s) of the injection area.
2. A thorough summary of the quantities of ozone injection. Include injection dates, total estimated area of influence, ozone concentrations, and total ozone injected (in pounds).
3. Interpretation of the results and evaluation of the remediation implementation effectiveness.

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. In addition to baseline events, sampling will be conducted monthly during the first six months after injection initiation, quarterly until injection is terminated, and for a minimum of one subsequent quarter. Groundwater samples shall be collected from the groundwater monitoring wells listed in Table 1 below (see Figure 1):

The groundwater monitoring well network will include the following:

- Nine (9) Compliance Wells – existing wells C13-CL2BR, C13-CL3BR, C13-GW12A1, C13-GW12A, C13-GW12B, C13-GW20A1, C13-GW22A, C13-GW26A, and proposed location C13-GW27A1. Compliance wells will monitor any potential groundwater changes outside of the injection area (one down-gradient, one up-gradient, and one cross-gradient in each the A1-, A-, and B- groundwater zones (see Figure 1 and Table 1 below).
- Three (3) Performance Wells – existing wells C13-CL6BR, C13-GW14A, and proposed well C13-GW28A1. Performance wells will provide groundwater data to evaluate the effects of ISCO within the injection area (proposed performance well C13 GW28A1 is located in the center of the injection area for the A1-Zone, performance well C13-GW14A is located near the center of the ozone injection area for the A-Zone, and performance well C13-CL6BR is located near the center of the ozone injection area for the B-zone (see Figure 1 and Table 1 below).

Two A1-zone wells (C13-GW27A1 and C13-GW28A1) will be installed for optimal monitoring coverage within and surrounding the injection area and will be incorporated into the compliance and monitoring network. Well C13-GW27A1 will serve as the downgradient compliance well for the A1-zone.

Table 1. Sampling Plan

Well ID	Water Zone	Monitoring Objective	Baseline Suite	Monthly/Quarterly Suite	Annual Suite*
C13-CL2BR	B	Up-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-CL3BR	B	Cross-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-CL6BR	B	B-Zone Performance	Suite A	Suite A	Suite A
C13-GW12A	A	Down-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW12A1	A1	Cross-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW12B	B	Down-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW14A	A	A-Zone Performance	Suite A	Suite A	Suite A
C13-GW20A1	A1	Up-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW22A	A	Cross-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW26A	A	Up-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW27A1	A1	Down-Gradient Compliance Point	Suite A, B, C	Suite A, B	Suite A, B, C
C13-GW28A1	A1	A1-Zone Performance	Suite A	Suite A	Suite A

*At least once annually, compliance wells will be sampled for Suite C analytes. Annual events may satisfy one quarterly sampling requirement per year.

Groundwater from the groundwater monitoring wells listed in Table 1 above shall be monitored for the duration of the WDR permit at the frequencies indicated in the “Monitoring Frequencies” section below in accordance with the following monitoring program (Table 2 below):

Table 2. Monitoring Program

ANALYSIS ⁽¹⁾	METHOD ⁽²⁾	TYPE OF SAMPLE	COMPLIANCE WELLS ANALYSES	PERFORMANCE WELLS ANALYSES	UNITS
SUITE A – Chemicals of Concern					
Volatile Organic Compounds	EPA Method 8260B or equivalent	Grab (or low flow sampling when feasible)	X	X	µg/L
Total Petroleum Hydrocarbons (Full Carbon Chain)	EPA Method 8015M or equivalent	Grab (or low flow sampling when feasible)	X	X	µg/L
SUITE B – Secondary Parameters					
Dissolved California Assessment Manual (CAM) metals, total iron and boron	EPA Method 6010B/7470 or equivalent	Grab (or low flow sampling when feasible)	X		µg/L
Hexavalent Chromium	EPA Method 7199 or equivalent	Grab (or low flow sampling when feasible)	X		µg/L
Anions (bromate, nitrate, and sulfate)	EPA Method 300.1/300 or equivalent	Grab (or low flow sampling when feasible)	X		µg/L
Manganese	EPA Method 6020D or equivalent	Grab (or low flow sampling when feasible)	X		mg/L
Ferrous Iron	SM 3500 or equivalent	Grab (or low flow sampling when feasible)	X		
SUITE C – Other Geochemistry⁽³⁾					
Manganese	EPA 6020A or equivalent	Grab (or low flow sampling when feasible)	X		

ANALYSIS ⁽¹⁾	METHOD ⁽²⁾	TYPE OF SAMPLE	COMPLIANCE WELLS ANALYSES	PERFORMANCE WELLS ANALYSES	UNITS
Total Dissolved Solids	EPA Method 2540C or equivalent	Grab (or low flow sampling when feasible)	X		mg/L
Field Parameters					
pH	N/A	In-situ	X	X	pH units
Specific Conductivity	N/A	In-situ	X	X	µmhos
Oxidation - Reduction Potential	N/A	In-situ	X	X	mV
Dissolved Oxygen	N/A	In-situ	X	X	mg/L
Temperature	N/A	In-situ	X	X	°F/°C
Turbidity	N/A	In-situ	X	X	NTU
Free product	N/A	In-situ	X	X	ft
Groundwater elevation	N/A	In-situ	X	X	ft

- (1) Samples will be collected via low-flow sampling, if feasible. If insufficient water is present for low-flow sampling, a grab sample will be collected using a disposable bailer.
- (2) Suggested method of analysis; alternative method may be used if comparable method limits (MLs) are achieved and the laboratory is certified for such analysis by the California Department of Health Services and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures, as applicable.
- (3) Suite C analyses to be sampled at least annually (see Table 2).

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

The following groundwater monitoring well sampling frequency is approved.

The groundwater monitoring network sampling frequencies is as follows:

- a. Compliance Wells (Sentinel Wells)
 - i. Baseline – to occur a minimum of one week prior to the initiation of injection
 - ii. Monthly for the first six months of RAP implementation starting immediately after the initiation of injection

- iii. Quarterly thereafter until injection is terminated, and for a minimum of one subsequent quarter
- b. Performance Wells
 - i. Baseline – to occur a minimum of one week prior to the initiation of injection
 - ii. Monthly for the first six months of RAP implementation starting immediately after the initiation of injection
 - iii. Quarterly thereafter until injection is terminated, and for a minimum of one subsequent quarter

Monitoring frequencies may be adjusted to a less frequent basis or parameters may be modified by the Executive Officer if the Discharger makes 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.

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.

VII. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data, discharge location data, correspondence, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100001770.

Carson-Gore Academy of Environmental Studies
(Formerly Central Region Elementary School #13)
WDR Order No. R4-2007-0019
Monitoring and Reporting Program No. CI-9579

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
Samuel Unger, P.E.
Executive Officer

Date: July 19, 2013