California Regional Water Quality Control Board

Los Angeles Region

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Linda S. Adams
Agency Secretary

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Arnold Schwarzenegger
Governor

April 27, 2010

Mr. David Chernik
Playa Vista Development
6500 Seabluff Drive,
Playa Vista, CA 90094

GENERAL WASTE DISCHARGE REQUIREMENTS (ORDER NO.R4-2007-0019, SERIES NO. 110 AND MONITORING AND REPORTING PROGRAM NO. CI 8609) ENHANCED IN SITU ANAEROBIC BIOREMEDIATION WITHIN SELECT PORTIONS OF THE FORMER TEST SITE 2 AND FORMER FIRE SAFETY TRAINING AREAS OF THE PLAYA VISTA DEVELOPMENT PLAYA VISTA PROPERTY (CLEANUP AND ABATEMENT ORDER NO. 98-125, FILE NO. 98-192, SLIC NO. 0773, SITE ID NO. 2043W-00)

Dear Mr. Chernik:

The Los Angeles Regional Water Quality Control Board (Regional Board) staff has reviewed your application dated October 31, 2008 (Application) and two addenda to the Application (Addenda) dated December 17, 2008 and December 3, 2009 respectively. The Application and Addenda was sent for enrollment under General Waste Discharge Requirement (WDR) permit. Playa Capital Company, LLC (Playa) plans to inject lactate amendment solution and emulsified oil into the groundwater within select portions of the former Test Site 2 (TS2) and former Fire Safety Training (FSTA) to enhance and stimulate the existing in-situ bioremediation remedial system in TS2 area, and Pump and Treat (P&T) remedial system in FSTA area (Sites).

The former TS2 and FSTA source areas are located within the western portion of Area D of the Site. The former TS2 covered an area approximately 150 feet wide by 300 feet long (approximately 1.0 acre) and was reportedly used by Hughes Aircraft to test aircraft equipment and store chemical drums from the 1950s to the mid 1980s. The former FSTA was used from the early-1960s to the mid-1980s to train fire fighters to handle chemical and fuel fires. The groundwater beneath the Site including TS2 and FSTA areas are mainly impacted with volatile organic compounds (VOCs), particularly cis,1,2-dichloroethene (cis1,2-DCE) and vinyl chloride (VC) from the historical industrial operations.

On April 6, 2010 the Regional Board approved the Work Plan for Supplemental Investigation and Implementation of Enhance the Anaerobic Bioremediation EAB within select portions of TS2 and FSTA Areas (Work Plan). The overall objectives of the Work Plan are to improve the operational efficiency of the existing remediation systems at TS2 and FSTA, thereby accelerating the overall remediation efforts.

According to the information provided, Regional Board staff 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. Please refer to the attached Fact Sheet for additional discharge information.

You may begin to inject a soluble lactate solution to the subsurface, followed by the additional a slow-release of EOS-450 into each of the injection points at approximate locations and depths indicated in the Work Plan which was approved on April 6, 2010.

Enclosed are your Waste Discharge Requirements consisting of Regional Board Order No. R4-2007-0019, (Series 110), Fact Sheet, Monitoring and Reporting Program No. CI-8609 and Standard Provisions. Please note that this WDR supersedes the previously WDR Order No R4-2002-0030: Series No 032 dated July 15, 2003 and shall not be rescinded until Regional Board staff determines the WDR is no longer needed for the proposed injection at the Sites.

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-8609, which will assure that the reports are directed to the 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 one copy of Order No.R4-2007-0019 to you. Additional copies of the Order will be furnished to anyone who requests it.

If you have any questions regarding this matter, please contact Dr. Noori Alavi, Project Manager, at (213) 576-6659, Mr. Adnan Siddiqui, Unit Chief, at (213) 576-6812 or Dr. Arthur Heath, Remediation Section Chief, at (213) 576-6725.

Sincerely,

Tracy J. Egoscue
Executive Officer

Enclosures:
1 Fact Sheet
2. Monitoring and Reporting Program No. CI-8609
3. General Waste Discharge Requirements, Order No. R4-2007-0019
4. Standard Provisions Applicable to Waste Discharge Requirements

CC: Interested Parties list, via e-mail

FACT SHEET

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles, California 90013

FACT SHEET

WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER REMEDIATION USING ENHANCED IN-SITU BIOREMEDIATION AT THE FORMER TEST SITE 2 AND FORMER FIRE SAFETY TRAINING AREAS OF THE PLAYA VISTA DEVELOPMENT PLAYA VISTA PROPERTY

CLEANUP AND ABATEMENT ORDER NO. 98-125, FILE NO. 98-192, SLIC NO. 0773, SITE ID NO. 2043W-00

ORDER NO. R4-2007-0019, SERIES 110, CI-8609

FACILITY ADDRESS

6775 Centinela Avenue,
Los Angeles, California

FACILITY MAILING ADDRESS

Mr. David Chernik
Playa Vista Development
6500 Seabluff Drive,
Playa Vista, CA 90094

SITE DESCRIPTION AND BACKGROUND:

The Los Angeles Regional Quality Control Board, (Regional Board) has been providing regulatory oversight for the ongoing environmental investigation, monitoring and cleanup work related to historical industrial use of the Playa Vista site (Site) under its Site Cleanup Program since 1998. On December 22, 1998, the Regional Board issued a Cleanup and Abatement Order No. 98-125 (CAO) to Playa Capital and Playa Phase I Commercial Land Company, LLC (Playa).

The former Test Site 2 (TS2, at Latitude: N33° 58' 13", Longitude: W118° 25' 36") and former Fire Safety Training Area (FSTA, at Latitude: N33° 58' 8", Longitude: W118° 25' 25") are located within the western portion of the Site. The former TS2 covered an area approximately 150 feet wide by 300 feet long (approximately 1.0 acre) and was reportedly used by Hughes Aircraft to test aircraft equipment and store chemical drums from the 1950s to the mid 1980s. The former FSTA was used from the early-1960s to the mid-1980s to train fire fighters to handle chemical and fuel fires.

The Site including TS2 and FSTA are located within the Santa Monica Hydrogeologic Basin, a sub-basin of the Los Angeles Coastal Plain. Groundwater beneath the site is first encountered approximately 12- to 18-feet below ground surface (bgs). Groundwater flow direction is variable as a result of the hydraulic influence of the groundwater extraction and remedial system operating in the TS2 and FSTA. Investigation results, indicate the

soil and groundwater beneath the Site including TS2 and FSTA areas are mainly impacted with volatile organic compounds (VOCs), particularly cis,1,2-dichloroethene (cis1,2-DCE) and vinyl chloride (VC) from the historical industrial operations.

REMEDIATION IN TS2 AND FSTA:

On June 28, 2002, the Regional Board approved the Remediation Plan (RP) for the former TS2 using in-situ bioremediation technology to deliver lactate amendment solution to the subsurface. Subsequently on July 15, 2003, Regional Board also approved a General Waste Discharge Requirement (WDR) to inject lactate amendment solution to the groundwater beneath the TS2 area. The former TS2 remedial system began operation in October 2003. The extracted groundwater is being treated through the above groundwater treatment system using an advanced oxidation process (AOP) and discharged to the sanitary sewer connection in accordance with the Los Angeles City Department of Public Works, Bureau of Sanitation (LADPW) permit.

On August 12, 2004, Regional Board approved the RP for FSTA area and subsequently, groundwater remediation at the FSTA began in October 2004. The FSTA remediation system consists of two groundwater interceptor trenches and one groundwater extraction well. The extracted groundwater is conveyed to the TS2 groundwater remediation system for treatment. Subsequently, treated groundwater is discharged to the sanitary sewer under the LADPW permit.

ENHANCED ANAEROBIC BIOREMEDIATION WITHIN SELECT PORTIONS OF THE FORMER TS2 AND FSTA:

Based on the performance monitoring evaluation of the both remedial systems, CDM concluded that the TS2 and FSTA remediation systems have been operating effectively; however, portions of the treatment areas within each source area are undergoing treatment at differing rates. Implementation of EAB is proposed to accelerate the remediation efforts with portions of both the TS2 and FSTA areas. The planned modifications to each remediation system will include the addition of soluble lactate solution to the subsurface, followed by the addition of a slow-release edible oil substrate (EOS) (i.e., a food grade solution of emulsified soybean oil and lactate). CDM has selected the EAB with EOS as the preferred enhancement approach after considering several key remediation technologies based on their anticipated effectiveness, implementability, and cost.

The EOS product is manufactured and supplied by EOS Remediation Inc. for the purposes of accelerating the in-situ anaerobic dechlorination of certain VOCs in groundwater. The emulsification process results in a small droplet size of soybean oil that may be readily distributed in the subsurface area surrounding the injection points, while at the same time provides a "slow release" characteristic that allows the edible oil to slowly dissolve over several years thereby providing a long-term carbon and energy source to accelerate the anaerobic biodegradation of the chlorinated solvents.

VOLUME AND DESCRIPTION OF DISCHARGE

The primary planned modifications to the TS2 and FSTA remediation systems include injection of 500 to 1,000 gallons of a soluble lactate solution to the target treatment area (Figure 1). The initial injection step will serve as a "primer" to stimulate the subsurface biological activity through the addition of lactate, which is a readily metabolized compound. The lactate primer solution will be developed by diverting groundwater from existing TS2 reinjection system into a polypropylene, or similar, holding tank. The reinjection flow stream from the TS2 system is designed to contain approximately 2,000 to 3,000 mg/L, which is a desirable concentration for use as a primer solution. The volume of 500 to 1,000 gallons of primer solution will be injected through direct push drill rods to an approximate even spacing throughout the treatment area at various locations in the upper Bellflower

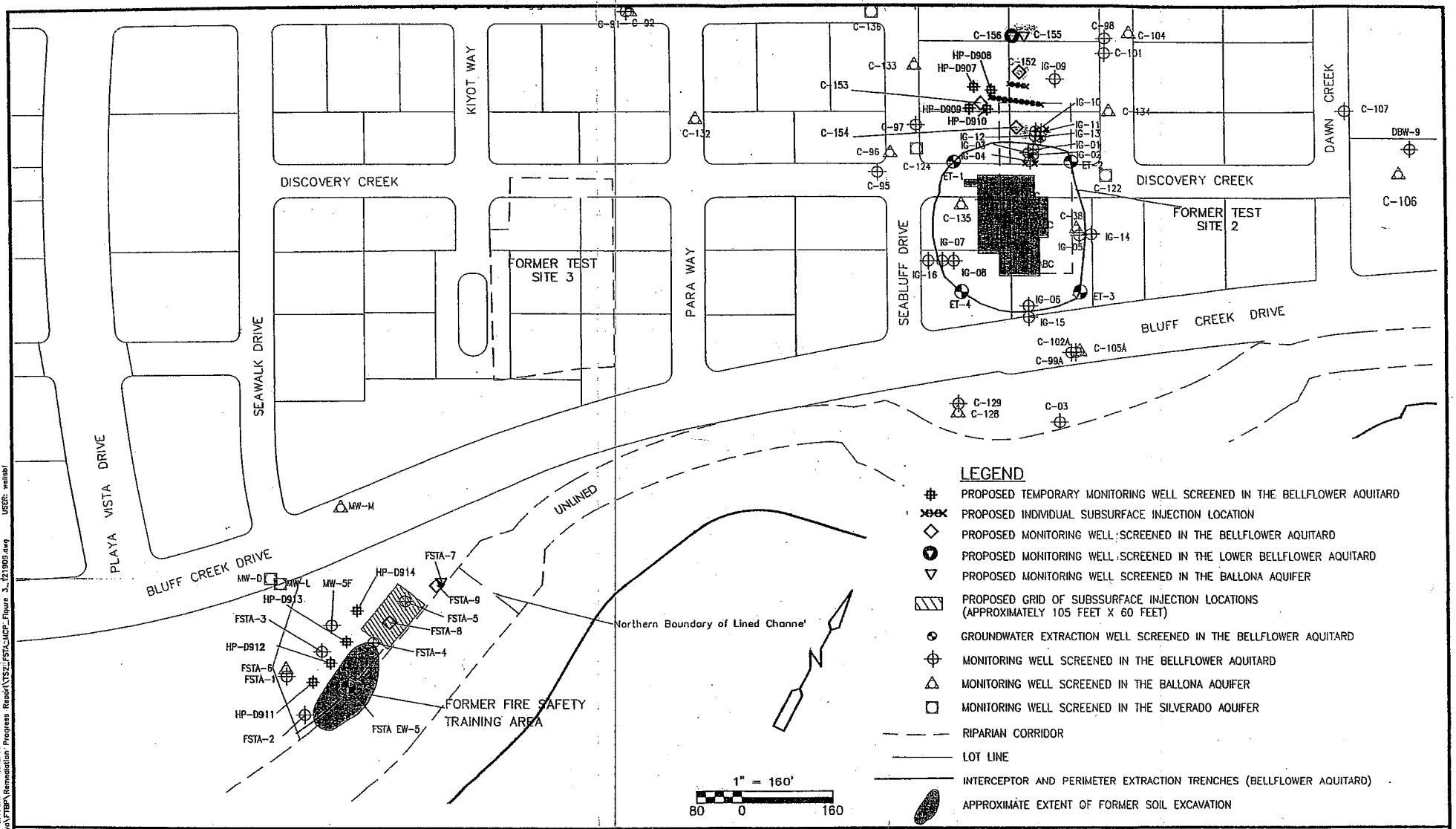
Aquitard. To assure that there is ample distribution of the fluids, the injection of the primer solution will occur through a minimum of four separate locations spaced throughout the treatment area.

After a minimum of two weeks following the lactate primer injection, the EOS injections will be performed using a proprietary product known as EOS-450, which is a food-grade solution of emulsified soybean oil and lactate. The EOS-450 product is manufactured and supplied by EOS Remediation Inc. of Raleigh, NC. The emulsification process results in a small droplet size of soybean oil that may be readily distributed in the subsurface area surrounding the injection points, while at the same time providing a "slow release" characteristic that allows the edible oil to slowly dissolve over several years, thereby providing a long-term carbon and energy source to accelerate the anaerobic biodegradation of the chlorinated solvents. The EOS-450 and water solution will be injected under slight pressured to propagate the fluids out into the formation. Efforts will be made to limit the injection pressures to minimize the development of preferential injection pathways. Preliminary calculations performed for planning purposes suggest that approximately 200 gallons of fluid may be injected across a 10-foot thickness at each injection location at minimal injection pressures. The estimated usage of EOS-450 is based on the dosage requirements recommended by EOS Remediation Inc. and the supporting calculations included in Attachment A of the TS2/FSTA Work Plan (CDM, October 2008). Depending upon the VOC results from the four proposed temporary groundwater monitoring wells or existing groundwater monitoring wells, the targeted treatment zone and planned volume of EOS-450 may be increased to cover additional portions of TS2 or FSTA area.

In accordance with the vendor's recommendations, the concentrated EOS-450 product will be diluted approximately 10-fold using potable water. Thus the total fluid injection volume in the targeted treatment zone will be approximately **6,050 gallons** (550 gallons of EOS-450 plus 5,500 gallons of potable water) for TS2 area, and a approximately **9,075 gallons** (825 gallons of EOS-450 plus 8,250 gallons of potable water) for FSTA area.

REMEDIATION PROGRESS MONITORING:

The effectiveness of the EOS injections will be tracked by evaluating data that are collected in accordance with the TS2/FSTA Monitoring and Contingency Plan (MCP) prepared by CDM on December 21, 2009. MCP provides the details concerning monitoring objectives, sampling locations, analytical program and methods, and frequencies within and adjacent to the remedial systems for TS2 and FSTA. Each of the new monitoring wells will be sampled in accordance with the schedule presented in the TS2/FSTA MCP. Any potential adverse water quality impacts that may result will be localized, of short-term duration, and will not impact any existing or prospective uses of groundwater. Groundwater quality will be monitoring to verify no long-tem adverse impact to water quality. The Discharge is required per Monitoring and Reporting Program No. CI-8609 to document the quantities of lactate and EOS-450 injected. There may be small increases associated with soluble gases such as methane, ethane, ethene, and carbon dioxide.



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CDM

Monitoring and Contingency Plan
Former Test Site 2 Area and Former Fire Safety Training Area

Proposed Injection Locations and Monitoring Well Location Map

Figure 1

Source: Modified after CDM, December 2009

Monitoring and Reporting Program NO. CI-8609

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

MONITORING AND REPORTING PROGRAM NO. CI-8609
FOR
FORMER TEST SITE 2 AND FORMER FIRE SAFETY TRAINING AREAS OF THE PLAYA VISTA DEVELOPMENT PLAYA VISTA PROPERTY PLAYA VISTA, CALIFORNIA

ORDER NO. R4-2007-0019 (Series No. 110)

CLEANUP AND ABATEMENT ORDER NO. 98-125, FILE NO. 98-192, SCP NO. 0773, SITE ID NO. 2043W-00

I. Monitoring and Reporting Requirements

A. Playa Capital Company, LLC (Playa) (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (April 27, 2010) under Regional Board Order No. R4-2007-0019. Upon the initiation of monthly groundwater monitoring and sampling, the first monitoring report shall be submitted by **August 15, 2010** for the first three months (April 2010 through June 2010) of this remediation program. Subsequent quarterly monitoring reports shall be received by the Regional Board according to the following schedule:

Monitoring Period	**Report Due**
January – March	May 15
April – June	August 15
July – September	November 15
October – December	February 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, starting in 2010, 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 discuss 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 groundwater analyses shall be lower than the permit limits 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. Discharge Monitoring

Prior to the start of the in-situ injection of lactate amendment solution and emulsified oil to groundwater, Discharger shall sample from the groundwater monitoring wells described in Monitoring and Contingency Plan (MCP) at former TS2 and FSTA areas (CDM, December 21, 2009, Tables 3-1 through 3-5,copies attached) for baseline groundwater parameters. Monitoring shall consist of samples collected from at least one up-gradient well, two wells within the injection area, and two monitoring wells down gradient of the injection area for both TS2 and FSTA areas. Following the collection of baseline groundwater samples, all wells shall be monitored for the life of the In-Situ Bioremediation, and Enhanced Anaerobic Bioremediation (EAB) remediation project in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Daily Injection Waste Flow	liters/day (to indicate solution concentration)	In situ	• Daily during injection
Total Organic Carbon (groundwater) (EPA Method 9060 Modified)	µg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Chlorinated Volatile Organic Compounds (EPA Method 8260B)	µg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
1,4-Dioxane (EPA Method 8270C)	µg/L	grab	Baseline, semi-annually
Total Dissolved Solids and Total Suspended Solids	mg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Specific Conductivity	µmhos/cm	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Turbidity	NTU	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
PH	pH units	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Oxidation-Reduction Potential	millivolts	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Temperature	°F/°C	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Groundwater Elevation	Feet, mean sea level (msl) and below ground surface (bgs)	In situ	• Baseline prior to injection. • Monthly first month through sixth month • Quarterly thereafter
Dissolved Oxygen	µg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Major Anions (bromide, chloride, sulfate, nitrate, nitrite, O-phosphate, and sulfide)	µg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Major Cations (barium, calcium, magnesium, manganese, potassium and sodium)	µg/L	grab	• Baseline prior to injection • Monthly first month through sixth month • Quarterly thereafter
Ferrous Iron, Manganese, Arsenic, Lead	µg/L	grab	• Baseline prior to injection • Quarterly thereafter
CO2, CH4, Ethane, Ethene	µg/L	grab	• Baseline prior to injection • Quarterly thereafter
Metabolic Acids	µg/L	grab	• Baseline prior to injection • Quarterly thereafter

Footnotes:

1) Groundwater elevation data shall be collected from all monitoring wells at both TS2 and FSTA areas during each monitoring event and a groundwater potentiometric surface map shall be created from the data and provided in the monitoring reports.

III. 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)"

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. PUBLIC DOCUMENTS

These 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.

Ordered by: _____ Date: April 27, 2010
Tracy J. Egoscue
Executive Officer

Table 3-1 - Summary of Monitoring Objectives
Former Test Site 2 Area

System Component	Monitoring Objective	Locations Monitored
Infiltration Gallery / Perimeter Extraction Trench Wells		
Infiltration Gallery	Monitor effectiveness of lactate injections and optimize hydraulic controls of infiltration gallery	PZ-1,2,3 (a,b,c), IG-01 through IG-08
Perimeter Extraction Trench	Monitor hydraulic capture zone and optimize perimeter extraction trench operations	IG -1 through IG-09, IG-11
Ex Situ Groundwater Treatment	Verify Industrial discharge permit requirements are met and optimize treatment process operations	Monthly system effluent in accordance with Industrial discharge permit
Emulsified Oil Injection Areas		
Emulsified Oil Injection Areas	Monitor effectiveness of emulsied oil injections	IG-4, IG-11, three new monitoring wells
Regional Monitoring Wells		
Regional Monitoring Wells	Monitor VOC concentrations and evaluate significance of MNA processes	C-90 through C-105, C-107, C-122 through C-138
Select Ballona Monitoring Wells	Monitor potential influence of the remediation system to three deeper, downgradient wells in the Ballona aquifer	C-128, C-133, and C-134

Notes:
VOCs = volatile organic compounds
MNA = monitored natural attenuation
The parameters monitored and the sampling frequency are presented in Table 3-3

Table 3-2 - Summary of Monitoring Objectives
Former Fire Safety Training Area

System Component	Monitoring Objective	Locations Monitored
Emulsified Oil Injection Area		
Emulsified Oil Injection Areas	Monitor effectiveness of emulsied oil injections	FSTA EW-5, FSTA-4, FSTA-5, FSTA-7, FSTA-8
Groundwater Monitoring Wells		
Groundwater Monitoring Wells	Monitor hydraulic capture and effectiveness of groundwater extraction wells	FSTA EW-5, FSTA-1 through FSTA-6, MW5F, MW-D, MW-F, MW-M, and FSTA-9
Riparian Corridor Surface Water		
Riparian Corridor	Monitor for potential VOC contamination in Riparian Corridor surface water to verify the impermeable liner integrity	Surface Water #1 through Surface Water #3

Notes:
VOCs = volatile organic compounds
The parameters monitored and the sampling frequency are presented in Table 3-4

Table 3.3 - Sample Collection Matrix
Former Test Site 2 Area

Well Identification	Aquifer	Groundwater Elevations	Field Parameters (pH, ORP, DO)	Volatile Organic Compounds (VOCs)	Dissolved Organic Carbon (DOC)	Methane, Ethane, Ethene	Sulfate, Nitrate, Chloride	Alkalinity (all forms)	Carbon Dioxide, Hydrogen Sulfide	Ferrous Iron	Dissolved Hydrogen	Total Iron	Metabolic Acids	Total Dissolved Solids (TDS)	Nitrite, Phosphate	Total Calcium, Magnesium, Potassium, Sodium
	Method	Field Meter	Field Meters	EPA 524.2	EPA 9060	AM20GAX	EPA 300.0	EPA 2320B	Hach	Hach	AM20GAX	EPA 200.7	AM23	EPA 160.1	EPA 300.0	EPA 200.7
	Filter	No	No	No	Yes	No	No	No	No	Yes	No	No	No/Yes	No	No	No
	Preservative	–	–	HCl	HCl	Na3PO4	–	–	–	–	–	HNO3	BAKH2SO4	–	–	HNO3
	Bottle Requirements	None	None	3 VOA	2 VOA	2 VOA	1 L Poly	1 L Poly	125 mL Poly	125 mL Poly	22 mL Gas	500 mL Poly	2 VOA / 250 mL Poly	1 L Poly	1 L Poly	500 mL Poly
Infiltration Gallery / Extraction Trench Wells																
PZ-1a	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
PZ-1b	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
PZ-1c	UB	•	•	•	•	•	•	•	•	•	•		•	•	•	•
PZ-2a	UB	•	•	•	•	•	•	•	•	•	•		•	•	•	•
PZ-2b	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
PZ-2c	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
PZ-3a	UB	•	•	•	•	•	•	•	•	•	•		•	•	•	•
PZ-3b	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
PZ-3c	UB	•	•	•	•	•	•	•	•	•			•	•	•	•
IG-1	UB	•	•	•	•	•	•	•	•					•	•	•
IG-2	UB	•	•	•	•	•	•	•	•	•	•		•	•	•	•
IG-3	UB	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
IG-4	UB	•	•	•	•	•	•	•	•	•		•	•	•	•	•
IG-5	UB	•	•	•	•	•	•	•	•	•		•	•	•	•	•
IG-6	UB	•	•	•	•	•	•	•	•	•		•	•	•	•	•
IG-7	UB	•	•	•	•	•	•	•	•		•			•	•	•
IG-8	UB	•	•	•	•	•	•	•	•	•		•	•	•	•	•
ET-1	UB	•														
ET-2	UB	•														
ET-3	UB	•														
ET-4	UB	•														
Emulsified Oil Injection Area																
IG-9	UB	•	•	•	•	•	•	•	•	•			•			
IG-11	UB	•	•	•	•	•	•	•	•	•			•			
C-152 (Proposed New Well)	UB	•	•	•	•	•	•	•	•	•			•	•		
C-153 (Proposed New Well)	UB	•	•	•	•	•	•	•	•	•	•		•	•		
C-154 (Proposed New Well)	UB	•	•	•	•	•	•	•	•	•			•	•		
C-155 (Proposed New Well)	BA	•	•	•	•	•	•	•	•	•			•	•		
C-156 (Proposed New Well)	LB	•	•	•	•	•	•	•	•	•			•	•		
Regional Monitoring Wells																
C-90	UB	•	•	•	•	•	•	•	•	•						
C-91	LB	•	•	•	•	•	•	•	•	•						
C-92	BA	•	•	•	•	•	•	•	•	•						
C-93	BA	•	•	•	•	•	•	•	•	•						
C-94A	LB	•	•	•	•	•	•	•	•	•						
C-95	LB	•	•	•	•	•	•	•	•	•						
C-96	BA	•	•	•	•	•	•	•	•	•						
C-97	UB	•	•	•	•	•	•	•	•	•						
C-98	UB	•	•	•	•	•	•	•	•	•						
C-99A	UB	•	•	•	•	•	•	•	•	•	•					
C-100	LB	•	•	•	•	•	•	•	•	•						
C-101	LB	•	•	•	•	•	•	•	•	•						
C-102A	LB	•	•	•	•	•	•	•	•	•	•					
C-103	BA	•	•	•	•	•	•	•	•	•						
C-104	BA	•	•	•	•	•	•	•	•	•						
C-105A	BA	•	•	•	•	•	•	•	•	•						
C-107	UB	•	•	•	•	•	•	•	•	•						
C-122	SI	•	•	•												
C-123	SI	•	•	•												
C-124	SI	•	•	•												
C-128	BA	•	•	•	•	•	•	•	•					•	•	•
C-129	BE	•	•	•												
C-130	BA	•	•	•												
C-131	BA	•	•	•												
C-132	BA	•	•	•												
C-133	BA	•	•	•	•	•	•	•	•					•	•	•
C-134	BA	•	•	•	•	•	•	•	•					•	•	•
C-135	BA	•	•	•												
C-136	SI	•	•	•												
C-137	SI	•	•	•												
C-138	SI	•	•	•												

Notes:
• = Parameter for quarterly sampling. Quarterly sampling will be conducted in accordance with the Groundwater Sampling and Analysis Plan (SAP), February 3, 2003.
Ferrous iron, carbon dioxide, and hydrogen sulfide will be analyzed immediately after sample collection by onsite personnel using a Hach equipment.

Aquifer
UB = Upper Bellflower
LB = Lower Bellflower
BE = Bellflower (undesignated)
BA = Ballona
SI = Silverado

Table 3.4 - Sample Collection Matrix
Former Fire Safety Training Area

Well Identification	Aquifer	Groundwater Elevations	Field Parameters (pH, ORP, DO)	Volatile Organic Compounds (VOCs)	1,4-Dioxane	Total Manganese	Dissolved Organic Carbon (DOC)	Methane, Ethane, Ethene	Sulfate, Nitrate, Chloride	Alkalinity (all forms)	Carbon Dioxide, Hydrogen Sulfide	Ferrous Iron	Dissolved Hydrogen	Total Iron	Metabolic Acids	Total Dissolved Solids (TDS)	Nitrite, Phosphate	Total Calcium, Magnesium, Potassium, Sodium
Method		Field Meter	Field Meters	EPA 524.2	EPA 8270C	EPA 200.7	EPA 9060	AM20GAX	EPA 300.0	EPA 2320B	Hach	Hach	AM20GAX	EPA 200.7	AM23	EPA 160.1	EPA 300.0	EPA 200.7
Filter		No	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No/Yes	No	No	No
Preservative		--	--	HCl	--	HNO3	HCl	Na3PO4	--	--	--	--	--	HNO3	BAKH2SO4	--	--	HNO3
Bottle Requirements		None	None	3 VOA	1 L Amber	500 mL Poly	2 VOA	2 VOA	1 L Poly	1 L Poly	125 mL Poly	125 mL Poly	22 mL Gas	500 mL Poly	2 VOA / 250 mL Poly	1 L Poly	1 L Poly	500 mL Poly
LAB				ASSC	ASSC	ASSC	ASSC	MIC	ASSC	ASSC	FIELD	FIELD	MIC	ASSC	MIC	ASSC	ASSC	ASSC
Emulsified Oil Injection Area																		
FSTA EW-5	BE	•	•	•	•	•	•	•	•	•	•	•						
FSTA-4	BE	•	•	•	•	•	•	•	•	•	•	•	•	•				
FSTA-5	BE	•	•	•	•	•	•	•	•	•	•	•						
FSTA-7 (Proposed New Well)	BE	•	•	•	•	•	•	•	•	•	•	•			•	•		
FSTA-8 (Proposed New Well)	BE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
FSTA-9 (Proposed New Well)	BA	•	•	•	•	•	•	•	•	•	•	•			•	•		
Groundwater Extraction Wells																		
FSTA EW-5	BE	•	•	•	•													
FSTA-1	BE	•	•	•	•	•	•	•	•	•	•	•						
FSTA-2	BE	•	•	•	•	•	•	•	•	•	•	•						
FSTA-3	BE	•	•	•	•	•	•	•	•	•	•	•	•	•				
FSTA-4	BE	•	•	•	•													
FSTA-5	BE	•	•	•	•													
FSTA-6	BA	•	•	•	•													
MW-5F	BE	•	•	•	•	•	•	•	•	•	•	•						
MW-D	SI	•	•	•	•													
MW-F	BA	•	•	•	•													
MW-M	BA	•	•	•	•													
Riparian Corridor Surface Water																		
Surface Water #1	N/A			•	•													
Surface Water #2	N/A			•	•													
Surface Water #3	N/A			•	•													

Notes:
• = Parameter for quarterly sampling. Quarterly sampling will be conducted in accordance with the Groundwater Sampling and Analysis Plan (SAP), February 3, 2003.
Ferrous iron, carbon dioxide, and hydrogen sulfide will be analyzed immediately after sample collection by onsite personnel using a Hach equipment.

Aquifer
UB = Upper Bellflower
LB = Lower Bellflower
BE = Bellflower (undesignated)
BA = Ballona
SI = Silverado

Table 3-5 - Primary Rationale for Analyte Collection

Analyte	*Primary Rationale for Collection*
Groundwater Elevations	Establish potentiometric surface elevation maps to define groundwater flow directions and assist with groundwater velocity calcuations
VOCs	Volatile Organic Compounds (VOCs); Define the magnitude and extent of volatile organic contamination in groundwater
1,4-dioxane	Define the magnitude and extent of 1,4-dioxane which may be a contaminant of potential concern in groundwater and a compound added as a stabilizer to chlorinated solvent source materials
pH	Measure of how acid or basic the groundwater is; has implications with respect to biological activity in groundwater
ORP	Oxidation Reduction Potential which is a general measure of the tendancy for chemical species to accept electrons and be reduced
DO	Dissolved Oxygen (DO); strong oxidizer and potential electron acceptor that can interfere with the reductive dechlorination of VOCs
Nitrate	Potential electron acceptor that can interfere with the reductive dechlorination of VOCs
Nitrite	Potential electron acceptor that can interfere with the reductive dechlorination of VOCs
Total Iron	Measure of total iron available in groundwater and valuable when compared with ferrous iron to determine amount of bioavailable iron
Ferrous Iron	Byproduct of ferric iron reduction; provides evidence of elevated biological activity
Sulfate	Potential electron acceptor that can interfere with the reductive dechlorination of VOCs
Sulfide	Byproduct of sulfate reduction
Methane	Byproduct of carbon dioxide reduction; provides evidence of elevated biological activity
Ethane / Ethene	Daughter products of VOC reduction, including vinyl chloride
DOC	Dissolved Organic Carbon (DOC); measure of carbon containing compounds and approximate measure of electron donor source to drive reductive dechlorination reactions
Metabolic Acids	Measurement of primary long-chain acids that are critical in reductive dechlorination reactions (includes lactic acid, acetic acid, pyruvic acid, butyric acid, and propionic acid
Dissolved Hydrogen	Additional tool for evaluating groundwater reducing environment
Phosphate	Micronutrient for biological activity
Chloride	Daugher product released during the dechlorionation of VOCs; also a general measure of groundwater quality
Alkalinity	Measurement of water's ability to buffer against changes in pH
Carbon Dioxide	Potential electron acceptor that can interfere with the reductive dechlorination of VOCs; byproduct of oxidation reactions
Total Dissolved Solids	Measure of dissolved salts and general indicator of groundwater quality
Total calcium, magnesium, potassium, sodium	Anions and general measure of groundwater quality

General Waste Discharge Requirements, Order No. R4-2007-0019

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 ™) 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.

December 27, 2004
Revised January 5, 2005
Revised February 1, 2005
Revised April 19, 2005
Revised November 17, 2006
Revised March 1, 2007

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

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_4, NO_3, NO_2), 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.

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 (NO_3-N+NO_2-N), 45 mg/L as Nitrate (NO_3), 10 mg/L as nitrate-nitrogen (NO_3-N), or 1 mg/L as nitrite-nitrogen (NO_2-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.

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

Standard Provisions Applicable to Waste Discharge Requirements

STANDARD PROVISIONS
APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. DUTY TO COMPLY

The discharger must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350]

2. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H&SC Section 5411, CWC Section 13263]

3. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

4. CHANGE IN OWNERSHIP

The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

5. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

(a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the Waste.

10. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. [CWC Section 13263(f)]

11. HAZARDOUS RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable Water Quality Control plan. [CWC Section 1327(a)]

12. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. [CWC Section 13272]

13. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

(d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

14. MONITORING PROGRAM AND DEVICES

The discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. [CWC Section 13267]

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Office a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

15. TREATMENT FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. [CWC Section 13263(f)]

16. DISCHARGE TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 fo the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Board. [CCR Title 2 Section 22357]

17. ENDANGERMENT TO HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Office within 24 hours:

(a) Any bypass from any portion of the treatment facility.

(b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.

(c) Any treatment plan upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

18. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies off all reports required by this Order, and record of all data used

to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Records of monitoring information shall include:

(a) The date, exact place, and time of sampling or measurement;

(b) The individual(s) who performed the sampling or measurement;

(c) The date(s) analyses were performed;

(d) The individual(s) who performed the analyses;

(e) The analytical techniques or method used; and

(f) The results of such analyses.

19. (a) All application reports or information to be submitted to the Executive Office shall be signed and certified as follows:

(1) For a corporation – by a principal executive officer or at least the level of vice president.

(2) For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official.

(b) A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:

(1) The authorization is made in writing by a person described in paragraph (a) of this provision.

(2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and

(3) The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

Interested Parties List

Interested Parties List

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