

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0818
CALIFORNIA WATER CODE SECTION 13267
FOR
ST SERVICES, L.L.C. AND NUSTAR ENERGY L.P.
BULK FUEL TERMINAL #29
STOCKTON, SAN JOAQUIN COUNTY

The ST Services, L.L.C, a subsidiary of NuStar Energy L.P. (hereafter jointly referred to as Discharger) owns the bulk fuel terminal at 2941 Navy Drive at the Port of Stockton (site). Operations at the terminal resulted in petroleum hydrocarbon pollution of soil and groundwater. This pollution impaired the beneficial use of this water resource. First encountered groundwater fluctuates seasonally between about two to 10 feet below ground surface. There are four identified groundwater bearing zones at the site. Local groundwater flow is to the east-southeast.

This Monitoring and Reporting Program (MRP) is issued pursuant to Section 13267 of the California Water Code and is necessary to delineate groundwater pollutant plumes and determine whether remediation efforts are effective. Existing data and information about the site show the presence of various chemicals, including total petroleum hydrocarbons (TPH) as gasoline, TPH as diesel, benzene, toluene, ethylbenzene, xylenes, methyl tertiary butyl ether (MTBE), tertiary butyl alcohol (TBA), and tertiary amyl methyl ether (TAME) emanating from the property due to the Discharger's past operations. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. This MRP replaces the requirements listed in MRP No. R5-2004-0822, which was issued on 6 May 2004 and is hereby rescinded.

Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Discharger shall submit plans and specifications to the Regional Board for review and approval. Once installed, all new wells shall be added to the monitoring program and shall be sampled and analyzed according to the schedule below.

GROUNDWATER MONITORING

As shown on Figure 1, there are 34 monitoring wells. Wells PS/P-10, PS/P-23, ST/WC-1A, ST/WC-1B, ST/WC-1C, and UP/MW-3 are monitored for depth to groundwater only. The groundwater monitoring program for the other 28 monitoring wells and any wells installed subsequent to the issuance of this MRP, shall follow the schedule below. Monitoring wells with free phase petroleum product or visible sheen shall be monitored, at a minimum, for product thickness and depth to water. Sample collection and analysis shall follow standard EPA protocol.

		Constituents	TPHg	TPHd	BTEX	MTBE ⁵	TBA ⁵	TAME ⁵	DIPE ⁵	ETBE ⁵	Ethanol ⁵	Methanol ⁵
		EPA Method	8015M	8015M	8020 or 8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
		Practical Quantitation Limit (ug/L) ⁴	50	50	0.5	0.5	5	0.5	0.5	0.5	50	100
Sampling Frequency ¹	Well											
Quarterly	PS/MW-14		x	x	x	x	x	x	x	x	x	x
	PS/MW-15		x	x	x	x	x					
	PS/P-11		x	x	x	x	x					
	PS/P-12		x	x	x							
	PS/P-13		x	x	x			x				
	PS/WC-2S		x	x	x	x	x		x			
	ST/MW-1		x	x	x	x	x	x	x			
	UP/MW-1		x	x	x	x	x					
	ACA-1A		x	x	x	x	x	x	x	x	x	x
	ACA-2A		x	x	x	x	x	x	x	x	x	x
	ACA-1B		x	x	x	x	x	x	x	x	x	x
	ACA-2B		x	x	x	x	x	x	x	x	x	x
	New Wells		x	x	x	x	x	x	x	x	x	x
Semi-Annually ²	OW-8A		x	x	x							
	OW-8B		x	x	x							
	OW-8C		x	x	x	x	x		x			
	PS/MW-17		x	x	x	x	x					
	PS/MW-19		x	x	x	x	x					
	PS/P-21		x	x	x							
	PS/WC-2M		x	x	x							
	PS/WC-4S		x	x	x	x	x					
Annually ³	PS/WC-4M			x		x						
	OW-6D		x	x	x							
	OW-7A		x	x	x							
	OW-7B		x	x	x							
	OW-7C		x	x	x							
	OW-7D		x	x	x							
	PS/WC-3M		x	x	x	x	x					
	PS/WC-3S		x	x	x	x	x		x			
	ST/WC-1A			x								
	ST/WC-1B			x								

¹ All wells shall be monitored quarterly for water levels and the presences and thickness of free product. Groundwater level measurements for all Stockton Terminals Technical Committee and ST Services, LLC monitoring wells shall be collected on the same day and all groundwater monitoring samples shall be collected during the same week.

² Wells shall be sampled semi-annually during the first and third quarters.

³ Wells shall be sampled annually during the third quarter.

⁴ For nondetectable results.

⁵ Fuel oxygenates, including MTBE, TBA, TAME, di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), ethanol, and methanol shall be analyzed in all monitoring wells during two monitoring events in the first and third quarters at the practical quantitation limit shown in the table. If results are nondetectable for fuel oxygenates for both sampling events, no further monitoring for oxygenates is required in that well. If a fuel oxygenate is detected, it shall be added to the monitoring program for the well in which it was detected. Monitoring wells that have already eliminated fuel oxygenate monitoring based on previous MRP requirements do not need to be resampled for fuel oxygenates.

REPORTING

When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. In addition, the Discharger shall notify the Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional or their subordinate and signed by the registered professional.

Quarterly electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30, shall be submitted electronically over the internet to the Geotracker database system by the 1st day of the second month following the end of each calendar quarter (i.e., by **1 February, 1 May, 1 August, and 1 November**), until such time as the Executive Officer determines that the reports are no longer necessary.

Quarterly monitoring reports shall be submitted to the Board by the 1st day of the second month following the end of each calendar quarter (**i.e., by 1 February, 1 May, 1 August, and 1 November**) until such time as the Executive Officer determines that the reports are no longer necessary. Each quarterly monitoring report shall include the following minimum information:

- (a) a description and discussion of the groundwater sampling event and results, including investigation derived waste disposal, trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated;
- (b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
- (c) groundwater contour maps for all groundwater zones, if applicable;
- (d) isocontour pollutant concentration maps for all groundwater zones, if applicable;
- (e) a table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom;
- (f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;
- (g) cumulative data tables containing the water quality analytical results and depth to groundwater;
- (h) a copy of the laboratory analytical data report;

- (i) if applicable, the status of any ongoing remediation, including cumulative information on the mass of pollutant removed from the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system; and
- (j) if applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.

An Annual Report shall be submitted to the Board by **1 February** of each year. This report shall contain an evaluation of the effectiveness and progress of the investigation and remediation, and may be substituted for the fourth quarter monitoring report. The Annual Report shall contain the following minimum information:

- (a) both tabular and graphical summaries of all data obtained during the year;
- (b) groundwater contour maps and pollutant concentration maps containing all data obtained during the previous year;
- (c) a discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;
- (d) an analysis of whether the pollutant plume is being captured by an extraction system or is continuing to spread;
- (e) a description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness;
- (f) the anticipated date for completion of cleanup activities;
- (g) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
- (h) if desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.

The results of any monitoring done more frequently than required at the locations specified in the MRP also shall be reported to the Regional Board. The Discharger shall implement the above monitoring program as of the date of the Order.

Ordered by: _____
PAMELA C. CREEDON
Executive Officer

(17 August 2007)