

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO.  
POSTCLOSURE MAINTENANCE AND CORRECTIVE ACTION  
SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS  
HARNEY LANE LANDFILL  
CLASS III LANDFILL  
SAN JOAQUIN COUNTY

This monitoring and reporting program (MRP) is issued pursuant to California Water Code section 13267 and incorporates requirements for corrective action, detection, and site maintenance monitoring contained in California Code Regulations title 27, division 2 (Title 27), Waste Discharge Requirements (WDRs) Order No. \_\_\_\_, and the April 2000 Standard Provisions and Reporting Requirements (SPRR). Compliance with this MRP is ordered by the WDRs. The Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Executive Officer.

Pursuant to Title 27 section 20430(d), the Discharger shall maintain water quality monitoring systems for background and corrective action monitoring.

**MRP SUMMARY TABLE**

<b>Section</b>	<b>Requirement</b>	<b>Frequency</b>
A.	Standard Observations	Monthly
B.	Facility Monitoring:	
	1. Maintenance Inspections	Monthly
	2. After Significant Storm Events	Within 7 Days After Event
	3. Site Winterization	Annually
C.	Water Quality Protection Standard	Update as necessary
D.	Unsaturated Zone Monitoring - LFG	
	1. Field Parameters	Quarterly
	2. VOCs	Semiannually
E.	Groundwater Monitoring	
	1. Elevation	Quarterly
	2. Background	Semiannually
	3. Corrective Action	Semiannually
	4. Constituents of Concern	Every 5 years
F.	Surface Water Monitoring:	Per General Storm Water Permit
G.	Reporting	
	1. Semiannual Report <sup>1</sup>	Semiannually
	2. Annual Monitoring Summary	Annually
	3. Constituents of Concern (COCs)	Every 5 years
	4. Notifications <sup>2</sup>	Per SPRR

1. Including certification of standard observations  
2. In event of release or leachate seep.

**A. STANDARD OBSERVATIONS**

Standard observations shall be performed **monthly** at the site and shall include those elements identified in Reporting Requirement F.6.f of the WDRs as applied to the site (e.g., landfill cover, perimeter ditches, detention basin, South Paddy Creek). Each monitoring report shall include a summary and certification of completion of all Standard Observations. Field logs of standard observations shall also be included in the report. Any landfill leachate seeps detected during these inspections (or at any other time) shall be reported in accordance with Reporting Requirement F.7 of the WDRs, and any leachate that enters the excavation area or facility drainage system shall be sampled and analyzed for the COCs referenced in Table C.1 herein.

**B. FACILITY MONITORING**

The discharger shall inspect the landfill cover and associated facilities (e.g., cover, precipitation and drainage controls, gas extraction system, monitoring wells, access roads), as necessary, to ensure that such facilities are functioning properly and are in adequate repair. Any damage to the landfill facilities observed during these inspections shall be flagged and repaired. Facility inspections and repairs shall be conducted in accordance with the following schedule:

	<b>Purpose</b>	<b>Inspection Frequency</b>	<b>Complete Repairs<sup>1</sup></b>
1.	Regular Maintenance	Monthly	Within 30 days
2.	Storm Response	Within one week of significant storm event <sup>2</sup>	Within two weeks of storm event
3.	Site Winterization	By September 30 of each year	By October 31 of each year

1. If necessary repairs cannot be completed within specified time frame, the Discharger shall, within 7 days, notify the Regional Water Board and provide a schedule for completing them.
2. A "significant" storm event shall be one that produces 1.4 inches or more of precipitation within a 24-hour period, as measured at the Linn Ranch Station.

The results of these inspections, including documentation of any significant damage and/or repairs (e.g., field logs, site map showing location of damage, before and after photos) shall be included in the semiannual monitoring report for the period and summarized in the Annual Report. If no inspection and/or repairs were conducted as required above, the report shall so state, providing the reason and circumstances (e.g., no significant storm event during monitoring period).

**C. WATER QUALITY PROTECTION STANDARD (Section 20390<sup>1</sup>)**

The Water Quality Protection Standard (WQPS) for groundwater shall consist of all Constituents of Concern, Concentration Limits for each constituent of concern, Monitoring Points, Point of Compliance, and the Compliance Period.

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<sup>1</sup> Regulatory sections quoted in this MRP's section titles and text are from Title 27 of the CCR unless otherwise noted.

**1. Constituents of Concern (Section 20395)**

The constituents of concern list includes all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The COCs for the landfill, including monitoring parameters, shall be as listed in Tables G.1 and G.2, which are incorporated herein and made part of this Order by reference. The COC list groups are as follows:

<b>Table C.1</b>		
<b>Constituents of Concern</b>	<b>Units</b>	<b>Test Method</b>
Field Parameters	As specified in Table G.1	
Inorganic:		
General Minerals	mg/L	See Table G.1
Dissolved Metals	µg/L	See Table G.1
Organic:		
Volatile Organic Compounds	µg/L	USEPA Method 8260B
Semi-Volatile Organic Compounds	µg/L	USEPA Method 8270
Organophosphorus Pesticides	µg/L	USEPA Method 8141A
Chlorinated Herbicides	µg/L	USEPA Method 8151
Organochlorine Pesticides	µg/L	USEPA Method 8081A
Polychlorinated Biphenols (PCBs)	µg/L	USEPA Method 8082

**2. Concentration Limits (Section 20400)**

Concentration Limits (CLs) for statistical COCs, including general minerals and dissolved metals generally detected in background, shall be based on interwell data analysis (intrawell analysis shall not be used due to evidence of groundwater impacts) using one of the data analysis methods specified in Monitoring Specification E.18. CLs for nonstatistical COCs, including VOCs, other organic COCs, and dissolved metals not (or not generally) detected in background, shall be equal to the method detection limit (MDL).

**a. Interim CLs**

Fourteen out of 25 dissolved metals were identified as statistical COCs, based on available historical monitoring data from upgradient well MW-1 (four 5-year monitoring events). Interim statistical CLs for these constituents have been estimated as specified in Table G.1. The remaining 11 dissolved metals (i.e., those not detected in any of the four 5-year monitoring events) were assumed nonstatistical COCs for setting interim CLs.

**b. Revised CLs**

Revised CLs shall be developed for general minerals and dissolved metals once additional background monitoring wells have been established per WDR Provision G.5 and a sufficient amount of monitoring data have been collected for statistical determination of CLs. See Footnote 3, Table E.3.c.

**3. Monitoring Points (Section 20405)**

The monitoring points for groundwater monitoring shall be as identified in Sections E.2.a and E.3.a herein.

**4. Point of Compliance (Section 20405)**

Title 27 defines the Point of Compliance (POC) as a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit. The POC wells shall consist of the following:

- a. All downgradient (and cross gradient) landfill perimeter wells, including MWs-2, 3, and 4;
- b. All upgradient perimeter wells within the zone of influence of LFG (i.e., MW-1);
- c. Any future wells that meet either (or both) of the criteria in 4a and 4b.

**5. Compliance Period (Section 20410)**

The compliance period (the minimum period for a landfill during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit) is equal to the active life of the Unit plus the closure period. The compliance period shall be as follows:

- a. Since the landfill operated from 1948 through 1991 and was closed in 1994, the compliance period is 56 years (53 + 3).
- b. If the landfill is in corrective action at the scheduled end of the compliance period, the compliance period shall be extended until the discharger can demonstrate that the Unit has been in continuous compliance with its WQPS for a period of at least three consecutive years, including proof period under Section 20430(f). See Monitoring Specification E.26 of the WDRs.

**D. UNSATURATED ZONE MONITORING**

The Discharger shall conduct LFG monitoring, as necessary, to assess the effectiveness of LFG extraction in mitigating LFG constituents (i.e., VOCs, carbon dioxide) as a potential source of groundwater impacts, including the need for additional LFG controls or other corrective action measures.

**1. Monitoring Points**

LFG monitoring shall, at a minimum, be conducted at the following locations:

<u>Landfill</u>	<u>Interval</u>	<u>Location</u>	<u>Sample Type</u>	<u>Monitoring Points</u>
1	Middle	Perimeter	Monitoring	GW-9M, GW-10D
1	Deep	In situ	Extraction	East header
2	Deep	In situ	Extraction	East or west header

The LFG monitoring points shall also include, for a given monitoring period, any perimeter gas well that exceeds 5 percent methane by volume during that period, as measured under the perimeter migration monitoring program required by the Local Enforcement Agency.

**2. Monitoring Parameters & Schedule**

The LFG monitoring parameters shall be as follows:

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Method</u>
Gas Pressure	in. w.c. <sup>1</sup>	Quarterly	Meter
Methane	%	Quarterly	Meter
Carbon Dioxide	%	Quarterly	Meter
VOCs <sup>1</sup>	ppbv	Semiannually	EPA Method TO-15 or 8260B

1. Inches water column.

Field meters shall be calibrated for each parameter before use. Field and calibration logs for each monitoring event shall be included in each monitoring report.

**E. GROUNDWATER MONITORING**

**1. Elevation Monitoring (Section 20415(e)(13))**

The groundwater surface elevation (in feet and hundredths, MSL) in all wells and piezometers shall be measured on a **quarterly** basis. Groundwater elevations taken prior to purging the well and sampling for Monitoring Parameters may be used to fulfill this requirement. Groundwater elevations for all monitoring wells for a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater gradient and direction. The results of groundwater elevation monitoring shall be displayed on a water table contour map and/or groundwater flow net for the site and included in each monitoring report.

The Discharger shall use the groundwater elevation monitoring data to estimate the following, as feasible:

- a. The groundwater flow velocity
- b. The gradient direction in the upper aquifer, and in any additional zone of saturation monitored pursuant to this MRP
- c. Times of highest and lowest elevations of the water levels in the wells
- d. Separation of groundwater from the lowest point of the unit

Each of these estimations shall be included in the semi-annual reports.

## 2. **Background Monitoring (Section 20415(b)(1)(A))**

Background monitoring shall be performed for the purpose of developing and updating concentration limits as described in Section C.2.

### a. Monitoring Points

The Discharger shall install and operate a sufficient number of background monitoring wells at appropriate locations and depths to yield ground water samples from the uppermost aquifer that represent the quality of ground water that has not been affected by a release from the unit. The background monitoring system may include wells that are not hydraulically upgradient of the Unit if:

- i. Samples from such wells are more representative than those provided by upgradient wells; or
- ii. Installation of an upgradient background well is not feasible; and
- iii. It can be demonstrated that samples from such wells are representative of background groundwater quality.

The background monitoring points for groundwater shall be as specified in Section E.3.a herein.

### b. Monitoring Parameters

See Section E.3.b.

### c. Monitoring Schedule

The background monitoring schedule shall be as specified in Section E.3.c herein, except for five-year inorganic COCs (i.e., dissolved metals) for which concentration limits have not yet been developed. For such COCs, background monitoring shall be conducted annually until a sufficient amount of data has been collected for statistical (or nonstatistical) determination of concentration limits. Thereafter, such monitoring may be reduced to every five years in accordance with Section E.3.c.

**3. Corrective Action Monitoring (Sections 20425 and 20430)**

The Discharger shall install and operate a groundwater corrective action monitoring system for the purpose of monitoring the nature and extent of the release and the progress of corrective action.

**a. Monitoring Points**

The corrective action monitoring points shall be as follows:

**Table E.3.a: Monitoring Points**

<u>Landfill</u>	Aquifer	<u>Monitoring Wells</u>		
		<u>Upgradient</u>	<u>Side gradient</u>	<u>Downgradient</u>
LF-1	Upper	MW-1 <sup>1</sup>	MWs-2 and 4 <sup>2</sup>	MW- 3
LF-2	Upper	MW-1 <sup>1</sup>	MW-4 <sup>2</sup>	MW- 3

1. Current background monitoring well.
2. Well contiguously monitors both landfills.

The corrective action monitoring points shall also include any future (onsite or offsite) groundwater monitoring wells installed at the facility, including additional (or alternative) background monitoring points per WDR Provision G.5. All monitoring wells shall comply with the monitoring well performance standards of Title 27 section 20415(b)(4).

**b. Monitoring Parameters**

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for the landfill shall be as listed in Section E.3.c and Tables G.1 and G.2. Any COC confirmed by retest (per WDR Monitoring Specification G.22) to be a constituent of a release shall also be added to the monitoring parameter list per Monitoring Specification G.24. In such cases, the Discharger shall also follow the Response to Release requirements of the WDRs (Monitoring Specification E.22) and SPRR, as necessary.

**c. Monitoring Schedule**

A sufficient number of samples shall be taken from all monitoring points to satisfy the data analysis requirements for a given reporting period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Collection and analysis of samples shall be in accordance with procedures set forth in the Sampling Collection and Analysis Plan per Monitoring Specification G.5 of the WDRs. The groundwater corrective action monitoring schedule shall be as follows:

**Table E.3.c: Corrective Action Monitoring Schedule**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Data Analysis</u>
<b>Field Parameters</b>			
Elevation	Feet MSL	Quarterly	---
pH	pH units	Semiannually	Statistical
Temperature	°C, °F	Semiannually	---
Turbidity	NTU	Semiannually	---
Dissolved Oxygen (DO)	%	Semiannually	---
Redox potential	millivolts	Semiannually	---
Specific Conductance	µMhos/cm	Semiannually	Statistical
<b>Monitoring Parameters</b>			
VOCs <sup>1</sup>	µg/L	Semiannually	Nonstatistical
General Minerals:			
Chloride	mg/L	Semiannually	Statistical
TDS	mg/L	Semiannually	Statistical
Total Alkalinity	mg/L	Semiannually	Statistical
Total Hardness	mg/L	Semiannually	Statistical
Chemical Oxygen Demand (COD)	mg/L	Semiannually	Statistical
Major Anions <sup>1</sup>	mg/L	Annually	Statistical
Major Cations <sup>1</sup>	mg/L	Annually	Statistical
<b>COCs<sup>1,2</sup></b>	See Table C	Every 5 years <sup>3</sup>	Statistical/Nonstatistical

1. See Tables G.1 and G.2 for full list of constituents and EPA test methods.
2. COC monitoring under this Order shall be conducted by **15 December 2009** and at least every five years thereafter.
3. More frequent monitoring may be required if concentration limits not yet developed. See Section E.2.c.

d. Data Evaluation

Corrective Action monitoring data evaluation shall include the following:

i. Background Data

- Developing/updating CLs for monitoring parameters and COCs, as appropriate.

ii. Nature and Extent of Release

- Comparing monitoring data with CLs to characterize the release or identify a new release.
- Water chemistry analysis by ion balance and an appropriate graphical methods (e.g., Piper diagram, Trilinear plot, Stiff diagram)
- Preparation of contaminant contour maps for representative constituents/parameters (e.g., specific conductance, TDS, chloride, Redox potential).

iii. Effectiveness of Corrective Action

- Preparation of time series plots for each constituent for which there are three or more data points (including non-detect values).
- Trend analysis for each constituent for which there are four or more data points above the practical quantitation limit (PQL), using appropriate statistical and graphical methods (e.g., Mann-Kendall, Sen's Slope).
- Comparison of contour maps for different periods to track changes in plume size.
- Comparison of monitoring data with CLs (i.e., cleanup goals).
- Identification of corrective action methods and mechanisms (e.g., source removal, decomposition type, attenuation).
- Gathering other evidence as to whether corrective action is or is not working (e.g., checking for breakdown products, geochemical conditions in groundwater).
- Overall evaluation of corrective action effectiveness and need for additional measures and/or monitoring wells.

The results of the above analysis, including a narrative discussion, shall be included in each semiannual report and summarized in the Annual Report, as specified under Section G.2 below. The semiannual monitoring reports shall also include a discussion of the progress of corrective action toward returning to compliance with the WQPS, as specified in Title 27 section 20430(h).

**F. SURFACE WATER MONITORING (Section 20415(c))**

**1. Storm Water**

The Discharger shall obtain and maintain coverage under the State Water Resources Control Board General Industrial Storm Water Permit, Water Quality Order No. 97-03-DWQ. The discharger shall also monitor storm water flows semiannually for the semiannual field and monitoring parameters specified in Table E.3.c. Sampling shall be conducted at the following locations (see Attachment B):

<u>Sampling Point</u>	<u>Sampling Location</u>	<u>Area Drained</u>	<u>Type</u>
SW-1	Upstream of landfill	NE of landfill	Runon
SW-2	Culvert to detention basin	NW outfall	Runoff
SW-3	Detention basin	SW outfall	Runoff

The results of storm water monitoring for these constituents shall be summarized in the monitoring reports submitted under this Order. If there is no discharge from the site during the monitoring period, or the Discharger did not obtain

samples of the discharge, the Discharger shall state the reasons and circumstances in the monitoring report.

**2. Surface Water**

Surface water monitoring of South Paddy Creek shall be conducted for the field parameters and semiannual monitoring parameters listed in Table E.3.c, except for Redox potential. Creek elevation may be estimated based on observation. Samples shall be collected at points S-1 and S-2 immediately upstream and downstream of the landfill, as shown on Attachment B: Site Map.

**G. REPORTING**

**1. Semiannual Reports**

The Discharger shall report monitoring data and information as required in this MRP and as required under WDRs Order No. \_\_\_\_ and the SPRR. Reports shall be submitted **semiannually**. Each semiannual monitoring report shall include the following information:

- a. A compliance evaluation summary and other information specified in WDR Reporting Requirements F.6.
- b. A tabular summary of well information from the installation logs, including well name, top-of-casing elevation, total depth, depths/elevations of screened interval, aquifer or zone (i.e., uppermost), and soil type(s) over the screened interval.
- c. The results of groundwater elevation monitoring, including a summary table, elevation contour map, and historical data table.
- d. Tabular summaries of corrective action monitoring data for the monitoring period, with appropriate headers, showing well, sampling date, concentrations, units, and CLs. Each table shall clearly show any exceedances of CLs that occurred during the monitoring period (i.e. highlight exceedances). Non-detect results shall indicate the applicable detection limit (e.g., "<0.3").
- e. Plots, graphical summaries and a narrative discussion of the results of correction action monitoring, as specified in Section E.3.d herein.
- f. Field and laboratory tests sheets.
- g. Tabular summaries of LFG monitoring data collected during the monitoring period under this order and as required by the Local Enforcement Agency (i.e., perimeter probe monitoring data).
- h. An electronic copy of the monitoring report in PDF format on compact disk.

**2. Annual Monitoring Summary Report**

An Annual Monitoring Summary Report (Annual Report) shall be prepared and

submitted in accordance with the WDR Reporting Requirements F.8 through F.11. The report shall summarize monitoring results for the prior year and include a discussion of compliance with the WDRs and the WQPS. The report may be included in the Second Semiannual Report for each year. The Annual Report shall include the following:

- a. Tabular and graphical summaries of the results of the prior year, including, representative time series plots and contaminant contour maps.
- b. A summary of the results of trend analysis performed on each constituent of the release during the prior year.
- c. A summary of the results of water chemistry analysis of water quality data collected during the prior year.
- d. A summary of the changes in plume and/or groundwater geochemical conditions since initiation of corrective action, based on analysis such as comparison of previous contaminant contour plots.
- e. A copy of the Sample Collection and Analysis Plan per WDR Monitoring Specification E.5.
- f. Electronic copies of the following on compact disk:
  - i. Historical groundwater elevation monitoring data for the site;
  - ii. Historical analytical monitoring data for each unit;

The historical data above shall be provided in tabular format(s) necessary for statistical analysis (e.g., Excel). Historical data for at least the previous 10 years shall be provided, or for as long as monitoring has been conducted at a given unit/well if less than 10 years. Each table shall be organized such as specified in C.1.d to clearly show historical concentrations at each well.

  - iii. A copy of the monitoring report in PDF format.
- g. Evidence to the Regional Board's Executive Officer, per WDR Provision G.7, that acceptable financial assurance instrument(s) have been provided for post-closure and corrective action (e.g., an acceptance letter from the CIWMB—Financial Assurance Division).

### 3. Reporting Schedule

The semiannual and annual reports shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made:

**Table G.3**

<u>Report</u>	<u>End of Reporting Period</u>	<u>Date Report Due</u>
First Semiannual	30 June	<b>31 July</b>
Second Semiannual	31 December	<b>31 January</b>
Annual Report	31 December	<b>31 January</b>

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Reports that do not comply with the above-required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs.

The Discharger shall implement the above monitoring program on the effective date of this Program. The transmittal letter accompanying monitoring reports submitted under this Order shall, as required under the SPRR (*Provision 5, General Requirements, REPORTING REQUIREMENTS*), contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

Attachments  
JDM: 16 March 2009

INORGANIC CONSTITUENTS OF CONCERN (COCs),  
 APPROVED USEPA ANALYTICAL METHODS, & CONCENTRATION LIMITS

**Table G.1**

	<b>USEPA Test Method</b>	<b>Concentration Limit<sup>1</sup></b>
<b>Field Parameters</b>		
Elevation, Ft. MSL	----	----
pH, pH units	150.1 or meter	<6, >8
Temperature, °C, °F	----	----
Turbidity, NTU	----	----
Dissolved Oxygen	360.1 or meter	----
Oxidation-Reduction (Redox) Potential, Millivolts	----	----
Specific conductance, µMhos/cm	120.1 or meter	---- <sup>2</sup>
<b>General Minerals, mg/L</b>		
Total Dissolved Solids (TDS)	2540C	---- <sup>2</sup>
Total Alkalinity	2320B	---- <sup>2</sup>
Total Hardness	2340B	---- <sup>2</sup>
Chemical Oxygen Demand (COD)	410.4	---- <sup>2</sup>
<b>Major Anions</b>		
Bicarbonate	2310B	---- <sup>2</sup>
Chloride	300	45
Nitrate – Nitrogen	300	25
Sulfate	300	20
<b>Major Cations</b>		
Calcium	200.7/6010	---- <sup>2</sup>
Magnesium	200.7/6010	---- <sup>2</sup>
Potassium	200.7/6010	---- <sup>2</sup>
Sodium	200.7/6010	---- <sup>2</sup>
<b>Dissolved Metals, µg/L<sup>3</sup></b>		
Aluminum	200.7/6010	345
Antimony	200.7/6010	25
Arsenic	200.9/200.8	4
Barium	200.7/6010	150
Beryllium	200.7/6010	MDL
Boron	200.7/6010	105
Cadmium	200.7/6010	MDL

<b>Table G.1</b>		
	<b>USEPA Test Method</b>	<b>Concentration Limit<sup>1</sup></b>
Chromium	200.7/6010	10
Hexavalent Chromium	7199/1636	3
Cobalt	200.7/6010	MDL
Copper	200.7/6010	MDL
Cyanide	335.4/9010	MDL
Iron	200.9/200.8	132
Lead	200.9/200.8	5
Manganese	200.7/6010	2
Mercury	7470A	MDL
Molybdenum	200.7/6010	MDL
Nickel	200.9/200.8	MDL
Selenium	200.9/200.8	MDL
Silver	200.7/6010	MDL
Sulfide	9030	MDL
Thallium	200.7/6010	MDL
Tin	200.7/6010	MDL
Vanadium	200.7/6010	36
Zinc	200.7/6010	MDL

1. Statistical concentration limits not yet calculated for inorganic COCs due to insufficient monitoring data. Table lists interim limits set equal to 1.5 x highest concentration historically detected, excluding outlier(s).
2. Insufficient data to compute interim concentration limit for this constituent.
3. Samples shall be filtered prior to performing dissolved inorganics analysis.

**ORGANIC COCs & APPROVED USEPA ANALYTICAL METHODS  
 (CONCENTRATION LIMITS = MDL)**

<b>Table G.2</b>
<b>Volatile Organic Compounds (VOCs)<sup>1</sup> (USEPA Method 8260B)</b>
Acetone
Acetonitrile
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Tert-Amyl methyl ether
Benzene
Bromobenzene
Bromochloromethane

<b>Table G.2</b>
Bromodichloromethane
Bromoform (Tribromomethane)
Tert-Butyl alcohol
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
tert-Butyl ethyl ether
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane
2,2-Dichloropropene
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Iodomethane (Methyl iodide)
Isobutyl alcohol
di-Isopropyl ether

<b>Table G.2</b>
Methacrylonitrile
Methyl bromide (Bromomethene)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
4-Methyl-2-pentanone (Methyl isobutylketone)
Methyl tert-butyl ether (MtBE)
Naphthalene
2-Nitropropane
n-Propylbenzene
Propionitrile
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
Xylenes (total)
<b>Semi-VOCs<sup>1</sup></b> (USEPA Method 8270 - base, neutral, & acid extractables):
Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate

<b>Table G.2</b>
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
p-Chloroaniline
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isophorone
Isosafrole
Kepone
Methapyrilene
3-Methylcholanthrene
Methyl methanesulfonate

<b>Table G.2</b>
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylNitrosamine)
N-Nitrosodiethylamine (DiethylNitrosamine)
N-Nitrosodimethylamine (DimethylNitrosamine)
N-Nitrosodiphenylamine (DiphenylNitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylNitrosamine)
N-Nitrosomethylethylamine (MethylethylNitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene
<b>Organochlorine Pesticides<sup>1</sup> (USEPA Method 8081A)</b>
Aldrin
α-BHC
β-BHC
γ-BHC (Lindane)
δ-BHC
Chlorobenzilate
α-Chlordane

<b>Table G.2</b>
$\gamma$ -Chlordane
Chlordane – not otherwise specified
DBCP
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Endrin ketone
Heptachlor
Heptachlor epoxide
Hexachlorocyclopentadiene
Isodrin
Methoxychlor
Toxaphene
<b>Polychlorinated Biphenols<sup>1</sup></b> (PCBs, USEPA Method 8082)
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
<b>Organophosphorus Pesticides<sup>1</sup></b> (USEPA Method 8141A):
Chlorpyrifos
Diazinon
Dimethioate
Disulfoton
Ethion
Famphur
Malathion
Parathion
Parathion-ethyl
Parathion-methyl
Phorate
<b>Chlorinated Herbicides<sup>1</sup></b> (USEPA Method 8151A):
2,4-D (2,4-Dichlorophenoxyacetic acid)

<b>Table G.2</b>
Dicamba
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
MCPA
MCPP
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
Pentachlorophenol

1. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte per WDR Monitoring Specification G.13.