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REVISED MONITORING & REPORTING PROGRAM 96-094

ORDER INFORMATION

Order Type(s):	Monitoring & Reporting Program (MRP)
Status:	Adopted
Program:	Title 23, Chapter 15
Region 5 Office:	Fresno
Discharger(s):	Clean Harbors Buttonwillow, LLC
Facility:	Clean Harbors Buttonwillow
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County:	Kern County
WDID:	5D152032001

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GLOSSARY

AMR .....Annual Monitoring Report

C.F.R. .....Code of Federal Regulations

CIWQS .....California Integrated Water Quality System Project

COC .....Constituents of Concern

DMP .....Detection Monitoring Program

DTSC .....Department of Toxic Substances Control

DWR.....California Department of Water Resources

EC .....Electrical Conductivity

ELAP.....State Water Board's Environmental Laboratory Accreditation Program (formerly administered by California Department of Public Health)

EMP .....Evaluation Monitoring Program

Five-Year COCs .....Five-Year Constituents of Concern

GeoTracker .....State Water Board's Data Management System for Sites with Potential Groundwater Impact

GP.....Gas Probe

IPZ.....Intermediate Perched Zone

HWFP.....Hazardous Waste Facility Permit (DTSC)

LCRS .....Leachate Collection and Removal System

LF.....Landfill

LFG.....Landfill Gas

LWTZ .....Lower Water Table Zone

MDL .....Method Detection Limit

GLOSSARY

Method TO-15 VOCs.....Volatile Organic Compounds associated with USEPA Method TO-15

MRP .....Monitoring and Reporting Program

MSW .....Municipal Solid Waste

MSWLF .....Municipal Solid Waste Landfill

N/A.....Not Applicable

PID .....Photo Ionization Detector

POC .....Point of Compliance for Water Quality Protection Standard

QA/QC .....Quality Assurance/Quality Control

Qualified Professional .....Professional Civil Engineer or Geologist licensed by the State of California

RCRA.....Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.

RL .....Reporting Limit

RMSP.....Revised Monitoring System Plan

ROWD / JTD.....Report of Waste Discharge / Joint Technical Document

SAP.....Sampling and Analysis Plan

SGP.....Soil Pore Gas

SI.....Surface Impoundment

SMR .....Semiannual Monitoring Report

SPRRs / Standard Provisions ...*Standard Provisions and Reporting Requirements for Chapter 15 (23 CCR 2510, et seq.) and Part 258 (40 CFR 258),* September 1993 Edition

TDS.....Total Dissolved Solids

Title 22.....California Code of Regulations, Title 22

Title 23.....California Code of Regulations, Title 23

Title 27.....California Code of Regulations, Title 27

UPZ.....Upper Perched Zone

USEPA.....United States Environmental Protection Agency

VOCs .....Volatile Organic Compounds

WDRs.....Waste Discharge Requirements

WL.....Water Level

WMU .....Waste Management Unit

WQPS .....Water Quality Protection Standard

UNITS

°F .....Degrees Fahrenheit

Gallons/Day .....Gallons per Day

mg/L.....Milligrams per Liter

µg/L.....Micrograms per Liter

µmhos/cm .....Microsiemens per Centimeter

µg/cm^3 .....Micrograms per Cubic Centimeter

ng/L.....Nanograms per Liter

NTUs.....Nephelometric Turbidity Units

PREFACE

Initially adopted by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) pursuant to Water Code section 13267, subdivision (b)(1), and subsequently revised by the Executive Officer in accordance with delegated authority per Water Code section 13223, this Order establishes a Revised Monitoring and Reporting Program (Revised MRP) for Clean Harbors Buttonwillow, LLC, which owns and operates the Clean Harbors Buttonwillow (Facility) in Kern County. Additional information regarding the Facility is set forth in the enumerated findings of the previously adopted Waste Discharge Requirements Order 96-094 (WDRs Order).

Except as otherwise provided in the following Revised MRP, these findings are incorporated herein. The Revised MRP also contains supplemental findings related to monitoring and reporting activities, and/or Facility conditions. For the purposes of California Code of Regulations, title 23, division 3, chapter 15 (Title 23) (e.g., §§ 2591, 2550.0-2550.11), the revised findings and provisions of this Order are conversely incorporated as part of the WDRs Order as well.

MONITORING & REPORTING PROGRAM

IT IS HEREBY ORDERED, pursuant to Water Code section 13267: that all previously issued Monitoring and Reporting Program(s) for the discharge of waste at the Facility are rescinded (except for enforcement purposes); and that the Discharger, their agents, employees and successors shall comply with the following Revised Monitoring and Reporting Program (Revised MRP). The Discharger shall not implement any changes until a Revised MRP is issued by the Central Valley Water Board or its Executive Officer.

In addition to the WDRs, the Discharger operates its Class I WMUs under a RCRA equivalent Hazardous Waste Facility Permit (HWFP) issued by DTSC. The Discharger submitted a Class II permit modification request to DTSC to modify portions of its unsaturated zone and groundwater monitoring requirements that are regulated both by the DTSC under Title 22 and the Central Valley Water Board under Title 23. The modifications are described in the *Revised Monitoring System Plan, Revision 5*, dated October 2018 (RMSP). The HWFP modification request was subsequently approved by DTSC on 1 November 2019 and incorporated the RMSP. As such, this Order is being issued to reflect the revised monitoring requirements for the Class I WMUs that are detailed in the RMSP and incorporated in the HWFP. Monitoring requirements may differ slightly from the HWFP for monitoring points for the Class II WMUs, which are not regulated by the DTSC.

A. General Provisions

1. **Incorporation of Standard Provisions**—The Discharger shall comply with all relevant provisions of the *Standard Provisions and Reporting Requirements for Chapter 15 (23 CCR 2510, et seq.) and Part 258 (40 CFR 258), September 1993* (SPRRs or Standard Provisions), which are incorporated herein. See, e.g., SPRRs sections *Provisions for Monitoring* and *Response to Release*.

2. **Monitoring Provisions in WDRs Order**—The Discharger shall comply with all “Monitoring Provisions” in the Facility’s operative Title 23 WDRs Order, which are also incorporated herein.

3. **Compliance with Title 23**—The Discharger shall comply with all of Title 23 provisions as they pertain to activities described in this MRP (including SPRRs).

4. **Sampling and Analysis Plan (SAP)**—All samples shall be collected, preserved and transported in accordance with the approved Sample Collection and Analysis Plan (SAP) and the Quality Assurance/Quality Control (QA/QC) standards specified therein. The approved SAP is included in Appendix B of the RMSP. The Discharger may use alternative

analytical test methods (including new USEPA-approved methods), provided that the alternative methods have method detection limits (MDLs) equal to or lower than the analytical methods specified in this MRP and are identified in the approved SAP.

B. Detection Monitoring Program (DMP)—To detect a release at the earliest possible time (see Title 23, § 2550.8, subd. (b)), the Discharger shall implement a Detection Monitoring Program (DMP) for groundwater and the unsaturated zone in accordance with the provisions of Title 23, particularly sections 2550.7 and 2550.8. Groundwater and unsaturated zone detection monitoring networks shall be revised (as needed) with the construction of each new landfill cell or module.

1. Groundwater Monitoring

a. Required Network—The Facility's groundwater monitoring well network consists of the wells listed in **Table 1**. As of the date of this Order, the network meets the requirements of Title 23. (Title 23, § 2550.7, subd. (b).)

Table 1—Groundwater Monitoring Network

Well	Well Type	Zone	Monitoring Program	WL Monitoring Frequency	5-Year COCs Monitoring Frequency[3]	Detection Monitoring Frequency[1,4]
I-1	Interface	UPZ	WL only	Semiannual[2]	Not Required	Semiannual[2]
I-3	Interface	UPZ	WL only	Semiannual[2]	Not Required	Semiannual[2]
MW-131RU[8]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial	Semiannual[5]
MW-146RU[8]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial	Semiannual[5]
MW-147RU[8]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial	Semiannual[5]
MW-158U[7]	Monitoring	UPZ	POC	Semiannual	Quinquennial	Semiannual
MW-159RU[8]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial	Semiannual[5]

Well	Well Type	Zone	Monitoring Program	WL Monitoring Frequency	5-Year COCs Monitoring Frequency[3]	Detection Monitoring Frequency[1,4]
MW-160U[7]	Monitoring	UPZ	POC	Semiannual	Quinquennial	Semiannual
P-101	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-1031-1	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-109	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-120U	Piezometer	UPZ	WL only	Semiannual[2]	Not Required	Semiannual[2]
MW-127U[8]	Monitoring	UPZ	Downdip	Semiannual	Quinquennial[8]	Semiannual[8,9]
P-130U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-131U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-135U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-138U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-139U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-140U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-141U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-142U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-143U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
MW-144U[6,7]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial[5,7]	Semiannual[5,7]
MW-145U[7]	Monitoring	UPZ	POC[5]	Semiannual	Quinquennial[5,7]	Semiannual[5,7]
P-146U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-147U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required

Well	Well Type	Zone	Monitoring Program	WL Monitoring Frequency	5-Year COCs Monitoring Frequency[3]	Detection Monitoring Frequency[1,4]
P-159U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-161U[7]	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-161RU[7]	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-2U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-3U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-4RU	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-4U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
P-5U	Piezometer	UPZ	WL only	Semiannual	Not Required	Not Required
MW-QU	Monitoring	UPZ	Background	Semiannual	Quinquennial[8]	Semiannual [9]
MW-TU	Monitoring	UPZ	Background	Semiannual	Quinquennial[8]	Semiannual [9]
MW-137RI[7]	Monitoring	IPZ	POC	Semiannual	Quinquennial	Semiannual
P-125I	Piezometer	IPZ	WL only	Semiannual	Not Required	Not Required
MW-128I	Monitoring	IPZ	POC[5]	Semiannual	Quinquennial[8]	Semiannual[8,9]
P-132I	Piezometer	IPZ	WL only	Semiannual	Not Required	Not Required
MW-148I	Monitoring	IPZ	Background	Semiannual	Quinquennial[8]	Semiannual [9]
MW-149RI	Monitoring	IPZ	Background	Semiannual	Quinquennial[8]	Semiannual [9]
P-CRI	Piezometer	IPZ	WL only	Semiannual	Not Required	Not Required
P-RI	Piezometer	IPZ	WL only	Semiannual	Not Required	Not Required
MW-151RRL[10]	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Semiannual

Well	Well Type	Zone	Monitoring Program	WL Monitoring Frequency	5-Year COCs Monitoring Frequency[3]	Detection Monitoring Frequency[1,4]
MW-152RRL[10]	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Semiannual
MW-153RL	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Semiannual
MW-163RL[10]	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Semiannual
MW-164RL	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Annual
MW-165RL	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Annual
MW-166RL[10]	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Annual
MW-167L[11]	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Annual
MW-168L	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Annual
MW-169L	Monitoring	LWTZ	POC	Semiannual	Quinquennial	Semiannual
MW-170L	Monitoring	LWTZ	POC[5]	Semiannual	Quinquennial[5]	Semiannual[5]
P-102L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-102RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-112L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-118L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-119L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-119RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-121L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required

Well	Well Type	Zone	Monitoring Program	WL Monitoring Frequency	5-Year COCs Monitoring Frequency[3]	Detection Monitoring Frequency[1,4]
P-126L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-126RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-133L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-150L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-150RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-151L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-151RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-152L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-152RL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-153L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-154L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-156L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-163L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-164L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-165L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-166L	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-PL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required
P-PRL	Piezometer	LWTZ	WL only	Semiannual	Not Required	Not Required

See Glossary for definitions of terms and abbreviations in table.

Table 1 Notes:

1 Groundwater samples shall be collected in the months specified by DTSC.

2 Semiannual verification for absence of groundwater in interface wells, collect grab sample if more than one foot of water is present.

3 COCs are listed in Table 3-2A and 3-2B of the October 2018 RMSP and in Table 4 of this Revised MRP. The complete list of compounds associated with the analytical methods SW-846 8260, 8270C, and 8151 will be analyzed and reported. However, parameters not included in the COC list are not considered COCs.

4 The monitoring parameters to be analyzed as part of the Detection Monitoring Program are listed in Tables 4-1, 4-2, and 4-3 October 2018 RMSP and in Table 3 of this Revised MRP.

5 This is a background or POC well for a nonhazardous waste management unit and the monitoring requirements may differ from the HWFP.

6 MW-144U is currently dry, as a substitute the Discharger shall use MW-145U. MW-144U will be sampled if sufficient water is present during a semiannual sampling event.

7 The well will not be redrilled if it goes dry due to declining water levels. The well will be converted to a piezometer if the well goes dry. If water levels increase due to ground water recharge, the well will revert back to its original designation.

8 All interim downdip monitoring wells will be sampled if insufficient water is present to sample any Upper Perched Zone POC wells. Interim monitoring will be discontinued if all Upper Perched Zone POC wells contain sufficient groundwater for sampling for two consecutive monitoring events. Sampling of Intermediate Perched Zone interim monitoring well MW-128I will be discontinued after sufficient water is present to sample MW-137RI for two consecutive events.

9 Interim monitoring wells MW-127U and MW-128I will be sampled semiannually and evaluated using inter-well statistics. Once 18 independent samples have been collected, MW-127U and MW-128I will be sampled semi-annually and evaluated using intra-well statistics. Upper Perched Zone background wells MW-QU and MW-TU and Intermediate Perched Zone background wells MW-148I and MW-149RI will be sampled semiannually until 18 independent samples have been collected from MW-127U and MW-128I. At that time, all Upper and Intermediate Perched zone background wells will be converted to piezometers and monitored for water levels only.

10 Proposed replacement monitoring well that will be installed in accordance with the September 2017 Class 2 permit modification request with DTSC, approved by DTSC on 8 October 2018.

11 If it is deemed to be dry, MW-167L will be replaced with MW-167RL, in accordance with the September 2017 Class 2 permit modification request with DTSC and approved by DTSC on 8 October 2018. The other near-dry wells identified in that request (MW-102RL and MW-119RL) will be considered piezometers and will not be replaced.

b. **Sample Collection and Analysis**—Groundwater samples shall be collected from each background, downdip, and POC well and analyzed for Monitoring Parameters listed in **Table 2** (*General Chemistry Parameters*) and **Table 3** (*Constituent Parameters*), in accordance with the specified schedule in **Table 1** for each well. (Title 23, § 2550.8, subds. (e)-(f).) See Note 8 above for downdip well sampling requirements.

Table 2—Groundwater Detection Monitoring, General Chemistry Parameters

Chemistry Parameter	USEPA Analytical Method	Sampling Frequency	Reporting Frequency
Specific Conductance[1]	9050	Detection Monitoring Frequency (DMF) of Table 1	Semiannual
pH[1]	9040	DMF of Table 1	Semiannual
TDS	160.1	DMF of Table 1	Semiannual
TOC	9060	DMF of Table 1	Semiannual
Temperature[1]	170.1	DMF of Table 1	Semiannual
Turbidity[1]	180.1	DMF of Table 1	Semiannual
Aluminum	6010B	DMF of Table 1	Semiannual
Antimony	6010B	DMF of Table 1	Semiannual
Barium[2]	6010B	DMF of Table 1	Semiannual
Cadmium	6010B	DMF of Table 1	Semiannual
Chromium	6010B	DMF of Table 1	Semiannual
Iron	6010B	DMF of Table 1	Semiannual
Lead	6020	DMF of Table 1	Semiannual
Manganese[2]	6010B	DMF of Table 1	Semiannual
Mercury	7470A	DMF of Table 1	Semiannual
Molybdenum[2]	6010B	DMF of Table 1	Semiannual
Nickel	6010B	DMF of Table 1	Semiannual

Chemistry Parameter	USEPA Analytical Method	Sampling Frequency	Reporting Frequency
Potassium	6010B	DMF of Table 1	Semiannual
Silicon[2]	6010B	DMF of Table 1	Semiannual
Acetone	8260B	DMF of Table 1	Semiannual
Methylene chloride	8260B	DMF of Table 1	Semiannual
2-Butanone	8260B	DMF of Table 1	Semiannual
2-Chloroethyl vinyl ether	8260B	DMF of Table 1	Semiannual
2-Hexanon	8260B	DMF of Table 1	Semiannual
4-Methyl-2-pentanone	8260B	DMF of Table 1	Semiannual
Vinyl acetate	8260B	DMF of Table 1	Semiannual

See Glossary for definitions of terms and abbreviations in table. [1]These parameters are measured in the field. [2] These parameters are spatial variability parameters.

Table 3—Groundwater Detection Monitoring, Constituent Parameters

Constituent Parameter	USEPA Analytical Method	Sampling Frequency	Reporting Frequency
Arsenic	6020	DMF of Table 1	Semiannual
Beryllium	6010B	DMF of Table 1	Semiannual
Boron	6010B	DMF of Table 1	Semiannual
Calcium	6010B	DMF of Table 1	Semiannual
Chloride	300/300.1	DMF of Table 1	Semiannual
Cobalt	6010B	DMF of Table 1	Semiannual
Copper	6010B	DMF of Table 1	Semiannual
Magnesium	6010B	DMF of Table 1	Semiannual
Selenium	6020	DMF of Table 1	Semiannual
Silver	6010B	DMF of Table 1	Semiannual
Sodium	6010B	DMF of Table 1	Semiannual

Constituent Parameter	USEPA Analytical Method	Sampling Frequency	Reporting Frequency
Sulfate	300/300.1	DMF of Table 1	Semiannual
Thallium	6010B	DMF of Table 1	Semiannual
Vanadium	6010B	DMF of Table 1	Semiannual
Zinc	6010B	DMF of Table 1	Semiannual
Short List VOCs (Attachment A)	8260B	DMF of Table 1	Semiannual

See Glossary for definitions of terms and abbreviations in table.

c. **Five-Year COCs**—The Discharger shall analyze for groundwater samples from each background, downdip, and POC well for the Five-Year Constituents of Concern (Five-Year COCs) listed in **Table 4**. Five-Year COCs were last monitored in 2016 (except for wells MW-127U and MW-128U which were monitored in 2020), and shall be analyzed again in 2021 (except for wells MW-127U and MW-128U which are required to be monitored again in 2025 but earlier sampling is allowed). (Title 23, § 2550.8, subd. (g).)

Table 4—Groundwater Detection Monitoring, Five-Year COCs

Five-Year COCs	USEPA Analytical Method	Sampling Frequency	Reporting Frequency
Dissolved Inorganics (Attachment B)	(*various*)	Every 5 Years	Every 5 Years
VOCs & Semi-VOCs (Attachment C)	(*various*)	Every 5 Years	Every 5 Years
Pesticides (Attachment D)	(*various*)	Every 5 Years	Every 5 Years

See Glossary for definitions of terms and abbreviations in table.

d. Groundwater Conditions—The Discharger shall monitor the Groundwater Conditions specified in **Table 5** from all wells and piezometers listed in **Table 1** with the result of such monitoring being reported semiannually.

Table 5—Groundwater Detection Monitoring, Groundwater Conditions

Groundwater Condition	Monitoring Frequency	Reporting Frequency
Elevation (Well-Specific)	Semiannual	Semiannual
Gradient	Semiannual	Semiannual
Flow Rate	Semiannual	Semiannual

2. Unsaturated Zone

a. Required Network and Monitoring— The Discharger shall use a neutron probe system, rather than liquid recovery types of monitoring, to monitor the unsaturated zone for each of the following **WMUs: 28, 31, 33, 34, and 35 (Cells 1, 2, 3, 4, 5, 6 and each new cell)**. The Discharger has demonstrated that soil-pore liquid samples cannot be obtained from soils at the Facility under normal conditions. The Discharger has also demonstrated that measurement of moisture changes in the unsaturated zone with a neutron probe system provides the best assurance of early detection of a release from a regulated unit. As of the date of this Order, the network meets the requirements of Title 23. (Title 23, § 2550.7, subd. (d).)

For all new WMUs, the unsaturated zone shall be monitored **monthly** for a period of one year to establish baseline (background) moisture conditions. After the completion of one year of monthly data, the monitoring frequency shall be reduced to **quarterly** with results being reported **annually** per **Section D.2.**

3. Summary of Water Quality Protection Standard (WQPS) Components—The Water Quality Protection Standard (WQPS) is the Title 23 analytical framework through which an individual WMU is monitored for releases and impacts to water quality, i.e., the Detection Monitoring Program (DMP). (See Title 23, § 2550.2, subd. (a).) As explained in further detail below, for the duration of the *Compliance Period*, the *Monitoring Points* situated at a WMU's *Point of Compliance*

are sampled and analyzed for *Monitoring Parameters* indicative of a release. If concentrations of *Constituents of Concern* exceed *Concentration Limits*, the results are confirmed through *Retesting Procedures*.

a. **Compliance Period**—The "compliance period" is the minimum time for which a water quality monitoring will be required—i.e., equal to the sum of active years and the closure period. (Title 23, § 2550.6.) The period restarts each time an Evaluation Monitoring Program (EMP) is initiated for a given WMU. (*Id*., §§ 2550.6 (a), 2550.7, 2550.6.) If a WMU is in corrective action, the period continues until it is demonstrated that the WMU has been in continuous compliance with its WQPS for at least three years. (*Id*., § 2550.6, subd. (c).)

b. **Monitoring Points**—For WQPS purposes, a "monitoring point" is any well, device, or location where monitoring is conducted, and is specified in the Facility's WDRs and subject to the WQPS. (Title 23, § 2601.) Monitoring Points are listed in **Section B** (*Detection Monitoring Program*)—specifically **Table 1** (*Groundwater*) and in **Section B.2.a** (*Unsaturated Zone*).

c. **Point of Compliance (POC)**—The Point of Compliance (POC) is a vertical plane at the WMU's hydraulically downgradient limit, extending through the uppermost underlying aquifer. (Title 23, §§ 2601, 2550.5(a).) The Facility's POC monitoring wells are listed below in **Table 1**.

d. **Constituents of Concern (COCs)**—Constituents of Concern (COCs) are waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in a WMU. (Title 23, §§ 2601, 2550.3)

e. **Monitoring Parameters**—Monitoring Parameters are a predetermined set of COCs and measurable physical characteristics (e.g., temperature, electrical conductivity, pH), which serve as reliable indicators of a WMU release, and for which samples will therefore be routinely analyzed. (Title 23, §§ 2610, 2550.3(a), 2550.8(e)-(f).) For the purposes of this MRP, the Monitoring Parameters for Groundwater are those listed in **Table 2** and **Table 3**.

f. **Five-Year COCs**—In addition to the Monitoring Parameters described above, this Order requires the *quinquennial analysis* of samples for a larger range of constituents that are reasonably

expected to be found in, or derived from, the waste contained within each unit at the Facility. (Title 23, §§ 2550.3, 2550.8(g).) Analytical results for Five-Year COCs were last submitted to the Central Valley Water Board as part of the 2020 Annual Monitoring Report and are due again in 2025. For the purposes of this MRP, the Five-Year COCs are listed in:

i. **Attachment B** (*Dissolved Inorganics*);

ii. **Attachment C** (*VOCs & Semi-VOCs*);

iii. **Attachment D** *(Pesticides).*

g. Concentration Limits—The Concentration Limit for each COC is the "background concentration," as determined by the statistical methods outlined in subdivision (e)(8) of Title 23, section 2550.7. (Title 23, § 2550.4, subds. (a), (b).) Methods for calculating Concentration Limits were proposed in the October 2018 RMSP. The approved methods use the combined Shewhart-CUSUM control chart method for intra-well comparisons as a basis for calculating concentration limits for those naturally occurring constituents that serve as detection monitoring constituent parameters.

The intra-well statistical program requires at least 18 independent (at least a quarter apart) data points. Therefore, Clean Harbors will continue with the current inter-well statistical program for new downdip monitoring wells MW-127U and MW-128I. Both wells will be evaluated using intra-well statistics once 18 independent samples have been collected. The inter-well statistical program generates prediction limits using historical data from background wells. Therefore, samples from background wells will continue to be collected until intra-well statistics can be used.

Concentration Limits shall be proposed and/or updated on an annual basis, in the Annual Monitoring Report (AMR) submitted per **Section D.2**.

h. Retesting Procedures—If monitoring results indicate measurably significant evidence of a release, as described in the *Provisions for Monitoring* section of the SPRRs, the Discharger shall follow the retest procedures outlined in the *Response to a Release* section of the SPRRs.

C. Additional Facility Monitoring

1. Surface Impoundment—The Discharger shall measure all liquid levels in all Class II surface impoundments that contain liquid. Liquid levels shall be recorded **weekly** and submitted **quarterly** per **Section D.3.**

a. Sample Collection and Analysis—Samples shall be collected at the frequencies and analyzed for the constituents listed in **Table 6**.

Table 6—Surface Impoundment Monitoring

Constituents	Sampling Frequency	Reporting Frequency
5-Year COCs (**Table 4**)	Annual	Annual
General Chemistry Parameters (**Table 2**)	Annual	Annual
pH	Monthly	Quarterly
Electrical Conductivity	Monthly	Quarterly
Dissolved Oxygen	Monthly	Quarterly
Hydrogen Sulfide	Monthly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

2. Leachate Collection & Removal System (LCRS)—The Discharger shall operate and maintain leachate collection and removal system (LCRS) sumps and conduct monitoring of any detected leachate seeps in accordance with Title 23 and the following provisions.

a. Annual LCRS Testing—All Leachate Collection and Removal Systems (LCRS) shall be tested annually to demonstrate proper operation, with the results of each test being compared to the results of prior testing. (See Title 23, § 2543, subd. (d).)

b. Sump Inspection—All LCRS sumps shall be inspected for the presence of leachate. As provided in **Table 7**, the total flow and

flow rate for leachate in each sump shall be recorded after each inspection and reported semiannually per **Section D.1.**

Table 7—LCRS Sump Monitoring, Inspection Parameters

Physical Parameter	Units	Sampling Frequency	Reporting Frequency
Flow Rate	Gallons/Day	Monthly	Semiannual
Total Liquid Removed	Gallons	Monthly	Quarterly
Liquid Level	Inches	Daily	Quarterly

See Glossary for definitions of terms and abbreviations in table.

c. **LCRS Sump Monitoring**—Upon detecting leachate in a previously dry sump, the Discharger shall notify Central Valley Water Board staff **within seven days**, and immediately sample and analyze leachate for the parameters in **Table 8**. Thereafter, whenever leachate is present in the same sump, the leachate shall be sampled and analyzed for the same parameters, and in accordance with the specified sampling and reporting schedule in Table 8.

Table 8—LCRS Sump Monitoring

Constituents	Sampling Frequency	Reporting Frequency
5-Year COCs (**Table 4**)	Annual	Annual
General Chemistry Parameters (**Table 2**)	Annual	Annual

See Glossary for definitions of terms and abbreviations in table.

3. **Incoming Waste**—For the discharge of non-hazardous waste to any Class II WMUs, the Discharger shall provide documentation that the waste is non-hazardous, pursuant to Title 22, section 66262.11. Records shall be maintained and adequate so that an independent auditor can verify that the waste is not hazardous. The Discharger shall report the waste type and quantity of waste accepted for disposal at the Facility on a **quarterly** basis per **Section D.3.**

4. **Regular Visual Inspection**—The Discharger shall perform regular visual inspections at the Facility in accordance with **Table 9** (*Criteria*) and **Table**

10 (*Schedule*). Results of these regular visual inspections shall be included in Semiannual Monitoring Reports per **Section D.1**.

Table 9—Criteria for Regular Visual Inspections

Category	Criteria
Within Unit	Evidence of ponded water at any point on unit outside of any contact storm water/leachate diversions structures on the active face of unit (record affected areas on map). Evidence of erosion and/or of day-lighted refuse.
Unit Perimeter	Evidence of leachate seep. Estimated size of affected area (record on map) and flow rate. Evidence of erosion and/or of day-lighted refuse.
Receiving Waters	Floating and suspended materials of waste origin—presence or absence, source and size of affected areas. Discoloration and turbidity—description of color, source and size of affected areas.

Table 10—Regular Visual Inspection Schedule

Category	**Wet Season** (1 Oct. to 30 April)	**Dry Season** (1 May to 30 Sept.)
Active Units	Weekly	Monthly
Inactive or Closed Units	Monthly	Quarterly

5. **Annual Facility Inspections**—Prior to **30 September** of each year, the Discharger shall inspect the Facility to assess repair and maintenance needs for drainage control systems, cover systems and groundwater monitoring wells; and preparedness for winter conditions (e.g., erosion and sedimentation control). If repairs are made as result of the annual inspection, problem areas shall be photographed before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by 31 October. See **Section D.4** for Reporting Requirements.

6. **Major Storm Events**—Within **seven days** of any storm event capable of causing damage or significant erosion (Major Storm Event), the

Discharger shall inspect the Facility for damage to any precipitation, diversion and drainage facilities, and all landfill side slopes. Necessary repairs shall be completed within 30 days of the inspection. the Discharger shall take photos of any problem areas before and after repairs.
See **Section D.5** for Reporting Requirements.

7. **Five-Year Iso-Settlement Surveys (Closed Landfills)**—Every five years, the Discharger shall conduct an iso-settlement survey of each closed landfill unit and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map. See **Section D.6** for Reporting Requirements.

D. Reporting Requirements

Table 11—Summary of Required Reports

Section	Report	Deadline
§ D.1	*Semiannual Monitoring Reports (SMRs)*	**1 May** (1 January to 30 June) **1 November** (1 July to 31 December)
§ D.2	*Annual Monitoring Reports (AMRs)*	**30 March**
§ D.3	*Quarterly Monitoring Reports (QMRs)*	**1 May** (1 January to 31 March) **1 August** (1 April to 30 June) **1 November** (1 July to 30 September) **1 February** (1 October to 31 December)
§ D.4	*Annual Facility Inspection Reports*	**15 November**
§ D.5	*Major Storm Reporting*	**Immediately after Damage Discovery** (*staff notification*) **Within 14 Days of Completing Repairs** (*written report, photos*)
§ D.6	*Survey and Iso-Settlement Mapping*	**Every Five Years**
§ D.7	*Financial Assurances Reports*	**1 March**
§ D.8	*Water Quality Protection Standard Reports*	**Proposed Revisions** (excluding Concentration Limits)

1. **Semiannual Monitoring Reports (SMRs)**—The Discharger shall submit Semiannual Monitoring Reports (SMRs) by **1 May** (1 Jan. to 30 June) and **1 November** (1 July to 31 Dec.). SMRs shall contain the following materials and information:

    a. A statement affirming that all sampling activities referenced in the report were conducted in accordance with the approved SAP.

    b. Map(s)/aerial photograph(s) depicting locations of all observation stations, monitoring points referenced in the report.

    c. In tabulated format, all monitoring data required to be reported on a semiannual basis, including Groundwater Conditions and Monitoring Parameters. (See Section D.9.b for additional requirements.)

    d. For each groundwater monitoring point referenced in the SMR:

        i. The times each water level measurement was taken;

        ii. The type of pump or other device used to purge and elevate pump intake level relative to screening interval;

        iii. The purging methods used to stabilize water in the well bore before sampling (including pumping rate);

        iv. The equipment and methods used for monitoring pH, temperature and electrical conductivity (EC) during purging activity, and the results of such monitoring;

        v. Methods for disposing of purged water; and

        vi. The type of device used for sampling, if different than the one used for purging.

    e. Evaluation of concentrations for all Constituent Parameters and Five-Year COCs (when analyzed), comparison to current Concentration Limits, and results of any Retesting Procedures per Section B.3.h.

    f. In the event of a verified exceedance of Concentration Limit(s), any actions taken per the *Response to Release s*ection of the SPRRs for wells and/or constituents not already specifically addressed in Corrective Action Monitoring under this MRP.

g. Evaluation as to effectiveness of existing leachate monitoring and control facilities, and runoff/run-on control facilities.

h. For lined landfill units, a summary of any instances where leachate on the landfill liner system exceeded a depth of 30 cm (excluding the leachate sump), and information about the required notification and corrective action.

i. Summaries of all Regular Visual Inspections conducted during the reporting period.

j. For closed landfills, summaries of inspections, leak searches and final cover repairs conducted in accordance with an approved Post-Closure Maintenance Plan.

k. Laboratory statements of results of all analyses evaluating compliance with the WDRs.

2. Annual Monitoring Reports (AMRs)—On **30 March** of each year, the Discharger shall submit an Annual Monitoring Report (AMR) containing following materials and information:

a. In tabulated format, all monitoring data for which annual reporting is required under this MRP. (See Section D.9.b for additional requirements for monitoring reports.)

b. Graphs of historical trends for all Monitoring Parameters and Five-Year COCs (if such analyses were performed) with respect to each monitoring point over the five prior calendar years.

c. An evaluation of Monitoring Parameters with regard to the cation/anion balance, and graphical presentation of same in a Stiff diagram, Piper graph or Schoeller plot.

d. All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file.

e. For each groundwater well, semiannual hydrographs showing the elevation of groundwater with respect to the top and bottom of the screened interval, and the elevation of the pump intake,

f. A comprehensive discussion of the Facility’s compliance record, and the result of any corrective actions taken or planned which may be needed to attain full compliance with the WDRs.

g. For landfill units, a map showing the areas and elevations of each unit where filling was completed during the previous calendar year; comparison to final closure design contours; and projected years in which each discrete module are expected to be filled.

h. A summary of the monitoring results, indicating any changes made or observed since the previous AMR.

i. A discussion on the results of Annual LCRS Testing conducted in accordance with Section C.2.a.

j. Annual updates to the Concentration Limits for all Monitoring Parameters and WQPS Monitoring Points, in accordance with Section B.3.g of this Order.

3. Quarterly Monitoring Reports (QMRs)—The Discharger shall submit Quarterly Monitoring Reports (QMRs) containing following materials and information:

a. In tabulated format, all monitoring data for which quarterly reporting is required under this MRP.

b. A comprehensive discussion of the Facility's compliance record, and the result of any corrective actions taken or planned which may be needed to attain full compliance with the WDRs.

c. A summary of the monitoring results, indicating any changes made or observed since the previous QMR.

4. Annual Facility Inspection Report—By **15 November**, the Discharger shall submit a report with results of the Annual Facility Inspection per **Section C.5**. The report shall discuss any repair measures implemented, any preparations for winter, and include photographs of any problem areas and repairs.

5. Major Storm Event Reports—Immediately following each post-storm inspection described in **Section C.6**, the Discharger shall notify Central Valley Water Board staff of any damage or significant erosion (upon discovery). Subsequent repairs shall be reported to the Central Valley

Water Board (together with before and after photos of the repaired areas) **within 14 days** of completion.

6. **Survey and Iso-Settlement Map (Closed Landfill Units)**—The Discharger shall submit all iso settlement maps prepared in accordance with **Section C.7**. (Title 27, § 21090, subd. (e).)

7. **Financial Assurances Report**—By **1 March** of each year, the Discharger shall submit a copy of the annual financial assurances report due to the DTSC that updates the financial assurances for closure, post-closure maintenance, and corrective action. (See WDRs Order.)

8. **Water Quality Protection Standard Report**—Any proposed changes to the Water Quality Protection Standard (WQPS) components (§ B.3), other than periodic update of the Concentration Limits (§ B.3.g), shall be submitted in a WQPS Report for review and approval. The report shall be certified by a "Qualified Professional" (§ B), and contain the following:

    a. *Potentially Affected Waterbodies*—An identification of all distinct bodies of surface water and groundwater potentially affected by a WMU release (including, but not limited to, the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the Facility);

    b. *Map of Monitoring Points*—A map of all groundwater and unsaturated zone monitoring points (including all background/upgradient and Point of Compliance monitoring points);

    c. *Groundwater Movement*—An evaluation of perennial direction(s) of groundwater movement;

    d. *Statistical Method for Concentration Limits*—A proposed statistical method for calculating Concentration Limits for Monitoring Parameters and Five-Year COCs (see § B.3.f) detected in at least 10 percent of the background data (naturally-occurring constituents) using a statistical procedure from subdivisions (e)(8)(A)-(D) or (e)(8)(E) of Title 23, section 2550.7; and

    e. *Retesting Procedure*—A retesting procedure to confirm or deny measurably significant evidence of a release (Title 23, §§ 2550.7 (e)(8)(E), 2550.8(j)(1)-(3)).

9. General Reporting Provisions

a. Transmittal Letters—Each report submitted under this MRP shall be accompanied by a Transmittal Letter providing a brief overview of the enclosed report, as well as the following:

i. Any violations found since the last report was submitted, a description of all actions undertaken to correct the violation (referencing any previously submitted time schedules for compliance), and whether the violations were corrected; and

ii. A statement from the submitting party, or its authorized agent, signed under penalty of perjury, certifying that, to the best of the signer's knowledge, the contents of the enclosed report are true, accurate and complete.

b. Monitoring Data and Reports

i. Electronic Submission via GeoTracker—All reports with monitoring data (e.g., SMRs and AMRs) shall be submitted electronically via the State Water Board's Geotracker Database (https://geotracker.waterboards.ca.gov). After uploading a report, the Discharger shall notify Central Valley Water Board staff via email at centralvalleyfresno@waterboards.ca.gov. The following information shall be included in the body of the email:

Attention:	Land Disposal Unit
Report Title:	[Title of Report]
GeoTracker Upload ID:	[Identification Number]
Facility Name:	Clean Harbors Buttonwillow
County:	Kern County
WDID:	5D152032001

ii. Data Presentation and Formatting—In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. Additionally, data shall be summarized in a manner that clearly illustrates compliance/noncompliance with WDRs.

iii. Non-Detections / Reporting Limits—Unless the reporting limits (RL) are specified in the same table, non-detections

and sub-RL concentrations shall be reported as "**< [limit]**" (e.g., "< 5 µg/L").

iv. **Units**—Absent specific justification, all monitoring data shall be reported in the units specified in the 2018 October RMSP.

c. **Compliance with SPRRs**—All reports submitted under this MRP shall comply with applicable provisions of the SPRRs.

d. **Additional Requirements for Monitoring Reports**—Every monitoring report submitted under this MRP (e.g., SMRs [§ D.1], AMRs [§ D.2]) shall include a discussion of relevant field and laboratory tests, and the results of all monitoring conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

E. **Record Retention Requirements**—The Discharger shall maintain permanent records of all monitoring information, including without limitation: calibration and maintenance records; original strip chart recordings of continuous monitoring instrumentation; copies of all reports required by this MRP; and records of all data used to complete the application for WDRs. Such records shall be legible, and show the following for each sample:

1. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;

2. Date, time and manner of sampling;

3. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

4. A complete list of procedures used (including method of preserving the sample, and the identity and volumes of reagents used);

5. A calculation of results; and

6. The results of all analyses, as well as the MDL and PQL for each analysis (all peaks shall be reported).

SIGNATURE

This Order is effective as of the date set forth below.

ORDERED BY:

Original Signed by Clay L. Rodgers for:
PATRICK PULUPA, Executive Officer

12/11/2020
DATE

LIST OF ATTACHMENTS

ATTACHMENT A—VOLATILE ORGANIC COMPOUNDS, SHORT LIST
ATTACHMENT B—DISSOLVED INORGANICS (FIVE-YEAR COCS)
ATTACHMENT C—VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUNDS (FIVE-YEAR COCS)
ATTACHMENT D—PESTICIDES (FIVE-YEAR COCS)

ENFORCEMENT

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

ADMINISTRATIVE REVIEW

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday or state holiday, the petition must be received by the State Water Board by 5:00 pm on the next business day. The law and regulations applicable to filing petitions are available on the State Water Board website (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

Attachment A—Volatile Organic Compounds, Short List

Constituent	**Analytical Method**
Benzene	USEPA Method 8260B
Bromomethane	USEPA Method 8260B
Bromodichloromethane	USEPA Method 8260B
Bromoform (Tribromomethane)	USEPA Method 8260B
Carbon disulfide	USEPA Method 8260B
Carbon tetrachloride	USEPA Method 8260B
Chlorobenzene	USEPA Method 8260B
Chloroethane (Ethyl chloride)	USEPA Method 8260B
2-Chloroethyl vinyl ether	USEPA Method 8260B
Chloroform (Trichloromethane)	USEPA Method 8260B
Chloromethane	USEPA Method 8260B
Dibromochloromethane (Chlorodibromomethane)	USEPA Method 8260B
1,1 Dichloroethane (Ethylidene chloride)	USEPA Method 8260B
1,2 Dichloroethane (Ethylene dichloride)	USEPA Method 8260B
1,1 Dichloroethylene (1,1 Dichloroethene; Vinylidene chloride)	USEPA Method 8260B
trans 1,2 Dichloroethylene (trans 1,2 Dichloroethene)	USEPA Method 8260B
1,2 Dichloropropane (Propylene dichloride)	USEPA Method 8260B
cis 1,3 Dichloropropene	USEPA Method 8260B
trans 1,3 Dichloropropene	USEPA Method 8260B
Ethylbenzene	USEPA Method 8260B
Styrene	USEPA Method 8260B
1,1,2,2 Tetrachloroethane	USEPA Method 8260B
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	USEPA Method 8260B
Toluene	USEPA Method 8260B
1,1,1 Trichloroethane (Methylchloroform)	USEPA Method 8260B
1,1,2 Trichloroethane	USEPA Method 8260B
Trichloroethylene (Trichloroethene)	USEPA Method 8260B
Vinyl chloride	USEPA Method 8260B
Xylenes	USEPA Method 8260B

Attachment B—Dissolved Inorganics (Five-Year COCs)

Constituent	**Analytical Method**
Aluminum	USEPA Method 6010B
Antimony	USEPA Method 6010B
Arsenic	USEPA Method 6020
Barium	USEPA Method 6010
Beryllium	USEPA Method 6010
Boron	USEPA Method 6010
Cadmium	USEPA Method 6010
Calcium	USEPA Method 6010
Chloride	USEPA Method 300
Chromium	USEPA Method 6010
Cobalt	USEPA Method 6010
Copper	USEPA Method 6010
Iron	USEPA Method 6010
Lead	USEPA Method 6020
Magnesium	USEPA Method 6010
Manganese	USEPA Method 6010
Mercury	USEPA Method 7470A
Molybdenum	USEPA Method 6010
Nickel	USEPA Method 6010
Potassium	USEPA Method 6010
Selenium	USEPA Method 6020
Silicon	USEPA Method 6010
Silver	USEPA Method 6010
Sodium	USEPA Method 6010
Sulfate	USEPA Method 300
Thallium	USEPA Method 6010
Vanadium	USEPA Method 6010
Zinc	USEPA Method 6010

Attachment C—Volatile And Semi-Volatile Organic Compounds (Five-Year COCs)

Constituent	**Analytical Method**
Acetone	USEPA Method 8260B
Acetonitrile (Methyl cyanide)	USEPA Method 8260B
Benzene	USEPA Method 8260B
Benzyl chloride	USEPA Method 8260B
Bromodichloromethane (Dibromochloromethane)	USEPA Method 8260B
Bromoform (Tribromomethane)	USEPA Method 8260B
Bromomethane	USEPA Method 8260B
2-Butanone	USEPA Method 8260B
n-Butyl alcohol	USEPA Method 8260B or DAI
Carbon disulfide	USEPA Method 8260B
Carbon tetrachloride	USEPA Method 8260B
Chlorobenzene	USEPA Method 8260B
Chloroethane (Ethyl chloride)	USEPA Method 8260B
2-Chloroethyl vinyl ether	USEPA Method 8260B
Chloroform (Trichloromethane)	USEPA Method 8260B
Chloromethane	USEPA Method 8260B
Cresol	USEPA Method 8270
o Cresol (2 methylphenol)	USEPA Method 8270
m Cresol (3 methylphenol)	USEPA Method 8270
p Cresol (4 methylphenol)	USEPA Method 8270
Dibromochloromethane (Chlorodibromomethane)	USEPA Method 8260B
p Dichlorobenzene (1,4 Dichlorobenzene)	USEPA Method 8270
1,1 Dichloroethane (Ethylidene chloride)	USEPA Method 8260B
1,2 Dichloroethane (Ethylene dichloride)	USEPA Method 8260B
1,1 Dichloroethylene	USEPA Method 8260B
1,2 Dichloroethylene (trans)	USEPA Method 8260B
1,2 Dichloropropane (Propylene dichloride)	USEPA Method 8260B
cis-1,3 Dichloropropene	USEPA Method 8260B
trans-1,3 Dichloropropene	USEPA Method 8260B
2,4 Dinitrotoulene	USEPA Method 8270
2-Ethoxyethanol	DAI
Ethyl acetate	USEPA Method 8260B

ATTACHMENT C—VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUNDS (FIVE-YEAR COCS)

Ethyl ether	USEPA Method 8260B
Ethylbenzene	USEPA Method 8260B
Ethylene dibromide	USEPA Method 8260B
Hexachlorobenzene	USEPA Method 8270
Hexachlorobutadiene	USEPA Method 8270
Hexachloroethane	USEPA Method 8270
Hexachlorocyclopentadiene	USEPA Method 8270
cyclo-Hexanone	USEPA Method 8260B
2-Hexanone (Methyl butyl ketone)	USEPA Method 8260B
Isobutanol	USEPA Method 8260B or DAI
Methanol	DAI
4 Methyl 2 pentanone (Methyl isobutyl ketone)	USEPA Method 8260B
Methylene chloride (Dichloromethane)	USEPA Method 8260B
Naphthalene	USEPA Method 8270
Nitrobenzene	USEPA Method 8270
Pentachlorophenol	USEPA Method 8270
Phenol	USEPA Method 8270
Pyridine	USEPA Method 8270
Styrene	USEPA Method 8260B
1,1,2,2 Tetrachloroethane	USEPA Method 8260B
Tetrachloroethylene (PCE)	USEPA Method 8260B
Toluene	USEPA Method 8260B
1,1,1 Trichloroethane (Methylchloroform)	USEPA Method 8260B
1,1,2 Trichloroethane	USEPA Method 8260B
1,1,2 Trichloro-1,2,2-trifluoroethane	USEPA Method 8260B
Trichloroethylene (Trichloroethene; TCE)	USEPA Method 8260B
2,4,5-Trichlorofluophenol	USEPA Method 8270C
2,4,6-Trichlorofluophenol	USEPA Method 8270C
Vinyl acetate	USEPA Method 8260B
Vinyl chloride (Chloroethene)	USEPA Method 8260B
Xylene (total)	USEPA Method 8260B

Attachment D—Pesticides (Five-Year COCs)

Constituent	Analytical Method
Aldrin	USEPA Method 8081A
Chlordane	USEPA Method 8081A
2,4-D	USEPA Method 8151A
DDT, DDE, DDD	USEPA Method 8081A
Dieldrin	USEPA Method 8081A
Endrin	USEPA Method 8081A
Heptachlor epoxide	USEPA Method 8081A
Kepone	USEPA Method 8081A
Lindane	USEPA Method 8081A
Methoxychlor	USEPA Method 8081A
Mirex	USEPA Method 8081A
Toxaphene	USEPA Method 8081A
2,4,5-TP	USEPA Method 8151A