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MONITORING & REPORTING PROGRAM R5-2024-0812



ORDER INFORMATION

Order Type(s):	Monitoring & Reporting Program (MRP)
Status:	ADOPTED
Program:	Site Cleanup Program / Title 27
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Aerojet Rocketdyne, Inc.
Facility:	White Rock North Dump and Aerojet Waste Consolidation Unit
Address:	White Rock Road & Grant Line Road
County:	Sacramento County
Parcel Nos.:	072-0100-020-0000
WDID:	5A34NC00106
Prior Order(s):	Cleanup and Abatement Order 96-150 Cleanup and Abatement Order R5-2023-0700 Waste Discharge Requirements Order R5-2020-0059 Monitoring & Reporting Program Order R5-2020-0059

SIGNATURE

Ordered by:

PATRICK PULUPA,
Executive Officer

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GLOSSARY

AMR	Annual Monitoring Report
AWCU	Aerojet Waste Consolidation Unit
CalRecycle	California Department of Resources Recycling and Recovery
CAO	Cleanup and Abatement Order
CIWQS	California Integrated Water Quality System Project
COC	Constituent of Concern
DMP	Detection Monitoring Program
DTSC	California Department of Toxic Substances Control
LCRS	Leachate Collection and Removal System
MDL	Method Detection Limit
MRP	Monitoring and Reporting Program
OU-5	Aerojet Superfund Site Operable Unit 5
PFAS	Per- and Polyfluoroalkyl Substances
POC	Point of Compliance for Water Quality Protection Standard
PQL	Practical Quantitation Limit
SAP	Sampling and Analysis Plan
SMR	Semiannual Monitoring Report
SPRRs	<i>Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition</i>
TDS	Total Dissolved Solids

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

USEPA.....United States Environmental Protection Agency

VOCsVolatile Organic Compounds

WDRs.....Waste Discharge Requirements

WDRs Order.....Waste Discharge Requirements Order R5-2020-0059

WMUWaste Management Unit

WQPSWater Quality Protection Standard

WRNDWhite Rock North Dump

UNITS

°FDegrees Fahrenheit

Gallons/DayGallons per Day

mg/L.....Milligrams per Liter

ng/L.....Nanograms per Liter

µg/L.....Micrograms per Liter

µmhos/cmMicromhos per Centimeter

µg/m³Micrograms per Cubic Meter

NTUs.....Nephelometric Turbidity Units

PREFACE

Adopted by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) pursuant to Water Code section 13267, this Order establishes a Monitoring and Reporting Program (MRP) for Aerojet Rocketdyne, Inc. (Discharger), which owns the White Rock North Dump in Sacramento County. The Discharger will also own and operate the Aerojet Waste Consolidation Unit (AWCU), which they plan to construct over a portion of WRND starting in 2025. For the purposes of this MRP, the "Facility" is defined as both WRND and the planned AWCU. Additional information regarding the Facility is set forth in the enumerated findings of Waste Discharge Requirements Order R5-2020-0059 (WDRs Order). Except as otherwise provided in the following MRP, those findings are incorporated herein.

This MRP also contains supplemental findings related to monitoring and reporting activities and/or Facility conditions. For the purposes of California Code of Regulations, title 27 (Title 27), sections 21720 and 20380-20435, the findings and provisions of this Order are incorporated as part of the WDRs Order.

Although adopted with the WDRs Order, this is a separate order subject to subsequent revision by the Executive Officer in accordance with delegated authority per Water Code section 13223. For the purposes of Title 27, such revisions shall be automatically incorporated as part of the WDRs Order.

MONITORING & REPORTING PROGRAM

IT IS HEREBY ORDERED, pursuant to Water Code section 13267, that all previously issued MRPs for the discharge of solid waste at the Facility are rescinded (except for enforcement purposes) and that the Discharger, their agents, employees, and successors shall comply with the following MRP.

A. General Provisions

- 1. Incorporation of Standard Provisions** — The Discharger shall comply with all relevant provisions of the *Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition* (SPRRs), as attached to the WDRs Order and incorporated herein. (i.e., SPRRs, §§ I (*Standard Monitoring Specifications*), J (*Response to a Release*)).
- 2. Monitoring Provisions in WDRs Order** — The Discharger shall comply with all “Monitoring Requirements” in the Facility’s operative WDRs Order (Provisions G.1-G.9), which are also incorporated herein.
- 3. Compliance with Title 27** — The Discharger shall comply with all provisions of Title 27 as they pertain to activities described in this MRP.
- 4. Sampling and Analysis Plan (SAP)** — All samples shall be collected, preserved, transported, and analyzed in accordance with the approved *Sampling and Analysis Plan* (SAP; Geosyntec Consultants, Inc., May 2022) and any subsequent version which has been approved by Central Valley Water Board staff. The Discharger may use alternative analytical test methods (including new methods approved by the United States Environmental Protection Agency (USEPA)), provided that the alternative methods have method detection limits (MDLs) and practical quantitation limits (PQLs) equal to or lower than those associated with the analytical methods specified in this MRP and are identified in the approved SAP. The SAP includes provisions to ensure groundwater monitoring equipment is free of per- and polyfluoroalkyl substances (PFAS) to the maximum extent possible. Monitoring equipment shall be PFAS-free unless the Discharger submits documentation as to why it is unable to use PFAS-free monitoring equipment and receives a waiver of the requirement in writing from Central Valley Water Board staff.

B. Detection Monitoring Program (DMP) — To detect a release from the AWCU at the earliest possible time (see Title 27, § 20420, subd. (b)), the Discharger shall implement a Detection Monitoring Program (DMP) for groundwater, surface water, and the unsaturated zone in accordance with the provisions of Title 27, particularly sections 20415 and 20420. As of the date of this MRP, the Discharger has installed groundwater monitoring network wells WRLF-GW01 through WRLF-GW10; however, the Discharger has not installed the unsaturated zone detection monitoring devices, nor constructed the drainage channels associated with the surface water detection monitoring network locations. The Discharger may construct the drainage channels in 2024. The Discharger plans to construct unsaturated zone detection monitoring devices and other infrastructure as they construct the AWCU, which is anticipated in 2025. Groundwater, unsaturated zone, and surface water detection monitoring networks shall be revised (as needed) with the construction of each new AWCU cell or module.

1. Groundwater — The Discharger conducts groundwater monitoring at WRND in accordance with Section 5.2 of the *2024 Site-Wide Groundwater Monitoring Plan Update* (Geosyntec Consultants, Inc., May 2024), which is updated annually following review by staff of the Central Valley Water Board, the California Department of Toxic Substances Control (DTSC), and USEPA. The *2024 Site-Wide Groundwater Monitoring Plan Update* presents a comprehensive collection of groundwater monitoring plans for the Aerojet Superfund Site, WRND, and the Inactive Rancho Cordova Test Site, located south of the Aerojet Superfund Site on land owned by the Discharger. The WRND groundwater monitoring program presented in the *2024 Site-Wide Groundwater Monitoring Plan Update* focuses on monitoring groundwater plumes associated with releases from WRND and upgradient sources at the Aerojet Superfund Site. Alternatively, the groundwater monitoring requirements in this MRP focus on the detection of potential releases from the planned AWCU. The monitoring requirements presented in this MRP will be incorporated into future versions of the *2024 Site-Wide Groundwater Monitoring Plan Update*.

a. Required Network — The Facility's groundwater monitoring well network consists of the wells listed in Table 1. The Discharger has conducted eight quarterly groundwater monitoring events at wells WRLF-GW01 through WRLF-GW10. The Discharger has also submitted the May 2024 *Water Quality Protection Standard* report, which summarizes these sample results, identifies which of these wells are located downgradient of the AWCU, and presents an approach for formulating Concentration Limits for each parameter at each well. As of the date of this Order, the network meets the requirements of Title 27. (Title 27, § 20415, subd. (b).)

Table 1 — Groundwater Detection Monitoring Network

Well	Groundwater Zone / Layer	Status	Point of Compliance (WQPS)¹
WRLF-GW01	B	Operational	Background
WRLF-GW02	B	Operational	Detection
WRLF-GW03	B	Operational	Detection
WRLF-GW04	B	Operational	Detection
WRLF-GW05	B	Operational	Detection
WRLF-GW06	B	Operational	Detection
WRLF-GW07	B	Operational	Detection
WRLF-GW08	B	Operational	Detection
WRLF-GW09	B	Operational	Background
WRLF-GW10	B	Operational	Background
WRLF-GW11 to WRLF-GWXX ²	B	Planned	To Be Determined

See Glossary for definitions of terms and abbreviations in table.

Table 1 Notes:

1. Title 27 sections 20164 and 20405, subdivision (a), define the Point of Compliance (POC) as a vertical plane at the Waste Management Unit's (WMU's) hydraulically downgradient limit, extending through the uppermost underlying aquifer. In the May 2024 *Water Quality Protection Standard* report, the Discharger identified monitoring wells WRLF-GW02 through WRLF-GW08 as detection monitoring wells based on groundwater gauging data indicating that these wells are located downgradient to cross-gradient of the AWCU.
2. The Discharger plans to construct AWCU Cells 1B through 1F depending on the quantity of transfer material to be disposed of at the AWCU from the AWCU Service Area. As the Discharger constructs AWCU Cells 1B through 1F, the Discharger shall install a sufficient number of POC detection groundwater

monitoring points (WRLF-11 to WRLF-XX) to provide earliest detection of a release of waste to groundwater in the uppermost aquifer for each phase of construction.

- b. **Sample Collection and Analysis** — Groundwater samples shall be collected from each well and analyzed for Monitoring Parameters listed in Table 2 (*Physical Parameters*) and Table 3 (*Constituent Parameters*) in accordance with the specified schedule for each parameter. (Title 27, § 20420, subs. (e)-(f).) Table 2, Table 3, and Table 5 monitoring requirements will take effect once the Discharger begins disposing of waste at the AWCU. Separately, the Discharger has been conducting pre-waste disposal sampling of the Table 1 wells and analyzing these samples for many of the Table 2, Table 3, and Table 4 parameters to establish Water Quality Protection Standard (WQPS) Concentration Limits (Section 4.g. of this MRP).

Table 2 — Groundwater Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Temperature	TEMP	°F	Quarterly	Semiannually
Electrical Conductivity	SC	µmhos/cm	Quarterly	Semiannually
pH	PH	pH Units	Quarterly	Semiannually
Turbidity	TURB	NTUs	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

Table 3 — Groundwater Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Bicarbonate	BICACO3	mg/L	Quarterly	Semiannually
Calcium	CA	mg/L	Quarterly	Semiannually
Carbonate	CACO3	mg/L	Quarterly	Semiannually
Chloride	CL	mg/L	Quarterly	Semiannually

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT
SACRAMENTO COUNTY

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Iron	FE	mg/L	Quarterly	Semiannually
Magnesium	MG	mg/L	Quarterly	Semiannually
Manganese	MN	mg/L	Quarterly	Semiannually
Nitrate (as Nitrogen)	NO3N	mg/L	Quarterly	Semiannually
Potassium	K	mg/L	Quarterly	Semiannually
Sodium	NA	mg/L	Quarterly	Semiannually
Sulfate	SO4	mg/L	Quarterly	Semiannually
TDS	TDS	mg/L	Quarterly	Semiannually
Short List VOCs (Attachment A)	(various)	µg/L	Quarterly	Semiannually
Perchlorate	PCATE	ug/L	Quarterly	Semiannually
N-Nitrosodimethylamine (NDMA)	NNSM	ng/L	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

- c. **Five-Year COCs** — Every five years, the Discharger shall analyze groundwater samples from each well for the Constituents of Concerns (COCs) listed in Table 4. From 2022 to 2023, the Discharger collected multiple rounds of samples from the Table 1 monitoring wells and analyzed samples for the Five-Year COCs listed in Table 4. The Discharger shall sample the Table 1 monitoring wells and analyze samples for the Table 4 Five-Year COCs again in 2027 and every five years thereafter. (Title 27, § 20420, subd. (g).)

Table 4 — Groundwater Detection Monitoring, Five-Year COCs

Five-Year COC	GeoTracker Code	Units	Sampling & Reporting Frequency
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
Extended List VOCs (Attachment C)	(various)	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	(various)	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	(various)	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table.

- d. **Groundwater Conditions** — Each quarter, the Discharger shall monitor the Groundwater Conditions specified in Table 5, with the results of such monitoring event being reported semiannually per Section E. (Title 27, § 20415, subd. (b)(1).)

Table 5 — Groundwater Detection Monitoring, Groundwater Conditions

Groundwater Condition	GeoTracker Code	Monitoring Frequency	Reporting Frequency
Elevation	ELEV	Quarterly	Semiannually
Gradient	(none)	Quarterly	Semiannually

2. Unsaturated Zone

- a. **Required Network** — The Facility’s unsaturated zone monitoring network will consist of the lysimeters and landfill gas probes specified in Table 6. These monitoring points will be installed as the AWCU is being

constructed, prior to waste placement. As of the date of this Order, the network meets the requirements of Title 27. (Title 27, § 20415, subd. (d).)

Table 6 — Unsaturated Zone Detection Monitoring Network

Monitoring Point	Device Type	Program	Monitored Unit	Status
LYS-1A ¹	Pan Lysimeter	Detection	AWCU Cell 1A	Planned
LYS-1B	Pan Lysimeter	Detection	AWCU Cell 1B	Planned
LYS-1C	Pan Lysimeter	Detection	AWCU Cell 1C	Planned
LYS-1D	Pan Lysimeter	Detection	AWCU Cell 1D	Planned
LYS-1E	Pan Lysimeter	Detection	AWCU Cell 1E	Planned
LYS-1F	Pan Lysimeter	Detection	AWCU Cell 1F	Planned
LFGP-1 ²	Gas Probe	Detection	WRND	Planned
LFGP-2	Gas Probe	Detection	WRND	Planned
LFGP-3	Gas Probe	Detection	WRND	Planned
LFGP-4	Gas Probe	Detection	WRND	Planned
LFGP-5	Gas Probe	Detection	WRND	Planned
LFGP-6	Gas Probe	Detection	WRND	Planned
LFGP-7	Gas Probe	Detection	WRND	Planned
LFGP-8	Gas Probe	Detection	WRND	Planned
LFGP-9	Gas Probe	Detection	WRND	Planned
LFGP-10	Gas Probe	Detection	WRND	Planned
LFGP-11	Gas Probe	Detection	WRND	Planned
LFGP-12	Gas Probe	Detection	WRND	Planned

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT

SACRAMENTO COUNTY

Monitoring Point	Device Type	Program	Monitored Unit	Status
LFGP-13 to LFGP-XX	Gas Probe	Detection	AWCU	Planned
GCL-1A ³	Gas Probe	Detection	AWCU Cell 1A Underlying Gas Collection Layer	Planned
GCL-1B	Gas Probe	Detection	AWCU Cell 1B Underlying Gas Collection Layer	Planned
GCL-1C	Gas Probe	Detection	AWCU Cell 1C Underlying Gas Collection Layer	Planned
GCL-1D	Gas Probe	Detection	AWCU Cell 1D Underlying Gas Collection Layer	Planned
GCL-1E	Gas Probe	Detection	AWCU Cell 1E Underlying Gas Collection Layer	Planned
GCL-1F	Gas Probe	Detection	AWCU Cell 1F Underlying Gas Collection Layer	Planned

See Glossary for definitions of terms and abbreviations in table.

Table 6 Notes:

1. Each pan lysimeter will be co-located (vertically aligned) with a leachate collection and removal system (LCRS) sump and a leak detection system (LDS) sump as shown on Attachment W of the WDRs Order. The location of the AWCU Cell 1A LCRS sump (LCP1), which will also serve as the location of pan lysimeter LYS-1A and the Cell 1A LDS sump, is shown on Attachment Q of the WDRs Order. Each AWCU Cell (1A through 1F, as needed) will be constructed with a single vertically-aligned pan lysimeter, LCRS sump, and LDS sump assembly, unless the Discharger constructs AWCU Cells 1B through 1F with shared pan lysimeters, LCRS sumps, and LDS sumps. In this case, the number of constructed monitoring points would be fewer than is shown above.
2. The planned locations of gas probes LFGP-1 through LFGP-12 are shown on Attachment R of the WDRs Order. In addition to these probes, the Discharger shall install at least one landfill gas probe along the AWCU POC (Section B.4.c). If/when the Discharger constructs AWCU Cells 1B through 1F, the Discharger shall install additional landfill gas probe(s) such that a probe is always present along the AWCU

POC. Since the final number AWCU POC landfill gas probes is currently unknown, these probes are identified in Table 6 as “LFGP-13 to LFGP-XX”.

3. Gas probes GCL-1A through GCL-1F will be installed within the same layer as pan lysimeters LYS-1A through LYS-1F (i.e., the volatile organic compound (VOC) Collection Layer). Each gas probe will be located between 10 to 100 feet from its corresponding lysimeter so that gas probe vapor sample data can be correlated with lysimeter liquid sample data. Gas probes GCL-1A through GCL-1F may be combined depending on whether the AWCU cells share common LCRS sumps.
 - b. **Soil Gas Monitoring** — Soil gas at the gas probes shall be monitored for methane and VOCs in accordance with Table 7, provided that samples may be prescreened to determine if such analyses will be required.¹ (Title 27, § 20420, subds. (e)-(f).) Table 7 soil gas monitoring requirements for the WRND gas probes (i.e., LFGP-1 through LFGP-12) and the AWCU gas probes (i.e., LFGP-13 to LFGP-XX) will take effect immediately following probe installation.

**Table 7 — Unsaturated Zone Detection Monitoring (Soil Gas),
 Constituent Parameters**

Constituent Parameter	GeoTracker Code	Units	Monitoring Frequency	Reporting Frequency
VOCs	(various)	µg/m ³	Quarterly	Semiannually
Methane	CH4	%	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

- c. **Lysimeter Inspection and Monitoring** — Pan lysimeters shall be inspected monthly for the presence of liquid which, if present, shall be

¹ A landfill gas analyzer shall be used to measure methane concentrations, and a Photo-ionization Detector (PID) shall be used to measure total VOC concentrations. The PID shall be calibrated to 100 parts per million isobutylene and utilize a lamp that is appropriate for measuring the VOCs present at the Facility. If methane concentrations exceed 1 percent by volume OR total VOCs exceed 1 part per million, a gas sample shall be obtained and analyzed for VOCs using USEPA Method Toxic Organics - 15. If a gas sample is collected, then both the screening results and the laboratory analytical results shall be reported. Otherwise, the methane and total VOC screening results shall be reported, and no further laboratory analysis is required.

analyzed for the Monitoring Parameters in Table 8 (*Physical Parameters*) and Table 9 (*Constituent Parameters*). (Title 27, § 20420, subds. (e)-(f).) If liquid is detected in a *previously dry* pan lysimeter, the Discharger shall notify Central Valley Water Board staff within seven days of the detection. Any constituent in the Transfer Material verified to be present in a pan lysimeter shall be added to the Monitoring Parameters listed in Table 3 for groundwater detection monitoring purposes. The monthly lysimeter inspection requirement and the Table 8 and Table 9 lysimeter monitoring requirements shall take effect immediately following lysimeter installation.

Table 8 — Unsaturated Zone Detection Monitoring (Lysimeter Liquid), Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Electrical Conductivity	SC	µmhos/cm	Monthly	Semiannually
pH	PH	pH Units	Monthly	Semiannually
Volume of Removed Liquid	(none)	Gallons	Monthly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

Table 9 — Unsaturated Zone Detection Monitoring (Lysimeter Liquid), Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Bicarbonate	BICACO3	mg/L	Quarterly	Semiannually
Calcium	CA	mg/L	Quarterly	Semiannually
Carbonate	CACO3	mg/L	Quarterly	Semiannually
Chloride	CL	mg/L	Quarterly	Semiannually
Iron	FE	mg/L	Quarterly	Semiannually
Magnesium	MG	mg/L	Quarterly	Semiannually
Manganese	MN	mg/L	Quarterly	Semiannually

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Nitrate (as Nitrogen)	NO3N	mg/L	Quarterly	Semiannually
Potassium	K	mg/L	Quarterly	Semiannually
Sodium	NA	mg/L	Quarterly	Semiannually
Sulfate	SO4	mg/L	Quarterly	Semiannually
TDS	TDS	mg/L	Quarterly	Semiannually
Short List VOCs (Attachment A)	(various)	µg/L	Quarterly	Semiannually
Transfer Material Compounds (Attachment G)	(various)	(various)	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

- d. **Five-Year COCs** — Every five years, liquid from each pan lysimeter shall be analyzed for the Five-Year COCs listed below in Table 10. Five-Year COCs monitoring shall begin when liquid is first observed in a lysimeter and shall be conducted every five years thereafter. (Title 27, § 20420, subd. (g).) Any Five-Year COC verified to be present in a lysimeter shall be added to the Monitoring Parameters listed in Table 3 for groundwater detection monitoring purposes.

Table 10 — Unsaturated Zone Detection Monitoring (Lysimeter Liquid), Five-Year COCs

Five-Year COC	GeoTracker Code	Units	Sampling & Reporting Frequency
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
Extended List VOCs (Attachment C)	(various)	µg/L	Every 5 Years

Five-Year COC	GeoTracker Code	Units	Sampling & Reporting Frequency
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	(various)	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	(various)	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table.

3. **Surface Water** — Since WRND is an unlined solid waste disposal site, surface water is currently allowed to infiltrate to the subsurface. The AWCU will act as a cover for up to approximately 50 acres of the approximately 100 acres of landfilled area at WRND. The AWCU will be constructed such that surface water drains to the AWCU perimeter, where it will be intercepted by a system of aboveground perimeter drainage ditches, as shown on Attachment K of the WDRs Order. These ditches will be connected to up to three main channels, which will convey the surface water to the north of WRND, across Old White Rock Road, into up to three unlined inundation areas on land owned by the Discharger. Surface water drainage to the unlined inundation areas will be monitored at monitoring points SW-3 through SW-5, which are shown on Attachment Q of the WDRs Order. On 10 March 2023, the Central Valley Water Board adopted Cleanup & Abatement Order (CAO) R5-2023-0700 for WRND, requiring the Discharger to install a Title 27-compliant cover over the portion of WRND that will not be covered by the AWCU. CAO R5-2023-0700 also requires the Discharger to submit a WRND surface water monitoring program as part of a WRND Closure and Post-Closure Maintenance Plan. Accordingly, WRND surface water monitoring is not addressed in this MRP.

a. **Required Network** — The AWCU's surface water monitoring network consists of the monitoring points listed in Table 11. As of the date of this Order, the network meets the requirements of Title 27. (See § 20415, subd. (c).)

Table 11 — Surface Water Detection Monitoring Network

Monitoring Point	Location	Program or Function	Monitored Unit	Status
SW-3	Drainage Ditch, Northern Boundary	Detection	AWCU Cell 1A	Planned
SW-4	Drainage Ditch, Northern Boundary	Detection	AWCU Cell 1A	Planned
SW-5	Drainage Ditch, Northern Boundary	Detection	AWCU Cell 1A and Subsequent Cell(s)	Planned

See Glossary for definitions of terms and abbreviations in table.

- b. **Sample Collection and Analysis** — When surface water is present at monitoring points in Table 11 at any point during the monitoring period between 1 September and 31 May, samples shall be collected from each monitoring point and analyzed for the Monitoring Parameters in Table 12 (*Physical Parameters*) and Table 13 (*Constituent Parameters*), in accordance with the specified schedule. (Title 27, § 20420, subs. (e)-(f).) As stated above, the Discharger is constructing AWCU perimeter drainage ditches and drainage channels to direct surface water from the AWCU to up to three unlined inundation areas. Accordingly, Table 12 and Table 13 surface water monitoring requirements shall take effect upon the Discharger completing construction of the surface water conveyance infrastructure.

Table 12 — Surface Water Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Electrical Conductivity	SC	µmhos/cm	Biweekly	Semiannually
pH	PH	Std. Units	Biweekly	Semiannually
Turbidity	TURB	NTUs	Biweekly	Semiannually
Hardness	HARD	mg / L	Biweekly	Semiannually
Presence of Oil & Grease	(none)	Yes / No	Biweekly	Semiannually

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Physical Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Flow to Surface Waters at Time of Sampling	(none)	Yes/No	Biweekly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

Table 13 — Surface Water Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency ¹	Reporting Frequency
Bicarbonate	BICACO3	mg/L	Varies	Semiannually
Calcium	CA	mg/L	Varies	Semiannually
Carbonate	CACO3	mg/L	Varies	Semiannually
Chloride	CL	mg/L	Varies	Semiannually
Iron	FE	mg/L	Varies	Semiannually
Magnesium	MG	mg/L	Varies	Semiannually
Manganese	MN	mg/L	Varies	Semiannually
Nitrate (as Nitrogen)	NO3N	mg/L	Varies	Semiannually
Potassium	K	mg/L	Varies	Semiannually
Sodium	NA	mg/L	Varies	Semiannually
Sulfate	SO4	mg/L	Varies	Semiannually
TDS	TDS	mg/L	Varies	Semiannually
TSS	TSS	mg/L	Varies	Semiannually
Short List VOCs (Attachment A)	(various)	µg/L	Varies	Semiannually

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency ¹	Reporting Frequency
Transfer Material Compounds (Attachment G)	(various)	(various)	Varies	Semiannually

See Glossary for definitions of terms and abbreviations in table.

Table 13 Notes:

1. Sampling Frequency:

- a) Prior to the installation of the final closure cover on the entirety of the AWCU:
 - i. During the Pre/Post-Wet Season (May, September, and October), the Discharger shall monitor for the constituents listed in Table 13 whenever there is a surface water discharge from the AWCU outside of the AWCU waste containment system where there also exists liquid at monitoring points SW-3 through SW-5.
 - ii. During the Wet Season (1 November - 30 April), when liquid is present at the monitoring points (SW-3 through SW-5), the Discharger shall monitor for the constituents listed in Table 13 as follows:
 - 1. Monthly, whenever there is a surface water discharge from the AWCU outside the AWCU waste containment system; or
 - 2. At least three times during the wet season, with at least two months between each sampling event.
- b) After installation of the final closure cover over the entirety of the AWCU, the Discharger shall monitor for the constituents listed in Table 13 on a quarterly basis, with a minimum of two samples taken per wet season.
- c. **Five-Year COCs** — The Discharger shall analyze surface water samples for the Five-Year COCs listed in Table 14. Five-Year COCs shall be analyzed upon initiation of disposal operations at the AWCU when surface water is present at the monitoring points (Table 11) and every five years thereafter. (Title 27, § 20420, subd. (g).)

Table 14 — Surface Water Detection Monitoring, Five-Year COCs

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Frequency
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
Extended List VOCs (Attachment C)	(various)	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	(various)	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	(various)	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table.

4. Summary of Water Quality Protection Standard (WQPS)

Components—The WQPS is the Title 27 analytical framework through which an individual WMU is monitored for releases and impacts to water quality (i.e., the DMP). (See Title 27, § 20390, 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* shall be sampled and analyzed for *Monitoring Parameters* indicative of a release. If a COC concentration exceeds its Concentration Limit, the results shall be 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 27, § 20410.) The period restarts each time an Evaluation Monitoring Program is initiated for a given WMU. (*Id.*, §§ 20410, subd. (b), 20415, 20425.) If a WMU is in corrective action, the compliance period continues until it is demonstrated that the WMU has been in continuous compliance with its WQPS for at least three years. (*Id.*, § 20410, 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 Waste Discharge Requirements (WDRs) and subject to the WQPS. (Title 27, § 20164.) Monitoring Points are listed in Section B (*Detection Monitoring Program*)—specifically Table 1 (*Groundwater*), Table 6 (*Unsaturated Zone*) and Table 11 (*Surface Water*).

- c. **Point of Compliance (POC)** — The POC is a vertical plane at the WMU's hydraulically downgradient limit, extending through the uppermost underlying aquifer. (Title 27, §§ 20164, 20405, subd. (a).)
- d. **Constituents of Concern (COCs)** — 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 27, §§ 20164, 20395.)
- 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 27, §§ 20164, 20395, subd. (a), 20420, subds. (e)-(f).) For the purposes of this MRP, the Monitoring Parameters are:
 - i. For Surface Water, those in Table 12 and Table 13;
 - ii. For Groundwater, those in Table 2 and Table 3; and
 - iii. For the Unsaturated Zone, those in Table 7, Table 8, and Table 9.
- f. **Five-Year COCs** — In addition to the Monitoring Parameters described above, this Order requires analysis on a five-year frequency for a larger range of constituents that are reasonably expected to be found in, or derived from, the waste contained within the AWCU. (Title 27, §§ 20395, 20420, subd. (g).) From 2022 to 2023, the Discharger collected multiple rounds of samples from the Table 1 monitoring wells and analyzed samples for the Five-Year COCs listed in Table 4. The Discharger submitted analytical results for the Five-Year COCs in the May 2024 *Water Quality Protection Standard* report. For the purposes of this MRP, the Five-Year COCs are listed in:
 - i. Attachment B (*Dissolved Inorganics*);
 - ii. Attachment C (*Extended List VOCs*);
 - iii. Attachment D (*Semi-Volatile Organic Compounds*);

- iv. Attachment E (*Chlorophenoxy Herbicides*);
 - v. Attachment F (*Organophosphorus Compounds*); and
 - vi. Any other COCs listed in Table 4 (*Groundwater*), Table 10 (*Unsaturated Zone*), and Table 14 (*Surface Water*)
- g. **Concentration Limits** — The Concentration Limit for each COC is the “background concentration,” as determined by the statistical methods outlined in Title 27 section 20415, subdivision (e)(8).² (Title 27, § 20400, subds. (a), (b).) The Discharger initially proposed methods for calculating initial (i.e., pre-waste placement) Concentration Limits in Section 6.4 of the draft *Joint Technical Document* (SLR International Corporation, August 2020). Following eight rounds of quarterly sampling at the Table 1 groundwater monitoring well network and additional discussions with Central Valley Water Board staff, the Discharger proposed a new intra-well Concentration Limit approach in the May 2024 *Water Quality Protection Standard* report. The Discharger is prohibited from disposing of Transfer Material in the AWCU until the Central Valley Water Board approves the Discharger’s proposed WQPS Concentration Limits for the AWCU. Concentration Limits shall be proposed and/or updated by the Discharger on an annual basis in the Annual Monitoring Report submitted per Section E.2 of this MRP.

Unless expressly rejected by the Executive Officer in writing, the AWCU Concentration Limits (including both initial, pre-waste placement Concentration Limits and Concentration Limits established via annual updates) shall be incorporated as part of this Order.

- h. **Retesting Procedures** — If monitoring results indicate measurably significant evidence of a release, as described in Section I.45 of the SPRRs (*Standard Monitoring Specifications*), the Discharger shall apply the following:
 - i. Non-Statistical Retesting Procedures (SPRRs, § I.46) for analytes detected in less than 10 percent of background samples (e.g., non-naturally occurring COCs); and

² Concentration Limits are initially proposed by the discharger, then reviewed and approved by the Central Valley Water Board (subject to any necessary revisions). The limits specified herein are approved and incorporated as part of the Facility’s WDRs.

- ii. Statistical Retesting Procedures (SPRRs, § 1.46) for analytes detected in at least 10 percent of background samples (e.g., naturally occurring COCs).

C. Corrective Action Monitoring — WRND is located between Aerojet Superfund Site Operable Unit 5 (OU-5) Zones 2 and 3. Hydrostratigraphic Layer B groundwater extraction wells installed to capture releases from WRND are present to the south of WRND; however, the Discharger has struggled to consistently operate these extraction wells due to persistent biomass accumulation and declining water levels. Accordingly, in November 2023, the Discharger submitted a request to shutdown these extraction wells and capture releases from WRND via operation of existing extraction wells installed for OU-5 and WRND located to the south, east, and west of WRND. Central Valley Water Board staff approved this request. Since the groundwater contaminant plumes associated with WRND and the Aerojet Superfund Site have comingled, the groundwater remedial actions conducted for WRND effectively functioned as part of the OU-5 groundwater remedy. As discussed in Section B.1. of this MRP, the Discharger conducts groundwater monitoring to evaluate these groundwater corrective actions in accordance with the monitoring program presented in the *2024 Site-Wide Groundwater Monitoring Plan Update* (Geosyntec Consultants, Inc., May 2024), which is updated annually following review by staff of the Central Valley Water Board, DTSC, and USEPA. Alternatively, the groundwater monitoring requirements in this MRP focus on the detection of potential releases from the planned AWCU. The monitoring requirements presented in this MRP will be incorporated into future versions of the *2024 Site-Wide Groundwater Monitoring Plan Update*.

On 10 March 2023, the Central Valley Water Board adopted CAO R5-2023-0700 for WRND, which requires the Discharger to install a Title 27-compliant cover over the portion of WRND that does not get covered by the AWCU. CAO R5-2023-0700, which revoked and replaced CAO 96-150, also requires the Discharger to submit a WRND Closure and Post-Closure Maintenance Plan which is to include a proposed WRND surface water monitoring program and any proposed updates to the WRND groundwater monitoring program.

D. Additional Facility Monitoring

1. Leachate Collection & Removal System (LCRS) and Leak Detection System (LDS) — The Discharger shall operate and maintain LCRS and LDS sump(s) and conduct monitoring of any detected leachate seeps in accordance with Title 27 and the following provisions.

- a. **Annual LCRS Testing** — All LCRS shall be tested annually to demonstrate proper operation and assess potential clogging. Results of

each test shall be compared to the results of prior testing. (See Title 27, § 20340, subd. (d).)

- b. **LCRS/LDS Sump Inspection** — All LCRS and LDS sumps shall be inspected monthly for the presence of leachate. As provided in Table 15, the total monthly volume and daily flow rate for leachate in each sump shall be recorded after each inspection and reported semiannually per Section E. Inspection requirements take effect immediately following LCRS/LDS sump installation.

Table 15 — LCRS and LDS Sump Monitoring, Monthly Inspection Parameters

Physical Parameter	GeoTracker Code	Units	Inspection Frequency	Reporting Frequency
Total Monthly Volume	(none)	Gallons	Monthly	Semiannually
Flow Rate	FLOW	Gallons/Day	Monthly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

- c. **LCRS and LDS Leachate Monitoring** — Upon detecting leachate in a previously dry LCRS or LDS sump, the Discharger shall notify Central Valley Water Board staff within seven days and immediately sample and analyze leachate for the parameters in Table 16. Thereafter, whenever leachate is present in the same LCRS or LDS sump, the leachate shall be sampled and analyzed for the same parameters, and in accordance with the specified sampling and reporting schedule in Table 16. Table 16 monitoring requirements shall take effect immediately following LCRS/LDS sump installation.

Table 16 — LCRS and LDS Sump Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Bicarbonate	BICACO3	mg/L	Quarterly	Semiannually
Calcium	CA	mg/L	Quarterly	Semiannually
Carbonate	CACO3	mg/L	Quarterly	Semiannually
Chloride	CL	mg/L	Quarterly	Semiannually

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Iron	FE	mg/L	Quarterly	Semiannually
Magnesium	MG	mg/L	Quarterly	Semiannually
Manganese	MN	mg/L	Quarterly	Semiannually
Nitrate (as Nitrogen)	NO3N	mg/L	Quarterly	Semiannually
Potassium	K	mg/L	Quarterly	Semiannually
Sodium	NA	mg/L	Quarterly	Semiannually
Sulfate	SO4	mg/L	Quarterly	Semiannually
TDS	TDS	mg/L	Quarterly	Semiannually
Short List VOCs (Attachment A)	(various)	µg/L	Quarterly	Semiannually
Transfer Material Compounds (Attachment G)	(various)	(various)	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

- d. **Five-Year COCs** — At least once every five years, the Discharger shall sample and analyze any leachate present in all LCRS and LDS sumps for the Five-Year COCs listed in Table 17. Sampling shall commence when leachate is first observed in any LCRS or LDS sump and shall continue on a five-year frequency for each LCRS and LDS sump thereafter.

Table 17 — LCRS and LDS Sump Monitoring, Five-Year COCs

Parameter	GeoTracker Code	Units	Sampling & Reporting Frequency
Total Organic Carbon	TOC	mg/L	Every 5 Years

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Parameter	GeoTracker Code	Units	Sampling & Reporting Frequency
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
Extended List VOCs (Attachment C)	(various)	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	(various)	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	(various)	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table.

2. **Leachate Seepage** — Leachate that seeps to the surface from any landfill WMU shall, immediately upon detection, be sampled and analyzed for the Monitoring Parameters in Table 18 (*Physical Parameters*) and Table 19 (*Constituent Parameters*). See Section E for Reporting Requirements. In the event of a reported leachate seep, Central Valley Water Board staff may direct additional sampling and analysis pursuant to Water Code section 13267, subdivision (b)(1).

Table 18 — Leachate Seep Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Total Volume	(none)	Gallons	Upon Detection	See MRP, § E
Flow Rate	FLOW	Gallons/Day	(same)	(same)
Electrical Conductivity	SC	µmhos/cm	(same)	(same)
pH	PH	pH Units	(same)	(same)

See Glossary for definitions of terms and abbreviations in table.

Table 19 — Leachate Seep Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Frequency	Reporting Frequency
Bicarbonate	BICACO3	mg/L	Upon Detection	See MRP, § E
Calcium	CA	mg/L	(same)	(same)
Carbonate	CACO3	mg/L	(same)	(same)
Chloride	CL	mg/L	(same)	(same)
Iron	FE	mg/L	(same)	(same)
Magnesium	MG	mg/L	(same)	(same)
Manganese	MN	mg/L	(same)	(same)
Nitrate (as Nitrogen)	NO3N	mg/L	(same)	(same)
Potassium	K	mg/L	(same)	(same)
Sodium	NA	mg/L	(same)	(same)
Sulfate	SO4	mg/L	(same)	(same)
TDS	TDS	mg/L	(same)	(same)
Short List VOCs (Attachment A)	(various)	µg/L	(same)	(same)
Transfer Material Compounds (Attachment G)	(various)	(various)	(same)	(same)

See Glossary for definitions of terms and abbreviations in table.

- 3. Regular Visual Inspection** — The Discharger shall perform regular visual inspections at the Facility in accordance with Table 20 (*Criteria*) and Table 21 (*Schedule*). Results of these regular visual inspections shall be included in Semiannual Monitoring Reports per Section E.1. Table 20 and Table 21 inspection requirements shall take effect upon the Discharger commencing waste disposal at the AWCU.

Table 20 — Criteria for Regular Visual Inspections

Category	Criteria
Within Unit	<ul style="list-style-type: none"> • Evidence of ponded water at any point on the AWCU 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	<ul style="list-style-type: none"> • Evidence of leachate seep. • Estimated size of affected area (record on map) and flow rate. • Evidence of erosion and/or of day-lighted refuse. • Evidence of discharge of contact stormwater outside of the AWCU liner containment perimeter. The Discharger shall immediately notify the Central Valley Water Board via telephone or email; and within seven days, submit a written report with the information required in Section E.3.
Nearby Surface Waters	<ul style="list-style-type: none"> • 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 21 — Regular Visual Inspection Schedule

Category	Pre/Post Wet Season (May, Sept., Oct.)	Wet Season (1 Nov. to 30 April)	Dry Season (1 Jun. to 31 Aug.)
Active Units	Following Rain Event	Weekly	Monthly
Inactive or Closed Units	Monthly	Monthly	Quarterly

4. **Annual Facility Inspections** — Prior to 1 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 (i.e., erosion and sedimentation control). In accordance with Requirement C.1. of the WDRs Order, the Discharger shall ensure that not more than 2.5 acres of Transfer Material is exposed to the environment during the months of May, September, October. The Discharger shall use tarps or other means to ensure that excessive contact stormwater is not produced, which could exceed the Discharger’s ability to collect, store, and dispose of such wastewater. A discharge of wastewater (i.e., leachate) outside of the AWCU’s leachate management system is a violation of the WDRs Order. 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 1 October. See Section E for Reporting Requirements.

5. **Major Storm Events** — Within seven days of any storm event capable of discharging waste outside of the AWCU liner boundary, 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 E for Reporting Requirements.

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- 6. Iso-Settlement Surveys (Closed Landfills)** — 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. The Discharger shall conduct the iso-settlement survey initially upon final closure of each portion of a landfill unit to establish baseline conditions, biennially for the following ten years, and then every five years thereafter. (Title 27, § 21090, subd. (e)(1)-(2); see Section E for Reporting Requirements.)
- E. Reporting Requirements** — The Discharger shall submit the required reports identified in Table 22. Unless stated otherwise below, the submittal requirement for each type of report shall take effect following the first reporting period during which data to be included in the subject report is first collected.

Table 22 — Summary of Required Reports

Section	Report	Deadline
§ 1	<i>Semiannual Monitoring Reports (SMRs)</i>	1 September of each year (1 January to 30 June) 1 March of each year (1 July to 31 December)
§ 2	<i>Annual Monitoring Reports (AMRs)</i>	1 March of each year
§ 3	<i>Leachate Seep Reporting</i>	Immediately upon Discovery of Seepage (<i>staff notification</i>) Within 7 Days (<i>written report</i>)
§ 4	<i>Annual Facility Inspection Reports</i>	1 October of each year
§ 5	<i>Major Storm Reporting</i>	Immediately after Damage Discovery (<i>staff notification</i>) Within 14 Days of Completing Repairs (<i>written report, photos</i>)
§ 6	<i>Survey and Iso-Settlement Mapping</i>	Within 60 days of Conducting the Iso-Settlement Survey (see Section D.6 for the required survey frequency)
§ 7	<i>Financial Assurances Reports</i>	1 June of each year
§ 8	<i>Water Quality Protection Standard Reports</i>	Proposed Revisions (excluding Concentration Limits)

1. **Semiannual Monitoring Reports (SMRs)** — The Discharger shall submit SMRs on 1 September (1 January to 30 June reporting period) and 1 March (1 July to 31 December reporting period). 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 (see Section A of this MRP).
 - b. Map(s)/aerial photograph(s) depicting locations of all observation stations and 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 Sections B and D of this MRP)
 - d. For each groundwater monitoring point referenced in the SMR:
 - i. The time each water level measurement was taken;
 - ii. The type of pump or other device used to purge and sample the well, along with the pump intake level relative to the well screen interval;
 - iii. The groundwater purging method and rate;
 - iv. The equipment and methods used for monitoring pH, temperature, and electrical conductivity during purging, and the results of such monitoring;
 - v. Methods for disposing of purge water; and
 - vi. The type of device used for sampling, if different than the method 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.
 - f. In the event of a verified exceedance of Concentration Limit(s), any actions taken per Section J of the SPRRs (*Response to Release*) to expand the scope of Corrective Action Monitoring (Section C of this MRP) to enhance groundwater monitoring of constituent(s) for which Concentration Limit exceedance(s) have been observed.

- 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 centimeters (excluding the leachate sump), and information about the required notification and corrective action in Section E.13 of the SPRRs (*Standard Facility Specifications*).
 - i. Summaries of all visual inspections conducted per Section D.3. 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 per Section G.26. through G.29. of the SPRRs (*Standard Closure and Post-Closure Maintenance Specifications*).
 - k. Laboratory reports for all results collected for the purpose of evaluating compliance with this MRP and the WDRs Order.
- 2. Annual Monitoring Reports (AMRs)**—The Discharger presents WRND groundwater data and remedy performance evaluation data in their OU-5 annual reports and other deliverables submitted for the Aerojet Superfund Site. Accordingly, the AMRs required herein focus on the observations and monitoring required by this MRP. On 1 March of each year,³ the Discharger shall submit an AMR containing following materials and information:
- a. In tabulated format, all monitoring data for which annual reporting is required under this MRP.
 - 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.⁴

³ The Annual Monitoring Report may be combined with the Semiannual Monitoring Report for 1 July through 31 December of the same year, provided that the combination is clearly indicated in the title.

⁴ Each graph shall contain individual data points (not mean values) and be appropriately scaled to accurately depict statistically significant trends or variations in water quality.

- c. An evaluation of monitoring parameters with regard to the cation/anion balance, including graphical representations 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, quarterly hydrographs showing the elevation of groundwater with respect to the well 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 is 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 D.
 - j. Annual updates to the Concentrations Limits, as required by Section B.4.g. of this MRP.
 - l. The following monthly and annual information with respect to leachate generated by the AWCU:
 - i. Total volume of leachate generated;
 - ii. Volume applied (returned) to AWCU for dust-control purposes;
 - iii. Volume exported offsite for treatment and/or disposal; and
 - iv. Identification of all offsite facilities receiving leachate.
- 3. Leachate Seep Reporting** — Upon discovery of seepage from any disposal area within the Facility, the Discharger shall immediately notify the

Central Valley Water Board via telephone or email; and within seven days, submit a written report with the following information:

- a. Map(s) depicting the location(s) of seepage;
 - b. Estimated flow rate(s);
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Monitoring Parameters in Table (*Physical Parameters*) and Table (*Constituent Parameters*), and an estimated date that the results will be submitted to the Central Valley Water Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
- 4. Annual Facility Inspection Report** — By 1 October, the Discharger shall submit a report with results of the Annual Facility Inspection per Section D.4. The report shall discuss any repair measures implemented, any preparations for winter, and include photographs of any problem areas and repairs. If the annual inspection is performed and repairs are completed prior to September 1, the annual inspection reporting may be included in the Semiannual Monitoring Report due September 1 of each year.
- 5. Major Storm Event Reports** — Immediately following each post-storm inspection described in Section D.5., 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 D.6. (Title 27, § 21090, subd. (e).) The Discharger shall conduct an iso-settlement survey and produce the associated map(s) initially upon final closure of any portion of a landfill waste management unit, biennially for the following ten years, and then every five years thereafter.
- 7. Financial Assurances Report** — By 1 June of each year, the Discharger shall submit a copy of the annual financial assurances report due to the California Department of Resources Recycling and Recovery (CalRecycle) that updates the financial assurances for closure, post-closure

maintenance, and corrective action. (See Requirement F.3. of the WDRs Order.)

8. **Water Quality Protection Standard Report** — Any proposed changes⁵ to the Water Quality Protection Standard (WQPS) components (§ B.4.), other than periodic update of the Concentration Limits, shall be submitted in a WQPS Report for review and approval. The report shall be certified by a licensed professional, 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, surface water 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 within the uppermost zone(s);
 - d. **Statistical Method for Concentration Limits** — A proposed statistical method for calculating Concentration Limits for Monitoring Parameters and Five-Year COCs detected in at least 10 percent of the background data (naturally-occurring constituents) using a statistical procedure from Title 27 section 20415, subdivisions (e)(8)(A)-(D) or (e)(8)(E); and
 - e. **Retesting Procedure** — A retesting procedure to confirm or deny measurably significant evidence of a release (Title 27, §§ 20415, subd. (e)(8)(E), 20420, subd. (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:

⁵ If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to onsite waste management activities, the Discharger may request modification of the WQPS.

- 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** — Except as expressly provided otherwise, 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) (<https://geotracker.waterboards.ca.gov>) including the laboratory analysis results in electronic data format (EDF). After uploading a report and laboratory analysis results in EDF format, the Discharger shall notify Central Valley Water Board staff via email. The following information shall be included in the body of the email:

Attention:	Site Cleanup Program / Title 27
Report Title:	[Title of Report]
GeoTracker Upload ID:	[Identification Number]
Facility Name:	White Rock North Dump and Aerojet Waste Consolidation Unit
County:	Sacramento County
CIWQS Place ID:	5A34NC00106

- 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 and this MRP.
- iii. **Non-Detections / Reporting Limits** — Any analytical result equal to or greater than the MDL but less than the PQL shall be reported and flagged as an estimated value. Only analytical results below the MDL shall be reported as non-detections.

- iv. **Units** — Absent specific justification, all monitoring data shall be reported in the units specified herein.
 - c. **Compliance with SPRRs** — All reports submitted under this MRP shall comply with applicable provisions of the SPRRs, including those in Section I (*Standard Monitoring Specifications*) and Section J (*Response to a Release*).
 - d. **Additional Requirements for Monitoring Reports** — Every monitoring report submitted under this MRP (e.g., SMRs, AMRs) 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.
- F. 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 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).

LIST OF ATTACHMENTS

Attachment A—Volatile Organic Compounds, Short-List
Attachment B—Dissolved Inorganics (Five-Year COCs)
Attachment C—Volatile Organic Compounds, Extended List (Five-Year COCs)
Attachment D—Semi-Volatile Organic Compounds (Five-Year COCs)
Attachment E—Chlorophenoxy Herbicides (Five-Year COCs)
Attachment F—OrganoPhosphorous Compounds (Five-Year COCs)
Attachment G—Transfer Material Compounds

ENFORCEMENT

If, in the opinion of the Executive Officer, the Discharger fail 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) (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

ATTACHMENT A—VOLATILE ORGANIC COMPOUNDS, SHORT-LIST

USEPA Method 8260B (Unless stated otherwise)

Constituent	GeoTracker Code
Acetone	ACE
Acrylonitrile.....	ACRAMD
Benzene	BZ
Bromochloromethane	BRCLME
Bromodichloromethane	BDCME
Bromoform (Tribromomethane).....	TBME
Carbon disulfide	CDS
Carbon tetrachloride.....	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride).....	CLEA
Chloroform (Trichloromethane)	TCLME
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2 Dibromo 3 chloropropane (DBCP).....	DBCP
1,2 Dibromoethane (Ethylene dibromide; EDB)	EDB
o Dichlorobenzene (1,2 Dichlorobenzene)	DCBZ12
m Dichlorobenzene (1,3 Dichlorobenzene)	DCBZ13
p Dichlorobenzene (1,4 Dichlorobenzene)	DCBZ14
trans 1,4 Dichloro 2 butene	DCBE14T
Dichlorodifluoromethane (CFC-12).....	FC12
1,1 Dichloroethane (Ethylidene chloride).....	DCA11
1,2 Dichloroethane (Ethylene dichloride).....	DCA12
1,1 Dichloroethylene (1,1 Dichloroethene; Vinylidene chloride)	DCE11
cis 1,2 Dichloroethylene (cis 1,2 Dichloroethene)	DCE12C
trans 1,2 Dichloroethylene (trans 1,2 Dichloroethene)	DCE12T
1,2 Dichloropropane (Propylene dichloride)	DCPA12
cis 1,3 Dichloropropene.....	DCP13C
trans 1,3 Dichloropropene	DCP13T

Di-isopropylether (DIPE)	DIPE
Ethanol	ETHANOL
Ethyltertiary butyl ether.....	ETBE
Ethylbenzene	EBZ
2 Hexanone (Methyl butyl ketone).....	HXO2
Hexachlorobutadiene	HCBU
Methyl bromide (Bromomethene).....	BRME
Methyl chloride (Chloromethane)	CLME
Methylene bromide (Dibromomethane).....	DBMA
Methylene chloride (Dichloromethane).....	DCMA
Methyl ethyl ketone (MEK: 2 Butanone).....	MEK
Methyl iodide (Iodomethane).....	IME
Methyl t-butyl ether.....	MTBE
4-Methyl 2 pentanone (Methyl isobutylketone).....	MIBK
Styrene.....	STY
Tertiary amyl methyl ether.....	TAME
Tertiary butyl alcohol	TBA
1,1,1,2 Tetrachloroethane	TC1112
1,1,2,2 Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	PCE
Toluene	BZME
1,1,1 Trichloroethane (Methylchloroform).....	TCA111
1,1,2 Trichloroethane	TCA112
Trichloroethylene (Trichloroethene)	TCE
Trichlorofluoromethane (CFC 11).....	FC11
1,2,3 Trichloropropane per Method SRL-524M-TCP.....	TCPR123
Vinyl acetate.....	VA
Vinyl chloride.....	VC
Xylenes	XYLENES

ATTACHMENT B—DISSOLVED INORGANICS (FIVE-YEAR COCS)

**Constituent /
Analytical MethodGeoTracker Code**

Aluminum, USEPA Method 6010 AL	Zinc, USEPA Method 6010 ZN
Antimony, USEPA Method 7041 SB	Iron, USEPA Method 6010 FE
Barium, USEPA Method 6010 BA	Manganese, USEPA Method 6010 MN
Beryllium, USEPA Method 6010 BE	Arsenic, USEPA Method 7062 AS
Cadmium, USEPA Method 7131A..... CD	Lead, USEPA Method 7421 PB
Chromium, USEPA Method 6010 CR	Mercury, USEPA Method 7470A..... HG
Cobalt, USEPA Method 6010 CO	Nickel, USEPA Method 7521 NI
Copper, USEPA Method 6010 CU	Selenium, USEPA Method 7742 SE
Silver, USEPA Method 6010 AG	Thallium, USEPA Method 7841 TL
Tin, USEPA Method 6010 SN	Cyanide, USEPA Method 9010C..... CN
Vanadium, USEPA Method 6010 V	Sulfide, USEPA Method 9030Bx..... S

**ATTACHMENT C—VOLATILE ORGANIC COMPOUNDS, EXTENDED LIST
(FIVE-YEAR COCS)**

**USEPA Method 8260,
Extended List**

Constituent	GeoTracker Code
Acetone	ACE
Acetonitrile (Methyl cyanide)	ACCN
Acrolein	ACRL
Acrylonitrile.....	ACRAMD
Allyl chloride (3 Chloropropene).....	CLPE3
Benzene	BZ
Bromochloromethane (Chlorobromomethane).....	BRCLME
Bromodichloromethane (Dibromochloromethane).....	DBCME
Bromoform (Tribromomethane).....	TBME
Carbon disulfide	CDS
Carbon tetrachloride.....	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride).....	CLEA
Chloroform (Trichloromethane)	TCLME
Chloroprene	CHLOROPRENE
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2 Dibromo 3 chloropropane (DBCP).....	DBCP
1,2 Dibromoethane (Ethylene dibromide; EDB)	EDB
o Dichlorobenzene (1,2 Dichlorobenzene)	DCBZ12
m Dichlorobenzene(1,3 Dichlorobenzene)	DCBZ13
p Dichlorobenzene (1,4 Dichlorobenzene)	DCBZ14
trans 1,4 Dichloro 2 butene	DCBE14T
Dichlorodifluoromethane (CFC 12).....	FC12
1,1 Dichloroethane (Ethylidene chloride).....	DCA11

1,2 Dichloroethane (Ethylene dichloride).....	DCA12
1,1 Dichloroethylene (1, 1 Dichloroethene; Vinylidene chloride)	DCE11
cis 1,2 Dichloroethylene (cis 1,2 Dichloroethene).....	DCE12C
trans 1,2 Dichloroethylene (trans 1,2 Dichloroethene)	DCE12T
1,2 Dichloropropane (Propylene dichloride)	DCPA12
1,3 Dichloropropane (Trimethylene dichloride).....	DCPA13
2,2 Dichloropropane (Isopropylidene chloride).....	DCPA22
1,1 Dichloropropene	DCP11
cis 1,3 Dichloropropene.....	DCP13C
trans 1,3 Dichloropropene	DCP13T
Di-isopropylether (DIPE)	DIPE
Ethanol	ETHANOL
Ethyltertiary butyl ether.....	ETBE
Ethylbenzene	EBZ
Ethyl methacrylate.....	EMETHACRY
Hexachlorobutadiene	HCBU
2 Hexanone (Methyl butyl ketone).....	HXO2
Isobutyl alcohol	ISOBTOH
Methacrylonitrile	METHACRN
Methyl bromide (Bromomethane).....	BRME
Methyl chloride (Chloromethane)	CLME
Methyl ethyl ketone (MEK; 2 Butanone).....	MEK
Methyl iodide (Iodomethane).....	IME
Methyl t-butyl ether.....	MTBE
Methyl methacrylate	MMTHACRY
4 Methyl 2 pentanone (Methyl isobutyl ketone)	MIBK
Methylene bromide (Dibromomethane).....	DBMA
Methylene chloride (Dichloromethane).....	DCMA
Naphthalene.....	NAPH
Propionitrile (Ethyl cyanide).....	PACN
Styrene.....	STY

Tertiary amyl methyl ether	TAME
Tertiary butyl alcohol	TBA
1,1,1,2 Tetrachloroethane	TC1112
1,1,1,2 Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)	PCE
Toluene	BZME
1,2,4 Trichlorobenzene.....	TCB124
1,1,1 Trichloroethane (Methylchloroform).....	TCA111
1,1,2 Trichloroethane	TCA112
Trichloroethylene (Trichloroethene; TCE)	TCE
Trichlorofluoromethane (CFC 11).....	FC11
1,2,3 Trichloropropane	TCPR123
Vinyl acetate.....	VA
Vinyl chloride (Chloroethene).....	VC
Xylene (total).....	XYLENES

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

**USEPA Methods 8270C or 8270D
(Base, Neutral & Acid Extractables)**

Constituent	GeoTracker Code
Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2 Acetylaminofluorene (2 AAF)	ACAMFL2
Aldrin	ALDRIN
4 Aminobiphenyl.....	AMINOBP4
Anthracene.....	ANTH
Benzo[a]anthracene (Benanthracene).....	BZAA
Benzo[b]fluoranthene	BZBF
Benzo[k]fluoranthene	BZKF
Benzo[g,h,i]perylene.....	BZGHIP
Benzo[a]pyrene	BZAP
Benzyl alcohol.....	BZLAL
Bis(2 ethylhexyl) phthalate	BIS2EHP
alpha BHC.....	BHCALPHA
beta BHC.....	BHCBETA
delta BHC.....	BHCDELTA
gamma BHC (Lindane).....	BHCGAMMA
Bis(2 chloroethoxy) methane.....	BECEM
Bis(2 chloroethyl) ether (Dichloroethyl ether)	BIS2CEE
Bis(2 chloro 1 methylethyl) ether (Bis(2 chloroisopropyl) ether; DCIP)	BIS2CIE
4 Bromophenyl phenyl ether	BPPE4
Butyl benzyl phthalate (Benzyl butyl phthalate).....	BBP
Chlordane.....	CHLORDANE
p Chloroaniline	CLANIL4
Chlorobenzilate	CLBZLATE

p Chloro m cresol (4 Chloro 3 methylphenol)	C4M3PH
2 Chloronaphthalene	CNPH2
2 Chlorophenol	CLPH2
4 Chlorophenyl phenyl ether	CPPE4
Chrysene	CHRYSENE
o Cresol (2 methylphenol)	MEPH2
m Cresol (3 methylphenol)	MEPH3
p Cresol (4 methylphenol)	MEPH4
4,4' DDD	DDD44
4,4' DDE	DDE44
4,4' DDT	DDT44
Diallate	DIALLATE
Dibenz[a,h]anthracene	DBAHA
Dibenzofuran	DBF
Di n butyl phthalate	DNBP
3,3' Dichlorobenzidine	DBZD33
2,4 Dichlorophenol	DCP24
2,6 Dichlorophenol	DCP26
Dieldrin	DIELDRIN
Diethyl phthalate	DEPH
p (Dimethylamino) azobenzene	PDMAABZ
7,12 Dimethylbenz[a]anthracene	DMBZA712
3,3' Dimethylbenzidine	DMBZD33
2,4 Dimehtylphenol (m Xylenol)	DMP24
Dimethyl phthalate	DMPH
m Dinitrobenzene	DNB13
4,6 Dinitro o cresol (4,6 Dinitro 2 methylphenol)	DN46M
2,4 Dinitrophenol	DNP24
2,4 Dinitrotoluene	DNT24
2,6 Dinitrotoluene	DNT26
Di n octyl phthalate	DNOP

Diphenylamine	DPA
Endosulfan I	ENDOSULFANA
Endosulfan II	ENDOSULFANB
Endosulfan sulfate.....	ENDOSULFANS
Endrin.....	ENDRIN
Endrin aldehyde	ENDRINALD
Ethyl methanesulfonate.....	EMSULFN
Famphur.....	FAMPHUR
Fluoranthene	FLA
Fluorene	FL
Heptachlor.....	HEPTACHLOR
Heptachlor epoxide	HEPT-EPOX
Hexachlorobenzene	HCLBZ
Hexachlorocyclopentadiene	HCCP
Hexachloroethane	HCLEA
Hexachloropropene.....	HCPR
Indeno(1,2,3 c,d) pyrene	INP123
Isodrin	ISODRIN
Isophorone	ISOP
Isosafrole.....	ISOSAFR
Kepone.....	KEP
Methapyrilene.....	MTPYRLN
Methoxychlor.....	MTXYCL
3 Methylcholanthrene	MECHLAN3
Methyl methanesulfonate	MMSULFN
2 Methylnaphthalene	MTNPH2
1,4 Naphthoquinone	NAPHQ14
1 Naphthylamine	AMINONAPH1
2 Naphthylamine	AMINONAPH2
o Nitroaniline (2 Nitroaniline).....	NO2ANIL2
m Nitroaniline (3 Nitroaniline).....	NO2ANIL3

p Nitroaniline (4 Nitroaniline).....	NO2ANIL4
Nitrobenzene.....	NO2BZ
o Nitrophenol (2 Nitrophenol).....	NTPH2
p Nitrophenol (4 Nitrophenol).....	NTPH4
N Nitrosodi n butylamine (Di n butylNitrosamine).....	NNSBU
N Nitrosodiethylamine (Diethylnitrosamine).....	NNSE
N Nitrosodimethylamine (Dimethylnitrosamine).....	NNSM
N Nitrosodiphenylamine (Diphenylnitrosamine).....	NNSPH
N Nitrosodipropylamine (N Nitroso N dipropylamine; Di n propylNitrosamine).....	NNSPR
N Nitrosomethylethylamine (Methylethylnitrosamine).....	NNSME
N Nitrosopiperidine.....	NNSPPRD
N Nitrosospyrrolidine.....	NNSPYRL
5 Nitro o toluidine.....	TLDNONT5
Pentachlorobenzene.....	PECLBZ
Pentachloronitrobenzene (PCNB).....	PECLNO2BZ
Pentachlorophenol.....	PCP
Phenacetin.....	PHNACTN
Phenanthrene.....	PHAN
Phenol.....	PHENOL
p Phenylenediamine.....	ANLNAM4
Polychlorinated biphenyls (PCBs; Aroclors).....	PCBS
Pronamide.....	PRONAMD
Pyrene.....	PYR
Safrole.....	SAFROLE
1,2,4,5 Tetrachlorobenzene.....	C4BZ1245
2,3,4,6 Tetrachlorophenol.....	TCP2346
o Toluidine.....	TLDNO
Toxaphene.....	TOXAP
2,4,5 Trichlorophenol.....	TCP245
0,0,0 Triethyl phosphorothioate.....	TEPTH
sym Trinitrobenzene.....	TNB135

ATTACHMENT E—CHLOROPHENOXY HERBICIDES (FIVE-YEAR COCS)

USEPA Method 8151A

Constituent	GeoTracker Code
2,4 D (2,4 Dichlorophenoxyacetic acid).....	24D
Dinoseb (DNBP; 2 sec Butyl 4,6 dinitrophenol).....	DINOSEB
Silvex (2,4,5 Trichlorophenoxypropionic acid; 2,4,5 TP)	SILVEX
2,4,5 T (2,4,5 Trichlorophenoxyacetic acid)	245T

ATTACHMENT F—ORGANOPHOSPHOROUS COMPOUNDS (FIVE-YEAR COCS)

USEPA Method 8141B

Constituent	GeoTracker Code
Atrazine	ATRAZINE
Chlorpyrifos	CLPYRIFOS
0,0 Diethyl 0 2 pyrazinyl phosphorothioate (Thionazin).....	ZINOPHOS
Diazinon	DIAZ
Dimethoate	DIMETHAT
Disulfoton	DISUL
Methyl parathion (Parathion methyl).....	PARAM
Parathion	PARAE
Phorate.....	PHORATE
Simazine	SIMAZINE

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT
SACRAMENTO COUNTY**ATTACHMENT G—TRANSFER MATERIAL COMPOUNDS**

Constituent Name	Units	Geotracker Code	Test Method
Anions			
Cyanide	µg/L	CN	USEPA 90114
Fluoride	mg/L	F	USEPA 300.0
Nitrite as N	mg/L	NO2	USEPA 300.0
Perchlorate	µg/L	PCATE	USEPA 314.0
Dioxins			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	OCDD	USEPA 8290
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	HPCDD1234678	USEPA 8290
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	HXCDD123478	USEPA 8290
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	HXCDD123678	USEPA 8290
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	HXCDD123789	USEPA 8290
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	PECDD12378	USEPA 8290
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	TCDD2378	USEPA 8290
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	HPCDD	USEPA 8290
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	HXCDD	USEPA 8290
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	PECDD	USEPA 8290
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	TCDD	USEPA 8290
Explosives			
Nitroguanidine	µg/L	NGURADIN	USEPA 8330
Furans			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	OCDF	USEPA 8290
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	HPCDF1234678	USEPA 8290
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	HPCDF1234789	USEPA 8290

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT

SACRAMENTO COUNTY

Constituent Name	Units	Geotracker Code	Test Method
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	HXCDF123478	USEPA 8290
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	HXCDF123678	USEPA 8290
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	HXCDF123789	USEPA 8290
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	PECDF12378	USEPA 8290
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	HXCDF234678	USEPA 8290
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	PECDF23478	USEPA 8290
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	TCDF2378	USEPA 8290
Total heptachlorodibenzofuran (HpCDF)	pg/L	HPCDF	USEPA 8290
Total hexachlorodibenzofuran (HxCDF)	pg/L	HXCDF	USEPA 8290
Total pentachlorodibenzofuran (PeCDF)	pg/L	PECDF	USEPA 8290
Total tetrachlorodibenzofuran (TCDF)	pg/L	TCDF	USEPA 8290
Metals			
Aluminum	µg/L	AL	USEPA 6010
Antimony	µg/L	SB	USEPA 7041
Arsenic	µg/L	AS	USEPA 7062
Barium	µg/L	BA	USEPA 6010
Beryllium	µg/L	BE	USEPA 6010
Boron	µg/L	B	USEPA 200.7
Cadmium	µg/L	CD	USEPA 7131A
Chromium	µg/L	CR	USEPA 6010
Chromium III (trivalent)	µg/L	CR3	USEPA 6010 or 6020
Chromium VI (hexavalent)	µg/L	CR6	USEPA 7196A or 7199
Cobalt	µg/L	CO	USEPA 6010
Copper	µg/L	CU	USEPA 6010
Iron	µg/L	FE	USEPA 6010
Lead	µg/L	PB	USEPA 7421
Lithium	µg/L	LI	USEPA 200.7

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT
SACRAMENTO COUNTY

Constituent Name	Units	Geotracker Code	Test Method
Manganese	µg/L	MN	USEPA 6010
Mercury	µg/L	HG	USEPA 7470A
Molybdenum	µg/L	MO	USEPA 200.7
Nickel	µg/L	NI	USEPA 7521
Selenium	µg/L	SE	USEPA 7742
Silver	µg/L	AG	USEPA 6010
Strontium	µg/L	SR	USEPA 6010 or 6020
Thallium	µg/L	TL	USEPA 7841
Tin	µg/L	SN	USEPA 6010
Titanium	µg/L	TI	USEPA 6010 or 6020
Vanadium	µg/L	V	USEPA 6010
Zinc	µg/L	ZN	USEPA 6010
PCBs			
2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	µg/L	PCB136	USEPA 1668
2,3,3',4,6-Pentachlorobiphenyl (PCB 109)	µg/L	PCB109	USEPA 1668
Aroclor 1248	µg/L	PCB1248	USEPA 8082
Aroclor 1254	µg/L	PCB1254	USEPA 8082
Aroclor 1260	µg/L	PCB1260	USEPA 8082
Total PCBs	µg/L	TOTPCB	USEPA 8082
Pesticides			
4,4'-DDD	µg/L	DDD44	USEPA 8270C or 8270D
4,4'-DDE	µg/L	DDE44	USEPA 8270C or 8270D
4,4'-DDT	µg/L	DDT44	USEPA 8270C or 8270D
Aldrin	µg/L	ALDRIN	USEPA 8270C or 8270D
alpha-BHC/HCH	µg/L	BHCALPHA	USEPA 8270C or 8270D
alpha-Chlordane	µg/L	CHLORDANEA	USEPA 8081A
beta-BHC/HCH	µg/L	BHCBETA	USEPA 8270C or 8270D

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT
SACRAMENTO COUNTY

Constituent Name	Units	Geotracker Code	Test Method
delta-BHC/HCH	µg/L	BHCDELTA	USEPA 8270C or 8270D
Dieldrin	µg/L	DIELDRIN	USEPA 8270C or 8270D
Endosulfan I (Alpha)	µg/L	ENDOSULFANA	USEPA 8270C or 8270D
Endosulfan II (Beta)	µg/L	ENDOSULFANB	USEPA 8270C or 8270D
Endrin	µg/L	ENDRIN	USEPA 8270C or 8270D
gamma-BHC/HCH (Lindane)	µg/L	BHCGAMMA	USEPA 8270C or 8270D
gamma-Chlordane	µg/L	CHLORDANEG	USEPA 8081A
Heptachlor	µg/L	HEPTACHLOR	USEPA 8270C or 8270D
Heptachlor epoxide	µg/L	HEPT-EPOX	USEPA 8270C or 8270D
Pendimethalin	µg/L	PENOXALIN	USEPA 8081A
SVOCs			
1,2-Diphenylhydrazine	µg/L	DPHY12	USEPA 8270C
10-10'-Oxybis-10H-phenoxarsine	µg/L	1010OXYRSIN	HPLC
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	µg/L	PCB167	USEPA 1668
2-Methylnaphthalene	µg/L	MTNPH2	USEPA 8270C or 8270D
3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	µg/L	PCB169	USEPA 1668
Anthracene	µg/L	ANTH	USEPA 8270C or 8270D
Benzo(a)anthracene	µg/L	BZAA	USEPA 8270C or 8270D
Benzo(a)pyrene	µg/L	BZAP	USEPA 8270C or 8270D
Benzo(b)fluoranthene	µg/L	BZBF	USEPA 8270C or 8270D
Benzo(b)fluoranthene/Benzo(k)fluoranthene	µg/L	BZBFBZKF	USEPA 8270C

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SACRAMENTO COUNTY

Constituent Name	Units	Geotracker Code	Test Method
Benzo(g,h,i)perylene	µg/L	BZGHIP	USEPA 8270C or 8270D
Benzo(k)fluoranthene	µg/L	BZKF	USEPA 8270C or 8270D
Bis(2-ethylhexyl)phthalate	µg/L	BIS2EHP	USEPA 8270C or 8270D
Chrysene	µg/L	CHRYSENE	USEPA 8270C or 8270D
Dibutyl phthalate	µg/L	DNBP	USEPA 8270C or 8270D
Diethyl ester hexanedioic acid A	µg/L	See Note Below	USEPA 8270C (TIC)
Fluoranthene	µg/L	FLA	USEPA 8270C or 8270D
Fluorene	µg/L	FL	USEPA 8270C or 8270D
Hexadecanoic acid	µg/L	PALMA	USEPA 8270C (TIC)
Indeno(1,2,3-cd)pyrene	µg/L	INP123	USEPA 8270C or 8270D
Naphthalene	µg/L	NAPH	USEPA 8260B
n-Nitrosodimethylamine	µg/L	NNSM	USEPA 8270C or 8270D
Phenanthrene	µg/L	PHAN	USEPA 8270C or 8270D
Phenol	µg/L	PHENOL	USEPA 8270C or 8270D
Pyrene	µg/L	PYR	USEPA 8270C or 8270D
Total Petroleum Hydrocarbons (TPH)			
Diesel fuel	mg/L	PHCD	USEPA 8015
Diesel Range Organics (C10-C24)	mg/L	DROC10C24	USEPA 8015
Extractable Petroleum Hydrocarbons (C10-C30)	mg/L	TPHC10C30	USEPA 8015
Kerosene	mg/L	KEROSENE	USEPA 8015
Oil and grease	mg/L	OILGREASE	Visual
Total Petroleum Hydrocarbons	mg/L	PHC	USEPA 8015

AEROJET ROCKETDYNE, INC.

WHITE ROCK NORTH DUMP AND AEROJET WASTE CONSOLIDATION UNIT

SACRAMENTO COUNTY

Constituent Name	Units	Geotracker Code	Test Method
Total Petroleum Hydrocarbons (C16-C36) Motor Oil	mg/L	MOILC16C36	USEPA 8015
Total Petroleum Hydrocarbons (C24-C36) Motor Oil	mg/L	MOILC24C36	USEPA 8015
Total Recoverable Petroleum Hydrocarbons	mg/L	TRPH	USEPA 8015
VOCs			
1,2-Dichloroethene (total)	µg/L	DCE12TOT	USEPA 8260B
Bromodichloromethane	µg/L	BDCME	USEPA 8260B
Freon	µg/L	See Note Below	USEPA 8260B
Freon 113	µg/L	FC113	USEPA 8260B
Methylene chloride	µg/L	MTLNCL	USEPA 8260B
Octadecanoic acid	µg/L	OCDNA	USEPA 8260B

Note: Geotracker Electronic Data Submittal currently does not have a Geotracker Code assigned to Dioctyl ester hexanedioic acid A and Freon. The Discharger shall apply for and receive Geotracker codes for these two compounds prior to performing background water quality sampling for the AWCU.