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Waste Discharge Requirements Order R5-2022-0060



ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	ADOPTED
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Sierra Pacific Industries
Facility:	Sierra Pacific Industries - Martell Division Facility
Address:	¼ mile southeast of the intersection of Ampine-Fibreform Road and Industry Blvd., Martell, CA, 95654
County:	Amador County
Parcel Nos.:	44-010-123-00, 44-010-129-00
GeoTracker ID:	L10003659506
Prior Order(s):	76-212, 87-120, 98-094, R5-2009-0110, R5-2014-0025

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 14 October 2022.

PATRICK PULUPA,
Executive Officer

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GLOSSARY

ADAL	Ash Disposal Area Landfill
ADC	Alternative Daily Cover
Antidegradation Policy	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
Basin Plan	<i>Water Quality Control Plan for the Sacramento and San Joaquin River Basins</i>
bgs	Below Ground Surface
BOD	Biochemical Oxygen Demand
C&D	Construction and Demolition Materials
CalRecycle	California Department of Resources Recovery and Recycling
CAP	Corrective Action Program
CAMP	Corrective Action Monitoring Program
CEQA	California Environmental Quality Act
CEQA Guidelines	California Code of Regulations, Title 14, section 15000 et seq.
C.F.R.	Code of Federal Regulations
COCs	Constituents of Concern
CPMP	Closure and Post-Closure Maintenance Plan
CQA	Construction Quality Assurance
Designated Waste	(a) Hazardous Waste subject to variance from management requirements per Health and Safety Code section 25143; and (b) Nonhazardous Waste containing pollutants that, under ambient conditions, could be released in concentrations exceeding applicable WQOs, or that could reasonably be expected to affect beneficial uses of water. (Wat. Code, § 13173.)
DMP	Detection Monitoring Program

DTSC	.....	California Department of Toxic Substances Control
DWR	.....	California Department of Water Resources
EC	.....	Electrical Conductivity
EIR	.....	Environmental Impact Report
EMP	.....	Evaluation Monitoring Plan
FEMA	.....	Federal Emergency Management Agency
GCL	.....	Geosynthetic Clay Liner
Hazardous Waste	.....	Wastes which, pursuant to Title 22, section 66261.3 et seq., are required to be managed in accordance with Division 4.5 of Title 22. (Title 27, § 20164; Title 23, § 2521(a).)
HDPE	.....	High-Density Polyethylene
JTD	.....	Joint Technical Document
LCRS	.....	Leachate Collection and Removal System
LEA	.....	Local Enforcement Agency
Leachate	.....	Liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. Leachate includes any constituents extracted from the waste and dissolved or suspended in the fluid. (Title 27, § 20164.)
LB	.....	Leachate Basin
LFG	.....	Landfill Gas
MCE	.....	Maximum Credible Earthquake
MDB&M	.....	Mount Diablo Base and Meridian
MDL	.....	Method Detection Limit
µg/L	.....	Micrograms per Liter
mg/L	.....	Milligrams per Liter
MPE	.....	Maximum Probable Earthquake

msl	Mean Sea Level
MRP	Monitoring and Reporting Program
MSW	Municipal Solid Waste regulated under 40 C.F.R. part 258
MSWLF	Municipal Solid Waste Landfill
MW	Monitoring Well
SPRRs	Standard Provisions and Reporting Requirements
Subtitle D	USEPA-promulgated MSW regulations under RCRA (see 40 C.F.R. part 258)
RCRA	Resource Conservation and Recovery Act
ROWD	Report of Waste Discharge
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
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WDRs	Waste Discharge Requirements
WMU	Waste Management Unit
WQOs	Water Quality Objectives
WQPS	Water Quality Protection Standard
WWL	Wood Waste Landfill

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. Sierra Pacific Industries–Martell Division (Discharger) owns and operates the Martell Division Facility (Facility), which is located approximately 1 mile west of the city of Martell in Amador County, in the North half of Section 19, Township 6 North, Range 11 East, Mount Diablo Base and Meridian (MDB&M). The Facility is a former lumber mill, former wood manufacturing operations, a former clean closed fungicide dip tank, an unlined wood waste landfill, an unlined leachate basin, a closed unlined ash disposal landfill, a former cogeneration clean closed fuel stockpile area, and undeveloped land. The Facility's location is depicted on the Site Location Map in **Attachment A**.
2. The Facility is situated on a 63.57-acre property comprised of Assessor's Parcel Numbers (APNs) 44-010-123-00 and 44-010-129-00. The address associated with the Facility is ¼ mile southeast of the intersection of Ampine-Fibreform Road. and Industry Blvd , Martell, California 95654.
3. WDRS Order R5-2014-0025 is being revised for the following significant reasons:
 - a. WDRS Order R5-2014-0025 required certification of clean closure of the Wood Waste Landfill and the Leachate Basin by 31 January 2022. The Discharger submitted documentation on 13 September 2018 and on 30 November 2021 requesting an extension of the clean closure date in R5-2014-0025 due to inaccurate information (see Information Sheet Finding 14) related to how much wood waste existed in the wood waste landfill at the time the WDRs Order was adopted.
 - b. The Wood Waste Landfill and the Leachate Basin unit classification has been revised based on Title 27 requirements (See Findings 17 and 18).
 - c. The WDRs require revised financial assurances estimates and financial assurance mechanisms for clean closure of the Wood Waste Landfill, the Ash Disposal Area Landfill, and the Leachate Basin.
 - d. The Discharger's last Report of Waste Discharge is over ten years old. On 13 January 2022 Regional Water Board staff requested that the Discharger submit a revised/amended ROWD by 24 February 2022 which would provide additional information about the facility, its operations, schedule for clean closure of the Wood Waste Landfill and Leachate Basin (Updated Clean

Closure Plan) as well as updated information on the cost estimates and financial assurance mechanisms required to ensure that the facility will comply with its WDRs and Title 27 requirements.

- e. The Discharger's 7 March 2022 Report of Waste Discharge included plans to clean close the previously closed Ash Disposal Area Landfill in conjunction with its revised Wood Waste Landfill and Leachate Basin clean closure plan.
4. As the Facility's owner and operator, the Discharger is responsible for compliance with this Order, which prescribes Waste Discharge Requirements (WDRs) regulating construction, monitoring, closure and post-closure maintenance of the Waste Management Units (WMUs) listed in **Table 1**.

**Table 1—Summary of Waste Management Units (WMUs)
Permitted under Order**

Unit	Type	Class	Size	Status
Ash Disposal Area Landfill	Landfill	Class II	5.3 Acres	Clean Closure Pending
Wood Waste Landfill	Landfill	Unclassified	15.6 Acres	Clean Closure Pending
Leachate Basin	Surface Impoundment	Unclassified	2.5 Acres	Clean Closure Pending

See Glossary for definitions of terms and abbreviations in table.

Materials Accompanying Order

5. The following materials are attached to this Order, and incorporated herein:

ATTACHMENT A—SITE LOCATION MAP
ATTACHMENT B—SITE MAP
ATTACHMENT C—SITE DRAINAGE PATTERNS
ATTACHMENT D—MONITORING LOCATIONS
ATTACHMENT E—WWL, LEACHATE BASIN, AND ADA LANDFILL CLEAN CLOSURE SCHEDULE
ATTACHMENT F—WATER SUPPLY WELL MAP
ATTACHMENT G—INTERMEDIATE COVER SURVEY AND REPAIR PLAN
ATTACHMENT H—ISO-CONCENTRATIONS OF CONSTITUENTS OF CONCERN

Standard Provisions & Reporting Requirements for Industrial Facilities Regulated by Title 27, April 2016 Edition (SPRRs or Standard Provisions)

Information Sheet for Waste Discharge Requirements Order (Information Sheet)

6. This Order is also accompanied by the concurrently adopted **Monitoring & Reporting Program R5-2022-0060 (MRP)**, the provisions of which are incorporated as part of this Order. Each time the operative MRP is modified by the Central Valley Water Board or its Executive Officer, the revised version shall become the operative MRP (superseding the prior version) and be incorporated as part of this Order (i.e., in lieu of the prior version).
7. To the extent there are any material inconsistencies between the provisions of this Order, the operative MRP and the SPRRs, the provisions of this Order shall be controlling. However, to the extent a revised MRP contains new or different factual findings reflecting changed conditions or circumstances at the Facility, the revised MRP findings shall be controlling.
8. Additional information about the Facility is set forth in the **Information Sheet**, which is incorporated as part of these findings.

Facility

9. The property was operated as a sawmill from 1941 to 1997. Between 1941 and 1997, the facility was owned and operated by American Forest Products Company. Georgia-Pacific Corporation purchased the property in 1987. Georgia-Pacific informed the Central Valley Water Board in a 13 June 1997 letter that it had sold the property to the Discharger.
10. American Forest Products began lumber milling operations at the facility in 1941. Georgia-Pacific continued milling from 1987 through 1997. In 1972, when burning of excess wood waste was outlawed due to air pollution concerns, American Forest Products began its Wood Waste landfill operations by filling in a drainage swale with its wood waste. By 1976, American Forest Products was operating an on-site cogeneration facility that consumed most of the wood waste, but still discharged unsuitable wood waste to its Wood Waste Landfill. In 1976, the Central Valley Water Board required American Forest Products to submit a Report of Waste Discharge (ROWD) for the Wood Waste Landfill and the Board adopted Waste Discharge Requirements (WDRs) Order No. 76-212. Subsequently, based on a ROWD submitted by American Forest Products on 24 March 1987, the Central Valley Water Board adopted WDR Order 87-120 that permitted disposal of wood waste into the originally permitted area.

11. From 1969 to 1984, American Forest Products performed wood surface protection at the site using a dip tank located on a concrete pad inside a former metal walled lumber stacker building, located at the south end of the former sawmill adjacent to where a Lowe's store now exits (See Attachment B and Information Sheet Findings 26-29.) The former Dip Tank was closed, and several soil investigations and two soil excavation and removal activities were performed in the former dip tank area. In 1987, G-P excavated approximately 200 cubic yards of PCP and TeCP-impacted soil. This work was performed under the oversight of the California Department of Health Services and was documented in the report entitled *Report, Final Remedial Activities* (Dames & Moore, 1987). In August 1999, approximately 700 cubic yards of soil located beneath the former lumber stacker building were excavated in accordance with the *Soil Remediation Work Plan* (Kennedy/Jenks, 1998b). Based on the presence of chlorinated phenols, specifically PCP, at concentrations up to 150 micrograms per liter in samples collected in 2015, the former fungicide dip tank site regulated under the Central Valley Water Board's Site Cleanup Program is not eligible for closure at this time. Site Cleanup staff may request additional sampling which will be handled separately from these WDRs.
12. In its 22 March 1993 Clean Closure Plan, Georgia-Pacific stated that it had stopped accepting wood waste in 1987 and intended to clean close the Wood Waste Landfill. Georgia-Pacific began clean closure of the Wood Waste Landfill between 1993 and 1997. On 1 October 1997, the Discharger submitted a ROWD for the facility. The Central Valley Water Board adopted WDRs Order No. 98-094 on 17 April 1998.
13. Investigations on the former ash disposal area were performed in 1997 and 1998 to evaluate the depth of the deposited material and to characterize the composition of the material. Materials observed beneath a 1-foot layer of surface soil included wood debris, dark fine-grained material, rocks, and other debris present in a layer that was approximately 10 to 15 feet thick in the areas explored. Results of the investigations were presented in the 17 May 1999, Waste Characterization Report (KJC, 1999). An additional waste characterization investigation was performed in the former ash disposal area in August 2007 to evaluate whether the material would be considered hazardous waste (Geomatrix, 2008a). Samples collected from randomly generated locations and target depths were analyzed for metals, polynuclear aromatic hydrocarbons (PAHs), and dioxins and furans. Additionally, a citrate-buffer waste extraction test (WET) was performed on two samples and the resulting leachate was analyzed for metals. The 80 percent upper confidence levels (80% UCLs) of the mean of the concentration data were calculated for all applicable analytes. No individual fill

material or leachate analytical results or individual 80% UCLs exceeded hazardous waste thresholds. However, the Central Valley Water Board staff in a 17 March 2008 letter determined after review of the Waste Characterization Report (Geomatrix, 2008a), that the ash material was a designated waste. On 8 October 2009, the Central Valley Water Board issued Order No. R5-2009-0110 in which the waste in the Ash Disposal Area and the leachate in the Leachate Basin were classified as designated waste. The Wood Waste Landfill was determined to be a threat to water quality. Therefore, the Order required that the Ash Disposal Area, the Leachate Basin and the Wood Waste Landfill be closed in accordance with California Code of Regulations, title 27 (Title 27).

14. The Discharger was closing the Wood Waste Landfill according to the 22 March 1993 "*Clean Closure Plan for Georgia Pacific Corporation's Solid Waste Disposal Site*" and the 1 October 1997 "*Report of Waste Discharge and Modification of the Wood Waste Pile Clean Closure Plan.*" The Discharger submitted a second addendum to the 1993 clean closure plan on 30 April 2009. The Discharger submitted a revised ROWD on 7 March 2022 that modified the clean closure plan and schedule for the Wood Waste Landfill, the Leachate Basin, as well as plans to clean close the Ash Disposal Area which previously had been closed with a Title 27 compliant final closure cover as discussed in the Findings below.

Waste Classification & Permitting

15. The Facility's waste piles, landfills, and surface impoundments are subject to Title 27 and in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.
16. On 7 February 2014, the Central Valley Water Board adopted R5-2014-0025, classifying the Facility's WMUs as either Class III landfills and as unclassified units for the discharge of non-hazardous solid waste and designated waste (as defined per Wat. Code, § 13173).
17. Title 27 section 21720(c) states that "Unit classifications and WDRs for existing Units shall be fully reviewed in accordance with schedules established by the RWQCB" and that the RWQCB shall periodically review the classification of Units based on monitoring results and geologic siting criteria (see Title 27, § 20080(e)). Title 27 section 20240(a) states that "*waste management units (Units) shall be classified according to their ability to contain wastes*". Title 27 sections 20250 and 20260 specify the criteria necessary to classify waste management units as Class II or Class III units respectively. Since the Wood Waste Landfill and the Leachate Basin are unlined and underlying natural geologic materials do not ensure the protection of the quality of groundwater or surface water (see Finding 23), the Wood Waste Landfill and the Leachate Basin cannot be classified as

Class II or Class III waste management units. Title 27 section 20210 requires that designated waste, as defined in California Water Code section 13173, shall be discharged only at Class I waste management units or at Class II waste management units with containment structures that isolate waste from waters of the state in accordance with Title 27 sections 20250, 20310, and 20320. Title 27 section 20950(a)(2)(A)(1) states that for waste management units closed as landfills, after closure the installed final cover constitutes the unit's principal waste containment feature. During final closure of the Ash Disposal Area the Discharger relocated the waste to provide necessary separation between groundwater and the ash disposal area waste and installed a final closure cover that exceeded Title 27 requirements. Although the Ash Disposal Area Landfill did not meet the base liner requirements specified in Title 27 sections 20250, 20310, and 20320 for isolation of wastes to be classified as a Class II waste management unit since the closed Ash Disposal Area Landfill contains designated waste and the Ash Disposal Area Landfill was closed with a Title 27 compliant final closure cover, for the purposes of Unit classification the Ash Disposal Area Landfill has been reclassified as a Class II landfill. The Wood Waste Landfill and Leachate Basin units are therefore existing unclassified units and the Ash Disposal Area Landfill is a Class II unit and as such the Discharger is in the process of clean closing said units.

18. This Order has reevaluated the classification of the Ash Disposal Area Landfill, the Wood Waste Landfill, and the Leachate Basin and has assigned the appropriate classifications in accordance with Finding 17 above, which are set forth above in **Table 1**.
19. On 12 December 2008, the Discharger submitted an updated Report of Waste Discharge (ROWD) and subsequent information amending the ROWD on 7 March 2022 for the Facility. Information in the ROWD and subsequent information submitted was used in the development of this Order. The Discharger's ROWD proposes to extend the clean closure of the wood waste landfill, leachate basin, and ash disposal area landfill from 31 December 2021 to 31 December 2032.
20. On 8 March 2022, the ROWD was deemed complete.
21. The waste management units in **Table 2** are categorized as **Existing Units** under Title 27 (see Title 27, § 20164).

Table 2—waste management units as “Existing Units” under Title 27

Unit	Issues	Status
Ash Disposal Area Landfill	Unlined	To be clean closed
Wood Waste Landfill	Unlined	To be clean closed
Leachate Basin	Unlined	To be Clean Closed

See Glossary for definitions of terms and abbreviations in table.

22. The Wood Waste Landfill currently has an intermediate soil cover installed over the wood waste which is estimated to be two to five feet thick. The Discharger in its 2022 ROWD performed a topographic survey of the Wood Waste Landfill intermediate soil cover and determined that certain repairs need to be made to the intermediate cover prior to onset of the 2022-2023 wet season as shown in **Attachment G**. These WDRs in Section I Provisions, require the Discharger to make the necessary repairs prior to onset of the 2022-2023 wet season.

Site Conditions

23. The facility is located on fractured and weathered rocks of the Logtown Ridge geological formation in Martell, Amador County, California as shown in **Attachment B**. A surface water table spring was previously observed adjacent to the southeast side of the Ash Disposal Area. The area was re-graded in connection with corrective actions at the Ash Disposal Area prior to closure.
24. Land within 1,000 feet of the site is used for commercial, industrial, residential, and agricultural purposes.
25. The Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
26. The facility lies at the head of the drainage basin to Rock Creek, a tributary of the Sacramento-San Joaquin Delta. Surface drainage from the Wood Waste Landfill, the Ash Disposal Area, and the Leachate Basin is toward Rock Creek. The designated beneficial uses of surface waters for the Sacramento-San Joaquin Delta, as specified in the Basin Plan, are: municipal and domestic supply, agricultural supply, industrial process supply, hydropower generation, water contact recreation, non-contact water recreation, cold freshwater habitat, spawning, reproduction and/or early development, and wildlife habitat. These

WDRs require the Discharger to manage stormwater that contacts waste such that it does not pose a threat to impact designated beneficial uses of receiving water.

27. The first encountered groundwater at or directly adjacent to the waste management units ranges from 3 to 60 feet below the native ground surface, with the shallowest groundwater near the Ash Disposal Area and the deepest first groundwater located to the southwest of the Wood Waste Landfill. Groundwater elevations range from 1,344 to 1,522 feet above mean sea level (MSL). The depth to groundwater fluctuates seasonally as much as 18 feet.
28. According to the 2019 First Semiannual Monitoring Report, the direction of shallow groundwater flow is generally to the southwest, at an average hydraulic gradient of 0.056 to 0.057 ft/ft with a velocity of 335 to 356 feet per year.
29. Groundwater quality recorded from 1986 to 2019 at up-gradient monitoring well B1 has ranged historically from 397 to 660 mg/L Total Dissolved Solids (TDS) for first encountered groundwater, and from 321 to 1,286 umohs/cm for electrical conductivity (EC).
30. Groundwater monitoring well B-14 monitors groundwater quality downgradient of the Wood Waste Landfill, the Ash Disposal Area, and the Leachate Basin. The following is a summary of the results from monitoring well B-14 during the 2010 through 2019 time period:
 - a. **PAHs** have not been detected in this monitoring well above the laboratory reporting limit in regular semi-annual sampling conducted between 2008 and 2010. The analysis detection limit was elevated between July 2010 and July 2013, and no detections were reported above the laboratory's practical quantitation limit (PQL) during that period. The 2014 WDRs required lower detection limits according to SIM USEPA Method 8270C. Monitoring conducted in 2014 and 2015 using that method reported PAHs only at "J" value concentrations - above the laboratory method detection limit (MDL) and below its PQL. The Discharger did not analyze laboratory samples for PAHs in the years 2016 through 2019.
 - b. **Manganese:** The average concentration of manganese in this monitoring well was 1,679 ug/L with the highest concentration being 4,300 ug/L.
 - c. **TDS** concentration from this monitoring well averaged 687 mg/L, with the highest concentration being 1,200 mg/L. This value exceeds the California and USEPA Secondary MCL of 500 mg/L. Groundwater quality at B-14

compared to groundwater quality for TDS at up-gradient monitoring well B-1 indicates that groundwater quality has been degraded.

- d. **Electrical Conductivity** at this monitoring well averaged 1,064 umhos/cm, with the highest concentration being 1832 umhos/cm. The Agricultural Water Quality Goal is 700 umhos/cm. Groundwater quality at B-14 compared to groundwater quality for EC at up-gradient monitoring well B-1 indicates that groundwater quality has been degraded.
 - e. **Iron** concentration reported at this monitoring well for this period averaged 4.1 mg/L, with the highest concentration being 15 mg/L. This is above the California Secondary MCL of 0.3 mg/L.
 - f. **Arsenic** concentration reported at this monitoring well for this period averaged 0.0043 mg/L, with the highest concentration being 0.0090 mg/L. This is below the California MCL of 0.01 mg/L.
 - g. **Dioxins and Furans** have not been detected in this monitoring well above the laboratory reporting limit in regular semi-annual sampling during 15 sampling events since 2008. As was provided for in Table 2 of the 2014 MRP the analysis frequency for PAHs and dioxin and furans was changed from semiannual to every five years since detections of PAH constituents and dioxin and furan congeners were sporadic and no concentrations were above the reporting limit (estimated concentrations reported below the reporting limits only) during sampling events from 2012 to 2015. The discharger interpreted this to mean that it was not required to analyze laboratory samples for PAHs, dioxins, and furans for all groundwater monitoring wells in the years 2016 through 2019 since the 2014 MRP allowed for the analysis frequency for PAHs and dioxin and furans to change from semiannual to every five years under certain conditions. The Discharger monitored and analyzed for these COCs 2020 and Total Heptachlorodibenzo-p-dioxins (HpCDD), 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin, and Octachlorodibenzo-p-dioxin were detected in monitoring well B-14. These constituents of concern are not naturally occurring indicating that groundwater has been degraded at the facility.
31. Groundwater monitoring well B-2 monitors groundwater quality downgradient of the Wood Waste Landfill. The following is a summary of the results from monitoring well B-2 during the 2010 through 2019 time period.
- a. **Manganese:** The average concentration of manganese in this monitoring well was 9,142 ug/L with the highest concentration being 12,000 ug/L.

- b. **TDS** concentration from this monitoring well averaged 1,011 mg/L, with the highest concentration being 1,100 mg/L. This value exceeds the California and USEPA Secondary MCL of 500 mg/L. Groundwater quality at B-2 compared to groundwater water quality for TDS at up-gradient monitoring well B-1 indicates that groundwater quality has been degraded.
 - c. **Electrical Conductivity** at this monitoring well averaged 1,486 umhos/cm, with the highest concentration being 2,455 umhos/cm. The Agricultural Water Quality Goal is 700 umhos/cm. Groundwater quality at B-2 compared to groundwater quality for EC at up-gradient monitoring well B-1 indicates that groundwater quality has been degraded.
 - d. **Iron** concentration reported at this monitoring well for this period averaged 1.1 mg/L, with the highest concentration being 2.4 mg/L. This is above the California Secondary MCL of 0.3 mg/L.
 - e. **Tannins and Lignins** concentration reported at this monitoring well for this period averaged 4.00 mg/L, with the highest concentration being 7.75 mg/L.
32. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.
33. Groundwater has been degraded (as described in Findings 30 and 31 above) by inorganic and organic waste constituents at this site, including elevated concentrations of TDS, bicarbonate, calcium, chemical oxygen demand (COD), iron, manganese, magnesium, tannins and lignins. **Attachment H** shows elevated iso-concentrations of TDS, iron, manganese, and tannins and lignins in groundwater at the Facility. PAHs and dioxin/furans which are non-naturally occurring substances have also been detected below the laboratory reporting limit but above the method detection limit in groundwater as recently as 2020 (See Information Sheet Finding 31 and Table 10. The Discharger's *Evaluation Monitoring Program Report* submitted on 30 May 2008 identified pollutant releases to groundwater from the Ash Disposal Area and Wood Waste Landfill. However, the Discharger has been notified that on occasion the method detection limits used to analyze for the presence of PAHs and dioxin/furan compounds were set higher than the method detection limits established in the analytical method used. The Discharger has since used lower laboratory detection limits for analyzing non-naturally occurring substances in its 2014, 2015, and 2020 monitoring efforts. (See Information Sheet Table 10)

34. There are 24 municipal, domestic, industrial, or agricultural supply wells within one mile of the site, as stated in the Discharger's 2022 ROWD. **Attachment F** shows water supply wells downgradient of the Facility within a 1-mile radius.
35. Class III WMUs must be designed and constructed to withstand a maximum probable earthquake (MPE), whereas Class II WMUs must withstand a maximum credible earthquake (MCE). (Title 27, § 20370.) The Discharger's site-specific seismic analysis indicates that an earthquake, occurring along the West Tahoe Fault, at a closest rupture distance of 86 kilometers, would result in the events summarized in **Table 3**.

Table 3—Seismic Analysis

Earthquake	Magnitude	Peak Ground Acceleration	Return Period
Max Credible (MCE)	7	0.16 g	2,475 Years

See Glossary for definitions of terms and abbreviations in table.

36. Annual average precipitation in the Martell area is approximately 29 inches per year, and the 100-year, 24-hour precipitation event is estimated to be 6.5 inches, as reported by the Discharger in its 12 December 2008 conceptual Closure Plan—Ash Disposal Area. The 100-year return period total annual precipitation for the nearest station (i.e., the Sutter Hill Station) is 51.29 inches, and the average annual precipitation is 28.35 inches, as reported by the California Department of Water Resources with a mean pan evaporation¹ of 79.7 inches per year. The nearest weather station is reflective of conditions at the Facility.
37. Class III WMUs must be constructed to accommodate stormwater runoff from 24-hour precipitation events with a return period of 100 years for Class III WMUs. (See Title 27, § 20320.) According to National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Atlas 14, Volume 6 (rev. 2014), the Facility's 100-year, 24-hour rainfall events are estimated to result in 5.70 inches of precipitation. Source: NOAA Precipitation Frequency Data Server.

¹ Source: City of Sutter Creek and Amador Regional Sanitation Authority Draft Wastewater Master Plan (November 2012)

38. Storm water run-off from dirt roads adjacent to the top deck of the WWLF is diverted to a drainage ditch beginning near the location of surface water monitoring location SW-1. This ditch drains into the watershed of an unnamed tributary to Rock Creek, and storm water monitoring location SW-2 is located on that tributary near the site’s southern boundary. Storm water run-off from the southwestern area of the WWLF that is under interim cover sheet flows to the southwest side of the WWLF and flows overland (no defined channel) to the drainage ditch that leads to the Rock Creek unnamed tributary watershed and surface water monitoring location SW-2. Storm water run-off from the clean-closed portions of the WWLF is diverted to two small settling basins and then to a drainage ditch that leads around the leachate basin and into the unnamed tributary to Rock Creek as depicted in **Attachment C**. The Facility is covered under the State Water Board’s operative General Permit for Storm Water Discharges Associated with Industrial Activities, NPDES Permit No. CAS000001 (Industrial General Permit).
39. According to the Federal Emergency Management Agency’s (FEMA) [Flood Insurance Rate Map](https://msc.fema.gov/portal) (https://msc.fema.gov/portal), Community-Panel Number 06005C0556F, the Facility is not located within a 100-year floodplain.

Monitoring Networks

40. As of the date of this Order, the Facility’s **groundwater** monitoring network consists of the existing monitoring wells listed in **Table 4** and shown in **Attachment D**.

Table 4—Groundwater Monitoring Well Network

Well	Program	Monitored Unit	Water-Bearing Zone	Status
B-1	Corrective Action	WWL & LB	Shallow	Operational
B-2	Detection, Corrective Action	WWL & LB	Shallow	Operational
B-3	Corrective Action	WWL & LB	Shallow	Operational
B-5	Detection	ADAL	Shallow	Operational
B-6R	Corrective Action	WWL & LB	Shallow	Operational
B-8	Detection	ADAL	Shallow	Operational

Well	Program	Monitored Unit	Water-Bearing Zone	Status
B-9	Corrective Action	WWL & LB	Shallow	Operational
B-10	Corrective Action	WWL & LB	Shallow	Operational
B-11	Detection, Corrective Action	WWL & LB	Shallow	Operational
B-12	Corrective Action	WWL & LB	Shallow	Operational
B-13	Corrective Action	WWL & LB	Shallow	Operational
B-14	Detection, Corrective Action	WWL & LB	Shallow	Operational
B-15	Detection	ADAL	Shallow	Operational
B-16	Background	ADAL	Shallow	Operational
B-17	Corrective Action	WWL & LB	Shallow	Operational
LD-2A	Corrective Action	WWL & LB	Deep	Operational
PZ-A	GW Separation	ADAL	Shallow	Operational
PZ-B	GW Separation	ADAL	Shallow	Operational
PZ-C	GW Separation	ADAL	Shallow	Operational
PZ-D	GW Separation	ADAL	Shallow	Operational
PZ-E	GW Separation	ADAL	Shallow	Operational

See Glossary for definitions of terms and abbreviations in table.

41. The Leachate Basin appears to be in hydraulic communication with the uppermost shallow aquifer, as described in the Information Sheet Findings 19, 20, and 21.
42. The corrective action monitoring systems for the Wood Waste Landfill and Leachate Basin consist of monitoring wells B-1, B-2, B-3, B-6R, B-9, B-10, B-11, B-12, B-13, B-14, B-17 and LD-2A. Monitoring Well B-14 is a point of compliance for the Leachate Basin and Wood Waste Landfill, and monitoring

wells B-2 and B-11 are the point of compliance monitoring wells for only the Wood Waste Landfill. The Point of Compliance is described in Title 27 Section 20405. Monitoring wells B-6R, B-12, B-13, B-17 and LD-2A are sentry wells to determine during corrective action whether the groundwater plume has moved further downgradient in compliance with State Water Resources Control Board Resolution 68-16 and Title 27. (Also see Finding 54)

43. The Facility's landfill WMUs were fully permitted and operating as of 1 July 1991. Additionally, installation of unsaturated zone monitoring devices would require unreasonable dismantling or relocating of permanent structures at the Facility. Accordingly, the Facility is exempt from Title 27 **unsaturated zone** monitoring requirements. (See Title 27, § 20415, subd. (d)(5).)
44. Therefore, no unsaturated zone monitoring devices currently exist at the facility. In April 2009, the Discharger installed five temporary piezometers at the Ash Disposal Area to obtain and evaluate the depth to groundwater within the waste. This was done in order to design interceptor drains associated with closure of the Ash Disposal Area. These temporary piezometers were removed during final closure of the Ash Disposal Area as a landfill waste management unit.
45. As of January 2013, the Ash Disposal Area has been closed in accordance with the *Revised Closure Plan and Post-Closure Maintenance Plan for Ash Disposal Area, Revision 3 – 21 June 2012*, which was reviewed by Central Valley Water Board staff for compliance with Title 27 requirements. Five new piezometers (PZ-A, PZ-B, PZ-C, PZ-D, and PZ-E), that replace the five temporary piezometers, have been installed into the drainage blanket to document separation between groundwater and the bottom of the waste. *The Revised Closure Plan and Post-Closure Maintenance Plan for Ash Disposal Area, Revision 3 – 21 June 2012* satisfies the requirements for closure, as contained in Title 27.
46. The WDRs require that the closed Ash Disposal Area Landfill unit shall be maintained and operated to ensure a minimum separation of five feet between the waste and the highest anticipated elevation of groundwater until the Ash Disposal Area Landfill has been clean closed and verified that it no longer poses a threat to receiving water quality. However, because piezometer PZ-E (one of five piezometer at this unit located in the northwest corner of the Ash Disposal Area) hit bedrock at 4.5 feet preventing further drilling, if this piezometer remains dry the Board would evaluate this as meeting the five-foot separation requirement at that location.
47. Title 27 Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible

detection of a release from a Unit in accordance with Title 27 Section 20415(b)(1)(B)2-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

48. PAHs and dioxin/furans are organic waste constituents that may be detected in groundwater at this site. Dioxin/furans were detected in groundwater above the laboratory reporting limit one time in one sample from one well (B-1) in 1999. However, dioxin/furans have not been detected above the laboratory reporting limit since 1999. Since most of these organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the evaluation of a release of wastes from the Ash Disposal Area, Wood Waste Landfill, and the Leachate Basin. PAHs have not been detected above the laboratory reporting limit at any wells since 2014. However, in groundwater monitoring well B-14, PAHs and furans were analyzed for and detected in 2014 and 2015 and dioxins were analyzed for and detected in 2014, 2015, and 2020 sampling events. Furthermore, since the Discharger will be disturbing waste during its clean closure efforts of the wood waste landfill, the leachate basin, and the ADA landfill this order requires dioxin/furans monitoring (also see Finding 30 and Finding 33).
49. As of the date of this Order, the Facility’s **surface water** monitoring network consists of the existing monitoring points listed in **Table 5** and shown in **Attachment D**.

Table 5—Surface Water Monitoring Network

Monitoring Point	Location	Program	Monitored Unit	Status
SW-1	South of WWL	Detection	WWL	Operational
SW-2	South of LB and WWL	Detection	LP and WWL	Operational
Leachate	Upstream before inlet to LB	Detection	WWL	Operational
Leachate Basin	Within LB	Detection	LB	Operational

See Glossary for definitions of terms and abbreviations in table.

50. As of the adoption of this Order, the above-described networks comply with the monitoring requirements of Title 27. (See Title 27, §§ 20415–20435.) Subsequent changes to these networks will be reflected in a Revised Monitoring & Reporting Program issued by the Executive Officer.

Water Quality Protection Standard

51. A Water Quality Protection Standard (WQPS) is the analytical framework through which WMUs are individually monitored for releases and impacts to water quality. (Title 27, § 20390, subd. (a).) Under Title 27, a WQPS is separately established for each WMU in WDRs. (*Id.*)
52. In accordance with Title 27, this Order, by virtue of its incorporation of **Monitoring & Reporting Program R5-2022-0060 (MRP)** and subsequent revisions thereto, establishes a WQPS for each WMU at the Facility.

Corrective Action

53. The corrective action for each of the three waste management units is as follows: The Ash Disposal Area Landfill closure action was closing the unit with a Title 27 compliant closure cover, which has been completed. The Discharger has since determined that it will clean close the Ash Disposal Area in accordance with the close schedule provided in **Attachment E** The Wood Waste Landfill and Leachate Basin will be clean closed. The details of the closures for each area are described in the following Findings.

Ash Disposal Area Landfill

54. In December 2008, the Discharger submitted a conceptual closure plan for the Ash Disposal Area, *Closure Plan—Former Ash Disposal Area* and on 7 February 2009, submitted additional draft engineering drawings. The closure plan was based on an Engineering Feasibility Study completed in 2008 that evaluated the feasibility of clean closure, demonstrated that clean closure was infeasible, and determined that closure-in-place as a landfill was the most feasible alternative to clean closure. The conceptual closure plan proposed closure-in-place of the Ash Disposal Area, utilizing an engineered alternative cover to cap the upper surface of the unlined facility in order to limit infiltration of storm water into the waste, thereby limiting any associated leaching from the waste material into groundwater.
55. The Discharger states that the objectives of its corrective action are to:
- a. Isolate buried wastes,
 - b. Prevent accumulation of standing water,

- c. Provide proper drainage to direct surface runoff away from the disposal area,
- d. Limit surface water infiltration into the waste, and
- e. Limit surface erosion of the waste due to rainfall or wind.

The Discharger's corrective action method for the Ash Disposal Area does not include groundwater containment or ex-situ water treatment.

- 56. In June 2011, the Discharger began closure activities at the Ash Disposal Area without an approved work plan, in violation of Provision F.11.d of the 2009 WDRs, which required that a *Final Construction Design and Construction Quality Assurance/Quality Control Plan* be submitted by 30 November 2010. Although a final closure plan was not approved by the Board, the Discharger continued with closure activities, and on 29 September 2011 the Discharger stated that it had excavated 150,000 cubic yards of ash from the entire Ash Disposal Area; stockpiled ash within and outside the Ash Disposal Area; and installed backfill and ash material back into the excavation to raise the ash above groundwater. The Discharger stated that the backfill material consisted of from the bottom up: cobbles and perforated drainpipe as a groundwater drainage layer, crushed rock as a soil filter, compacted soil filter, and ash material.
- 57. Due to violations of the 2009 WDRs, the Executive Officer issued Cleanup and Abatement Order (CAO) R55-2011-0710 to bring the Discharger into compliance with WDRs R5-2009-0110. In response to the CAO, the Discharger submitted a *Revised Closure Report* on 15 February 2012, an *Ash Excavation Technical Report* on 15 February 2012, and five drawings for the *Revised Closure Report* on 23 February 2012.
- 58. Title 27, Section 21090 provides the minimum prescriptive final cover components for landfills or waste piles consisting of, in ascending order, the following layers:
 - a. Two-foot soil foundation layer.
 - b. One-foot soil low flow-hydraulic conductivity layer, less than 1×10^{-6} cm/s or equal to the hydraulic conductivity of any bottom liner system.
 - c. One-foot soil erosion resistant/vegetative layer.
- 59. Title 27 allows engineered alternative final covers provided the alternative design will provide a correspondingly low flow-through rate throughout the post-closure maintenance period.
- 60. The Discharger in its *Revised Closure Report* on 15 February 2012 submitted the proposed final cover that includes an analysis of the proposed engineered alternative final cover.

61. The Discharger has demonstrated that the engineered alternative final cover meets the performance goals of Title 27 and that it is equivalent to the prescriptive standard.
62. The Discharger's engineered alternative constructed for the Ash Disposal Area Landfill top deck consists of, from the top down:
 - a. 3 inches of asphalt;
 - b. 1 foot of base rock;
 - c. 10-ounce non-woven geotextile filter fabric or equivalent;
 - d. A textured 50-mil linear low-density polyethylene (LLDPE) Super Gripnet membrane liner with an integral drainage layer; and
 - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.
63. The Discharger's engineered alternative constructed for the side-slopes includes a vegetative cover with slopes not exceeding a 3h:1v grade, and consisting of, from top to bottom:
 - a. Vegetative cover of native grasses seeded at a rate of 34.5 pounds per acre;
 - b. 1-foot cover soil;
 - c. 10-ounce non-woven geotextile filter fabric;
 - d. A textured 50-mil LLDPE Super Gripnet geomembrane liner with integral drainage layer; and
 - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.
64. Side slopes for the closed landfill include 15-foot wide benches every 50 vertical feet as required by Title 27.
65. Section 21750 of Title 27 of the California Code of Regulations requires that landfill slopes must have a calculated safety factor of 1.5 under dynamic pseudo-static conditions as demonstrated with a critical slope stability analysis. The Discharger has performed critical slope analysis for the final cover using SLOPE W software. Static safety factors of approximately 4.0 against global failure, and 1.6 against surficial veneer cover failure, were calculated for critical sections. A seismic coefficient of 0.16 was applied to the analyzed section. Pseudo-static factors of safety of approximately 2.5 were calculated for global stability and approximately 1.0 for the surficial veneer cover section. The Discharger's critical slope stability analysis demonstrated that the side slopes of the final cover are in accordance with the requirements of Title 27.

66. WDRs Order R5-2014-0025 approved the constructed final cover and found that the final cover system satisfied the requirements for closure contained in Title 27.
67. The Discharger in its 2022 report of waste discharge indicated that in conjunction with clean closure of the wood waste landfill and leachate basin, the Discharger will clean close the ash disposal area landfill in accordance with the schedule shown in **Attachment E**. These WDRs do not allow any leachate from the ash disposal area landfill to be discharged to groundwater or surface waters while clean closure of the ash disposal area landfill is occurring. The Discharger has stated in its 2022 ROWD that clean closure of the ash disposal area landfill will occur in such a manner that the waste in the ash disposal area will remain covered during the wet season to prevent generation of contact stormwater i.e., leachate or wastewater.

Wood Waste Landfill

68. The Discharger states it will continue to clean close the Wood Waste Landfill consistent with the 22 March 1993 "Clean Closure Plan for Georgia Pacific Corporation's Solid Waste Disposal Site" and the 1 October 1997 "Report of Waste Discharge", 2009 "Addendum to Clean Closure Plan", and amended Report of Waste Discharge submitted on 7 March 2022. This is consistent with the mandatory clean-closure per Title 27 section 21410(a)(1) for a waste pile. The Discharger proposes multiple years to complete the clean closure by excavating and processing the remaining wood waste and associated soils as shown in **Attachment E**. The clean closure of the Wood Waste Landfill involves excavating and processing the remaining wood waste in the landfill for reuse. At the end of each dry season, all of the area from which wood waste has been removed and clean closed that year, will be graded and hydroseeded, in order to prepare the surface for winter rains. Storm water that contacts the uncovered wood waste area will be collected in unlined drainage ditches and routed to the unlined Leachate Basin. Storm water runoff from the clean closed area will be routed to a drainage ditch that traverses around the Leachate Basin and discharges directly into the tributary to Rock Creek. Water collected in the Leachate Basin will be used for on-site dust control or in wood waste processing.

Leachate Basin

69. The Discharger has raised the berms of the Leachate Basin to provide more capacity for the Basin by constructing 5-foot high berms around the southernmost (lowest) section of the Leachate Basin in order to bring the berm elevation up to approximately 1,399 feet elevation.

70. At the completion of clean closure of the Wood Waste Landfill and Ash Disposal Area Landfill the Discharger shall clean close the Leachate Basin in accordance with Title 27 Section 21400 and the schedule shown in **Attachment E**.

Cogeneration Fuel Stockpile Area

71. The former Cogeneration Fuel Stockpile Area was northeast of the Wood Waste Landfill and covered approximately 4.7 acres. The stockpile was removed to native soils or bedrock with verification sampling as described in "*Revised Verification Report of Partial Clean Closure Wood Waste Pile and Form Cogeneration Fuel Stockpile Area*" dated 20 August 2008. The area was then revegetated. The Cogeneration Fuel Stockpile Area has been cleaned closed and the closure complies with Title 27.

POST CLOSURE MAINTENANCE OF ASH DISPOSAL AREA LANDFILL

72. On 21 September 2012, the Discharger submitted the Revised Final Post-Closure Maintenance and Monitoring Plan (RFPMMP), Former Ash Disposal Area report. On 17 October 2012, Central Valley Water Board staff provided written concurrence with the Final Post-Closure Maintenance and Monitoring Plan, as long as the Discharger incorporated a number of specified conditions. On 1 August 2013, the Discharger submitted an "*Addendum to Revised Final Post Closure Maintenance Plan*" addressing the conditions in 17 October 2012 letter. The Board concurred with the Addendum response to the conditions and this Addendum became a part RFPMMP and was attached to the onsite copy at the facility.
73. The Discharger in its 2022 ROWD is proposing to clean close all waste management units at the Facility. Upon verification that the any threat to receiving water quality has been removed the Discharger will no longer required to perform post closure maintenance and associated monitoring of any former waste management units.

Unit Construction

74. The Central Valley Water Board is authorized to approve an **engineered alternative** to Title 27 prescriptive standards (see, e.g., Title 27, § 20330, subd. (c)), provided that the discharger demonstrates that compliance with the prescriptive standard would be unreasonably and unnecessarily burdensome in comparison to the proposed alternative.
75. Title 27, § 20080, subds. (b) allows the Central Valley Water Board to consider and approve alternatives to construction or prescriptive standards contained in

the SWRCB-promulgated regulations including Title 27. Alternatives shall only be approved where the discharger demonstrates that:

(1) the construction or prescriptive standard is not feasible, as demonstrated in accordance with Title 27, § 20080, subds. (c); and

(2) there is a specific engineered alternative that:

(A) is consistent with the performance goal addressed by the particular construction or prescriptive standard; and

(B) affords equivalent protection against water quality impairment.

The engineered alternative must also comply with State Water Board Resolution 93-62.

76. The Discharger proposed an engineered alternative to the prescriptive final closure cover requirement specified in Title 27, § 21090, subds. (a) as described in Findings 58 through 59. The Discharger has adequately demonstrated that construction of a final closure cover over the Ash Disposal Area Landfill in accordance with the Title 27 prescriptive standard would be unreasonably and unnecessarily burdensome in comparison to the proposed engineered alternative. The Discharger has further demonstrated that the proposed engineered alternative(s), as described in Findings 58 through 59, are not only consistent with the performance goals of the prescriptive standard, as described above, and will afford at least equivalent water quality protections.

Unit Closures

77. On 7 March 2022, the Discharger submitted an amended Clean Closure Plan, which indicates that the Facility's Wood Waste Landfill, the Ash Disposal Area Landfill, and Leachate Basin are scheduled to be clean closed on the dates specified in in **Table 6**.

Table 6—Unit Clean Closure Schedule²

Unit Module	Clean Closure Date
Wood Waste Landfill	31 December 2031 (See Attachment E)

² Closure dates are estimates, which may be affected by several factors (e.g., fluctuating waste receipts).

Unit Module	Clean Closure Date
Leachate Basin	31 December 2032 (See Attachment E)
Ash Disposal Area Landfill	31 December 2031 (See Attachment E)

Post-Closure Maintenance & Financial Assurances

78. Title 27, sections 22207 require a closure cost estimate for Class II and Class III units. The cost estimate must be equal to the cost of closing a unit at the point in its active life when the extent and manner of operation would make closure the most expensive. When closing units in phases, the estimate may account for closing only the maximum area or unit open at any time. The Discharger's ROWD submittal dated 7 March 2022 included a cost estimate for clean closure of all three waste management units shown in Table 6 above. The lump sum estimate is for the cost to close largest future area needing closure at any one time. The total amount of the closure cost estimate in 2022 dollars for the Wood Waste Landfill, Ash Disposal Area Landfill, and Leachate Basin is \$8,284,500. This Order requires that the Discharger maintain financial assurance with the Central Valley Water Board in at least the amount of the annually updated closure cost estimate for the Wood Waste Landfill, Ash Disposal Area Landfill and Leachate Pond until such time as they are closed and closure has been accepted by Central Valley Water Board staff. The Discharger has posted a Performance Bond for Closure through Western Surety Company.
79. Title 27, sections 22212 require a cost estimate for Class II and Class III units for post-closure maintenance. The Discharger's ROWD dated 7 March 2022 included a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2022 dollars is \$405,670 for five years of postclosure monitoring of the Facility following clean closure of the Wood Waste Landfill, the Ash Disposal Area Landfill and the Leachate Basin. This Order requires that the Discharger maintain financial assurance with Central Valley Water Board in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. The Discharger has posted Performance Bond for Closure through Western Surety Company.
80. Title 27, section 20380(b) requires per Title 27 a cost estimate for corrective action of all known or reasonably foreseeable releases. The Discharger's ROWD dated 7 March 2022 did not include financial assurance cost estimates for corrective action for any known or reasonably foreseeable releases from the three waste management units. The Wood Waste Landfill, the Ash Disposal Area Landfill and the Leachate Basin corrective action measure is clean closing the

site with no potential releases and the closure financial assurances cover the clean closure of the Wood Waste Landfill, the Ash Disposal Area Landfill and the Leachate Basin. As a result, the financial assurance for post-closure maintenance and clean closure financial assurances are sufficient to cover any corrective action of all known or reasonably foreseeable releases.

81. The Discharger's *Revised Final Post-Closure Maintenance and Monitoring Plan* (RFPMMP) dated 2013 (see Findings 67-68) is the operative document providing for post-closure maintenance of the Ash Disposal Area Landfill for the entire post-closure maintenance period of at least 30 years or until it is clean closed, and until it is demonstrated that the Facility no longer poses a threat to the public health and safety and the environment. (See Title 27, §§ 20950(a)(1), 21180(a).)
82. The CPMP includes costs estimates for closure (Title 27, §§ 21820, 22206), post-closure maintenance (§§ 22210–22212), and foreseeable corrective action for releases (§§ 22220–22222). As of the date of this Order, these estimates, calculated in accordance with Title 27, are specified in **Table 7**.

Table 7—Current Cost Estimates (Financial Assurances)

Requirement	Estimated Cost
Clean Closure ³	\$8,284,500
Post-Closure Maintenance ⁴	\$405,670

³ As the Discharger clean closes the waste management units in accordance with the schedule shown in Attachment E and provides a partial verification report that demonstrates that the area clean closed has been restored and meets Title 27 requirements for clean closure the Discharger may request that the financial assurances fund balance for clean closure be reduced proportionally based on the fraction of the total amount of waste removed and/or fraction of the total area to be clean closed that was actually clean closed.

⁴ Post-Closure Maintenance costs are estimated for conducting 5 years of postclosure maintenance and groundwater monitoring after clean closure of all waste management units.

Requirement	Estimated Cost
Corrective Action ⁵	\$-0-

83. This Order requires the Discharger to maintain financial assurances with the State Water Board in at least the Estimated Cost amounts specified in **Table 7**, in accordance with Title 27.
84. As of the date of this Order, the closure fund, post-closure maintenance fund and corrective action fund balances are specified in **Table 8**. Currently, the closure cost estimates are underfunded. These WDRs in section I Provisions require the Discharger to adequately fund clean closure and post-closure maintenance of the facility in the amounts shown in **Table 7**.

Table 8—Current Fund Balances (Financial Assurances)

Requirement	Current Balance
Closure	\$2,594,820
Post-Closure Maintenance	\$543,001
Corrective Action	\$ -zero

California Environmental Quality Act

85. The issuance of this Order, which prescribes requirements and monitoring of waste discharges at an **existing facility**, with negligible or no expansion of its existing use, is exempt from the procedural requirements of the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., pursuant to California Code of Regulations, title 14, section 15301. The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.

Other Regulatory Matters

86. This Order is issued in part pursuant to Water Code section 13263, subdivision (a), which provides as follows:

⁵ Corrective action cost estimates are zero since all waste management units at the Facility will be clean closed to remove all waste that poses a threat to receiving water quality.

The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge..., with relation to the conditions existing in the disposal area ... into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of [Water Code] Section 13241.

87. This Order implements the Central Valley Water Board's Basin Plan, which designates beneficial uses for surface water and groundwater and establishes water quality objectives (WQOs) necessary to preserve such beneficial uses. (Wat. Code, § 13241 et seq.)
88. The State Water Board's *Statement of Policy with Respect to Maintaining High Quality Waters in California*, Resolution 68-16 (*Antidegradation Policy*) prohibits the Central Valley Water Board from authorizing degradation of "high quality waters" unless it is shown that such degradation: (1) will be consistent with the maximum benefit to the people of California; (2) will not unreasonably affect beneficial uses, or otherwise result in water quality less than as prescribed in applicable policies; and (3) is minimized through the discharger's best practicable treatment or control.
89. Consistent with Title 27, this Order requires the Discharger to maintain the Facility to contain waste within WMUs, thereby preventing degradation of water quality. To the extent that there are releases from Facility WMUs, the Discharger will be required to address such releases through a Corrective Action Program. (See Title 27, §§ 20385, 20415, 20430.) Because this Order does not authorize any degradation in water quality, it complies with the *Antidegradation Policy*.
90. For the purposes of California Code of Regulations, title 23 (Title 23), section 2200, the Facility has a threat-complexity rating of **2-B**, where:
 - a. Threat Category "2" reflects waste discharges that can impair receiving water beneficial uses, cause short-term water quality objective violations, cause secondary drinking water standard violations, and cause nuisances; and
 - b. Complexity Category "B" reflects any discharger not included in Category A, with either (1) physical, chemical or biological treatment systems (except for septic systems with subsurface disposal), or (2) any Class II or Class III WMUs.

Reporting Requirements

91. This Order is also issued in part pursuant to Water Code section 13267, subdivision (b)(1), which provides that:

[T]he regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

92. The technical reports required under this Order, as well as those required under the separately issued MRP, are necessary to ensure compliance with prescribed WDRs and the provisions of Title 27, Subtitle D (40 C.F.R. part 258) and State Water Board Resolution 93-62. Additionally, the burdens associated with such reports are reasonable relative to the need for their submission.
93. Failure to comply with the reporting requirements under this Order and the MRP may result in enforcement action pursuant to Water Code section 13268.

Procedural Matters

94. All local agencies with regulatory jurisdiction over land-use, solid waste disposal, air pollution and public health protection have approved the use of the Facility's site for the discharge of waste to land as provided for herein.
95. The Discharger, interested agencies and interested persons were notified of the Central Valley Water Board's intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, § 13167.5; Title 27, § 21730.)
96. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.
97. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that the Discharger and their agents, employees and successors shall comply with the following.

A. Discharge Prohibitions

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Prohibitions (SPRRs, § C), which are incorporated herein, as well as the following.

1. **“Hazardous Waste,”** as defined per Title 23, section 2601, shall not be discharged at the Facility. The Department of Toxic Substances Control (DTSC) shall be immediately notified of any such discharges in violation of this Order.
2. The transfer of liquids from the Leachate Basin to Ampine LLC is prohibited.
3. The discharge of designated waste into the Leachate Basin from the Wood Waste Landfill (except for Wood Waste Landfill leachate as described in Findings 18 and 19 and with the limits established in Discharge Specification B.4) or the Ash Disposal Area Landfill is prohibited.
4. The discharge of “hazardous waste” and “designated waste” at this facility is prohibited (except for Wood Waste Landfill leachate as described in Findings 18 and 19, and with the limits established in Discharge Specification B.4. For the purposes of this Order, the term ‘hazardous waste’ is as defined in California Code of Regulations, title 23, section 2510 et seq., and ‘designated waste’ is as defined in Water Code section 13173.
5. The discharge of solid waste, leachate, or liquid waste to surface waters, surface water drainage courses, or groundwater is prohibited, with the exception of discharges from the Wood Waste Landfill to the Leachate Basin described herein. These discharges shall discontinue by 31 December 2031.
6. The discharge of waste to the Ash Disposal Area Landfill or Wood Waste Landfill is prohibited.
7. The discharge of liquid or semi-solid wastes, or solid wastes containing free liquid or moisture in excess of the moisture holding capacity of the waste is prohibited.

8. In order to reduce the possibility of stormwater infiltration and/or runoff, the area in which active clean closure operations are conducted at the Wood Waste Landfill must not exceed eight acres during the period of the annual rainy season, from 1 October to 30 April.
9. The discharge of untreated contact stormwater i.e., leachate or wastewater, from the ash disposal landfill during clean closure of the ash disposal to groundwater or surface waters is prohibited.

B. Discharge Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Discharge Specifications (SPRRs, § D), which are incorporated herein, as well as the following.

1. The waste management units (Wood Waste Landfill, Ash Disposal Area Landfill, and Leachate Basin) shall be maintained to prevent inundation or washout due to floods with a 100-year return period.
2. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
3. Annually, prior to **15 October**, any necessary erosion control measures shall be implemented. Any depressions, potholes, tire tracks, rills, or other blemishes in the Wood Waste Landfill and Ash Disposal Area Landfill covers that may retain water must be repaired. If necessary, the covers must be re-graded and the vegetation reestablished in order to shed storm water. Any other construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.
4. Liquid from the Leachate Basin may only be used for on-site dust control on the Wood Waste Landfill and adjacent access roads to and from the Wood Waste Landfill which drain back to the Leachate Basin and between the Wood Waste Landfill and the Leachate Basin. This liquid may not be used for dust control from 24 hours before a predicted and 24 hours after an actual 0.25 inch rain event. Liquid in the Leachate Basin may also be used in the wood waste processing at the Wood Waste Landfill where the wood waste processing area drains back to the Leachate Basin.
5. Intrawell limits for TDS, iron, manganese, tannins and lignins, and COD were established for monitoring wells B-12, B-13, B-17, LD-2A and B-6R (see Table 10 and 11 of MRP R5-2020-0060). The data set used was

from samples collected from years 2008 through January 2013. The statistical formula in B.4 of Monitoring and Reporting Program No. R5-2014-0025 (Upper Tolerance Limit = $\bar{X} + KS$) was used, and seasonal/spatial variability and outliers evaluations were completed per Title 27 Section 20415(e)(9)(F & G). If the concentration exceeds the intrawell limits specified in accompanying MRP R5-2022-0060 the Discharger shall report the exceedance to the Central Valley Water Board within 72 hours and within 60 days of the reported exceedance submit a report that describes the exceedance and any necessary corrective action measures.

C. Facility Specifications

The Discharger shall comply with all Standard Facility Specifications (SPRRs, § E) which are incorporated herein.

D. Unit Construction Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Construction Specifications and Standard Storm Water Provisions (SPRRs, §§ D, L), which are incorporated herein, as well as the following.

1. Except as authorized in **Section D.2**, the Discharger shall not commence liner construction (other than preparatory earthmoving and grading) until the Central Valley Water Board has approved in writing all necessary construction plans, specifications and construction quality assurance plans related to the new liner(s).
2. The Discharger shall not implement changes to approved waste containment designs until the Central Valley Water Board approves of the proposed changes in writing, provided that the proposed changes:
 - a. Previously approved components are not eliminated;
 - b. The engineering properties of previously approved components are not substantially reduced; and

- c. The proposed liner system will result in water quality equal to or greater than the design(s) prescribed per Title 27, section 20310 et seq., and this Order.⁶

E. Closure & Post-Closure Maintenance Specifications

Except as otherwise directed below, the Discharger shall comply with all Standard Closure and Post-Closure Specifications (SPRRs, § G) and closure-related Standard Construction Specifications (SPRRs, § F), as well as the following with respect to closure of landfills at the Facility.

Clean Closure of the Wood Waste Landfill, Ash Disposal Area Landfill, and Leachate Basin

1. The Wood Waste Landfill, the Ash Disposal Area Landfill, and the Leachate Basin must be clean closed according to the time schedule in **Section I.3, Time Schedule** of this Order, and the following Specifications.
2. The Wood Waste Landfill and the Ash Disposal Area Landfill shall be clean closed by 31 December 2031. Any extracted material not immediately removed offsite must be handled in accordance with the facility SWPPP.
3. Continuing in 2022, the Discharger must perform a topographic survey of the Wood Waste Landfill annually and document the amount of material removed from the Ash Disposal Area Landfill annually and then document the volume of wood waste remaining in the wood waste landfill and the amount of material remaining in the Ash Disposal Area Landfill. The topographic maps must be stamped and signed by a California licensed Land Surveyor or Civil Engineer licensed to perform land surveying.
4. The Discharger submitted a Topographic Survey Report as part of its 7 March 2022 ROWD that documents the volume of wood waste remaining in the Wood Waste Landfill and estimates the volume that must be removed on a yearly basis in order to submit the final closure report by 30 March 2033 (Time Schedule Section I.4.). As of the end of 2021 the Discharger estimated that there was 351,045 cubic yards of in-situ material remaining in the wood waste landfill and 100,000 cubic yards of in-situ material remaining in the ash disposal area landfill as shown in

⁶ Proposed changes that do not meet these criteria are considered “material,” and will require the revision of this Order.

Attachment E. Thereafter, a topographic map documenting current elevations of the waste management units and the volume of remaining wood waste must be submitted every year in the annual monitoring report.

5. At final closure of the Wood Waste Landfill, the Ash Disposal Landfill, and Leachate Basin, all residual wastes, including liquids, sludge, precipitates, settled solids, and liner materials and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to an appropriate unit or treated to the extent that the Central Valley Water Board staff find they no longer pose a threat to water quality, in conformance with the requirements of Title 27 sections 20950(a)(2)(B) and 21090(f).
6. The closure of the Wood Waste Landfill, the Ash Disposal Area Landfill, and Leachate Basin shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.
7. A final verification of clean closure report for the Wood Waste Landfill, the Ash Disposal Area Landfill, and the Leachate Basin must be submitted according to the time schedule in **Section I.4, Time Schedule** of this Order.

Ash Disposal Area Landfill

8. The Discharger shall maintain closure of the Ash Disposal Area Landfill with the final cover components proposed in the operative Final Closure and Post-Closure Maintenance Plan (CPMP), as approved per **Finding 62** in areas where the Discharger is not performing active clean closure operations.
9. The Discharger shall obtain revised WDRs prior to closure of any landfill with a final cover other than the one(s) approved herein.
10. During or after final cover installation, the Discharger may perform minor modifications to problematic areas of the final cover in areas not removed or disturbed by clean closure operations, provided that: (a) the barrier layer of the final cover (e.g., geomembrane, GCL and/or compacted clay layer) remains intact; and (b) the Central Valley Water Board approves of such modifications.
11. If the final cover incorporates a geomembrane barrier, all edges of the final cover not removed or disturbed by clean closure operations shall be sealed by connecting to the liner.

12. The Discharger shall apply a volume of seed, binder and nutrients to any vegetative/erosion-resistant layer sufficient to establish the vegetation proposed in the final closure plan. The Discharger shall also install any necessary erosion and sedimentation controls to protect vegetation while it is being established.
13. Critical interfaces of any new final cover shall be laboratory-tested to ensure minimum design shear strength. The results of such testing shall be reported to the Central Valley Water Board as part of the Construction Quality Assurance (CQA) Report.
14. The ash disposal area landfill shall be maintained and operated to ensure a minimum separation of five feet between the waste and the highest anticipated elevation of groundwater. Piezometer PZ-E is required to be dry at all times to meet this five-foot separation requirement (see Finding 46).
15. The Discharger shall immediately notify Water Board staff of any slope failure of the ash disposal area landfill and shall construct temporary and permanent repairs as soon as possible.

F. Financial Assurances

Except as otherwise directed below, the Discharger shall comply with all Standard Financial Assurance Provisions (SPRRs, § H), as well as the following.

1. The Discharger shall maintain with State Water Board assurances of financial responsibility for the amounts specified for each category in **Finding 82**, adjusted annually for inflation.
2. A report regarding financial assurances, or a copy of the financial assurances report submitted to CalRecycle, shall be submitted to the Central Valley Water Board staff annually, no later than **1 June**.
3. If the State Water Board or Central Valley Water Board determines that the submitted financial assurances for the Facility are inadequate, the Discharger shall, within 90 days of such determination:
 - a. Obtain a new financial assurance mechanism for the amount specified by State Water Board or Central Valley Water Board; and
 - b. Submit a report documenting such financial assurances to CalRecycle and the Central Valley Water Board.

4. The operative Preliminary CPMP shall include all components required per Title 27, section 21769, subdivision (c), and include a lump sum cost estimate for:
 - a. Completion of all actions required for closure or clean closure of each WMU;
 - b. Preparation of detailed design specifications;
 - c. Development of a Final CPMP; and
 - d. Undertaking at least 30 years of post-closure maintenance if a waste management unit is not clean closed or so long as a waste management unit continues to pose a threat to receiving water quality.
5. Whenever changed conditions increase the estimated costs of closure and post-closure maintenance, the Discharger shall promptly submit an updated CPMP to the Central Valley Water Board, CalRecycle and the LEA.

G. Monitoring Requirements

Except as otherwise directed below, the Discharger shall comply with all applicable Standard Monitoring Specifications (SPRRs, § I) and Standard Response to Release Specifications (SPRRs, § J), as well as the following:

1. The Discharger shall comply with all requirements and provisions of the separately issued Monitoring R5-2022-0060 and any subsequent revisions thereto (operative MRP). If the Discharger demonstrates that monitoring in accordance with the operative MRP has conclusively determined that certain constituents of concern are not present in receiving waters (surface waters and/or groundwaters) the Discharger may formally request that the operative MRP be revised to either modify the number of wells sampled for those individual constituents of concern and/or the frequency of sampling for those individual constituents of concern.
2. The Discharger shall implement the Water Quality Protection Standard (WQPS) set forth in the operative MRP (see also Title 27, § 20390); and shall verify the compliance of each WMU with each subsequent monitoring event.
3. For all WMUs, the Discharger shall implement a groundwater, surface water and unsaturated zone detection monitoring program (DMP) if feasible in accordance with Title 27, sections 20385, 20415 and 20420.

4. For each WMU subject to corrective action, the Discharger shall implement a corrective action monitoring program (CAMP) in accordance with Title 27, sections 20385, 20415 and 20430, and Section I of the SPRRs.
5. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for evaluating if there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), in two consecutive sampling events including a resample, indicates that a release of waste from a Unit has occurred. The specified non-statistical method for evaluation of dioxin and furan monitoring data is the presence of two or more constituents above their respective Method Detection Limit (MDL) level as described in EPA Method 1613B and EPA Method SM 5550B. Following an indication of a release, verification testing will be conducted to assess whether there has been a release from the Unit, or if there is a source of the detected constituents other than the landfill, or if the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL, as a trigger, is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL.

H. Reporting Requirements

In addition to those Standard Provisions pertaining to notification and reporting obligations (see, e.g., §§ K.1-2, K.6, K.8-10), the Discharger shall comply with the following provisions.

1. The Discharger shall comply with all MRP provisions pertaining to the submittal and formatting of reports and data.
2. Reports shall be submitted electronically via the State Water Board's [GeoTracker Database](https://geotracker.waterboards.ca.gov) (https://geotracker.waterboards.ca.gov). After uploading, the Discharger shall notify Central Valley Water Board staff via email at CentralVallySacramento@WaterBoards.ca.gov. The following information shall be included in the body of the email:

Attention:	Title 27 Compliance & Enforcement Unit
Report Title:	[Enter Report Title]
GeoTracker Upload ID:	[Number]

Facility: SPI- Martell Division Facility
County: Amador County
CIWQS Place ID: 239635

3. All technical reports submitted under this Order shall be prepared by, or under the direct supervision of, a California-licensed civil engineer or appropriate California-licensed engineering geologist for the work performed. For the purposes of this section, a “technical report” is a report incorporating the application of scientific or engineering principles.
4. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and stamp of the seal.

I. Time Schedule

The Discharger shall complete the following tasks in accordance with the specified deadlines:

Table 9—Time Schedule

Item No.	Category	Task	Deadline
1.	Construction	Submit construction and design plan(s) for review and approval in accordance with Section D of this Order, and Section F of the SPRRs.	90 Days Prior to Proposed Construction
2.	Construction	Submit construction report(s) for review and approval upon completion demonstrating construction was in accordance with approved construction plans and Section F.27 of the SPRRs.	60 Days Prior to Proposed Discharge to Unit(s)
3.	Clean Closure	In accordance with Title 27 section 21410 for the Wood Waste Landfill and Ash Disposal Area Landfill, and section 21400 for the Leachate Basin, the Discharger shall clean close the Wood Waste Landfill, the Ash Disposal Area Landfill, and the Leachate Basin in accordance with the schedule in Attachment E .	31 December 2031 for wood waste landfill and ash disposal landfill, 31 December 2032 for leachate basin
4.	Clean Closure	By 30 March 2033 , the Discharger must submit a <i>Verification of Clean Closure Report for the Wood Waste Landfill, Leachate Basin, and Ash Disposal Area Report</i> . This report shall provide the necessary sampling data with an evaluation demonstrating the clean closure complies with Title 27 section 21410 for the Wood Waste Landfill and and Ash Disposal Area Landfill, and section 21400 for the Leachate Basin.	30 March 2033

Item No.	Category	Task	Deadline
5.	Intermediate Cover Repairs	By 31 October 2022 , the Discharger shall make the necessary repairs to the Wood Waste Landfill intermediate cover in accordance with the Discharger's 2022 ROWD Section 8.0 and submit a technical report verifying that such repairs were made as part of its 2022 Annual Facility Monitoring Report.	15 November 2022
6.	Financial Assurances	The Discharger shall submit a report which includes copies of the financial assurance mechanisms used to demonstrate that it has provided financial assurances in the amounts listed in Table 7 .	1 January 2023

J. Other Provisions

1. The Discharger shall maintain at the Facility copies of this Order (including all attachments), the operative Monitoring & Reporting Program (i.e., MRP R5-2022-0060 and any revisions thereto), and the SPRRs. These materials shall be made available to all operating personnel, who shall be familiar with the contents of such materials.
2. The Discharger must comply with all local permitting requirements.
3. The Discharger must comply with all conditions of this Order including timely submittal of technical and monitoring reports as directed by the Central Valley Water Board's Executive Officer. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action, imposition of civil monetary liability, or revision or rescission of this Order.
4. The Discharger has the continuing responsibility to assure protection of waters of the state from discharged wastes, seeps, gases, and leachate generated by discharged waste during the closure and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.

5. The Discharger shall comply with all applicable provisions of Title 27 (including those requirements and provisions not specifically referenced herein).

LIST OF ATTACHMENTS

ATTACHMENT A—SITE LOCATION MAP

ATTACHMENT B—SITE MAP

ATTACHMENT C—SITE DRAINAGE PATTERNS

ATTACHMENT D—MONITORING LOCATIONS

ATTACHMENT E—WWL, LEACHATE BASIN, AND ADA LANDFILL CLEAN CLOSURE SCHEDULE

ATTACHMENT F—WATER SUPPLY WELL MAP

ATTACHMENT G—INTERMEDIATE COVER SURVEY AND REPAIR PLAN

ATTACHMENT H—ISO-CONCENTRATIONS OF CONSTITUENTS OF CONCERN

Standard Provisions & Reporting Requirements for Industrial Facilities Regulated by Title 27, April 2016 Edition (SPRRs or Standard Provisions)

Information Sheet

Monitoring and Reporting Program R5-2022-0060 (separate document)

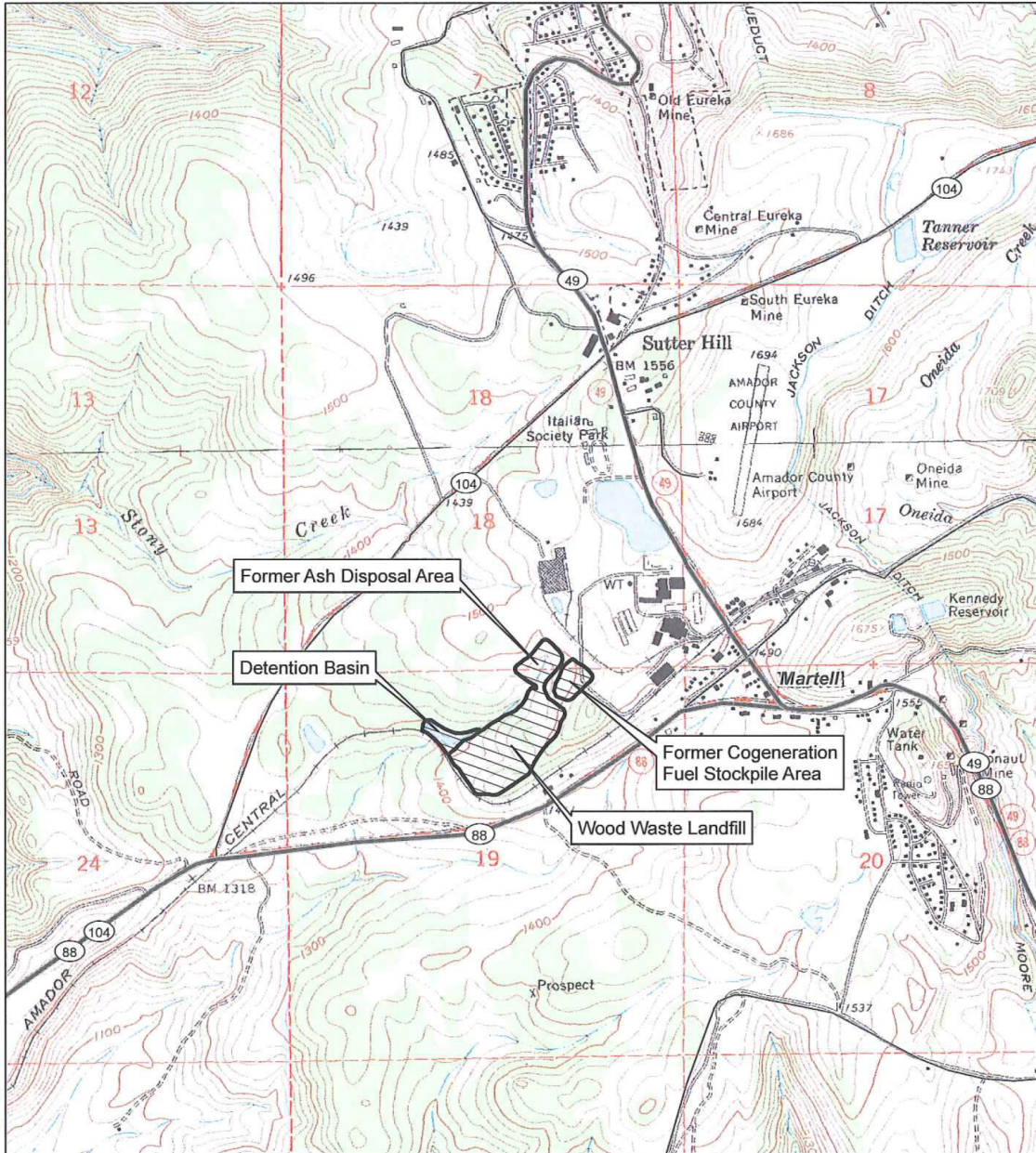
ENFORCEMENT

If, in the opinion of the Executive Officer, the Dischargers 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.

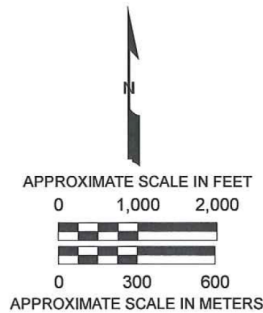
ADMINISTRATIVE REVIEW

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—SITE LOCATION MAP



California



Basemap modified from U.S. Geologic Survey (USGS)
 Topographic quadrangles: Amador City and Jackson, CA.

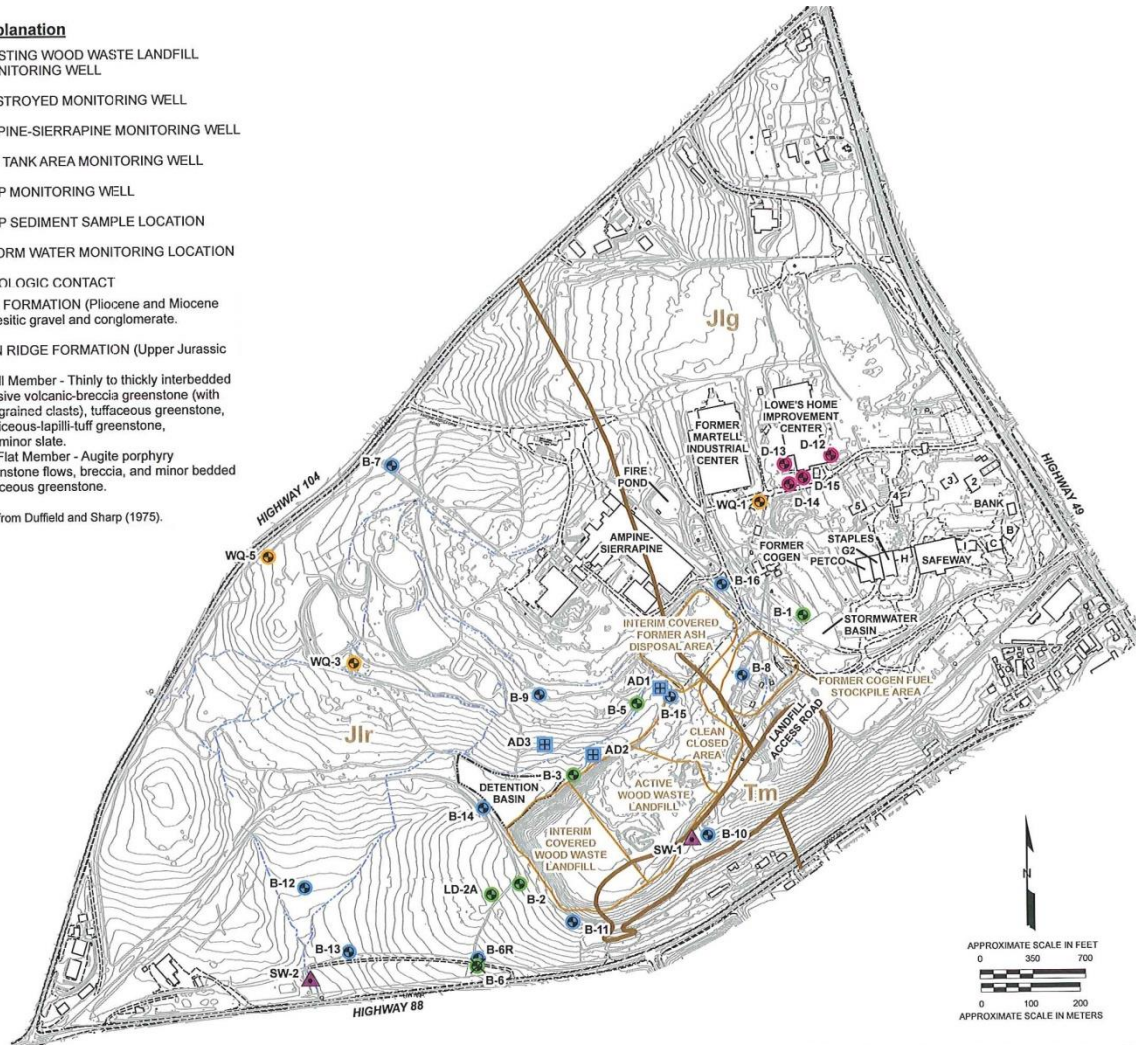
SITE LOCATION MAP
 Sierra Pacific Industries
 Martell Division Facility
 Martell, California

By: KLU	Date: 12/05/2008	Project No. 12107.000
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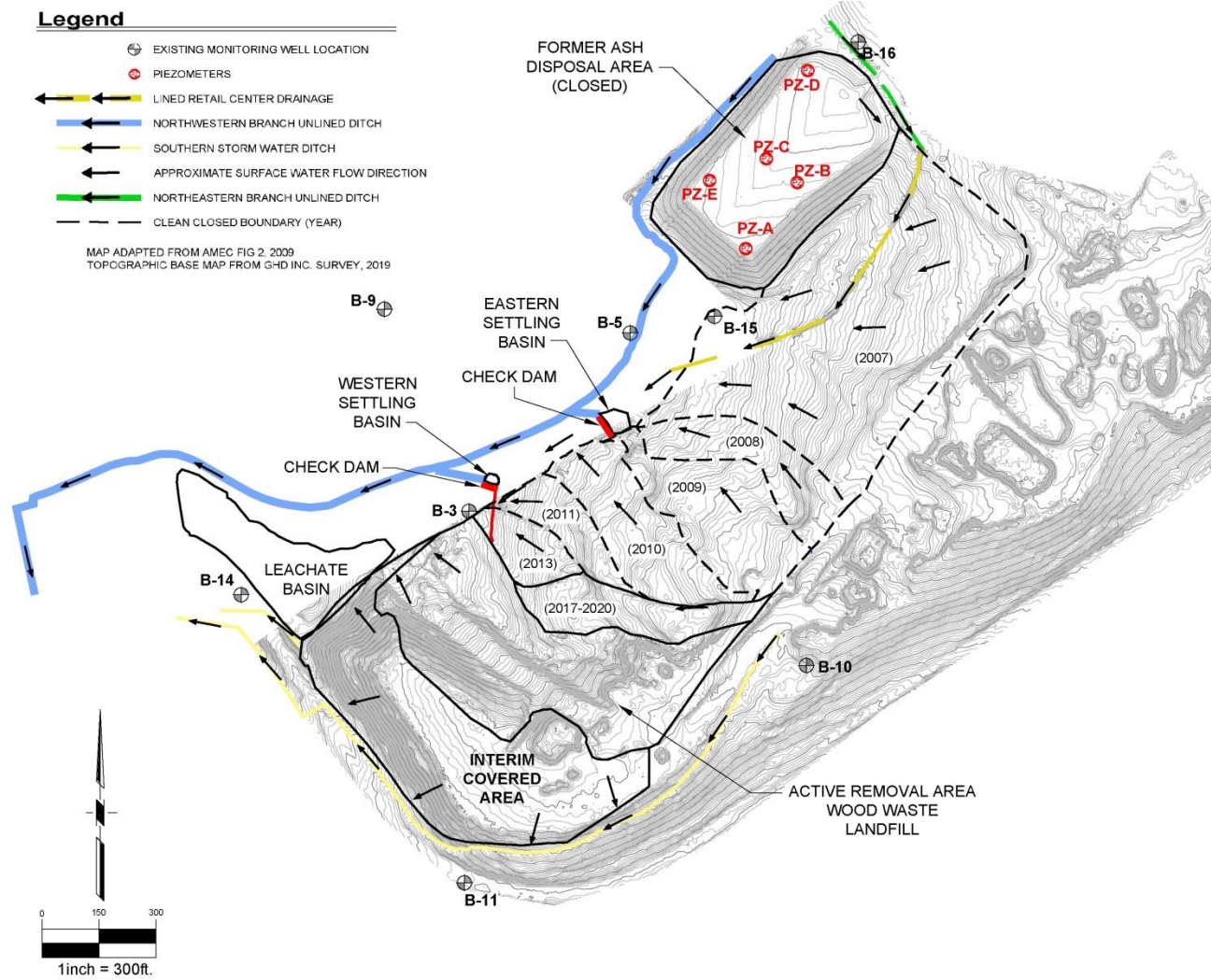
AMEC Geomatrix

ATTACHMENT B—SITE MAP

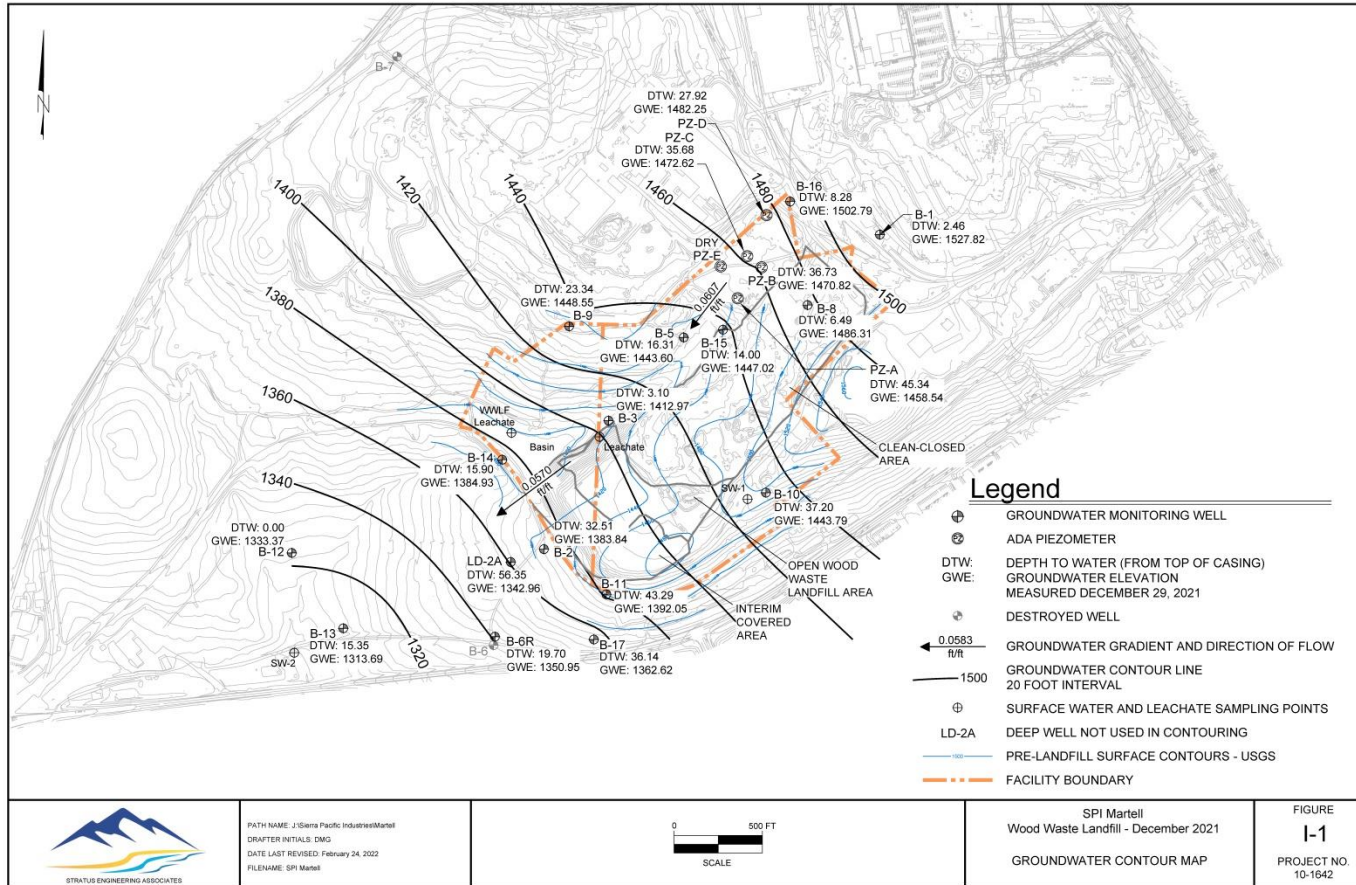
- Explanation**
- B-2 EXISTING WOOD WASTE LANDFILL MONITORING WELL
 - B-6 DESTROYED MONITORING WELL
 - WQ-1 AMPINE-SIERRAPINE MONITORING WELL
 - D13 DIP TANK AREA MONITORING WELL
 - B-9 EMP MONITORING WELL
 - AP1 EMP SEDIMENT SAMPLE LOCATION
 - SW-1 STORM WATER MONITORING LOCATION
 - GEOLOGIC CONTACT
 - Tm** MEHRTEN FORMATION (Pliocene and Miocene age) - Andesitic gravel and conglomerate.
 - LOGTOWN RIDGE FORMATION (Upper Jurassic Age)**
 - Jlg** Goat Hill Member - Thinly to thickly interbedded massive volcanic-breccia greenstone (with fine-grained clasts), tuffaceous greenstone, pumiceous-lapilli-tuff greenstone, and minor slate.
 - Jlr** Rabbit Flat Member - Augile porphyry greenstone flows, breccia, and minor bedded tuffaceous greenstone.
- Note:** Geology from Duffield and Sharp (1975).



ATTACHMENT C—SITE DRAINAGE PATTERNS



ATTACHMENT D—MONITORING LOCATIONS



PATH NAME: J:\Sierra Pacific Industries\Martell
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 DATE LAST REVISED: February 24, 2022
 FILENAME: SPI Martell



SPI Martell
 Wood Waste Landfill - December 2021
 GROUNDWATER CONTOUR MAP

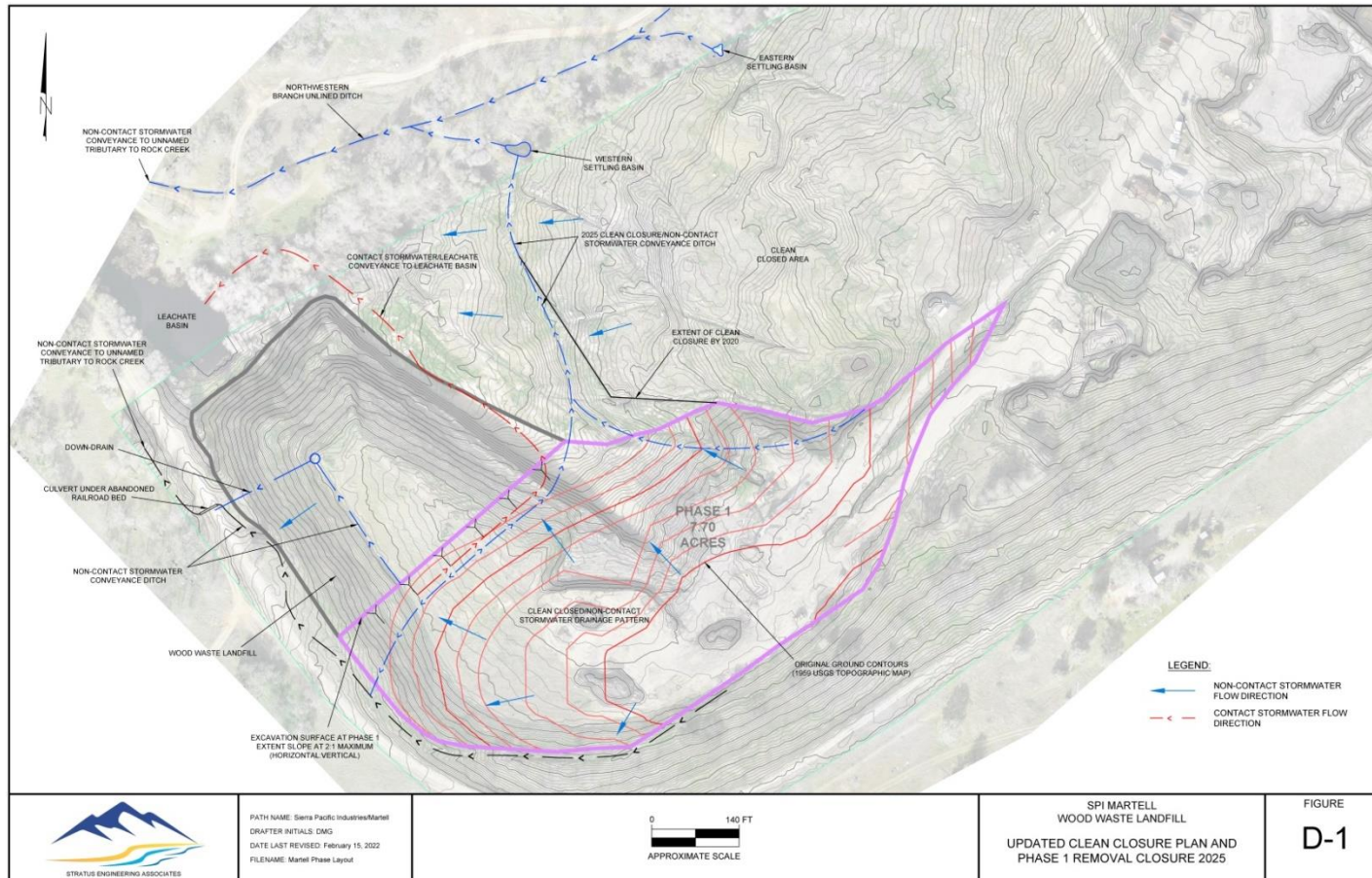
FIGURE
I-1
 PROJECT NO.
 10-1642

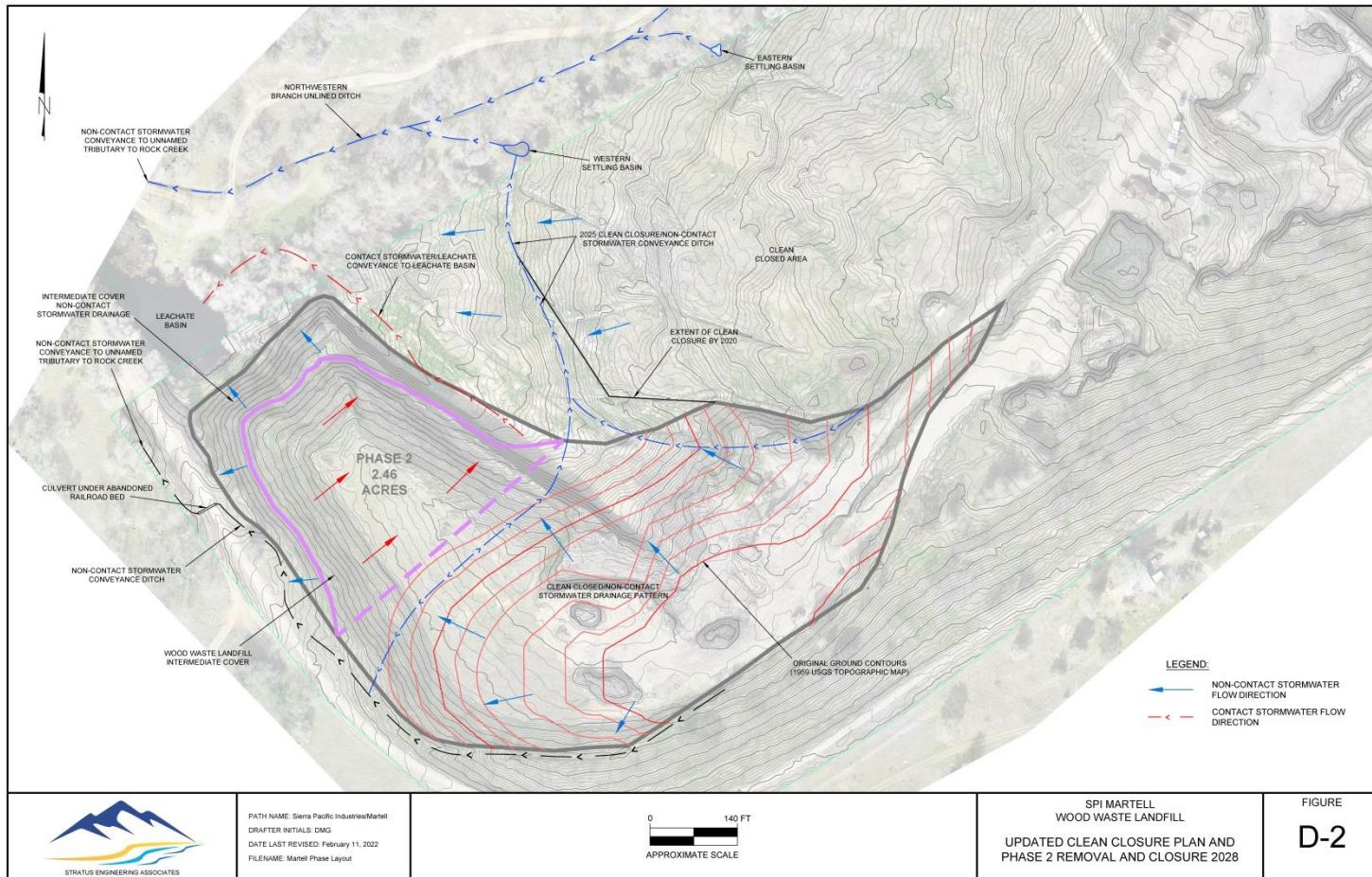
ATTACHMENT E—WWL, LEACHATE BASIN, AND ADA LANDFILL CLEAN CLOSURE SCHEDULE

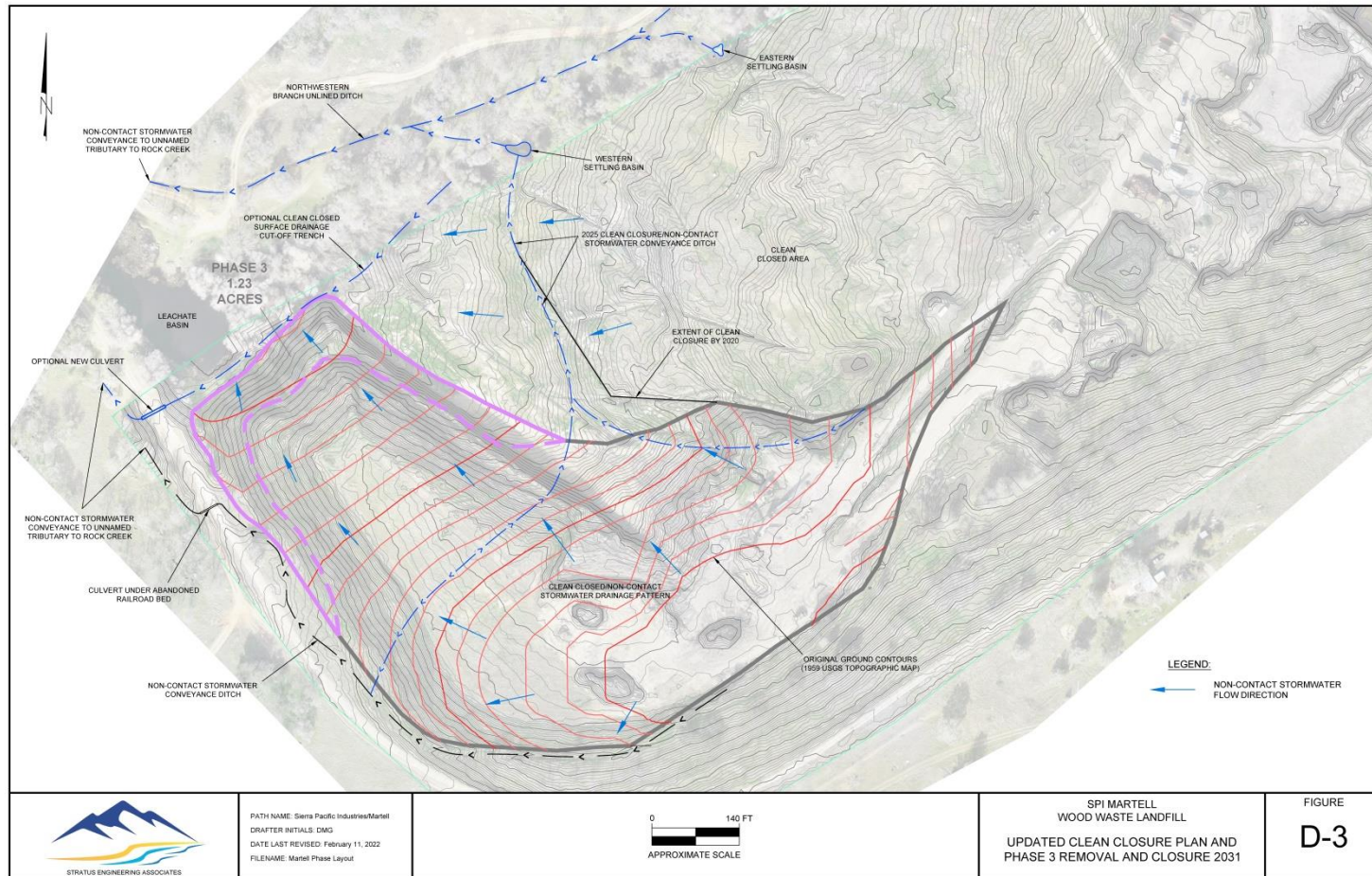
Task	Compliance Date
1. Clean close 45% of remaining volume in wood waste landfill and ash disposal area landfill	31 December 2025
2. Clean close 60% of remaining volume in wood waste landfill and ash disposal area landfill	31 December 2028
3. Clean close 100% of remaining volume in wood waste landfill and ash disposal area landfill	31 December 2031
4. Site restoration and leachate Basin clean closure	31 December 2032
5. Submit verification report certifying that wood waste landfill and leachate basin have been clean closed and restoration of the area has been completed.	30 March 2033

Table C-1
Estimated Wood Waste Landfill and ADA Volumes and Closure Phases
 (cubic yards)

Clean Closure Phase	Year	WWLF	WWLF	WWLF	WWLF	WWLF	ADA	ADA	ADA	ADA	ADA	Total	Total	
		Bank Volume Remaining at Years End	Bulked Volume Remaining at Years End	Bulked Volume Shipped	Bank Volume Phase Total	Bulked Volume Phase Total	Bank Volume Remaining at Years End	Bulked Volume Remaining at Years End	Bulked Volume Shipped	Bank Volume Phase Total	Bulked Volume Phase Total	Bulked Volume Shipped	Volume Removed Each Phase	Bank	Bulked
1	2021	351,045	586,245	33,133			100,000	167,000	0			33,133		
	2022	312,123	521,245	65,000			88,623	148,000	19,000			84,000		
	2023	273,201	456,245	65,000			77,246	129,000	19,000			84,000		
	2024	234,278	391,245	65,000			65,868	110,000	19,000			84,000		
	2025	195,356	326,245	65,000	155,689	260,000	54,491	91,000	19,000	45,509	76,000	84,000	201,198	336,000
2	2026	156,434	261,245	65,000			43,114	72,000	19,000			84,000		
	2027	117,512	196,245	65,000			31,737	53,000	19,000			84,000		
	2028	78,590	131,245	65,000	116,766	195,000	20,359	34,000	19,000	34,132	57,000	84,000	150,898	252,000
3	2029	39,668	66,245	65,000			8,982	15,000	19,000			84,000		
	2030	746	1,245	65,000			0	0	15,000			80,000		
	2031	0	0	1,245	78,590	131,245				20,359	34,000	1,245	98,949	165,245
4	2032	Site Restoration and Leachate Basin Closure												





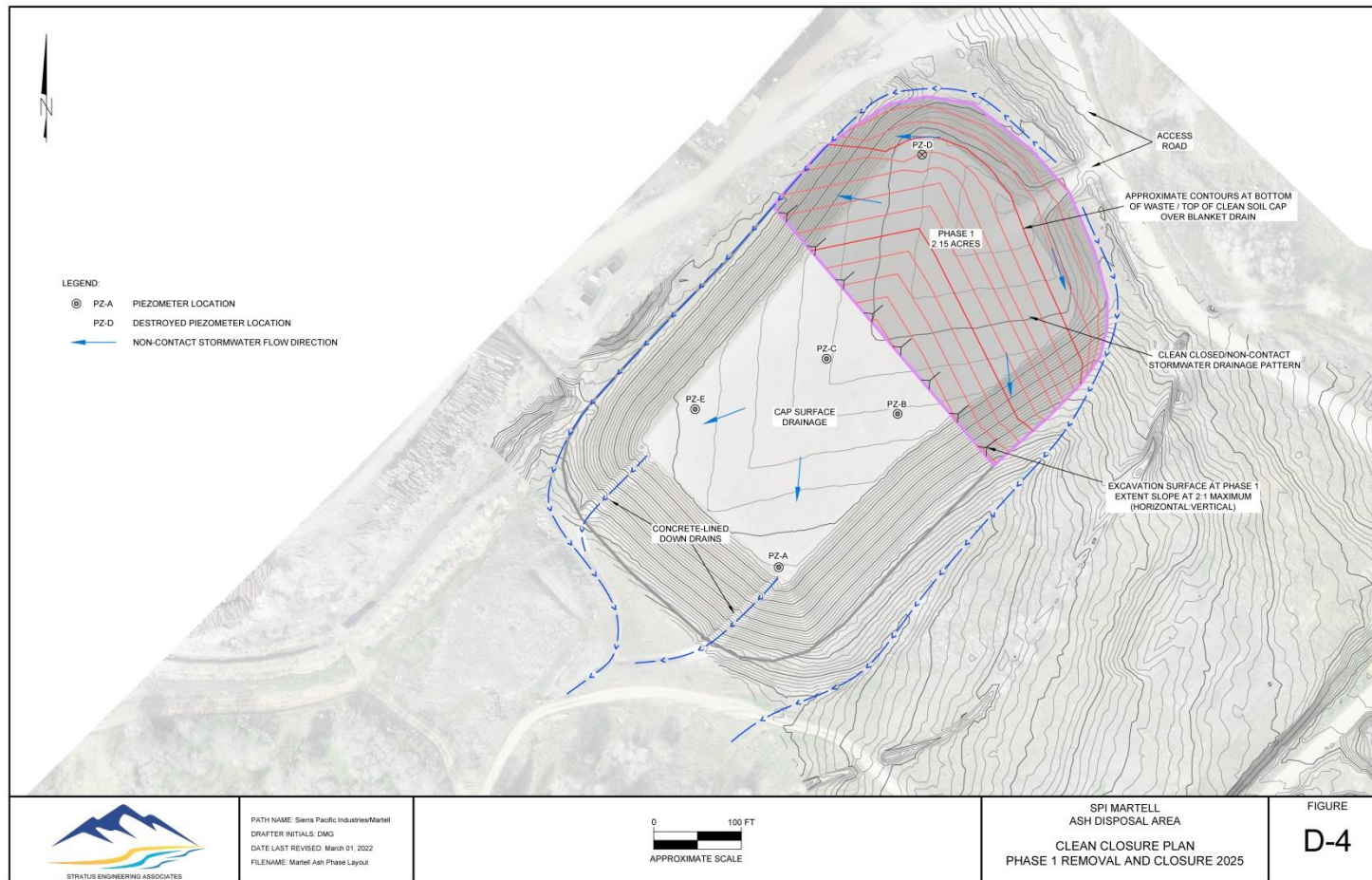


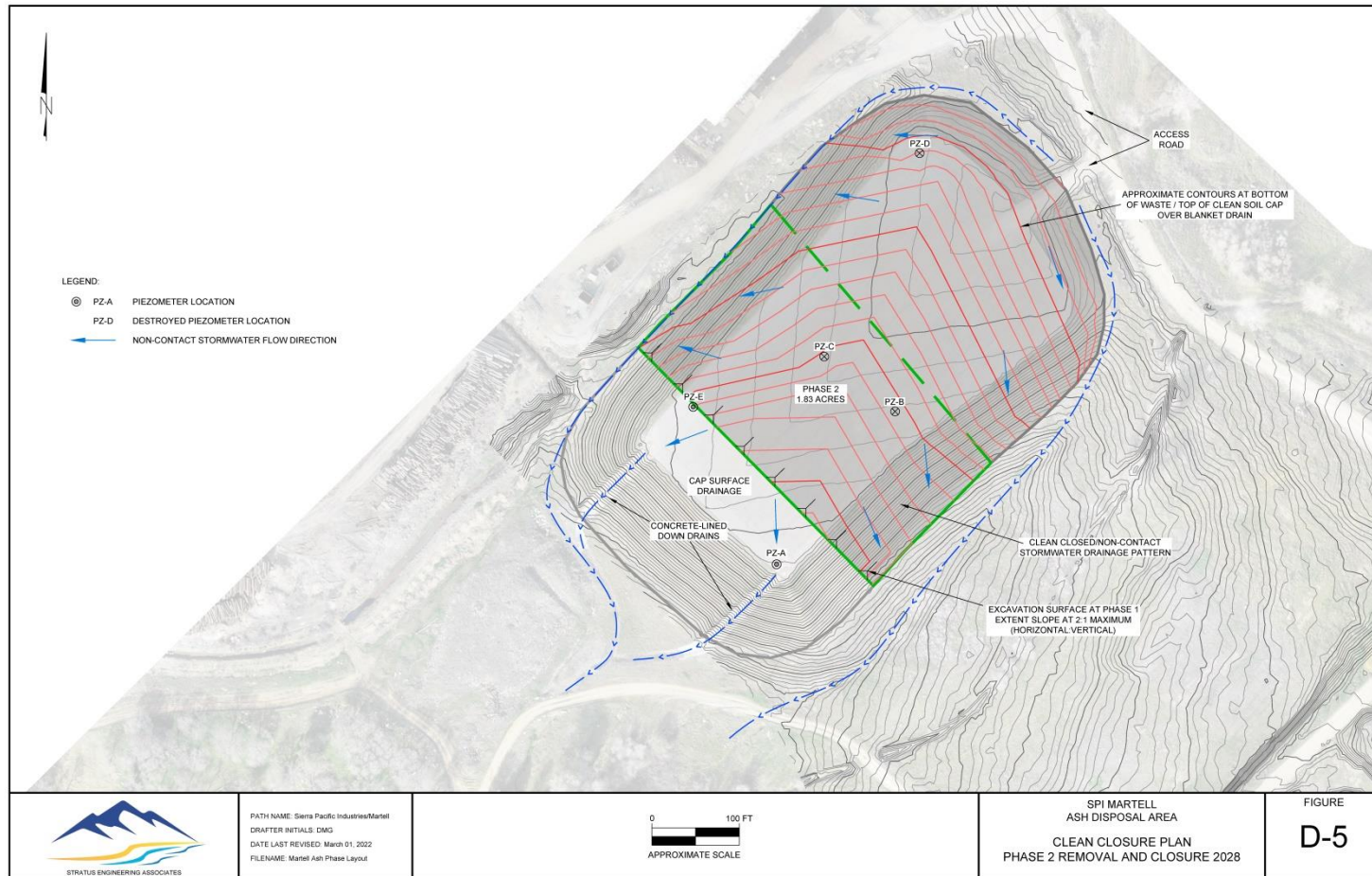
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 DRAFTER INITIALS: DMG
 DATE LAST REVISED: February 11, 2022
 FILENAME: Martell Phase Layout

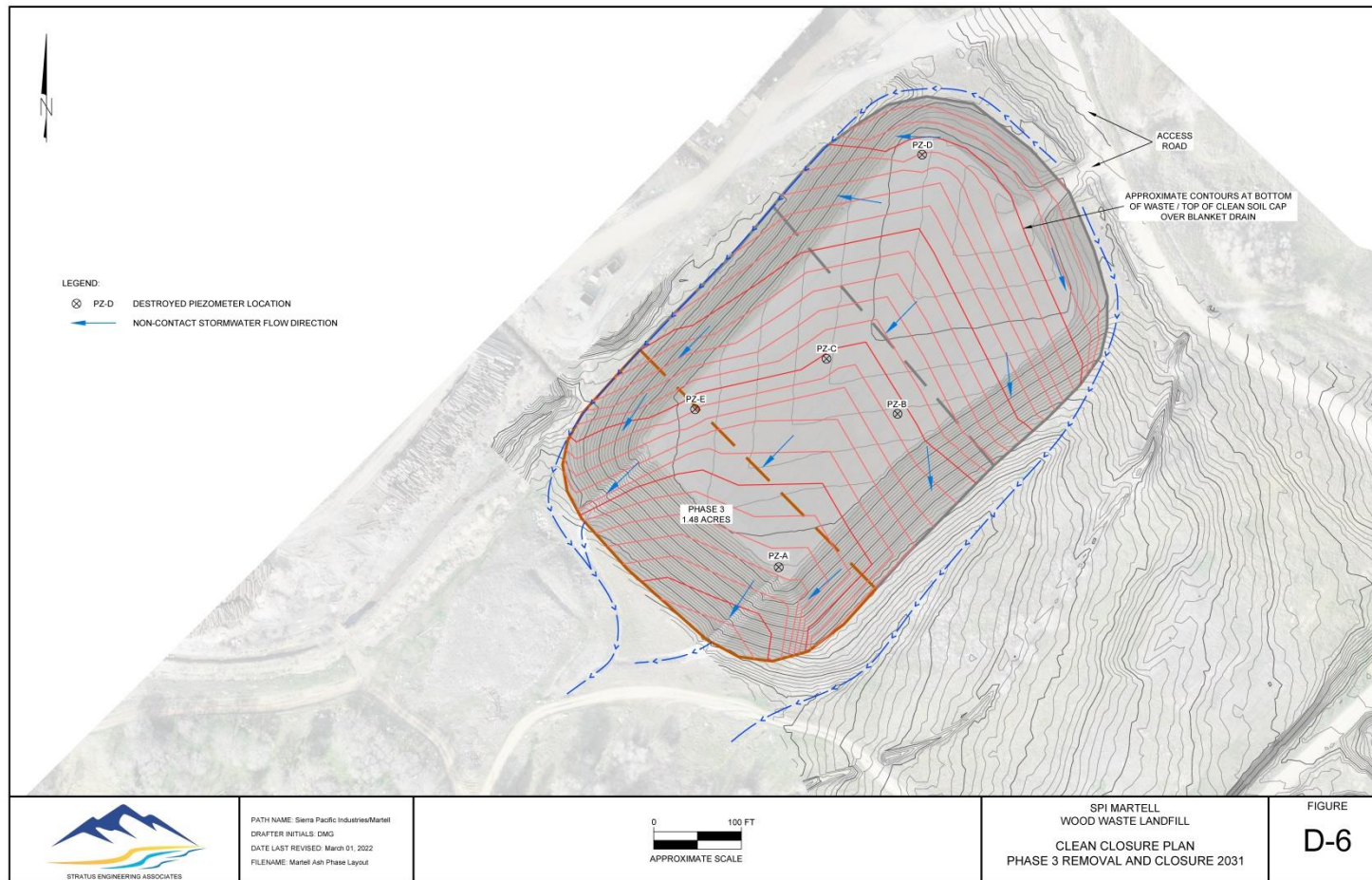
0 140 FT
 APPROXIMATE SCALE

SPI MARTELL
WOOD WASTE LANDFILL
UPDATED CLEAN CLOSURE PLAN AND
PHASE 3 REMOVAL AND CLOSURE 2031

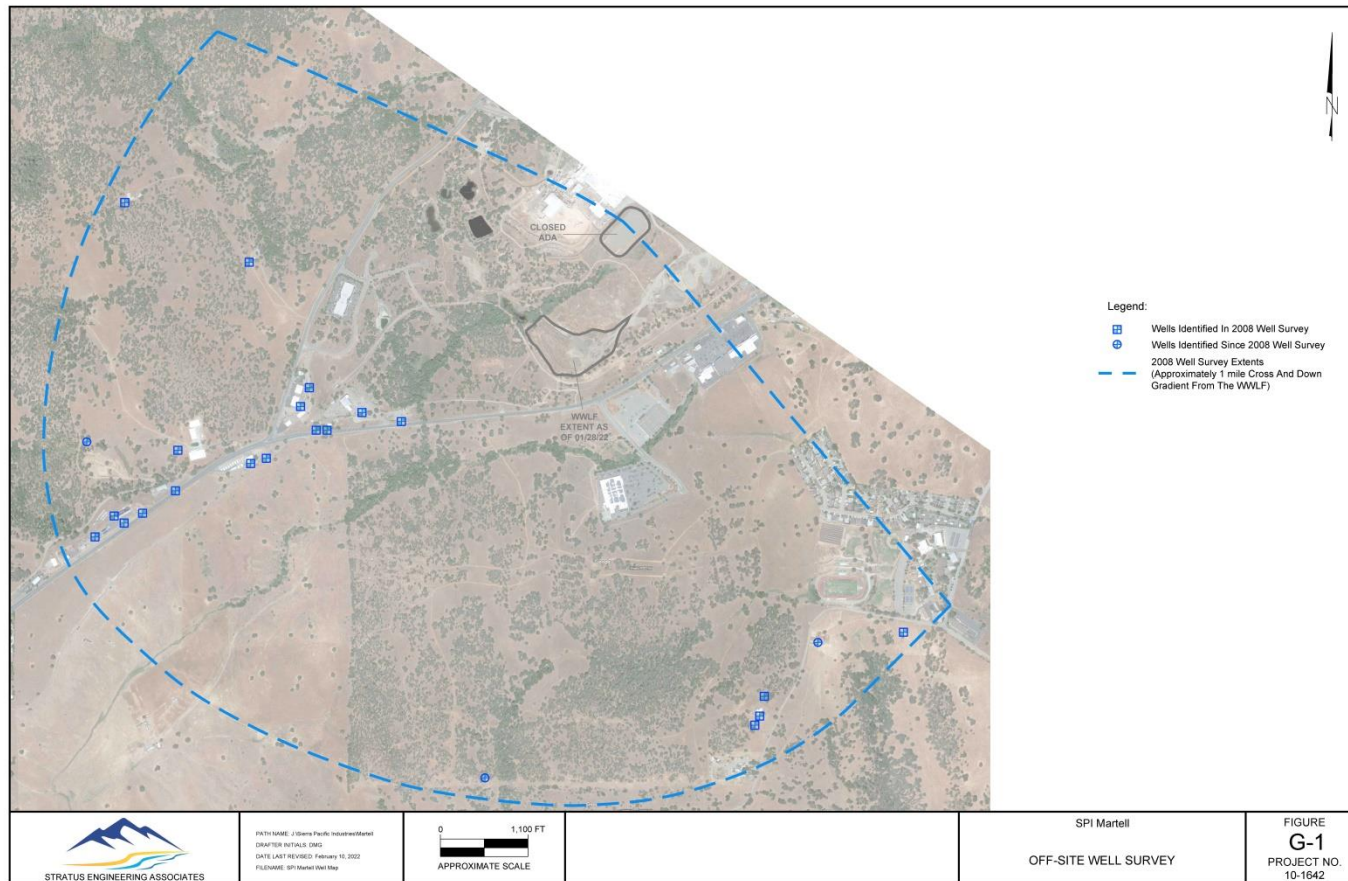
FIGURE
D-3



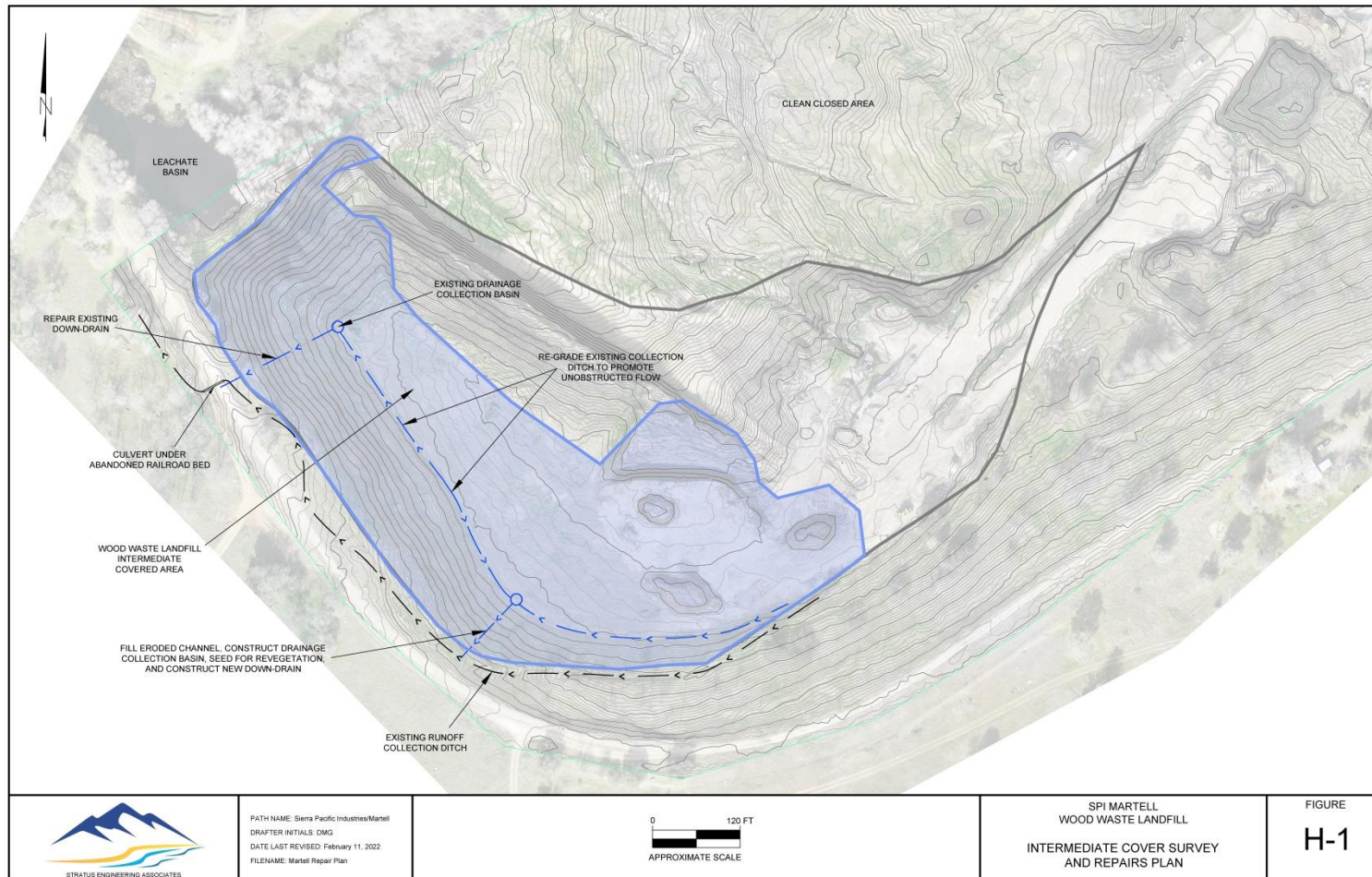




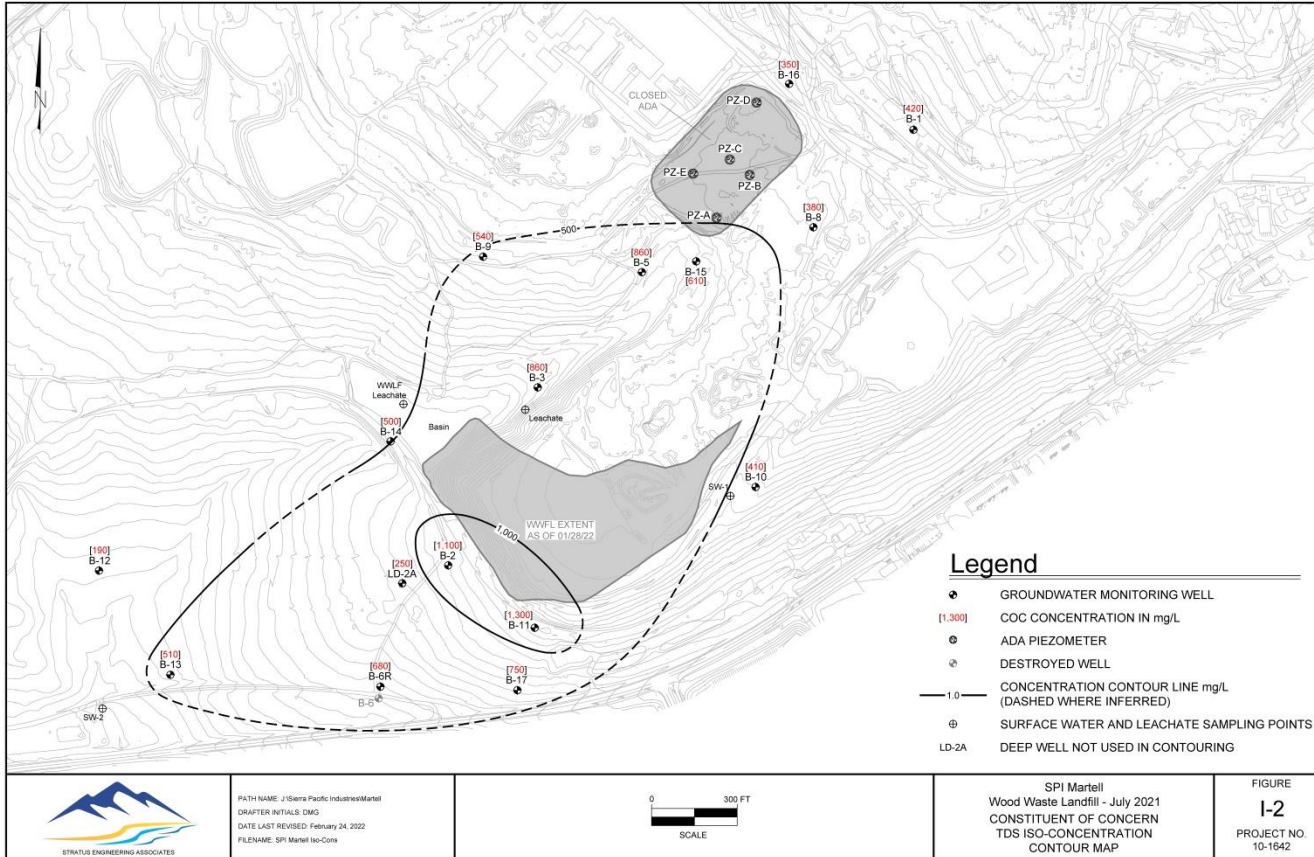
ATTACHMENT F—WATER SUPPLY WELL MAP

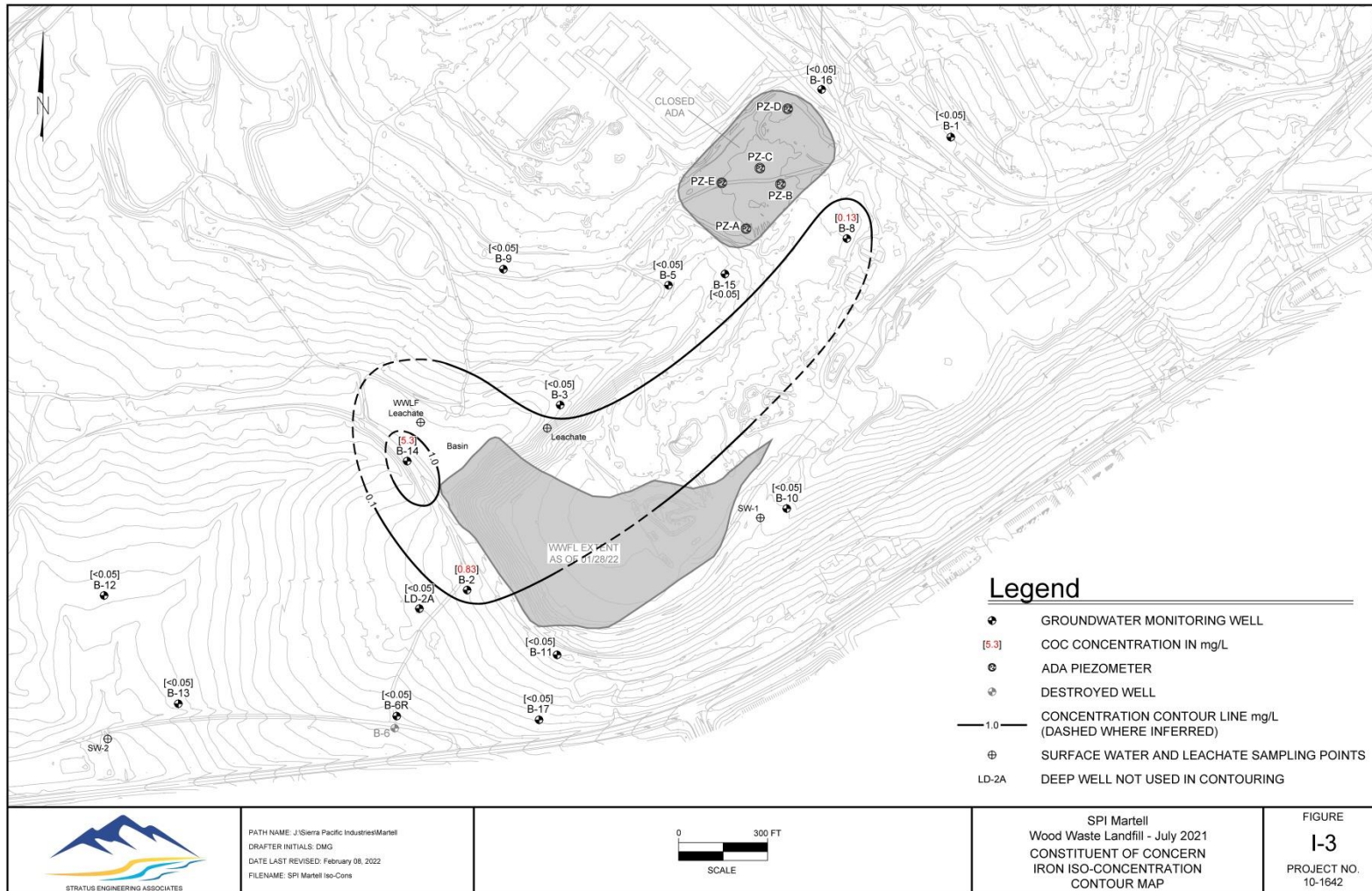


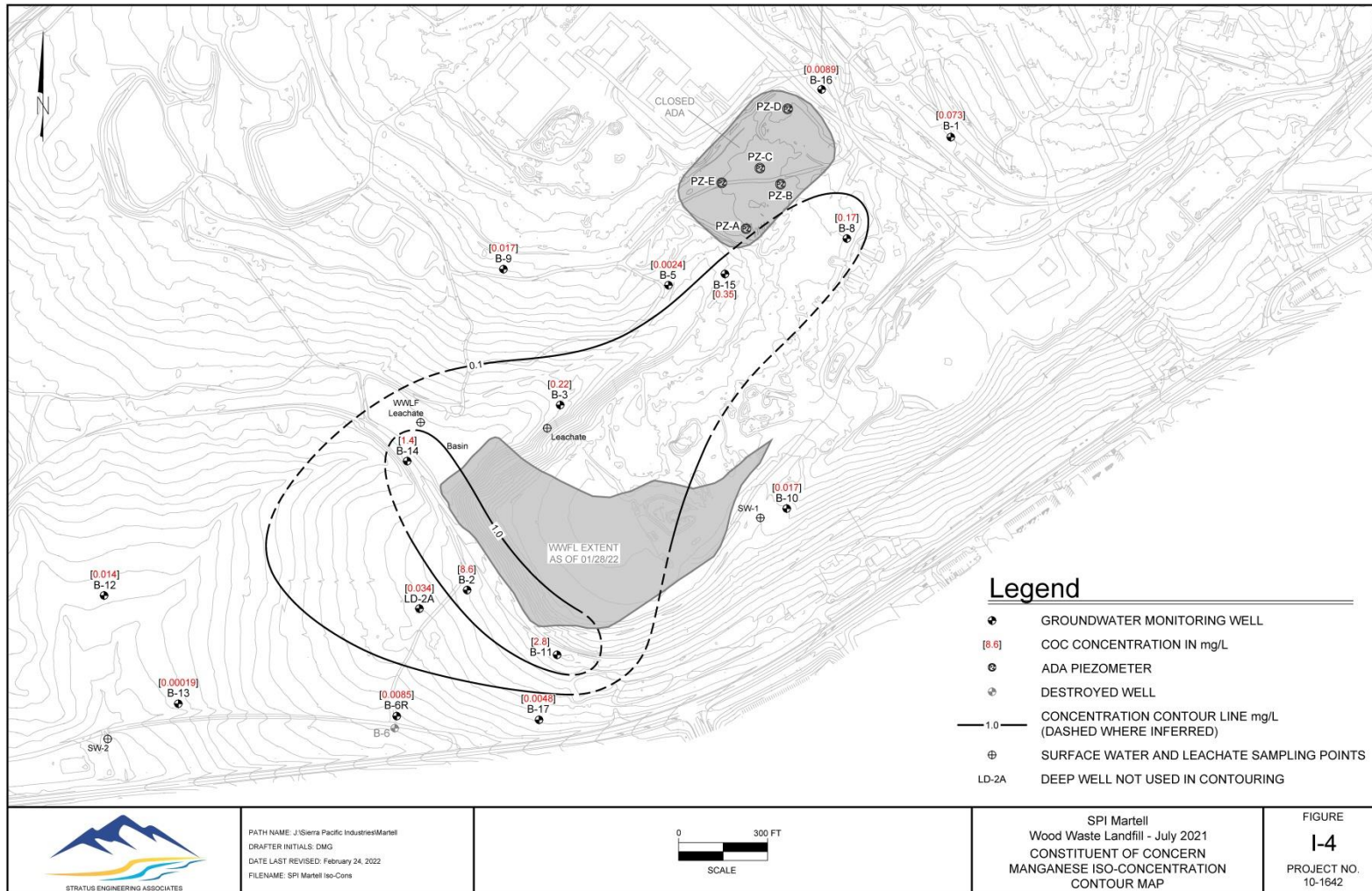
ATTACHMENT G—INTERMEDIATE COVER SURVEY AND REPAIR PLAN

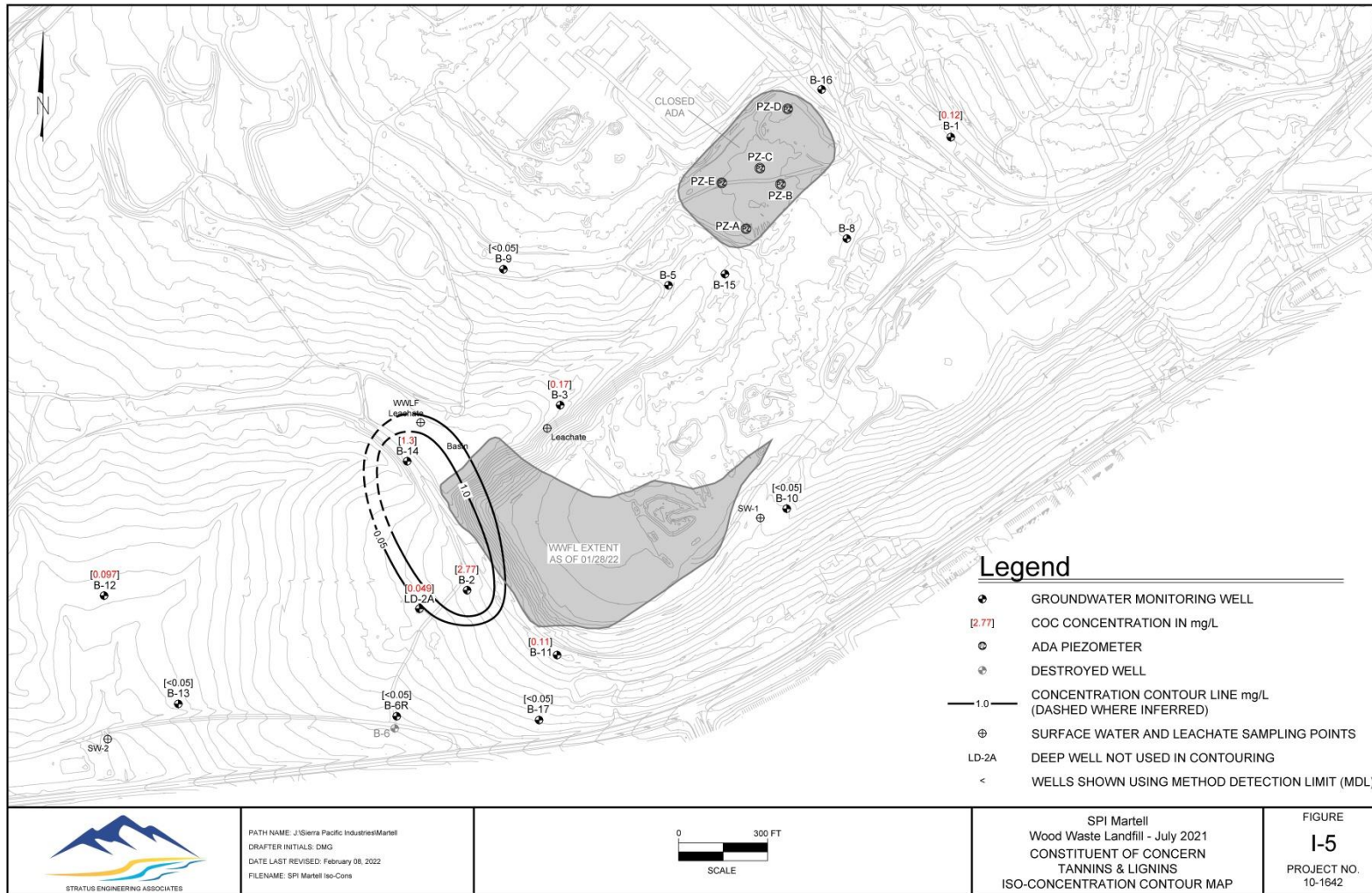


ATTACHMENT H—ISO-CONCENTRATIONS OF CONSTITUENTS OF CONCERN









**STANDARD PROVISIONS & REPORTING REQUIREMENTS- (INDUSTRIAL
FACILITIES- 04/2016)**

STANDARD PROVISIONS AND REPORTING REQUIREMENTS INDUSTRIAL
FACILITIES REGULATED BY TITLE 27
(Title 27, § 20005 et seq.)

April 2016 Edition

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A. Applicability

1. These Standard Provisions and Reporting Requirements (SPRRs) are applicable to Class II surface impoundments, waste piles, and land treatment units that are regulated by the Central Valley Regional Water Quality Control Board (hereafter, Central Valley Water Board) pursuant to the provisions of California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.
2. "Order," as used throughout this document, means the Waste Discharge Requirements (WDRs) to which these SPRRs are incorporated.
3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
4. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
5. If there is any conflicting or contradictory language between the WDRs, the Monitoring and Reporting Program (MRP), or the SPRRs, then language in the WDRs shall govern over either the MRP or the SPRRs, and language in the MRP shall govern over the SPRRs.
6. If there is a site-specific need to change a requirement in these SPRRs for a particular facility, the altered requirement shall be placed in the appropriate section of the WDRs and will supersede the corresponding SPRRs requirement. These SPRRs are standard and cannot be changed as part of the permit writing process or in response to comments, but they will be periodically updated on an as-needed basis.
7. Unless otherwise stated, all terms are as defined in Water Code section 13050 and in Title 27, section 20164.

B. Terms and Conditions

1. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or

- nuisance, is a violation of this Order and the Water Code, which can result in the imposition of civil monetary liability [Wat. Code, § 13350(a)]
2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [Wat. Code, § 13381]:
 - a. Violation of any term or condition contained in this Order;
 - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
 - d. A material change in the character, location, or volume of discharge.
 3. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge (ROWD), or other appropriate joint technical document (JTD), with the Central Valley Water Board [Wat. Code, § 13260(c) and § 13264(a)]. A material change includes, but is not limited to, the following:
 - a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
 - b. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment);
 - c. A change in the type of waste being accepted for disposal; or
 - d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.
 4. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [Wat. Code, §13267(c)].

5. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [Wat. Code, § 13263(e) and Title 27, § 21720(b)].
6. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [Wat. Code, § 13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
7. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [Wat. Code, § 13263(g)].
8. Technical and monitoring reports specified in this Order are requested pursuant to the Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the Water Code [Wat. Code, §13268(a)].

C. Standard Prohibitions

1. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:
 - a. require a higher level of containment than provided by the unit; or
 - b. are 'restricted wastes'; or
 - c. impair the integrity of containment structures;is prohibited [Title 27, § 20200(b)].
2. The discharge of wastes outside of a waste management unit or portions of a unit specifically designed for their containment is prohibited.
3. The discharge of waste to a closed waste management unit is prohibited.

4. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited, except within the treatment zone at a land treatment unit.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

D. Standard Discharge Specifications

1. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the waste management unit and whether or not the wastes are required to be managed as a hazardous waste [Title 27, § 20200(c)] or designated waste [Title 27, § 20210].
2. Leachate collected from a waste management unit shall be discharged to the unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the waste classification of the liquid [Title 27, § 20200(d) and § 20340(g)].
3. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.
4. The discharge shall remain within the designated disposal area at all times.
5. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].

E. Standard Facility Specifications

1. All waste management units shall be designed, constructed, and operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe.
2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
3. The Discharger shall **immediately** notify the Central Valley Water Board staff of any slope failure occurring at a waste management unit. Any failure which threatens the integrity of containment features or the waste management unit

shall be promptly corrected in accordance with an approved method [Title 27, § 21710(c)(2)].

4. The Discharger shall **immediately** notify Central Valley Water Board staff of any flooding, unpermitted discharge of waste off-site or outside of waste management units, equipment failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
5. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
6. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.
7. The Discharger shall maintain the depth of the fluid in the sump of each waste management unit at the minimum needed for efficient pump operation (the depth at which the pump turns on given the pump intake height and maximum pump cycle frequency).
8. Each LCRS shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [Title 27, § 20340(d)].
9. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Board Order No. 2014-0057-DWQ (or most recent general industrial storm water permit), or retain all storm water on-site.

F. Standard Construction Specifications

1. The Discharger shall submit for review and approval at least **90 days** prior to proposed construction, design plans and specifications for new Class II waste management units that include the following:
 - a. Detailed construction drawings showing all required liner system components, the LCRS, leachate sump, unsaturated zone monitoring system, and access to the LCRS for required annual testing.

- b. A Construction Quality Assurance (CQA) Plan prepared by a California-registered civil engineer or certified engineering geologist, and that meets the requirements of Title 27, section 20324.
 - c. A geotechnical evaluation of the area soils, evaluating their use as the base layer or reference to the location of this information in the ROWD/JTD [Title 27, § 21750(f)(4)].
 - d. Information about the seismic design of the proposed new waste management unit (or reference to the location of this information in the ROWD/JTD) in accordance with Title 27, section 20370.
 - e. A revised water quality monitoring plan for groundwater detection monitoring (or information showing the existing plan is adequate) in accordance with Title 27, section 20415.
 - f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, sections 21760(b) and 20375(b).
2. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.
3. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved. Waste management units shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the unit commences [Title 27, § 20310(e)].
4. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].
5. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].

6. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].
7. The Discharger shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
8. All Class II waste management units shall be designed to withstand maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion [Title 27, § 20370(a)].
9. The Discharger shall perform stability analyses that include components to demonstrate the integrity of the waste management unit foundation, final slopes, and containment systems under both static and dynamic conditions throughout the life of the unit [Title 27, § 21750(f)(5)].
10. New Class II Units, other than LTUs and expansions of existing Class II units, shall have a 200 foot setback from any known Holocene fault. [Title 27, § 20250(d)].
11. Liners shall be designed and constructed to contain the fluid, including waste, and leachate [Title 27, § 20330(a)].
12. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, § 20320(c)].
13. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [Title 27, § 20320(b)].
14. A test pad for each barrier layer and any final cover shall be constructed in a manner duplicating the field construction. Test pad construction methods, with the designated equipment, shall be used to determine if the specified density/moisture-content/hydraulic conductivity relationships determined in the laboratory can be achieved in the field with the compaction equipment to be used and at the specified lift thickness [Title 27, § 20324(g)(1)(A)].

15. The Discharger shall ensure proper preparation of the subgrade for any liner system that includes a GCL so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
16. The Discharger shall propose an electronic leak location survey of the top liner for any new waste management unit in the construction quality assurance plan unless the Discharger demonstrates that a leak location survey is not needed.
17. Leachate collection and removal systems are required for Class II surface impoundments [Title 27, § 20340(a)].
18. The LCRS shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the waste management unit [Title 27, § 20340(b)].
19. Leachate collection and removal systems shall be designed and operated to function without clogging through the life of the waste management unit.
20. The leachate sump, leachate removal pump, and pump controls shall be designed and set to maintain a fluid depth no greater than the minimum needed for efficient pump operation [Title 27, § 20340(c)].
21. All construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [Title 27, § 20323].
22. The Construction Quality Assurance program shall be supervised by a registered civil engineer or a certified engineering geologist who shall be designated the CQA officer [Title 27, § 20324(b)(2)].
23. The Discharger shall ensure that a third party independent of both the Discharger and the construction contractor performs all of the construction quality assurance monitoring and testing during the construction of a liner system.
24. The Discharger shall notify Central Valley Water Board staff at least **14 days** prior to commencing field construction activities including construction of a new Class II waste management unit, construction of a final cover (for units closed as a landfill), or any other construction that requires Central Valley Water Board staff approval under this Order.

25. The Discharger shall submit for review and approval at least **60 days** prior to proposed discharge, final documentation required in Title 27 Section 20324(d)(1)(C) following the completion of construction of a new Class II waste management unit. The report shall be certified by a registered civil engineer or a certified engineering geologist and include a statement that the liner system was constructed in accordance with the approved design plans and specifications, the CQA Plan, the requirements of the WDRs, and that it meets the performance goals of Title 27. The report shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, the construction quality assurance plan, and the performance goals of Title 27.
26. The Discharger shall not discharge waste onto a newly constructed liner system until the final documentation report has been reviewed and an acceptance letter has been received.

G. Standard Closure and Post-Closure Specifications

1. The final closure and post-closure maintenance plan for the waste management unit shall include at least the following: an itemized cost analysis, closure schedule, any proposed final treatment procedures, map, changes to the unit description presented in the most recent ROWD, future land use, and a construction quality assurance plan [Title 27, § 21769(c) & (d)].
2. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].
3. The final cover of waste management units closed as a landfill shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [Title 27, § 21090(b)(1)(A)].
4. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].
5. All final cover designs shall include a minimum 1-foot thick erosion resistant vegetative layer or a mechanically erosion-resistant layer [Title 27, § 21090(a)(3)(A)(1 & 2)].
6. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [Title 27, § 21090(b)(2)].

7. The Discharger shall design storm water conveyance systems for Class II units that are closed as a landfill for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
8. Construction or repair of a final cover system's low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance plan [Title 27, § 21090(b)(1)(E)].
9. Within **30 days** of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that units that are closed as a landfill shall be maintained in accordance with an approved post-closure maintenance plan [Title 27, § 21710(c)(6)].
10. The post-closure maintenance period for units closed as a landfill shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].
11. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, and any areas damaged by equipment operations [Title 27, § 21090(a)(4)(B)].
12. The Discharger shall repair any cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].

H. Standard Financial Assurance Provisions

1. The Discharger shall establish an irrevocable fund (or provide other means) for closure to ensure closure of each Class II unit in accordance with an approved closure plan [Title 27, § 20950(f) and § 22207(a)].
2. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit [Title 27, §20380(b) and § 22222].

I. Standard Monitoring Specifications

1. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [Title 27, § 20415(e)(4)].
2. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [Title 27, § 20415(e)(1)].
3. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [Title 27, § 20415(b)(4)(A)].
4. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [Wat. Code, § 13176(a)].
5. A Detection Monitoring Program for a new Class II waste management unit shall be installed, operational, and one year of monitoring data collected from background monitoring points prior to the discharge of wastes [Title 27, § 20415(e)(6)].
6. Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).
7. The Discharger shall submit for approval, establish, and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;
 - c. Sample analytical methods and procedures;
 - d. Sample quality assurance/quality control (QA/QC) procedures;

- e. Chain of Custody control; and
- f. Sample analysis information including sample preparation techniques to avoid matrix interferences, method detection limits (MDLs), practical quantitation limits (PQLs) and reporting limits (RLs), and procedures for reporting trace results between the MDL and PQL.

If required by the Executive Officer, the Discharger shall modify the Sample Collection and Analysis Plan to conform with this Order.

- 8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan. Appropriate sample preparation techniques shall be used to minimize matrix interferences.
- 9. If methods other than USEPA-approved methods or Standard Methods are used, or there is a proposed alternant USEPA method than the one listed in the MRP, the proposed methodology shall be submitted for review and approval prior to use, including information showing its equivalence to the required method.
- 10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
- 11. The laboratory reporting limit (RL) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL).

12. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. Laboratory data shall not be altered or revised by the Discharger. If the Discharger observes potential lab errors, it shall identify the issue in the monitoring report and shall describe steps that will be taken to prevent similar errors in the future.
14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs. MDLs and PQLs shall be reported.
15. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged in the laboratory report accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent’s actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
16. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and signature of a responsible person from the laboratory. **Sample results shall be reported unadjusted for blank results or spike recoveries.** In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.

17. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
18. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)].
19. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].
20. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].
21. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.
22. The Discharger shall provide Central Valley Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.
23. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, section 20410 [Title 27, § 20390].
24. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405].
25. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].
26. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater

- that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].
27. The Detection Monitoring Program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].
 28. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].
 29. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].
 30. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].
 31. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].
 32. The Discharger shall notify Central Valley Water Board staff within **seven days** if fluid is detected in a previously dry LCRS, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [Title 27, § 21710(c)(3)].
 33. Driller's logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Wat. Code, § 13751 and Title 27, § 20415(b)(3)].
 34. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 20415(e)(13)].
 35. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].

36. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].
37. For each waste management unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [Title 27, § 20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for determining “measurably significant” (as defined in Title 27, section 20164) evidence of a release from the waste management unit and determining compliance with the water quality protection standard [Title 27, § 20415(e)(6) and (7)].
38. For statistical analysis of data, the Discharger shall use one of the methods described in Title 27, section 20415(e)(8)(A)-(E). A non-statistical data analysis method can be used if the method can achieve the goal of the particular monitoring program at least as well as the most appropriate statistical method [Title 27, § 20415(e)(8)]. The Discharger shall use a statistical or nonstatistical data analysis method that complies with Title 27, section 20415(e)(7, 8, 9, and 10), to compare the concentration of each constituent of concern or monitoring parameter with its respective background concentration to determine whether there has been a measurably significant evidence of a release from the waste management unit. For any given monitoring point at which a given constituent has already exhibited a measurably significant indication of a release at that monitoring point, the Discharger may propose to monitor the constituent, at that well, using a concentration-versus-time plot.
39. The Discharger may propose an alternate statistical method [to the methods listed under Title 27, section 20415(e)(8)(A-D)] in accordance with Title 27, section 20415(e)(8)(E), for review and approval.
40. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27, section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs or an approved Sample Collection and Analysis Plan for routine laboratory operating conditions that are available to the facility. The Discharger’s technical report (Sample Collection and Analysis Plan and/or Water Quality Protection Standard

- Report), pursuant to Title 27, section 20415(e)(7), shall consider the PQLs listed in Appendix IX, Article 19 to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a “trace” detection) shall be identified and used in appropriate statistical or non-statistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory’s concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of “ties”.
41. The water quality protection standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (e.g., USEPA methods 8260 and 8270).
42. Alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) if part of an approved water quality protection standard. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.
- 43. Confirmation of Measurably Significant Evidence of a Release.**
Whenever a constituent is detected at a detection monitoring point at a concentration that exceeds the concentration limit from the water quality protection standard, the Discharger shall conduct verification sampling to confirm if the exceedance is due to a release or if it is a false-positive (unless previous monitoring has already confirmed a release for that constituent at that monitoring point). An exceedance of the concentration limit from the water quality protection standard is considered measurably significant evidence of a release that must be either confirmed or denied. There are two separate verification testing procedures:
- a. Standard Monitoring Specification I.0 provides the procedure for analytes that are detected in less than 10% of the background samples such as non-naturally occurring constituents like volatile organic compounds; and
 - b. Standard Monitoring Specification I.0 provides the procedure for analytes that are detected in 10% or greater of the background samples such as naturally occurring constituents like chloride.

44. Verification Procedure for Analytes Detected in Less than 10% of Background Samples.

The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

- a. Initial Determination of Measurably Significant Evidence of a Release. Identify each analyte in the current detection monitoring point sample that exceeds either its respective MDL or PQL, and for which a release has not been previously confirmed. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if either:
 - 1) The data contains two or more analytes that equal or exceed their respective MDLs; or
 - 2) The data contains one or more analyte that equals or exceeds its PQL.
- b. Discrete Retest [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)]:
 - 1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.0.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.
 - 2) **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if (not including the original sample) two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL. The Discharger shall then:
 - a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and
 - b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.

- c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

45. Verification Procedure for Analytes Detected in 10% or Greater of the Background Samples.

The Discharger shall use either a statistical or non-statistical method pursuant to Title 27, section 20415(e)(8)(E) for all analytes that are detected in 10% or greater of the background samples. The Discharger shall use one of the statistical methods required in Title 27, section 20415(e)(8)(E) unless another method has been proposed by the Discharger in a Water Quality Protection Standard Report (or equivalent report) and approved by the Central Valley Water Board in a Monitoring and Reporting Program pursuant to Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E). The method shall be implemented as follows:

- a. **Initial Determination of Measurably Significant Evidence of a Release.** The Discharger shall compare the value reported by the laboratory for each analyte to the statistically-derived concentration limit from the most recent report (Annual Monitoring Report or Water Quality Protection Standard Report) that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there is measurably significant evidence of a release [Title 27, § 20420(i)].
- b. **Retest Method** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)].
 - 1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.0.a., above) that there is a preliminary indication of a release, then the Discharger shall **immediately** notify Central Valley Water Board staff by phone or e-mail and, within **30 days** [Title 27, § 20415(e)(8)(E)(3)] of such indication, the Discharger shall implement a verification procedure/retest option, in accordance with Title 27, sections 20415(e)(8)(E) and 20420(j)(2). The verification procedure shall include either a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of at least two “discrete” retests (i.e., statistical analyses each of which analyzes only newly-acquired data from the monitoring point that indicated a release) [Title 27, § 20415(e)(8)(E)]. The Discharger may use an alternate method previously approved by the Central Valley Water Board and included in the Monitoring and Reporting Program. The verification procedure shall comply with the requirements of Title 27, section 20415(e)(8)(E) in addition to the performance standards of

Title 27, section 20415(e)(9). The retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. For any indicated monitoring parameter or constituent of concern, if the retest results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed.

- 2) **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall evaluate the results pursuant to paragraph I.0.b.1, above and shall:
 - a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and
 - b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.
 - c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

46. **Physical Evidence of a Release.** If the Discharger determines that there is a significant **physical** evidence of a release, the Discharger shall immediately verbally notify Central Valley Water Board staff and provide written notification **by certified mail within 7 days** of such determination, and within **90 days** shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program [Title 27, § 20385(a)(3) and § 20420(l)(1) & (2)].

J. Response To A Release

1. **Measurably Significant Evidence of a Release Has Been Confirmed.** If the Discharger has confirmed that there is measurably significant evidence of a release from a waste management unit pursuant to Standard Monitoring Specification I.0 or I.0, then the Discharger shall:
 - a. **Immediately** sample all monitoring points in the affected medium at that waste management unit and determine the concentration of all monitoring parameters and constituents of concern for comparison with established concentration limits. Because this constituent of concern scan does not involve statistical testing, the Discharger will need to collect and analyze

only a single water sample from each monitoring point in the affected medium [Title 27, § 20420(k)(1)].

- b. **Within 90 days** of confirming measurably significant evidence of a release, the Discharger shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program meeting the requirements of Title 27, sections 20420(k)(5)(A-D), including but not limited to the results of sampling pursuant to paragraph J.0.0, above. The Evaluation Monitoring Program shall be designed for the collection and analysis of all data necessary to assess the nature and extent of the release and to determine the spatial distribution and concentration of each constituent throughout the zone affected by the release [Title 27, § 20420(k)(5) and § 20425(b)].
- c. **Within 180 days** of confirming measurably significant evidence of a release, the Discharger shall submit to the Central Valley Water Board an initial engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, section 20430. At a minimum, the initial engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [Title 27, § 20420(k)(6)].
- d. If the Discharger confirms that there is measurably significant evidence of a release from the waste management unit at any monitoring point, the Discharger may attempt to demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to Title 27, section 20420(k)(7) in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, sections 20420(k)(6) & (7) unless Central Valley Water Board staff agree that the demonstration successfully shows that a source other than the waste management unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In order to make this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining measurably significant evidence of a release,

and shall submit a report **within 90 days** of determining measurably significant evidence of a release [Title 27, § 20420(k)(7)].

- e. **Within 90 days** of the date that the Evaluation Monitoring Program from paragraph J.0.0 is approved (the date is it established), the Discharger shall complete and submit the following:
 - i) **Results and Assessment for the Evaluation Monitoring Program.** A report with the results and assessment based on the approved Evaluation Monitoring Program [Title 27, § 20425(b)].
 - ii) **Updated Engineering Feasibility Study.** An updated engineering feasibility study for corrective action based on the data collected to delineate the release and data from the ongoing monitoring program required under Title 27, section 20425(e) [Title 27, § 20425(c)].
 - iii) **Amended ROWD for a Corrective Action Program.** An amended report of waste discharge to establish a Corrective Action Program meeting the requirements of Title 27, section 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study [Title 27, § 20425(d)].

K. General Provisions

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Central Valley Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.

- c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if:
 - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Central Valley Water Board.
 - e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
3. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
 4. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and leachate generated by discharged waste during the active life, closure, and any post-closure maintenance period of the waste management units and during subsequent use of the property for other purposes.
 5. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of this Order.

6. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [Title 27, § 21710(a)(4)].
7. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Board or Central Valley Water Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Central Valley Water Board [Title 27, § 21720(f)].
8. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.
9. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [Title 27, § 21710(c)(1)].
10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of the Order within **14 days** of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in General Provision 0.0 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without

requirements, a violation of the Water Code. Transfer of this Order shall be approved or disapproved by the Central Valley Water Board.

L. Storm Water Provisions

1. The Discharger shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].
2. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [Title 27, § 20365(a)].
3. Precipitation on Class II waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the LCRS, which shall be designed and constructed to accommodate the precipitation conditions for each class unit [Title 27, § 20365(b)].
4. Diversion and drainage facilities shall be designed, constructed, and maintained to [Title 27, § 20365(c)]:
 - a. Accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the waste management unit.
 - b. Effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities.
 - c. Prevent surface erosion through the use of energy dissipators where required to decrease the velocity of runoff, slope protection, and other erosion control measures where needed to prevent erosion.
 - d. Control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste.
 - e. Take into account:
 - i) For closed waste management units and for closed portions of units, the expected final contours of the closed unit, including its planned drainage pattern.

- ii) For operating portions of waste management units other than surface impoundments, the unit's drainage pattern at any given time.
 - iii) The possible effects of the waste management unit's drainage pattern on and by the regional watershed.
 - iv) The design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management facility.
 - f. Preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.
5. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [Title 27, § 20365(d)].
 6. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
 7. Cover materials shall be graded to divert precipitation from the waste management unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation [Title 27, § 20365(f)].
 8. Any drainage layer in a final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)].

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2022-0060
FOR
Sierra Pacific Industries
Sierra Pacific Industries- Martell Division Facility
Amador County

INFORMATION SHEET

Background

1. On 29 November 2010, the Discharger submitted an amended Report of Waste Discharge (ROWD). WDRs Order No. R5-2014-0025 was adopted using information in the ROWD and the reports listed below:
 - a. Evaluation of Groundwater Levels Beneath the Ash Disposal Area – 30 July 2010
 - b. Request to Amend Waste Discharge Requirements (WDR's) Order No. R5-2009-0110 – 4 April 2012
 - c. Final Closure and Post-Closure Maintenance Plan Former Ash Disposal Area – 22 June 2012
 - d. Revised Final Post-Closure Maintenance and Monitoring Plan for Ash Disposal Area – 20 September 2012
 - e. Updated Short-Term Contingency Plan for Leachate Basin – 12 October 2012
2. The 2010 ROWD, combined with the other reports mentioned above, contains the applicable information required in Title 27. The ROWD and supporting documents contained information related to revised R5-2014-0025 which included:
 - a. The Discharger's closure design for the ash disposal area as a landfill, which was closed by January 2013. The design included raising the base of the unit to maintain a five-foot separation between the ground water and waste, and installing a synthetic low permeable cover with either a vegetative or asphalt upper layer.
 - b. An increase in the height of the Leachate Basin containment berms to increase capacity.
 - c. Changes to the monitoring location for the runoff from the Wood Waste Landfill to better represent the effectiveness of the Best Management Practices (BMPs) for storm water runoff.

Ash Disposal Area Landfill

3. The Ash Disposal Area Landfill, located northeast of the Wood Waste Landfill and in the central area of the facility, was used as a disposal area for ash generated from Georgia-Pacific's Wellons boiler at the on-site cogeneration plant, and from a suspension burner within a particleboard facility. Georgia-Pacific's 21 June 1990 Report of Disposal Site Information, stated that ash from the Wellons boiler and the suspension burner was transported and deposited into a dedicated ash monofill consisting of adjacent piles three to five feet deep, 10 feet wide, and 50 feet long (2,500 cubic feet), which were each covered with one foot of soil. In Table 1 of the Report of Disposal Site Information, Georgia-Pacific stated that the 1990 rate of ash discharge was 620 tons per year (1,000 cubic yards), and that after 1990 the rate dropped to 25 tons per year. The Discharger stated in its 30 September 1997 ROWD that Georgia Pacific had stopped placing ash into the Ash Disposal Area in 1990 when the Wellons boiler was converted to natural gas.
4. In association with the 1997 land transfer to the Discharger, three composite samples of the ash material were obtained at depths of one to ten feet below the top of the ash pile. The samples were analyzed for dioxins/furans and polynuclear aromatic hydrocarbons (PAHs). A weighted value, called a Toxicity Equivalence (TEQ), was calculated for each dioxin sample result. In order to calculate a TEQ, a toxic equivalent factor (TEF) is assigned to each member of the dioxin and dioxin-like compound. The TEF is the ratio of the toxicity of one of the compounds in this category to the toxicity of the two most toxic compounds in the category, which are each assigned a TEF of 1. The most toxic compounds are 2,3,7,8-tetrachlorodibenzo-p-dioxin and 1,2,3,7,8-pentachlorodibenzo-p-dioxin. TEFs that have been established through international agreements currently range from 1 to 0.0001. The TEQ of each sample is calculated by multiplying the actual weight of each dioxin and dioxin-like compound by its corresponding TEF and then summing the results to obtain the TEQ. In its 18 May 1999 Waste Characterization Report, the Discharger reported that dioxins/furans were detected in three ash samples at concentrations of 0.16, 0.28, and 0.4 ug/kg TEQ, each exceeding the EPA Regional Screening Levels (RSL) criteria of 0.018 ug/kg TEQ for industrial soils. In addition, all three ash samples contained concentrations of PAHs.
5. In March 2000, Central Valley Water Board staff reviewed the Discharger's first waste characterization report of the ash waste (submitted on 18 May 1999), determined it incomplete, and directed the Discharger to address staff's comments and resubmit a revised waste characterization report. The Discharger submitted the revised waste characterization report on 1 February 2008. The

revised report stated that concentrations of dioxins were detected in all 11 samples of the ash material, all samples were above the RSL for industrial soils, and PAHs were reported in the ash material.

6. In its Evaluation Monitoring Report, the Discharger provided data that showed groundwater down gradient of the Ash Disposal Area has been impacted by elevated concentrations of calcium, magnesium, bicarbonate, and total dissolved solids with sporadic detection of dioxins. According to the Water Code section 13173, a designated waste is defined as a "Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan." Based on the elevated groundwater analytical results for calcium, magnesium, bicarbonate, and total dissolved solids (TDS) in groundwater down gradient of the Ash Disposal Area, the Ash Disposal Area has released inorganic constituents in concentrations to groundwater that exceed the water quality criteria.
7. Based on the analytical results presented in the Discharger's second waste characterization report, historical groundwater monitoring data, and the Discharger's Evaluation Monitoring Program Report, the Central Valley Water Board concluded that the ash material was appropriately classified as a designated waste.
8. Based on the waste classification of the ash material in the Ash Disposal Area, the unit was classified as a Class II waste pile.
9. The Ash Disposal Area has been closed as an unlined Class III landfill in accordance with *Revised Final Post-Closure Maintenance and Monitoring Plan for Ash Disposal Area – 20 September 2012*. However, based on WDRs Finding 17 based on the characteristics of the waste placed in the Ash Disposal Area Landfill the landfill has been reclassified as a Class II landfill.

Wood Waste Landfill

10. The Wood Waste Landfill, located along the southern boundary of the site, was used by the former operators to dispose of wood waste, bark, and slash from the log decks that contained too much dirt and debris to be used as fuel in the on-site cogeneration plant. Additionally, wood waste generated off-site, consisting of pallets, scrap lumber, and residential yard waste, was accepted from the general public for disposal in the Wood Waste Landfill.

11. Title 27 defines leachate as any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. It includes any constituents extracted from the waste and dissolved or suspended in the fluid. During the Discharger's clean closure operations, the working face of the Wood Waste Landfill is open to the environment, and storm water contacts and leaches through the wood waste. The resulting leachate discharges to an unlined basin (Leachate Basin).
12. When rainwater contacts the open face of the Wood Waste Landfill, a leachate is formed that can contain soluble materials extracted from the wood waste. This leachate has the potential to impact water quality in the Leachate Basin and/or in the underlying groundwater. In 2009-2010, the Discharger implemented additional best management practices for the leachate from the Wood Waste Landfill. Since that time, storm water runoff monitoring has shown average TDS concentrations below 500 milligrams per liter (mg/L) and manganese level below 300 micrograms per liter (ug/L), which is above the taste and order threshold but below USEPA Health Advisory for manganese..
13. The Discharger is presently clean closing the Wood Waste Landfill and Leachate Basin under the requirements found in the 2009 WDRs. Those requirements are continued under these WDRs.
14. Since restarting closure operations in 2002, the Discharger has extracted approximately 900,000 cubic yards of wood waste. From 2007 to present, the Discharger has closed approximately 11.54 acres of the 27 acre Wood Waste Landfill, and performed confirmation sampling and inspections in order to document that the wood waste has been removed down to native soil. The total volume of waste in the landfill is not well defined due to the inaccuracy of the bottom survey, which is based on a 20-foot contour USGS survey with an elevation accuracy of +/- 10 feet. This Order requires that the Discharger complete the Wood Waste Landfill closure activities as part of the corrective action and in accordance with section E. Construction Specifications; to comply with the maintenance and monitoring requirements; and to submit the technical reports in accordance with Provisions G.11.

Gaseous Emissions

15. The data contained in LEA Advisory #13 issued by the CIWMB indicates that gaseous emissions from a Wood Waste Landfill are insignificant when compared to the emissions generated from a municipal solid waste landfill. Data collected from 46 wood waste disposal sites indicated that air emissions from Wood Waste

Landfills are insignificant. Therefore, gaseous emissions are not considered a threat and no gaseous emission monitoring will be required.

Leachate Basin

16. The Leachate Basin is located adjacent to the northwest toe of the Wood Waste Landfill and down gradient of the Ash Disposal Area. Historically, but not currently, the Discharger pumped the Leachate Basin liquids to an adjacent facility currently operated by Sierra Pine Limited.
17. Leachate from the Wood Waste Landfill, run-off from the Ash Disposal Area, and sediment from the Ash Disposal Area have historically discharged into the unlined Leachate Basin. The Discharger states that currently, only leachate from the Wood Waste Landfill, water used in clean closure operations, seeps, and groundwater discharge into the Leachate Basin.
18. In June 2007, water in the Leachate Basin contained concentrations of arsenic (0.00497 mg/L), and manganese (2,510 ug/L), below the California MCL of 0.01 mg/L for arsenic and above the California Secondary Maximum Contaminant Level (MCL) of 50 ug/L for manganese. In January 2008, samples from monitoring well B-14 contained concentrations of arsenic at 0.0079 mg/L (an estimated concentration as reported by the laboratory) and manganese at 3,100 ug/L.
19. Groundwater monitoring well B-14, a corrective action monitoring well, is hydraulically down gradient of the Leachate Basin, and extends into the uppermost aquifer. The lowermost portion of the Leachate Basin also extends into the uppermost aquifer. As reported by the Discharger, the water levels and water quality in the Leachate Basin and monitoring well B-14 consistently indicates that monitoring well B-14 is in hydraulic communication with the Leachate Basin.
20. During the rainy season, water quality in the Leachate Basin generally improves as leachate from the Wood Waste Landfill area enters the Basin. During this season the TDS generally falls below 500 mg/L. During the dry season, as water levels drop in the Leachate Basin because of evaporation and because it appears groundwater comprises a larger portion of the water in the Leachate Basin, the concentration of TDS in the Leachate Basin generally increases.
21. Due to degraded groundwater inflow into the Leachate Basin, neither the Leachate Basin itself nor monitoring well B-14 are appropriate locations to assess what impacts, if any, the leachate runoff from the Wood Waste Landfill and seeps entering the Leachate Basin may have on groundwater. Rather, the

more appropriate approach is to regulate the quality of leachate runoff from the Wood Waste Landfill and seeps entering the Leachate Basin to ensure protection of local groundwater. Continued monitoring of monitoring well B-14 is required by Monitoring and Reporting Program (MRP) R5-2014-0025 for separately imposed corrective action-related requirements.

22. Sediment samples in the Leachate Basin obtained on 29 November 2007, and analyzed for leachate extracted with a citrate buffer, had concentrations of dioxin/furans ranging from 2.9×10^{-5} ug/L to 0.0023 ug/L, however the TEQ for TCDD was less than the water quality criteria of 0.000001 ug/L. In 2008/2009 Discharger removed the bottom sediments from the Leachate Basin, and transported the material to the Ash Disposal Area.

Drainage Channel

23. Erosional sediment from the Ash Disposal Area Landfill, Wood Waste Landfill and industrial facilities was deposited into a drainage channel that parallels the Wood Waste Landfill from the Ash Disposal Area to the Leachate Basin. In 2007, samples of this sediment were analyzed. Dioxin congeners 1,2,3,4,6,7,8-HpCDD, OCDD and 1,2,3,4,6,7,8-HpCDF were detected in the sediment at concentrations ranging from 59 to 560 picograms per liter.
24. The 2009 WDRs required the Discharger to sample the sediment in drainage channel, and based on those results, propose a management strategy. The Drainage Channel Sediment Sampling Report was submitted to the Central Valley Water Board and CDFW on 4 November 2011 and then resent to the California Department of Fish and Wildlife (CDFW) in 2012.
25. Because some of the Drainage Channel sediment concentration for PCDD/F exceeded the ambient site-specific levels and the screening benchmarks, the CDFW requested that the Central Valley Water Board require that a site-specific ecological and human health risk assessment be conducted to evaluate potential risk. Specifically, the risk to birds and mammals that may utilize the site would be evaluated. Discharger was requested to submit a report by 31 October 2013 assessing the risk. The Discharger submitted a Predictive Ecological Risk Assessment (PERA) Report on 31 October 2013 as required.

Former Dip Tank⁷

26. The former dip tank area is located adjacent to an existing Lowe's store in the eastern portion of the site (See Attachment B). From 1969 to 1984, American Forest Products performed wood surface protection at the site using a dip tank located on a concrete pad inside a former metal walled lumber stacker building, located at the south end of the former sawmill.
27. The wood surface protection solutions reportedly used were the following fungicides: PQ-10, which contained pentachlorophenol (PCP), tetrachlorophenol (TeCP), and copper-8-quinolate; and Permatox 100, which contained sodium pentachlorophenate and phenol mercuric acetate. Review of manufacturers' product information sheets obtained via the internet indicates that these products were designed to be mixed with water to form the fungicide solution that was applied to the wood. The wood surface protection solution also contained dioxins and furans as byproducts of the manufacture of the chlorinated phenols.
28. Incidental spillage of wood surface protection product would drip into a concrete sump in the dip tank's pad and would then be pumped back into the dip tank. Dipped wood reportedly was stacked to dry on a concrete-asphalt pad located outside the building. Some wood surface protection product reportedly dripped from the drying lumber, drained into a sump in the pad, and discharged to an unlined ditch west of the dip tank.
29. Several soil investigations and two soil excavation and removal activities have been performed in the former dip tank area. In 1987, G-P excavated approximately 200 cubic yards of PCP and TeCP-impacted soil. This work was performed under the oversight of the California Department of Health Services and was documented in the report entitled *Report, Final Remedial Activities* (Dames & Moore, 1987). In August 1999, approximately 700 cubic yards of soil located beneath the former lumber stacker building were excavated in accordance with the *Soil Remediation Work Plan* (Kennedy/Jenks, 1998b). Bedrock was encountered during this excavation work and the excavation reportedly was advanced to the maximum extent feasible the maximum depth excavated was 14.5 feet bgs). According to *Kennedy/Jenks's Soil Remedial Action* report, "due to the presence of greenstone throughout the excavation area, which is difficult to excavate, and the presence of water in two limited areas

⁷ Source: *Former Dip Tank Area Groundwater Sampling Report*, Amec Foster Wheeler Environment & Infrastructure, Inc. October 7, 2015

of the excavation, further soil removal in the [former dip tank area] is economically infeasible” (Kennedy/Jenks, 2000). Following concurrence by the Regional Water Board, the excavation was backfilled with soil obtained from an on-site borrow source.

30. Based on the presence of chlorinated phenols, specifically PCP, at concentrations up to 150 micrograms per liter in samples collected in 2015, the former fungicide dip tank site regulated under the Central Valley Water Board’s Site Cleanup Program is not eligible for closure at this time. Site Cleanup staff may require additional sampling which will be handled separately from these WDRs.

Recent Monitoring Results of PAH, Dioxins and Furans

31. The table below shows recent monitoring results of non-naturally occurring PAH, dioxin, and furan compounds in groundwater at the Facility since 2014. The Discharger did not analyze groundwater samples for these constituents of concern during the years 2016 through 2019.

Table 10— Recent PAH, Dioxin, and Furan Monitoring Results

Sample Date	Monitoring Point	Parameter Name	Value	RL	MDL	Units	RL Note
1/14/2015	B-14	Acenaphthylene	7.6	51	5.1	NG/L	J,DX
1/14/2015	B-14	Acenaphthylene	5.6	39	3.9	NG/L	J,DX
7/23/2014	B-14	Acenaphthylene	5.5	55	5.5	NG/L	J,DX
1/14/2015	B-14	Anthracene	5.2	51	4.6	NG/L	J,DX
1/14/2015	B-14	Anthracene	4.9	39	3.4	NG/L	J,DX
7/23/2014	B-14	Fluoranthene	7.8	55	4.8	NG/L	J,DX
7/21/2015	B-14	Total Heptachlorodibenzo-p-dioxins (HpCDD)	7.17	-	-	PG/L	J*
1/14/2015	B-14	Total Heptachlorodibenzo-p-dioxins (HpCDD)	22.5	-	-	PG/L	J*
7/23/2014	B-14	Total Heptachlorodibenzo-p-dioxins (HpCDD)	16.7	-	-	PG/L	J*
1/22/2014	B-14	Total Heptachlorodibenzo-p-dioxins (HpCDD)	7.48	-	-	PG/L	J*
7/21/2015	B-14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	3.3	-	-	PG/L	J*
1/14/2015	B-14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	12.8	-	-	PG/L	J*
7/23/2014	B-14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	6.24	-	-	PG/L	J*

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1/22/2014	B-14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2.49	-	-	PG/L	J*
7/21/2015	B-14	Total Heptachlorodibenzofurans (HpCDF)	3.03	-	-	PG/L	J*
1/14/2015	B-14	Total Heptachlorodibenzofurans (HpCDF)	6.31	-	-	PG/L	J*
7/23/2014	B-14	Total Heptachlorodibenzofurans (HpCDF)	3.67	-	-	PG/L	J*
7/21/2015	B-14	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.6	-	-	PG/L	J*
1/14/2015	B-14	1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.81	-	-	PG/L	J*
7/23/2014	B-14	1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.67	-	-	PG/L	J*
1/14/2015	B-14	Total Hexachlorodibenzo-p-dioxins (HxCDD)	5.18	-	-	PG/L	J*
1/14/2015	B-14	Naphthalene	6	51	5.1	NG/L	J,DX
1/14/2015	B-14	Naphthalene	5	39	3.9	NG/L	J,DX
1/20/2020	B-14	Octachlorodibenzo-p-dioxin	7.46	-	-	PG/L	J*
7/21/2015	B-14	Octachlorodibenzo-p-dioxin	9.44	-	-	PG/L	J*
1/14/2015	B-14	Octachlorodibenzo-p-dioxin	31.2	-	-	PG/L	J*
7/23/2014	B-14	Octachlorodibenzo-p-dioxin	32.7	-	-	PG/L	J*
1/22/2014	B-14	Octachlorodibenzo-p-dioxin	14	-	-	PG/L	J*
 							
7/21/2014	B-15	Fluoranthene	9.9	53	4.6	NG/L	J,DX
1/21/2014	B-15	Fluoranthene	6.1	56	4.8	NG/L	J,DX
1/21/2014	B-15	Naphthalene	7.3	56	4.1	NG/L	J,DX
1/21/2014	B-15	Phenanthrene	8.5	56	7	NG/L	J,DX
1/21/2014	B-15	Pyrene	6.2	56	4.7	NG/L	J,DX
 							
1/14/2015	B-16	Naphthalene	7.5	51	5.1	NG/L	J,DX
7/21/2014	B-16	Naphthalene	6.6	55	5.5	NG/L	J,DX
1/20/2014	B-16	Naphthalene	8.3	54	4	NG/L	J,DX
 							
7/23/2014	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.01	-	-	PG/L	J*
7/21/2015	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.59	-	-	PG/L	J*

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7/23/2014	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	5.42	-	-	PG/L	J*
1/14/2015	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	9.32	-	-	PG/L	J*
7/21/2015	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2.53	-	-	PG/L	J*
1/20/2020	B-18 (Blind B-14 sample)	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2.17	-	-	PG/L	J*
7/23/2014	B-18 (Blind B-14 sample)	Acenaphthylene	5.5	53	5.3	NG/L	J,DX
1/14/2015	B-18 (Blind B-14 sample)	Acenaphthylene	6.8	51	5.1	NG/L	J,DX
1/14/2015	B-18 (Blind B-14 sample)	Anthracene	4.7	51	4.5	NG/L	J,DX
7/23/2014	B-18 (Blind B-14 sample)	Fluoranthene	8.3	53	4.5	NG/L	J,DX
1/14/2015	B-18 (Blind B-14 sample)	Naphthalene	6.4	51	5.1	NG/L	J,DX
7/23/2014	B-18 (Blind B-14 sample)	Octachlorodibenzo-p-dioxin	25.7	-	-	PG/L	J*
1/14/2015	B-18 (Blind B-14 sample)	Octachlorodibenzo-p-dioxin	14.4	-	-	PG/L	J*
7/21/2015	B-18 (Blind B-14 sample)	Octachlorodibenzo-p-dioxin	7.55	-	-	PG/L	J*
1/20/2020	B-18 (Blind B-14 sample)	Octachlorodibenzo-p-dioxin	7.05	-	-	PG/L	J*
7/23/2014	B-18 (Blind B-14 sample)	Total Heptachlorodibenzofurans (HpCDF)	5.28	-	-	PG/L	J*
7/21/2015	B-18 (Blind B-14 sample)	Total Heptachlorodibenzofurans (HpCDF)	1.59	-	-	PG/L	J*
7/23/2014	B-18 (Blind B-14 sample)	Total Heptachlorodibenzo-p-dioxins (HpCDD)	13.7	-	-	PG/L	J*
1/14/2015	B-18 (Blind B-14 sample)	Total Heptachlorodibenzo-p-dioxins (HpCDD)	15.1	-	-	PG/L	J*
7/21/2015	B-18 (Blind B-14 sample)	Total Heptachlorodibenzo-p-dioxins (HpCDD)	5.85	-	-	PG/L	J*
1/20/2020	B-18 (Blind B-14 sample)	Total Heptachlorodibenzo-p-dioxins (HpCDD)	5.16	-	-	PG/L	J*
1/21/2014	B-3	Naphthalene	6.6	53	3.9	NG/L	J,DX
7/21/2014	B-5	Fluoranthene	8.5	54	4.6	NG/L	J,DX
1/14/2015	B-5	Naphthalene	6.3	52	5.2	NG/L	J,DX

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Sample Date	Monitoring Point	Parameter Name	Value	RL	MDL	Units	RL Note
7/21/2014	B-5	Naphthalene	5.6	54	5.4	NG/L	J,DX
1/21/2014	B-5	Naphthalene	7.5	54	4	NG/L	J,DX
1/21/2014	B-8	Fluoranthene	5.5	55	4.7	NG/L	J,DX
1/21/2014	B-8	Naphthalene	7.2	55	4.1	NG/L	J,DX
1/21/2014	B-8	Pyrene	5.3	55	4.6	NG/L	J,DX
1/22/2014	LD-2A	Octachlorodibenzo-p-dioxin	6.53	-	-	PG/L	J*

RL- Reporting Limit

MDL- Method Detection Limit

PG/L- Picograms per Liter

NG/L- Nanograms per Liter

J- EPA Flag - Estimated value

J*- The MDL and RL for dioxins and furans was not provided for detections of the COC where an estimated value was provided between the MDL and the RL.

DX- Value < lowest standard (MQL), but > than MDL