COMMUNITY MONITOR ANNUAL REPORT 2024
ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY
Livermore, California

Prepared For:

ALRRF Community Monitor Committee

Prepared By:

Langan CA, Inc.
1814 Franklin Street, Suite 505
Oakland, CA 94612

Megan Rollo
Staff Scientist

Grace Stafford
Project Manager

Mukta Patil, PE
Senior Project Engineer

January 8, 2025
750657605

LANGAN

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Background: Settlement Agreement

In December 1999, a Settlement Agreement was reached among parties involved in a lawsuit regarding the proposed expansion of the Altamont Landfill and Resource Recovery Facility (ALRRF). The settlement limited the expansion to a second permitted operational area, known as Fill Area 2 (FA2), adjacent to the existing Fill Area 1 (FA1). The Settlement Agreement established the Community Monitor Committee (CMC) and a funding mechanism for its technical consultant, the Community Monitor (CM).

The Settlement Agreement defines the purview of the CMC and the CM. The CM's scope of work is further defined in a contract between the CM and the CMC. The City of Livermore provides staff and administrative support to the CMC, as well as management of the CM contract and space for CMC meetings. The City also acts as financial agent for the CMC, pursuant to a letter agreement dated July 6, 2004.

In broad terms, the CM is to review certain reports and information, as defined; monitor incoming traffic by conducting truck counts, as described in the Settlement Agreement; and inspect the ALRRF site no more than twelve times each year. The Settlement Agreement describes the CM's Scope of Work to include "issuing a written report each year summarizing the ALRRF's compliance record for the period since the last such report with respect to all applicable environmental laws and regulations." This Annual Report provides that summary for 2023.

The Settlement Agreement also requires that the ALRRF operator, Waste Management of Alameda County (WMAC), pay invoices submitted by the CM to the CMC, if the work represented in those invoices is consistent with the CM's scope of work and role as defined in the Settlement Agreement.

1.2 Prior Community Monitor Work

Records indicate that the CMC retained a technical consultant as the CM from 2005 through part of 2007.

In mid-2007, the CMC selected the current CM team of Environmental Science Associates (ESA) and Langan (formerly Treadwell & Rollo). This team began work in February 2008. From 2008 through 2019, the team carried out report reviews, Class 2 soil analysis file review, and site inspections as defined in the Settlement Agreement. From 2020, after a public procurement process to select a continuing CM, the CM team of Langan and ESA switched roles, with Langan

as the primary CM and ESA as a sub-contractor to Langan. The CM team continues to carry out report reviews, Class 2 soil analysis file review, and site visits, as defined in the Settlement Agreement.

- In 2008, the primary concern was the rate at which groundwater monitoring wells were purged during sampling. This was resolved satisfactorily.
- In 2009, the CM team took a close look at the methodology used by ALRRF and its consultants to track variations in groundwater quality. No Areas of Concern (AOCs) were identified.
- In 2010, landfill gas perimeter probes were installed to comply with new regulations, and one of those probes detected landfill gas at levels that exceeded regulatory limits. This was abated by installing several gas extraction wells close to those probes.
- In 2011, the ALRRF sought to use fine material[1] from the Davis Street Material Recovery Facility (MRF) as Alternative Daily Cover. The use of this material was approved by the LEA through a special study in 2013.
- In 2012, two ongoing problems, windblown litter and seagull activity, became more severe; and while the gull problem has varied seasonally, the litter problem has continued.

Since mid-2013, the CM's observations and document reviews have included the construction of FA2 and related mitigation measures. The excavation and preparation of the Phase 1 portion of FA2, together with related improvements, were monitored in 2014 and 2015.

In 2015, the Five-Year Permit Review process began when the Alameda County Department of Environmental Health, the Local Enforcement Agency (LEA), requested the ALRRF to submit an application and a revised draft of its Joint Technical Document[2] (JTD), which contains a detailed description of FA2 development plans, design details, and operating procedures. On July 31, 2015, the revised JTD was submitted to the LEA and the Central Valley Regional Water Quality Control Board (CVRWQCB). The Five-Year Permit Review process was completed in 2020. Waste Discharge Requirements (WDRs) and Ceased and Deist Orders (CDOs) were issued by the CVRWQCB in mid-2016.

1 MRF fines: Fine material produced by sorting systems that recover materials at the Davis Street Transfer Station.

2 Under California regulations, a Joint Technical Document (JTD) is a detailed description of all of the means and methods by which a disposal site will satisfy State requirements to protect water resources and safely dispose of permitted wastes.

Throughout this process, the LEA held its permit review in abeyance while CVRWQCB staff prepared, and the CVRWQCB adopted, the WDRs. Subsequently, the LEA's review required more than four years to complete. It was difficult for the ALRRF to refine its JTD to conform to the requirements of the WDRs and subsequent directives from CVRWQCB staff, and the sheer size and complexity of the JTD itself also impeded progress. The JTD, after several revisions, was finalized on April 30, 2020. The Five-Year Solid Waste Facility Permit (SWFP) was finalized and issued on September 2, 2020.

In 2021, as a result of COVID-19 health emergency and the statewide Shelter-in-Place Order issued in early March 2020, the CM site visits were suspended from January through March 2021.

In 2022, FA2 Phase 5 cell and stormwater construction improvements were authorized by the CVRWQCB. These improvements were completed in October 2023. Large winter storms occurred throughout the end of 2022 into the beginning of 2023, causing erosion at the landfill. The CVRWQCB issued 14 AOCs in April of 2023 regarding these erosional areas. WM completed the improvements to damaged areas in September 2023.

1.3 Regional Context and Landfill Capacity Needs

Events in the landfill disposal industry and demographic shifts within the greater Bay Area have affected, and may continue to affect, operations and future developments at the ALRRF. Prior Annual Reports have discussed impending landfill capacity changes and changes in landfill usage that could directly affect the life expectancy of regional landfills including the ALRRF.

Those issues have largely abated, but legislative and regulatory developments have resulted in new implications for landfill life in the region and statewide. The bellwether for this trend was AB 1594, which was passed in 2014. As of January 1, 2020, the use of green material as alternate daily cover (ADC) does not constitute diversion through recycling and is considered disposal for purposes of measuring a jurisdiction's 50 percent per capita disposal rate.

The 2015-2016 legislative session in California gave rise to several new laws that are intended to dramatically reduce the disposal to landfill of organic wastes (plant debris, food scraps and similar

materials that readily decompose and produce methane, a potent greenhouse gas). In Alameda County, this material is approximately 30% of the waste stream[3,4].

The two pieces of 2016 legislation with the most direct effect are SB 1383 and AB 901. SB 1383 established targets to achieve a 50 percent reduction in the statewide disposal of organic waste from the 2014 level by 2020, and a 75 percent reduction by 2025. AB 901 changed how disposal and recycling is reported to California Department of Resources Recycling and Recovery (CalRecycle). The intended effect is to provide a more accurate assessment of progress toward State goals. Regulations that implement these measures are now in place, and CalRecycle is providing resource documents and workshops to support implementation[5].

One result of this activity has been a tangible commitment by waste industries in California to provide additional organics diversion facilities. In Alameda County, two examples are the 500 tons per day Covered Aerated Static Pile (CASP) facility at the ALRRF, and the implementation of 100 tons per day of anaerobic digestion and subsequent composting capacity at the Davis Street Transfer Station. Taken together, these could reduce disposal at the ALRRF by up to 600 tons per day, which would be a 25% reduction in the current rate of disposal there. This reduction may be offset somewhat by the need for disposal of contaminants and oversize materials from compost operations.

Related State legislation passed in the 2017-2018 session provided further support for waste reduction through product stewardship, packaging, and enhanced organics-diversion requirements. The legislation passed in the first year of the 2019-2020 session has continued to focus on product stewardship while also removing some requirements to provide buy-back recycling centers.

Against this backdrop, the ALRRF began operation in FA2 on March 25, 2019. This triggered several constraints on the types, quantities and sources of materials received; these are described in the next section of this report. On April 27, 2022, the CVRWQCB conducted a final inspection and onsite meeting for FA2 Phase 4. Throughout 2022, Phase 4 continued to be the active phase of FA2. In October of 2023, construction at Phase 5 completed and Phase 4 and Phase 5 has been the active phase of FA2.

---

3 CalRecycle 2014 Waste Characterization Study: https://www2.calrecycle.ca.gov/WasteCharacterization/ , accessed December 2017.

4 Alameda County 2017-2018 Waste Characterization Study: http://www.stopwaste.org/sites/default/files/2017-18%20Alameda%20County%20Waste%20Characterization%20Study.pdf , accessed December 2018.

5 https://calrecycle.ca.gov/organics/slcp/education, accessed December 2023.

1.4 Site-Specific Constraints and Opportunities

The 1999 Settlement Agreement added constraints on operations, by adding new conditions to the Conditional Use Permit for the ALRRF. Solid wastes from out-of-county sources were strictly limited to those covered by existing disposal agreements. During peak traffic hours, the number of refuse trucks entering the landfill is limited. Numerous conditions intended to protect natural resources on the ALRRF property were imposed. These were extensively refined during the development of permit conditions from the State and Federal natural resource agencies with permit authority: The US Army Corps of Engineers, the US Fish and Wildlife Service, the California Department of Fish and Wildlife, and the (CVRWQCB). This process required several years and concluded in 2012.

Some of these conditions did not take effect until FA2 began to receive refuse, on March 25, 2019. These conditions include limitations on the amounts of sludge, inert waste and special waste accepted from certain Bay Area counties, as well as self-hauled wastes from Contra Costa County. The specific restrictions are:

- Wastes collected for disposal under a municipal franchise may only be received from Alameda County, San Francisco, and the City of San Ramon in Contra Costa County. San Francisco and San Ramon wastes can only be received if those jurisdictions meet specified waste diversion goals.

- Non-franchise waste may only be received for disposal from Alameda County and San Francisco, plus up to 25,000 tons per year of sludge, inert waste and special waste from the other seven Bay Area counties. In addition, up to 25,000 tons per year of self-hauled wastes from Contra Costa County may be disposed.

Also, under the Settlement Agreement the size of the future expansion area was limited to 40 million tons of capacity, with a footprint of approximately 250 acres. In addition to Conditional Use Permit conditions, the Settlement Agreement established the CMC and the CM role, as described above; and it established mitigation funding related to the landfill expansion.

The physical setting of the ALRRF site presents certain constraints and opportunities. Canyons provide convenient high-volume fill sites, but hilly terrain and local high winds in the Altamont area require constant attention to windblown litter, especially film plastic. As FA1 neared its final elevation, windblown litter continued to be a problem due to the exposure of the landfill's active face to wind. That problem increased through 2019, despite the move to FA2 at a lower elevation. Although the ALRRF's litter collection crew has been able to repeatedly remove litter from large expanses of the ALRRF property, high-wind events in 2019 and 2020 quickly replenished

windblown litter in those areas, requiring repeated cleanups. In 2021, the landfill experienced record wind speeds, exacerbating the existing windblown littler issue further around FA2. As a result, a section of the fencing was knocked down and windblown litter covered large expanses of the ALRRF property as well as neighboring properties, including Bethany Reservoir. The landfill has added additional staff dedicated to litter cleanup, has repaired and increased the perimeter fencing downwind of FA2, and is communicating frequently with CalRecycle and the LEA to provide updates on removal of the windblown litter. In 2022, the LEA and CVRWQCB issued violations for windblown litter, these violations were resolved, and additional litter fences were constructed. On January 5, 2023, the CVRWQCB issued a resolution letter to the Investigative Order R5-2021-00817, that required windblown litter cleanup reporting, indicating that WM reporting obligations under this Investigative Order were complete. The CM provides an updated table of the CVRWQCB requests in the quarterly packets, including the requirements outlined in the Cease-and-Desist Order (CDO) R5-2021-0020, AOCs and Violations from inspections, the expected completion timeline and progress that has been made on each item.

1.5 Overview of Operations, Regulations and Permits

1.5.1 Operational Functions and Requirements

Like most large landfills throughout California, the ALRRF performs a variety of functions that support the region's management of solid wastes. These functions continue to evolve as increasing emphasis is placed on reducing and recovering wastes, but the primary function of the site continues to be the safe disposal of solid wastes by placing, compacting and covering these materials. Federal, State and local regulations require that at the ALRRF:

- Wastes are covered to control litter, prevent fire, and prevent the spread of disease.
- Wastes are placed and compacted to be physically stable.
- Plant debris is not to be disposed; if received, it must be separated and reclaimed by composting or other methods. The CASP compost system adjacent to the landfill provides a convenient location for plant debris that is inadvertently delivered to the landfill.
- A liner and liquid recovery system is in place to prevent groundwater contamination by leachate.
- Landfill gas (LFG) is controlled by an extraction system. Currently the gas is used to produce fuel (liquefied and compressed natural gas, LNG/CNG) and electrical energy.
- Emissions from combustion and processing (diesel engines and landfill gas systems) are controlled to meet Bay Area Air Quality Management District (BAAQMD) standards.

- Other air pollutants and nuisances (dust, odor, litter, etc.) are prevented.
- Stormwater erosion is controlled, and stormwater runoff is tested for pollutants.

Compliance with these requirements protects the environment and public health, and it also presents opportunities to develop and support innovative methods for improved waste management. Currently, such activities at the ALRRF include:

- Using LFG to produce electricity and fuel (LNG/CNG);
- Stockpiling and processing materials for beneficial use on site, such as using demolished concrete for wet-weather roads and access pads;
- Blending liquids with dry materials in a solidification process to make a product that can be landfilled or used as cover;
- Using contaminated soils and other wastes (biosolids, shredded tires, MRF fines, treated auto shredder fluff, etc.) for cover material, as permitted;
- Stockpiling construction and demolition (C&D) materials and scrap metal for processing elsewhere;
- Providing an area for the separation of plant debris from other wastes, to avoid landfilling plant debris; and
- Hosting site visits, by prior arrangement, for public education.

The ALRRF property covers more than three square miles. Within that area, the portion that is delineated as landfill is divided into FA1 and FA2. FA1 covers approximately 235 acres, including an Asbestos-Containing Waste landfill operation which occupies several acres within the FA1 footprint. The FA2 footprint is approximately 250 acres. Although refuse and cover material are currently being delivered to FA2, FA1 has not closed, and it will likely receive additional refuse to reach its permitted final elevation. It is currently the site of the active asbestos landfill and two solidification basins. The process to relocate the solidification basins to FA2 began in 2024.

Lands surrounding FA1 and FA2 are mainly grazing land and some construction-support activities related to the continuing construction of FA2, which will take place in phases over several years. These surrounding lands include a Conservation Plan Area, protected with a permanent easement that provides suitable habitat for several special status species.

Much of the work done by the CM involves the review of data and reports required of the ALRRF by regulatory and permitting agencies, as described below.

1.5.1.1 Water

In California, the State Water Resources Control Board (SWRCB) and its Regional Water Quality Control Boards (RWQCBs) protect groundwater and surface water resources through laws, regulations and permit requirements. Because most of the ALRRF property drains into the Central Valley, the CVRWQCB issues and administers the WDRs for the site. These WDRs set various operating requirements, and they also define the programs that monitor water quality by periodically testing groundwater wells as well as storm water basin contents and discharges. The CVRWQCB also requires the ALRRF to address incidents that increase risk to groundwater, such as the inadvertent receipt of wastes that contain unpermitted levels of hazardous materials. The CM reviews semiannual groundwater monitoring reports, the stormwater pollution prevention plan, annual stormwater monitoring reports, and the annual Winterization Plan update, as well as correspondence and required reports that the CVRWQCB posts on its GeoTracker web site[6].

1.5.1.2 Air

The BAAQMD administers its own regulations, including Regulation 8 Rule 34 regarding landfill gas control, as well as relevant State and Federal regulations. At the Federal level these are referred to as Title V requirements. The operation of (and especially the air emissions from) the landfill gas control systems, various diesel engines, and other processes that produce air emissions are regulated through permit requirements. Every six months the ALRRF submits a comprehensive "Title V report" to the BAAQMD. This report summarizes emission test results and landfill gas control system performance as required. The CM reviews these reports as they are issued. The landfill also produces an annual estimate of greenhouse gas (GHG) emissions, as required by Federal regulations. The most recent data available, for 2023, indicate that the ALRRF is the third highest GHG-emitting landfill in California, with 38,055 metric tons of total carbon dioxide ("greenhouse gas as carbon dioxide equivalent") emitted, behind the Kiefer Landfill in Sacramento County (116,288) metric tons of carbon dioxide emitted) and the Puente Hills landfill in Los Angeles County (102,626) metric tons of total carbon dioxide emitted).[7]

1.5.1.3 Disposed Wastes

Two agencies regulate solid waste disposal in Alameda County. At the county level, the LEA, and at the State level, CalRecycle which supports and oversees the LEA. The LEA is the main

[6] ALRRF's profile can be accessed through: https://geotracker.waterboards.ca.gov/profile_report?global_id=L10005834311

[7] Air Resources Board file https://ww2.arb.ca.gov/mrr-data, accessed December 14, 2023.

enforcement agency for the Solid Waste Facility Permit (SWFP) that governs many aspects of operations at the ALRRF, such as operating hours, landfill cover materials and cover frequency, types of materials that are allowed to be disposed, etc. The SWFP is reviewed and updated every five years, and the CMC and CM closely follow that process, as required by the Settlement Agreement. The CM also reviews ALRRF inspection reports made by the LEA, as those reports become publicly available; and each year at least four of the monthly CM site inspections are done in conjunction with the LEA, as required in the CM's Scope of Work. The CM conducted 12 site visits in 2024 as required by the scope of work. Section 2.1 provides more details. Two of the 12 CM site visits in 2024 were performed with the LEA. The CM also reviews the LEA's monthly inspection reports which are publicly available on the CalRecycle web site[8].

1.5.1.4 Land Use

Concurrently with the Settlement Agreement, Land Use Permit C-5512 for the ALRRF site was updated to incorporate mitigations specified by the Settlement Agreement. These modifications include restrictions on waste quantities, limits on truck traffic, and other operational constraints, as well as certain biological resource protection measures discussed in Section 1.5.2 below. The CM tracks compliance through site visits, review of data from ALRRF operations, and review of periodic reports submitted to regulatory agencies by the ALRRF, including the annual Mitigation Monitoring Report submitted to County Planning. Annual monitoring surveys of the on-site Conservation Plan Area are also reviewed by the CM.

An additional Land Use Permit (PLN 2010-00041) was approved by Alameda County in March of 2013 for the future development and use of composting and material recovery operations at the ALRRF. In April 2018, the ALRRF began operation of its CASP compost facility northeast of FA1. Currently, Waste Management's position is that the CASP facility is not within the purview of the CMC. However, the CMC has taken the position that the additional permit *is* within its purview.

1.5.1.5 Waste Diversion Requirements

At the local level, the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board formed StopWaste as a joint powers agency to pursue local and state waste reduction and diversion goals. StopWaste has implemented mandatory separation of recyclables and compostables at businesses and multifamily properties throughout the county, and it provides public education, training and other assistance. In addition, StopWaste

[8] ALRRF CalRecycle profile can be accessed through: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/7.

has developed, and all of its member agencies have adopted, a single-use bag ban ordinance; and StopWaste has adopted a countywide ban on the disposal of plant debris in local landfills.

Section 1.3 of this Annual Report describes recent State legislation that requires increased solid waste diversion (or reduction) and more comprehensive reporting of disposed and diverted quantities.

1.5.2 Requirements for FA2 Development and Use

1.5.2.1 Background

In 2011, the last major permits for the development of FA2 were obtained after agreement was reached between regulatory agencies and WMAC regarding mitigation for the loss of a wetland channel and the loss of habitat for special status species. Mitigations were established through Alameda County Conditional Use Permit C-5512 and permits from several State and Federal agencies:

- US Army Corps of Engineers, which had jurisdiction over wetlands.
- US Fish and Wildlife Service (USFWS), which consulted on wildlife protective measures.
- CVRWQCB, which certified that the mitigations would protect water quality.
- California Department of Fish and Wildlife (CDFW), which concurred with the USFWS' Biological Opinion and placed specific conditions on work in the wetland channel.

The fundamental requirements of these permits are:

- The dedication of 750 acres of ALRRF land as a Conservation Easement, in perpetuity.
- The creation of additional wetlands, in the form of a new pond between FA2 and the Eastern Alkali Wetland.
- The enhancement of a riparian channel approximately the same size as the channel to be displaced by FA2.

To guide these efforts and many related requirements, the ALRRF and its consultants prepared the following documents:

- Conservation Management Plan
- Pest Management Plan
- Grazing Plan

- Waters and Wetlands Mitigation Plan

The ALRRF dedicated the 991.6-acre Conservation Easement in 2012 and built the mitigation wetland pond in 2013. In late 2017, the ALRRF executed an agreement with the Cosumnes Floodplain Mitigation Bank to fund river channel restoration and preservation in southern Sacramento County. The current status of these efforts is described in Section 1.5.2.3 below.

1.5.2.2 Corridors and Connectivity

The Biological Opinion from the USFWS describes the need for wildlife connectivity and wildlife corridors in eastern Alameda County to provide for wildlife movement and thereby enhance species health by preventing inbreeding. The Biological Opinion states that this need exists for three of the four protected species in the area: San Joaquin Kit Fox, California Red-Legged Frog, and California Tiger Salamander. The fourth federally threatened species is the valley elderberry longhorn beetle. ALRRF has no direct or indirect adverse effects toward this species. The ALRRF's Conservation Management Plan contains the following requirements in the Minimization and Mitigation sections of the document:

> MIN-31 – The project proponent will contribute funding to conduct a research study of wildlife passage at local over- and under- crossings to determine if these conduits provide conductivity [sic] for wildlife through the Interstate 580 corridor. The study will entail the periodic placement of motion-activated camera station, track plates, and other approved sampling method. The project proponent will provide the Service and/or CDFW with as much as $50,000 to perform the study. With the approval of the Service and CDFW, the project proponent may contract the study to an approved third party.
>
> MIT-7 – The mitigation pond/wetland will be constructed in an upland area […] immediately upstream from the Eastern Alkali Wetland. […] This area provides suitable upland refugial habitat for tiger salamanders and suitable dispersal habitat for red-legged frogs to the Eastern Alkali Wetland and the Southern Alkali Wetland.

These requirements are also stated in the USFWS Biological Opinion, which in turn is referenced by the CDFW Consistency Determination.

1.5.2.3 Current Status

The wetland mitigation pond built in 2013 was damaged by sediment inflow due to unusually heavy rainfall in early 2014. To remedy this, ALRRF purchased off-site wetland channel mitigation credits from the Cosumnes Floodplain Mitigation Bank in southern Sacramento County and had the pond rebuilt and replanted in 2018. In late 2018 the very extensive sedimentation basin SB-

H was constructed between the pond and Fill Area 2. In 2021 and 2022, the wetland mitigation pond was irrigated, shallow water was observed in the pond and vegetation grew. In the first quarter of 2023, winter storms caused large erosional damage to the SB-H culvert and waterway system at the mitigation pond. The event deposited sediment into the mitigation pond. The area has since been re-constructed. By the end of 2023, the mitigation pond had increased in water quantity. This carried into 2024, as the mitigation pond benefitted from an increased quantity of water, which was observed in the pond, as well as birds and amphibious life.

In 2024, the CM reviewed a summary report describing wetland and wildlife mitigation activities and issues. Wetland and wildlife mitigation activities continued in 2024 with monitoring of construction areas and wildlife protection measures (e.g., relocating sensitive species such as California Tiger Salamander, when encountered). In 2024, the CM received and reviewed the 2023 Annual Status Report by Kleinfelder that describes conservation activities.

The CM also reviews the ALRRF annual mitigation monitoring progress report, which briefly summarizes the status of compliance with each of the 106 conditions in Conditional Use Permit C-5512.

2.0 COMMUNITY MONITOR ACTIVITIES AND ISSUES

2.1 Introduction

Under the Settlement Agreement, the CM has three ongoing duties:

- Review reports, data and information that are required to be submitted by WMAC to regulatory agencies, or that provide information regarding the ALRRF's compliance with applicable environmental laws and regulations (Settlement Agreement Sections 5.7.1.-5.7.3)

- Conduct inspections of the ALRRF facility up to 12 times per year (Sections 5.7.7, 5.8)

- Review the records of testing and acceptance of "Class 2 soils", i.e., soils known to come from a contaminated site (Section 5.7.9)

2.2 Monitoring of Improvements and Changes

Through report reviews and site visits, several new developments in ALRRF facilities and operations were monitored in 2024:

- Correspondence on February 21, 2024, by the CVRWQCB, detailed the review of the *Updated Monitoring Program Technical Memorandum* prepared October 2, 2023. This

memorandum discusses the landfill's groundwater monitoring well networks: FA1, FA2, LSI-1, LSI-2, and LS-3, along with their designated monitoring program. These monitoring programs include detection monitoring, corrective actions monitoring, and 5-year detection monitoring. Additionally, the memorandum discusses WM proposed method for calculating inorganic intrawell concentration limits, concentration limits for anthropogenic constituents and calculating FA2 intrawell sample quantities.

- On April 23, 2024, a staff letter presented by the CVRWQCB details the revisions to the report submitted by WM on February 23, 2023, *Fill Area 2 Revised Configuration for Phase 7, Destroy and Replace Monitoring Well MW-53 and Gas Probes UGP-16S/D*, which outlines proposed revisions to the layout of Phase 7 in FA2. As detailed in the May 20, 2024, staff letter by the CVRWQCB, CVRWQCB staff reviewed and conditionally approved the *Report of Construction Quality Assurance Phase 6 Construction*, dated February 9, 2024. This report documents the CQA monitoring activities of Geosyntec for the construction of the FA2, Phase 6 containment cell. This staff letter addresses conditional approval in accordance with Title 27 and WDR requirements for the Phase 6 CQA Report, the construction documented in the Phase 6 CQA Report, and the LSI-3 Water Balance Memorandum. WM must electronically submit to the CVRWQCB staff documentation showing restoration of the operations layer at least 48-hours prior to waste placement and the discharger must resubmit Construction Memoranda #1 and provide documentation to which factor of safety is corrected. On July 25, 2024, on behalf of WM, Geosyntec reviewed, revised, and commented on the Conditional Approval Report of CQA for Phase 6 Construction and LSI-3 Water Balance Memorandum prepared by the CVRWQCB. On August 12, 2024, WM submitted to the CVRWQCB the soil gas probe and monitoring well replacement report for ALRRF prepared by Geosyntec documenting the replacement of FA1 monitoring locations of MW-53 and UGP-16.

- In the 12 months from June 2023 through May 2024, seven poorly performing landfill gas wells were decommissioned, and 17 new landfill gas extraction wells were brought online. Wells with higher-than-normal gas temperatures were monitored for possible subsurface combustion. A total of seven existing wells were decommissioned, i.e., shut down and disconnected from the gas extraction system because they had become unproductive. During surface emission monitoring, there were 23 exceedances of the 500 parts per million by volume (ppmv) methane threshold total. All the corrective actions to block these emissions were successful and passed their 10-day and 30-day follow-up tests. Methane exceeding regulatory threshold of 5% was not found in any of the 50 perimeter probes installed around Fill Areas 1 and 2. Probe GP-20C and probe GP-8C, both have historically had higher methane values that have been proven to be naturally occurring and not related to landfill operations. No exceedances were detected during this monitoring event. The landfill gas wells nearest to groundwater monitoring wells E-05/E-07, E-20B, and MW-4A continued to be operated. This was an effort to prevent landfill gas from reaching those groundwater wells, where low concentrations of VOCs have been detected. Currently the operating emission control devices for landfill gas at

the ALRRF consist of two turbines (S-6 and S-7) and two flares (A-15 and A-16). The two turbines were tested for compliance with emission limits in December 2023, while the main flare, A-16, and the back-up flare, A-15, and were tested in March 2024. All four devices passed by the BAAQMD under Permits (8-34-301.4) and Condition Number (19235).

- On August 13, 2024, the *Final Report, Evapotranspirative Cover (ET cover) Demonstration*, prepared by Geosyntec, on behalf of WM, was submitted to the CVRWQCB after the completion of the 4-year demonstration and monitoring project following the ET cover construction in 2018. The report concludes that the 10-arce ET cover performed well over the demonstration period. Geosyntec notes that the ground surface conditions, vegetation and stormwater feature all required minimum maintenance. There was no observed erosion, minimal cracking, and no observed ponding. Geosyntec states that the results of the demonstration show that the ET cover will isolate the landfilled waste from precipitation water at least as well as the applicable prescriptive cover, satisfying the alternative cover requirement of the Title 27, Section 21090(a). Additionally, the cover meets the overall performance goals of the project: to isolate wastes from the environment, minimize infiltration, promote healthy vegetation, and reduce erosion.

- The Mitigation Pond had water present during the site visit conducted in April of 2024. Langan and ESA observed the completed repair of the erosion feature at the northwest boundary of the mitigation pond and at the Basin H stormwater culvert as the result of winter 2022 and 2023 storms. The restoration activities included removal of eroded sediment from the pond and reinstallation of perimeter fencing.

- The windblown litter issue remained similar to 2023 during 2024. The LEA issued an AOC on July 15, 2024, and October 15, 2024, as litter was observed on the neighboring properties around the Back-40 access roads leading to Bethany Reservoir. In both cases, WM cleaned up the litter and the AOCs were removed.

- In the period from January through November 2024, the ratio of **Class 2 cover soil** to municipal solid waste increased to 22% from 21% in 2024.

2.3 Compliance and Significant Incidents

As noted above, the Settlement Agreement defines the CM's Scope of Work to include "issuing a written report each year summarizing the ALRRF's compliance record for the period since the last such report with respect to all applicable environmental laws and regulations." This Annual Report provides that summary. The regulatory agencies that administer these laws and regulations, and the environmental permits held by the ALRRF, include the following:

- Alameda County Planning Department

- Alameda County Department of Environmental Health
- Bay Area Air Quality Management District
- US Environmental Protection Agency
- California Department of Resources Recycling and Recovery
- Central Valley Regional Water Quality Control Board
- California Department of Fish and Wildlife
- US Army Corps of Engineers
- US Fish and Wildlife Service

To determine if there are trends in the compliance record, a list of compliance issues has been compiled; issues from 2018-2024 are shown in Table 2-1, below. Persistent issues appear in the upper part of the table, followed by infrequent or one-time issues. Past issues from 2011–2017 are shown in the 2017 Annual Report.

To compile this table, the CM reviewed publicly available data from the regulatory agencies listed above, ALRRF correspondence with those agencies, and the CM's monthly site inspection reports. The severity of the issues was rated subjectively by the CM using the 1 to 5 scale shown below Table 2-1. Issues that were judged to be beyond the control of the ALRRF are not included in the annual total of severity scores but are listed below the total line.

Table 2-1
Compliance Issues Ranked by Severity

Issue	2018	2019	2020	2021	2022	2023	2024
Contamination at E-05, E-07, E-20B	2	2	2	2	2	2	2
Stormwater contamination	3	3	2	2	1	1	1
Windblown Litter	3	4	3	5	4	3	3
Birds	2	2	2	2	2	2	1
Erosion	-	3	2	2	1	2	2
Cover thin / absent	-	1	1	1	2	-	5
Worker injury	-	1	1	-	-	-	-
Condensate/Leachate Leakage	3	3	2	2	2	2	3
Ponding in low-lying area of landfill	1	2	2	2	1	1	5
Sediment in Wetland Mitigation Area	-	-	-	-	-	2	1
Odor, on site	-	1	-	-	-	-	-
Leachate Seeps	-	4	2	2	1	1	1
Erosion control (sitewide)	-	3	2	1	1	2	1
Waste outside active area (trash, pallets)	-	-	-	-	-	2	2
Leachate Leak Disposal	-	-	-	-	3	-	-
Contaminants at monitoring well MW-4A	-	-	-	3	2	1	1
Contaminants at monitoring well MW-38	-	-	-	-	2	1	1
Windblown litter beyond last litter fence	4	2	2	5	3	3	3
Disposal of liquid into pond without prior approval	4	5	2	-	-	-	-
Lack of means to record liquid level in ponds [cleared]	4	-	-	-	1	-	-
Failure to monitor landfill gas well	4	-	-	-	-	-	-
Incomplete groundwater monitoring report	4	-	-	-	-	-	-
Liquid separation not implemented, Fill Area 1		4	-	-	-	-	-
Medical waste (sharps) manifest issue	-	-	2	-	-	-	-
Totals	**44**	**40**	**27**	**29**	**28**	**25**	**32**
Issues Beyond Control of / Refuted by ALRRF							
Truck overturn	3	2	2	2	2	1	2
Methane Gas at Perimeter Probe(s) [cleared]	-	4	4	-	-	-	-
Fire in refuse &/or stored material	-	3	3	3	-	-	1
Fire on ALRRF property, outside active areas	2	3	2	-	1	-	1
Positive COVID case	-	-	-	1	1	-	-

Indicates that a violation was issued by a regulatory agency.

Severity Criteria

1: Minor or ongoing issue having little potential to harm environmental or public health; below regulatory thresholds.
2: Issue having some potential to harm environmental or public health; below regulatory thresholds; being addressed.
3: Issue having potential to harm environmental or public health; below regulatory thresholds; not improving, or new.
4: Issue having significant potential to harm environmental or public health or resulting in a violation being issued.
5: Issue having significant potential to harm environmental or public health; violation issued; willful non-compliance.
-: Not applicable/not evaluated

For the purposes of this report and table, incidents involving the delivery of hazardous materials with incorrect profiles (showing them as non-hazardous) are considered to be beyond ALRRF's control; but the CVRWQCB's position appears to be that ALRRF is responsible, nevertheless.

The total severity score for 2024 is higher compared to 2023.

One incidents of particular concern occurred in 2024:

- **Windblown Litter**. This may be the single most persistent problem at the ALRRF. With the move of refuse fill operations from the FA1 hilltop into the FA2 canyon, additional fencing lining the perimeter of FA2 and the site, a reduction in windblown litter was expected. Windblown litter dispersed across site remained consistent from 2023 through 2024. In 2024, during site visits, often windblown litter was observed in the Back-40, or on the roadways or sloped areas near the Bethany Reservoir when visited with LEA. ALRRF received two AOCs from the LEA due to significant amounts of windblown litter deposited outside of the property. An internal litter cleanup crew remains a part of the ALRRF work force. When necessary, the crew removes litter from neighboring properties to the east of the ALRRF. This is described further in Section 2.2 above and Sections 2.3.1 and 2.3.2.1 below.

2.3.1 Compliance Issues Documented by the LEA

In 2024, two AOC notices were issued by the LEA. LEA inspection reports indicate concerns about the following:

- **Windblown Litter:**
    - On July 15, 2024, LEA staff conducted an inspection of the ALRRF and observed significant amounts of windblown waste on the neighboring properties around the Back 40 or the access roads/slopes leading to the Bethany Reservoir. Onsite accumulations of litter and offsite migration of litter, as observed during inspections, is not permitted on the California Code of Regulations.
    - On November 15, 2024, LEA staff conducted an inspection of the ALRRF and observed significant amounts of windblown waste on the neighboring properties around the Back 40 or the access roads/slopes leading to the Bethany Reservoir. The LEA also observed an accumulation of litter inside the fence of the electrical substation during this inspection. WM stated they require approval and accompaniment to access and clean the inside of the substation. Onsite accumulations of litter and offsite migration of litter, as observed during inspections, is not permitted on the California Code of Regulations.

2.3.2 CVRWQCB Violations and Concerns

2.3.2.1 2024 Violations

During 2024, there were two Violations issued by the CVRWQCB.

On June 10, 2024, the CVRWQCB conducted an inspection of the Altamont Landfill. The report provides a summary of inspection and outlines the Notice of Violation and steps issued as required to maintain compliance with the WDRs and Title 27. The requirements under the Notice of Violation issued are listed below:

1. Ensure leachate returned to FA1/Unit 2 for dust control is applied at the minimum amount necessary for dust control.

2. Submit a proposal and timeline to install containment system for the leachate collected at Seep B and C collection point to prevent discharge and ponding of leachate atop FA1/Unit 1.

3. Document the removal of ponded leachate and leachate stained/impacted daily or intermediate cover soil from atop FA1/Unit 1 and FA2/Unit 2, as well as soil replacement, with clean soil, and regrading to ensure adequate cover thickness and drainage.

4. Ensure daily cover is applied across all waste at least every 6.5 days.

WM has resolved the June 10, 2024, Notice of Violation.

On August 5, 2024, the CVRWQCB conducted an inspection of the Altamont Landfill. The report provides a summary of inspection and outlines the Notice of Violation and steps issued as required to maintain compliance with the WDRs and Title 27. The requirements under the Notice of Violation issued are listed below:

1. Isolate, remove, and properly contain the hazardous waste and arrange for its disposal at a permitted facility authorized to accept hazardous waste.

2. Submit a report documenting the offsite disposal of the hazardous waste at a permitted facility authorized to accept hazardous waste.

WM has resolved the August 5, 2024, Notice of Violation.

2.3.2.2 2024 Areas of Concern

On June 10, 2024, CVRWQCB conducted an inspection of the Altamont Landfill. The report provides a summary of inspection and outlines Areas of Concern, required to maintain compliance with the WDRs and Title 27. WM has resolved these Areas of Concern, and they are listed here as for reference. The Areas of Concern included in the report are listed below:

1) A broken LFG extraction line was observed atop LF-1.
2) While flowing into the basin, free liquid was observed just outside of the limits of the Yellow Flag Solidification Basin.
3) Windblown waste was observed well outside the southern and western limits of FA2, and as far south as the SB-H outfall spillway, and as far east as the SP-F outfall spillway.
4) The leachate return pump, which pumps leachate from LSI-3 back up to a J-stand near the top of FA2 was leaking, the temporary plastic catch basin installed to contain the leak was full of leachate, and leachate was spilling out of the full catch basin onto the ground.
5) An area of settlement and ponding was observed along the eastern side of Maintenance Shop in FA1/Unit 1.
6) Poor drainage and ponding were observed on benches along the southwestern corner of FA1.
7) An area of erosion, with cuts at least a foot deep into the cover, were observed along the southwestern side slope of FA1/Unit2.
8) An area of ponded storm water was observed east of the Blue Flag Basin due to poor grading.
9) The storm water discharge path off the eastern side of FA1 to storm water basin SB-H contained a significant amount of vegetative debris, Altamont Landfill.
10) An area of settlement and former ponding was observed near the southeastern side of the 10-acre ET cover demonstration project (Figure 49).
11) The freeboard markings on LSI-1 (Figure 44) and LSI-3 (Figure 74) were barely readable.
12) Neither of the soil gas monitoring probes observed, UPG-10 and VP-6, were properly secured (Figures 81 and 82). In contrast, all observed groundwater monitoring wells were properly labeled and secured.

13) Combined Violation 2, Area of Concern 3, as well as the substantial amount of windblown litter observed across the facility outside the active disposal face constitute a failure to implement good housekeeping BMPs in accordance with the Industrial Stormwater Programs, Industrial General Permit (IGP). As explained in the IGP, the Discharger is required to:
    a. Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off facility materials or storm water run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials should be cleaned and disposed of properly.
    b. Cover all stored industrial materials that can be readily mobilized by contact with storm water.
    c. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper, etc.) that can be transported or dispersed by the wind or contact with storm water.

WM is actively implementing AOC actions that require continuous implementation or have otherwise resolved AOCs.

2.3.2.3 CDO

The CVRWQCB issued CDO R5-2021-001 for the ALRRF on April 22, 2021. In the CDO, the CVRWQCB alleged the ALRRF was being operated outside of applicable federal and state regulations, and the WDRs. The CDO provided a list of various items the Discharger (ALRRF) performed out of compliance and provided a time schedule with specific requirements to that compelled the Discharger to resolve past compliance issues, achieve compliance with Title 27 and the WDRs, and conformed to its Notice of Applicability (NOA) in a time frame acceptable to the CVRWQCB. The items identified were not new and had been discussed during the past years with the CM, but the CDO raised the severity of the issues. Between 2021 and 2024, WMAC has resolved most of the issues raised by the CDO as reported below.

Requirements Outlined in the CDO include the following:

<u>Implementation of FA2 Unit 1 Detection Monitoring Program</u>

The CDO requires the Discharger to implement a CVRWQCB approved detection monitoring network. The Discharger has proposed and installed monitoring devices for FA2, nevertheless the CDO notes that it does not meet all the requirements outlined in the WDRs.

The following actions were requested to resolve this item:

- Installation of interim point of compliance (POC) wells in FA2 Unit 1, which will continue while FA2 is being expanded.
- Installation of final permanent FA2 limit wells, which has been completed.
- Implementation of a Water Quality Monitoring and Response Program for FA2 Unit 1.

MW-4A Evaluation Monitoring Program

In May 2017, MW-4A, located in the northeastern limit of FA1, reported exceedances of bicarbonate, calcium and five VOCs. Additional sampling confirmed a release in this area, which has been attributed to landfill gas. The Discharger has implemented focused extraction of landfill gas in this area and conducted additional investigation to define the extent of the release.

Continued implementation of the FA1 Corrective Action Program

The Discharger has chosen landfill gas extraction as the corrective action measure to address landfill gas effects. The CDO requires continued implementation of the Corrective Action Program, and to submit the following:

Report outlining the Corrective Action Program (landfill gas extraction). Starting with the Second Semiannual 2021 groundwater sampling event, a Corrective Action Status Reports have been submitted to the CVRWQCB to document the effectiveness of the Corrective Action Program.

Continued operation of solidification basins

Title 27 and the WDRs require that the solidification process does not result in the introduction of liquids into a solid waste management unit (WMU) in excess of the moisture holding capacity of the unit. The solidification basins at ALRRF are operated atop of FA1 Unit 2. These solidification basins do not comply with the WDR requirements. To bring this item back into compliance, the CVRWQCB included the following requirements in the CDO:

- The operation of the two solidification basins atop of FA1 Unit 2 can continue until new solidification basins are constructed.

- The new solidification basins shall be moved outside of the existing WMUs, shall be completed as double lined containment systems, with a leachate recovery system (LCRS) installed between the liners, and a monitoring system.

On October 19, 2021, in accordance with the CDO, Golder Associates Inc. (Golder) prepared the Report of Waste Discharge (ROWD) for the proposed concrete-lined, Solidification Basins that will be re-located near Fill Area 2 (FA2) at the ALRRF. The basins will be constructed as Class 2 liquid waste management units and will be underlain by a geomembrane liner to provide a double containment system with a leachate collection and recirculation system (LCRS). A pan lysimeter will be constructed underneath the sump. On November 8, 2022, a monitoring plan for the solidification basins was prepared by Geosyntec. On August 29, 2023, the CVRWQCB issued tentative Waste Discharge Requirements (WDRs) and monitoring program for the proposed Solidification Facility. WM provided comments, and the CVRWCB responded to the comments on November 29, 2023. A public hearing was scheduled for December 14/15, 2023.Once all the permitting is approved by the CVRWQCB, the construction of the new solidification basins can be completed. During 2024, permitting by the CVRWQCB was issued to the landfill to perform grading of the new solidification area basin. Additional permitting must be granted in order for additional construction of the area.

Water Board Tracking Timeline

The timeline for the requirements and deliverables requested in the CDO are summarized below:

- Work plan to install the soil gas monitoring wells (interim and final) for FA1 and FA2 no later than 90 days after adoption of the CDO.
- Report installation within 60 days of installing any new groundwater monitoring well or soil gas monitoring well.
- Work plan to conduct surface water monitoring for surface water flowing out of FA2 no later than 90 days after adoption of the CDO.
- Notify the CVRWQCB 30 days prior to removal of interim monitoring devices.
- Document the results of the MW-4A evaluation monitoring program (including groundwater and soil gas sampling) in separate Corrective Action Progress reports to be submitted semi-annually by 1 August and 1 February each year.
- Report the installation and operation of new off-waste footprint solidification basins no later than 12 months from approval of the Report of Waste Discharge (depending on approval), 2024.

The majority of the tasks listed in the CDO have been completed on or before the due date included in the CDO. However, some items have not been completed; this issue will continue to

be tracked. The CM presents a table that lists updates of the requirements outlined in the CDO, the expected completion timeline and progress that has been made on each item on each quarterly packet.

2.3.2.4 Other Concerns

Several open issues had arisen between the ALRRF and the CVRWQCB since the current WDRs were finalized in July 2016. Most of these issues were included in the CDO issued by the CVRWQCB in 2021 and described in section 2.3.2.3.

2.3.3 Other Incidents

The following information is based on reports filed in the site's Special Occurrences Log and on Community Monitor site inspections.

2.3.3.1 Vehicular Incidents

Within the ALRRF operating area, four dump-trucks and one ADT overturned during 2024. One injury was reported.

2.3.3.2 Fire

One fire occurred on site in 2024.

2.4 Review of Reports

2.4.1 Groundwater

Two groundwater monitoring reports were reviewed in 2024. The first covered the period from July through December of 2023; the second covered January through June of 2024.

The data in these reports indicate that most monitoring wells with VOC contamination are still fluctuating. In the Second Semiannual 2023 sampling event, it appears VOCs are decreasing over time, including VOCs previously detected in E-05R at high concentrations. In the First Semiannual 2024 sampling event, it appears that VOCs are continuing to decrease over time. These trends will continue to be tracked.

Reoccurring statistical exceedances of concentrations of inorganic constituents (chemical oxygen demand, dissolved calcium, chloride, sulfate, total dissolved solids, and bicarbonate alkalinity) continued through 2024. This appeared in MW-2, MW-8A, MW-10, MW-18, MW-62 and PC-2A as reported in the First Semiannual 2024 Report. MW-8A, MW-8B and PC-2A are a part of a group of wells that have experienced changes in inorganic groundwater chemistry starting as early as 2018. An evaluation of potential sources of the water quality changes was conducted for these

wells, which determined the changes were due to storm water effects and not a release from the landfill (Geosyntec, 2020). WMAC has continued to report water quality data for all three wells in accordance with the 2016 WDR/MRP.

VOCs detected in corrective action monitoring wells E-05, and E-07, were generally consistent and within the ranges of previous detections observed at these wells. E20-B had a slight increase in detected concentrations than previous detections observed in the well. No VOCs were detected in E-03A, E-21, or E-23 located downgradient of E-05 and E-07. None of the VOCs that have historically or currently been detected in E-20B were detected in downgradient monitoring well MW-27 during this, or any previous, reporting period. LFG-related VOCs continue to be detected in POC monitoring well MW-38. On February 15, 2022, the CVRWQCB indicated that the monitoring of water quality in the MW-38 area (including newly installed downgradient well MW-53) should be included in the CDO status report for corrective action areas. The amended AROWD that combined the corrective action areas on the eastern side of FA1 into one Corrective Action Program was submitted on March 20, 2023. No VOCs were detected at MW-4A. The concentrations of bicarbonate alkalinity at MW-4A have fluctuated from slightly below to slightly above the statistical concentration limit.

2.4.2 Storm Water

During the Second Semiannual 2023, no VOCs were detected in sedimentation basin samples from InBasinC, InSB-E, InSB-F, or InSB-H. InBasinA sample had one VOC, acetone, at an above reporting limit concentration. No other VOCs were detected InBasinA. Acetone has been detected at similar levels in past samples from this sample point.

During the First Semiannual 2024, no VOCs were detected in sedimentation basin samples from FA2 Storm Water Retention Basin F (InSB-F), or Basin H (InSB-H). BasinC sample had a recurring concentration of acetone (15 micrograms per liter [µg/l]), above the reporting limit of 10 µg/l. The InBasinA and InSB-E samples each had a below reporting limit VOC detection of tert-butyl alcohol and toluene. No other VOCs were detected in InBasinA, InBasinC or InSB-E. Tert-butyl alcohol has been detected at similar levels in past samples from InBasinA. Although toluene has not been previously detected in samples from InSB-E, similar concentrations of toluene have been observed in past samples from other surface water monitoring points and in field equipment blanks associated with sampling in May 2024. Per the WDR, a single below reporting limit VOC species is not considered an initial indication of the presence of VOCs and no further actions are required.

ALRRF conducted a study on potential sources for these VOCs and it has not identified any industrial sources at the site for the 2023 Second Semiannual nor 2024 First Semiannual reporting.

2.4.3 Air Quality

Title V is one of several programs authorized by the U.S. Congress in the 1990 Amendments to the federal Clean Air Act. The Bay Area Air Quality Management District (BAAQMD) administers Title V requirements for the ALRRF. Title V operating permits incorporate the requirements of all applicable air quality regulations. Hence, the semi-annual Title V reports provide a comprehensive review of compliance with BAAQMD permits and regulations.

In 2024, the CM received the Title V reports for the periods June – November 2023, and December 2023 – May 2024. These reports describe landfill gas control operations and source testing, and they also document new or unique developments at the site that can have an effect on air emissions. Results from the current reporting year are similar to those from the previous year:

- The required surface emissions monitoring (checking for methane leaks through the landfill cap) continued to occur, and although exceedances of methane were found, they were typically remedied on the first try, without the need for repeated repairs.

- From June 2023 – November 2023, 2 landfill gas wells were decommissioned, and 5 new wells were installed and began operation.

- From December 2023 – May 2024, 5 landfill gas wells were decommissioned, and 12 new wells were installed and began operation.

- The operating emission control devices for landfill gas at the ALRRF consist of two turbines (S-6 and S-7) and two flares (A-15 and A-16). For both monitoring periods, the two turbines and two flares were tested for compliance with emission limits All four devices passed by the BAAQMD Permit 8-34-301.4 and Condition Number 19235.

- Throughout both monitoring periods, the landfill gas wells nearest to groundwater monitoring wells E-05/E-07, E-20B, and MW-4A continued to be operated with as much vacuum as they would tolerate without pulling in air from above the ground surface. This was an effort to prevent landfill gas from reaching those groundwater wells, where low concentrations of VOCs have been detected.

2.4.4 Mitigation Monitoring

The Mitigation Monitoring and Reporting Program Annual Progress Report, covering calendar year 2023, was reviewed by the CM during the second quarter of 2024. It is a table that lists each of the conditions described in the current Conditional Use Permit (CUP-5512), followed by a description of the implementation status of that condition or mitigation. The status descriptions together with the verification notes generally reflected the current status of each mitigation

measure. Updates to this table from the previous year are listed below, with reference to the applicable CUP Condition number.

- Condition 4.4: After the Expansion Date, the amount of sludges, inert waste, and special waste accepted for disposal at ALRRF from outside Alameda County and San Francisco shall not exceed 25,000 per calendar year, and no such waste shall be accepted from outside the Nine Bay Area Counties. The "banking" and "major event" provisions and exceptions set forth in Condition No. 4.3 above shall not apply after the Expansion Date. The site received 15,428.10 tons in 2023, staying below the 25,000 tons/calendar year.

- Condition 18: The mitigation program shall be monitored annually for five years (minimum, or a period agreed upon by the operator in consultation with FWS and DFG) after implementation to assure the success of the mitigation, as determined by evaluation of performance standards and success criteria based on FWS and DFG requirements and standards. If at any point during the five-year monitoring period, the mitigation plan is judged to have not been successful, the mitigation shall be reinitiated, after modification as necessary, and monitored for a succeeding five-year period. Implementation activities will be monitored annually for the first five years after implementation to verify that California DFG and USFWS approved performance standards and requirements have been met. The monitoring period was restarted due to damage to the wetland area. There was wetland damage in winter 2022-2023 that was rectified last summer and cleared by the biologist.

- Condition 26: Reports for Phase 6 post-construction report along with prior post-constructions will be submitted in 2024.

- Condition 29: The operator shall monitor the replacement wetlands after they are created to assess whether they are meeting the performance standards in the approved Wetlands Mitigation Plan. Such monitoring shall be conducted for five years or until performance standards are met, whichever occurs first. ALRRF will conduct monitoring of replacement wetlands in accordance with the Wetlands Mitigation Plan. Monitoring will be conducted for a minimum of 5 years from implementation or until performance standards are met. There was wetland damage in winter 2022-2023 that was rectified last summer and cleared by the biologist.

- Condition 36: The operator shall fence the area to keep livestock out of the alkali sink. Fencing was installed to restrict cattle access to the alkali wetlands in 2019. Conservation

Easement recorded (May 2012). Mitigation Plan implementation began in 2013. Fencing of the alkali wetland located next to the mitigation wetland was completed in 2019.

- Condition 47: During Phase 6 mass excavation, several seeps were noted along the first slope of the western sideslope. Three "fingerdrain" trenches were excavated to capture water from three seeps, as well from two moist ground areas; the trenches were backfilled with underdrain gravel enclosed in geotextile fabric, which drain to the underdrain piping at the toe of the slope. The pipes that collect seepage from Springs 1 and 2 were extended to discharge beyond the Phase 6 cell.

In addition to the Annual Progress Report described above, in prior years the ALRRF has prepared reports to inform the natural-resource agencies about progress on their permit requirements for Fill Area 2 expansion: establishing the Conservation Plan Area, constructing the wetland mitigation project, protecting existing wetlands and surface waters, etc. In 2024, CM received the Status Report for Mitigation Wetland Report (prepared by Kleinfelder in previous years) which documents the impacts to wetlands and special-status plant and wildlife species known in the Fill Area 2 expansion area. Kleinfelder noted that:

- All performance standards (PS), except for PS-6, PS-9, and PS-11, are being met.
- The mitigation pond provides breeding habitat for California tiger salamander (CTS) and California red-legged frog (CRLF) and both species have been observed in the pond.
- The other ponds in the conservation plan area (CPA) are also flourishing and provide a breeding habitat for these species.
- Over the last ten years, in addition to the mitigation pond, CTS and/or CRLF have been observed in stockpond-6 (SP-6), SP-8, SP-9 and SP-11.
- All ponds except for SP-7 are meeting successful criteria outlined in Performance Standard 3.
- No non-native predators were observed in any ponds in 2023.
- Kleinfelder recommends: the removal of all populations of artichoke thistle, tamarisk populations in the CPA, removal of the Peruvian pepper tree in the northeastern corner of the CPA and Russian olive tree in the northwestern portion of the CPA.

2022 Annual Progress Report for the Evapotranspirative Cover report prepared by Geosyntec documents observations, maintenance, and data analysis regarding the performance of the Evapotranspirative Cover, and the inspections performed through the end of 2022. Geosyntec noted that:

- Over the 2022 calenda year, vegetation on the side slopes and top deck continued to mature. The limited, sparsely vegetated areas observed in 2020 and 2021, remained partly sparse during 2022, but reduced from 2021 to 2022. Vegetation along the side slopes and ditches were generally well established. This area will continue to be monitored and if vegetation does not become established in these areas, additional hydroseeding, re-seeing or additional work may need to be performed.

- Average root depths between 2021 and 2022 indicate the vegetation across the ET cover appears to be relatively healthy.

- The ET cover is experiencing minimal erosion along the top deck and side slopes. Long-term persistent ponding has not been observed.

- Some cracks, likely due to desiccation, were observed in 2022, as well as 2019, 2020 and 2021. Geosyntec will continue to monitor the previously identified cracks.

2.5 Review of Records

Several types of site records were reviewed by the CM in 2024. The CM's scope of work requires the periodic review of files that contain lab analyses and other descriptions of **Class 2 soils** (considered non-hazardous) that are brought to the site for use as cover soil.

The **Special Occurrences Log** for the ALRRF was examined four times during the year and summarized for the Committee. The **LEA's monthly inspection reports** are publicly available on the CalRecycle web site and were checked by the CM every month, to note any new issues that may have been identified by the LEA.

2.5.1 Class 2 Soils

An ongoing CM task is the periodic review of files containing profiles (sample analyses) for Class 2 soils that are imported for use as cover soil in the Class 2 portion of the ALRRF. For efficiency, this is generally conducted two to three times per year, and it requires at least one full day for a qualified specialist to review each file to be sure that it is complete and within the regulatory limits for Class 2 materials. The review conducted in 2024 occurred on May 13, 2024,

for Class 2 soils accepted in October 2023 through May 2024; and periodically throughout September and November 2024, for Class 2 soils accepted through May 2024 through October 2024. WM has made the files available to the CM electronically via email correspondence.

A total of 95 profiles were reviewed on May 13, 2024, that corresponded to Class 2 soil accepted at the landfill between October 2023 through May 2024. A total of 122 profiles were reviewed throughout September and November of 2024, that corresponded to Class 2 soil accepted at the landfill between May 2024 and October 2024.

One profile was found out-of-compliance. The waste originated from the PG&E Redwood City Spoils yard. According to PG&E the Clean Harbors Environmental Services erroneously characterized the waste and transported it to ALRRF for disposal on June 25, 2024. A sample collected to assess the nature of the subject waste contained lead with a total threshold limit concentration (TTLC) of 800 milligrams per kilogram (mg/kg) and a soluble threshold limit concentration (STLC) of 44 milligrams per liter (mg/L). The STLC demarcation for lead Hazardous Waste is 5.0 mg/L The waste was then commingled and mixed with treated metal shredding waste for solidification and used as daily cover. WM provided the CVRWQCB with an Improper Disposal Report, self-reporting the acceptance, solidification, and disposal of 10.67 tons of hazardous waste at ALRRF. The waste has since been removed from the FA2.

2.5.2 Special Occurrences Log

Each permitted solid waste disposal site in California must keep a Log of Special Occurrences to document unusual and potentially disruptive incidents, including fires, injury and property damage, accidents, explosions, receipt or rejection of prohibited wastes, lack of sufficient number of personnel, flooding, earthquake damage and other unusual occurrences. The ALRRF log was either checked by the CM in person during site visits or requested via email. Three dump trucks and one ADT overturned, and one fire occurred in 2024.

2.5.3 LEA Inspection Reports

In 2024, there was one type of AOC noted in these reports, but two AOCs issued. Both AOCs pertained to windblown litter within the property boundaries as well as on surrounding properties. The LEA requested for ALRRF to reduce the litter quantity on ALRRF property and completely removed litter cited outside ALRRF property boundary. The AOC issued July 17, 2024, has been removed. The AOC issued October 15, 2024, has been removed.

2.6 Monthly Site Visits

Twelve site visits were held during 2024. The visit day and time were as shown in Table 2-2 below.

In general, satisfactory conditions were observed, although windblown litter presence was still a persistent issue. Minor problems generally were rectified prior to the next inspection. Details are available in the monthly site visit reports provided in CMC meeting packets. Distinct operations, such as the stockpiling and processing of specific materials, took place in well-defined areas. No instances of unpermitted activities were noted. There were no new problems seen regarding refuse placement, public safety or traffic management, whether on hours or off hours. Throughout these visits, staff and management were forthcoming regarding operating practices and current conditions.

Table 2-2
2024 Site Visit Summary

Date	Day of Week	Visit Time	Announced in Advance?	With LEA staff?
January 25	Thurs	1:00 PM	Yes	No
February 28	Wed	11:00 AM	No	Yes
March 20	Wed	10:00 AM	Yes	No
April 19	Fri	10:00 AM	Yes	No
May 29	Wed	10:00 AM	Yes	No
June 11	Tues	9:00 AM	Yes	No
July 26	Fri	10:30 AM	Yes	No
August 22	Thurs	10:00 AM	Yes	No
September 26	Thurs	12:00 PM	Yes	No
October 10	Thurs	10:00 AM	No	No
November 5	Mon	9:00 AM	No	Yes
December 6	Fri	9:00 AM	Yes	No

In 2024, observations by the CM focused on:

- The operations in Fill Area 2.
- Maintenance of the mitigation pond.
- Plant growth and soil conditions in the evapotranspirative cover test area.
- Storm drainage and erosion control.

- Observation of issues of ongoing concern, including the presence of large numbers of seagulls and management of windblown litter east of FA 2.
- Construction of FA 2 phases 6 and 7.
- Relocation of Solidification Basins from FA1 to FA2.
- Changes at the site that could harm the environment or public health.

No truck traffic counts were conducted in 2024, because ALRRF data on tonnage and traffic made it clear that the traffic volume requirements of the Conditional Use Permit were being met.

2.7 Per- and Polyfluoroalkyl Substances (PFAS) Updates

The PFAS Order was given by the SWRCB as part of a statewide effort to obtain a preliminary understanding of PFAS compounds concentrations in groundwater and leachate at various landfills. The Order indicates this sampling is necessary to determine if PFAS compounds are present in and near waters that could be used for drinking water purposes. The SWRCB and RWQCBs will evaluate the data collected and use it to support of any regulatory action to be implemented.

To be representative, samples were collected in November 2019 from a background well, a downgradient well, and a composite leachate sampling location, where possible. PFAS compounds were reported at higher concentrations in groundwater monitoring wells in the previously affected assessment and corrective action areas (E-05, E-07, E-20B, and MW-20) than the background or the detection monitoring program (DMP) wells. The highest PFAS concentrations in groundwater were reported in corrective action wells E-05 and E-07, located immediately downgradient of the old permitted unlined portion of FA 1. Relative to corrective action wells E-05 and E-07, lower concentrations of PFAS compounds were reported in the E-20B corrective action area, situated adjacent to the old unlined FA 1.

No additional PFAS sampling is proposed or required at this time. The SWRCB is analyzing the compiled data in airports, landfills and drinking water supply systems to aid in the development of Public Health Goals in drinking water. The concentrations reported at the ALRRF were below the maximum concentrations for groundwater and leachate at other landfills covered by the PFAS Order, and within the middle of the concentration ranges.

In 2021-2022 the United States Environmental Protection Agency (EPA) made several announcements regarding its goals for investigating, regulating, and remediating PFAS in consumer products and across environmental media. This included Emergency Planning and

Community Right-to-Know Act and Toxic Substances Control Act Regulation, Safe Drinking Water Act Regulation, Clean Water Act Regulation, plans to initiate the addition of PFOA, PFOS, Perfluorobutane sulfonic acid (PFBS), and GenX[9] to the list of Resource Conservation and Recovery Act (RCRA) Hazardous Constituents, as well as clarify that constituents classified as RCRA hazardous wastes can be cleaned up through RCRA corrective action process.[10] Additionally, the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) announced the availability of a draft technical support document for proposed Public Health Goals (PHGs) for PFOA and PFOS in drinking water. The public comment period for the draft ended on October 28, 2021. The intended effect once PFAS regulation and guidance is finalized at the Federal and State level is to comprehensively regulate and remediate PFAS. More information on the progression of PFAS regulations throughout 2021-2022 are available in the 2022 Annual Report.

In 2023, the EPA announced proposed national primary drinking water maximum contaminant levels (MCLs) for six PFAS (PFOA and PFOS as individual contaminants, and four contaminants as a PFAS mixture). The proposed regulation would require public water systems to monitor, notify the public of the contaminant levels, and treat drinking water to reduce the levels of these PFAS if they exceed the proposed MCLs. California-specific MCLs for PFAS have not yet been established as of March 2023, and the proposed regulations do not require any actions until finalized, likely by the end of 2023. On May 4, 2023, the EPA generated tables that reflect changes in the toxicity and chemical specific parameters per regional screening levels hierarchies. The table compares the previous toxicity database to this new and current table. This update is in response to the Integrated Risk Information System (IRIS) which is a part of the risk assessment process in which hazard identification and dose-response assessment are applied to derive toxicity values.

On February 1, 2024, the Biden-Harris Administration announced new steps to protect communities from PFAS and other emerging chemicals of concern.[11] The EPA is proposing to modify the definition of hazardous waste as it applies to the cleanups permitted at hazardous waste facilities to ensure the EPA's regulations are clearly reflected and authorizes states authorities to require the cleanup of the full range of substances under the Resource Conservation and Recovery Act (RCRA). The EPA states that the proposed rules would "strengthen protections for communities and drinking water supplies located near the 1,740

[9] GenX is the trademark name for a short-chain PFAS that is being marketed as a replacement for PFOA.
[10] The National Law Review: EPA Makes PFAS Announcements, Issues PFAS Strategic Roadmap and Planned RCRA Hazardous Waste Designations https://www.natlawreview.com/article/epa-makes-pfas-announcements-issues-pfas-strategic-roadmap-and-planned-rcra, accessed November 2021.
[11] https://www.epa.gov/newsreleases/biden-harris-administration-announces-new-steps-protect-communities-pfas-and-other

permitted hazardous waste facilities across the nation." This would include corrective action under RCRA, requiring facilities that treat, store, or dispose of hazardous waste to investigate and mitigate hazardous releases into soil, groundwater, surface water and air. The EPA will publish the proposals in the Federal Register.

Regarding corrective actions, known technologies for treating PFAS in water include granular activated carbon, ion exchange, and reverse osmosis[12]. Granular activated carbon and ion exchange resins remove chemicals by sorption (the chemical is attached to the media), which reduces concentrations of chemicals in the effluent water of the system. Reverse osmosis removes contaminants by pushing water through a semipermeable membrane, effluent water has less chemicals, and a portion of the water (rejected water or concentrate) is collected for disposal. PFAS do not degrade in the environment, and one of the few technologies that can potentially destroy PFAS is incineration.

On April 19, 2024, the EPA announced that it was designating two types of PFAS, PFOA and PFOS as Comprehensive Environmental Response Compensation and Liability Act (CERCLA) hazardous substances. EPA does not intend to pursue entities such as publicly owned/operated municipal solid waste landfills for PFAS under CERCLA.

On 8 July 2024, the EPA final rule designating two PFAS (PFOA and PFOS), including their salts and structural isomers - as hazardous substances under CERCLA became effective.

Current and proposed regulations have focused on drinking water. Future developments may include additional monitoring for landfill and other disposal facilities.

3.0 LOOKING AHEAD: ANTICIPATED EFFORTS AND ISSUES

3.1 Introduction

The 2023 contract year was the beginning of an extended 3-year Community Monitor contract, with Langan providing CM services, assisted by ESA. The CM team will continue to perform report reviews, site inspections and Class 2 soils file reviews in 2025.

[12] Interstate Technology and Regulatory Council (ITRC), 2022. Treatment Technologies – PFAS — Per- and Polyfluoroalkyl Substances. https://pfas-1.itrcweb.org/12-treatment-technologies/#12_1. Accessed on March 10, 2022.

3.2 Issues to be Tracked in 2025

3.2.1 Ongoing Review

The following issues will continue to be monitored in the coming year:

- Concurrence of natural-resource agencies with off-site wetland mitigations.
- Groundwater monitoring methods and data quality.
- Groundwater quality, including the vadose zone below the landfill liners.
- Stormwater quality and management practices.
- Performance of the landfill gas system; decommissioning and installation of gas wells.
- Refuse truck traffic counts, if needed.
- ET cover test site next steps
- Compliance with the CDO.
- Reduction of windblown litter on and off ALRRF property.
- Track new developments related to PFAS.

3.2.2 Site Assessments

All operations will continue to be observed, with close attention to the following areas.

3.2.2.1 Landfill Gas Control System

This system protects both air and groundwater quality, and it operates within a complex regulatory framework involving Federal permits, local permits, State regulations, and ALRRF CUP conditions. Physical changes to this system are likely to include the further addition of landfill gas extraction wells, decommissioning of wells that are no longer productive, and ongoing operation of turbines, flares, etc. In 2025, four topics will be of special interest:

- The effect of the gas system on the concentrations of contaminants in wells E-20B and MW-4A.
- Implementation of the corrective action program in the MW-38 area.
- Gas temperatures, particularly in the high-temperature cluster of wells in FA 1 Unit 2.
- Implementation of gas collection in FA 2

3.2.2.2 Stormwater Controls and Monitoring

Throughout the year, and especially during wet weather months, the CM will monitor conditions at all stormwater basins. The stormwater pollution controls – skimmers, flocculant addition, Filtrexx™ check dams, and additional discharge points appear to have reduced contamination, although sporadic VOCs have been detected.

3.2.2.3 Windblown Litter

This will likely continue to be an issue for FA 2 and downwind areas. ALRRF has installed additional fences and maintained an internal crew to perform litter clean up as prevention to litter disposal offsite during 2022 through 2024.

3.2.2.4 New Systems

The CM will directly observe, and review available performance data, for:

- The ET cover test area next steps
- The wetland mitigation pond
- Tipper and truck wash equipment in FA 2
- The liquids separation system
- Relocation of the solidification operations

In addition, monitoring reports on the Mitigation Wetland and the Conservation Plan Area, will be reviewed as they are provided.

3.2.2.5 Groundwater Contaminants and Groundwater Data

The CM team will continue to check concentrations of VOCs which show an increase. The team will also monitor data from wells E-20B, MW-4, MW-12, MW-20, MW-38 and any well that shows evidence of contamination. The quality of the groundwater sampling and analyses, especially the occurrence of contaminants in quality-control samples and field samples, will also continue to be monitored.

3.2.3 Class 2 Soils File Review

As required by the Scope of Work, the CM will conduct this review at least twice during 2025.

3.2.4 Permit Requirements

As required by the Scope of Work, the CM will continue to review compliance with the Conditional Use Permit and other conditions.

3.2.4.1 Tonnage Limitations

Section 4 of the Settlement Agreement contains numerous restrictions on the types and source jurisdictions of wastes that can be brought to the ALRRF Specifically:

- The amounts of Sludges, Inert Waste and Special Waste from outside San Francisco and Alameda Counties is limited to 25,000 tons per year, and these materials may only originate within the nine Bay Area counties.
- Self-Hauled wastes (of all types) from Contra Costa County are limited to 25,000 tons per year.
- Materials brought for disposal may only originate from Alameda County, San Francisco, and San Ramon.

3.2.4.2 Natural Resource Protections and Reporting

The natural resource permits issued in connection with the ALRRF contain over 80 explicit permit conditions, too many to enumerate here. In the near term, the following monitoring and reporting conditions are especially significant for the CMC:

- Every four years after the start of construction of FA 2 (which began in 2015), the CDFW is to receive a status report on the required periodic surveys of the Conservation Plan Area. The wildlife surveys focus on Western Burrowing Owl, San Joaquin Kit Fox, California Red-legged Frog, and California Tiger Salamander.
- Annual wetland monitoring reports are required by the Lake and Streambed Alteration Agreement, which was issued by the CDFW, for the first five years of operation of the wetland mitigations, i.e. the constructed pond.
- Reconnaissance survey reports for the Conservation Plan Area are also required by the CDFW. These include baseline and periodic surveys for sensitive wildlife species (see list above), and annual rangeland and general reconnaissance surveys. These are due on January 15 of the calendar year following the survey.

We will continue to request progress reports in the future.