LANGAN

Memorandum

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To: ALRRF Community Monitor Committee

From: Langan – Community Monitor

Date: April 10, 2024

Re: **CMC Meeting of 4/10/24 - Agenda Item 6.8 - Topics for 2023 Annual Report**

The draft of the Annual Report for 2023 is attached. The list below summarizes the topics-of-interest for 2023 that were identified by Committee Members. Each of these is addressed or updated in the appropriate section(s) within the reports, and those sections are identified below.

Topic	Section(s)
Fill Area 2 operations and expansion	
Monitoring well replacement	2.2 – 1st bullet
Construction Activity during 2023	2.2 – 2nd bullet
Cease and Desist Order (CDO)	2.3.2.2
Fill Area 2 Detection Monitoring Program	
MW-4A Evaluation Monitoring Program	
Fill Area 1 Corrective Action Program	
Solidification basins	
Windblown litter incidents and controls	1.2, 1.4, 2.2, 2.3
ET cover	2.2 – 6th bullet

Information has been updated through the report to reflect changes that have occurred in this year.

COMMUNITY MONITOR ANNUAL REPORT 2023
ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY
Livermore, California

Prepared For:

ALRRF Community Monitor Committee

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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.

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[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 solidification basins are proposed to be relocated to FA2 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 2022, indicate that the ALRRF is the third highest GHG-emitting landfill in California, with 33,447 metric tons of total carbon dioxide ("greenhouse gas as carbon dioxide equivalent") emitted, behind the Kiefer Landfill in Sacramento County (118,060) metric tons of carbon dioxide emitted) and the Puente Hills landfill in Los Angeles County (101,138,292) 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 2023 as required by the scope of work. Section 2.1 provides more details. Three of the 12 CM site visits in 2023 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. In 2023, the mitigation pond benefitted from an increased quantity of water was observed in the pond, as well as birds and amphibious life. As a part of FA2 Phase 6, the area of SB-H will be expanded. The Phase 6 construction is still in process.

In 2023, the CM reviewed a summary report describing wetland and wildlife mitigation activities and issues. Wetland and wildlife mitigation activities continued in 2023 with monitoring of construction areas and wildlife protection measures (e.g., relocating sensitive species such as California Tiger Salamander, when encountered). In 2023, the CM received the 2022 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 2023:

- Beginning February 27, 2023, WMAC began destroying wells MW-34A, MW-34B, MW-35A, MW-35B, MW-49A, MW-49B, MW-54, MW-55, MW-56, MW-57, UGP-11 and VP-5.

The wells were located inside the planned FA2 footprint and needed to be destroyed to accommodate for grading and continued construction of the landfill. The monitoring wells were samples prior to destruction during the First Semiannual monitoring event in 2023 and the interim point of compliance wells for FA2 Phase 6 were installed prior to the Second Semiannual monitoring event.

- On July 11, 2023, the CVRWQCB reviewed the February 14, 2023 design report for the construction and stormwater improvements for operations expansion to FA2, Phase 6 and Sediment Basin H (SB-H) and approved the proposed design report provided.

- Monitoring well MW-60 installation was completed on June 29, 2023. MW-60 was installed for the new proposed solidification basin for additional monitoring.

- On August 28, 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.

- In the 12 months from June 2022 through May 2023, 14 poorly-performing landfill gas wells were decommissioned and 22 new landfill gas extraction wells were brought on line. Wells with higher than normal gas temperatures were monitored for possible subsurface combustion. A total of 14 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 22 exceedances of the 500 parts per million by volume (ppmv) methane threshold total. All of 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 2022, while the main flare, A-16, and the back-up flare, A-15, and were tested in February 2023. All four devices passed by the BAAQMD under Permits (8-34-412 and 8-34-301.1) and Condition Numbers (18773 and 19235).

- The 10-acre Evapotranspirative (ET) Cover Test area was observed during the April site visit. In general, most of the cover area had vegetation, with the exception of segments of the upper swale banks in the southern portion of the site, the southwestern and

northwestern corners of upper flat area, and the northern end of the lower bench of the ET cover area, which had no vegetation. Native species were observed throughout the ET cover. The CM team (Langan and ESA) observed flowering plants. There were only a few cracks observed on the surface, which were less than a 1/8-inch wide and appeared to be shallow. ESA observed portions of the ET Cover observed with limited or no groundcover include a 25 foot by 20 foot area near the entrance of the gate, a 100 foot by 20 foot area immediately southwest of stormwater diversion berm near entrance gate, a 75 foot by 40 foot area in the center portion of the southwest facing slope, and a 25 foot by 25 foot area surrounding ground monitoring well 686. ESA recommends scarifying and re-hydroseeding these areas in early winter of 2023. A negligible amount of windblown litter was observed at the ET cover. The plans for the ET Cover Test Area include annual monitoring, followed by a report to the CVRWQCB at the conclusion of the four-year study period. Since the ET Cover was completed on November 14, 2018, submittal of the Performance Monitoring report is scheduled for April 1, 2024.

- The Mitigation Pond had water present during the site visit conducted in April of 2023. The marsh appeared stable in the northeastern and central western portion of the pond, however the overall population appeared to decline compared to May of 2022. The CM team could not confirm whether or not the pond meet the goal of retaining 20 inches of water in the deepest end by the end of August, and during the August visit there was a considerable quantity of water observed at the Mitigation Pond. The CDFW Consistency Determination recommends monitoring reports be submitted to CDFW and USFWS to inform the agencies of the mitigation pond habitat conditions specifically for California red-legged frog and California tiger salamander that are being monitored.

- The windblown litter issue was reduced during 2023 in comparison to previous years. The LEA issued an AOC on May 23, 2023 as litter was observed on the neighboring properties around the Back-40 access roads leading to Bethany Reservoir. WMAC cleaned up the litter and the AOC was removed in June. In 2023 WMAC completed the installation of fencing to control the windblown litter issues and continuous staffing of litter pickers prevented litter from leaving the property boundary. The windblown litter issues appear to be improving.

- Prior to September 2023, WM began implementing winter preparation requirements per WDR. A wet season inspection was performed to assess conditions of the landfills ponds, inlets, discharge points, groundwater monitoring wells and the surrounding areas. Prior to October 31, 2023, ALRRF removed any debris from v-ditches/channels, drain inlets, energy dissipaters and from erosion control matting in permanent drainage ditches. Additionally, the landfill restored rock check dams in permanent drain ditches, removed litter from fences around selective drainage inlets and constructed silt traps and soil berms in select locations.

- In the period from January through November 2023, the ratio of **Class 2 cover soil** to

municipal solid waste decreased to 21% from 23% in 2022.

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 2016-2023 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 2011–2015 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	2017	2018	2019	2020	2021	2022	2023
Contamination at E-05, E-07, E-20B	2	2	2	2	2	2	2
Stormwater contamination	3	3	3	2	2	1	1
Windblown Litter	2	3	4	3	5	4	3
Birds	2	2	2	2	2	2	2
Erosion	1	-	3	2	2	1	2
Cover thin / absent	-	-	1	1	1	2	-
Worker injury	1	-	1	1	-	-	-
Condensate/Leachate Leakage	3	3	3	2	2	2	2
Ponding in low-lying area of landfill	-	1	2	2	2	1	1
Sediment in Wetland Mitigation Area	2	-	-	-	-	-	2
Odor, on site	-	-	1	-	-	-	-
Leachate Seeps	2	-	4	2	2	1	1
Erosion control (sitewide)	-	-	3	2	1	1	2
Waste outside active area (trash, pallets)	-	-	-	-	-	-	2
Leachate Leak Disposal	4	-	-	-	-	3	-
Contaminants at monitoring well MW-4A	4	-	-	-	3	2	1
Contaminants at monitoring well MW-38	-	-	-	-	-	2	1
Windblown litter beyond last litter fence	-	4	2	2	5	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	**28**	**44**	**40**	**27**	**29**	**28**	**25**
Issues Beyond Control of / Refuted by ALRRF							
Truck overturn	3	3	2	2	2	2	1
Methane Gas at Perimeter Probe(s) [cleared]	-	-	4	4	-	-	-
Fire in refuse &/or stored material	1	-	3	3	3	-	-
Fire on ALRRF property, outside active areas	2	2	3	2	-	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. Fortunately, no such issues occurred in 2023.

The total severity score for 2023 is lower compared to 2022.

One incidents of particular concern occurred in 2023:

- **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 improved throughout 2023. During site visits, no windblown litter was observed in the Back-40, or at Bethany Reservoir when visited with LEA. However, ALRRF received an AOC 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 section 2.3.1 and 2.3.2.1 below.

2.3.1 Compliance Issues Documented by the LEA

In 2023, one AOC notice was issued by the LEA. LEA inspection reports indicate concerns about the following:

- **Windblown Litter:** On May 23, 2023, 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.

2.3.2 CVRWQCB Violations and Concerns

2.3.2.1 2023 Violations

No violations were issued by the CVRWQCB in 2023.

2.3.2.2 2023 Areas of Concern

On April 19, 2023, 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. Erosional damage was observed around the lower FA1 LCRS and underdrain lift station.

2. Erosional damage to the closed section of the FA1 cover was observed at two locations just north of the lower FA1 LCRS and underdrain lift station.

3. Numerous leachate seeps with pooled leachate were observed near historical Seeps A, B, and C.

4. Significant leachate ponding was observed atop FA1/U2 just east of the J-stand. Smaller areas of ponded leachate were also observed atop FA1/U2 near LFG well 790.

5. A significant volume of water is present in LSI-1 and active efforts to accelerate emplace evaporation or for the proper disposal of the liquid in accordance with the WDRs should begin soon to ensure adequate freeboard is available in accordance with the site's approved water balance for the 2023/2024 wet season.

6. A large area of sparce to absent vegetation is present atop the side slope of the 10-acre ET cover test pad in FA1, west of LFG well 686.

7. Notable amounts of waste were observed along the southeastern limit of FA2 Phase 4, outside the active face within FA2.

8. Significant erosion of the storm water diversion drainage course that runs from Basin D to SB-H, at the planned southeastern limit of FA2.

9. Significant depositional sedimentation has occurred in SB-H, from upstream erosion in the FA2 construction area. This sedimentation in SB-H dramatically reduces the basins' ability to perform as designed during future rain events.

10. Significant erosion just before the Mitigated Wetland and depositional sedimentation in the Mitigated Wetland. The erosional cuts prior to the Mitigated Wetland exceed six feet in depth.

11. Significant erosion along the eastern drainage channel off Stockpile 7, as can some repairs to the area where the entire lower section of the channel has now been lined with rock.

12. Significant depositional sedimentation has occurred in SB-F, which is now almost completely full of sediment, dramatically reducing the basins' ability to perform as designed during future rain events.

13. A significant volume of water is present in LSI-1 and active efforts to accelerate emplace evaporation or for the proper disposal of the liquid in accordance with the WDRs should begin soon to ensure adequate freeboard is available in accordance with the site's approved water balance for the 2023/2024 wet season.

14. Wells PC-2A, PC-2B, and PC-2C do not have protective locking stove pipe covers.

On September 19, 2023 the CVRWQCB conducted an inspection to observe the construction of FA 2 Phase 6, the proposed solidification facility, and other areas of the property. The inspection report summarizes the visit and did not report violations nor AOCs.

2.3.2.2 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 2023, 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.

<u>MW-4A Evaluation Monitoring Program</u>

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.

<u>Continued implementation of the FA1 Corrective Action Program</u>

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.

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 arised 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, two dump-trucks overturned in 2023. No injuries were reported.

2.3.3.2 Fire

No fires occurred on site in 2023.

2.4 Review of Reports

2.4.1 Groundwater

Two groundwater monitoring reports were reviewed in 2023. The first covered the period from July through December of 2022; the second covered January through June of 2023.

The data in these reports indicate that most monitoring wells with VOC contamination are still fluctuating. In the Second Semiannual 2022 Report, it appears VOCs are decreasing over time. In the First Semiannual 2023 sampling event it appears that VOCs are decreasing over time except for VOCs detected in E-05R, which showed a sharp increase in total VOC concentration, due to an increase in tert-butyl-alcohol concentration, compared to previous sampling events. These trends will continue to be tracked.

A new development in 2020 that continued into 2023, is an increase in concentrations of inorganic constituents (dissolved calcium, chloride, sulfate, total dissolved solids, and bicarbonate alkalinity). This appeared in E-05R, MW-8A, MW-10, PC-2A and WM-2, as reported in the Second Semiannual 2022 Report.

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 increased detection 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 were 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. Two trace-level detections of LFG related 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.

A corrective action Status Report for the First Semiannual 2023 period was submitted on July 29, 2023 for the CDO referenced corrective actions for MW-4A, E-20B, GP-9 and MW-38. The SCS report states that the GCCS system and LFG extraction wells are performing as expected. It is expected that the VOC concentrations are to decrease over time. 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.

2.4.2 Storm Water

During the Second Semiannual 2022 or First Semiannual 2023, no VOCs were detected in sedimentation basin samples from FA2 Storm Water Retention Basin E (InSB-E), Basin F (InSB-F), or Basin H (InSB-H). Six VOCs were detected in samples from FA1 Storm Water Retention Basin A (InBasinA) and Basin C (InBasinC). These VOCs have been detected off and on in storm water basin samples in the past. SCS noted the VOC detections in storm water were less frequent than in prior years and attributed the improvement it to additional Best Management Practices (BMPs). ALRRF conducted a study on potential sources for these VOCs and it has not identified any industrial sources at the site.

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 2023, the CM received the Title V reports for the periods June – November 2022, and December 2022 – May 2023. 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 2022 – November 2022, 5 landfill gas wells were decommissioned, and 19 new wells were installed and began operation.

- From December 2022 – May 2023, 9 landfill gas wells were decommissioned, and 9 new wells were installed and began operation.

- The LNG plant continued to operate at a fairly steady production rate. There were a few brief unscheduled down-time events due to maintenance and planned utility shutdowns from June 2022 to November 2022, but after each of those problems was resolved, the gas plant returned to steady production. From December 2022 to May 2023, there were

shut downs due to maintenance, testing, shutdowns due to high oxygen in the feed, a fault with the H_2O analyzer, issue with the Flare, troubleshooting due to issues with the Raw Feed H_2O analyzer, and other shut down events, potential low temperature alarm, a delayed temperature shutdown event and during a water wash. The frequency of major shut downs was approximately the same compared to previous reporting periods. After each of the problems was resolved, the gas plant returned to steady production. All control devices passed their latest emissions tests without incident.

2.4.4 Mitigation Monitoring

The Mitigation Monitoring and Reporting Program Annual Progress Report, covering calendar year 2022, was reviewed by the CM during the second quarter of 2023. 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: This condition limits the amount of sludges, inert waste, and special waste accepted for disposal at ALRRF from outside Alameda County and San Francisco to not exceed 25,000 tons per calendar year. This condition is monitored through the life of ALRRF, and was not exceeded during year 2022. Three loads (11.65 tons) were accepted inadvertently from outside the Nine Bay Area Counties in 2022. In 2023, WM has maintained compliance with this condition. ALRRF has noted that additional training and procedural review have been implemented for scale house personnel and sales department to address such issues in the future.

- Condition 18: This condition applies to mitigation monitoring prior to construction activities in FA2 and shall be monitored annually for five years (minimum) after implementation to assure success of mitigation. Implementation activities will be monitored annually during construction to verify the California DFG and USFWS approved performance standards and requirements are met. This monitoring period was restarted due to damage of the wetland area.

- Condition 26: Operator shall submit a post-construction compliance report to FWS within 45 days of completion of each major project component. ALRRF will prepare and submit Post-Construction Compliance reports to the USFWS as required. A consultant has been contracted to implement program.

- Condition 29: Operator shall monitor the replacement wetlands after they are created to assess whether they are meeting performance standards of approved Wetlands Mitigation Plan. Monitoring shall be conducted for five-years or until performance standards are met. ALRRF will conduct monitoring of replacement wetlands in accordance to approved plan. Performance standards are om process after damage to wetlands occurred.

- Condition 47: Seeps were encountered during Phase 5 construction on the lower portions of south-west side slopes, which were anticipated and mitigated by the Phase 5 design that incorporates geocomposite underdrains to intercept and convey groundwater to the underdrain system. One seep was encountered on the floor at the toe of the side slope which will be mitigated by the floor underdrain in this area. The pipes that collect seepage from Springs 1 and 2 were extended to outlet beyond the Phase 5.

- 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 2023, the CM did not received any Status Report for Mitigation Wetland Report (prepared by Kleinfelder in previous years). The Community Monitor will continue to request updates on these reports.

2021 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 2021. Geosyntec noted that:

- Vegetation along the sideslopes was generally well established, and limited areas remained sparsely vegetated along the top deck. Areas that had been re-seeded in 2020 will continue to be monitored.

- The Evapotranspirative cover appeared to experience minimal erosion along the top deck and sideslopes, and minor cracks were observed. Geosyntec recommended continued monitoring for these areas.

- The monitoring sensors were operating with no issues. Monitoring will continue through the end of the pilot test period.

2.5 Review of Records

Several types of site records were reviewed by the CM in 2023. 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. This review was conducted twice in 2023, on May 25, 2023 for Class 2 soils accepted in December 2022 through May 2023; and on November 2, 2023 for Class 2 soils accepted through May 2023 through October 2023. The files are made accessible electronically from WMAC's Livermore office.

A total of 91 profiles were reviewed on May 25, 2023, that corresponded to Class 2 soil accepted at the landfill between December 2022 through May 2023. A total of 91 profiles were reviewed on November 2, 2023, that corresponded to Class 2 soil accepted at the landfill between December 2022 and May 2023. During each review, no out-of-compliance profiles were found.

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. Two dump trucks overturned in 2023.

2.5.3 LEA Inspection Reports

In 2023, there was one type of AOC noted in these reports. It pertained to windblown litter within the property boundaries as well as on surrounding properties. The LEA requested for ALRRF to

reduce the liter quantity on ALRRF property and completely removed liter cited outside ALRRF property boundary. This AOC has been removed.

2.6 Monthly Site Visits

Twelve site visits were held during 2023. 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
2023 Site Visit Summary

Date	Day of Week	Visit Time	Announced in Advance?	With LEA staff?
January 31	Tues	10:00 AM	yes	no
February 27	Mon	9:30 AM	no	yes
March 24	Thurs	9:50 AM	yes	no
April 6	Thurs	1:00 PM	yes	no
May 16	Mon	10:00 AM	yes	no
June 13	Tues	10:00 AM	yes	no
July 25	Tues	5:00 AM	yes	yes
August 22	Tues	10:45 AM	yes	no
September 19	Tues	10:25 AM	yes	no
October 17	Tues	10:00 AM	yes	no
November 6	Mon	9:00 AM	yes	yes
December 15	Fri	10:00 AM	yes	no

In 2023, observations by the CM focused on:

- The operations in Fill Area 2.
- Additional perimeter and active phase fencing to mitigate litter effluent
- Completion and 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 5 and 6.
- Changes at the site that could harm the environment or public health.

No truck traffic counts were conducted in 2023, 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.

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

[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.

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.

The four-year test of evapotranspirative (ET) cover methods is expected to be completed in 2024; the liquids separation system continued to operate. Exceedances at monitoring wells and windblown litter issues will continue to be tracked.

3.2 Issues to be Tracked in 2024

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.
- Performance of the 10-acre ET cover test site.
- 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 the LNG plant, turbines, flares, etc. In 2024, 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 2023.

3.2.2.4 New Systems

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

- The ET cover test area
- 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 2024.

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.