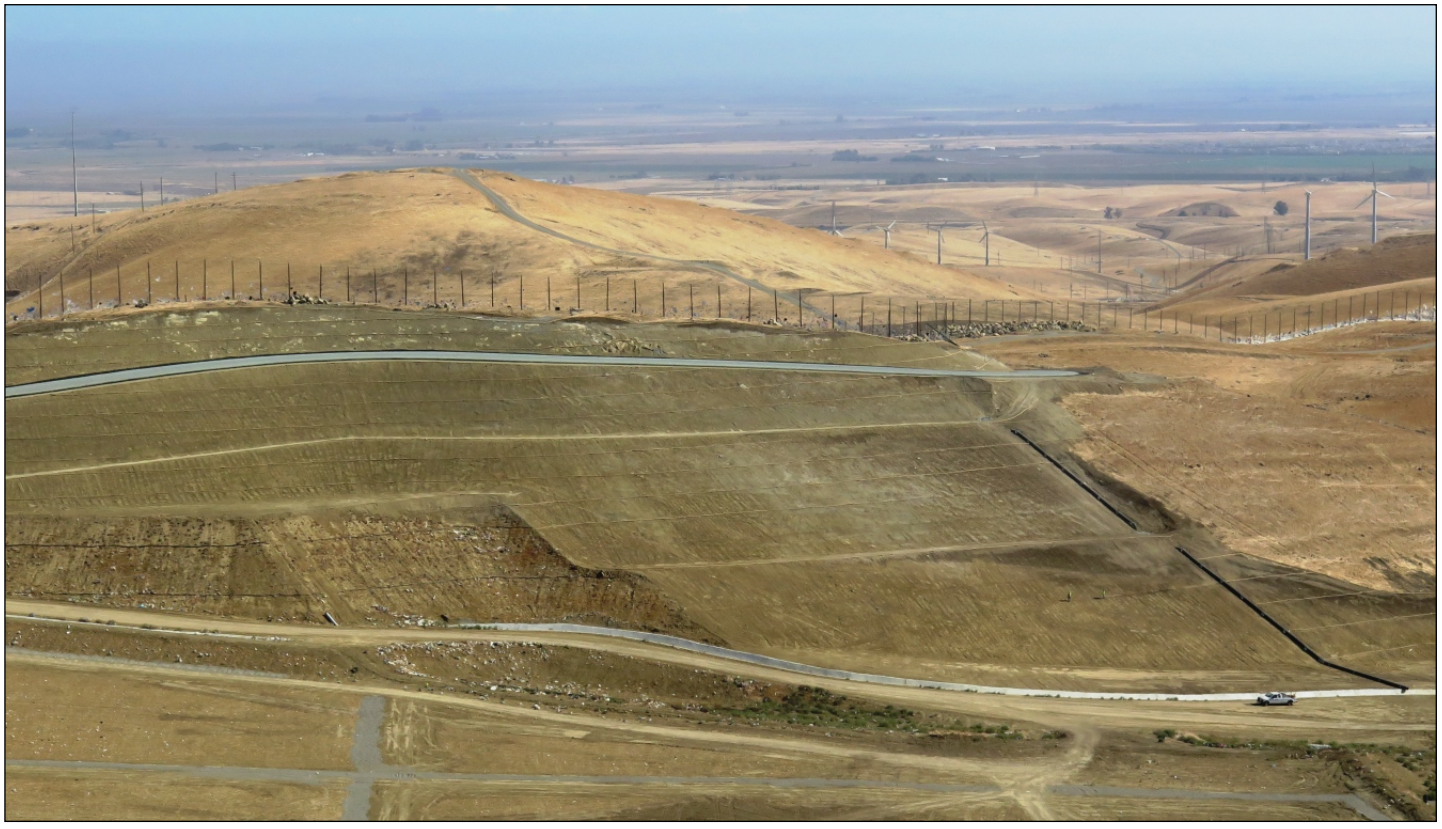
ALRRF COMMUNITY MONITOR ANNUAL REPORT 2016

Prepared for
ALRRF Community Monitor Committee

January 11, 2017



The photo on the cover of this report shows the view looking eastward at the southern portion of the excavation for Fill Area 2, Phase 2. The photo was taken on September 30, 2016.

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550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900
www.esassoc.com

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SECTION 1
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 expansion would add a second permitted operational area, known as Fill Area 2, adjacent to the existing Fill Area 1. The Settlement Agreement established the Community Monitor Committee (CMC) and a funding mechanism for a technical consultant, referred to as 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 a 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 2016.

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

Available 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 and Langan Engineering (formerly Treadwell & Rollo). This team began work in February 2008. From 2008 through 2015, the team has carried out report reviews, Class 2 soil analysis file review, and site inspections as intended. 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 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. Two ongoing problems, windblown litter and seagull activity, worsened in 2012; and while the gull problem has varied seasonally, the litter problem has continued as Fill Area 1 approaches its maximum permitted elevation. Since mid-2013, the CM's observations and document reviews have included the construction of Fill Area 2 and related mitigation measures. The excavation and preparation of the Phase 1 portion of Fill Area 2, together with related improvements including stormwater basins, a truck wash system, a leachate containment pond and access road, etc., were monitored in 2014 and 2015.

In March of 2015, the Five-Year Permit Review process began when the Local Enforcement Agency (LEA), which is the Alameda County Department of Environmental Health, requested the ALRRF to submit an application and a revised draft of its Joint Technical Document[2], which contains a detailed description of Fill Area 2 development plans, design details, and operating procedures. The ALRRF requested extensions and was granted two, through June 17, 2015. An additional extension was requested but was not granted.

On July 31, 2015, the revised JTD was submitted to the LEA and the Central Valley Regional Water Quality Control Board (Water Board). The Water Board subsequently issued a set of very stringent draft Waste Discharge Requirements (WDRs), which are the permit conditions that govern operation and monitoring to protect water resources. ALRRF staff and consultants found a number of the WDRs to be impractical, so they proposed alternatives to Water Board staff. These were discussed and revised over an extended period of time. The new Waste Discharge Requirements were issued in July 2016, with certain details to follow later in 2016.

Throughout this process, the LEA held its permit review in abeyance while the Water Board issues were resolved. This consumed more time than regulations allow; as a consequence, the LEA found it necessary to issue a series of Notices of Violation to the ALRRF from July 12 through September 9, 2016. By the end of September, the LEA had received an updated JTD and permit application, and their permit review was under way. Currently (December 2016), the Permit Review is in its final stages.

Other issues from 2016 are described below in Section 2.3, Compliance and Significant Incidents.

1.3 Regional Context and Landfill Capacity

Events in the landfill disposal industry and demographic shifts within the greater Bay Area have affected, and will continue to affect, operations and future developments at the ALRRF:

- City of San Francisco refuse disposal shifted from the ALRRF to the Hay Road landfill in Solano County, beginning in mid-January 2016. Two lawsuits that were filed in an effort to block this from happening were resolved in favor of the City of San Francisco and its hauler, Recology. This reduced the flow of municipal solid waste to the ALRRF by approximately 30%.

[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.

- There are no new landfill sites currently in development in the region. However, on a regional basis there appears to be adequate capacity for refuse disposal in the short to medium term, at least through the year 2035 [3].
- In Alameda County two countervailing forces, population growth and policies to increase waste diversion, have kept the flow of refuse to ALRRF from Alameda County at a fairly steady volume.

In addition, in 2016 the in-place density of refuse already delivered to the landfill was found to be significantly higher than previously thought. This had the effect of increasing the capacity of Fill Area 1 and delaying the need to use Fill Area 2 by approximately two years.

1.4 Site-Specific Constraints and Opportunities

The 1999 Settlement Agreement added constraints on operations, by adding new conditions to the Use Permit for the ALRRF. Solid wastes from out-of-county sources are 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 Central Valley Regional Water Quality Control Board. This process required several years and concluded in 2012.

Also, 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 Use Permit conditions, the Settlement Agreement establishes the CMC and the CM role, as described above; and it establishes mitigation funding related to the landfill expansion.

The physical setting of the ALRRF site also presents certain constraints and opportunities. Hilly terrain and high winds require constant attention to windblown litter, especially film plastic. As Fill Area 1 neared its final elevation in 2016, the windblown-litter problem continued due to the increased exposure of the working face to wind. The landfill has increased its litter cleanup crew size and has taken other steps to reduce the exposure of refuse to the wind. Local and state bans on the use of plastic bags by retailers may be helping to reduce this problem, but the widespread use of plastic trash bags and plastic film continues to produce windblown litter at the ALRRF. Ultimately, the solution will be to move disposal operations into Fill Area 2, which will be less exposed to the wind for many years into the future.

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

[3] This estimate is based on a simple and conservative set of calculations assuming steady growth in population, no increase in diversion, the continued delivery of San Francisco refuse to a landfill in the greater Bay Area, and the ability for some regional disposal sites to receive all materials when other facilities reach their present capacity.

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. Currently it is back-hauled to the Davis Street facility for processing and eventual use as compost or biomass fuel.
- A liner and liquid recovery system 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.
- 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);
- using CNG fuel for on-site operations, as fuel for tipper engines;
- stockpiling and processing materials for beneficial use on site, such as using waste concrete for wet-weather roads and access pads;
- blending liquids and other materials to make a soil-like 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.) as 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 Fill Area 1 (currently active) and Fill Area 2 (currently being constructed). The active parts of Fill Area 1 cover approximately 211 acres. Fill Area 1 also includes an Asbestos-Containing Waste landfill operation which occupies several acres within the Fill Area 1 footprint.

Lands surrounding the active area are managed primarily as grazing land, with portions leased for wind energy. These surrounding lands also provide suitable habitat for several special status species. Design revisions in 2010 for the final shape of Fill Area 1 increased its capacity, further increasing its expected lifetime. As noted above, the high density of in-place refuse also added to the life of Fill Area 1, so that Fill Area 2 is not expected to receive refuse until 2018.

Much of the work done by the CM involves the review of data and reports produced by, or required of, the ALRRF. This is largely driven by the requirements of regulatory and permitting agencies, as described below.

1.5.1.1 Water

In California, the State Water Resources Control Board 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 Central Valley RWQCB issues and administers the Waste Discharge Requirements (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 RWQCB also regulates 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 annual stormwater monitoring report, and the annual Winterization Plan update.

1.5.1.2 Air

The Bay Area Air Quality Management District (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 produces a "Title V report" that summarizes emission test results and system performance as required. The CM reviews these reports as they are issued. The landfill also produces an annual estimate of greenhouse gas emissions, as required by Federal regulations.

1.5.1.3 Disposed Wastes

There are two agencies that regulate solid waste disposal in Alameda County. The Alameda County Department of Environmental Health is the Local Enforcement Agency (LEA), and the California Department of Resources Recycling and Recovery (CalRecycle) supports and oversees the LEA. The LEA is the main enforcement agency for the Solid Waste Facility Permit (SWFP) that delimits 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 delineated in 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.

1.5.1.4 Land Use

Concurrently with the Settlement Agreement, Land Use Permit C-5512 for the ALRRF site was updated to incorporate various mitigations identified in 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 direct inspection, 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. Currently Waste Management's position is that this permit is not within the purview of

the CMC, but the CMC has taken the position that the additional permit *is* within their purview. Condition 22 of this permit requires that it begin to be implemented within three years of its issuance. At this writing, the ALRRF is preparing a site adjacent to the north end of Fill Area 1 for future use as a compost facility. Additional environmental permits for this operation will be necessary.

1.5.1.5 Local Requirements: StopWaste

The Alameda County Waste Management Authority and Recycling Board (StopWaste) waste-diversion goal is continuing to be pursued, most recently through the implementation of (a) mandatory recycling at businesses and (b) commercial source separation of compostable materials in many Alameda County cities. These requirements are implemented at the local level by agencies' opting into (or out of) the ordinance's requirements. In addition, StopWaste has developed, and most of its member agencies have adopted, a single-use bag ban ordinance and a ban on disposing of plant debris in local landfills.

These waste diversion efforts represent a constraint because they limit the flow of refuse to the ALRRF, but they are also an opportunity for the ALRRF to (a) reduce its litter cleanup effort to the extent that the bag ban has a material effect, and (b) provide processing of recyclables in a MRF that may be developed at the landfill in the future.

1.5.2 Requirements For Fill Area 2 Development and Use

The current active area (Fill Area 1) will be supplemented by the expansion area (Fill Area 2) in the near future. In 2010, the last major permits for the development of Fill Area 2 were obtained. Environmental mitigations associated with the development and use of Fill Area 2 were established in Use Permit C-5512 and were refined in meetings between ALRRF staff/consultants and several natural resource agencies, concluding in 2012. These environmental mitigations are lengthy and complex; the topics that they cover are listed in Table 1-1 below.

Table 1-1
ALRRF Environmental Mitigation Topics Associated with Fill Area 2 Development

Establishment of Conservation Plan Area
Need for Biological Monitor on site
Explicit protections for special-status species: San Joaquin Kit Fox, Western Burrowing Owl, California Tiger Salamander, California Red-Legged Frog, others
Rules regarding vehicle use, litter prevention, etc.
Pre-construction surveys for protected species
Staging areas: location, identification and use
Equipment maintenance and spill prevention
Handling of protected species, when necessary
Elimination of invasive species
Grazing Management and Pest Management Plans
Procedures if cultural remains are found
Construction of compensatory wetlands; annual status reporting
Other periodic monitoring reports
Protection and monitoring of surface waters

In 2016, the CM made observations during site visits that pertain to several of the above Conditions and reviewed the 2015 report of vegetation and wildlife monitoring surveys for the Conservation Plan Area. The CM also reviews the ALRRF annual mitigation monitoring report, which briefly summarizes the status of compliance with each of the 106 Conditions in Conditional Use Permit C-5512.

According to the September 30, 2016 draft JTD, Fill Area 2 will be developed in 12 or more Phases. In 2016, development of Fill Area 2 focused on the excavation of the Phase 2 area and long-term infrastructure including electrical power, truck wash area, leachate pond construction, access road paving, etc. Construction of additional Phases will occur in future years as needed, depending on the rate at which the Phase 1 and Phase 2 areas are consumed.

ALRRF staff have verbally reported that the use of Fill Area 2 (Phase 1) is likely to begin in 2018. In the interim, the excavation of Phase 3 is planned for 2017; and liner installation for Phase 2 is planned for 2019. All of these dates should be considered tentative.

SECTION 2
Community Monitor Activities and Issues

2.1 Introduction

Under the Settlement Agreement, the Community Monitor (CM) has three ongoing duties:

- Review reports, data and information that are required to be submitted by Waste Management of Alameda County 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)

Throughout 2016, the CM was active in each of these areas, as described below.

2.2 Monitoring of Improvements and Changes

Through report reviews and site visits, several new developments in ALRRF facilities and operations in 2016 became apparent:

- **Landfill gas wells** that had been installed in 2015 were brought on line in 2016. Several landfill gas wells that were becoming unproductive were taken off line as well. The Air District permit was amended to allow further addition and decommissioning of gas wells in 2016 and beyond; and a further round of new well installations occurred late in 2016.
- **For Fill Area 2**, excavation of the Phase 2 portion was completed, a relocated Phase 2 access road was constructed, and the truck wash at the north end of Fill Area 2 was completed. The Fill Area 2 leachate management system was substantially completed.
- **The entry road was repaved,** from the admin area (near Altamont Pass Road) past the scale house and up to the top deck of Fill Area 1.
- **Operations roads and drainage** on the east side of Fill Area 1 were reworked to improve drainage and reduce roadside ponding. A detention basin was constructed upslope of Basin B to reduce the delivery of silt to Basin B, with the goal of improving stormwater quality as discharged from that location.
- **In Fill Area 1,** two existing pond excavations were modified to increase their capacity to their fully-permitted volume. As stipulated in the 2016 WDRs, these ponds will be used for Fill Area 1 leachate management. Impermeable synthetic liners were installed in each pond. In mid-year, refuse fill operations focused on the west edge of the landfill, creating a ridge intended to serve as a windbreak to prevent litter dispersion. Subsequently, operations shifted to the east end of the south edge, to prepare a 10-acre demonstration area for a proposed final cover method which will use vegetation to absorb rain water and prevent its infiltration. (Standard practice is to use a very-low-permeability material such as clay or plastic as a landfill cap.)
- **The litter collection crew** was augmented with five permanent employees.

- **The wood stockpile at the Bio-Fuel Systems, Inc. wood grinding operation** became much larger than normal. This is discussed further in Sections 2.3.1 and 2.3.2, below.

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, as well as 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 (CalRecycle)
- 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; it is shown in Table 2-1, below. Persistent issues appear in the upper part of the table, followed by infrequent or one-time issues. 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.

For the purposes of this report and table, the delivery of hazardous materials with incorrect profiles (showing them as non-hazardous) is considered to be beyond ALRRF's control; but the Water Board's position appears to be that ALRRF is responsible nevertheless. Either way, this is a problem that appears to be worsening. Recent personnel changes and reassignment of the profile review function within Waste Management, may be a contributing factor.

The table shows high severity totals in 2013, 2015, and especially 2016. Levels of regulatory scrutiny have been changing in the last several years, with the Water Board inspecting more frequently (though not on a regular schedule) and the LEA reducing inspections in 2015, from weekly to twice a month. Water Board staff inspections have been much more intensive, involving several Water Board staff specialists and an extended site visit. The October 25, 2016 Water Board inspection was followed by three Notice of Violation letters, listing a total of four violations and several Areas of Concern, plus more than a dozen required action items with deadlines in late 2016 or early 2017.

Table 2-1
Compliance Issues Ranked by Severity

	Severity					
Issue	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Contamination at E-05, E-07, E-20B	2	2	2	2	2	2
Stormwater contamination	3	3	3	3	3	3
Windblown Litter	2	1	3	2	2	4
Birds	2	2	2	2	2	2
Erosion	2	1	-	-	3	2
Cover thin / absent	2	2	2	3	4	-
Worker injury	-	1	3	-	1	2
Condensate/Leachate Leakage	-	-	1	1	3	-
Ponding in low-lying area of landfill	-	1	1	2	-	-
Sediment in Wetland Mitigation Area	-	-	-	1	3	3
MRF fines suitability for ADC	4	4	-	-	-	-
Odor, on site	-	1	-	-	-	1
Leachate Seeps	-	-	-	-	1	1
Ponding on landfill due to water leak	1	-	-	-	-	-
Leachate Spill	-	4	-	-	-	-
CUPA inspection (Haz Mat Management)	-	-	4	-	-	-
Unpermitted construction of FA2	-	-	4	-	-	-
Groundwater Elevation Error	-	-	2	-	-	-
Sampling Pump Problem: VD-unsat	-	-	2	-	-	-
Late Annual Report to Water Board	-	-	-	-	4	-
Sampling Pump Problem: well E-05	-	-	-	-	2	-
Stormwater monitoring compliance (FA2 pond, tire and wood operations)	-	-	-	-	-	4
Material out of bounds (wood operation)	-	-	-	-	-	4
Erosion control (sitewide)	-	-	-	-	-	4
Waste outside active area (trash, pallets)	-	-	-	-	-	4
Totals	18	22	29	16	30	36
Issues Beyond Control of ALRRF						
Truck overturn	1	1	1	1	1	3
Hazardous material delivered (ash, high in lead)	-	4	-	-	-	-
Fire in refuse &/or stored material	-	-	2	-	-	3
Material high in copper disposed (later removed)	-	-	4	-	-	-
Dinoseb solidification & disposal (later removed)	-	-	-	4	-	-
Liquid high in chromium, nickel received (removed before being disposed)	-	-	-	-	-	4
Soil high in benzene received, disposed	-	-	-	-	-	4
Methane Gas at Perimeter Probe(s) [cleared, 2016]	-	-	-	4	4	4

indicates that a violation was issued by a regulatory agency.

Severity Criteria

1: Minor or ongoing issue with little potential to harm environmental or public health; below regulatory thresholds.

2: Issue with some potential to harm environmental or public health; below regulatory thresholds; being addressed.

3: Issue with potential to harm environmental or public health; below regulatory thresholds; not improving, or new.

4: Issue with significant potential to harm environmental or public health, or resulting in a violation being issued.

5: Issue with significant potential to harm environmental or public health; violation issued; willful non-compliance.

2.3.1 Compliance Issues Documented by the LEA

As of mid-November, a total of 5 Violations and 5 Area of Concern notices had been issued by the Local Enforcement Agency (LEA) in calendar year 2016. All of the Violations were for delay in submitting documents for the five-year permit review, as described in a previous section.

The Areas of Concern focused on Gas Monitoring and Control (4 times), and Litter Control (1 time). High winds in July led to the concern about litter control. Since then, the ALRRF has more than doubled its litter control staff; but given the site conditions, the issue is likely to recur in summer months, as long as the upper elevations of Fill Area 1 are being used for disposal.

The Gas Monitoring topic is a continuation of the concern about high methane readings that may have originated from natural "fossil fuel" methane, not landfill gas. The LEA was awaiting CalRecycle's independent assessment of the cause. This issue was resolved in an August 29, 2016 letter from CalRecycle to the LEA, stating that the gas at probe #8 was determined to be from a non-landfill source, and the gas in probes #1 and #20 was "unlikely" to be from the landfill, based on distance from refuse and the intervening topography. The September 9, 2016 inspection report says that the issue has been addressed and removed, but the prior inspection reports on the CalRecycle SWIS database, visible on the internet, still show this issue as an Area of Concern.

2.3.1.1 ALRRF Lessee Bio-Fuels Systems, Inc.

The LEA has issued a separate permit for the Bio-Fuels waste wood processing operation on land leased from the ALRRF. The LEA inspects this operation monthly; in 2016, the LEA inspector issued Notices of Violation every month on record (through October), noting the excessive size of the stored wood pile, contamination of the wood storage area by litter and unserviceable equipment, and risk of fire. The October inspection report also stated that Bio-Fuels' subcontractor for wood grinding had moved out and has not been on site since August 8, 2016.

The root cause of this issue is a shrinking market for waste wood biomass fuel. A July 28 editorial in Biomass Magazine begins with this sentence: "California continues to be a frustrating illustration of the paradox of biomass nationwide: so much fuel exists and needs a place to go, yet many biomass facilities [wood fired power plants] are struggling to stay open." It then explains that the costs of transportation and processing outweigh the value of wood as fuel, and suggests that biomass's benefits in avoided air emissions need to be incorporated into the economics. In short, an alternative energy market that began with price supports (in the 1980's), but no longer has them, cannot compete with other alternatives in the current marketplace.

2.3.2 Water Board Violations and Concerns

2.3.2.1 2016 Violations

Stormwater monitoring compliance (Fill Area 2 pond; tire and wood operations) – In their October 25 site inspection, Water Board staff noted that the Fill Area 2 leachate pond, while substantially complete, still needed to install some permanent stormwater protection features, remove temporary construction-related features, and file a Notice of Termination for their construction stormwater permit. They also noted that the wood grinding and tire shredding operations drain northward from their location on Soil Stockpile 1, but there was no stormwater monitoring for that flow.

Material out of bounds (wood operation) – The excessive size of the wood stockpile in the Bio-Fuel Systems yard, noted on October 25, is the issue.

Erosion control and sediment basin size – The inspection report stated: "Water Board staff observed large areas of soil disturbance and erosion potential throughout the Site. Erosion control was not implemented in all inactive areas and finished slopes. Several new sediment basins have been implemented at discharge locations to capture storm water runoff, but it was unclear if these basins were designed per the industrial permit design storm standards."

Waste outside active area (trash, pallets) – The inspection report noted windblown litter throughout the site and a pile of unused pallets near the toe of Fill Area 2 Phase 1.

Liquid high in chromium, nickel received (removed before being disposed) – In September 2016, this liquid was sent for solidification with an incorrect profile. The error was reported by the generator while the liquid was in the solidification basin but before disposal had occurred. The material and much of the basin's clay liner were removed and sent to an approved site for disposal. The basin was tested, found to be clean, and relined; it is back in service.

Soil high in hydrocarbons received, disposed – Contaminated soil from the excavation of a former Manufactured Gas Plant (MGP) site in Marin County was sent to the ALRRF for disposal. Tests of the soil had found it to contain hazardous levels of benzene, but apparently its profile did not include this information so it was considered to be acceptable by the ALRRF. The available documentation does not explain whether the error was committed by the generator, the hauler, or the ALRRF.

This is a significant problem, involving over 2,500 tons of soil received over a six month period. During that period (February through July 2016), the total amount of Class 2 cover soil received at the ALRRF was more than 100,000 tons. Regional Water Board staff has directed the ALRRF to submit a work plan to remove the material by December 30, 2016, and to provide manifests documenting its complete removal and proper disposal by February 28, 2017.

2.3.2.2 Other Issues

In 2014, Regional Water Board staff took issue with the assertion by ALRRF and SCS Engineers that the contamination found at groundwater monitoring well E-20B can be attributed to landfill gas. After further correspondence between ALRRF and the Water Board on this issue, the Water Board required submittal of an updated Corrective Action Plan for groundwater near this well, to include more frequent sampling of groundwater wells in the vicinity, and other measures, including an estimate of the time needed to reduce VOC contamination to non-detect levels around well E-20B.

ALRRF submitted its Corrective Action Plan in August of 2014 and is executing that plan. Special gas extraction wells were installed between E-20B and the landfill, and a new groundwater monitoring well downslope / downgradient of E-20B was also installed.

The Corrective Action Plan estimated that it will be approximately 10 years before VOC concentrations reach non-detect levels, based on linear extrapolation from existing trends, without taking the special gas extraction wells into account. Independently, the Community Monitor team (Langan Engineering) estimated that it would take at least one year for groundwater remediated by the new gas wells to reach the vicinity of E-20B, and possibly longer for E-20B to

show the effect, since the new gas wells are not as deep as the aquifer being sampled at E-20B. The data from well E-20B and the new downgradient well will continue to be tracked by the CM.

2.3.3 Other Incidents

The following information is based solely on reports filed in the site's Special Occurrences Log.

2.3.3.1 Facility Damage or Worker Injury

During 2016, there was one incident that resulted in an injury requiring outside assistance. In September, a Waste Management worker received first and second degree burns when exposed to hot water from a pump that he was servicing. He was taken to an emergency room for treatment.

2.3.3.2 Fire

Two minor fires in recently disposed material were quickly extinguished by site staff. These occurred on May 18 and September 9.

On July 20, in the late afternoon, a fire began in the green waste staging area east of the SE corner of Fill Area 1. The origin was apparently spontaneous combustion within the pile of green waste. Alameda County FD fought the fire with cooperation from landfill staff. The incident received some press coverage indicating that it might burn for days, but that was not the case. It was extinguished by the following morning.

About 1 PM July 20, a fire began below a utility pole that was being serviced by AT&T. The AT&T service truck was completely destroyed, and the fire spread in all directions. It was confined to the vicinity of Basin C. Heat from the exhaust system of a vehicle parked in a grassy area can cause a fire. However, ALRRF staff have verbally reported that an AT&T crew member said the fire was caused by an electrical spark. This fire was extinguished that day. Whether this incident has an impact on stormwater quality at Basin C remains to be seen; no reports are available as yet. Observations of water in the basin, later in the year, found no oily sheen or other indication of pollution.

2.3.3.3 Vehicular Accidents

There were no reported collisions between vehicles. However, on November 23, a departing haul truck turned too widely and damaged on-site roadway lighting and a Yield sign; and earlier in the year, many of the anchored plastic pylons placed as lane dividers on the newly repaved entry road below the scale house were quickly destroyed, presumably by departing trucks. This may have been intentional; in any event, they have not been replaced.

2.3.3.4 Other Incidents

Throughout the year there were six incidents of end-dump truck trailers tipping over sideways while unloading. The usual cause is wet material that sticks to the dump bed after it is raised, causing the trailer to become unstable. Also, there was an unusually high number of mishaps associated with the handling of transfer trailers on the tippers – four in all. This appears to be a run of bad luck, compounded by apparent driver error in some cases. There were also several incidents involving leakage of small quantities (several gallons) of hydraulic or lubricating oil; in all cases, the oil was reportedly contained and captured in soil and was disposed as class 2 material.

The end dump and hydraulic oil issues are unsurprising, given the nature of the operation. However, a more unusual incident occurred in early December, when a transfer truck arrived at the landfill with its rear doors wide open. There was refuse on Altamont Pass Road and on the steep entry road within the site. The driver's employer was contacted and advised of the issue.

2.4 Review of Reports

2.4.1 Groundwater

Two groundwater monitoring reports were reviewed in 2016. The first covered the time frame from July through December of 2015; the second covered January through June of 2016. Both reports reflect the Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board that took effect in April of 2009.

Groundwater monitoring results did not differ appreciably from prior years. Contaminants, when present, were well below regulatory limits that would require remediation. For most contaminants, trends in the data were indistinct or gradually declining. We first noted in 2013 that the fuel additive MTBE and its degradation by-product tert-butyl alcohol appeared to have concentrations that are increasing in wells E-5, E-7 and E-20B, although not steadily. In general terms, the 2016 data show no significant increase in any of these contaminants. Continued monitoring of the reports on these wells is planned.

2.4.2 Storm Water

A new set of annual requirements for industrial storm water monitoring and reporting took effect throughout California on July 1, 2015. Stormwater samples now are to be taken when a "qualifying storm event"[4] (QSE) occurs. Up to four such QSE's are to be sampled at each discharge point during a stormwater year (July through June). Under the new stormwater permit process, the ALRRF rewrote its Stormwater Pollution Prevention Plan (SWPPP) and submitted it in July 2015, as required.

Stormwater pollution prevention at an operating landfill fundamentally involves trapping waterborne particles of potentially-contaminated soil before they reach stormwater basins or discharge points. However, in a broader sense, it also involves measures such as employee training, good housekeeping, providing containment, having spill control equipment, and preventive maintenance. The current SWPPP lists a wide range of Best Management Practices that cover all of these measures. It does not list or map physical stormwater pollution prevention measures installed at the site, but the annual Winterization Plan required by the Waste Discharge Requirements provides a list of the types of measures used, together with photos of examples of the measures as installed. These measures included adding silt-trap geotextile to drainage ditches and steep side slopes; adding rice straw blankets or mulch to landfill side slopes; using "wattle" (straw rolls) on exposed slopes and around storm drains; and other similar means of preventing and controlling erosion.

The annual storm water report for 2015-2016 was submitted to the State Water Resources Control Board on July 6, 2016, under the facility ID of 5S01I000600. With the continuing drought in California, there were fewer than four QSE's that caused discharges at each of the three basins serving Fill Area 1 and its vicinity. Basin A had 3, Basin B had 1 and Basin C had 2. In general,

[4] a precipitation event that: (1) produces a discharge for at least one drainage area; and, (2) is preceded by 48 hours with no discharge from any drainage area.

discharges occurred on differing days at each basin, except that on December 22 2015, Basins A and C both discharged during a QSE.

For each QSE, two types of samples were taken at the three basins: samples from within the basin and samples from the basin outlet. In addition, Basin A was sampled on May 25, immediately before an intentional release, which partially drained the basin so that it could be excavated to restore capacity.

Results from chemical analyses of these samples were provided with the First Semiannual Groundwater Monitoring Report in July 2016. A review of those results shows very low-level detections of several substances that are considered pollutants. The levels are consistent with prior years' data, with one exception. Methylene chloride was found at estimated levels between 0.32 and 0.64 micrograms per liter (parts per billion). This is about one-tenth of the USEPA drinking water standard (5 ppb) but is still of concern because the substance is categorized as a probable human carcinogen. However, it is likely that the methylene chloride is a laboratory or field contaminant, since it was also found in blank (unopened) samples associated with this round of testing. This will need to be watched in the future.

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 2016, the CM received the Title V reports for the periods June – November 2015, and December 2015 – May 2016. These reports describe landfill gas control operations and source testing, but they also document new or unique developments at the site that can have an effect on air emissions. Results from 2016 are similar to those from 2015:

- Surface emissions monitoring continued to occur, and although exceedances of methane were found, they were typically remedied on the first try, without the need for repeated repairs.
- The LNG plant continued to operate, and unscheduled down-time was minimal, especially in the second half of 2015. In the first half of 2016, there were two extensive LNG plant outages, and a very uncharacteristic outage on one of the 3MW turbines that lasted nearly two weeks while the turbine speed control was repaired.
- All control devices passed their emissions tests without incident.
- Twenty-three landfill gas wells had been installed, and nine others decommissioned, in the 2014-2015 period. The installation of these 23 wells completed the permitted number of new well installations under the current BAAQMD permit. On March 14 2016, ALRRF staff requested new gas extraction well quotas: 120 new wells to be installed, and 100 decommissioned in the future. This was granted by BAAQMD on June 6, 2016.

All devices, including the internal combustion (IC) engines, were available throughout the reporting period except when down for maintenance.

2.4.4 Mitigation Monitoring

The Mitigation Monitoring and Reporting Program Annual Progress Report covering calendar year 2015 was received in January 2016. 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 CM found that the status descriptions together with the verification notes generally reflected the current status of each mitigation measure. The updates to this table from the previous year are listed below, with reference to the applicable CUP Condition number(s):

- 4.6 - This requirement, to adjust tonnage limits for partial years, was annotated by ALRRF staff to indicate that the expected start date for Fill Area 2 operations would be in the second quarter of 2016 (revised from the 2014 revision, which stated the third quarter of 2015). This was prior to the finding of higher refuse density / additional capacity in Fill Area 1, which will extend the Fill Area 2 start date to approximately mid-2018.
- 9 - Regarding the timing and design of site closure, the Implementation Status of this Condition was revised to state that closure planning and design would be addressed during the revisions to Waste Discharge Requirements.
- 38 - This Condition requires slope stability analyses and approved grading plans prior to construction of Fill Area 2 phases. ALRRF staff have noted that this was done for the Phase 1 design using a Design Report dated August 2014.
- 40 - This Condition requires that survey monuments be established on and near the landfill to monitor long-term settlement. ALRRF staff have noted that this aspect of closure will be addressed during the revisions to Waste Discharge Requirements.
- 46 - This Condition requires that any seeps encountered during construction be managed so that groundwater and the landfill are protected. ALRRF staff have noted that this was done for Fill Area 2, Phase 1.
- 47 - This Condition requires that Fill Area 2 become active within three years of its scheduled start date. ALRRF staff noted that Fill Area 2 is expected to being receiving refuse in 2018.
- 82 - This Condition requires that the Operator offer to retrofit existing noise-sensitive uses to reduce exterior noise levels below 45dBA. ALRRF staff have noted that this was completed in 2015, with documentation on file at ALRRF.
- 102 – This Condition requires that the Operator request that the Regional Water Board concur that the landfill would not release leachate to Bethany Reservoir. ALRRF staff indicated that this has been completed, citing as verification their compliance with the 2009 Waste Discharge Requirements, which prohibit discharge of leachate and require a liner system that prevents movement of leachate to waters of the State.

In addition to the Annual Progress Report described above, the ALRRF has begun to submit annual 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. The first such report, for 2014, was provided to the CM in November 2015 and a number of deficiencies were noted. The report for 2015 was provided in August of 2016; it was more thorough and clear, but it did not directly address several of the performance goals for the Conservation Plan Area. Monitoring for burrowing owls and San Joaquin kit fox was omitted from the 2015 effort, but that may not be a strictly annual requirement of the natural resource permits; further interpretation is pending. To date, the resource agencies have not commented publicly on these reports.

2.5 Review of Records

Several types of site records were reviewed by the CM in 2015. The CM's scope of work requires the periodic review of files that contain lab analyses and other descriptions of **Class 2 soils** (considered hazardous by California standards, but not by Federal standards) that are brought to the site for use as cover soil. Also, the **Special Occurrences Log** for the ALRRF was examined twice during the year, as part of monthly site inspections. The **LEA's weekly inspection reports** are publicly available on the CalRecycle web site and were checked by the CM every few weeks, to identify any new issues that may have arisen.

2.5.1 Class 2 Soils

An ongoing task for the CM team 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 currently conducted two to three times per year, and it requires a full day for a qualified specialist from Langan to review each file to be sure that it is complete and within the regulatory limits for Class 2 materials. In 2016, these reviews were conducted in May and December. A total of 194 files were reviewed, 10% fewer than the previous year. No out-of-compliance profiles were found, and all files were complete except one from the December set that was lacking a lab report. That report is being sought. Based on past experience, it is expected to be added to the file in the near future.

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 checked twice during 2016. As in prior years, the most common incident was the occasional mishap involving large end-dump semi-trailers that become unbalanced while the bed is elevated, causing the truck bed to fall to one side. Fortunately, there were no injuries associated with these incidents. Other logged incidents included a total of four fires. Two were small, in refuse, quickly extinguished by facility staff. The other two required a response from Alameda County FD: one adjacent to Basin C (a grass fire) and the other in a large green material stockpile east of the asbestos fill area. Additional detail on several of these items may be found in Section 2.3.3 above.

2.5.3 LEA Inspection Reports

In 2016, ongoing difficulties with windblown litter were again noted in many of the LEA inspection reports. High methane in perimeter gas probes was also an issue, as described in Section 2.3.1 above. The large population of seagulls was noted during the winter and spring, as well as the landfill's efforts to control them. The condition of the entry road was an occasional issue, until it was fully repaved in late spring.

2.6 Monthly Inspections

Twelve site inspections were held during 2016. To obtain the best possible understanding of the range of operating conditions, the inspection day and time were varied as shown in Table 2-2 below. Off-hours inspections, outside of the hours that the landfill is open to the public, are shown with gray highlighter.

Table 2-2
Site Inspection Summary

Date	Day of Week	Inspection Time	Announced in Advance?	With LEA staff?
Jan 26	Tues	10:00 AM	no	yes
Feb 9	Tues	2:30 PM	yes	no
Mar 4	Fri	11:00 PM	yes	no
Apr 13	Wed	12:00 PM	no	yes
May 11	Wed	11:00 AM	yes	yes
Jun 15	Wed	5:00 AM	yes	no
Jul 14	Thurs	4:00 PM	yes	no
Aug 2	Tues	11:00 AM	yes	no
Sep 30	Fri	10:00 AM	no	yes
Oct 12	Wed	10:00 AM	yes	no
Nov 10	Thurs	5:30 AM	yes	no
Dec 2	Fri	10:00 AM	yes	no

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

In 2016, observations by the CM team continued to focus on:

- The completion of Fill Area 2 Phase 1, and the excavation for Phase 2.
- Storm drainage and erosion control, including the installation and performance of stormwater Best Management Practices.
- Traffic on site, and the adequacy of crews and equipment to handle incoming traffic and waste volumes.
- General observations of fill activities, including spreading, compaction and traffic control during normal and off-hours operations.
- Changes in staffing and operating practices as the landfill adjusted to the termination of deliveries of San Francisco refuse.
- Observation of issues of ongoing concern, including the presence of large numbers of seagulls and management of windblown litter.

The Scope of Work for the CM specifies that at least three inspections be performed off hours, and that approximately four to six be performed jointly with the LEA. As shown in the table above, three off-hour and four joint inspections were conducted in 2016.

In addition to the on-site inspections, counts of arriving refuse trucks were conducted by the CM in January and October of 2016. These counts continued to be well below the limit stipulated in the CUP.

SECTION 3
Looking Ahead: Anticipated Efforts and Issues

3.1 Introduction

In the 2017 contract year, the CM team will continue to perform report reviews, site inspections and Class 2 soils file review. As Fill Area 1 nears completion, operations will become more complex in order to control the final height and shape of the filled area, and windblown litter will probably continue to be an issue. Also, as the ALRRF continues the development of Fill Area 2, the CM will review mitigation plans and reports for the Conservation Plan Area or other parts of the site, as needed.

3.2 Issues to be Tracked in 2017

3.2.1 Ongoing Review

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

- Implementation of requirements of the 2016 Waste Discharge Requirements.
- Completion of the Five Year Permit Review.
- Groundwater monitoring methods and data quality.
- Groundwater quality, including the vadose zone.
- Stormwater quality and management practices.
- Performance of landfill gas handling equipment.
- Additional changes to the landfill gas extraction system.
- Effects of any development of composting or material recovery operations on the landfill.
- Refuse truck traffic counts, to be taken three times during high-traffic summer months.
- Installation of the 10-acre test site for the Evapotranspiration Cover Test Site.

3.2.2 Site Inspections

All operations will continue to be observed, and the following areas will receive emphasis.

3.2.2.1 Landfill Gas Control System

Performance of this system is closely related to groundwater quality, and it takes place within a complex regulatory framework involving Federal permits, local permits, new 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 2017, two topics will be of special interest:

- The effect of new gas wells on the concentrations of contaminants in well E-20B.
- The new requirement to report landfill gas data to the Regional Water Board.

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.

3.2.2.3 Windblown Litter

As noted above, this will continue to be an issue for Fill Area 1. The effectiveness of recently adopted control measures, as well as any noticeable effect from recent plastic bag bans, will be evaluated.

3.2.2.4 Fill Area 2

The CM will continue to observe construction, which may include excavation for Phase 3, west of Phase 1. Mitigation progress reports regarding the Conservation Plan Area will continue to be reviewed to the extent required by the Settlement Agreement. The mitigation pond and other wetland areas within the Conservation Plan Area will be observed.

3.2.2.5 Groundwater Contaminants and Groundwater Data

The CM team will continue to check concentrations of MTBE, tert-butyl alcohol, and tetrahydrofuran, which showed an increase in 2015 but not 2016. The team will also watch data from well E-20B and other wells that have shown traces of contamination. The quality of the groundwater data, especially the occurrence of contaminants in quality-control samples and field samples, will also be monitored.

3.2.2.6 Responses to Notices of Violation

Several NOV's were issued by the Regional Water Board in the last quarter of 2016. The CM will review the ALRRF's responses as they become available.

3.2.3 Class 2 Soils File Review

As required in the Scope of Work, the CM will conduct this review several times during 2017.

3.3 Project Management Considerations

As the current contract continues, the budget is expected to be sufficient through 2017, the first year of the 3-year extension period. Kelly Runyon will continue with the lead role as Community Monitor, as a subcontractor to ESA. The Five-Year Permit Review process should be completed in early 2017, freeing up resources that may be needed for unanticipated issues.