



# COMMUNITY MONITOR COMMITTEE

## Altamont Landfill Settlement Agreement

\*\*\* The Public is Welcome to Attend\*\*\*

### AGENDA

[www.altamontcmc.org](http://www.altamontcmc.org)

#### VOTING MEMBERS

Bob Woerner  
City of Livermore

Jerry Pentin  
City of Pleasanton

Donna Cabanne  
Sierra Club

David Tam  
Northern California  
Recycling Association

#### NON-VOTING MEMBERS

Sarah Fockler  
Waste Management  
Altamont Landfill and  
Resource Recovery  
Facility

Arthur Surdilla  
Alameda County

Robert Cooper  
Altamont Landowners  
Against Rural  
Mismanagement (ALARM)

#### STAFF

Judy Erlandson  
City of Livermore  
Public Works Manager

DATE: **Wednesday, January 11, 2017**  
TIME: **4:00 p.m.**  
PLACE: City of Livermore  
Maintenance Services Center  
3500 Robertson Park Road

1. Call to Order
2. Introductions
3. Roll Call
4. Approval of Minutes (Minutes from October 12, 2016)
5. Open Forum This is an opportunity for members of the audience to comment on a subject not listed on the agenda. No action may be taken on these items.
6. Matters for Consideration
  - 6.1 **Status of Five-Year Permit Review (ESA/Langan)**
  - 6.2 **Groundwater Analyses, Sample Contamination, and Well Purging (ESA)**
  - 6.3 **Review of Reports Provided by ALRRF (ESA)**
  - 6.4 **Update re Fill Area 2 Status and Related Issues(ESA)**
  - 6.5 **Reports from Community Monitor (ESA)**
  - 6.6 **Draft Annual Report (ESA)**
  - 6.7 **Announcements (Committee Members)**
7. Agenda Building

This is an opportunity for the Community Monitor Committee Members to place items on future agendas.
8. Adjournment

The next regular Community Monitor Committee meeting is tentatively scheduled to take place at 4:00 p.m. on **April 12, 2017** at 3500 Robertson Park Road, Livermore.

#### Informational Materials:

- Community Monitor Roles and Responsibilities
- List of Acronyms
- Draft Minutes of October 12, 2016
- Reports from ESA

**City of Livermore**  
**TDD (Telecommunications for the Deaf)**  
**(925) 960-4104**

PURSUANT TO TITLE II OF THE AMERICANS WITH DISABILITIES ACT (CODIFIED AT 42 UNITED STATES CODE SECTION 12101 AND 28 CODE OF FEDERAL REGULATIONS PART 35), AND SECTION 504 OF THE REHABILITATION ACT OF 1973, THE CITY OF LIVERMORE DOES NOT DISCRIMINATE ON THE BASIS OF RACE, COLOR, RELIGION, NATIONAL ORIGIN, ANCESTRY, SEX, DISABILITY, AGE OR SEXUAL ORIENTATION IN THE PROVISION OF ANY SERVICES, PROGRAMS, OR ACTIVITIES. TO ARRANGE AN ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS PUBLIC MEETING, PLEASE CALL (925) 960-4586/4582 (VOICE) OR (925) 960-4104 (TDD) AT LEAST 72 HOURS IN ADVANCE OF THE MEETING.

The Community Monitor Committee Agenda and Agenda Reports are prepared by City staff and are available for public review on the Thursday prior to the Community Monitor Committee meeting at the Maintenance Service Center, located at 3500 Robertson Park Road, Livermore. The Community Monitor Committee Agenda is available for public review at the Maintenance Service Center, 3500 Robertson Park Road, Livermore, and on the Community Monitor Committee web site, <http://www.altamontcmc.org>.

Under Government Code §54957.5, any supplemental material distributed to the members of the Community Monitor Committee after the posting of this Agenda will be available for public review upon request at 3500 Robertson Park Road., Livermore or by contacting us at 925-960-8000.

If supplemental materials are made available to the members of the Community Monitor Committee at the meeting, a copy will be available for public review at the Maintenance Service Center, at 3500 Robertson Park Road, Livermore.

## **Community Monitor Committee Roles and Responsibilities**

Below is a summary of the duties and responsibilities of the Community Monitor Committee and related parties as defined by the Settlement Agreement between the County of Alameda, the City of Livermore, the City of Pleasanton, Sierra Club, Northern California Recycling Association, Altamont Landowners Against Rural Mismanagement, and Waste Management of Alameda County, Inc. The purpose of this document is to aid in determining if discussion items are within the scope of the Community Monitor Committee.

### **Community Monitor Committee's Responsibilities**

Under Settlement Agreement section 5.1.2, the CMC is responsible for supervising and evaluating the performance of the Community Monitor as follows:

- A. Interviewing, retaining, supervising, overseeing the payment of, and terminating the contract with the Community Monitor;
- B. Reviewing all reports and written information prepared by the Community Monitor; and
- C. Conferring with the Community Monitor and participating in the Five Year Compliance Reviews (next due in 2015) and the Mid-Capacity Compliance Review (due when the new cell is constructed and capacity is close to 50%, unlikely to occur before 2028) (Condition number 6 of Exhibit A of the Agreement).

### **Community Monitor's Responsibilities**

The Community Monitor supplements and confirms the enforcement efforts of the County Local Enforcement Agency. The Community Monitor is primarily responsible for:

- A. Reviewing any relevant reports and environmental compliance documents submitted to any regulatory agency (sections 5.7.1, 5.7.2, and 5.7.3);
- B. Advising the public and the Cities of Livermore and Pleasanton about environmental and technical issues relating to the operation of the Altamont Landfill via the CMC (section 5.7.4);
- C. Presenting an annual written report summarizing the Altamont Landfill's compliance record for the year to the CMC and submitting the report to Alameda County and the Cities of Livermore and Pleasanton (section 5.7.5);
- D. Notifying the County Local Enforcement Agency and Waste Management of Alameda County of any substantial noncompliance findings or environmental risk (section 5.7.6);
- E. Monitoring and accessing the Altamont Landfill site and conducting inspections (section 5.7.7);
- F. Counting trucks arriving at the Altamont Landfill (section 5.7.8); and
- G. Reviewing waste testing data and source information (section 5.7.9).

### **Waste Management of Alameda County's Responsibilities**

Per the settlement agreement, Waste Management is responsible for:

- A. Paying for the services of the Community Monitor, based on an annual cost estimate (section 5.3.3).
- B. Paying an additional 20% over the annual cost estimate if warranted based on "credible evidence" (section 5.3.3).

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## List of Acronyms

Below is a list of acronyms that may be used in discussion of waste disposal facilities. These have been posted on the CMC web site, together with a link to the CIWMB acronyms page:

<http://www.ciwmb.ca.gov/LEACentral/Acronyms/default.htm>.

Updates will be provided as needed. This list was last revised on September 25, 2013.

### Agencies

ACWMA – Alameda County Waste Management Authority  
ANSI – American National Standards Institute  
ARB or CARB – California Air Resources Board  
ASTM – American Society for Testing and Materials  
BAAQMD – Bay Area Air Quality Management District  
CDFG or DFG – California Department of Fish and Game  
CDRRR – California Department of Resources Recycling and Recovery, or CalRecycle  
CIWMB – California Integrated Waste Management Board (predecessor to CDRRR – see above)  
CMC – Community Monitor Committee  
DWR – Department of Water Resources  
LEA – Local Enforcement Agency (i.e., County Environmental Health)  
RWQCB – Regional Water Quality Control Board  
SWRCB – State Water Resources Control Board

### Waste Categories

C&D – construction and demolition  
CDI – Construction, demolition and inert debris  
FIT – Fine materials delivered to the ALRRF, measured by the ton.  
GSET – Green waste and other fine materials originating at the Davis Street Transfer Station, for solidification, externally processed.  
GWRGCT – Green waste that is ground on site and used for solidification or cover (discontinued January 2010)  
GWSA – Green waste slope amendment (used on outside slopes of the facility)  
MSW – Municipal solid waste  
RDW – Redirected wastes (received at ALRRF, then sent to another facility)  
RGC – Revenue generating cover

### Water Quality Terminology

IDL – Instrument Detection Limit – The smallest concentration of a specific chemical, in reagent grade water, that can be detected, with 99% confidence, with the detection instrument (e.g. the mass spectrometer).  
MCL – Maximum Contaminant Level – The legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act.  
MDL – Method Detection Limit – The smallest concentration of a specific chemical, in a sample that contains other non-interfering chemicals, that can be detected by the prescribed method, including preparatory steps such as dilution, filtration, digestion, etc.  
RL – reporting limit: in groundwater analysis, for a given substance and laboratory, the concentration above which there is a less than 1% likelihood of a false-negative measurement.

### Substances or Pollutants

ACM – asbestos-containing material  
ACW – asbestos-containing waste  
ADC – Alternative Daily Cover. For more information: <http://www.ciwmb.ca.gov/lqcentral/basics/adcbasic.htm>  
BTEX – benzene, toluene, ethylbenzene, and xylene (used in reference to testing for contamination)  
CH<sub>4</sub> – methane  
CO<sub>2</sub> – carbon dioxide  
DO – dissolved oxygen  
HHW – household hazardous waste  
LFG – landfill gas

LNG – liquefied natural gas  
MEK – methyl ethyl ketone  
MIBK – methyl isobutyl ketone  
MTBE – methyl tertiary butyl ether, a gasoline additive  
NMOOC – Non-methane organic compounds  
NTU – nephelometric turbidity units, a measure of the cloudiness of water  
TCE - Trichloroethylene  
TDS – total dissolved solids  
TKN – total Kjeldahl nitrogen  
TSS – Total Suspended Solids  
VOC – volatile organic compounds

#### Documents

CCR – California Code of Regulations (includes Title 14 and Title 27)  
CoIWMP – County Integrated Waste Management Plan  
CUP – Conditional Use Permit  
JTD – Joint Technical Document (contains detailed descriptions of permitted landfill operations)  
MMRP – Mitigation Monitoring and Reporting Program  
RDSI – Report of Disposal Site Information  
RWD – Report of Waste Discharge  
SRRE – Source Reduction and Recycling Element (part of CoIWMP)  
SWPPP – Stormwater Pollution Prevention Plan  
WDR – Waste Discharge Requirements (Water Board permit)

#### General Terms

ALRRF – Altamont Landfill and Resource Recovery Facility  
ASP – Aerated Static Pile composting, which involves forming a pile of compostable materials and causing air to move through the pile so that the materials decompose aerobically.  
BGS – below ground surface  
BMP – Best Management Practice  
**CASP – Same as ASP, above.**  
CEQA – California Environmental Quality Act  
CQA – Construction Quality Assurance (relates to initial construction, and closure, of landfill Units)  
CY – cubic yards  
GCL – geosynthetic clay liner  
GPS – Global Positioning System  
IC engine – Internal combustion engine  
LCRS – leachate collection and removal system  
LEL – lower explosive limit  
mg/L – milligrams per liter, or (approximately) parts per million  
µg/L – micrograms per liter, or parts per billion  
PPE – personal protective equipment  
ppm, ppb, ppt – parts per million, parts per billion, parts per trillion  
RAC – Reclaimable Anaerobic Composter – a method developed by Waste Management, Inc., to place organic materials in an impervious containment, allow them to decompose anaerobically, and extract methane during this decomposition.  
SCF – Standard cubic foot, a quantity of gas that would occupy one cubic foot if at a temperature of 60°F and a pressure of one atmosphere  
SCFM – standard cubic feet per minute, the rate at which gas flows past a designated point or surface  
STLC – Soluble Threshold Limit Concentration, a regulatory limit for the concentrations of certain pollutants in groundwater  
TTLC – Total Threshold Limit Concentration, similar to STLC but determined using a different method of analysis  
TPD, TPM, TPY – Tons per day, month, year  
WMAC – Waste Management of Alameda County



# COMMUNITY MONITOR COMMITTEE

## *Altamont Landfill Settlement Agreement*

Minutes of October 12, 2016

### **DRAFT**

1. Call to Order  
The meeting was called to order at 4:01 p.m.
  
2. Roll Call  

Members Present:	Bob Woerner; Donna Cabanne; Jerry Pentin; Sarah Fockler; Arthur Surdilla
Absent:	Robert Cooper, Altamont Landowners Against Rural Mismanagement; David Tam arrived at 4:21 PM.
Staff:	Marisa Gan, City of Livermore Recycling Specialist; Kelly Runyon, Community Monitor
  
3. Introductions  
Those in attendance introduced themselves as part of the roll call.
  
4. Approval of Minutes  
The Chair reordered the agenda to defer approval of the July 2016 minutes until Mr. Tam's arrival.
  
5. Open Forum  
There was no Open Forum discussion.
  
6. Matters for Consideration
  - 6.1 Responses to Committee Member Questions  

Concentrations of Naturally Occurring Groundwater Contaminants – Mr. Runyon presented a table that compared drinking water standards to background levels of arsenic, antimony and cyanide, noting that naturally occurring background levels often exceed drinking water standards. Mr. Runyon also noted that for the ALRRF wells that have been under discussion, levels of these substances are similar to those in the table. Ms. Cabanne expressed concern about nearby residents' drinking water and asked that these levels continue to be watched. In discussion, Ms. Fockler noted that at the landfill, well water from the site is not used for any purpose.

Ms. Cabanne also noted that in the most recent groundwater monitoring reports, some detections of contaminants were attributed to laboratory contamination; and this has been an ongoing concern with these lab results. Mr. Runyon stated that Langan Engineering, part of the Community Monitor

team, had also reviewed the semiannual groundwater monitoring report with contamination concerns in mind; and Langan found that the data meet professional standards. Mr. Woerner asked about the sampling interval for these substances, and Mr. Runyon responded that it is every five years. Mr. Woerner stated that he would like to see the data from an extended period of time, and with error bars. Mr. Runyon stated that he would provide the available data going back for 10 years, but the data may be too sparse to compute error bars. Mr. Woerner also noted that it would be helpful if memos to the Committee clearly indicated areas of concern, up front, in a summary. Mr. Pentin then stated a concern that taken at face value, some of the data in Committee memos could be interpreted as showing a high level of environmental risk. He asked for the memo to provide more context or interpretation regarding the level of hazard that the table describes. Mr. Woerner concurred. Mr. Runyon suggested that data from new groundwater wells might help provide useful context. Mr. Pentin asked if more frequent testing, beyond the regulatory requirements, could be authorized or approved by the Committee. Mr. Runyon replied that such actions are outside of the Committee's scope as defined in the Settlement Agreement.

Mr. Tam arrived at 4:21 PM.

Purging Requirements in Tentative Water Board Waste Discharge Requirements (WDRs) - Ms. Cabanne expressed continuing concern about the monitoring well purging techniques used by SCS Engineers. She asked when more detail about purging will be provided, with the field data sheets modified to reflect the details of these techniques. Mr. Runyon said that he expects these changes to appear in the next semiannual groundwater monitoring report, to be received in early February and discussed at the April 2017 Committee meeting. Ms. Cabanne asked if the related amendment to the Waste Discharge Requirements [i.e., the Monitoring and Reporting Program] has been prepared. Ms. Fockler stated that it has not, because it is part of the ALRRF's ongoing discussions with the Central Valley Regional Water Quality Control Board (Water Board), regarding implementation-related details of the WDRs that are still being worked out. Ms. Cabanne asked if the Water Board would have this on their agenda. Mr. Runyon stated that he does not expect the issue to come before the Board; it should be resolved at the staff level.

Mr. Pentin noted that the purging topic has been in active discussion since April 2016, and he asked if it is typical for these types of issues to take a year or more to be resolved. Mr. Runyon stated that the number and complexity of the issues raised by the first draft of the new WDRs prolonged the WDR process. Ms. Cabanne asked that the Committee be updated on the progress of these issues at each meeting. Mr. Runyon agreed to do so and said that he would request updates from the ALRRF as well.

## 6.2 Review of Reports Provided by ALRRF

On the semi-annual groundwater monitoring report, Mr. Runyon stated that in response to its frequent references to sample contamination, Langan had



examined the report carefully and found it acceptable. Mr. Pentin expressed concern about these occurrences. Mr. Woerner also expressed concern that the frequent instances of contamination call into question the validity of the sampling and testing processes. Mr. Pentin concurred and asked if there are applicable standards. Ms. Cabanne noted that this has been a long term ongoing issue. Mr. Pentin asked what the testing procedures are; Mr. Runyon said that he would look into that. Mr. Pentin also asked if the Water Board would review the data. Mr. Runyon replied that they do review these data, and that likely led to the more stringent draft 2016 WDRs. Further discussion of possible contamination in samples concluded with Mr. Runyon suggesting a presentation, at the next meeting, by a person with substantial direct experience in landfill groundwater sampling and analyses.

Regarding the monitoring report for the Conservation Plan Area, Ms. Cabanne moved that the Committee require that an ESA botanist and wildlife biologist review the current, and any future, reports on the Conservation Plan Area. Mr. Tam seconded. The motion passed unanimously, 4-0.

Regarding the current (2015) Conservation Management Plan report, Ms. Fockler noted that the lack of monitoring for San Joaquin Kit Fox and Burrowing Owl was due to the ALRRF's consultant's misunderstanding that funds were not available for that work. She further stated that the consultant had not made ALRRF aware of the funding issue, and if they had, funds would have been provided. Ms. Cabanne asked when the next report could be expected. Ms. Fockler replied, March of 2017. Mr. Pentin asked if monitoring is happening now, and Ms. Fockler replied that it is. Ms. Cabanne asked Mr. Runyon to follow up and tell the Committee when the next report is received. Mr. Pentin asked if the consultant was scoped and paid to do the missing monitoring and Ms. Fockler replied that they were. He then asked if Fish and Wildlife have accepted the report. Ms. Fockler said that they have received the report and have not taken issue with it or provided comments.

Ms. Cabanne asked if the eight probes mentioned in the semiannual air emissions report were installed. Mr. Runyon replied that they were, and that their purpose is to inform Waste Management's landfill gas system designers regarding the efficiency of the system at the ALRRF.

### 6.3 Update re Fill Area 2 Status

Mr. Runyon provided large-format photos of Fill Area 2, Phases 1 and 2. He explained the difference between groundwater seepage (shown in the photos) and leachate seepage (noted in the monthly site visit report). Mr. Tam asked for an estimate of the area affected by groundwater seepage; Mr. Runyon described it as an acre or two. Mr. Tam asked how long it would take to fill the Phase 2 portion of Fill Area 2. Mr. Runyon stated that because of overlapping fill volumes from each phase, he could not provide an immediate answer.

### 6.4 Reports from Community Monitor

Referring to the tonnage summary, Ms. Cabanne asked for further explanation of the high tonnage from Newark. Mr. Runyon explained that this was due to the disposal of unmarketable salt from the salt ponds in Newark. Ms. Fockler added that before it was accepted, the material was profiled and found to be non-hazardous. Ms. Cabanne asked if the Community Monitor could review the profile. Ms. Fockler responded that profiles are kept confidential, to protect customers' information and to maintain the landfill's competitive position. In response to a question from Ms. Cabanne, Ms. Fockler stated that the landfill will be receiving the material for three years, in the summer months, to a total of 200,000 tons. Mr. Woerner asked if this activity had taken place prior to this year. Neither Ms. Fockler nor Mr. Runyon could recall seeing a similar situation, back through 2008.

Mr. Woerner expressed concern about the overturned truck incidents reported in the Special Occurrences Log. Mr. Runyon stated that the landfill takes the appropriate steps to prevent these, but there are instances when material sticks in the truck bed as it is being raised, and in some such cases an overturn cannot be prevented. Mr. Tam asked about two incidents involving City of Berkeley loads and the tippers. Mr. Runyon clarified that these were transfer trucks from the City's transfer station, and he and Ms. Fockler described the incidents further.

Regarding the tonnage bar charts, Mr. Woerner asked for some interpretation of the charts, possibly in footnotes or in text placed closer to the charts.

Ms. Cabanne asked if the possible tamarisk plants, noted in a monthly report, could be harmful to the Conservation Plan Area. Mr. Runyon explained that the County has applied herbicide to those plants, and they are now dead; however, new plants could emerge if seeds were previously produced, and this should be watched for.

Ms. Cabanne asked if the algae noted in Basin A was going to be controlled. Mr. Runyon replied that the landfill plans to excavate the basin, weather permitting.

Regarding the July grass fire near Basin C, Ms. Cabanne asked if the gaskets in the nearby stormwater pipe would be checked for damage. Ms. Fockler stated that they have been checked and are undamaged.

Mr. Tam asked if there is a way to know how much material is being delivered from the salt ponds in Newark. Mr. Runyon responded that he has no data specific to that customer but does see a total of all tons disposed from Newark.

#### 6.5 Status of Five-Year Permit Review

In discussion of the Monitoring and Reporting Program (MRP) required as part of the site's updated Waste Discharge Requirements, Ms. Fockler explained that the MRP is still in development through discussions between Waste Management and Regional Water Quality Control Board (RWQCB) staff.

Mr. Woerner asked if the Notices of Violation issued by the LEA are continuing. Mr. Surdilla stated that they will be discontinued shortly, because the Waste Discharge Requirements have been adopted by the RWQCB. This will enable the LEA to have a complete picture of the requirements that the landfill must meet, thus the LEA's review can proceed. Mr. Woerner asked that the status and expected outcome be summarized in future reports.

Ms. Cabanne asked if the MRP could be summarized for the Committee. Mr. Runyon said that he intends to do that when the MRP is completed. In response to further questions, Ms. Fockler explained that the ALRRF cannot predict how soon that will occur. Mr. Tam asked if the landfill would be fined for the delay. Mr. Runyon explained that this is unlikely at present, while both sides are working cooperatively.

At 5:43 PM the Chair reordered the agenda to take up several items because Mr. Woerner needed to leave soon.

6.10 Agreement for Consulting Services with ESA

Ms. Gan circulated the Exercise of First Extension document for signatures by all Committee members.

4 Approval of April 13 Meeting Minutes

Mr. Tam moved approval of the minutes as submitted; Ms. Cabanne seconded. There was no discussion; the motion passed unanimously (4-0).

6.9 Meeting Dates for 2017

Ms. Gan presented the draft meeting schedule and asked Committee members if there was a need to change any of the dates. No changes were proposed. Mr. Pentin moved approval, and Ms. Cabanne seconded. The motion passed unanimously (4-0).

6.6 Reducing Truck Traffic Counts

Mr. Runyon described the limit on refuse truck traffic set by the Conditional Use Permit, and the limitations on independent truck traffic counts as defined by the Settlement Agreement. He added that he took a 2-hour truck count during the morning limit period and found that the current refuse truck traffic was less than ½ of the CUP limit. After further discussion, including consideration of additional traffic due to the new stream from Newark, Mr. Pentin moved that there be two truck counts in summer months over the next three years, with the need for truck counts to be re-evaluated after that. Mr. Woerner seconded the motion. It passed unanimously (4-0).

6.7 Annual Report Topics

In addition to the topics described in the memo on this topic, Committee members requested coverage of the following topics:

Mr. Pentin: Information regarding the kit fox and burrowing owl monitoring issue.

Ms. Cabanne: inclusion of a botanist and wildlife biologist in the review of Conservation Plan Area monitoring reports; and the status of the new Waste Discharge Requirements and MRP.

6.8 Announcements

Mr. Tam provided a letter from the Alameda County Parks, Recreation and Historical Commission to California Natural resources Secretary John Laird, advocating suspension of the approval process for expansion of Off-Highway Vehicle use on Tesla Park land. (This letter has been posted on the Committee web site.)

Mr. Woerner left at 5:50.

7. Agenda Building

Mr. Runyon stated that he had numerous questions and issues to respond to for the next meeting. No other topics were added.

8. Adjournment

The meeting was adjourned at 5:52 p.m.

# memorandum

date January 2, 2017  
to ALRRF Community Monitor Committee  
from Kelly Runyon  
subject CMC Meeting of 1/11/17 - Agenda Item 6.1 - Status of Five-Year Permit Review

The Central Valley Regional Water Quality Control Board (Water Board) adopted Waste Discharge Requirements (WDRs) for the ALRRF in July 2016, and the Monitoring and Reporting Program (MRP) was finalized in mid October. This concluded the development of permit conditions by Water Board staff. The Local Enforcement Agency for Alameda County was provided with an updated copy of the Joint Technical Document (JTD), which describes the design and planned operation of the ALRRF, at the end of September; they are now able to complete their review and issue an updated Solid Waste Facility Permit. That process is ongoing, and it is the last step in the review. It does not appear likely to involve a public meeting or hearing, as only minor modifications will be needed for the new permit.

The LEA representative may be able to provide a verbal update on the permit review process at the January 11 Committee meeting.

The Community Monitor team (primarily Langan Engineering) has prepared a detailed table that compares the previous MRP to the new one. This will provide us with a checklist for report review; it also shows the Committee the full extent of both MRPs, side by side. In the 2016 list of MRP required actions, new requirements are shown with pink background or pink text; and reductions in existing requirements are shown in green. The full table appears on the next five pages.

		2009 Sampling Program						2016 Sampling Program				
		Parameters	Method	N	Monitoring Frequency			Parameters	Method	N	Monitoring Frequency	Notes
<b>Groundwater</b>												
G1	<b>Field Parameters</b>	Elevation	Field Equipment	37*	Quarterly	<b>Field Parameters</b>	Elevation	Field Equipment	44*	Quarterly	*Nine Monitoring wells will be sampled in 2016, and then will be on a 5-year sampling schedule	
G2		Temperature, Electric Conductivity, pH, Turbidity	Field Equipment	37*	Semiannual		Temperature, Specific Conductance, pH, Turbidity	Field Equipment	37*	Semiannual		
G3	<b>Monitoring Parameters</b>	Chemical Oxygen Demand (COD), Kjeldahl Nitrogen, Total Dissolved Solids (TDS), Chloride, Bicarbonate as CaCO3, Sulfate, Calcium	Various	37*	Semiannual	<b>Monitoring Parameters</b>	Total Dissolved Solids (TDS), Chloride, Chemical Oxygen Demand (COD), Bicarbonate as CaCO3, Kjeldahl Nitrogen, Sulfate, Calcium	Various	37*	Semiannual		
G4		Volatile Organic Compounds (VOCs)	EPA Method 8260	37*	Semiannual		Volatile Organic Compounds (VOCs)	EPA Method 8260B	37*	Semiannual	Short List in Table V	
G5	<b>Supplemental Parameters</b>	Carbonate, Nitrogen Nitrate as N, Calcium (dissolved), Magnesium (dissolved), Manganese (dissolved), Potassium (dissolved), Sodium (dissolved)	Various	37*	Semiannual	<b>Supplemental Parameters</b>	Nitrogen Nitrate as N, Magnesium(dissolved), Manganese(dissolved), Potassium (dissolved), Sodium (dissolved), Sulfate	Various	37*	Semiannual	Complete list in Table I	
G6	<b>5-Year Consituents of Concern</b>	Total Organic Carbon (TOC)	5310B	37	5 years	<b>5-Year Consituents of Concern</b>	Total Organic Carbon (TOC)	5310B	37	5 years	Complete list in table V	
G7		Inorganics (dissolved)	Various EPA Methods - See Table VI	37	5 years		Inorganics (dissolved)	Various EPA Methods - See Table VI	37	5 years	Complete list in table VI	
G8		VOCs (extended)	EPA Method 8260B	37	5 years		VOCs (extended)	EPA Method 8260B	37	5 years	Extended list in Table VI	
G9		Semi-Volatile Organic Compounds (SVOCs)	EPA Method 8270	37	5 years		Semi-Volatile Organic Compounds (SVOCs)	EPA Method 8270C/D	37	5 years	Complete list in table VI	
G10		Chlorophenoxy Herbicides	EPA Method 8151A	37	5 years		Chlorophenoxy Herbicides	EPA Method 8151A	37	5 years	Complete list in table VI	
G11		Organophosphorus Compounds	EPA Method 8141A	37	5 years		Organophosphorus Compounds	EPA Method 8141A	37	5 years	Complete list in table VI	
G12						<b>Corrective Action</b>	Acetophenone		3	Semiannual		
G13							Dinoseb		15	Annual		

2009 Sampling Program						2016 Sampling Program					
	Parameters	Method	N	Monitoring Frequency		Parameters	Method	N	Monitoring Frequency	Notes	
<b>Unsaturated Zone: Soil-Pore Gas</b>											
SG1	Field Parameters	VOCs	EPA Method TO-14	2	Semiannual	Field Parameters	VOCs *	EPA Method TO-15	12	Annual	TO-14 vs TO-15: TO-15 is an expanded analyte list that includes polar and non-polar compounds. Can achieve lower detection limits
SG2		Methane	Field Equipment	2	Semiannual		Methane, Carbon Dioxide, Oxygen, Remainder Gas, Flow rate (CFM)				
<b>Unsaturated Zone: Lysimeters, Leak Detection System and Underdrains</b>											
U1	Field Parameters	Electrical conductivity, pH	Field Equipment	1	Quarterly	Field Parameters	Presence/absence of liquid, Specific conductance, pH, volume of liquid removed, flow from underdrains	Field Equipment	7	Monthly	
U2	Monitoring Parameters	TDS, Chloride, Carbonate, Bicarbonate, Nitrogen - Nitrate, Sulfate, Calcium, Magnesium, Potassium, Sodium		1	Annual	Monitoring Parameters	TDS, Chloride, Carbonate as CaCO3, Bicarbonate as CaCO3, Nitrogen, Sulfate, Calcium, Magnesium, Manganese, Potassium, Sodium, Methane, Carbon Dioxide, Oxygen		7	Semiannual	
U3		VOCs (in liquid matrix)	EPA Method 8260B	1	Annual		VOCs (in liquid matrix)		7	Semiannual	Short List in Table V
U3						Pentaclorophenol, arsenic (dissolved), copper (dissolved), chromium (dissolved)		7	Annual		
U4	5-Year Constituents of Concern	TOC		1	5 years	5-Year Constituents of Concern	TOC		7	5 years	
U5		Inorganics (dissolved)	Various EPA Methods - See Table VI	1	5 years		Inorganics (dissolved)	Various EPA Methods - See Table VI	7	5 years	Complete list in table VI
U6		VOCs (extended)	EPA Method 8260B	1	5 years		VOCs (extended)	EPA Method 8260B	7	5 years	Extended list in Table VI
U7		SVOCs	EPA Method 8270C	1	5 years		SVOCs	EPA Method 8270C	7	5 years	Complete list in table VI
U8		Chlorophenoxy Herbicides	EPA Method 8151A	1	5 years		Chlorophenoxy Herbicides	EPA Method 8151A	7	5 years	Complete list in table VI
U9		Organophosphorus Compounds	EPA Method 8141A	1	5 years		Organophosphorus Compounds	EPA Method 8141A	7	5 years	Complete list in table VI
U10					Corrective Action	Acetophenone		1	Semiannual		
U11						Di-noseb		3	Annual		

		2009 Sampling Program						2016 Sampling Program				
		Parameters	Method	N	Monitoring Frequency			Parameters	Method	N	Monitoring Frequency	Notes
<b>Leachate/Seep</b>												
L1	<b>Field Parameters</b>	Total Flow, Flow Rate, Electric Conductivity, pH	Field Equipment	2	Quarterly	<b>Field Parameters</b>	<b>Presence/absence of liquid</b> , flow rate	Field Equipment	4**	Monthly	**In the event of a new seep in a previously dry location, the Water Board will be notified and the seep will be sampled immediately	
L2							Specific conductance, pH	Field Equipment	4**	Monthly for seeps, semiannually for everything else		
L3	<b>Monitoring Parameters</b>	TDS, Chloride, Carbonate, Bicarbonate, Nitrogen - Nitrate, Sulfate, Calcium, Magnesium, Potassium, Sodium, VOCs		2	Annual	<b>Monitoring Parameters</b>	TDS, Chloride, Carbonate as CaCO3, Bicarbonate as CaCO3, Nitrogen, Sulfate, Calcium, Magnesium, <b>Manganese</b> , Potassium, <b>Pentachlorophenol</b> , <b>Sulfide</b>		4**	Semiannual		
L4							Volatile Organic Compounds1 (in liquid matrix)		4**	Semiannual	Short List in Table V	
L5						Arsenic, copper, chromium		4**	Annual			
L6	<b>5-Year Consituents of Concern</b>	TOC		2	5 years	<b>5-Year Consituents of Concern</b>	TOC		4**	5 years		
L7		Inorganics (dissolved)	Various EPA Methods - See Table VI	2	5 years		Inorganics (dissolved)	Various EPA Methods - See Table VI	4**	5 years	Complete list in table VI	
L8		VOCs (extended)	EPA Method 8260B	2	5 years		VOCs (extended)	EPA Method 8260B	4**	5 years	Extended list in Table VI	
L9		SVOCs	EPA Method 8270C	2	5 years		SVOCs	EPA Method 8270C	4**	5 years	Complete list in table VI	
L10		Chlorophenoxy Herbicides	EPA Method 8151A	2	5 years		Chlorophenoxy Herbicides	EPA Method 8151A	4**	5 years	Complete list in table VI	
L11		Organophosphorus Compounds	EPA Method 8141A	2	5 years		Organophosphorus Compounds	EPA Method 8141A	4**	5 years	Complete list in table VI	



		2009 Sampling Program						2016 Sampling Program				
		Parameters	Method	N	Monitoring Frequency			Parameters	Method	N	Monitoring Frequency	Notes
<b>Surface Water</b>												
SW1	<b>Field Parameters</b>	Total Flow, Flow Rate, Electric Conductivity, pH	Field Equipment	6***	Semiannual	<b>Field Parameters</b>	Specific Conductance, pH, Dissolved Oxygen, Turbidity, Temperature	Field Equipment	6	Semiannual****	*** Three samples from the facility boundary to be collected Semiannually during the wet season (Oct 1 through May 30) and three samples, one within each basin to be collected annually  ****Semiannual sampling to be coordinated once before and once after the wet season (15 October through 15 May)	
SW2							Discharge to Water of USA	Field Equipment	6	Each Storm Event		
SW3	<b>Monitoring Parameters</b>	TDS, Carbonate, Bicarbonate, Chloride, Nitrogen -Nitrate, Sulfate, Calcium, Magnesium, Potassium, Sodium		6***	Semiannual	<b>Monitoring Parameters</b>	TDS, Chloride, Carbonate as CaCO3, Bicarbonate as CaCO3, Nitrogen, Sulfate, Calcium, Magnesium, Potassium, Sodium		6	Semiannual***		
SW4		VOCs	EPA Method 8260B		Semiannual		VOCs		6	Semiannual***	Short List in Table V	
SW5	<b>5-Year Consituents of Concern</b>	TOC		6	5 years	<b>5-Year Consituents of Concern</b>	TOC		6	5 years		
SW6		Inorganics (dissolved)	Various EPA Methods - See Table VI	6	5 years		Inorganics (dissolved)	Various EPA Methods - See Table VI	6	5 years	Complete list in table VI	
SW7		VOCs (extended)	EPA Method 8260B	6	5 years		VOCs (extended)	EPA Method 8260B	6	5 years	Extended list in Table VI	
SW8		SVOCs	EPA Method 8270C	6	5 years		SVOCs	EPA Method 8270C	6	5 years	Complete list in table VI	
SW9		Chlorophenoxy Herbicides	EPA Method 8151A	6	5 years		Chlorophenoxy Herbicides	EPA Method 8151A	6	5 years	Complete list in table VI	
SW10		Organophosphorus Compounds	EPA Method 8141A	6	5 years		Organophosphorus Compounds	EPA Method 8141A	6	5 years	Complete list in table VI	

		2009 Sampling Program						2016 Sampling Program				
		Parameters	Method	N	Monitoring Frequency			Parameters	Method	N	Monitoring Frequency	Notes
<b>Landfill Gas Extraction Wells</b>												
LFG1						<b>LFG Corrective Action Monitoring</b>		Methane, Carbon Dioxide, Oxygen, Remainder Gas, Gas Temperature at each well, Gas Flow Rate (CFM)		14	Monthly	
LFG2								Initial Static Pressure in Wellhead, Adjusted static pressure in wellhead		14	Monthly	
<b>Facility Monitoring</b>												
F1		Facility Monitoring and Maintenance			Annually - Prior to 30 September, the start of the rainy season			Facility Monitoring and Maintenance		6	Annually - Prior to 30 September, the start of the rainy season	
F2		Any Maintenance and Repairs based on the annual Facility Monitoring and Maintenance assessed in September			Annually - Prior to 31 October			Any Maintenance and Repairs based on the annual Facility Monitoring and Maintenance assessed in September			Annually - Prior to 31 October	
F3		Major Storm Inspection for damage and/or repairs			Within 7 days of major storm event			Major Storm Inspection for damage and/or repairs			Within 7 days of major storm event	
								Pre and Post earthquake inspections			Before and after an earthquake event	
F4								Leak Search for the integrity of low permeable layers			Biennial	



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CMC Agenda Item 6.2  
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# memorandum

date January 2, 2017

to ALRRF Community Monitor Committee

from Michael Burns, Kelly Runyon

subject CMC Meeting of 1/11/17 - Agenda Item 6.2 - Groundwater Analyses, Sample Contamination and Well Purging

At the October 12, 2016 Community Monitor Committee meeting, Committee members raised several questions and concerns related to groundwater sampling (particularly, low flow purging) and lab analyses of groundwater samples. The following pages in this memorandum are the basis for a presentation and discussion that will be provided by Michael Burns of ESA at the January 11 Committee meeting. They are not self-explanatory, but they will aid in understanding the presentation. The explanation will be summarized in the meeting minutes for future reference.

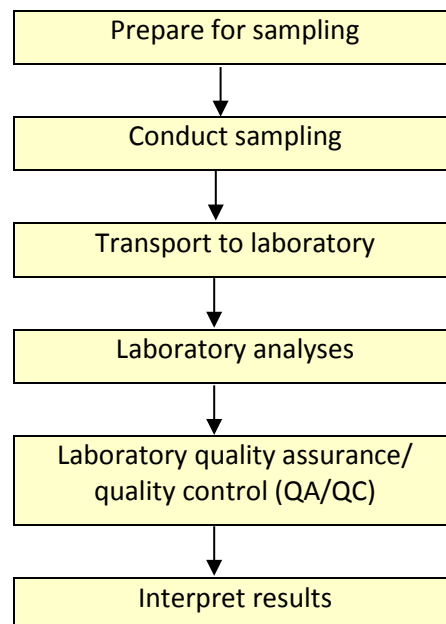
**Sampling and Analyses Presentation – This material is in support the presentation on:****Sample Cross Contamination – Field QC and Lab QC**

Bottom Line: The ability of modern testing methods to detect tiny (e.g., part per trillion) amounts of chemicals can exceed the ability to decontaminate sample bottles and equipment, and/or avoid interference by non-target chemicals (e.g., “matrix interference”). In other words, every sample analysis will have some “noise” in the results. The question is how much and which “noise” is acceptable.

The challenge is analogous to hearing recorded music at a party. If we know the song, most of us can identify it even though there is loud conversation throughout the room. Similarly, if we know what landfill leachate has in it, and we know that there might be chemicals in a sample that originated from other sources, we can disregard those others and watch for signs of leachate in the sample.

Overall sampling and analysis steps

Here is a generalized flow chart of the process. There are way more steps than shown here.



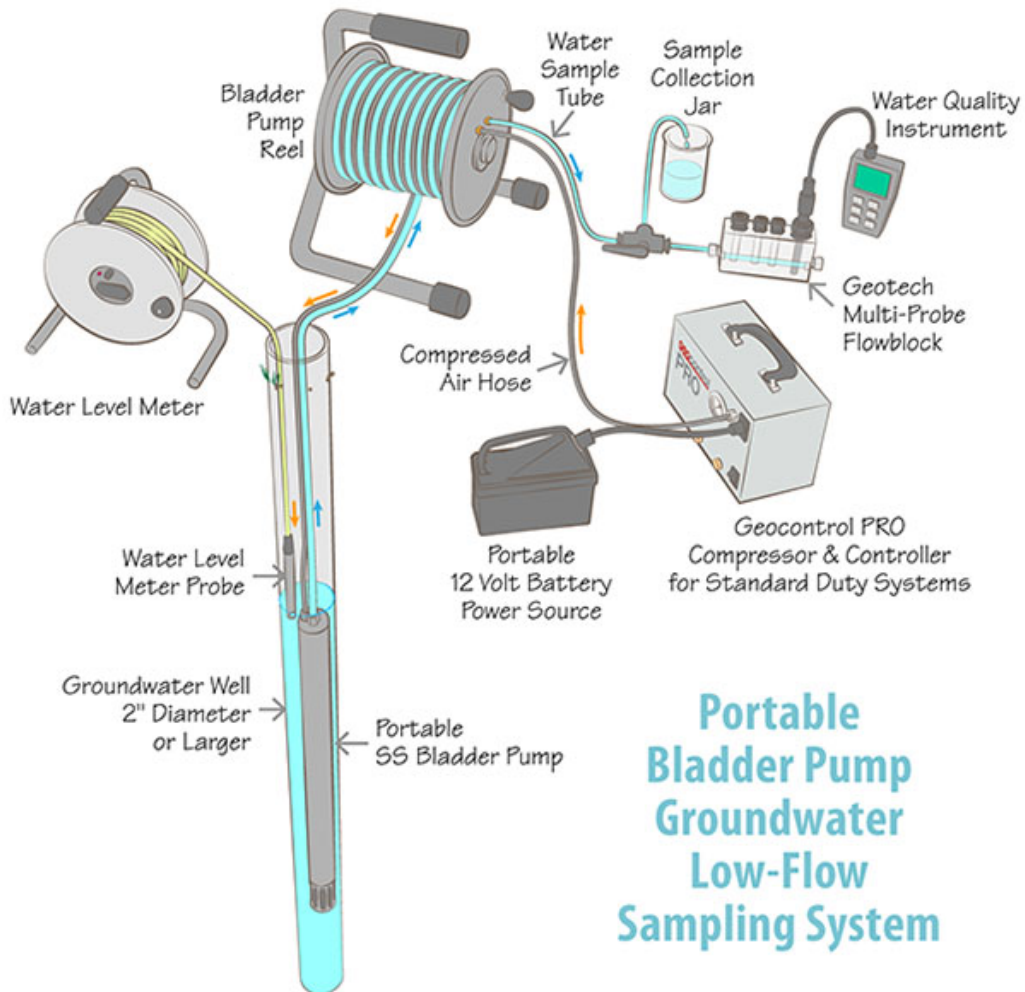
Let’s explore what is involved in the sampling and analysis steps, what are the sample cross-contamination possibilities (field & laboratory), and what is done to identify & minimize cross-contamination?

### Pre-sampling event preparation

- Develop sample list
  - Field samples – These samples quantify what is in the surface water and groundwater.
  - Field QC samples - Field duplicates, field blanks, equipment blanks, and trip blanks are QC samples used to detect cross-contamination. We'll discuss these below under "Field QC."
  - Lab QC samples – The laboratory will have their own QC program, summarized further below.
- Assemble materials and equipment
  - Acquire sample bottles and blank samples (show a VOC bottle)
  - Bottle decontamination procedures (cleaning by lab and/or suppliers)
  - Preservatives (Used to prevent the chemicals from changing)
  - Containers for protecting & transporting sample bottles (coolers, ice)
  - Sampling equipment (pumps and tubing, field meters, gloves, etc.)
  - Decontamination equipment & materials (e.g., non-phosphate soap, deionized rinse water)
- Chain of custody forms

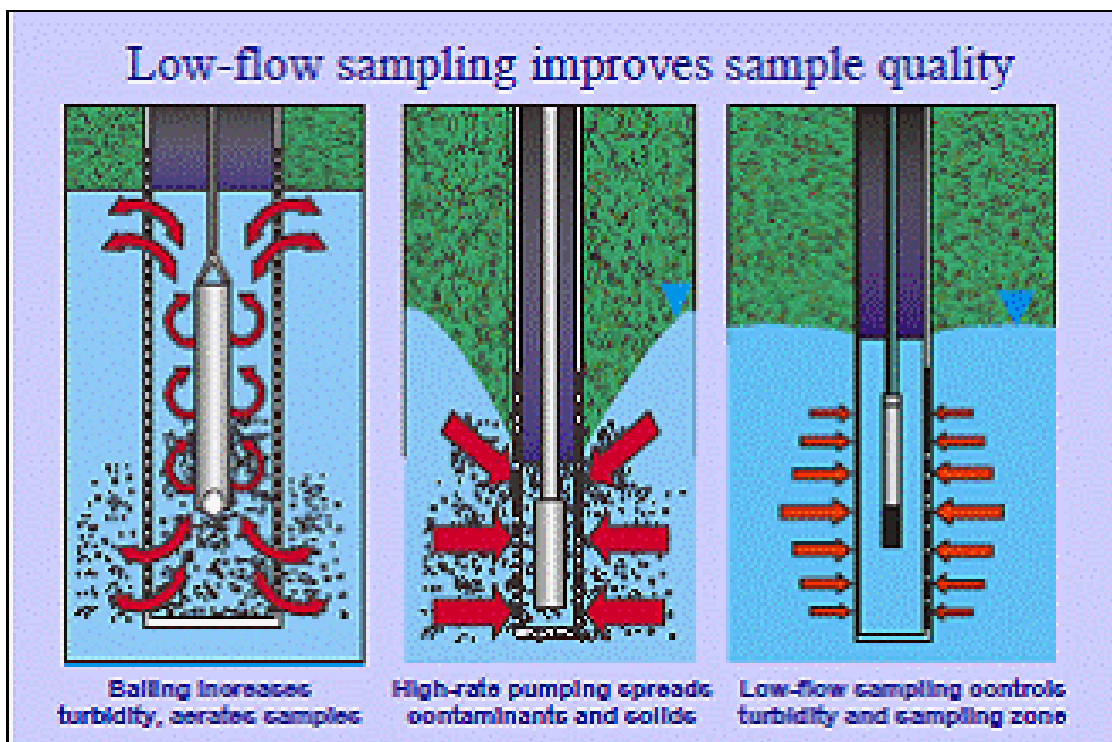
### Conduct the sampling

- Setup at sample site
- For each well
  - Purge the well to remove standing water not representative of the groundwater
    - Low-flow purge methods reduces loss of volatiles and stirring up the sediment trap
  - Sample the well
    - Use low-flow techniques for sampling; same reasons
  - Decontaminate equipment
- Surface water
  - Sample
  - Decontaminate equipment





Low flow sampling youtube; 12:42: <https://www.youtube.com/watch?v=LqZuhsystW0>



Field QC - The sampling described above involves a lot of handling; the laboratory analyses also involve handling. The purpose of QC samples is to test for breakdowns in the sample extraction, analysis or decontamination procedures.

- Field duplicates – Duplicate samples measure precision; the ability of the lab to reproduce the results. Typically, these are 10% of the field samples.
- Field blanks – Field blanks are used to detect contamination that might be introduced into the groundwater samples through the bottles used or the air around the samples. Each field blank is prepared by pouring the lab-prepared de-ionized or reagent quality water into the sample bottles at the location of one of the wells in the sampling program. The field blank is handled and shipped in the same manner as the rest of the samples. Typically, one per day is collected.
- Equipment blanks – Equipment blanks are used for sampling events where portable down-hole equipment (such as pumps or bailers) may contact the sample. These samples check the effectiveness of equipment decontamination procedures. Equipment blanks are collected by pouring de-ionized or reagent quality water into or over the sampling device (e.g., the bailer) after it has been decontaminated, then pouring the sample into an equipment blank bottle. The equipment blank is handled and shipped in the same manner as the rest of the samples. Typically, one equipment blank per day is collected.
- Trip blanks – Trip blanks are used to detect contamination that may be introduced in the field, in transit, or in the bottle preparation, sample log-in, or sample storage stages at the laboratory through the sample bottle seal or the bottle itself. Trip blanks are typically samples of reagent quality water prepared at the laboratory. They remain with the sample bottles while in transit to the site, during sampling, and during the return trip to the laboratory. Trip blank sample bottles must not be opened at any time during this process; the purpose is to test the seal of the sample bottle, as well as the bottle itself. Upon return to the laboratory, trip blanks will be analyzed using the same procedures and methods that are used for the collected field samples. Typically, one trip blank per transit is collected.

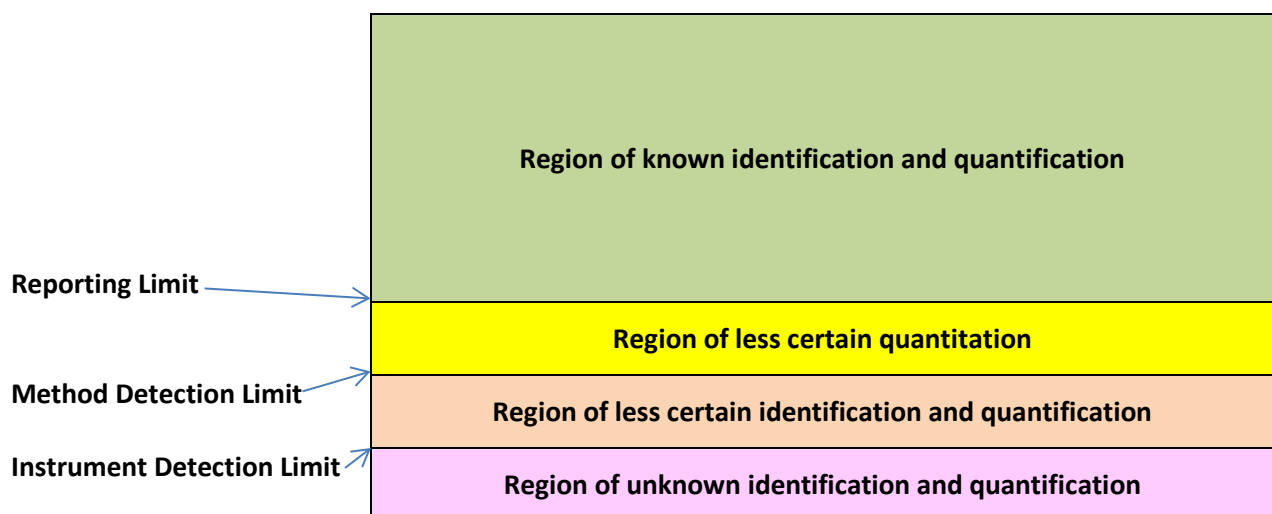
Transportation to laboratory – some considerations

- Coolers – Keeps the samples from heating up, breaching the bottle cap seal, and losing volatiles or introducing other chemicals.
- Holding times – The samples are not static; chemical and/or biological processes can change the concentrations of chemicals in the sample.
- Upon receipt, the lab checks the condition of sample bottles and temperature in the cooler.



Laboratory analyses of samples

- Analyses – The analyses use methods developed and certified by the US EPA and other entities. The laboratory must be certified by the state or the feds for every method they use.
- Reporting - Reporting limit (RL) vs method detection limit (MDL) vs instrument detection limit (IDL).
  - The IDL is the lowest concentration that can be detected by an instrument without correction for the effects of sample matrix or method-specific parameters such as sample preparation. In other words, what is the smallest concentration of just one chemical that can be detected in reagent grade water by that instrument assuming the test method introduces no variability. This represents 99% confidence that the signal is not random noise.
  - The MDL is the lowest concentration that can be detected by an instrument with correction for the effects of sample matrix and method-specific parameters such as sample preparation. In other words, what is the smallest concentration of one specific chemical that can be detected but necessarily accurately quantified in water with several other chemicals that do not cause matrix interference. This represents 99% confidence that the chemical concentration is greater than zero.
  - The RL is the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. RLs normally are arbitrarily set, rather than explicitly determined, at some multiple of typical MDLs for reagent grade water. Multiplying factors are given for various matrices such as groundwater, wastewater, soil and sludge, etc.



### Laboratory quality control and data validation

- Method blanks – Checks for cross-contamination in the analytical process; sample bottles are also used in this process. The method blank is typically de-ionized water or reagent grade water, before it is placed in the bottle. The test result should be zero; if not, the instrument gets cleaned.
- Laboratory control samples (LCS) & LCS duplicates – Laboratory samples with known concentrations are analyzed to assess accuracy of analytical method.
- Laboratory control spikes (matrix spike/matrix spike duplicate) – Add a known concentration to one of the field samples to assess for accuracy of the method and matrix interference; especially useful for landfill samples with multiple chemicals (e.g., is there rum in this eggnog? How much?).
- Initial calibration, continuing calibration, and internal machine standards – These are procedures required by each certified analytical method to ensure precision and accuracy.

### Discussion of observed QC Sample Results

- Reviewed 2S2015 sampling event data; this sampling event included leachate samples.
- Field QC samples
  - Duplicates – Duplicates collected for Wells MW-10 and E-23 had acceptable results (within about 10% of each other) except for calcium & magnesium although still within historical ranges.
  - Overall trip blanks, field blanks, equipment blanks – All detections were below RLs and above MDLs, reducing but not eliminating the usability of the data. Two equipment blanks collected at MW-3B had acetone detected in both below RLs. Since none was detected in any field sample, the source could not have been from the field. Acetone is a common laboratory cross-contaminant, used in washing equipment and materials. In general, the results indicate cross contamination from sample bottles and/or lab equipment, not from equipment decontamination procedures.
- The results for trip blanks, field blanks, equipment blanks, and method blanks were reviewed together to look for patterns and unusual detections. The two tables below summarize trip blank detections and method blank detections, and provides comments on the detections.

**Trip Blanks** - These are obvious sample bottle and/or laboratory equipment issues. Overall conclusions regarding landfills commonly discount these chemical detections.

Chemical	Number of Detections	Comments
Acetone	2	<ol style="list-style-type: none"> <li>1. Also detected in background Wells MW-9/MW-10; therefore, bottle or lab contaminant affected results</li> <li>2. Also detected in leachate samples that both had acetone with similar concentrations. Reasonable to expect acetone in leachate but not in background wells, so acetone results “considered suspect and unreliable.” THIS “SUSPECT AND UNRELIABLE CLASSIFICATION DOES NOT NECESSARILY APPLY TO OTHER SUBSTANCES DETECTED AT THESE WELLS.</li> </ol>
Methylene Chloride (MeCl)	3	Also detected in basin samples with similar concentrations; noted ten method blank detections of MeCl . MeCl was not detected other samples nor in leachate; therefore, it is reasonable to conclude MeCl is a lab issue, not a landfill issue.
Carbon Disulfide	1	Also detected in background Well MW-9, but in leachate samples. CS <sub>2</sub> also noted Lab Control Sample with CS <sub>2</sub> above upper control limits (overdetected) in same batch; may be an analytical method issue.

### Method Blanks Detections & some linked Laboratory Control Sample (LCS) Issues

Chemical	Number of Detections or Issues Noted	Comments
Acetone	1	Just one hit suggests acetone is only an occasional bottle and/or equipment cleaning issue
Methylene Chloride (MeCl)	10	With ten hits, these seems more like a laboratory equipment and/or materials issue (not sample bottles), since not detected in leachate.
Common Cations & Anions	1 (Mn) to 14 (Na) hits	These elements are common and found everywhere, including drinking water. Sodium (14) & alkalinity (9) had the most detections. All the method blank detections were below RLs and above MDLs (trace amounts), unlikely to affect the usability of the data.
Less Common Cations & Anions	2 (Mn, Ba) to 3 (Fe)	Less common but not rare. All the method blank detections were below RLs and above MDLs (trace amounts), unlikely to affect the usability of the data.
Silver	3	Seems odd to have this in a method blank; perhaps it's in some piece of lab equipment. Not in leachate, so won't affect data usability.
TKN & COD	TKN (1) & COD (2)	Commonly used in landfill programs; detected in leachate. Both cited a number of times in LCS samples as outside of recovery limits. Matrix interference is a common issue with these tests. Low concentrations relative to leachate, so unlikely to affect data usability.
Styrene, 3-methylphenol, 4-methylphenol	1 each	Not in leachate samples, so won't affect data usability.

#### Notes:

- Common cations and anions = sodium, potassium, calcium, magnesium, chloride, sulfate, nitrate, alkalinity (bicarbonate, carbonate)
- Less common cations and anions = manganese, barium, iron

### Discussion and Conclusions

- The ability of modern analytical testing methods and equipment to detect tiny (e.g., part per trillion) amounts of chemicals can and does exceed the ability to decontaminate sample bottles and equipment, and/or avoid matrix interference (i.e., non-target but similar chemicals can interfere with the detection of the chemical you're looking for). Some chemicals are very common everywhere (e.g., sodium, calcium, magnesium, chloride, sulfate, bicarbonate). Some chemicals are used in the analytical process to extract and detect other chemicals (e.g. MEK).
- Known lab cross-contaminants due to use in cleaning or analysis or both (e.g., acetone, MeCl).
- The detection of trace concentrations of cleaning and/or analytical chemicals does not affect the usability of the data so long as the cleaning chemicals are not also detected in the field samples. For example, some chemicals detected in the assorted lab QA/QC samples (e.g., styrene, 3-methylphenol, 4-methylphenol) were not detected in the field samples. To the extent possible, labs do purposely use chemicals not anticipated in the field samples to clean and perform the analyses so as not to affect the data usability. However, to set their calibration curves and other measuring criteria, they do have to analyze anticipated chemicals and their surrogates, meaning chemicals anticipated to be in field samples are also being handled in the lab.
- The environment has lots of natural variability, so tend to look only for order of magnitude differences.
- BTW - A quick Google search returned articles noting accuracy issues with TKN analytical method.

So, having said all that, what do we think? Overall, the observed "noise" does not appear to be affecting the usability of the data. That being said, there does seem to be a lot of noise, relative to other sampling projects we have conducted and laboratories we have used. However, we would not recommend that Waste Management change labs. Each lab has its own equipment, and there may be some variability between labs. This could disrupt trend analyses, which are an important part of long-term monitoring.

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# memorandum

date January 2, 2017  
to ALRRF Community Monitor Committee  
from Michael Burns, Kelly Runyon  
subject CMC Meeting of 1/11/17 - Agenda Item 6.3 - Review of Reports Provided by ALRRF

## **Conservation Plan Area 2015 Monitoring Survey Report**

### Executive Summary

The CPA 2015 Monitoring Survey is an improvement over that of the previous year but appears to have some deficiencies in scope: the Plan's goals for Range Management and Sensitive Plants are not addressed, and burrowing owl and San Joaquin Kit Fox observations were not made. (However, formal wildlife observations may not be necessary between 2014 and 2018; we are seeking clarification on this point.) The report does not appear to have been carefully edited for content, as statements in a few areas seem to contradict findings reported elsewhere in the report.

There are valuable findings in the report: the presence of rare and appropriate plants at the mitigation wetland pond; invasive plants at that pond and other wetland areas; breeding populations of both California Red-Legged Frog and California Tiger Salamander; and the presence of invasive, predatory bullfrogs in one of the stormwater basins. The report identifies several long-term risks to the environment (invasive plants and animals) but does not indicate a dramatic change that would require immediate remediation to protect public health or the environment.

### Detailed Review

This report was written by the biological monitoring consulting firms for the 991.6-acre ALRRF Conservation Plan Area (CPA), DUDEK and BioMaAS, Inc. (together, the DUDEK team). It covers calendar year 2015 and was forwarded by ALRRF staff in early August of this year. An overview was provided for the Committee's October 12, 2016 meeting. The Committee requested further review by a qualified botanist and wildlife biologist from Environmental Science Associates. ESA provided the same staff that reviewed the initial 2014 CPA Baseline and Monitoring Reports for 2014: Rachel Brownsey, Botanist/Restoration Ecologist; and Julie Remp, Senior Wildlife Biologist. Both have mitigation monitoring experience with projects in eastern Alameda County, in similar habitats.

Their reviews are summarized immediately below. In general, although the quality and clarity of the report is improved over the initial 2014 report, there is room for further improvement. Moreover, this report presents at best a partial effort toward compliance; many of the Performance Standards adopted for mitigations of Fill Area 2 expansion are not discussed and may not have been evaluated by the monitoring work performed in 2015. The lack

of feedback from the agencies that receive this report is also a concern, but that is beyond the control of the ALRRF, its consultants, or the Community Monitor Committee.

#### Botanical Surveys: Summary of Review

- The timing of the surveys was appropriate.
- For the Mitigation Pond, Performance Standard #3 (PS3), requiring 20% of the shoreline to provide escape cover for California Red-Legged Frogs, was misinterpreted in one section of the report. Nevertheless, the report correctly reached the general conclusion that the standard had not yet been met.
- The monitoring method for PS3 at the Mitigation Pond was much more detailed than necessary to determine whether PS3 was satisfied.
- Two of the three vegetation-related performance standards are not directly addressed in the report: PS7 (Range Management) and PS11 (Sensitive Plants).
- It was useful and appropriate for the report to describe the new occurrence of a rare plant, crownscale, and an invasive plant, perennial pepperweed, at the mitigation pond site. WMAC should include perennial pepperweed in future treatment efforts, to keep it from spreading and ultimately eliminate it.

#### Wildlife Surveys: Summary of Review

- The description of surveys for California Tiger Salamander (CTS) eggs is unclear about the number and timing of those surveys.
- Surveys for eggs of the California Red-Legged Frog (CRLF) appear to have been done much later than specified in the Conservation Management Plan. Indeed, most of the egg masses that were found had hatched or were hatching.
- The reporting on surveys for amphibians is unclear about the numbers and locations of those surveys. The text and the tables sometimes present conflicting information about what was found in the field.
- Not enough information was presented about the survey personnel or their equipment (e.g., flashlight candlepower) to determine if regulatory agencies' criteria were being met.
- The primary map in the report (Figure 1) lacks labels to help the reader understand where the survey findings provided in Table 1 occurred.
- In a discussion of special status species, Storm Water Basin A was described as containing bullfrogs that could threaten the CTS and CRLF in other ponds; but in the more detailed description of the surveys' results, no mention is made of those bullfrogs.
- The report clearly documents an important finding: It does appear that breeding is occurring for CTS and CRLF within the study area.

#### Botanical Surveys: Details

For vegetation monitoring there are not formal protocols or standards (with the exception of rare plant surveys), but there are definitely correct and incorrect ways to apply field methods to address certain questions about vegetation. The methods and analysis were compared with the Performance Standards from the Conservation Management Plan (CMP). At this time, ESA only has the Performance Standards section of the CMP.

For most compensatory mitigation projects (e.g. pond creation) performance standards are established based on the goals and objectives of the compensatory mitigation. Therefore, evaluating whether the performance standards are being achieved tells you if the mitigation site is performing as intended. The performance standards related to vegetation include:



Performance Standard 3 – Vegetation. A minimum of 20 percent of the shoreline along the deep water section of each pond shall be vegetated in all years in order to provide escape cover for CRLF.

Performance Standard 7 – Range Management. The CPA will be maintained in a condition conducive to attract SJKF. To this end, and consistent with the Grazing Management Plan, the grasslands will be operated to maintain a level of residual dry matter between 400 and 700 pound/acre at the end of each grazing season. This will assure that grasses and forbs are maintained at heights between 2 and 4 inches, which is optimum for California ground squirrel, San Joaquin Kit Fox, and Western Burrowing Owl.

Performance Standard 11– Sensitive Plants. The CPA will be used to establish at least two subpopulations of non-listed sensitive plants (stinkbells and San Joaquin saltbush).

The DUDEK team used cover type mapping and vegetation transect monitoring (point-intercept method) to quantitatively map and describe the vegetation at the created Mitigation Pond. For the other existing wetland features, only cover type mapping was conducted. These methods are the same as the baseline monitoring in 2014. Monitoring occurred on July 9th 2015, which is appropriate timing for this site given the seasonal inundation of wetland features.

The transect monitoring employed by the DUDEK team measures percent vegetation cover by species, and the species cover percentages can be summed to represent total vegetation cover. The total vegetation cover value for the Mitigation Pond bottom was used to evaluate conformance with Performance Standard 3 (PS3). For the mitigation pond the value was 26 percent cover on the pond bottom, and Section 3.5.2.6 states that PS3 was met. However, **the performance standard is “20 percent of the shoreline”, not 20 percent cover on the shoreline.** So, a better approach for assessing this standard is to use the cover type mapping which would show which parts of the shoreline are vegetated and which are not. Presumably, this is how the DUDEK team arrived at their conclusions in Sections 2.3 and 4.2 where they assert that neither the wetland features nor the Mitigation Pond met PS3 (thereby contradicting the conclusion in Section 3.5.6.2). However, a more quantitative and transparent approach could have been taken here, such as delineating the “deep water sections” within each wetland feature and at the Mitigation Pond, then overlaying the cover type map and calculating (in GIS) the percent of the deep water section that is vegetated and the percent that is not vegetated. The cover type map for the Mitigation Pond is provided in the report, but there is no figure showing the cover type mapping for the wetland features.

Overall, the performance standards for vegetation are minimal and, with the exception of PS11, are focused on habitat components for special-status wildlife. It is therefore puzzling why such a labor-intensive transect monitoring approach was taken at the Mitigation Pond. The careful documentation of vegetation composition and exotic vs. native species, while interesting, does not contribute to the evaluation of success in relation to the habitat goal of the mitigation pond: California red-legged frog (CRLF) and California tiger salamander breeding habitat and CRLF summer refuge habitat. As stated in Section 3.2 Vegetation Standards, the CMP does require both “cover type mapping and vegetation sampling to determine If the pond is meeting success criteria,” but vegetation sampling is not needed to address the performance standards.

Performance Standards 7 and 11 are not discussed in the 2015 monitoring report, although the population of crowscale (*Atriplex coronata* var. *coronata*, California Rare Plant Rank 4.2) at the Mitigation Pond was adequately mapped and described.

Finally, the DUDEK team was right to document the perennial pepperweed that is beginning to invade the Mitigation Pond. WMAC should follow through with the recommendation in 4.3 to include perennial pepperweed in future treatment efforts.

### Wildlife Surveys: Details

California tiger salamander and California red-legged frog were surveyed for the second year by the DUDEK team. Review of the survey methods and results in the report uncovered some discrepancies and errors that need further clarification.

In section 1.1.1 CTS Egg Surveys, surveys were conducted during January-February but the number of surveys conducted or the dates of surveys were not stated so it is unclear how many surveys were performed and at what locations. This section also states “due to the presence of tall vegetation at Pond 6 and Storm Water pond A (SW A) a boat was used to survey.” However, in Table 1: Results of the California Tiger Salamander (*Ambystoma californiense*; CTS) and California Red-legged Frog (*Rana draytonii*; CRLF) Surveys Performed During the First Quarter of 2015, the footnote states SW A and SW C were not surveyed.

This section also addressed other species observed, and it incorrectly states Pacific tree frog (*Pseudacris regilla*) as present. In central California, the Pacific tree frog has been reclassified as Sierran treefrog (*Pseudacris sierra*).

In section 1.2.1 CRLF Nocturnal Surveys, one nighttime survey was performed on Feb. 3, 2015 using flashlights and auditory surveys. The report does not specify which sites were surveyed and which were not (if any). This section states “two adult individuals of CTS were observed in Pond 1 (Fig. 1, Table 1) and one was heard calling in Pond 12.” However, in Table 1, Pond 1 is negative for CRLF while Pond 6 had both egg masses and adults (though the number of adults is not noted). According to the CMP, surveys will include “daytime and nighttime surveys between the first and third weeks of March at all existing wetlands within the CPA.” The report does not discuss any CRLF surveys during this specified time.

In section 1.2.2 CRLF Egg Surveys, as stated one survey was conducted on April 29 of all the water features simultaneously with CTS larvae surveys. According to the CMP, CRLF egg-mass surveys should occur within one month of the first substantial rains in fall/winter. April 29 was well after the first substantial rain in fall/winter, and the report states most of the egg masses had hatched or were hatching. The statement that all water features were surveyed contradicts Table 1 and section 1.1.2 CTA Larvae Survey stating SW A “was not feasible to effectively survey.” The second paragraph also states “Because CRLF egg masses were not observed during our last surveys (March) at Storm Water pond A (SW A), no survey was performed at this time.” This statement implies CRLF egg mass surveys were conducted earlier; that should be detailed in this section.

The report does not state that larval surveys for CRLF were conducted during early July as specified in the CMP. Furthermore the nocturnal survey methods did not document their conformance with the USFWS Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (August 2005), which states “Nighttime surveys shall be conducted with a Service-approved light such as a Wheat Lamp, Nite Light, or sealed-beam light that produces less than 100,000 candle watt. Lights that the Service does not accept for surveys are lights that are either too dim or too bright. For example, Mag-Light-type lights and other types of flashlights that rely on 2 or 4 AA’s/AAA’s, 2 C’s or 2 D batteries. Lights with 100,000 candle watt or greater are too bright and also would not meet Service requirements.” Also, qualifications of surveyors were not discussed so it is unclear if surveyors met the standards of the protocols. Without datasheets or more details on the survey methods it is impossible to determine whether survey timing, weather conditions, and equipment followed protocol recommendations.

Lastly, Figure 1 does not clearly label the water features so it is difficult to correspond the written results and results in Table 1. The CMP identifies 12 water features (6 ponds, 5 wetlands, and 1 mitigation pond) that should be surveyed. In future survey efforts, reporting should try to correspond site labels and identification with original naming for accurate comparison.

Overall, it is difficult to determine the accuracy of surveys and results due to lack of details on survey dates, locations, and methods, as well as conflicting statements throughout the sections. At a minimum, survey datasheets should be included for review; and the figure and table should be checked for consistent/accurate information.

Despite the confusing results presented in the report, it does appear that the surveys successfully identified both breeding CTS and CRLF within the study area, though only CTS eggs were documented in the Mitigation Pond and were in fair condition due to excess sedimentation.

In section 4.1 Special-status Wildlife Species, the last paragraph states “The presence of bullfrogs in Storm Water pond A (SW A) is a risk of potential dispersal of this non-native predator to neighboring water features which will be detrimental to CRLF and CTS presence.” However, bullfrogs were not mentioned as being documented during this year’s surveys. Since Performance Standard 4 Non-Native Aquatic Predator Control specifies controlling bullfrogs and Centracids (sunfish and largemouth bass), efforts to accurately document and report these non-native species should be made during surveys.

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# memorandum

date January 2, 2017

to ALRRF Community Monitor Committee

from Kelly Runyon

subject CMC Meeting of 1/11/17 - Agenda Item 6.4 - Update re Fill Area 2 Status and Related Issues

As noted in an earlier Agenda Item, the Central Valley Regional Water Quality Control Board has updated its permit requirements for the ALRRF (the Waste Discharge Requirements and related documents including the Monitoring and Reporting Program, Sample Analysis Plan, etc.). These updates were all in place in mid October 2016. On October 25, three Water Board staff inspected the ALRRF, escorted by ALRRF staff. On November 21 and 22, and December 2, three distinct Notices of Violation (NOVs) were written, describing the following:

## Violations

- Acceptance of hazardous waste that had not been properly characterized, from a site in San Rafael, between February and August 2016; over 2,500 tons in all. The responsibility for characterizing the waste and fully reporting the results may lie with others (the violation notice is unclear on this point), but by accepting that waste, the landfill violated a permit condition.
- Expansion of the green waste and wood waste operation run by lessee Bio-Fuel Systems Inc., outside the area identified in the ALRRF Joint Technical Document.
- Widespread windblown and water-carried litter, outside of the landfill area designated for its containment.
- At the FA2 leachate pond: Stabilize the site (prevent erosion), add stormwater controls, revise the monitoring program, correct the expected completion date, and check that the reported risk level is still correct.
- Implement erosion controls where needed; check that new Fill Area 2 (FA2) storm water basins were designed to meet current design criteria.
- Implement formal storm water controls and monitoring for the tire shredding and wood waste processing areas.

## Areas of Concern

- Past leachate seeps, and potential future slope instability, on the south slope of Fill Area 1.
- Enlargement of surface impoundments, and excavation for future compost processing, without Water Board review and / or approval of design.

The NOVs require several progress reports that have a variety of due dates in early 2017.

Meanwhile, the physical status of Fill Area 2 has changed little since the previous Committee meeting in mid October. No significant erosion damage has been seen on FA2 slopes, and the FA2 leachate pond has been lined and fenced, with monitoring features (wells etc.) installed. Litter cleanup efforts have been made on the west slope of the Phase 1 area, with obvious improvement, but strong winds at the site will continue to impact that area with litter.

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# memorandum

date January 2, 2017

to ALRRF Community Monitor Committee

from Kelly Runyon

subject CMC Meeting of 1/11/17 - Agenda Item 6.5 - Reports From Community Monitor

Attached are inspection reports for September through December of 2016.

The September inspection was unannounced and took place on September 30, with the LEA.

The October inspection was announced and took place on October 12.

The November inspection was announced and took place on November 10 at 5:30 AM (off-hours).

The December inspection was announced and took place on December 2.

During these inspections, all landfill operating areas were observed. Recent LEA inspection reports were reviewed on-line. The Special Occurrences Log was reviewed in December.

In these inspection reports, two areas of special interest are marked with blue highlight. The first describes the test area for a final cover system that the ALRRF is proposing as an alternate to the regulatory “default method”, an impervious cover made using a membrane or very low permeability soil. The second blue highlight notes an unusual incident, in which a California Tiger Salamander had been found in a construction trench just prior to a Community Monitor site inspection.

Issues that cause special concern are marked with yellow rectangles in the monthly inspection reports. There were several issues during the last four months of the year, listed below. They include :

- The receipt of hazardous liquid waste at a solidification basin, and its subsequent removal when notified by the generator.
- The issuance of a Violation to the ALRRF by the Regional Water Board because the stockpile of scrap wood on the site leased from ALRRF by Bio-Fuels Systems had outgrown its designated area.
- A separate Notice of Violation because discarded materials (several small stacks of pallets) were found in Fill Area 2, which is not yet permitted to receive wastes.

Also attached are graphs showing monthly tonnages by type of material for the most recent 12-month period. Figure 6.5-1 shows the breakdown of materials that make up Revenue-Generating Cover. Figure 6.5-2 shows these same quantities, plus the Municipal Solid Waste (MSW) and Special Waste tonnage for each month. In response to Committee members’ concern about an influx of material from the City of Newark, monthly tons from Newark are superimposed on the figure, as a line graph. The surge in February and March was due to a large Newark construction project that had wastes that needed to be disposed. The surge in August is the salt-and-soil mixture from Newark salt ponds, discussed at the previous meeting.

Very substantial quantities of biosolids are also apparent in the data from September and November. Quantities this large have been delivered in years past, but typically in August as wastewater facilities are working to increase capacity shortly before the wet season. In addition, a new stream began to be accounted for in October: shredded wood from Bio-Fuel Systems Inc., used as dry material for solidification.

**ALRRF Community Monitor Monthly Report****September 2016**Monthly Tonnage Report for August 2016, received September 16, 2016

Tonnage Summary:		<u>tons</u>
Disposed, By Source Location		
1.1	Tons Disposed from Within Alameda County	91,153.05
1.2	Tons Disposed from City of San Francisco TS	0.00
1.3	Other Out of County Disposal Tons	1,821.41
	subtotal Disposed	<u>92,974.46</u>
Disposed, By Source Type		
2.1	C&D	450.44
2.2	MSW	89,732.84
2.3	Special Wastes	2,770.55
	subtotal Disposed	<u>92,953.83</u>
	Difference, (due to one refuse load logged as cover in August):	-20.63    -0.02%
Other Major Categories		
2.4	Re-Directed Wastes (Shipped Off Site or Beneficially Used)	11.66
2.5	Revenue Generating Cover	46,367.95
	Total, 2.1 - 2.5	139,333.44
Materials of Interest		
2.3.1	Friable Asbestos	984.69
2.3.2	Class 2 Cover Soils	25,234.34
2.5.1	Auto Shredder Fluff	14,235.58
2.5.2	Processed Green Waste/MRF fines, Beneficial Use (GSET)	117.23
2.5.3	MRF Fines for ADC	1,584.52



**ALRRF Community Monitor Monthly Report****September 2016**Site Inspection September 30, 2016, 10:00 AM - 12:00 noon.

- Attended by K. Runyon and Wing Suen (LEA); escorted by Jamison Pfister. Unannounced.
- Two tipplers were operating at the working face. One dozer and two compactors were spreading material. Fill was being placed along the west side of Fill Area 1, overlooking the entry road, within the Class 2 portion of the site. A second, smaller dozer was pushing cover material into position for use later in the day.
- The public disposal area was on the opposite side (east side) of Fill Area 1, at the southeast corner of the Class 2 portion of Fill Area 1.
- The C&D materials bunker was between 1/2 and 3/4 full, with several metal appliances stockpiled adjacent to the bunker. No prohibited items were seen.
- The plant debris bunker was empty. Several metal appliances were next to the C&D bunker.
- Winds were strong and increasing, estimated at 20 - 30 MPH, from the north. Most litter fences were practically blinded by litter. Due to strong north winds the previous day, there were portable litter fences to the south of the working face. Because of the low height of the portable fences, some litter had escaped and fallen onto the south-facing outside slope of the landfill. The litter-picking crew was working in that area.
- Solidification areas were not observed.
- In the asbestos area, a load had been placed for disposal but not yet covered. The wind was starting to move lighter bags away from the main pile. The LEA did not express concern about this.

Observation of Environmental Controls

- The large flare (A16), internal combustion engines, turbine plant, and LNG plant all were operating.
- Adjacent to the two ponds at the leachate treatment plant (one had been lined and used to store raw water; the other had been excavated but not used), the storage area ("boneyard") had been cleared. The raw water pond remained empty. Much of its membrane liner had been stripped back but was still in the pond.
- Some litter was noted along Altamont Pass Road, west of the site entrance.

Fill Area 2

- Phase 2 excavation was complete. The groundwater seeps south of the Phase 1 area were dry.
- Staff reported that the gravel "windows" on the west side of Phase 1, which conduct leachate to the underdrains, will be closed off with black plastic during the upcoming wet season.



Phase 2 excavation, with wattle, benches and downdrain in place.

**ALRRF Community Monitor Monthly Report****September 2016**Stormwater Controls and Best Management Practices

- Water has been extracted from ponds to create capacity for the wet season. This water is used on site for dust control.
- The water in Stormwater Basin A continued to support the growth of algae. The Basin A water level was very low.
- Basin B, and the new basin upslope of B, were dry. Basin C was not observed.
- North of Fill Area 2, basin SW-1 was very low.
- South of Fill Area 2 Phase 1, the upper and lower portions of basin SW-A were both dry.
- Crushed concrete is being prepared and placed in high traffic areas, including access roads, the asbestos fill and the wet-weather tipper pad.

Compost Site Preparation

- Soil stockpile 5, northwest of Fill Area 2, is being graded for possible future use as a compost site, pending approval by the Regional Water Board and other agencies.

Final Cover Demonstration Area

- A test area for the proposed final cover system has been identified on Fill Area 1, west of the asbestos fill area. Currently, it is not at final elevation and is covered with soil. It appears to be in the Class 3 portion (unit 1) but close to the Class 2 portion (unit 2). The test area will be developed when the Regional Water Board approves the test plan.

## ALRRF Community Monitor Monthly Report

October 2016

Monthly Tonnage Report for September 2016, received October 17, 2016

Tonnage Summary:		<u>tons</u>	
Disposed, By Source Location			
1.1	Tons Disposed from Within Alameda County	66,215.70	
1.2	Tons Disposed from City of San Francisco TS	0.00	
1.3	Other Out of County Disposal Tons	<u>1,747.35</u>	
	subtotal Disposed	<u>67,963.05</u>	
Disposed, By Source Type			
2.1	C&D	495.42	
2.2	MSW	64,948.86	
2.3	Special Wastes	<u>2,539.40</u>	
	subtotal Disposed	<u>67,983.68</u>	
	Difference, correction for 1 refuse load logged as cover in August	20.63	0.03%
Other Major Categories			
2.4	Re-Directed Wastes (Shipped Off Site or Beneficially Used)	8.19	
2.5	Revenue Generating Cover	45,375.14	
	Total, 2.1 - 2.5	113,367.01	
Materials of Interest			
2.3.1	Friable Asbestos	984.98	
2.3.2	Class 2 Cover Soils	15,757.00	
2.5.1	Auto Shredder Fluff	13,050.21	
2.5.2	Processed Green Waste/MRF fines, Beneficial Use (GSET)	167.49	
2.5.3	MRF Fines for ADC	1,867.38	

**ALRRF Community Monitor Monthly Report****October 2016**Site Inspection October 12, 2016, 10:00 AM - 12:00 PM.

- Attended by K. Runyon with M Gan and A Harris from City of Livermore; escorted by Sarah Fockler. Announced.
- Working face is near the southwest corner of Fill Area 1. Public tipping area is adjacent, to the north.
- One tipper was operating; two transfer trucks were waiting to unload. One compactor and one dozer were placing and compacting tipped refuse.
- A third truck, City of Berkeley, chose to self-unload using its "live floor" conveying system. Bird cannon is operating; seagull population is relatively low.
- The middle solidification pit was being rebuilt after it was emptied because a hazardous liquid waste had been mischaracterized and sent to the site. ALRRF staff stated that the Regional Water Board has issued a violation to the landfill for receiving this material. The material did not get beyond the solidification basin; it was not placed in or on the landfill itself.
- The west solidification pit was in use. There was nothing unusual at the plant debris and C&D material bunkers.

Observation of Environmental Controls

- The suspected tamarisk trees at the truck wash water storage pond were treated by the County pest control agency and appear to be dead.



- Construction was observed at the Fill Area 1 leachate ponds, near the southeast corner of Fill Area 1. Clay liner material was being blended and prepared in the south pond; the north pond was being excavated.



- Litter collection has been progressing from north to south across the west slope of Fill Area 2 Phase 1. A separate portion of that slope, south of the Phase 1 area, had also been cleaned of litter.

**ALRRF Community Monitor Monthly Report****October 2016**Fill Area 2

- The area was quiet, except for a small amount of construction work at the FA2 leachate pond.

Stormwater Controls and Best Management Practices

- Stormwater Basin A water level was lower than normal, with some algae visible below the surface.
- The Basin B water level was very low, with a minor amount of litter on the land between the water line and the discharge elevation.
- Basin C was not directly observed, but the burned area near Basin C was unchanged; the charred area was still obvious.
- For Fill Area 2, Phase 2, erosion controls have recently been placed on exposed slopes. Slopes on Slopes in Fill Area 1 have also had erosion controls installed, including wattle (straw rolls) and mats. In addition, bulldozers have "track walked" on slopes to create horizontal furrows that reduce stormwater velocity.
- Throughout the site, some but not all drainage ditches have been cleaned.

Compost Site Preparation

- Grading of soil stockpile 5 is continuing, to set up a Covered Aerated Static Pile (CASP) compost area. The adjacent hill was being leveled to provide an area for compost "curing", the stage which follows active composting.
- Staff reported that a draft modification to the County Integrated Waste Management Plan (CoIWMP), describing the compost operation, has been sent to the Waste Management Authority (Stopwaste) for review.

Final Cover Demonstration Area

- Staff reported that the required demonstration test area for the proposed final cover system has been proposed to the Regional Water Board. As proposed, the 10-acre area would be partially on the Class 2 portion of the site and partially on the Class 3 area.

**ALRRF Community Monitor Monthly Report****November 2016**Monthly Tonnage Report for October 2016, received November 15, 2016

Tonnage Summary:		<u>tons</u>	
Disposed, By Source Location			
1.1	Tons Disposed from Within Alameda County	65,034.36	
1.2	Tons Disposed from City of San Francisco TS	0.00	
1.3	Other Out of County Disposal Tons	1,978.15	
	subtotal Disposed	<u>67,012.51</u>	
Disposed, By Source Type			
2.1	C&D	464.65	
2.2	MSW	62,029.95	
2.3	Special Wastes	4,517.91	
	subtotal Disposed	<u>67,012.51</u>	
	Difference	0.00	0.00%
Other Major Categories			
2.4	Re-Directed Wastes (Shipped Off Site or Beneficially Used)	12.17	
2.5	Revenue Generating Cover	62,427.98	
	Total, 2.1 - 2.5	129,452.66	
Materials of Interest			
2.3.1	Friable Asbestos	1,107.08	
2.3.2	Class 2 Cover Soils	33,196.72	
2.5.1	Auto Shredder Fluff	12,897.12	
2.5.2	Processed Green Waste/MRF fines, Beneficial Use (GSET)	81.01	
2.5.3	MRF Fines for ADC	1,984.17	

**ALRRF Community Monitor Monthly Report****November 2016**Site Inspection November 10, 2016, 5:30 AM - 7:30 AM.

- Attended by K. Runyon; escorted by Terry Medeiros. Announced; off-hours.
- At the scale area, a water valve had been left open longer than required in the truck wash system, and excess water was overflowing from its storage basin nearby. This did not create a hazardous situation, and it was already under control. The recent repaving of the area prevented damage to the road.
- The entry road between the scales and the active landfill is in good condition, well lit.
- According to ALRRF staff, the Water Board has required that the final-cover demonstration area not straddle both the Class 2 and Class 3 portions of the landfill. Consequently the ALRRF will place it entirely on the Class 3 area, with part of it extending over the steep front (south) face of the landfill. As a first step, the 10-acre test area was being filled to reach its final elevation. The test area is referred to as the "ET" (for evapotranspiration) cover area, because it will use surface vegetation rather than an impervious liner to keep rainwater from reaching the subsurface.



**Steep portion of ET cover area, viewed from below**

- Two tippers were available at the working face. Arriving transfer trailers, including those brought from the "drop and hook" holding area near the scale house, were able to unload immediately. One dozer and two compactors were spreading material. Fill was being placed at the south edge of Fill Area 1, on the east side. The tipping area had been winterized by placing broken concrete on the ground surface.
- No gulls were present this early in the day. Staff mentioned that they had seen several gray fox, and one red fox, in recent weeks.
- Soil was being extracted from later-phase portions of Fill Area 2, for use in the ET cover test.
- The C&D bunker and the plant debris bunker were less than half full. A TV set was noted in the C&D pile; the standard procedure is to remove it and ship it as e-waste.
- The green waste bunker was empty. The two original solidification basins were in use; the third was empty and available for use.
- The middle (of three) solidification pits had been found to contain hazardous material, has been emptied and rebuilt; it is being tested prior to being put back into service.

**ALRRF Community Monitor Monthly Report****November 2016**Observation of Environmental Controls

- Landfill gas wells were being installed where needed throughout Fill Area 1. A track-mounted drill rig was being used so that work could continue in wet weather.
- Litter was nearly gone from some parts of the Fill Area 2 excavation, and it was much reduced on some Fill Area 1 side slopes. The new crew of full-time litter pickers has been making gains.

Stormwater Controls and Best Management Practices

- Basin A water level remained low (had risen slightly) and still showed traces of algae below the surface.
- Basin B water level was very low. No water was stored in the detention basin above Basin B.
- Basin C and the Fill Area 2 stormwater basins were not observed.
- Ditches, drains and inlets were generally clear. Wattle on slopes appeared to be functioning as intended.

Fill Area 1 Leachate Ponds

- The shallow existing ponds have been excavated to their design depth, and an impervious synthetic (plastic) liner has been installed in each. Markings on the liners indicated that they had recently been tested for leakage.

Fill Area 2

- No erosion problems were seen in Fill Area 2. The area is being maintained but construction of Phase 1 (including liner) and 2 (excavation only) appears complete.

Compost Site Preparation

- Rough grading of Soil Stockpile 5 appears to be complete, and the leveling of the adjacent hill is continuing.



**ALRRF Community Monitor Monthly Report**

**December 2016**

Monthly Tonnage Report for November 2016, received December 15, 2016

Tonnage Summary:		<u>tons</u>
Disposed, By Source Location		
1.1	Tons Disposed from Within Alameda County	67,440.99
1.2	Tons Disposed from City of San Francisco TS	0.00
1.3	Other Out of County Disposal Tons	<u>3,528.58</u>
	subtotal Disposed	<u>70,969.57</u>
Disposed, By Source Type		
2.1	C&D	377.80
2.2	MSW	65,995.02
2.3	Special Wastes	<u>4,618.15</u>
	subtotal Disposed	<u>70,990.97</u>
	Difference, correction for 1 refuse load logged as cover in October	21.40      0.03%
Other Major Categories		
2.4	Re-Directed Wastes (Shipped Off Site or Beneficially Used)	21.18
2.5	Revenue Generating Cover	60,225.22
	Total, 2.1 - 2.5	131,237.37
Materials of Interest		
2.3.1	Friable Asbestos	1,015.33
2.3.2	Class 2 Cover Soils	26,327.54
2.5.1	Auto Shredder Fluff	15,679.99
2.5.2	Processed Green Waste/MRF fines, Beneficial Use (GSET)	121.80
2.5.3	MRF Fines for ADC	1,634.65



**East edge of Bio-Fuel Systems wood pile**  
(see next page for discussion)

**ALRRF Community Monitor Monthly Report****December 2016**Site Inspection December 2, 2016, 10:00 AM - 12:00 PM.

- Attended by K. Runyon; escorted by Sarah Fockler. Announced.  
This visit began with a look at the wood waste stockpile at the adjacent Bio-Fuels System site, which occupies property apparently leased from Waste Management, adjacent to the ALRRF scale house, the LNG plant, and a transfer trailer holding area. The size of the wood waste stockpile has been an issue for some time; Bio-Fuels has a permit to operate from CalRecycle, but the LEA has written Violation notices against Bio-Fuels with every monthly inspection visit since January 2016 for holding wood waste beyond their permitted 7-day limit. In fact the October Violation noted that some piles of wood had been on site since January. In addition, the Water Board issued a violation notice to the ALRRF, dated November 22, indicating that this operation was in violation because the wood pile is significantly larger than, and in a different location than, the description in the ALRRF Waste Discharge Requirements. See photo on previous page.  
The root cause of this issue is the lack of a market for wood fuel over the last 12 to 18 months.
- One tipper was available at the working face, which was the ET cover demonstration area. One dozer and one compactor were spreading and compacting refuse, continuing to raise the test area to final grade in preparation for the cover test. The queue of transfer trucks waiting to unload grew from one truck to three during observation, but this did not present a traffic management problem.
- Over the past few months the landfill has been adding waste along the west side of the site to serve as a windbreak. This mound is roughly 20 feet high and should provide some benefit as filling proceeds to the east.
- Unfortunately, the wind on this date was blowing strongly from the north, carrying litter onto the south face of the landfill. The 5-person litter crew was working to reduce it. The wind was also carrying a pungent odor into the admin-office area, apparently from recent biosolids deliveries.
- An unusually large number of cover-material deliveries was noted, with several trucks waiting in line at the scale house.
- A moderate number of gulls were present at the working face. The bird cannon was operating. ALRRF staff noted that recent depredation (shooting) of gulls had been more effective than it was initially. It is not clear why this is the case.
- The C&D bunker was about 50% full. The green waste bunker was about 1/3 full. . A large number of appliances were stored nearby for Freon extraction and salvage. Two solidification basins were in use; the third was empty and available for use.
- At Fill Area 1, the upper east side road north of the two ponds was being regraded and shored up. In the process, the road grader unintentionally cut too deep and tore the geotextile in the roadway.
- Gas well drilling has been completed and the drilling equipment is being removed from the site. Both turbines, both IC engines, the LNG plant and the adjacent flare all appear to be operating normally.

Stormwater Controls and Best Management Practices

- Basin A water level remained low (had risen slightly); no algae visible; water slightly turbid.
- Basin B water level was very low. No water was stored in the detention basin above Basin B.
- Basin C has about 6 feet of storage capacity remaining. Fire damage from July was not evident; new grass has grown in throughout the burned area.
- In Fill Area 2, basin SW-A and its upstream stilling basin were both empty.
- Ditches, drains and inlets were generally clear. Wattle on slopes appeared to be functioning as intended, although, on excavated (non-refuse) slopes above the Fill Area 2 entry road, silt had built up heavily on the upslope sides of the straw rolls.

**ALRRF Community Monitor Monthly Report****December 2016**Fill Area 1 Leachate Ponds

- Construction work was continuing at both ponds. However, some work was on hold because a probable California Tiger Salamander had been seen by a construction worker in a trench at one of the ponds earlier in the day. A biologist was enroute to find and relocate the animal.

Fill Area 2

- The Phase 2 excavation was checked for erosion on side slopes. None was seen.
- At the toe of the Phase 1 area, a stockpile of pallets, apparently left over from liner installation, remained in place. In a recent Notice of Violation, these pallets were identified by Central Valley Water Board staff as waste material that should not be present in Fill Area 2.
- A minor amount of work was being done at the new leachate pond, to complete construction.

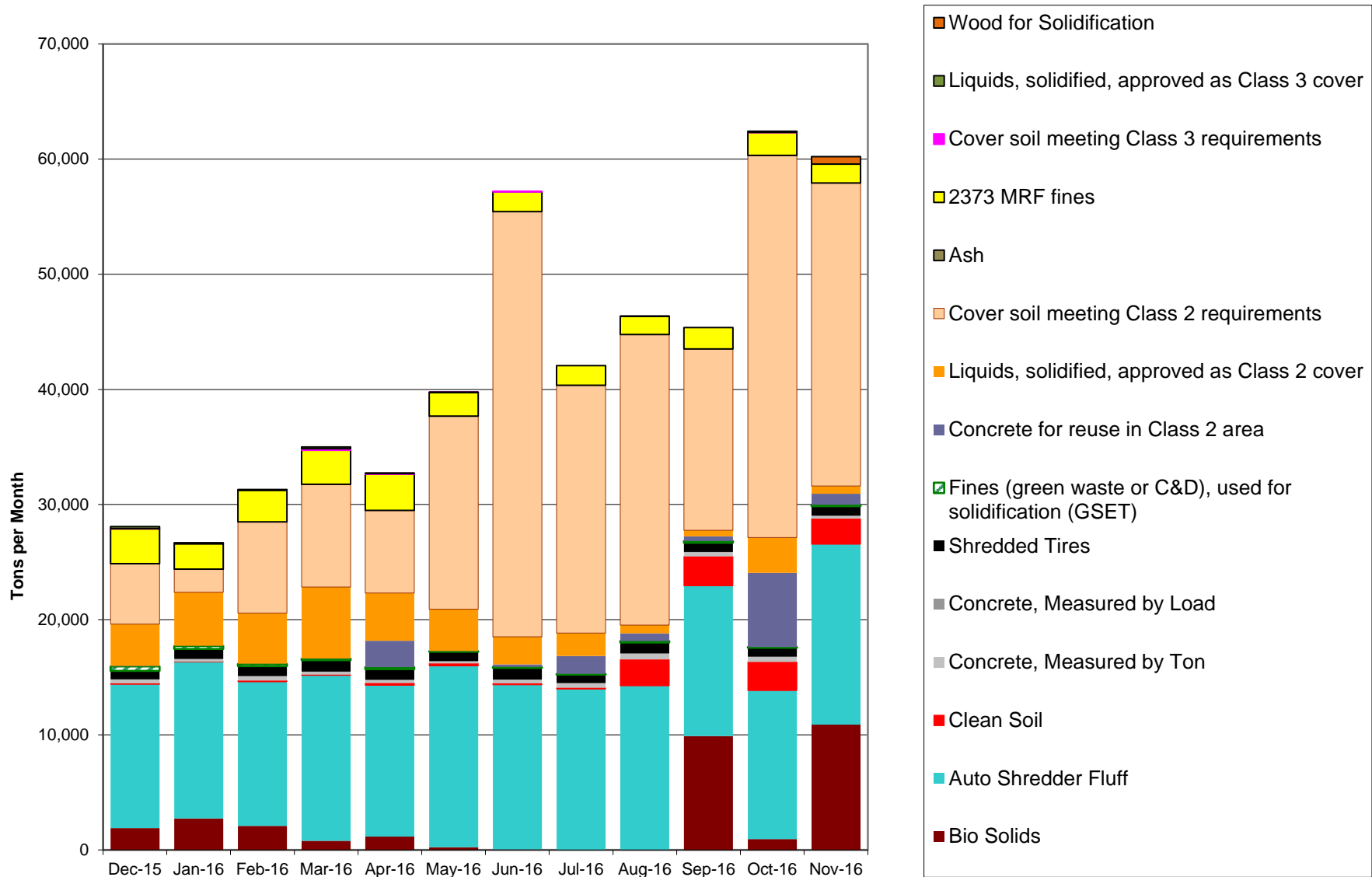
Mitigation Pond

- The pond appears largely unchanged from previous visits. An effort was made to locate a rare plant (crownscale) that was referenced in the 2015 mitigation report, but results were uncertain. Most plants in the reported areas, including the crownscale, are annuals and had died back. A further attempt is planned for next spring. Around the pond and elsewhere on site, black mustard has begun to grow and is expanding its range. This is a common grassland invasive plant.

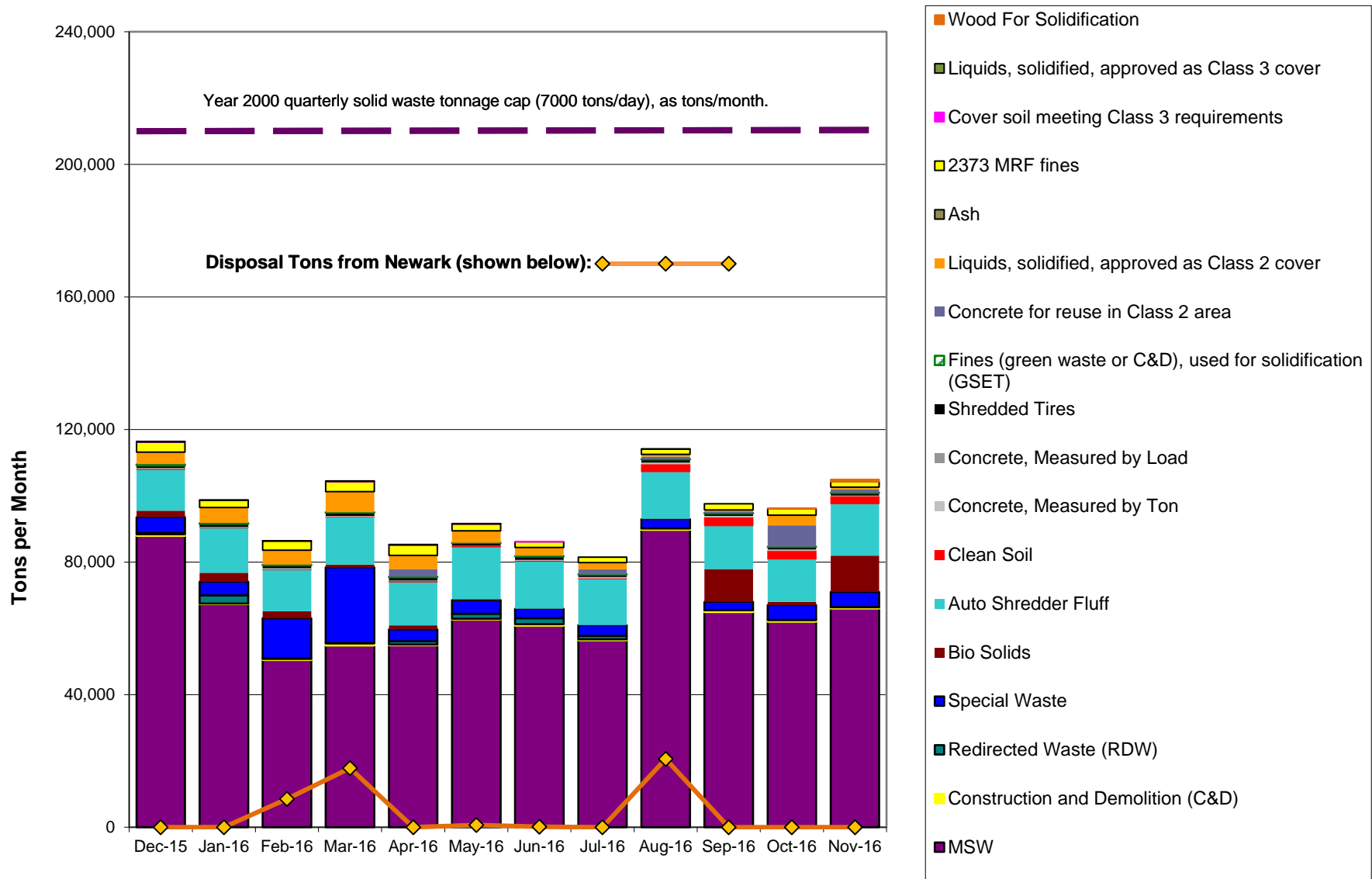
Special Occurrences Log, August 1 - December 1

- There were four instances of end-dump trailers overturning, on August 26, October 9, October 18, and December 1. In general, these were due to stuck material in the trailer causing it to lose balance when raised. No injuries were associated with these incidents.
- August 11: A trailer on a tipper was dragged when being reset on its tractor. Incident occurred because the driver backed his tractor onto the tipper contrary to instructions from the tipper operator. No injuries; no serious damage.
- September 2: Stuck material protruding from a transfer trailer damaged the framing above a tipper.
- September 9: a small fire in the refuse area was immediately put out by staff.
- September 9: a customer notified the site that some hazardous material had mistakenly been delivered from a remediation site (described more fully in 2016 Annual Report).
- September 19: A shop employee was burned by hot water from a pump and was taken to the ER for treatment. Burns were first and second degree.
- September 27: At the tipper, a customer fell from the step of his truck cab and cut his leg. No medical aid was needed.
- October 21: An oil leak released several gallons of oil into the soil near the cover staging area in Fill Area 1. The soil was fully excavated and placed for Class 2 disposal.
- November 2: A hydraulic leak was seen on an entering truck. The driver was told to park nearby but he left the site. The oil was cleaned up with dry soil that was removed with the on-site street sweeper. The customer has been advised that they will be banned if they have another leak and do not stay on site as directed.
- November 23: On-site roadway lighting and a Yield sign were damaged when a departing customer's truck took a turn too wide.
- December 1: A truck from the Fremont transfer station drove to the landfill with its rear doors open. Spillage occurred on Altamont Pass Road and on site. Some spillage was still requiring cleanup on the date of this inspection (December 2).

**Figure 6.5-1 Monthly Volumes of Revenue-Generating Cover**



**Figure 6.5-2 Monthly Volumes of Landfilled Materials**



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CMC Agenda Item 6.6  
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# memorandum

date January 2, 2017  
to ALRRF Community Monitor Committee  
from Michael Burns, Kelly Runyon  
subject CMC Meeting of 1/11/17 - Agenda Item 6.6 - Draft Annual Report

The draft Annual Report for 2015 is hereby submitted for review. There is new or updated information on virtually every page. The most substantial updates are in the following sections:

- 1.3 Regional Context and Landfill Capacity
- 1.5.2 Requirements for Fill Area 2 Development and Use
- 2.2 Monitoring of Improvements and Changes
- 2.3 Compliance and Significant Incidents (all subsections)
- 2.4.2 Storm Water
- 2.4.4 Mitigation Monitoring
- 3.2.1 Ongoing Review
- 3.2.2.4 Fill Area 2
- 3.2.2.5 Groundwater Contaminants and Groundwater Data
- 3.2.2.6 Responses to Notices of Violation

Comments and corrections should be provided by the end of January, to be verified and included in the revised Annual Report, which will be posted on the Community Monitor web site prior to the April 2017 Committee meeting.

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# ALRRF COMMUNITY MONITOR ANNUAL REPORT 2016

DRAFT

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.

# ALRRF COMMUNITY MONITOR ANNUAL REPORT 2016

DRAFT

Prepared for  
ALRRF Community Monitor Committee

January 11, 2017



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# SECTION 1

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## 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<sup>1</sup> 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<sup>2</sup>, 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%.

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

<sup>2</sup> 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<sup>3</sup>.
- 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

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<sup>3</sup> 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

Issue	Severity					
	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
<b>Issues Beyond Control of ALRRF</b>						
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"<sup>4</sup> (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,

<sup>4</sup> 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 be 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.