

9 HAZARDOUS WASTE STORAGE AND REMOVAL

The Central Maui Landfill currently stores hazardous waste in a bunker located at the southeast end of Closed Phase I&II. This area will store only hazardous waste generated from the landfill's Hazardous Waste Exclusion Program and wastes illegally disposed of immediately outside the landfill.

Stored materials shall be EPA labeled, and visually inspected daily by trained personnel for signs of leaking or spilled hazardous waste. The inspector will immediately notify the designated supervisor of any incident and will fill out an incident form (HAZARDOUS WASTE INCIDENT FORM). In addition, a HAZARDOUS WASTE STORAGE AREA MONTHLY INSPECTION REPORT form shall be filled out monthly.

9.1 ONSITE STORAGE TIME LIMITATION

Onsite hazardous waste storage will be limited to 90 days or as required by the State Health Department prior to off-site disposal. Waste may be transported to a permitted treatment, storage and disposal facility (TSDF) any time prior to that.

9.2 ACCUMULATION START DATE

The "Accumulation Start Date" on the EPA label of each drum containing hazardous waste should be monitored on a regular basis. At 60 days from the earliest "Accumulation Start Date", arrangements should be made to transport and properly dispose of the waste to allow time for the disposal site operator to review the inventory sheets for the drum shipment and accept the waste. If the "Accumulation Start Date" has a worn off label, information on the start date from the inventory sheets should be transferred to a new label.

9.3 STORAGE AREA INSPECTIONS

The designated hazardous waste storage area shall be subject to a monthly inspection. The monthly inspection will be documented on the HAZARDOUS WASTE STORAGE AREA MONTHLY INSPECTION REPORT form. This report addresses proper labeling of the containers, the integrity of containers and storage area and the presence and condition of safety equipment. The completed monthly report form will be retained on file at the Central Maui Landfill office.

If it is found through the monthly inspection that problems exist with the drum labeling, container or storage area integrity or that necessary safety or spill containment equipment is absent or non functional, the designated supervisor shall be notified immediately so that corrective measures can be taken.

9.4 HAZARDOUS WASTE REMOVAL/DISPOSAL

Unsuitable wastes identified through the site's hazardous waste exclusion program are handled as follows: if the wastes pose an immediate risk to health, safety and/or the environment, a

hazardous material spill contractor will be contacted for immediate clean-up, packaging, transportation and disposal; wastes which are in adequate containers and can be safely handled are either returned to the hauler if possible, or stored onsite in a designated area (e.g., the chemical storage building, the waste oil tank, etc.) to await proper disposition/recycling within 90 days by a licensed hazardous waste hauler/recycler.

10 REPORTING

The reporting requirements for the Hazardous Waste Exclusion Program will consist of recording information and observations during the random weekly load check inspections and monthly storage area inspections. The incident form (Appendix A) will be completed by the load checking inspector and signed by the vehicle driver. A copy of the incident form and any associated documents will be placed on file at the landfill and a duplicate copy will be sent to the State of Hawaii, Department of Health.

A report will be prepared and submitted on a monthly basis for inspection of the hazardous waste storage area (in Appendix A). These reports will document proper labeling of the containers, the integrity of the containers and storage area, and the presence and condition of safety equipment. Completed report forms will be retained onsite.

The CML will maintain a daily log of all unacceptable waste as required by the HDOH operations permit

APPENDIX A

FORMS

HAZARDOUS WASTE INCIDENT FORM

COUNTY OF MAUI - CENTRAL MAUI LANDFILL

Pulehu Rd., Puunene, Maui

(808) 270-6153

(Page 1 of 3)

1. **Date:** _____ **Time:** _____ a.m. (circle)
p.m.

Location:

- _____ Scalehouse
- _____ Residential Waste Drop-Off
- _____ Recycling Area
- _____ Active Face

Other:

2. **Information on vehicle that is responsible for bringing waste to the landfill (if possible)**

Driver's Name: _____
Last, First, Middle Initial.

Driver's License No.: _____

Vehicle License Plate No.: _____

Vehicle Owner / Agency:
_____ City (specify) _____

_____ Other (specify) _____

Owner Telephone No.: _____

- Vehicle Type:
- _____ Refuse Truck
 - _____ Transfer Trailer

Other _____

3. **Prohibited Materials Found and Approximate Quantity:**

HAZARDOUS WASTE INCIDENT FORM
(Page 2 of 3)

3. Origin of the Waste and Generator:

4. List of Hazards to Human Health or Environment (also list injuries if any):

5. Quantity of Hazardous Materials Recovered and Unrecovered and Their Condition:

6. Circumstances That Led to the Incident:

5. Corrective Actions Taken to Prevent Incident Reoccurrence:

HAZARDOUS WASTE INCIDENT FORM
(Page 3 of 3)

Notes:

Driver's Signature: _____

Landfill Employee Signature: _____

6. Reporting to Hawaii Department of Health

A copy of this report must be sent to the HDOH within 24 of incident.

Was this report sent out within 24 hours?

_____ Yes

_____ No

Reason for not sending: _____

HAZARDOUS WASTE STORAGE AREA MONTHLY INSPECTION REPORT

CENTRAL MAUI LANDFILL
(Page 1 of 2)

Date: _____

Inspected By: _____

1. Check the storage area for the presence of leakage, liquid or gaseous from any drum or pail containing waste. Is there any leakage?
Yes / No (circle and initial) _____

2. Is/are the hazardous waste transport vehicles, properly placarded on all four sides?
Yes / No (circle and initial) _____

3. Is proper signage posted in the hazardous waste storage area?
Yes / No (circle and initial) _____

4. Are containers properly labeled with the Hawaii Hazardous Waste sticker and is the sticker visible for inspection?
Yes / No (circle and initial) _____

5. Are containers in good condition and are those containers containing waste closed?
Yes / No (circle and initial) _____

6. Is the storage area structurally intact (the underlying surface, concrete or asphalt, should be void of cracks)?
Yes / No (circle and initial) _____

HAZARDOUS WASTE STORAGE AREA MONTHLY INSPECTION REPORT

(Page 2 of 2)

7. Is necessary safety equipment available and operational for use in an emergency?

Fire Extinguishers:

Yes / No (circle and initial) _____

Portable Eyewash:

Yes / No (circle and initial) _____

First Aid Kit:

Yes / No (circle and initial) _____

Absorbent/Spill Containment Materials:

Yes / No (circle and initial) _____

Comments:

RANDOM WEEKLY LOAD CHECK FORM

COUNTY OF MAUI - CENTRAL MAUI LANDFILL

Pulehu Rd., Puunene, Maui

(808) 270-6153

(Page 1 of 2)

1. **Date:** _____ **Time:** _____ a.m. / p.m. (circle)

2. **Information on vehicle that is responsible for bringing waste to the landfill (if possible)**

Driver's _____ Name:

Last,

First,

Middle Initial.

Driver's License No.: _____

Vehicle License Plate No.: _____

Vehicle Owner / Agency:

_____ City (specify) _____

_____ Other (specify) _____

Owner Telephone No.: _____

Vehicle Type:

_____ Refuse Truck

_____ Transfer Trailer

_____ Other _____

3. **Origin of Waste (Generator):**

RANDOM WEEKLY LOAD CHECK FORM
(Page 2 of 2)

4. Prohibited Materials Found and Approximate Quantity (also list injuries if any):

5. List of Hazards to Human Health or Environment (also list injuries if any):

6. Quantity of Hazardous Materials Recovered and Unrecovered and Their Condition (if any):

7. Corrective Actions Taken to Prevent Incident Reoccurrence (if necessary):

Notes:

Driver's Signature: _____

Landfill Employee Signature: _____

8. Reporting to Hawaii Department of Health

If prohibited wastes are found a copy of this report must be sent to the HDOH within 24 of incident. If not file under weekly load check reports located in CML office.

EXCLUDED WASTES:

Hazardous Wastes,
Bulk Liquid Waste,
Commercial Construction / Demolition Waste,
Tires, Batteries, Appliances,
Automotive Parts, Propane Tanks,
Large Scrap Metal, Air Conditioners,
Vehicles

PROHIBITED WASTE

**HAZARDOUS WASTE
RANDOM SAMPLING OF
REFUSE IS IN EFFECT
BULK LIQUID WASTE
COMMERCIAL CONSTRUCTION
AND DEMOLITION WASTE**

FIGURE 1. ENTRANCE SIGNAGE

Appendix G

Contact Phone Numbers and Emergency Contacts

**APPENDIX G
CENTRAL MAUI LANDFILL
CONTACT PHONE NUMBERS AND EMERGENCY CONTACTS**

<u>Title</u>	<u>Office Phone Number</u>
Chief, Solid Waste Division	270-7881
Solid Waste Superintendant	270-6153
Landfill Worksite Supervisor	270-6153

Appendix H

Landfill Gas Migration Monitoring Procedures

LANDFILL GAS MONITORING PLAN

**CENTRAL MAUI LANDFILL
PUUNENE, HAWAII**

Prepared for

**COUNTY OF MAUI
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE DIVISION
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LANDFILL GAS MONITORING PLAN CENTRAL MAUI LANDFILL

1. INTRODUCTION

This Plan describes the regulatory requirements, proposed facilities, and operational procedures for monitoring potential migration of landfill gas from the Central Maui Landfill (CML). It has been prepared for submittal to the Hawaii Department of Health (DOH) and to guide implementation of landfill gas monitoring by the County of Maui.

This document was prepared by A-Mehr, Inc. on behalf of the Solid Waste Division of the Maui County Department of Environmental Management.

2. REGULATORY REQUIREMENTS

Hawaii Administrative Rules, Title 11, Section 11-58.1-15(d) requires operators of municipal solid waste landfills to implement a routine methane monitoring program to ensure that (1) concentrations of landfill gas do not exceed 25 percent of the lower explosive limit for methane in facility structures, and (2) the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary. Monitoring of methane, oxygen and carbon dioxide in structures and at the site perimeter is required no less frequently than quarterly, and is to be based on site-specific factors including:

- Soil conditions;
- Hydrogeologic conditions surrounding the facility;
- Hydraulic conditions surrounding the facility; and
- The location of facility structures and property boundaries

Although neither the DOH Solid Waste Permit for CML nor Hawaii regulations contain specific design or location criteria for monitoring points, other jurisdictions have established criteria that may be used as a guide. The State of California, for example, requires gas monitoring networks to meet the following general criteria:

- (1) Perimeter subsurface monitoring probes shall be installed around the entire disposal footprint, but not within refuse.
- (2) Perimeter monitoring probes shall be located at or near the permitted facility boundary.
- (3) The lateral spacing between adjacent monitoring probes shall not exceed 1,000 feet, and shall be reduced as necessary to protect

persons and structures threatened by landfill gas migration. This coincides with the Molokai permit requirement for probe spacing.

(4) The depth of the borehole of all landfill gas monitoring probes shall equal the maximum depth of waste within a 500-foot radius from the probe location (500 foot radius represents $\frac{1}{2}$ lateral spacing distance between adjacent probes). The number and depths of monitoring intervals within the borehole shall be installed in accordance with the following criteria:

- a shallow monitoring interval shall be installed a minimum of 5 to 10 feet below the surface;
- an intermediate monitoring interval shall be installed at or near half the depth of the waste;
- a deep monitoring interval shall be set at or near the depth of the waste;

In cases where the depth of the waste does not exceed 20 feet, the number of monitoring intervals may be reduced to one shallow interval. In cases where the depth of waste does not exceed 30 feet, the number of monitoring intervals may be reduced to two, with one probe located in the shallow interval, and the second interval located at or near the depth of the waste.

The California rules provide exceptions and secondary criteria for modifying the above requirements, but most systems approved by the regulatory agencies comply with the general requirements.

3. SITE CONDITIONS

CML is constructed in a depleted rock quarry. Based on observations during quarry operations, the soils in the area are generally characterized by a topsoil layer of 5 to 15 feet overlaying a basalt rock layer of approximately 40 feet consisting of the Kula volcanic series. A contact layer of clay separates the basalt from underlying Honomanu cinder deposits (MFA 1996).

Figure 1 illustrates the existing landfill and proposed future disposal areas. Phases I and II were established prior to Subtitle D regulations requiring liner and leachate collection systems. Prior to refuse placement in these areas, a leveling layer of local soil was placed on the floor of the quarry and leachate collection pipes were placed. No liner was placed against the walls of the quarry, which were approximately 30 feet high. Phases I and II were closed and capped with a low-permeability soil cover in 2007

Phases IV, V (including V-B Extension) and proposed/future Phases III and VI, are constructed with a prescriptive composite liner system on the floor and sideslopes consisting of low permeability soil overlain by a high density polyethylene geomembrane. Compacted soil fill is placed against the quarry walls prior to installation of the soil liner and geomembrane on sideslopes.

An active landfill gas (LFG) collection and control system was installed in Phases I and II in 2008, and extended into Phase IV and V areas in 2011. Phase V-B Extension, constructed in 2018, was equipped with horizontal gas collectors located immediately above the LCRS gravel layer and these will be hooked up to collection system when a minimum of 40 feet of refuse is placed over the collectors. All proposed/future lined disposal areas will also be equipped with gas collection systems.

Gas migration from Phases I and II is controlled primarily by the extraction of LFG from the waste mass. Incidents of exceedance of methane concentration limits (5% by volume) in gas probe GP-4 located at the southeast corner of Phase I have been substantially eliminated since installation of the gas control system. Migration is further limited by the relative impermeability of the Kula series basalt surrounding the site and the relatively shallow soil layer above the rock.

Gas migration from the existing lined disposal areas has been minimal due to the composite liner system, the gas collection system being extended into these lined areas and the surrounding basalt bedrock of low permeability. Proposed/future lined disposal areas are expected to perform similarly.

4. PERIMETER GAS MONITORING

4.1 Monitoring Network

4.1.1 Existing Probes

Figure 1 shows the location of the twelve (12) existing perimeter gas probes at CML, which are generally described as follows:

- GP-1 is located in the Phase III area, which is currently used for sludge and green waste co-composting operations. GP-1 is not presently used as a monitoring point.
- GP-2 is located at the northeast corner of Phase II. It is a nested probe consisting of three monitoring points at different depths.
- GP-3.1 and GP-3.2 were installed in December 2011 within the buffer zone along the east side of Phase I. They are nested probes with three monitoring points at different depths. (A-Mehr, Inc. 2012)

- GP-4 is located at the southeast corner of Phase I. It has monitoring points at two depths.
- GP-5 is located at the southwest corner of Phase I, with two monitoring depths.
- GP-6R is a two-depth probe located at the north end of Phase IV-B
- GP-7 is a single-depth probe located at the north end of Phase IV-A
- GP-8 is a single-depth probe located approximately mid-way along the east side of Phase IV-A.
- GP-9 was installed in December 2011 on the west side of Phase VA. It monitors at three depths.
- GP-10 was installed in December 2011 on the north side of Phase II, and monitors at two depths.
- GP-11 was installed in December 2011 on the west side of Phase V-B. It monitors at three depths.

Table 1 summarizes the depths and key dimensions of the existing monitoring probes. Figure 2 illustrates typical construction details of a three-depth monitoring probe.

4.1.2 Proposed Relocated Probes and Proposed New Probe

As a result of the planned development of the Phase III and Phase VI disposal areas, the existing monitoring probe network will require modification and expansion.

Phase III will be developed first and will impact probes GP-1, GP-2, and GP-10 as these probes are located within the grading limits of the disposal area. These existing probes will be relocated to positions outside the grading limits of the project, as illustrated on Figure 1, while maintaining the lateral distance between adjacent probes to 1000 feet or less. The probe design depths are equal to the maximum depth of waste within 500 feet of the probe location. The relocated probes will be designated GP-1R, GP-2R, and GP-10R. Upon installation of the relocated probes, the existing probes will be removed, and the boreholes abandoned and sealed.

The development of the future Phase VI disposal area will require installation of a new probe designated GP-12 to maintain perimeter probe spacing to 1000 feet or less. The probe design depth is equal to the maximum depth of waste within 500 feet of the probe location. Figure 1 illustrates the proposed location of GP-12.

Table 2 summarizes the borehole depths, monitoring intervals, and key dimensions of the relocated and new monitoring probes. Figure 2 illustrates typical construction details of a three-depth monitoring probe.

Permits required for probe installation will be secured prior to work commencing.

4.1.3 Probe Abandonment Procedures

The existing probes that must be relocated due to construction of the Phase III disposal area will be removed and abandoned in accordance with applicable State (HDOH HEER TGM, Section 6.2.5 and HDLNR Well Construction Standards, Part 3) and local regulations. Permits required for probe abandonment will be secured prior to work commencing. Following completion of abandonment work, an abandonment report will be prepared and submitted as required by regulations and permits. The following is a brief summary of the steps for probe abandonment.

Elements of the existing probe located above ground surface, such as protective well casing, protective bollards, etc., will be removed first. The ¾" diameter PVC internal probe casings will be pulled out. The existing borehole will be drilled out to clean and remove remaining probe components. To ensure the borehole is cleaned to the greatest extent reasonable, the bore hole depth will be overdrilled by 2 feet (minimum). Immediately after the borehole is drilled out, it will be pressure grouted, from bottom of the borehole to ground surface, with a cement-bentonite slurry consisting of Portland cement, bentonite (3% to maximum of 8%), and water. Figure 3 illustrates a typical probe abandonment detail.

4.2 Frequency of Monitoring

Routine monitoring of perimeter gas probes is conducted on a quarterly basis. Any probe for which results indicate methane concentrations in excess of 5% by volume in a quarterly sampling event will subsequently be sampled on a monthly basis until two consecutive monthly readings demonstrate the methane concentration has been reduced to the compliance level.

4.3 Monitoring Procedures

4.3.1 Monitoring Instruments

CML will use a GEM-2000 infrared gas monitoring instrument or equivalent to sample landfill gas in perimeter gas probes and in structures.

4.3.2 Instrument Calibration

The monitoring instrument will be calibrated before each sampling event according to the manufacturer's instructions, using certified zero and span gases. Sampling should not be performed unless the calibration indicates the instrument performance is within specification limits.

**TABLE 1
CENTRAL MAUI LANDFILL
EXISTING GAS MONITORING PROBES
CONSTRUCTION DATA**

Probe No.		GP-1	GP-2	GP-3.1	GP-3.2	GP-4	GP-5
Northing		-14018.1	-14041.5	-14707.4	-15391.6	-16135.5	-16122.1
Easting		-8124.2	-7105.1	-6760.4	-6581.3	-6402.9	-7020.7
Surface Elevation		228	237	279	294	302	295
Total Depth (feet)		21	36	45	47	31	31
No. of Intervals		2	3	3	3	2	2
1 st Screened Interval	Depth	5-10	5-10	4-11	4-11	5-10	5-10
2 nd Screened Interval	Depth	15-20	15-20	19-26	19-26	25-30	25-30
3 rd Screened Interval	Depth	--	30-35	34-46	34-46	--	--

Probe No.		GP-6R	GP-7	GP-8	GP-9	GP-10	GP-11
Northing		-13954.4	-13554.6	-14139.9	-15019.3	-14251.3	-15688.7
Easting		-9390.2	-8972.6	-8506.9	-9318.9	-7681.3	-8740.4
Surface Elevation		237	230	233	278	236	295
Total Depth (feet)		30	20	16	69	30	55
No. of Intervals		2	1	1	3	2	3
1 st Screened Interval	Depth	5-10	5-20	5-16	4-10	4-11	4-11
2 nd Screened Interval	Depth	25-30	--	--	24-36	19-26	24-31
3 rd Screened Interval	Depth	--	--	--	44-60	--	38-51

**TABLE 2
CENTRAL MAUI LANDFILL
RELOCATED/NEW GAS MONITORING PROBES
DESIGN DATA**

Probe No.		GP-1R	GP-2R	GP-10R	GP-12
Northing		-13577.9	-13982.1	-13482.1	-16408.8
Easting		-8276.9	-7038.0	-7620.82	-7977.1
Surface Elevation		221	249	224	304
Total Depth (feet)		13	48	16	66
No. of Intervals		1	3	1	3
1 st Screened Interval	Depth	5-13	5-10	5-14	5-10
2 nd Screened Interval	Depth	--	19-29	--	28-38
3 rd Screened Interval	Depth	--	38-48	--	56-66

4.3.3 Measurement Procedures

The following procedures will be followed for monitoring perimeter gas probes:

- Check each probe's condition and structural integrity and suitability for monitoring. Be sure each inspected probe is not subject to excessive negative pressure generated by nearby vacuum sources. A simple way to check for negative pressure is to hold a sheet of paper just above the opening of the probe and see if the paper is sucked to the opening. If the paper is sucked to the probe opening, the probe is more than likely influenced by negative pressure. Probes should also be checked for presence of water prior to monitoring. Probes that are damaged or are under negative pressure are considered inadequate for use.
- Use a gas monitoring instrument that is properly calibrated and warmed up for at least 5 minutes. Open the petcock or otherwise ready the probe for sampling, and connect the flexible intake tube assembly to the probe, making sure that there is a tight seal.
- Direct connect the instrument to the probe. Monitor until a steady state reading is achieved for 30 seconds and record the reading. It is not necessary to purge one probe volume of gas

5. STRUCTURE MONITORING

The following structures will be checked for methane concentration on a quarterly basis during perimeter gas probe monitoring events:

- Scalehouse
- Main administration building
- Engineering/environmental annex building

Structures should be monitored during the first hour of operations in the morning, to detect any overnight buildup of gas. The same calibrated instrument used for perimeter gas probe monitoring will be used to sample indoor ambient air in each building. A minimum 30-second steady-state reading shall be recorded in each building.

6. REPORTING AND RECORDKEEPING

6.1 Routine Reporting

Data from each quarterly monitoring event will be recorded and maintained at CML. The Department will summarize and report all data to DOH within 45 days after each monitoring event. In addition, any measurement of a methane concentration in excess of DOH regulations (lower explosive limit (LEL), or 5 percent by volume) in a perimeter gas probe, or 25% of the LEL (1.25 percent by volume) in structures, will be reported to DOH as a non-compliance event within 24 hours as required by the facility's Solid Waste Management Permit.

6.2 Non-Compliance Events

The CML Environmental Compliance Officer will direct an investigation of any incidence of non-compliance due to excessive methane concentration in a perimeter probe. The investigation will include additional monitoring and checking the performance of the landfill gas collection system in the vicinity of the probe. If the non-compliance condition persists, a remedial program will be developed and implemented, with reporting to DOH as required by permit. The affected probe will be monitored on a minimum frequency of once per month until at least three consecutive months of compliance are demonstrated.

If methane concentrations are measured in excess of 1.25% in any occupied structure, immediate steps will be taken to protect human health and safety. The building will be evacuated until additional ventilation, by opening doors and windows and operating ventilation equipment, has reduced the concentration below the compliance level. Extraordinary ventilation measures will be continued and gas levels will be monitored at least twice daily until an investigation has identified and remediated the cause of the excessive methane levels.

7. REFERENCES

MFA 1996. Final Environmental Impact Statement for the Expansion of Central Maui Landfill Project. Masa Fujioka & Associates, April 1996.






A-Mehr, Inc. 2012. Construction Quality Assurance Report, Central Maui Landfill, Landfill Gas Monitoring Reports. March 2012.

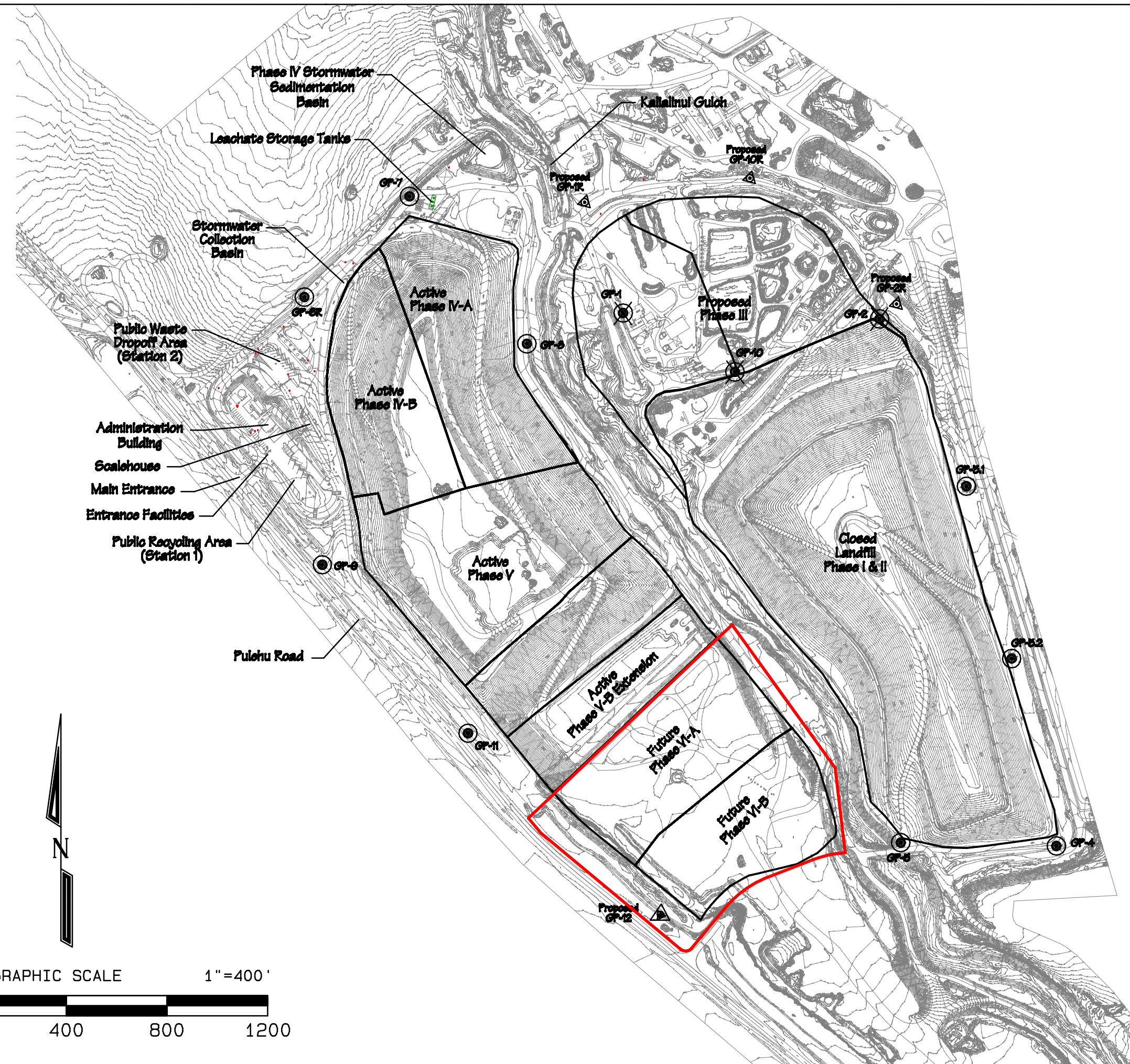
FIGURES

Notes

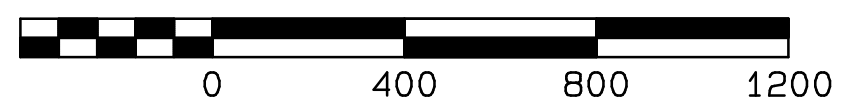
(1) Existing Topography Based on Aerial Survey Dated 4/17/19

Legend

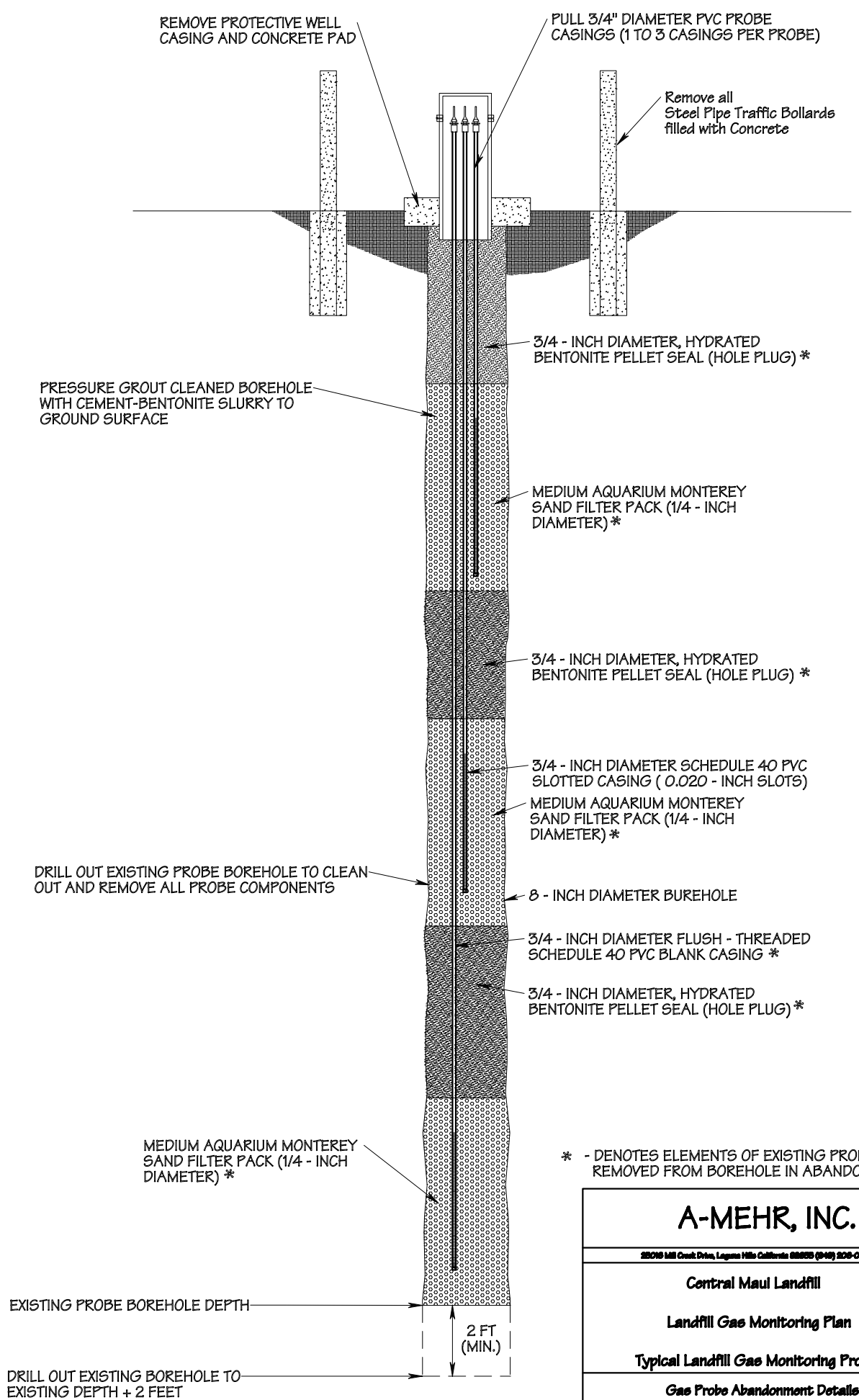
- GP-B  Gas Monitoring Probe
- GP-12  Relocated / Proposed Gas Monitoring Probe
- GP-1  Existing Gas Monitoring Probe to be Removed / Relocated
-  Existing and Proposed Waste Limits Phase I, II, III, IV, V, and VI
-  Phase VI Property Line



GRAPHIC SCALE 1" = 400'



A-Mehr, Inc.		FILENAME as-lm19
Central Maui Landfill		DRAWN RM
Landfill Gas Monitoring Plan		CHECKED
Gas Monitoring Network		DATE 8/16/19
		FIGURE 1



* - DENOTES ELEMENTS OF EXISTING PROBE THAT WILL BE REMOVED FROM BOREHOLE IN ABANDONMENT PROCESS

A-MEHR, INC.	FILENAME
	Gas Probe Abandonment
<small>28018 Hill Creek Drive, Laguna Hills California 92653 (949) 226-0257</small>	DRAWN
	RM
Central Maul Landfill	CHECKED
	AM
Landfill Gas Monitoring Plan	DATE
	9/27/19
Typical Landfill Gas Monitoring Probe	FIGURE
	3
Gas Probe Abandonment Details	

Appendix I

Storm Water Pollution Control Plan

**CENTRAL MAUI LANDFILL
STORM WATER POLLUTION CONTROL PLAN**

Prepared for

**COUNTY OF MAUI
DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT
SOLID WASTE DIVISION
2200 Main Street, Suite 225
Wailuku, Hawaii 96793**

Prepared by

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January 2019

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CENTRAL MAUI LANDFILL STORM WATER POLLUTION CONTROL PLAN

1. INTRODUCTION

1.1 Purpose

This Plan has been prepared in accordance with requirements of Hawaii Administrative Rules Chapter 11-55 and corresponding federal regulations contained in 40 CFR, Section 122. It describes the facilities, means and methods by which the County of Maui (County) will operate Central Maui Landfill (CML) in compliance with state and federal requirements to prevent pollution of surface waters of the State of Hawaii.

1.2 Responsible Personnel

Implementation of this Storm Water Pollution Control Plan (SWPCP) is the responsibility of the individuals filling the following key positions within the County of Maui Department of Environmental Management, Solid Waste Division:

- Director, Department of Environmental Management
- Chief, Solid Waste Division
- Solid Waste Operations Manager, Solid Waste Division
- Environmental Compliance Specialist (ECS), Solid Waste Division
- Engineer, Solid Waste Division

Each of these individuals is authorized to prepare and submit reports and other documents referenced in the SWPCP.

1.3 Related Plans and Programs

The SWPCP has been prepared in consideration of other regulatory plans and documents associated with CML, and will be implemented in coordination with them. Related plans and programs include, but are not limited to the following:

- Solid Waste Management Permit No. LF-0074-13 for Central Maui Landfill, issued by the Hawaii Department of Health on February 26, 2018;
- Operations Plan, Central Maui Landfill, February 2017 and as subsequently amended; and
- Closure / Post Closure Maintenance Plan, Central Maui Landfill, February 2017 and as subsequently amended.

2. SITE AND FACILITY DESCRIPTION

2.1 Site Location and General Description

CML is located on the isthmus between West Maui and Haleakala, approximately 14,000 feet southeast of the Kahului Airport. The Tax Key Map identification for the site is TMK (2) 3-8-03:19. Figure 1 is a vicinity map showing the site location.

CML is organized in six phases of development. Phases I and II were operational from 1987 through November 2005, after which disposal operations were moved to Phase IV-A. Phases I and II were closed and capped during 2007. The Phase III area is currently the location of a facility conducting co-composting of biosolids and green waste, and accumulation and storage of fats, oil and grease for eventual transport to off-site end users. The County intends to develop the Phase III waste disposal at some undetermined point in the future, at which time the current activities located there will be relocated to permit landfill construction. Phases I, II and III are located on the eastern side of Kalia Inui Gulch.

Phases IV, V and VI of CML are located on the western side of the Kalia Inui Gulch. These Phases are located in an area previously mined by the HC&D, LLC (formerly Ameron Corporation) rock quarry and crushing operation. Phase IV is approximately 29 acres with 11 acres for entrance and ancillary facilities, and 18 acres for solid waste landfilling. The Phase IV-A disposal area and entrance facilities were constructed between 1998 and 2004 with disposal operations beginning late 2005. The Phase IV-B disposal area sits on approximately 8 acres. Phase IV-B construction was completed in 2007, allowing disposal operations to commence later that year.

Phase V-A construction began in April 2009 and was completed in two parts. Part 1 was completed in December 2009 and Part 2 completed in May 2010. The addition of Phase V-A increased the site's waste footprint by 12 acres and began receiving waste in December 2009. Phase V-B construction began in June 2010, and was completed in December 2010. The addition of Phase V-B increased the landfill area by an additional 6 acres. Phase V-B began receiving waste in April 2012.

Phase V-B Extension, an area occupying approximately 4.7 acres, was the last portion of the Phase V area to be developed. Construction of Phase V-B Extension was completed in December 2018.

Phase VI is planned as a future expansion area should the County acquire the property. Phase VI sits on 19 acres, abutting the southern end of Phase VB-Extension.

2.2 Site Map

Figure 2 depicts a detailed map of the facility showing drainage structures and facilities, major materials handling areas and other features referenced in this SWPCP.

2.3 Storm Drainage System

This section describes the facilities installed and planned for management of storm drainage at CML, and is organized by the three main areas of the site. Figure 2 illustrates the facilities described below.

2.3.1 Phases I and II

Phases I and II were closed and capped in 2006-07. Closure construction included major improvements to the storm drainage system, as shown in Figure 2. The principal features of the system include the following:

- All areas of the closed landfill are graded to drain, and vegetated with grass;
- A system of paved and curbed roadways, supplemented by concrete channels, serve as primary collectors of drainage from the grassy slopes;
- Corrugated polyethylene pipes are installed at key locations to conduct drainage from collection points on the mid-slope benches to the perimeter road and channel system;
- Approximately 90% of the area drains to the Phase I & II basin, a large grass-lined retention/sedimentation basin, which discharges by overflow into the Kaliainui Gulch; and
- Runoff from the remainder of the site is conveyed by culvert and surface drainage ditches to the Phase III retention basin.

2.3.2 Phase III

Runoff from the Phase III area is directed by overland flow or surface drainage ditches to a large retention basin in the north end of the site, as shown on Figure 2. The Phase III co-composting and FOGs receiving operation is currently run by a Contractor, under separate solid waste and clean water permits.

2.3.3 Phases IV-VI

The following principal storm drainage facilities for the Phase IV-VI area, as shown on Figure 2, include:

- Runoff from Station 1 (residential recyclable collection bins), buildings and most paved areas of the Entrance Facility are collected in underground

concrete pipes and conveyed to the Phase IV Stormwater Basin located to the northeast of Phase IV;

- Runoff from the municipal waste drop off bin area (Station 2), which may have come in contact with refuse, is collected separately from general storm drainage, and piped to the leachate storage area for management with landfill leachate; and
- Runoff from the Phase IV (A&B) and Phase V (A&B) disposal areas are collected in paved perimeter channels and transported to the Phase IV Stormwater Basin.
- Runoff from Phase V-B Extension is collected in temporary lined sedimentation basin to the south. Water collected in the Phase V-B Temporary Stormwater Basin is pumped out to the paved perimeter channel to the east along Kalialinui Gulch. Storm water pumped to this paved channel is ultimately collected in the Phase IV Stormwater Basin.

Storm water collected in the Phase IV Stormwater Basin features a storage capacity of 7.4 acre-feet and is discharged primarily by evaporation and percolation through the fractured bedrock in which the basin is constructed. An emergency spillway is provided for overflow into the Kalialinui Gulch in the event of a major storm. There has not been an overflow event since initial construction of the basin in 1999.

3. POLLUTION CONTROL STRATEGY

This section describes the potential sources and types of pollutants that may occur in various areas of the facility, and outlines the control measures that will prevent the release of pollutants to surface water.

3.1 Sources and Types of Pollutants

3.1.1 Landfill Areas

This section discusses potential sources and types of pollutants in three categories of landfill areas:

- Closed landfill areas, in which all waste filling has been completed and the area permanently closed, capped and vegetated. At present, this includes the Phase I and II areas of CML.
- Active landfill areas, consisting of areas where waste has been placed, additional filling is expected, and no permanent closure has occurred. Presently this consists of Phase IV and Phase V.
- Working face, the area within the active landfill where waste is actively being placed on a daily basis. The working face moves as the waste fill advances across the active landfill.

Runoff from closed landfill areas normally contains minor amounts of vegetative matter or suspended solids from any erosion of cover soil. Periodic inspections and maintenance of the cover, as described in Section 3.3 below, minimize the sediment content of runoff from closed areas.

Runoff from the active landfill contains primarily suspended solids consisting of small soil particles entrained while running across daily and intermediate cover soil. It may also contain small amounts of paper or plastic litter. Landfill equipment is generally fueled and lubricated on the active landfill, resulting in the need for spill prevention and control measures, described in Section 4 below, to prevent spills of fuel or lubricant from adding oil and grease pollutants to runoff.

CML standard operating practices call for placement of temporary earthen berms or trenches around the working face to prevent run-on and runoff from the working face. The berms prevent rainfall that has contacted waste from contributing to site runoff, which could add various waste-related pollutants as well as biological and chemical oxygen demand constituents to the surface water.

3.1.2 Self-Haul Waste Drop-Off Area and Recyclable Material Collection Area

Runoff from the residential recyclable material collection area (Station 1) is conveyed through storm water channels to the Phase IV Basin. The self-haul municipal waste drop-off area (Station 2), which could potentially be exposed to waste materials, is collected separately from other surface water and conveyed to the leachate storage area for management along with landfill leachate.

3.1.3 Leachate Storage Facility

The leachate storage facility consists of eight 4,000-gallon above ground polyethylene tanks located within a concrete secondary containment facility. Leachate is pumped into the tanks from the Phase IV-A wet well and the Phase IV-B sump. Storm water runoff from the self-haul waste drop-off area (Station 2) drains by gravity to a sump adjacent to the leachate storage facility, from which a float-controlled pump transfers it to the storage tanks.

Leachate is withdrawn from the storage tanks by transfer pump to a commercial or county tanker truck for transport to a wastewater treatment plant, or to the active landfill working face to assist with compaction of the refuse and litter control by wetting the refuse, and/or to subsurface leachate recirculation trenches installed in the waste and within the lined cells.

Under normal operating conditions there is no discharge to surface water from the leachate storage facility and the recirculation trenches. In most scenarios, if a leachate spill occurred during the transfer from tanks to truck, CML operational personnel trained in spill response and countermeasure control will respond to the event, implement control and clean-up measures, fully remediate, and prevent any permanent release to the environment. In event of a large spill during transfer operations that cannot be adequately controlled and remediated, leachate containing a variety of organic and inorganic pollutants could be released to surface water.

3.1.4 Landfill Gas Management Facilities

CML operates a landfill gas collection and control system which consists of a gas collection well field, collection piping network, a blower system to apply vacuum to the well field, and a flare for incineration of the collected landfill gas. The flare and associated components are a potential source of pollution from spills of landfill gas condensate, which contains a variety of organic and inorganic pollutants. Spills could occur primarily in the event of a rupture or leak in any of the system's three condensate collection sumps, above ground storage tank, or transfer piping. Condensate is transferred from low points in the landfill gas manifold line and is conveyed to the above ground storage tank adjacent to the flare assembly. Condensate stored temporarily in the above ground storage tank (within a secondary containment structure) is pumped to the flare for incineration.

3.1.5 Covered Equipment Wash Pad

A concrete pad located adjacent to the storm water basin in the Phase IV area is used to clean landfill operating equipment periodically and before performing major maintenance. Potential pollutants include mud and other sediment, refuse washed from wheels and tracks, and oil and grease.

3.1.6 Paved Roads and Parking Areas

Paved roads and parking areas throughout the site are a potential source of suspended solids, litter, vegetation, organic constituents and oil and grease.

3.2 Pollution Control Strategies

3.2.1 Structural Control Measures

This section describes permanent engineered facilities constructed specifically for management of surface water in a manner that prevents pollution of surface water discharged to the Kalialinui Gulch.

Paved Drainage Channels

All major storm water conveyances in both the closed Phase I and II landfill, and the operational Phase IV and Phase V landfill areas are asphalt or concrete paved and are regularly inspected, and therefore transfer storm water from collection points to sedimentation basins without adding any significant sediment or other pollutants to the runoff. The channels enclose the entire perimeter of both landfill areas, and are designed to carry runoff from a design 24-hour, 25-year storm event as required under HAR 11-58.1-15(g).

Storm Water Basins

Storm water basins receive and retain storm water from the facility. To date, there have been no direct discharges from any of the storm water basins described below.

- The Phase I and II basin, reconstructed in 2006-2007, is a long and relatively shallow basin with a thick stand of grass on the floor and slopes. The grass covering allows the basin to function as a biological filter for removal of pollutants during low-flow periods. It retains approximately 2.8 acre-feet of water before overflow enters a paved drainage channel that discharges to the Kalialinui Gulch. In the event of discharge requiring sampling, aliquots shall be taken at the paved drainage channel just upstream of Kalialinui Gulch. Sampling at this location serves as the last point before the Phase I and II water enters the receiving body of water (Kalialinui Gulch).

- The Phase III basin serving the co-composting operation has a capacity of approximately 4.4 acre-feet. It is grass-lined and has no designed outfall or overflow spillway. In the event of a major storm event causing the stored water volume to exceed its capacity, it would overflow into the HC&D aggregate processing and storage area to the north. Water standing in the HC&D yard infiltrates into the subgrade or, during major storm events, drains by overland flow into the Kalialinui Gulch.
- The storm water basin serving the Phase IV, Phase V and future Phase VI landfill areas is a deep basin with a capacity of 7.4 acre-feet. It is excavated into fractured bedrock, and is maintained to have minimal sediment or vegetation that would impede infiltration of stored water into the rock. In the event the basin should overflow, it would discharge through a grass-lined swale to the east into Kalialinui Gulch. Sampling would be conducted at the swale upstream of the gulch using the same selection rationale as the Phase I&II basin.
- Storm water incident to Phase V-B Extension is collected in a partially lined retention basin located within the 80-foot property line buffer zone. This basin has a capacity of approximately 0.82 acre-feet and is essentially a trough between a berm at the property line and the end of the landfill disposal area. These berms also prevent run on from the adjacent property, protecting the lined landfill areas. Storm water collected in the basin will be managed through evaporation and by pumping to the eastern paved drainage channel above (as required) collecting in the Phase IV sedimentation basin. Both the berms and the sedimentation basin are periodically inspected and maintained.

Secondary Containment

The leachate storage tanks just north of the Phase IV area are located within a secondary containment structure designed to hold the contents of the largest tank and incident rainfall from the design storm. The containment is constructed of concrete blocks. A spill can be manually pumped from the containment into a tanker truck for management as leachate. The containment has a valved drain installed to remove storm water from the containment area following rain events.

The landfill gas condensate collection system was also constructed with containment structures to hold spillage from the condensate storage tank and condensate pumping/destruction system. The condensate storage tank containment is constructed of concrete blocks. The condensate pumping/destruction system is part of the flare skid, which is located on a concrete pad that is curbed to provide containment. Both containment systems have drains to release clean storm water from the containment area.

Covered Equipment Pad

A covered equipment pad is located to the northwest of the Phase IV Stormwater Basin and is used to periodically clean and maintain landfill heavy equipment. Wash water from the pad is partially contained to prevent run-on and run-off contribution of pollutants to the facility storm water. The roof cover prevents incident rain from collecting in the containment area preventing transport to the storm water system.

Tire Wash

A tire wash system is installed at the CML, located to the east of Station 2 and immediately adjacent to the exit route followed by vehicles leaving the facility. The system is used during wet weather to reduce track out of mud by vehicles which reduces the impact of soil sediments in the site storm water run off. Collected tire wash water is transferred to CML's water truck for spraying at the active landfill working face to assist in litter control.

3.2.2 Non-Structural Control Measures

This section describes the operational practices implemented at CML to prevent surface water contamination. They include temporary or seasonal physical barriers as well as maintenance and housekeeping activities.

Runoff Controls at the Active Disposal Working Face

Among the most critical responsibilities of site operations for storm water control is to prevent run-on and run-off of surface water from the landfill active face. All precipitation incident on exposed refuse must be contained within the immediate area and be allowed to infiltrate into the refuse for subsequent management as leachate. This is accomplished primarily by construction of temporary earthen berms and/or retention trenches around the active refuse handling area during periods of rain. Berms upslope of the active working face prevent run-on from contacting refuse diverting it to soil-covered areas. A berm or swale may be constructed down grade of the active face to retain runoff from the working face. If utilized, retention swales shall be covered with clean earthen daily/intermediate cover material at the end of the day. Cover material over daily working areas are sloped to convey storm water to the existing drainage system.

Installation and maintenance of runoff controls are responsibilities of landfill operations supervisors. Planning and installation must occur prior to the first seasonal rains or at any time when rain is forecast. Berms must be maintained, relocated or reconstructed regularly as the location of the active landfill active face changes.

Preventive and Scheduled Maintenance

Preventive maintenance of equipment is important not only to ensure equipment availability for operations, but also to minimize the potential for leaks of fuel or other fluids that could contribute to pollution of storm water.

Storm water management facilities must be maintained consistently to ensure their proper functioning. At a minimum the following measures should be implemented:

- Asphalt paved and concrete lined channels and all storm drain pipes and culverts will be inspected annually, and any significant accumulations of sediment will be removed prior to the onset of the winter rainy season;
- Grass and other vegetation growing in storm water basins will be cut and removed annually or as necessary during the dry season to maintain it; and
- At not less than 5 year intervals, all sediment and vegetation will be removed from storm water basins in order to maintain their storage capacity at design levels.

Good Housekeeping

CML is required by state regulations and its solid waste management permit to keep the site clear of litter, and to control dust and mud. Measures for these controls are specified in the site's Operations Plan and are implemented on a daily basis, including:

- Placement and maintenance of litter screens to minimize the amount of litter leaving the active disposal area;
- Daily litter pickup throughout the site by County employees and contract laborers;
- Control of dust from unpaved areas by spraying water from the site water truck;
- Periodic sweeping or cleaning of paved roads and parking areas; and
- Installation and operation of the truck tire wash facility to minimize tracking of mud from the landfill area onto paved roads.

Sediment and Erosion Control

The following measures will be implemented to minimize soil erosion and sediment transport in surface water being managed at the site:

- Soil and vegetative cover in the closed Phase I and II landfill area will be inspected annually, with any eroded or bare areas being repaired and replanted;

- Landfill exterior sideslopes in the Phase IV and Phase V area that are substantially at final grade will be covered with compost or mulch, and/or planted with grass to prevent erosion to the extent possible, and eroded areas will be repaired as needed prior to the onset of winter rains each year;
- Unpaved access roads on the surface of the landfill will be surfaced with rock, asphalt rubble or other materials, to the extent possible consistent with the availability of suitable materials; and
- Sandbag check dams, diversion berms, silt fencing and similar devices will be installed as necessary and maintained during the rainy season to minimize erosion and sediment transport in unpaved areas of the site.

4. SPILL PREVENTION AND RESPONSE PLAN

This section describes facilities and procedures implemented at CML to prevent the release to the environment of liquids used or stored at the facility. Spill prevention is an important element of storm water pollution prevention not only for events that may occur during rain events, but also in relation to events that may result in contaminated surface soil that would subsequently contribute pollutants to surface runoff from the affected area.

4.1 Potential Spill Sources

The sources of potential spills at CML include the following:

- Equipment Servicing Operations – Landfill operating equipment is serviced using a mobile service truck. A skid-mounted 1,000-gallon capacity single-wall and a 1,500-gallon dual wall steel (diesel) tanks are located above the lined portion of the landfill is used to fuel operating equipment. The site also features a dual-wall 500-gallon gasoline tank at Station 2.

Lubricants are stored in 55-gallon drums located on spill containment pallets inside a locked container. When these materials are to be utilized they are transferred from the drums to the service truck. Most servicing involving changing of oil and coolant occurs off-site; however, if on-site servicing is done, used oil and coolant are stored temporarily in 55-gallon drums on secondary containment pallets inside the storage containers before being removed from the site.

Potential spills of diesel fuel may occur during transfers of fuel from the supplier's tank truck to the on-site fuel tanks, and/or from the tanks to landfill equipment/vehicles. Other fluids, primarily motor oil, hydraulic fluid and coolant, could potentially be spilled during transfers from 55-gallon drums to the service truck and/or from the service truck to the landfill equipment.

- Leachate Storage Facility – Leachate is transferred from the Phase IV-A wet well and Phase IV-B sump to the leachate storage facility, which consists of eight 4,000-gallon polyethylene tanks located within a secondary containment structure. Potential spills could occur during transfer of leachate to or from the tanks. Leachate contains a variety of organic and inorganic pollutants.
- Landfill Gas Condensate System – The landfill gas (LFG) collection and control system includes a system of sumps and pipeline system for collecting landfill gas condensate and transferring it to the LFG processing facility located at the northeast corner of the Phase IV area. Condensate is initially stored in a 4,000-gallon polyethylene storage tank located in a secondary

containment structure, then pumped to the flare for incineration. Potential spills could occur in the event of a leak or break in condensate piping.

- Closed Landfill – The leachate collection and monitoring point for closed Phases I&II is Manhole 4. Manhole 4 is located to the northeast of Phase I&II in Phase III. Spills may occur during transfer of leachate from Manhole 4 to tanker truck.

4.2 Spill Prevention Procedures

4.2.1 Fuel Handling

This section outlines procedures to be followed at CML to prevent spills of diesel fuel associated with fueling of landfill operating equipment.

Fuel Tank Maintenance

The on-site 1,000 & 1,500-gallon diesel and 500-gallon gasoline tanks will be inspected periodically as described in Section 7.2 below. Any leaks from piping or valves associated with the tank must be repaired immediately.

Fuel Transfers from Supplier's Truck to On-Site Storage Tanks

All fuel loading and unloading operations must meet the minimum requirements and regulations of the Department of Transportation. Site personnel involved with loading and unloading operations will familiarize themselves with these requirements.

The on-site tanks are filled from a port located on the top of the tank. When the tank is being filled, tanker truck drivers are required to be out of the truck and monitoring the transfer operations. Drivers are also responsible for making connections and disconnections of transfer lines. The driver or another responsible party must physically observe the level of fuel in the tank as it is being filled to prevent overflows. Prior to departure, the driver is required to examine the lower most drain in addition to other outlets for leakage. When necessary, outlets are adjusted to prevent leakage while in transit.

Fuel Transfers from On-Site Tank to Vehicles and Equipment

The following procedures shall be followed when transferring fuel to vehicles or landfill operating equipment from the 1,000 and 1,500-gallon storage tanks or service truck.

- The following spill cleanup equipment shall be on hand at the location of fueling:

- a) A drip bucket/pan.
 - b) A shovel.
- The fueling operator shall observe the following precautions and procedures:
 - a) The operator must hold the nozzle while filling the vehicle.
 - b) The operator must not overfill the tank.
 - c) The operator must not keep the nozzle open using a device or method other than his/her hand.
 - d) The operator must place the drip pan/bucket on the ground beneath the vehicle fill opening as necessary to catch any overflow. Any overflow must be transferred immediately into the fuel storage tank.
- The following procedures apply to fueling operations on the landfill surface:
 - a) If a spill of less than 25 gallon occurs, the operator must immediately shovel soil onto the spill to absorb the fuel, then remove all contaminated soil to a pile. Prior to the end of the working day, site operations shall test a sample of the fuel-contaminated soil to determine if it is flammable by removing it from the landfill area and attempting to cause it to burn with a propane torch. If the soil is determined to be non-flammable, it should be picked up and disposed at the active landfill face. Any cover soil removed from the spill location should be replaced. If the soil sample tested is found to be flammable, mix additional soil with the contaminated soil until it is determined to be non-flammable and dispose of it at the active face.
 - b) If a spill of 25 gallons or more occurs, take immediate steps to contain the spill, get help, and report the incident to the site ECS.
- The following procedures apply to any fueling of equipment outside the lined landfill area:
 - a) The following equipment must be on hand at the site of fueling:
 - Two watertight covered containers, one labeled 'Clean Absorbent' and the other 'Used Absorbent'
 - A supply of clean, dry absorbent.
 - A yard brush
 - b) If a spill of less than 25 gallon occurs, the operator must immediately place absorbent on the spilled fuel, and immediately pick up the absorbed material with a sweeping brush and shovel, and place it in the 'Used Absorbent' receptacle.
 - c) The 'Clean Absorbent' and 'Used Absorbent' storage containers must be protected from rain at all times.

- d) Used absorbent must be disposed of in accordance with State and Federal regulations.
- e) The fueling area must be kept dry cleaned (sweep and shovel - absolutely no water) to the maximum extent possible.
- f) The shovel, yard brush, and drip pan/bucket must always be kept in the vicinity of the fueling activities.
- g) The drip pan/bucket must be stored up-side down when not in use.
- h) If a spill of 25 gallons or more occurs, take immediate steps to contain the spill, get help, and report the incident to the site ECS.

4.2.2 Handling of Lubricants and Coolants

Oil, hydraulic fluid, coolant and other equipment operating fluids, as well as waste oil and coolant, must be stored in drums located on containment pallets in the materials storage container. In the event the container becomes full or otherwise is unable to hold more drums, drums may be stored temporarily on containment pallets, provided they are located on a paved area and covered securely with a tarpaulin or other cover.

4.2.3 Leachate Handling

Spills within the leachate storage containment area are prevented by periodic inspection and maintenance of piping, valves and connections between tanks. Any significant spills should be pumped out of the containment and properly disposed at the active landfill working face.

Leachate is currently handled by truck under two circumstances:

- Transfers from the Phase IV-A wet well, IV-B sump, Manhole 4 (servicing Closed Phase I&II) and V-B Extension sump to the active disposal working face, to subsurface recirculation trenches constructed in the existing refuse within the lined landfill cells, or to an off-site wastewater treatment plant; and
- Transfers from the leachate storage facility to the active disposal working face, to subsurface recirculation trenches constructed in the existing refuse within the lined landfill cells, or to an off-site wastewater treatment plant.

Transfers to the active working face and the recirculation trenches are made using the site water truck. Hose connections are made to quick-connect fittings at the Phase IV-B sump or leachate storage facility, and the transfer pump is actuated. The following procedures are followed to prevent spills:

- Before filling, the operator must ensure that all spray or drain valves on the water truck are closed.

- The operator must ensure that the fill hose is securely placed inside the fill port of the water truck.
- The operator must remain with the truck at all times during filling to monitor the level of leachate in the tank, and shut off the pump before the tank is full unless automated batching is available. A minimum of 1 foot of freeboard should be left in the truck tank to prevent overflow spills while the truck is being moved to the disposal area.
- After the pump is shut off, the fill hose must be handled carefully to prevent residual leachate remaining in it from being spilled outside the containment area.
- Minor spills of leachate should be cleaned up by spreading soil over the area and then removing the contaminated soil to the landfill active working face for disposal.

Transfers of leachate to an off-site treatment plant may be done by a commercial contract hauler. The same procedures outlined above must be followed. Site personnel are responsible for monitoring the activities of the commercial tanker truck driver to ensure that any spills are properly cleaned up.

4.2.4 Condensate Handling

The following measures will be implemented to prevent spills of gas condensate.

- The system operator will be responsible for periodic inspection of areas where above grade condensate pipes are run, to observe any breaks or leaks.
- Condensate handling components at the flare station, including the final knockout drum in the main gas inlet, the condensate storage tank, and related pumps and piping, will be inspected regularly and maintained as needed to prevent leakage.
- Before draining any accumulated rainwater from the condensate tank secondary containment, the water will be visually checked by appearance and odor for the presence of spilled condensate. If contamination is present, the water will be pumped from the containment and properly disposed or spread at the active disposal working face, returned to the condensate tank, or transferred to the leachate storage facility.

Transfers of condensate to tanker truck may be required in the event that the automated condensate destruct system is unavailable. Condensate transferred to tanker truck will be managed as leachate. Procedures for the prevention of spills during the transfer of condensate are the same as leachate outlined in Section 4.2.3 above.

4.3 Spill Response

4.3.1 General

The following sections describe procedures to be followed in the event of a spill or release of a petroleum product or other liquid addressed in this plan.

An important aspect of an effective response procedure during a spill incident is to keep the material separated from water to minimize migration and the resulting potential increase in human and environmental exposure. Every effort should be made to prevent spills and emphasize containment at the source rather than resort to separation of the material from expanded portions of the environment or downstream waters.

4.3.2 Discovery of a Release

The person discovering a release of material from a container, tank, or operating equipment should initiate certain actions immediately.

- a) Extinguish any sources of ignition. Until the material is identified as nonflammable and noncombustible, all potential sources of ignition in the area should be removed. Vehicles should be turned off. If the ignition source is stationary, attempt to move spilled material away from the ignition source. Avoid sparks and movement creating static electricity.
- b) Attempt to stop the release at its source. **Assure that no danger to human health exists first.** Simple procedures (turning valves, plugging leaks, etc.) may be attempted by the discoverer if there is no health or safety hazard and there is a reasonable certainty of the origin of the leak.
- c) Initiate spill notification and reporting procedures. Report the incident immediately to the Supervisor and the ECS. The ECS would then disseminate the spill notification to other responsible personnel. If there is an immediate threat to human life (e.g. a fire in progress or fumes overcoming workers), an immediate alarm should be sounded to evacuate the affected area, and the fire department should be called. Request the assistance of the fire department's hazardous materials response team if an uncontrollable spill has occurred and/or if the spill has migrated beyond the site boundaries.

4.3.3 Containment of a Release

The following procedures shall be implemented in the event of a significant release (greater than 25 gallons) outside a secondary containment area:

- a) Stop the release at the source. Close valves or apply temporary patches to leaks in tanks. Personnel must wear appropriate safety equipment to prevent direct contact with liquids or vapors. Consult applicable material

safety data sheets for material compatibility, safety, and environmental precautions.

- b) Contain the material released into the environment. Following proper safety procedures, the spill should be contained by absorbent materials and dikes using shovels and brooms or heavy equipment. Consult applicable material safety data sheets for material compatibility, safety, and environmental precautions.
- c) Continue the notification procedure. The ECS shall notify outside authorities as required and obtain outside contractors to clean up the spill, if necessary.

4.4 Spill Cleanup

Appropriate personal protective equipment and clean-up procedures can be found on material safety data sheets. Care must be taken when cleaning up spills in order to minimize the generation of waste. The ECS can provide assistance for the issues discussed below.

- a) Recover or cleanup the material spilled - As much material as possible should be recovered and reused where appropriate. Material that cannot be reused must be declared as waste. Disposal methods shall be as follows:
 - Diesel fuel absorbed by soil shall be blended with soil until the mixture is determined to be non-flammable, then disposed at the active landfill working face.
 - Leachate and condensate absorbed by soil or chemical absorbent will be disposed at the active working face. It may be used as daily cover provided it is covered with additional waste or refuse within 24 hours.
 - Other materials, including coolant, lubricants or other fluids must be absorbed in solid material and shoveled into open top, 55-gallon drums. When drums are filled after a cleanup, the drum lids shall be secured and the drums shall be appropriately labeled (or re-labeled) identifying the substance(s), the date of the spill/cleanup, and the facility name and location. Combining non-compatible materials should be avoided as this can cause potentially dangerous chemical and/or physical reactions or may severely limit disposal options. Compatibility information can be found on material safety data sheets.
- b) Cleanup of the spill area - Surfaces that are contaminated by the release shall be cleaned by the use of an appropriate substance or water. Cleanup water must be minimized, contained and properly disposed. Occasionally,

porous materials (such as wood, soil, or oil-dry) may be contaminated; such materials will require special handling for disposal.

- c) Decontaminate tools and equipment used in cleanup - Even if dedicated to cleanup efforts, tools and equipment that have been used must be decontaminated before replacing them in the spill control kit.

4.5 Post-Cleanup Procedures

- a. Notification and reports to outside agencies. - The ECS shall file the following reports for any spill of 25 gallons or more:
- For any spill of 25 gallons or more, notify the Solid Waste Branch of the Hawaii Department of Health by phone or fax within 8 hours if possible, but not more than 24 hours; and file an Incident Report according to Solid Waste Management Permit requirements within three days following the spill or release.
 - For any spill of 25 gallons or more of diesel fuel, other petroleum products or any hazardous material, also notify the Department of Health, Hazard Evaluation & Emergency Response Office at (808) 586-4249 during normal business hours, or (808) 247-2191 after normal business hours, as well as Local Emergency Planning Committee (LEPC) representative at (808) 270-7911.
- b. Arrange for proper disposal of any waste materials. - The waste material from the cleanup must be characterized according to State and Federal Regulations. Representative sampling and analysis may be necessary to make this determination. In any case, the ECS shall assure that the waste is transported and disposed of in compliance with applicable laws, regulations and the site's Solid Waste Management Permit.
- c. Review the contingency and spill plans. - Management and operating personnel shall review spill response efforts, notification procedures, and cleanup equipment usage to evaluate their adequacy during the episode. Where deficiencies are found, the plan shall be revised and amended.

5. SIGNIFICANT LEAKS, SPILLS OR DISCHARGES

There have been no recorded incidents of significant leaks or spills of toxic or hazardous pollutants at Central Maui Landfill.

Based on available site information and documents there have been no discharges of storm water to the Kalialinui Gulch from the spillways of the retention/infiltration basins causing the discharge of a reportable quantity for which notification is or was required under 40 CFR §110.6.

6. STORM WATER MONITORING PLAN

This section describes methods to be used by CML personnel to monitor storm water in conformance with the General Permit for storm water discharges from industrial facilities under the National Pollutant Discharge Elimination System (NPDES) as specified in HAR 11-55, Appendix B.

6.1 Location and Frequency of Sampling

6.1.1 Visual Observations

During significant rain events, landfill operations personnel or designee for CML will visually check the three storm water basins at the facility, as identified in Section 3.2.1 above, on a daily basis. Data to be recorded for each observation include:

- Date and time
- Approximate depth of water and elevation below the discharge structure
- Approximate rate of water inflow to basin
- Presence or absence of flow from the basin

6.1.2 Sampling Events and Locations

Regulations require sampling to be conducted during a “representative storm”, defined as one in which at least 0.1 inches of rainfall accumulates and follows at least 72 hours after a previous storm with greater than 0.1 inch of rain. In response to this requirement, surface water sampling will be conducted during the first event in which a discharge occurs from a storm water basin each year. Because all basins are designed to retain storm water and discharge only by overflow, no sampling may occur in dry years, while from one to three basins may have flow and require sampling in wetter years. Samples will be collected from the outfall or point of discharge from the basin as indicated in Section 3.2.1.

6.2 Sample Collection Methods

Test parameters for which samples are collected are listed in Table 1. Table 1 also specifies the sample collection method for each parameter as either a grab sample or a composite sample. Grab samples are to be collected during the first fifteen minutes of discharge. Composite samples are a combination of at least two sample aliquots, the first being collected within the first fifteen minutes of discharge and subsequent samples collected at 15-minute intervals for the duration of discharge or for a maximum of one hour (four samples). Each sample will be collected in a clean container that has been washed, triple rinsed and sealed prior to being taken into the field.

The collected sample aliquots for the parameters requiring a composite sample must be combined into the composite sample for analysis on a flow-proportional basis. In order to do this, each sample aliquot must be associated with a flow measurement obtained using the handheld extendable flowmeter in the landfill engineering trailer. The flow measurements should be made before each sample aliquot is collected. One aliquot from each grab sample is then combined into a composite sample for testing, as follows:

Let Q_i = the measured discharge flow associated with sample i ;
 Q_{tot} = the total of all measured flowrates, **taken at equal time intervals**;
 V_i = the volume of a sample aliquot i to be added to make a composite sample;
 V_{tot} = the total volume needed for laboratory analysis; and
 n = the number of grab samples to be combined into a composite ($n = 2, 3$ or 4)

Then V_n is equal to $V_{tot} (Q_n/Q_{tot})$;
 $V_2 = V_{tot} (Q_2/ Q_{tot})$
 $V_3 = V_{tot} (Q_3/ Q_{tot})$
 $V_4 = V_{tot} (Q_4/ Q_{tot})...$

The calculated total volume of all aliquots should not exceed the capacity of the mixing vessel, or be less than the volume needed to fill the laboratory sample bottles

An appropriate measuring device (measuring cup, graduated cylinder, etc.) is used to measure the calculated volume from each sample and pour it into a clean container, which is stirred or shaken to thoroughly mix the aliquots from the grab samples. The combined sample is then used to fill the prepared sample bottles supplied by the analytical laboratory.

Each sample bottle will be identified by location, date, and time. Samples will be sealed and shipped to the analytical laboratory using procedures specified by the laboratory.

6.3 Test Parameters, and Detection Limits

Surface water samples will be tested for the parameters listed in Table 1, with limits not exceeding given values as specified in Hawaii Administrative Rules (HAR) Chapter 11-54 for the applicable classification of the receiving state waters. The Department of Health may include discharge limitations specified in HAR Section 11-55-19 and discharge limitations based on Federal Register, Vol.

73, No. 189, pages 56572-56578. Parameters, methods and limits may be revised from time to time and as directed by the Hawaii Department of Health.

6.4 Storm Water Flow Measurement

During periods when storm water is being discharged from a basin, if the handheld extendable flowmeter is unavailable, the following manual procedures will be implemented during sample events and at least twice each day to estimate the total rate of discharge during the storm event:

- Measure or estimate the average width and depth of the flow across a length of reasonably uniform channel or flow path below the spillway or other discharge point from the basin.
- Estimate the surface velocity of the flow by timing the flow of a floating object, such as a leaf or wood chip, across a measured length of flow. Repeat this measurement 3 to 5 times until a reasonable average is obtained.
- Compute the volumetric flow rate in cubic feet per second by multiplying the average surface velocity by the cross-sectional area of the flow path.

At the conclusion of the period of discharge, compute a time-averaged rate of discharge for the period.

Storm water discharge quantities may also be estimated in accordance with HAR Chapter 11-55, Appendix B.

6.5 Storm Event Information

Rainfall data is collected at an on-site weather station located at the CML administration building. The following data will be collected and recorded for the storm event during which sampling occurred:

- Date the event began
- Duration (days and hours)
- Starting and ending times
- Total inches of rain during event
- Elapsed time from end of previous storm event with rainfall greater than 0.1 inches and the beginning of the sampled event.

6.6 Report

A report will be prepared for each sampling event, including the following information:

- Date and time of sampling
- Sampling methods

- Results
- Storm event information
- Flow measurement results
- Log of visual observations during storm event

7. IMPLEMENTATION PROCEDURES

This section describes the procedures to be followed at CML to implement this SWPCP and ensure that any storm water discharges meet state water quality standards. The principal elements of implementation are training, inspections, documentation and maintaining the plan in a current state.

7.1 Employee Training

The ECS for CML will prepare and present an annual training session for all pertinent site operations staff to inform them of the SWPCP plan and requirements. The training will include information on regulatory requirements, facilities and procedures for preventing storm water pollution, and spill prevention and control measures. Documentation of the training will include an outline of the contents and an attendance list of staff participants.

7.2 Inspections

7.2.1 Frequency of Inspections

Inspections of the storm water management system at CML must be made at least twice each year at the following times:

- During the month of August prior to preparing the annual Surface Water Management Plan required to be submitted to the DOH Solid Waste Division by September 1 of each year, according to the site's Solid Waste Management Permit; and
- During the first major rain event of the wet season.

7.2.2 Scope of Inspections

Each inspection will be conducted by CML or designee and will include the following elements:

- Condition of landfill cover and the presence of eroded areas or areas susceptible to erosion during storm events;
- Condition of drainage channels and pipes, including damage or presence of excessive sediment, litter or debris;
- Condition of storm water basins including presence of excessive sediment, vegetation or debris;
- Need for temporary drainage and erosion control measures on landfill access roads and inactive areas;
- Condition of diversion and retention berms at the active landfill working face;
- Condition of spill prevention and control facilities relative to handling and storage of fuel, leachate and landfill gas condensate; and

- Detailed description of deficiencies and recommendations for maintenance or repairs to correct them.

7.2.3 Documentation

Inspections will be documented on a form prepared by the ECS. All inspection reports must be retained on site for a minimum of three (3) years.

7.2.4 Correction of Deficiencies

Any deficient conditions identified in an inspection should be corrected within 14 days if possible. Conditions requiring construction or repairs that are not capable of being implemented within 14 days should be completed as soon as possible according to a schedule established and documented within 14 days after the inspection. In no event should items identified in the August inspection be completed later than October 15.

Corrective actions must be documented in the relevant inspection report or an addendum to the inspection report.

7.3 Storm Water Pollution Control Plan Maintenance

7.3.1 Location of the SWPCP

A current copy of the SWPCP must be maintained at the CML administration building, where it is readily available for inspection by Hawaii Department of Health personnel.

7.3.2 Procedures for Updating the Pollution Control Plan

The SWPCP may be amended from time to time, either at the request of the Hawaii Department of Health or at the County's initiative. The Plan must be amended whenever a change in the facility occurs that may significantly affect the discharge of pollutants to surface water, or when there is a change in regulatory requirements. Revisions in the SWPCP should also be made when changes to the storm water management systems or practices are made. The ECS has primary responsibility for determining when the SWPCP requires updating, and facilitating the revisions in consultation with other responsible parties.

7.3.3 SWPCP Submittals

Copies of the revised SWPCP or revisions to it are required to be submitted to the Hawaii Department of Health within thirty days after revisions are made.

Copies of the revised plan or of revised sections should be submitted to both the Clean Water Branch and Solid Waste Branch of HDOH.

Tables

**TABLE 1
STORM WATER MONITORING PARAMETERS**

Parameter (Units)	Effluent Limitation	Min Monitoring Frequency	Type of Sample
Quantity of Discharge (gal)	{3}	Annually {4}	Calc. or Est.
Biochemical Oxygen Demand (5-day) (mg/L)	140 {5} 37 {6}	Annually {4}	Grab or Composite
Chemical Oxygen Demand (mg/L)	{3}	Annually {4}	Grab or Composite
Total Suspended Solids (mg/L)	80 {5} {7} 55 {6} {7} 24 {8}	Annually {4}	Grab or Composite
Total Phosphorus (mg/L)	{3}	Annually {4}	Grab or Composite
Total Nitrogen (mg/L) {9}	{3}	Annually {4}	Grab or Composite
Nitrate + Nitrite Nitrogen (mg/L)	{3}	Annually {4}	Grab or Composite
Oil and Grease (mg/L)	15	Annually {4}	Grab {10}
pH	5.5 - 8.0	Annually {4}	Grab {11}
Total Recoverable Iron (mg/L)	1.0	Annually {4}	Grab or Composite
Ammonia (mg/L)	10 {7} 4.9 {8}	Annually {4}	Grab or Composite
Alpha Terpineol (mg/L)	0.033 {7} 0.016 {8}	Annually {4}	Grab or Composite
Benzoic Acid (mg/L)	0.12 {7} 0.071 {8}	Annually {4}	Grab or Composite
p-Cresol (mg/L)	0.025 {7} 0.014 {8}	Annually {4}	Grab or Composite
Phenol (mg/L)	0.026 {7} 0.015 {8}	Annually {4}	Grab or Composite
Total Recoverable Zinc (mg/L)	0.022 {7} 0.022 {8}	Annually {4}	Grab or Composite

mg/L Milligrams per Liter

Notes:

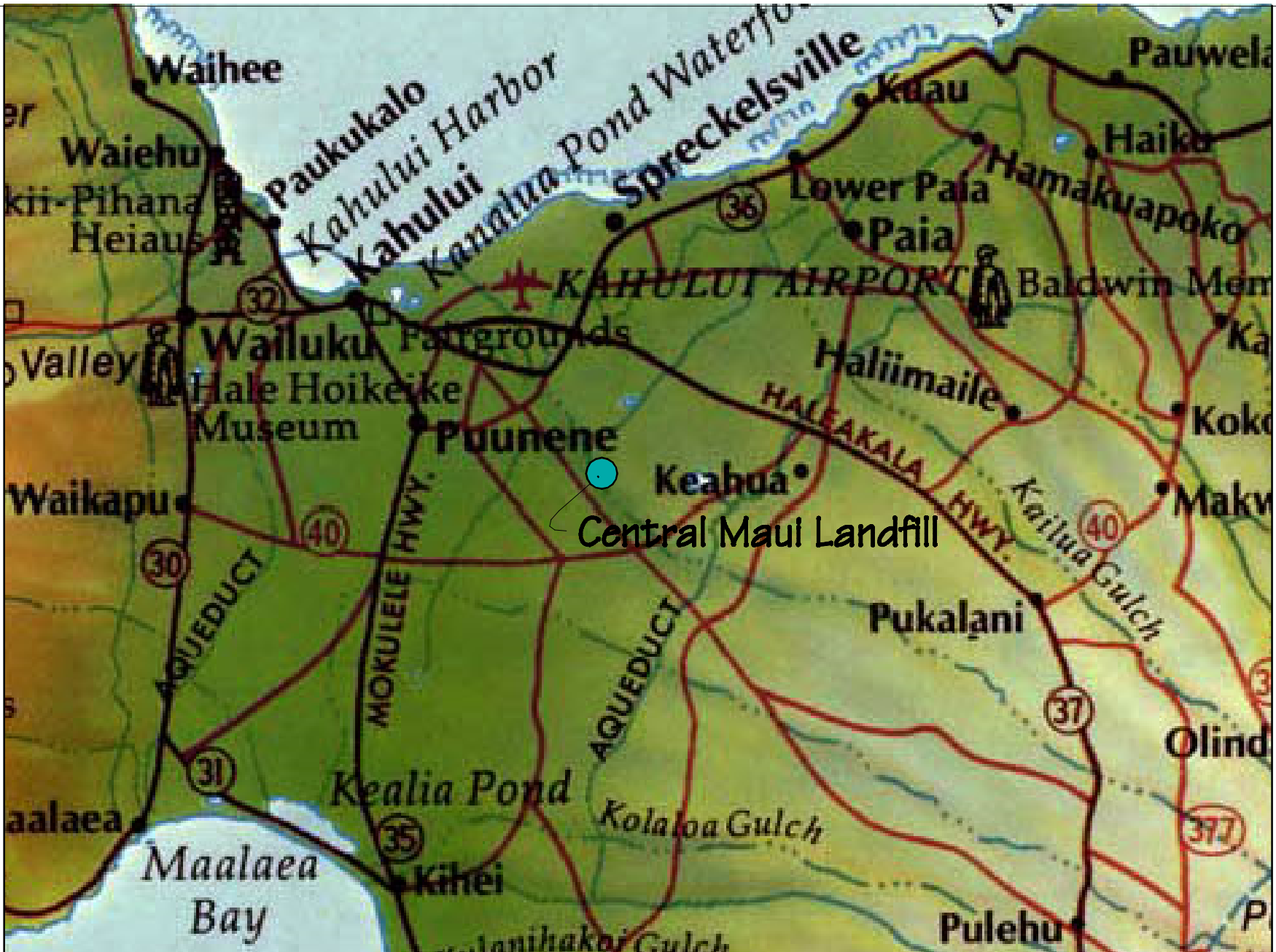
- {1} Pollutant concentration levels shall not exceed the storm water discharge limits or be outside the ranges indicated in the table. Actual or measured levels which exceed those storm water discharge limits or are outside those ranges shall be reported to the DOH as required in HAR, Chapter 11-55, Appendix B, Section 10(c).
- {2} The Permittee shall collect samples for analysis from a discharge resulting from a representative storm. A representative storm means a rainfall that accumulates more than 0.1 inch of rain and occurs at least 72 hours after the previous measurable (greater than 0.1 inch) rainfall event.

The Permittee shall analyze the sample collected during the first 15 minutes as a grab sample. If two (2) or more samples are collected, the Permittee shall analyze the samples as a composite sample.

“Composite sample” means a combination of at least two (2) sample aliquots, collected at periodic intervals. The composite shall be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to the total flow of storm water discharge flow since the collection of the previous aliquot. The Permittee may collect aliquots manually or automatically.

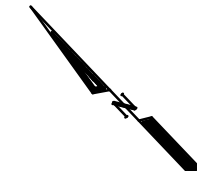
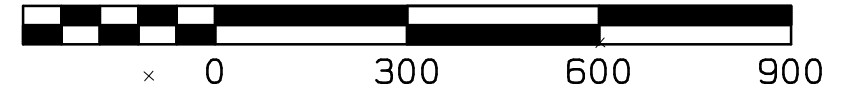
- {3} No limitation at this time. Only monitoring and reporting required.
- {4} “Annually” means once per calendar year.
- {5} This limitation applies during the wet season (November 1 – April 30).
- {6} This limitation applies during the dry season (May 1 – October 31).
- {7} This value is a daily maximum limitation.
- {8} This value is a maximum monthly average limitation.
- {9} The Total Nitrogen parameter is a measure of all nitrogen compounds in the sample (nitrate, nitrite, ammonia, dissolved organic nitrogen, and organic matter present as particulates).
- {10} The Permittee shall measure Oil and Grease using EPA Method 1664, Revision A.
- {11} The Permittee shall measure pH within 15 minutes of obtaining the grab sample.

Figures

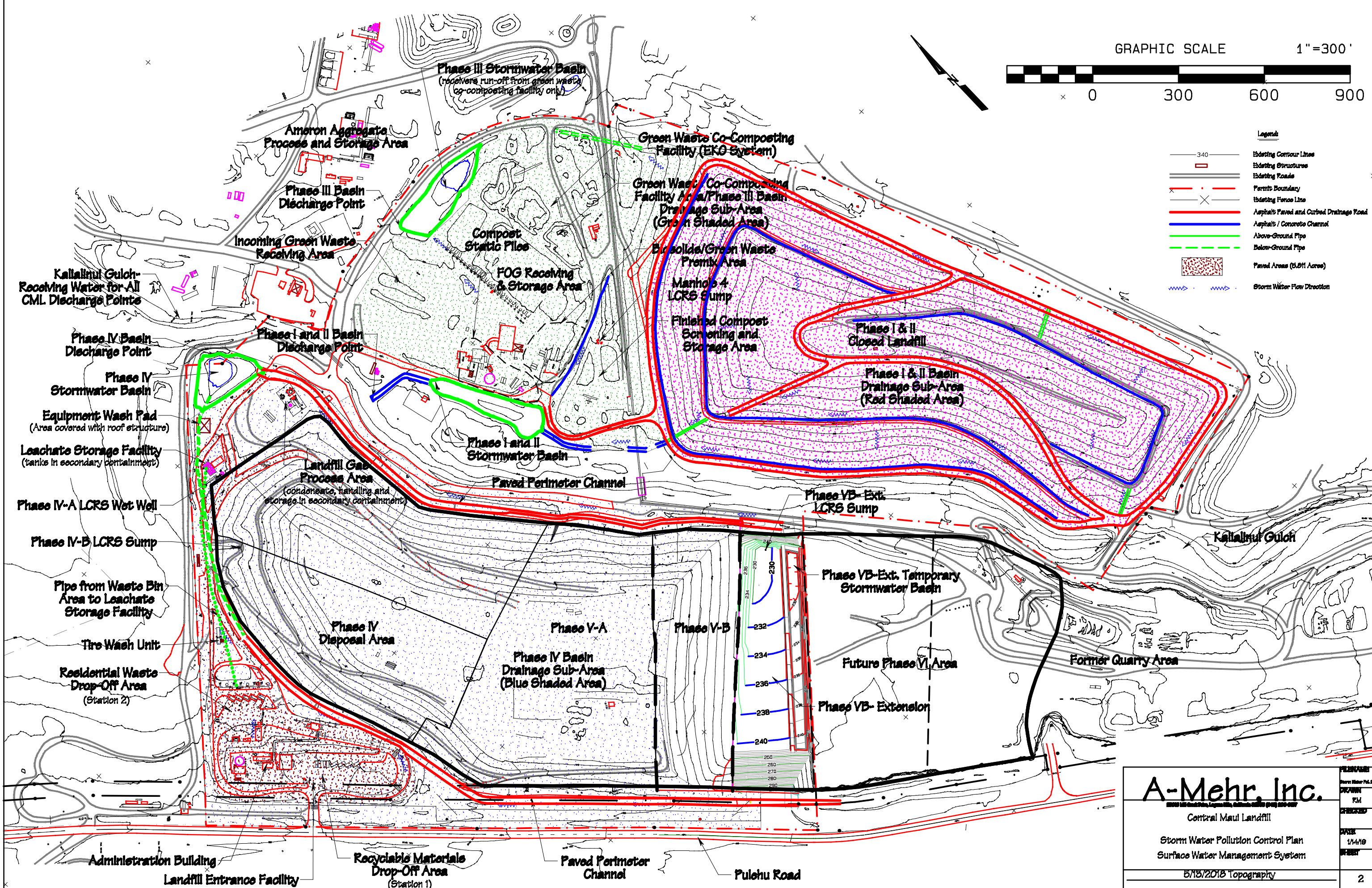


Vicinity Map

A-MEHR, INC		FILE
28016 Mill Creek Drive, Laguna Hills, CA 92653		DATE
(949) 206-0187 (949) 206-6187 FAX		FIGURE
Central Maui Landfill		CHECK
Storm Water Pollution Control Plan		DATE
Vicinity Map		FIGURE
		1

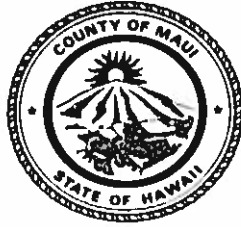


- Legend**
- 340 Existing Contour Lines
 - Existing Structures
 - Existing Roads
 - Permits Boundary
 - Existing Fence Line
 - Asphalt Paved and Curbed Drainage Road
 - Asphalt / Concrete Channel
 - Above-Ground Pipe
 - Below-Ground Pipe
 - Paved Areas (5,511 Acres)
 - Storm Water Flow Direction



A-Mehr, Inc.		PROJECT Storm Water Poll. Control DRAWN RM CHECKED DATE 1/4/18 SHEET 2
Central Maui Landfill		
Storm Water Pollution Control Plan Surface Water Management System		
5/13/2018 Topography		

MICHAEL P. VICTORINO
Mayor
MICHAEL M. MIYAMOTO
Acting Director
SHAYNE R. AGAWA, P.E.
Deputy Director



MICHAEL P. RATTE
Solid Waste Division
ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division
TAMARA FARNSWORTH
Environmental Protection &
Sustainability Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

January 25, 2019

Ms. Lene Ichinotsubo, P.E., (Acting) Chief
Solid and Hazardous Waste Branch
Environmental Management Division
Department of Health, State of Hawaii
2827 Waimano Home Road
Pearl City, Hawaii 96782

Dear Ms. Ichinotsubo:

**SUBJECT: CENTRAL MAUI LANDFILL
STORM WATER POLLUTION CONTROL PLAN UPDATE
SOLID WASTE MANAGEMENT PERMIT LF-0074-13**

In accordance with Hawaii Administrative Rules Title 11, Chapter 55, Appendix B, Section 6, the County of Maui herewith submits its updated Storm Water Pollution Control Plan for the Central Maui Landfill, Puunene, Maui, Hawaii.

Should you have any questions, please contact Sage Kiyonaga, Solid Waste Division Engineer, at (808) 270-7941.

Sincerely,

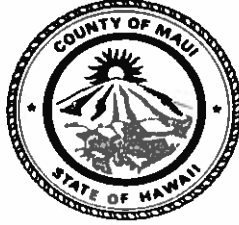
for 
MICHAEL MIYAMOTO
Acting Director, Department of Environmental Management

Attachments
cc: Sage Kiyonaga
Virgil Viernes
Bob Schmidt

MICHAEL P. VICTORINO
Mayor

MICHAEL M. MIYAMOTO
Acting Director

SHAYNE R. AGAWA, P.E.
Deputy Director



MICHAEL P. RATTE
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

TAMARA FARNSWORTH
Environmental Protection &
Sustainability Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

January 25, 2019

Mr. Stewart Yamada, P.E., Chief
Environmental Management Division
Department of Health, State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Yamada:

**SUBJECT: CENTRAL MAUI LANDFILL
STORM WATER POLLUTION CONTROL PLAN UPDATE
FILE NO. HI F50414**

In accordance with Hawaii Administrative Rules Title 11, Chapter 55, Appendix B, Section 6, the County of Maui herewith submits its updated Storm Water Pollution Control Plan for the Central Maui Landfill, Puunene, Maui, Hawaii.

Should you have any questions, please contact Sage Kiyonaga, Solid Waste Division Engineer, at (808) 270-7941.

Sincerely,

A handwritten signature in black ink that reads "Michael Miyamoto".

Handwritten initials "AM" in black ink.

MICHAEL MIYAMOTO
Acting Director, Department of Environmental Management

Attachments

cc: Sage Kiyonaga
Virgil Viernes
Bob Schmidt

Appendix J

Special Occurrences Report Form

REPORT OF SPECIAL OCCURRENCES

County of Maui
 Department of Environmental Management
 Solid Waste Division
 2200 Main Street, Suite 225
 Wailuku, HI 96793
 (808) 270-7875

Central Maui Landfill
 Pulehu Road
 Puunene, Maui, Hawaii 96784
 Telephone (808) 271-6153

DATE:	
REPORT MADE BY:	POSITION:

- Check One:**
- Incident of non-compliance with the Solid Waste Permit
- Incident Threatening Human Health or the Environment Check Type of Incident Below

Incident Threatening Human Health or the Environment

Date and Time of Incident _____

Type of Incident (Check one)

<input type="checkbox"/> Fire	<input type="checkbox"/> Accident
<input type="checkbox"/> Earthquake	<input type="checkbox"/> Explosion
<input type="checkbox"/> Unusual and Sudden Settlement	<input type="checkbox"/> Presence of Hazardous Waste
<input type="checkbox"/> Injury	<input type="checkbox"/> Flooding
<input type="checkbox"/> Other Unusual Occurrences	<input type="checkbox"/> Landslide

Actual or Potential Hazards to Human Health or the Environment, if any:

If Incident involved release of materials:

Type of Material(s) _____

Quantity Released _____

Quantity Recovered _____

Disposition of Recovered Materials _____

Injuries to Persons or Damage to Property, if any _____

Incident of Non-Compliance

Permit or Regulation Not Complied With _____

Reason or Cause of Non-Compliance _____

Exact Dates and Times of Non-Compliance Beginning: _____

Ending (Actual or Projected): _____

Steps taken to reduce, eliminate & prevent recurrence of non-compliance _____

FAX THIS FORM WHEN COMPLETED TO:

Hawaii Department of Health
 Solid and Hazardous Waste Division
 Fax No. (808) 586-7509

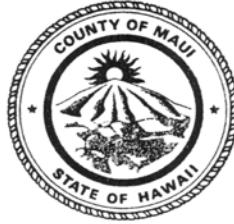
Appendix K

Radiation Monitoring Plan

ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director



TRACY TAKAMINE, P.E.
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**

2200 MAIN STREET, SUITE 100
WAILUKU, MAUI, HAWAII 96793

October 10, 2012

Mr. Stuart Yamada, P.E.
Environmental Management Division
State of Hawaii Department of Health
919 Ala Moana Boulevard, Room 300
Honolulu, HI 96814

Dear Mr. Yamada:

**SUBJECT: RADIATION MONITORING PLAN
CENTRAL MAUI LANDFILL
SOLID WASTE MANAGEMENT PERMIT NO. LF-0089-08**

In accordance with Special Conditions I, Section C (Acceptance Criteria), Item 4 of solid waste permit LF-0089-08, the County of Maui, Department of Environmental Management is submitting this *Radioactive Waste Monitoring Plan* for the Central Maui Landfill (CML).

Should you have any questions, please call Tracy Takamine, Solid Waste Division Chief, at (808) 270-7881.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Ginoza", with a stylized flourish at the end.

KYLE K. GINOZA, P.E.
DIRECTOR OF ENVIRONMENTAL MANAGEMENT
COUNTY OF MAUI

Attachments

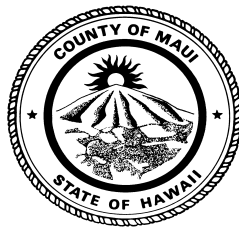
Cc: Michael Kehano, SWD

RADIATION MONITORING PLAN

**Central Maui Landfill
Puunene, Hawaii**

**Submitted To
Hawaii State Department of Health – Office of Solid and
Hazardous Waste Management
September 2012**

Prepared by



**County of Maui
Wailuku, Hawaii**

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INTRODUCTION

To prevent the acceptance of radioactive material, radiation monitors are installed at the incoming scale to screen all waste loads destined for the landfill disposal area. The monitors are positioned adjacent to both sides of the scale and will sense radiation emitted by incoming loads from seven feet away. The monitors are set to alarm when the level of radiation emitted by a vehicle exceeds ten times the background level of radiation experienced in the general vicinity of the scale facility.

The radiation monitors consist of two scintillation detectors mounted on poles on both sides of the inbound scale, and a controller / readout unit located inside the scalehouse. The system is designed specifically for solid waste landfills and is installed according to the manufacturer's recommendations. Appendix A contains a copy of the manufacturer's specifications on the monitoring system (Thermo Scientific LFM-3 Radiation Detection System).

OPERATIONAL PROCEDURES

To ensure proper operation of the monitors, each monitor will be checked by a scale house operator using a controlled radioactive source at the beginning of the work week. In the event a monitor is determined to be non-functioning or unreliable, a backup hand-held monitor (maintained on-site) will be utilized to scan each load manually until a replacement monitor is obtained or repair of the non-functioning monitor is completed. Appendix A contains information on the hand-held monitor (Thermo Scientific RadEye PRD).

In the event a radiation monitor alarm set point is triggered, the following procedures will be implemented:

- The vehicle triggering the monitor will be immediately stopped from proceeding to the working face by the scale house operator.
- To verify that radiation emissions have been detected in the load, the scale attendant will scan the load using the hand-held monitor. If the hand-held unit also detects elevated levels of radiation, the vehicle will be directed to an area out of the flow of traffic and the driver instructed to await further direction.
- Scale house personnel will notify facility management of the incident.

- A member of facility management will investigate the incident further with a hand-held monitor. The driver (and any passengers) and the load will be monitored separately with the hand-held detector to determine which is the source of the radioactive emission.
- If the driver causes the hand-held monitor to alarm, facility management will inquire if the driver or someone he/she knows has recently undergone radiation therapy.
- After monitoring the load separate from the driver, if it is determined only the driver is emitting radiation, the load will be weighed at the scales and allowed to be discharged at the working face.
- Upon concluding the load is a source of radioactive emissions, the vehicle will be directed to an area segregated from employees, customers, and the general public. The Maui Fire Department (MFD) will be contacted at 911 and informed of the incident to ensure the correct personnel are sent to the landfill. If the MFD is able to dispatch a radiation-trained officer with advanced equipment to the site on the same day, the driver and its passengers will be directed to remain at the site until the MFD arrives. As a precaution, the driver and its passengers will be segregated from the load. The MFD, as a matter of procedure, will notify the Department of Health (DOH) Indoor and Radiological Health Branch of the incident.
- Concurrently with the MFD notified, facility management will obtain information from the hauler regarding the origin of the load and the possible point of generation of the radioactive material in the load. The representative of the hauling company will be contacted and, if possible to determine, the owner of the waste. The information obtained will typically include:
 1. Driver's name
 2. Driver's license number
 3. Driver's truck number
 4. Origin of load or route area serviced
 5. Time
- If the MFD is unable to conduct an on-site investigation on the same day, the driver will be directed to leave the load at the CML until such time as the MFD is able to investigate the type and source of the radiation.
- The MFD will evaluate the radioactive emissions from the load in order to attempt to ascertain the type of radiation and the nature of the source material. Based on the results of this evaluation, the CMI and MFD will coordinate with the Department of Health and may: approve the material for immediate disposal; order the load be detained in the segregated area

until such time the source material decays and associated emissions fall below the level acceptable to the DOH, at which time the load would be released for disposal: or the CML and MFD may begin an incident-specific management procedure with assistance from DOH.

- Loads released for disposal will pass through the scale, be weighed, and then buried at the active landfill working face.
- For all such incidents, a member of the CML will notify the Hawaii Department of Health, Hazardous and Solid Waste Branch by telephone or facsimile within 24 hours after the occurrence, and will prepare a written Incident Report to be submitted to the DOH within three days, according to requirements of the facility Solid Waste Permit.

APPENDIX A

RADIATION MONITORING EQUIPMENT

The Thermo Scientific LFM-3 portal radiation detection system is an easy to set-up and use, multi-purpose gamma and X-ray detection system.

Thermo Scientific LFM-3 Radiation Detection System



Key Features

- Robust, ruggedized detectors suitable for indoor or outdoor applications
- Supplied with 200' (60m) of cable for each detector, with a maximum capability up to 3,300' (1000m)
- High-performance system control unit with single button operation
- Automated, natural background compensation system ready to operate within minutes of installation
- Low, medium and high energy channels provide additional information about the type of radiation detected
- Large, clear display screen and LEDs provide for easy interpretation of data

Applications

- Solid Waste Facilities
- Transfer Stations
- Waste to Energy Plants
- Recycling facilities
- Hospitals – Nuclear Medicine and Housekeeping
- Healthcare and Research



The Thermo Scientific LFM Series Radiation Monitoring System product family has long been considered to be the benchmark for radiation monitoring in the hospital and solid waste industry, with hundreds of installed units. The LFM-3 builds on the proven, familiar detector design of previous LFM models and combines this with new, state-of-the-art electronics.

The LFM-3 Radiation Monitoring System is designed to maximize sensitivity to gamma radiation, with a minimum of nuisance alarms, at an affordable price. The system is perfect for monitoring materials bound for landfills, transfer stations and other waste processing facilities

The complete system consists of two shielded, 50.8 mm (2 in.) diameter, NaI (TI) scintillation detectors shock-mounted in separate weatherproof PVC housings.

Cables connect the detectors to an easy-to-read digital readout electronics package. Operating the system does not require intensive training or specialized knowledge.

The detectors are constructed to withstand temperature extremes. They also have low mass housings to detect and discriminate low, medium, and high gamma energies.

Product Specifications

LFM-3 Specifications

FHT-6020 Controller

Displayable Range	0 – 999,999 cps
Operating Temperature	32 to 122°F (0 to 50°C)
Power Requirements	85V to 264VAC (nominal 115V to 230VAC), 47 to 400Hz.
Maximum input current	550mA, 115VAC or 330mA, 230VAC
Size	6.5" x 5.11" x 2" (165mm x 130mm x 51mm)
Weight	2.9 lbs (1.3kg)
Construction	Extruded Aluminum housing
Display	128 x 64 Pixel LCD display
Push Button	One operating key
LEDs	4 LEDs: <ul style="list-style-type: none"> • 1 Green LED (Status) • 2 Yellow LEDs (Error and Alarm 1) • 1 Red LED (Alarm 2)
Audible Alarm	85 dB(A) at 11.8" (30 cm) distance
Interfaces	<ul style="list-style-type: none"> • One RS-232 PC interface with a baud rate of 9,600 or 19,200 • One RS-485 connection for both NaI detectors • One RS-485 connection for optional alarm tower connection

NaI Detectors

Radiation Detected	Low, medium, and high energy gammas and X-rays (>20keV)								
Sensitivity	The following point sources, free in air at 7 feet (2.1 m) from the detector face can be detected with a confidence level of 95%:								
	<table border="1"> <thead> <tr> <th>1 Second Interval</th> <th>15 Second Interval</th> </tr> </thead> <tbody> <tr> <td>• 44.6 μCi (1.65MBq) Cs-137</td> <td>• 14.0 μCi (0.52MBq) Cs-137</td> </tr> <tr> <td>• 17.3 μCi (0.64MBq) Ba-133</td> <td>• 5.4 μCi (0.20MBq) Ba-133</td> </tr> <tr> <td>• 29.0 μCi (1.07MBq) Co-57</td> <td>• 9.1 μCi (0.34MBq) Co-57</td> </tr> </tbody> </table>	1 Second Interval	15 Second Interval	• 44.6 μ Ci (1.65MBq) Cs-137	• 14.0 μ Ci (0.52MBq) Cs-137	• 17.3 μ Ci (0.64MBq) Ba-133	• 5.4 μ Ci (0.20MBq) Ba-133	• 29.0 μ Ci (1.07MBq) Co-57	• 9.1 μ Ci (0.34MBq) Co-57
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• 44.6 μ Ci (1.65MBq) Cs-137	• 14.0 μ Ci (0.52MBq) Cs-137								
• 17.3 μ Ci (0.64MBq) Ba-133	• 5.4 μ Ci (0.20MBq) Ba-133								
• 29.0 μ Ci (1.07MBq) Co-57	• 9.1 μ Ci (0.34MBq) Co-57								
Detectors	Two, 2" NaI(Tl) scintillation detectors in low mass housings, constructed to withstand temperature extremes; they are also lead-shielded and shock mounted within special PVC housings.								
Size	4.5" x 17.5" x 7" (144mm diameter, 445mm length, 178mm height)								
Weight	14.7 lbs (6.7 kg)								
Construction	Weatherproofed, painted PVC housings with liquid tight connections suitable for outdoor use.								
Operating Temperature	-4 to 122°F (-20 to 50°C)								

Options

Alarm Tower includes standard 50' (15m) of cable	TF-401-10000050
Desktop Mounting Assembly	1100722
Response Optimization and Test Adapter Assembly	LFM-00003-ME
Mini Desktop Receipt Printer (alarm activated)	TF-120-0004

Next Generation Advanced Pocket-Size Radiation Meters

RadEye PRD

High Sensitivity
Personal Radiation
Detector

RadEye G

Wide Range Gamma
Survey Meter for
Personal Radiation
Protection



Radiation Detection, Gamma Dose Rate Measurements and Area Monitoring


- Large Graphic Display
- Simple and Intuitive User Interface
- Dose Rate / Count Rate / Level: Display and Alarm
- True Dose Calculation and Alarm
- Durable and Shock Resistant
- Accurate with Excellent EMI Immunity
- Low Power Technology
- Rechargeable Standard-Size AAA Batteries



Natural Background Rejection Technology
for Enhanced Sensitivity (RadEye PRD)

- True dose and dose rate calculation avoids significant overestimation of low gamma energies
- Automatic background update, i. e. no user action necessary
- NBR allows very low alarm level for artificial radioactivity
- Designed to meet ANSI 42.33/1, 42.32 and IEC 62401
- Energy response behavior in Roentgen or Sievert can be selected via software.

NBR = Natural Background Rejection

NBR  The NBR measurement technology has been developed for the suppression of alarms caused by variations of the natural background. Thus an enhanced alarming sensitivity for most artificial gamma sources of concern is achieved. Unlike conventional spectroscopic-based gamma identification systems, the instruments using NBR do not require the presence and resolution of gamma spectral lines.

RadEye G - Wide Range Gamma Survey Meter for Personal Radiation Protection

The RadEye G is a light-weight and very rugged instrument designed for the quick and reliable measurement of the gamma dose rate. Modern electronic circuitry guarantees excellent linearity over 6 decades of radiation intensity: from background level to 5 R/h - with overrange indication up to 1000 R/h.



The RadEye G incorporates a large energy compensated GM-tube for the precise dose rate measurement for gamma and x-ray.

RadEye G-10 version incorporates a different energy filter in order to achieve a Sievert response curve according to ambient equivalent dose rate $H^*(10)$.

The intelligent ratemeter algorithm (ADF mode) guarantees that even the smallest changes of dose rate are immediately detected, while at the same time, the random fluctuations are effectively suppressed.

- Large and well proven energy compensated GM detector
- Very good low energy response (from 45 keV)
- Reasonable count rate at background level, 0.17 cps at 10 μ R/h
- 6 decades of measuring range 5 μ R/h to 5 R/h
- Overrange indication up to 1000 R/h

RadEye Software

All settings and the data analysis can be done by an optional Windows™-based PC-software and an accompanying reader device. In order to allow retrospective analysis of any event, the latest 1600 dose rate values are stored in the internal data memory. For each time interval both the mean and the maximum measurement values are stored.

Changes in configuration, occurring alarms and errors are saved in the RadEye memory. These saved events can be read out via the option "log-book". It is shown as a table and can be saved to the PC hard disc or printed. The logbook has a maximum of 250 data sets. Several events at the same time are saved as one record. On the display every event is shown in one line for a clear view.



RadEye PRD configuration



RadEye PRD history



RadEye car adapter for mobile area survey applications



RadEye belt holster with openings for alarm-LED and earphone connector



Excellent EMI-shielding proven by rigorous testing procedures



RadEye data communication fitting to FH 40 G system



Cost saving with rechargeable batteries

Features of RadEye PRD and RadEye G

- Rugged and reliable
- Removable rubber sleeve for extra protection
- Large display for clear information
- Weighs only 160 g (96 x 61 x 31 mm) - true "pocket meter"
- Top alarm indication - can be operated in holster
- One hot and four advanced buttons - easy to use, no PC required
- Low power technology - 600 h operation time on 2 AAA cells
- Rechargeable batteries can be used - low cost of ownership
- Overload indication up to 1000 R/h - personal safety
- 1600 data points (mean/max.) - allows retrospective analysis
- PC-software with real-time graph - perfect for tutorial and training
- Adaptable user interface - can be optimized to application / user group
- Earphone output for noisy environment
- Alarm relay output - for area monitor application



	RadEye G RadEye G-10	RadEye PRD
Main Application	Wide Range Gamma Dose Rate Measurement First Responders, Nuclear Industry, Medical Radiation Protection	High Sensitivity Gamma Radiation Detection and Dose Rate Measurement Security Forces, Steel and Recycling Industry, First Responders
Detector	Energy compensated GM-tubes: G version for exposure (R) G-10 for ambient equivalent dose H*(10) (Sv)	NaI(Tl)-detector with high quality μ -Photomultiplier; software switch for Roentgen or Sievert calculation
Measuring Range	5 μ R/h - 5 R/h 0.05 μ Sv/h - 50 mSv/h	1 μ R/h - 25 mR/h 0.01 μ Sv/h - 250 μ Sv/h
Overrange Indication	1000 R/h (10 Sv/h)	1000 R/h (10 Sv/h)
Energy Range (+/- 30 %)	45 keV - 1.3 MeV	60 keV - 1.3 MeV excellent detection from 30 keV
Count Rate for Cs-137 (662 keV)	0.017 cps per μ R/h 1.7 cps per μ Sv/h	1.5 cps per μ R/h 150 cps per μ Sv/h
Count Rate for Am-241 (60 keV)	0.020 cps per μ R/h 2.0 cps per μ Sv/h	30 cps per μ R/h 2000 cps per μ Sv/h
Enhanced alarming sensitivity by Natural Background Rejection	No	Yes, down to 1 μ R/h at low gamma energies
Cosmic Radiation Background	No suppression	Suppression typically > 95 %

Appendix L

Construction and Demolition Waste Acceptance Forms



FOR OFFICIAL USE ONLY	
C&D Job No.: _____	Date Approved: _____
Approved By: _____	Expires 6 Months from Approval

**Declaration of Non-Hazardous Commercial Construction and Demolition Waste
MAUI COUNTY LANDFILLS**

For Delivery To: Molokai Lanai Central Maui

Waste Generator / Jobsite

Property Owner: _____

Jobsite Address: _____

Phone No.: _____

Contractor

Contractor: _____

Address: _____

Phone No.: _____

Email Address: _____

Waste Transporter

Transporter: _____

Address: _____

Phone No.: _____

Email Address: _____

C&D Delivery Period is 6 Months from Date of Approval.

Note: Customers should renew their C&D Job No. prior to expiration.

USE OF SITE

- Residential
- Commercial
- Industrial
- Vacant Land
- State/Federal
- Other: _____

JOB/PROJECT

- Demolition
- Renovation
- Roofing Only
- New Construction
- Other: _____

WASTE MATERIAL

- Canec
- Concrete/Asphalt
- Grub
- Mixed Const. Waste
- Rock/Dirt/Soil
- Liquid Waste/Sludge
- Transite
- Asbestos
- Lead Based Paint
- Paint Chips
- Contaminated Soil
- Other: _____

THE UNDERSIGNED HEREBY CERTIFIES THAT IT HAS REVIEWED AND WILL COMPLY WITH THE ATTACHED TERMS, CONDITIONS AND PROVISIONS AND REPRESENTS THAT THE FOLLOWING PERSONS ARE AUTHORIZED TO EXECUTE THIS AGREEMENT.

Print Name of Property Owner or Authorized Agent / Signature _____
Date

Print Name of Contractor Authorized Agent / Signature _____
Date

Print Name of Transporter Authorized Agent / Signature _____
Date

Only wastes delivered by the Transporter identified above will be accepted. For any additional transporters submit an additional separate copy of this Form.

Terms, Conditions and Provisions:

- Materials delivered **do not** contain hazardous wastes as defined by Federal, State and local agencies, including but not limited to radioactive, Polychlorinated Biphenyls (PCBs), petroleum, asbestos and lead.
- Materials delivered under this C&D Number are solely from the above Waste Generator / Jobsite address.
- Any and all information provided by me herein and as supplement to is true and correct.
- I will indemnify, defend and hold harmless the County of Maui and authorized agents, from any and all claims, actions, proceedings, expenses, damages and liabilities, including attorney's fees and costs, directly or indirectly arising out of the services received.
- The County reserves the right to refuse service where the County has cause, for any reason, to believe that incoming materials may contain unacceptable materials, sourced from a location other than specified above, or adversely affects the landfill.
- The County may require testing results from an independent, certified laboratory (at no expense to the County) to confirm that all materials delivered contains no unacceptable wastes. Samples submitted for testing shall be representative of the wastes to be delivered and collected in accordance with EPA SW-846. Requested tests may include but not limited to TCLP metals, VOCs, Semi-VOCs, and EPA Method 8080.
- The County of Maui reserves the right to change the terms, conditions and provisions of this contract at any time.

Maui County Landfills

Commercial Construction and Demolition Waste Acceptance General Conditions

Acceptable Material

Maui County Landfills may only accept materials originating from commercial construction and demolition (C&D) sites in accordance with its State Department of Health Permit. By permit Central Maui Landfill cannot accept C&D waste unless there are no other permitted private C&D landfills in operation. C&D waste is defined as solid waste resulting from the construction, repair, demolition, or razing of buildings, of roads, and other structures. It includes the land clearing debris from the clearing of land for construction. Construction and demolition wastes typically consist of concrete, hollow tile, bituminous concrete, asphaltic pavement, wood, glass, masonry, roofing, siding, plaster, alone or in combinations. Land clearing debris typically consists of dirt, rock, stumps, boulders, brush, and other similar material. Demolition and construction waste does not include cleanup materials contaminated with hazardous wastes, asbestos, waste paints, solvents, sealers, adhesives, or similar materials.

Unacceptable Material

The Maui County Landfills will not accept any materials prohibited under Hawaii Revised Statutes (HRS) Chapter 342H and Hawaii Administrative Rules (HAR) Section 11-58.1 including but not limited to the following:

Petroleum Contaminated Materials	Green Waste
Tires	Flammable Explosives
Vehicle Parts and Fluids	Toxic and Carcinogenic Materials
Appliances (White Goods)	Flammable Explosives
PCBs	Adhesives
Tanks and Cylinders	Sealers
Liquids	Asbestos (separate receiving procedures apply)
Medical Wastes	Solvents
Batteries and Electronic Wastes	Paints
Sealed Barrels/Drums	Hazardous Waste, as defined in Section 8.04.010 Maui County Code

Waste Size Limitations

Incoming materials shall be no larger than 4-feet in the first and second largest dimensions and 1-foot in the smallest dimension. Concrete, boulders and rubble shall be no greater than 4-feet long in the largest dimension, 2-feet in the second and third largest dimensions and shall be free of protruding materials.

Waste Screening

The County shall assume no responsibility for screening, examining or inspecting any or all loads delivered by the Customer. The County may inspect incoming loads at any time.

C&D Acceptance Hours (unless otherwise arranged at your local landfill office)

The Maui County Landfills will only accept C&D wastes on weekdays from opening through 1PM, or as otherwise directed by your local landfill. C&D will not be accepted on Saturdays and County Holidays.

Loads consisting predominantly (i.e. greater than 50% by volume) of lightweight materials such as styro-foam, shredded paper, and sandblast material will only be accepted on weekdays from opening to 8AM, or as otherwise directed by your local landfill.

Rates

Please contact your local landfill office for rates and charges for C&D waste disposal. Rates and charges are subject to change.

Recycling

Contractors are encouraged to reuse, repurpose, donate or recycle to the greatest extent possible. For more information on recycling in your area, please contact the County Recycling Hotline at 270-7880.

C&D Number

The completed Declaration of Non-Hazardous Construction and Demolition Waste Form shall be emailed or mailed to the Central Maui Landfill Office along with any supporting documentation, i.e.; building assessment/abatement reports or any certified laboratory testing results for C&D wastes suspected to contain hazardous wastes:

Email: *ConDemo@co.maui.hi.us*

Address: *Central Maui Landfill
PO Box 518
Puunene, Hawaii 96784*

Please allow for up to 7 business days for processing. Upon completion, a copy of this form will be emailed or mailed back to the Contractor with the project C&D Job Number unless further information is required. For more information please call (808) 280-3416 or visit our website at: www.co.maui.hi.us/1739/Commercial-ConstructionDemo-Waste-Accept.



County of Maui Soil Profile Sheet

1. Soil Generator Information

- a. Generator Name: _____
- b. Generator Address: _____ c. Zip Code: _____
- d. Address of Soil Generation: _____
- e. Address of Soil Storage (if different from source address) _____
- f. Type of Facility Soil Has Been Generated From: _____
- g. State DOH Facility ID#: _____
- h. Contact: _____ i. Phone: (____) _____

2. Soil Information

- a. Name of Contaminant(s): _____
- b. Amount of Soil (tons and/or cubic yards) _____
- c. Type of Soil: _____
- d. Soil Moisture: Wet: _____ Damp: _____ Dry: _____
- e. Soil Color (Munsell Color Chart Code if available) _____
- f. Strong incidental odor ? No _____ Yes _____ Describe: _____
- g. pH _____
- h. Is the soil ignitable? Yes _____ No _____
- i. Describe the circumstances by which the soil has been generated.

3. Transportation Information

- a. Method of Shipment: Bulk Solid _____ Drum/Box _____ Other _____
- b. Transportation Company: _____
- c. Is this a U. S. Department of Transportation (USDOT) Hazardous Material? Yes ___ No ___

4. Chemical Contaminants (Attach supplementary sheets if necessary)

	Range (Min-Max)	
a. _____	- _____	ppm.
b. _____	- _____	ppm.
c. _____	- _____	ppm.
d. _____	- _____	ppm.
e. _____	- _____	ppm.
f. _____	- _____	ppm.
g. _____	- _____	ppm.
h. _____	- _____	ppm.
i. _____	- _____	ppm.

Attach copies of analytical reports and chain of custody documentation.
Attach a description of the soil sampling procedures.
Attach a site plan showing where the soil originated, and where samples were collected.

Continued

j. Does the soil contain any of the following (provide concentration if known)

PCBs	Yes _____ No _____	_____ ppm
Cyanides	Yes _____ No _____	_____ ppm
Sulfides	Yes _____ No _____	_____ ppm
Asbestos	Yes _____ No _____	_____ %

k. Indicate method used to determine the presence or absence of items listed in section j.

l. Sampling Source(e.g., Drum, Pit, Pile, Insitu, etc.) _____

m. Does the waste represented by this profile contain any of the carcinogens that require OSHA notification? Yes ___ No ___

n. Does the waste represented by this profile contain dioxins? Yes ___ No ___ (List in Section 4)

o. Does the waste represented by this profile contain asbestos? Yes ___ No ___ If yes, friable _____ non-friable _____.

p. Does the waste represented by this profile contain benzene? Yes ___ No ___

q. Is the waste subject to RCRA Subpart CC Controls? Yes ___ No ___

r. Does the waste contain any Class I or Class II ozone-depleting substances? (Freons) Yes ___ No ___

s. Does the waste contain debris? Yes ___ No ___ (List, if yes) _____

t. Personal Protective Equipment Requirements: _____

u. Is this a state hazardous waste? Yes ___ No ___ (List, if yes) _____

v. Is the Waste from a CERCLA or state mandated clean-up? Yes ___ No ___ (if yes, provide relevant documentation.)

w. Does the waste represented by this waste profile contain concentrations of PCBs regulated by 40 CFR ? Yes ___ No ___

x. Does the waste represented by waste profile contain radioactive material or disposal regulated by the NRC? Yes ___ No ___

y. Does the waste profile and all attachments contain true and accurate descriptions of the waste material, and has all relevant information within the possession of the Generator regarding known or suspected hazards pertaining to the waste been disclosed to the contractor? Yes ___ No ___

5. Generator's or Representative's Certification

a. Print Sampler's Name: _____ b. Sample Date: _____

c. Sampler's Title: _____

d. Sampler's Employer (if other than Generator): _____

The sampler's signature certifies that any sample submitted is representative of the soil described above pursuant to the DOH Technical Guidance Manual for Underground Storage Tank Closure and Release Response (August 1992) and EPA SW-846.

e. Sampler's Signature: _____

Continued

6. Generator Certification

By signing this soil profile sheet, the Generator certifies:

- a. This soil is not a "Hazardous Waste" as defined by EPA or the State of Hawaii.
- b. This waste does not contain regulated radioactive materials or regulated concentrations of PCBs (Polychlorinated Biphenyls).
- c. The statements and attachments contain true and accurate descriptions of the soil. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.
- d. The analytical data presented herein or attached hereto were derived from testing representative samples taken in accordance with the DOH Technical Guidance Manual for Underground Storage Tank Closure and Release Response (August 1992 and subsequent amendments/ revisions) and EPA SW-846.
- e. If any changes occur in the character of the soil, the Generator shall notify a Nanakuli Landfill representative immediately.

f. Signature _____

g. Company _____

h. Name and Title _____

i. Date _____

7. County of Maui Waste Disposal Decision (For Official Use Only)

- a. Waste Disposal Decision Accepted Rejected
- b. Disposal Method Landfill Special Waste Landfill (Asbestos)
- c. Precautions, Special Handling Procedures, or Limitations on Approval: _____
- d. C&D Job No. _____ Date: _____
- e. Reviewed by _____ Date: _____
- f. Eng. Section Approval: _____ Date: _____
- g. Operations Approval: _____ Date: _____
- h. Forwarded to DOH: _____ Date: _____

Additional Information for Contaminated Soil Reviews

1. Is this a hazardous waste (RCRA C)? Yes No
2. Does this waste contain heavy metals? Yes No
If yes, explain & identify
3. Does the waste contain PCBs? Yes No
If yes, explain
4. Is the waste a TSCA waste? Yes No
If yes, explain & identify
5. Is the waste a CERCLA waste? Yes No
If yes, explain & identify
6. Regulatory agency & Contact _____

7. Generator _____

8. Type of Contamination _____
9. Consultant Name & Number _____
10. Review report attached _____

If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in this Sheet and additionally attached sheets from information provided by the generator and additional information as it has determined to be reasonably necessary.

Certification Signature: _____ Title: _____
Name (Type or Print): _____ Company: _____ Date: _____

Submittal Instructions

The following are the items that should be in any review report, in the order noted.

1. List of regulatory agencies and regulations applicable to the project. Include Names and contact information (phone numbers) for all agencies involved for follow up.
2. Contact information: generator, type of contamination, and site history in narrative form.
3. Consultant information (i.e. Names, phone numbers) include the consultant that did the original investigation and subsequent investigations.
4. Report format for technical information.
 - A. Background information for site and processes.
 - B. Summary of investigative action. Including sampling and testing information pertinent to disposal.
 - C. Summary of remedial actions and how material being disposed was generated.
 - D. Rational for the determination that material is solid waste this should be based on applicable regulations.
 - E. Site location maps and site drawings.
 - F. Summary table of test data.
 - G. Laboratory data.

Actions Taken

Date: _____
Accepted: _____ Rejected: _____
Reason for Rejection: _____



COUNTY OF MAUI LANDFILLS ACCEPTANCE OF CONSTRUCTION & DEMOLITION WASTE

Central Maui (Upon Closure of the Maui Demolition and Construction Landfill Facility), Hana, Molokai and Lanai Landfills are permitted by the Hawaii Department of Health to Accept Commercial Construction and Demolition Waste

ACCEPTED WASTES	
Commercial Construction and Demolition Waste	Materials that originate from commercial construction or demolition sites (excluding resident self-hauled-wastes from residential projects), which include concrete, hollow bituminous concrete, asphalt, pavement, wood, glass, masonry, roofing, siding, plaster, dirt, rock, stumps (upon approval), boulders and brush.
<u>Special Rate Waste Types:</u> - Clean soil, rocks & concrete containing no protruding rebar - Clean soil, rocks & concrete not containing rebar - Non-HI5 and Non-ADF crushed glass	<u>Associated Tipping Fees at County Landfills:</u> - \$75 per ton (no larger than 4' x 2' x 2') - \$50 per ton (2 ½ inch minus) - \$20 per ton (2 ½ inch minus)
Normal Rates Apply for Mixed Construction & Demolition Waste.	

****A Declaration of Non-Hazardous Waste Form must be completed and approved prior to acceptance of loads after April 1, 2016****

County Landfills will not accept any materials prohibited under Hawaii Revised Statutes (HRS) Chapter 342H and Hawaii Administrative Rules (HAR) Section 11-58.1 including but not limited to the following:

- Petroleum Contaminated Materials
- Tires
- Appliances (White Goods)
- PCBs
- Tanks and Cylinders
- Liquids
- Batteries and Electronic Wastes
- Sealed Barrels/Drums
- Green Waste
- Flammable Explosives
- Solvents
- Adhesives
- Sealants
- Asbestos (separate receiving procedures apply)
- Paints
- Hazardous Waste as defined in Section 8.04.010 MCC

Any loads found to be containing unacceptable material will be referred to alternative sites prior to delivery where possible. The County of Maui reserves the right to charge for re-loading, clean-up, and/or disposal of any unacceptable materials that have been delivered to landfill sites in error.

To avoid disruption to your operations please call ahead or advise if you have any concerns about the acceptability of any waste material in your loads.

For more information and facility operating hours, please contact your local landfill or visit www.co.maui.hi.us

Appendix M

Leachate Reintroduction Operation Log and Related Diagrams

