

PERMITTEE:
OWNER/OPERATOR:
County of Maui
Molokai Integrated Solid Waste
Management Facility
Naiwa, Molokai

PERMIT NUMBER: LF-0032-19
DATE OF ISSUE: **DRAFT**
EXPIRATION DATE: **[5 years after issuance]**
COUNTY: Maui
LATITUDE/LONGITUDE: 21° 07' N, 157° 03' 42" W
PROJECT: Molokai Integrated Solid Waste
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DRAFT SOLID WASTE MANAGEMENT PERMIT

This solid waste management permit renewal and modification is issued under the provisions of Chapter 342H, "Solid Waste Pollution" Hawaii Revised Statutes (HRS), and Title 11, Chapter 58.1, "Solid Waste Management Control" Hawaii Administrative Rules (HAR). The above-named permittee is hereby authorized to construct and to operate the facility shown on the application and revised operations plan received on October 2019 additional submittals received on April 20, 2020, May 28, 2020, October 27, 2021, and other documents on file with the Department of Health (Department) as follows:

To Construct: Phases 5 and 6 of the municipal solid waste (MSW) sanitary landfill. The MSW landfill consists of approximately 6.8 acres in Phases 1 and 2, approximately 4.8 acres in Phases 3 and 4, and approximately 6.6 acres in Phases 5 and 6 (3.2 acres in Phase 5 and 3.4 acres in Phase 6). Phase 1 began disposal operations in October 1993 and was constructed with a single bottom geosynthetic liner and a leachate collection system. Phase 2 began disposal operations in 1997 and was constructed with a soil liner and leachate monitoring and collection system. Phase 3 was constructed and placed in service in 2009, and Phase 4 was constructed and placed in service in 2014. Phase 3 and Phase 4 were constructed with a bottom composite liner system comprised of an 80-mil HDPE liner on top of a soil liner with a permeability of 3.36×10^{-7} cm/sec or less. Phase 3 and Phase 4 are hydraulically isolated from Phases 1 and 2. Phases 5 and 6 are planned as the next phases of development for the landfill, each with a proposed composite liner system comprised of 80-mil HDPE liner on top of a one-foot thick soil liner with a permeability of 1.0×10^{-6} cm/sec or less.

Phase 3 and Phase 4 share a common leachate collection system, with the sump located in Phase 3. The leachate collection system is designed and operated to maintain less than a 1-inch depth of leachate over the bottom liner or a lesser value subject to detections in the alternative groundwater monitoring system. Upon construction of the Phase 5 liner, the Phase 1 area will be hydraulically connected to Phase 5. The wet well in Phase 1 may be abandoned and in this circumstance, leachate generated in Phases 1 and 2 will drain to the Phase 5 and be collected in the Phase 5 sump. Upon construction of the Phase 6 liner, the Phase 2 area will be hydraulically connected to Phase 6 and Phase 5. The Phase 2 pan lysimeter may be modified to drain onto the Phase 6 liner which will drain to the Phase 5 sump. An underlying pan lysimeter will be constructed below the Phase 5 sump.

Phases 1 to 6 shall be limited to the 18.2-acre area with a maximum elevation of 290 feet above mean sea level (MSL) as indicated in Figure 5, Molokai Landfill Operations Plan Final Grades of the Molokai Integrated Solid Waste Facility Operations Plan prepared by A-Mehr, Inc., dated October 2010 and revised October 2019.

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Not included in the landfill acreage are areas used for appurtenant uses such as offices, equipment and maintenance facilities, greenwaste and salvage facilities, soil stockpile area, buffer zones, stormwater ditches, perimeter road, and parking.

The Greenwaste Area is located on an area of approximately 2 acres located in the west corner of the property, south of Molokai Metals and west of the proposed Phase 6 area.

To Operate: (1) A municipal solid waste (MSW) sanitary landfill consisting of approximately 6.8 acres in Phases 1 and 2, and approximately 4.8 acres in Phases 3 and 4, and 6.6 acres in Phases 5 and 6 under the small landfill exemption, HAR 11-58.1-11(f). The daily disposal rate for the MSW shall not exceed an annual average of 20 tons per day to qualify as a small landfill. Adequate equipment and personnel to operate the MSW landfill facility shall be maintained. At the nominal operating rate of 20 tons per day, the site shall have a minimum of one bulldozer, and one spotter. The Department of Health shall be notified if the daily disposal rate, based on an annual average, exceeds the 20 tons per day. If the daily disposal rate exceeds 20 tons per day, the placement of waste shall be limited to Phases 3, 4, 5, and 6. A liner equivalency evaluation was performed to demonstrate that the performance of the proposed soil composite liner and cell designs in Phases 3 through 6 is comparable to the regulatory prescribed composite liner.

(2) A Greenwaste Storage/Composting Operation for clean greenwaste and pallets located on an area of approximately 2 acres located in the west corner of the property, south of Molokai Metals and west of the proposed Phase 6 area.

The Molokai Metals salvage and recycling facility at the Molokai Integrated Solid Waste Management Facility is not regulated by this permit. The Molokai Metals Facility is regulated pursuant to Solid Waste Management Permit No. SV-0023-17, issued on January 19, 2021, or subsequently issued permit.

The Molokai Recycling Center at the Molokai Integrated Solid Waste Management Facility, currently operated by the Maui Disposal Company, is not regulated by this permit. The Molokai Recycling Center is regulated pursuant to Solid Waste Management Permit No. RY-0044-18, issued on November 10, 2020, or subsequently issued permit.

IN ACCORDANCE WITH: (1) A permit renewal and modification application dated October 16, 2019, (2) *Design Report, Molokai Integrated Solid Waste Management Facility, Phase 5 and Phase 6 Disposal Cells and Drainage Improvements*, prepared by A. Mehr, dated October 2019, (3) *Operations Plan for Molokai Integrated Solid Waste Management Facility* dated October 2010, revised October 2019; (4) *Molokai Integrated Solid Waste Facility Closure and Post-Closure Plan* dated October 2007 and revised October 2019, (5) *Molokai Integrated Solid Waste Facility Capacity Master Plan*, dated July 2015, (6) Attachment P-5 and (7) Attachment P-6. All other plans and information submitted as required by this permit and approved by the

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department are also part of the permit documents. Should there be any discrepancies among the aforementioned documents, HRS 342H and I, HAR 11-58.1 and the conditions of this permit, rules and permit conditions shall take precedence.

LOCATED AT: Maunaloa Highway
Naiwa, Molokai, Hawaii
TMK (2) 5-2-011:027 (portion)

SUBJECT TO: HRS 342H and 342I; HAR 11-58.1; and Standard Conditions, Special Conditions I, Sections A through I, and Special Conditions II.

Acceptance of this permit constitutes an acknowledgement and agreement that the holder will comply with all rules, regulations, and orders of the Department and the conditions precedent to the granting of this permit.

This permit supersedes the Solid Waste Management Permit Number LF-0070-09, issued on January 30, 2010, in its entirety.

(for) DIRECTOR OF HEALTH
State of Hawaii

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The solid waste management facility is subject to HRS Chapter 342H, *Solid Waste Pollution*, and, HAR Chapter 11-58.1, *Solid Waste Management Control*, and the following conditions:

STANDARD CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable, pursuant to the authority of HRS §342H. The Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants, representatives, contractors, or subcontractors. If any term or condition of this permit becomes invalid as a result of a challenge to a portion of this permit, the other terms and conditions of this permit shall not be affected and shall remain valid.
2. This permit:
 - a. shall not in any manner affect the title of the premises upon which the facility is or will be located;
 - b. does not release the permittee from any liability for any loss due to personal injury or property damage caused by, resulting from, or arising out of the design, installation, construction, operation, maintenance, closure, or post-closure of the facility;
 - c. does not release the permittee from compliance with other applicable statutes and regulations of the State of Hawaii or with applicable federal or local laws, regulations, or ordinances;
 - d. in no way implies or suggests that the State of Hawaii, or its officers, agents, or employees assumes any liability, directly or indirectly, for any losses due to personal injury or property damage caused by, resulting from, or arising out of the design, construction, operation or maintenance of the facility; and
 - e. shall not constitute nor be construed to be an approval of the design, construction, operation, maintenance, closure and post-closure of the facility beyond the regulatory requirements mandated by HRS § 342H and HAR§11-58.1.
3. Issuance of this permit does not preclude the responsibility of the permittee to obtain any and all necessary approvals and permits from the appropriate federal, state, and local agencies, including zoning clearances, prior to the start of operations.
4. Unless the submitted documents and other information secured by the Department from the permittee contain confidential information, such as secret processes or methods of manufacture, they shall be made available for inspection by the public (HRS §342H-14). The permittee shall be responsible for identifying, in writing, the specific information

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asserted to be confidential. The Department shall review the assertion made by the permittee and determine if confidentiality is indeed warranted.

5. This permit is valid only for the specific processes and operations applied for and indicated in the submitted application and additional submissions approved by the Department. Any unauthorized deviation that affects the facility's design, operations or procedures, or which could threaten human health and the environment, from the submitted application, drawings, operations manual, and additional submissions or conditions of this permit may constitute grounds for revocation of this permit, and/or enforcement action by the Department. Should there be any discrepancies between the submitted documents and the permit conditions, the permit conditions shall take precedence. A copy of the submitted application and additional submissions shall be maintained at the facility.
6. This permit is non-transferable whether by operation of law or otherwise, either from one location to another, from one solid waste disposal operation to another, or from one person to another without the written approval of the director [HAR §11-58.1-04(e)(2)].
7. This permit shall be kept at or near the construction and operation site for which the permit is issued and shall be available upon request [HAR §11-58.1-04(f)]. A request for a duplicate permit shall be made in writing to the director within ten (10) days after the destruction, loss, or defacement of this permit. A fee of \$50 shall be charged and submitted with the request [HAR §11-58.1-04(h)(3)].
8. The permittee shall at all times properly operate and maintain the facility and systems of treatment, process, and control (and related appurtenances), as applicable to the facility, that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. The facility shall be designed, constructed, and equipped in accordance with best practicable technology so as to operate without causing a violation of applicable rules and regulations.
9. Incident Notification Requirements. The permittee shall notify the Department, in writing or facsimile, whenever there are incidents such as fire, explosion, or release of regulated material/waste, which could threaten human health or the environment (i.e., air, soil, or surface and subsurface waters). Initial notification may be by phone or fax and reported within eight (8) hours, whenever possible, and no more than twenty-four (24) hours. The notification report shall be completed and submitted by an Environmental Compliance Officer or other responsible official within seven (7) calendar days (three [3] calendar days for waste disposal facilities, such as landfills and incinerators), and shall include:
 - a. name, address, and telephone number of the owner and operator;

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- b. name, address, and telephone number of the facility at which the incident occurred;
- c. date, time, and type of incident (i.e., fire, explosion, release, etc.);
- d. name and quantity of material(s) involved;
- e. the extent of injuries, if any;
- f. an assessment of actual or potential hazards to human health or the environment, where this is applicable;
- g. estimated quantity and disposition of recovered and unrecovered material that resulted from the incident;
- h. evaluation of the circumstances that led to the incident;
- i. steps being taken to prevent reduce, eliminate, and prevent recurrence, including an implementation schedule; and
- j. other information or monitoring as required by the Department

Notification requirements for releases only apply to releases of a quantity equal or exceeding the reportable quantity listed in HAR §11-451.

10. Noncompliance Notification Requirements. If, for any reason, the permittee does not comply with, or will be unable to comply with, any condition or limitation specified in the permit, the permittee shall notify the Department verbally within twenty-four (24) hours followed by a written report within seven (7) calendar days (three [3] calendar days for waste disposal facilities, such as landfills and incinerators) of the verbal notification. The written report shall be completed and submitted by an Environmental Compliance Officer or other responsible official and contain the following information:
 - a. description and cause of noncompliance;
 - b. period of noncompliance, including exact dates and times; and, if not corrected, the anticipated duration that the noncompliance is expected to continue;
 - c. steps that will be taken to correct the area of noncompliance;
 - d. steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance, including an implementation schedule; and
 - e. other information or monitoring as required by the Department.

The permittee may be subject to enforcement action by the Department, penalties, or revocation of this permit.

The use of a fax machine for notifications is acceptable. Any data transmission or detailed explanations transmitted shall be accompanied by regular mail submittals. Failure to notify in accordance with this requirement may initiate enforcement action.

11. Monitoring and Recordkeeping Requirements. The permittee shall comply with the following monitoring and recordkeeping requirements:

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- a. Upon request, the permittee shall furnish all records (e.g., transaction reports, disposal receipts, sampling, and testing results) and plans required by the Department. The retention period for all records shall be a minimum of five (5) years; however, there shall be an indefinite retention period for all records associated with any unresolved enforcement action as determined by the Department.
 - b. The permittee shall retain at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original recordings of monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The retention period shall be a minimum of five (5) years, or longer, as may be specified in the Special Conditions, from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. The retention period shall be for the life of the facility, through closure and post-closure periods, for waste disposal facilities (such as landfills and incinerators).
 - c. Records of monitoring information, if applicable, shall include
 - i. the date, exact location, and time of sampling or measurements;
 - ii. the person responsible for performing the sampling or measurements;
 - iii. the date(s) analyses were performed;
 - iv. the person responsible for performing the analyses;
 - v. analytical techniques or methods used; and
 - vi. results of such analyses.
12. The permittee shall submit complete and detailed plans and reports on existing solid waste management systems and of any proposed addition to, modification of, or alteration of any such systems that affects the facility's operations or procedures, or which could threaten human health and the environment and contain the information requested by the Department in the form prescribed by the Department. Any submission for permit modification shall be submitted in accordance with Standard Conditions, condition 13. The plans and reports shall be prepared by a competent person acceptable to the Department, and at the expense of the permittee.
13. Should the permittee decide to modify the permit or continue operation of the solid waste facility beyond the expiration date of the permit, the permittee shall submit a complete permit modification or renewal application at least one hundred eighty (180) days (one year for municipal solid waste landfills) prior to the modification or the date of permit expiration. Any submission for permit modification does not affect these permit conditions until such modification becomes final in accordance with HAR§11-58.1-04, or as approved by the Department.

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14. The director may, in accordance with HRS §342H-6, enter and inspect the facility for the purpose of:
- a. investigating an actual or suspected source of solid waste or other pollution;
 - b. ascertaining compliance or noncompliance with any rule, regulation, permit condition, or standard promulgated by the Department; and
 - c. conducting tests in connection therewith (including collecting soil, water, air, ash, and any other material or samples).

The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises.

15. The Department may require the permittee to conduct sampling and testing to determine the degree of pollution, if any, from the solid waste facility (including soil, water, air, ash, and any other materials or samples). If contamination is found, the permittee shall conduct remedial action as necessary to protect human health and the environment.
16. When requested by the Department, the permittee shall within a reasonable time, as specified by the Department, furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly. Upon the written request of the permittee, the deadline for submission of information may be extended, if the Department determines that reasonable justification exists for the extension.
17. If the Department determines that the permittee has violated or is violating any provision of HRS §342H, HAR §11-58.1, or these permit conditions, the Department may pursue enforcement action in accordance with HRS §342H-7, *Enforcement*; §342H-9, *Penalties*; §342H-10, *Administrative Penalties*; §342H-11, *Injunctive and other relief*; or any other pertinent rules.
18. The Department may, on its own motion, modify, suspend, or revoke a permit if, after affording the applicant a hearing in accordance with HRS 91, the Department determines that any permit condition, rule, or provision of HRS §342H has been violated or that such is in the public interest [HAR §11-58.1-04(d)].
19. If the governor or the director determines that an imminent peril to the public health and safety is, or will be, caused by the disposal of solid waste or any combination of discharges of other waste that requires immediate action, the governor or the director, without a public hearing, may order the permittee to immediately reduce or stop the

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disposal, discharge, or process, and may take any and all other actions as may be necessary (HRS §342H-8).

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SPECIAL CONDITIONS I: MSW Landfill
Section A. General Facility Conditions

1. The Molokai Integrated Solid Waste Management Facility Disposal Capacity **Master Plan** prepared by A-Mehr, Inc., dated July 2015, and approved subsequent revisions shall be maintained by the permittee for planning purposes and be revised on a regular basis to provide for waste disposal planning for at least 20 years. The master plan shall include the waste footprints and service lives of Phases 1 through 6 and planned lateral expansions. The master plan shall also include the proposed Basis of Design (BOD), buffer areas, appurtenant and support facilities.
2. The final grades, with the maximum height at 290 feet above mean sea level, shall be in accordance with Figure 5, Molokai Landfill Operations Plan Final Grades, prepared by A-Mehr, Inc., dated October 2019.
3. **Potential Impact Area.** The permittee shall manage a potential impact area, which shall include any adjacent public roads or environmentally sensitive areas. The potential impact area shall be a minimum of 1,000 feet from the property line along any present or future urban area, and a minimum of 80 feet away from any agricultural areas. The permittee shall incorporate methods to minimize impacts from litter, vectors and odors. The buffer area to be managed shall be identified within the operations plan drawings and agreed upon by the Department. MSW disposal activities shall not occur within potential impact areas.
4. **Air Criteria.** The permittee is responsible for obtaining permits and maintaining compliance with any state or federal Clean Air regulations, in accordance with HAR 11-58.1-15(e).
5. The permittee shall provide adequate queuing and storage space for a minimum of 5 waste delivery vehicles at the landfill disposal area.
6. No construction of additional disposal cells or modification of the lateral or vertical extent of disposal cells shall occur without written approval by the Department. Any modification requests shall be submitted in accordance with Standard Condition number 13 at least one (1) year prior to commencement of the proposed construction or modification, and shall include demonstration that the proposed modification or expansion is in compliance with HRS 342H-52(b). The construction and design plans shall be prepared and certified by a professional engineer, with at least five (5) years' experience in designing landfills and registered in the State of Hawaii.

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7. A permanent sign shall be posted at the facility entrance identifying the facility, the hours and days of operation, and the name and address of the operator, a telephone number and other pertinent information.
8. The permittee may only operate the facility during the normal operating hours of 8:00 AM to 2:30 PM, Tuesday thru Saturday, for acceptance and disposal of waste at the MISWF. In the event that the facility proposes any waste acceptance and disposal outside normal operating hours, the permittee shall notify the department, in writing, of this event. The notification shall be provided at least twenty-four (24) hours in advance of the event. If the event is unanticipated, the permittee shall provide verbal notice of the event within four (4) hours and written notification within eight (8) hours of commencement of the event. A facsimile submission of the notification is acceptable. The written notification shall specify the affected dates and times, the nature and reason for the extended operations, identification of any considerations associated with the extended operations, and controls/procedures that will be implemented to mitigate any adverse impacts of the extended operations.
9. An all-weather access road shall be maintained into and out of the facility site, through the entrance facility and to and from the working area of the landfill.
10. The permittee is responsible for providing measures to control public access in accordance with HAR 11-58.1-15(f). The permittee shall provide and maintain controlled access to the facility in the form of fences and gates along the site perimeter. All gates shall be kept locked when an attendant is not on duty.
11. Scavenging at the facility by the general public is prohibited.
12. The MSW landfill shall have a Site Manager and an Environmental Compliance Officer who shall be knowledgeable of state solid waste laws, regulations, these permit conditions and the permit application components including, but not limited to, the revised October 2019 Operations Plan and approved subsequent submissions. The Environmental Compliance Officer may be an employee based outside of the County. The permittee shall submit written updates if there are any changes in the responsibilities or identification of the Site Manager or the Environmental Compliance Officer.
13. Landfill operations shall be supervised at all times by an individual who has successfully completed a Manager of Landfill Operations (MOLO) training course conducted by the Solid Waste Association of North America, or a DOH-approved alternative. MOLO training certifications or equivalent shall be current. Records of such training shall be placed in the operating record.

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14. The permittee shall comply with the financial assurance requirements in HAR §11-58 1-18 for closure of the landfill, post-closure care, and corrective action, if required.
 - a. The permittee shall include a copy of the detailed written estimates in the Annual Operating Report, as required by Special Conditions I, condition I.2.I, and
 - b. The permittee shall include documentation of financial assurance in the Annual Operating Report, as required by Special Conditions I, condition I.2.I.

15. Emergency Operating Procedures. The permittee shall implement the Emergency Operating Procedures, provided in Section 13.5 of the revised October 2019 Operations Plan, and approved subsequent submissions.
 - a. The permittee shall provide verbal and written notification of incidents to the department, in accordance with Standard Condition number 9 of this permit. Incidents shall also include suspected subsurface fires and be reported based on any of the notification criteria listed in the Operations Manual.
 - b. The permittee shall implement the Emergency Operating Procedures for the following situations:
 - i. Above and below ground fires,
 - ii. Severe storm (25-year, 24-hour storm or greater, or continued rainy conditions over duration of 14 days), including hurricanes.
 - iii. Hazardous material spills at or above the Reportable Quantity,
 - iv. Other emergency procedures, and trigger levels, as provided in the Emergency Operating Procedures.
 - c. The permittee shall assess, monitor, and maintain the landfill after emergencies that may affect the integrity of the landfill, including, but not limited to, the liner system, leachate collection and control system, surface water management system, and any other affected portions of the landfill.

Section B: Construction and Maintenance – MSW Disposal Cells

1. The permittee shall maintain the integrity of the liner system and leachate collection system as designed and constructed. In the event that damage to the liner and/or leachate collection systems has occurred, the permittee shall repair the liner and/or leachate collection system, or provide alternative environmental controls as approved by the Department.

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- a. Existing MSW landfill Phase 1, in accordance with the **Construction Drawings** prepared by Parametrix, Inc. and dated April 1993. The liner and the leachate collection system consists of:
 - i. A prepared subgrade;
 - ii. A 6-inch thick bedding layer;
 - iii. A 30-mil PVC liner;
 - iv. A 12-inch layer of leachate collection gravel;
 - v. Perforated leachate collection pipes in trenches along the south-west and south-east sides of Phase 1, covered by 1.5-foot min drain rock wrapped with geotextile
 - vi. A 12-inch soil layer;
 - vii. A leachate wet well located at the south corner of Phase 1. This wet well may be abandoned and removed during construction of Phase 5. If the wet well is abandoned, documentation of its removal and/or closure shall be included with the Phase 5 CQA Report.

- b. Existing MSW landfill Phase 2, in accordance with drawings prepared by Parametrix, Inc. and dated May 1997. The liner and the leachate collection system consists of:
 - i. A prepared subgrade with a 6-inch minimum of embankment material over any exposed rock encountered during excavation.
 - ii. A 20' x 40' geomembrane-lined collection basin lysimeter (CBL). This CBL may be modified to drain to the Phase 6 liner during construction of Phase 6. If the CBL is modified, documentation of its modification shall be included with the Phase 6 CQA Report.

- c. Existing MSW landfill Phase 3, in accordance with the Phase 3 Design Report prepared by A-Mehr, Inc. and dated March 2007 and revised April 2007, and the Construction Quality Assurance Report dated July 2009. The liner and the leachate collection system consists of:
 - i. A 12-inch thick layer of low-permeability soil;
 - ii. A 12-inch thick layer of imported low-permeability soil with a hydraulic conductivity of 9.17×10^{-9} cm/sec;
 - iii. A geomembrane liner of 80-mil high density polyethylene (HDPE) double side textured panels on the floor and single side textured panels on the slopes;
 - iv. A 12-inch thick layer of gravel drainage rock placed above the geotextile on the floor;

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- v. A layer of 16-ounce per square yard non-woven geotextile placed above the HDPE geomembrane liner and over the drainage layer;
 - vi. A leachate collection and removal system, consisting of perforated leachate collection pipes in trenches, within the gravel drainage rock layer and along the west and south sides of Phase 3; designed to manage leachate from the Phase 4 disposal area as well as the Phase 3 area;
 - vii. A double-lined (2 layers of 80-mil HDPE liner) internal leachate collection sump in the southwest corner of Phase 3, with a depth of 5 feet below the adjacent cell floor. The top of the sump has an elevation of 222.5 feet above mean sea level (msl). The regulatory compliance level for leachate in the Phase 3 sump is 221.5 feet msl; and;
 - viii. A vertical leachate collection pipe and riser for monitoring and pumping leachate from the sump.
 - ix. A 10' x 10' geomembrane-lined collection basin lysimeter.
- d. Existing MSW landfill Phase 4, in accordance with *Design Report Phase 4 and Related Drainage Improvements Molokai Integrated Solid Waste Facility*, prepared by A-Mehr, Inc., dated October 2013 and received March 27, 2014, and the Final Report of Construction Quality Assurance for Molokai Landfill Phase 4, submitted on January 29, 2015. The liner and the leachate system consists of:
- i. A 12-inch thick layer of compacted imported low-permeability soil with hydraulic conductivity of 3.36×10^{-7} cm/sec;
 - ii. A geomembrane liner of 80-mil high density polyethylene (HDPE) double side textured panels on the floor and single side textured panels on the slopes;
 - iii. A 12-inch thick layer of gravel drainage rock placed above the geotextile on the floor;
 - iv. A layer of 16-ounce per square yard non-woven geotextile placed above the HDPE geomembrane liner and over the drainage layer; and
 - v. A perforated leachate collection pipe in a trench, within the gravel drainage rock layer and along the south side of Phase 4. The trench and pipe are connected to the existing LCRS pipe along the west side of Phase 3, to convey leachate to the existing Phase 3 sump;
- e. The proposed liner and leachate system design for Phase 5 and Phase 6 as presented in the *Design Report, Molokai Integrated Solid Waste Management Facility, Phase 5 and Phase 6 Disposal Cells and Drainage Improvements*, prepared by A-Mehr, Inc., dated October 2019:

Liner System (bottom to top):

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- i. A prepared subgrade consisting of native soil and rock, covered with a leveling layer of compacted soil as needed to provide a firm and smooth subgrade;
 - ii. A minimum 12-inch thick layer of compacted low-permeability soil with a maximum hydraulic conductivity of 1.0×10^{-6} cm/sec; and
 - iii. A geomembrane liner of 80 mil high density polyethylene (HDPE).
Leachate Collection and Removal System (LCRS; top to bottom):
 - iv. A layer of 16-ounce per square yard non-woven geotextile placed above the HDPE geomembrane liner;
 - v. A 12-inch thick layer of gravel drainage rock placed above the geotextile on the floor;
 - vi. A layer of 16-ounce per square yard non-woven geotextile placed above the LCRS gravel; and
 - vii. A centrally located LCRS trench, constructed with an 8-inch diameter perforated HDPE pipe and the trench filled with gravel, that is graded at a minimum slope of 1% to drain to the Phase 5 LCRS sump.
 - viii. The Phase 5 LCRS sump graded to a depth of four feet below the adjacent cell floor, constructed with the following components (top to bottom):
 - (1) A layer of 16-ounce per square yard non-woven geotextile;
 - (2) A 4-foot thick layer of LCRS drainage rock;
 - (3) A layer of 16-ounce per square yard non-woven geotextile;
 - (4) Double layer of 80 mil HDPE geomembrane liner; and
 - (5) A 4-foot thick layer of low permeability compacted soil liner with a maximum hydraulic conductivity of 1.0×10^{-6} cm/sec.
 - (6) A vertical leachate collection pipe and riser for monitoring and pumping leachate from the sump.
 - (7) A 10' x 10' geomembrane-lined collection basin lysimeter.
2. Significant modification of Phases 1 through 6 disposal cells shall not occur prior to the Department's approval of the final construction plans and specifications prepared and certified by a professional engineer, registered in the State of Hawaii, with at least five (5) years' experience in designing landfills.
 3. Prior to liner installation, the subgrade shall be prepared to provide a smooth, firm, unyielding, rut-less foundation with well-graded material no larger than one-inch gravel. For any areas where previously constructed cells are being connected to cells under construction, the permittee shall ensure that a minimum five percent (5%) grade and design grades are followed.

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4. The permittee is responsible for obtaining the services of a registered land surveyor who shall provide a minimum second order of accuracy on: triangulation, traverse, leveling and baseline measurements of the base grades, liner grades and key location and elevation points of the leachate collection and sump system as shown on the drawings. The liner contractor and installer prior to liner placement shall certify the base grades in writing.
5. Construction of the low-permeability soil liner component of a composite liner system shall be conducted according to the plans and specifications approved by the Department. The QA/QC engineer shall observe construction and perform testing as specified and shall certify that the thickness and hydraulic conductivity of the soil liner comply with the approved plans and specifications.
6. Installation of any geosynthetic liner shall be performed by an experienced installer who has installed a minimum of 500,000 square feet of similar type liners or shall be performed under the supervision of the manufacturer. An experienced QA/QC landfill inspector with at least five (5) years of experience in landfill CQA responsible to a professional engineer shall observe liner installation and grade elevations. The permittee shall notify the Department, in writing, at least five (5) days prior to any liner installation work.
7. The permittee shall retain a professional engineer, with at least five (5) years' experience in designing landfills, and registered in the State of Hawaii, to provide construction quality assurance (CQA) for construction of new lined disposal cells. Upon completion of construction, the professional CQA engineer shall prepare a report for submittal to the Department containing, at a minimum:
 - a. Documentation of quality assurance/quality control testing procedures
 - b. Summary of field test results
 - c. Summary of results of laboratory analyses
 - d. A map of each sector showing panel layouts as installed
 - e. Certification that all weld test results and vacuum or pressure testing of all welded seams were visually observed.
 - f. Certification that the bottom liner and leachate collection system have been installed in accordance with the plans as approved by the Department.
 - g. As-built and survey drawings documenting the cell construction, including the location and elevation of base grades, liner system, and leachate collection system.
 - h. Detailed documentation to show that panels were properly joined to liner in previous constructed sections, and/or the construction of anchor trenches and berms.

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- i. The floor liner grades and leachate pipe slopes for the leachate collection and removal system.
 - j. Identification of any deviations from the construction plan, reason for the deviation and effects on the integrity of the design.
8. No solid waste shall be placed in any new cell or sector until: (1) the professional CQA engineer certifies, by submittal of the report referenced in Special Conditions I, condition B.7 or a letter containing the certifications required therein, completion of construction in accordance with approved drawings; and (2) the Department completes inspection of each new sector. The permittee shall coordinate the inspection of each new sector by the Department, with the presence of the design engineer and on-site facility operator.
9. The first layer of solid waste shall consist of a minimum thickness of 5 feet of select waste that is screened for the removal of objects that can cause puncture or displacement damage. The thickness of the select waste layer shall be determined based on the size/weight of the compactor and shall be defined in the Operation Plan. Material that may cause puncture or displacement damage to the liner shall be removed. Compactor work on the select waste layer shall avoid wheel spinning and twisting. Equipment operation directly on the operation layer shall be prohibited. A record documenting select waste screening and placement shall be maintained at the facility and provided to the Department with verification by the construction quality assurance (CQA) engineer including photo documentation. An alternate select waste placement may be used if approved by the Department.
10. Containment systems in Phases 3 through 6 shall be designed to withstand the maximum horizontal acceleration due to the design earthquake for Seismic Zone 2B as defined by the United States Geological Survey. Following any occurrence of an earthquake determined to cause horizontal acceleration at the site equal to or greater than the design event, the permittee shall inspect any exposed liner system to identify and assess any damage that may have occurred. A report of the inspection shall be filed with the Department within 30 days following the event, including proposed corrective actions to repair any damage identified by the inspection. A professional engineer registered in the State of Hawaii shall conduct the inspection and prepare the report.

Section C: Acceptance Criteria

1. The permittee is authorized to accept for disposal, solid wastes, as defined in HAR 11-58.1-03, except unacceptable waste listed under Special Conditions I, condition C.2.h.

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2. The MSW landfill shall implement the Hazardous Waste Exclusion Program dated April 2008 and revised December 2013, located in Appendix G of the October 2019 revised operations plan, and the following conditions:
 - a. The permittee shall make every practicable effort to screen waste and prevent unacceptable waste from entering and being disposed at the landfill.
 - b. The permittee shall post a sign on the property that lists unacceptable wastes.
 - c. The permittee shall conduct random load checks of mixed commercial loads (not inclusive of loads known to only contain single-source-separated materials, such as sludge), at least once per week, to spot check for unacceptable wastes. The permittee shall document findings on the Load Check Data Sheet.
 - d. The landfill operators at the active workface shall visually screen the contents of each load.
 - e. If unacceptable waste is observed, the permittee shall either remove unacceptable waste or reject the load. If the waste has been unloaded, the permittee shall separate the unacceptable waste, move it away from the active workface, and manage it in accordance with Special Conditions I, condition C.3.
 - f. Operators shall receive training on visual surveillance and unacceptable waste handling procedures set forth in the Site Operations Manual. Training shall be attended at least once per year, or more frequently as needed to ensure compliance with the facility procedures.
 - g. The permittee shall maintain records of random inspections on the Load Check Data Sheets, and personnel training.
 - h. Unacceptable waste is defined as:
 - i. Regulated hazardous waste, as defined in state hazardous waste laws and regulations.
 - ii. Polychlorinated biphenyl (PCB) waste, as defined in 40 CFR Part 761;
 - iii. Untreated infectious waste, excluding infectious waste generated within the household, in accordance with HAR 11-58.1-63;
 - iv. Bulk or non-containerized liquid waste, except as provided in HAR 11-58.1-15(i)(1);
 - v. Containers holding liquid waste, except as provided in HAR 11-58.1-15(i)(2);
 - vi. Commercial loads containing greater than 25% greenwaste and household loads containing greater than 50% greenwaste, in accordance with HAR 11-58.1-65(b);
 - vii. automobiles, white goods, and whole motor vehicle tires, in accordance with HAR 11-58.1-65(c);
 - viii. Lead acid batteries, in accordance with HRS 342I;
 - ix. Compressed gas tanks; and
 - x. Other unacceptable wastes listed in the Site Operations Manual.

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3. Should unacceptable waste be identified at the MSW landfill, the permittee shall separate the waste, manage, store, transport, and recycle/dispose it in accordance with the Molokai Integrated Solid Waste Facility Operations Manual, Hazardous Waste Exclusion Program, and applicable laws and rules. Unacceptable waste identified at the facility shall not be disposed of at the landfill.
 - a. Unacceptable waste shall be transported from the landfill prior to posing a nuisance, health, or safety concern.
 - b. Unacceptable waste shall be transported to a permitted solid waste management facility allowed to accept the waste, or out-of-state recycling/disposal facility.
 - c. The permittee shall maintain a daily log of unacceptable waste turned away from the landfill or separated from disposal, including date, hauler, waste type, estimated quantity, and destination.
 - d. The permittee shall notify the Department, in writing, within 24-hours or the next working day of the identification of hazardous or PCB waste. The notification shall include the date and time of incident, origin of the waste, hauler/generator, description and quantity of waste, actions that will be taken to manage the waste at the site, and actions that will be taken to remove the waste from the premises. The permittee shall also provide written notification, including a copy of the associated manifests, within three (3) days of removal of the waste from the facility.
4. The permittee shall implement the Radiation Monitoring Program dated July 2014. All incoming loads shall be screened to prevent the acceptance of radioactive wastes. Radioactive wastes shall be managed in accordance with HAR 11-58.1-64. In the event that a radioactive load is identified, the facility shall follow the procedures of the July 2014 Radioactive Monitoring Program. The permittee shall complete and submit a Radiation Monitoring Report, documenting the date, time, actions taken, and resolution of the event.
5. The permittee shall implement the Special and Hazardous Waste Screening Program, as provided in section 12 of the revised October 2019 Operations Plan, and approved subsequent submissions.
 - a. The permittee shall pre-approve special wastes, prior to acceptance at the facility. Special waste may not include unacceptable waste.
 - b. The permittee shall maintain written documentation and implement special handling procedures associated with each type of special waste. The procedures shall be based on the physical, chemical or pertinent characteristics of the special waste.

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- c. Special waste means any solid waste which, because of its source or physical, chemical, or biological characteristics, require special consideration for its proper processing or disposal, or both, includes, but is not limited to:
- i. Asbestos;
 - ii. Semi-solid wastes including:
 - (1) Water separated car and equipment wash wastes;
 - (2) Sewage sludges;
 - (3) Underground storage tank and other sludges;
 - iii. Off-specification and outdated products;
 - iv. Baghouse dusts;
 - v. Inorganic filter cakes;
 - vi. Treated infectious waste;
 - vii. Dead animals and offal;
 - viii. Contaminated Materials including:
 - (1) Contaminated soils and debris, including: resins and chemical debris; petroleum and other contaminated soils; and petroleum fuels (i.e., used oil, diesel, jet fuel, gasoline) and debris;
 - (2) Sandblast grits;
 - (3) Waste that are toxic in nature, such as insecticides, poisons, or radioactive materials (provided that they are not regulated under another authority such as RCRA Subtitle C, TSCA that requires disposal other than at a permitted MSW landfill), and
 - (4) Other solid waste, which may be accepted for disposal such as contaminated industrial/commercial waste and non-TSCA regulated PCB waste, provided such materials are not regulated hazardous waste; and
 - ix. Other special waste listed in the Site Operations Manual.
- d. The MSW landfill shall approve Contaminated Materials (as defined in Special Conditions I, condition C.5.c.viii.), on a case-by-case basis, prior to acceptance at the facility.
- i. The permittee shall implement the Procedures for the Acceptance of Contaminated Material. These procedures shall be implemented for all contaminated materials defined in Special Conditions I, condition C.5.c.viii.
 - ii. A notice of Contaminated Material Approval shall be submitted to the Department prior to acceptance at the facility. The use of facsimile submissions is acceptable. The notice shall include: acceptance date(s), quantity and description of waste, origin of waste, waste profile sheet/approval manifest; proposed management of contaminated material (use as daily cover or disposal as void space fill) and any special management and handling procedures.

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- e. Records of all documentation shall be maintained at the facility.

Section D: Operation of the MSW Landfill

1. The disposal rate for MSW shall not exceed an annual average of 20 tons per day to maintain small-community exemption status under HAR 11-58.1-11(f). If the annual average disposal rate exceeds 20 tons per day, the permittee shall notify the Department in writing and incoming waste shall be placed only in phases 3 through 6. The permittee shall also implement the groundwater monitoring plan found in Appendix D, Section 7 of the revised 2019 Operations Plan, as specified in Special Condition G1.
2. The revised **Operations Plan for the Molokai Integrated Solid Waste Facility dated October 2010, revised October 2019 and approved subsequent revisions** shall be implemented. If there are discrepancies between the Operations Plan and these permit conditions or HAR 11-58.1, the permit conditions and rules shall take precedence. The Department may periodically require revisions to the Operations Plan. The contents of the Operations Plan shall address permit requirements and be implemented to ensure compliance. Any changes to the Operations Plan shall be submitted to the Department for review and approval. Depending on the scope of the change, a permit modification may also be required. At a minimum, the following items and permit requirements shall be included in the Operations plan and incorporated into landfill operations:
 - a. **General Site Description**, providing information on the location, size, elevations and limits of the site, and the types and quantities of waste received per day, a discussion of the climate, and a discussion of the surrounding area.
 - b. **Equipment and personnel requirements**, describing the number and types of equipment and the personnel with their respective titles needed to operate the facility on a minimum basis. The facility Site Manager and Environmental Compliance Officer shall be identified by name and have their responsibilities described.
 - c. **User Population**, identify and describe the user population that will be allowed to utilize the landfill site for disposal. Discuss the screening and review process to identify legitimate users. A list of the types of users shall be maintained for operator reference and regulatory review.
 - d. **Site Utilization Concept**, providing a plan to coordinate the overall use of the landfill site including the management/disposal of special waste and management of unacceptable waste.
 - e. **Waste Placement Procedures**, including methods of compaction, grading, and placing cover material.
 - f. **Operational Controls**, including control of disease vectors, explosive gases, mud, dust and litter.

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- g. **Emergency Operating Procedures**, including methods for managing fires, severe storm events and hazardous waste spills.
3. **Program for Regular Training.** The permittee, at a minimum, shall provide training to landfill operators annually. Operators shall be familiar with the Operations Manual by the use of regular training presentations by supervising staff. Records of such training shall be maintained and provided to the Department upon request.
4. **Mud Prevention Program.** The permittee shall provide measures, as necessary, for minimizing the tracking of mud onto public roads from the site. The measures may include on-site road maintenance and cleaning, a wet-weather disposal area, and a truck or truck wheel cleaning area for vehicles prior to leaving the site. Possible truck or truck wheel cleaning measures that may be implemented include: rumble strip, drive-through tire wash, trash clean out pad, and/or wash pad.
5. **Dust Control Program.** The permittee shall provide measures to control dust from roads and all other areas of the site. The measures may include road treatments and water sprays to minimize dust generation.
6. **Adequate equipment and personnel** to operate the MSW landfill facility shall be maintained including provisions for back-up personnel and equipment. At an average operating rate of less than 20-tons per day of MSW, the site shall have a minimum of one bulldozer and one spotter. This equipment and personnel requirements shall be met unless otherwise approved by the Department.
7. Stockpiled materials within the landfill waste boundary shall be limited to cover material. Stockpiles with a volume greater than 30 days capacity shall have added stormwater controls. Stockpiled soil shall not exceed permit grades unless otherwise approved in writing by a licensed engineer.
8. The permittee shall place daily cover on the disposed solid waste at the end of each workday, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.
9. **Daily Cover Material** shall be a minimum of six inches of earthen material or an alternative in accordance with HAR 11-58.1-15(b) and shall leave no exposed waste. Aggregate size shall be less than 2.5 inches and well-graded (having the representation of all particle sizes less than the specified maximum).

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10. The permittee may submit a written proposal to request the use of an alternate daily cover (ADC), comprised of alternate materials of alternative thickness (other than at least six inches of earthen material).
 - a. The request shall include ADC specifications, associated operational procedures, an assessment of whether the alternative material and thickness can control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, and any other pertinent information.
 - b. The use of ADC is limited to daily cover use.
 - c. The permittee shall obtain Department approval, in writing, prior to the commencement of the demonstration project.
 - d. The use of ADC shall be evaluated in demonstration projects. The demonstration project shall be performed in 6-month increments to determine whether the ADC and its thickness can control disease vectors, fires, odors, nuisance, litter and scavenging without presenting a threat to human health and the environment.
 - e. The permittee shall report the performance of the ADC at the end of the demonstration period, including an evaluation of whether the ADC appropriate for use at the facility, and successful operational procedures.
 - f. The permittee shall obtain Department approval, in writing, prior to commencement of continued use of ADC beyond the demonstration period. The Department may impose conditions on the use of ADC. These conditions shall become part of the permit.
 - g. The demonstration period or the approved use of an ADC may be rescinded or cancelled by either the Department or Operator at any time without cause.

11. The permittee is approved to use tarps as ADC, based on the permittee's demonstration conducted from July 1, 2010 to January 8, 2011. The tarps shall be AAA Tarps 50' x 50' Upgraded Alternate Daily Landfill Cover 6.7 oz. or approved equivalent. The tarps may be used only under the following conditions:
 - a. The use of the tarp as ADC is limited to the active workspace. The tarp shall not be used on inactive cells or areas requiring intermediate cover.
 - b. The area where the ADC was used shall be covered with waste or soil daily cover within twenty-four (24) hours after initial ADC placement.
 - c. The use of a tarp as ADC shall not exceed two (2) consecutive days in any seven-day workweek. A minimum of six (6) inches of earthen material shall be placed as daily cover when the two-day ADC usage is reached. Should the permittee note nuisance conditions, such as odor or vector, prior to the two-consecutive day limit, the permittee shall place a minimum of six (6) inches of earthen material instead of the tarp and document the nuisance condition and

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- soil placement in the ADC Performance Monitoring report described in item h. The permittee shall limit the footprint of the active workspace to an area smaller than the dimensions of the tarp. There shall be no exposed waste.
- d. The permittee shall use measures such as wet sprays to control dust and litter at the workface.
 - e. The permittee shall not use the tarp as ADC on days when the sustained wind speeds (over a two-minute period) exceed thirty (30) miles per hour at the active workface.
 - f. The permittee shall visually inspect the tarp prior to each use for damage or excessive wear, including tears and holes. The tarps shall be repaired or replaced if damage may interfere with the ability to control disease vectors, fires, odors, litter, or if the damage is greater than six (6) inches in length.
12. **Daily-Cover-Monitoring-Verification-Program with Weekly Recordkeeping.** The permittee, using appropriate personnel, shall take digital photos of the workface at the end of each workweek, from a perspective that reveals the complete landfill, to demonstrate adequate placement of daily cover for the week. Records shall be maintained on file at the facility and information within verified as to its authenticity by the appropriate personnel. The Department may require changes to the program at any time, including the use of independent third parties. The Daily-Cover-Monitoring-Verification-Program shall include quantitative records of daily waste disposed, approximate cell dimensions and daily soil cover used in tons and cubic yards.
13. **Intermediate cover** is required for all inactive waste areas. Inactive waste areas are areas that do not receive waste within a 30-day period. Intermediate cover shall be a minimum of 12-inches of earthen material (including daily cover), be capable of shedding and directing stormwater to conveyance systems, and withstanding traffic. Regardless of the time period since last receiving waste, all areas that have vehicular traffic shall be covered with intermediate cover.
14. **Disease Vector Control.** The permittee shall provide measures as needed to evaluate, prevent and/or control on-site populations of disease vectors and minimize nuisance conditions, and document any associated activities. The measures shall meet the requirements of HAR 11-58.1-15(c).
15. **Litter Control.** The permittee shall provide measures to minimize free litter in the landfill and prevent its occurrence beyond the property line of the facility. During the course of the working day of operation, all windblown material shall be collected and be properly disposed. The measures, at a minimum, shall include:

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- a. The use of portable litter screens which shall be deployed within 100 yards of the active workface.
 - b. The use of permanent or semi-permanent litter screens or fences in primary and secondary control positions.
 - c. Litter cleanup in the event of a major windstorm or other incident in which litter escapes the normal litter containment systems.
 - d. Provisions for a truck clean-out area near the active workface that shall be maintained on a daily basis. The truck clean-out area shall have litter control fencing and disposal receptacles for truck clean-out.
 - e. The collection of litter shall be quantified with the number of litter pickers and the number of bags of litter collected on a daily basis.
16. **Asbestos Disposal.** The permittee shall ensure that the disposal of asbestos waste is in accordance with current NESHAP (National Emission Standards for Hazardous Air Pollutants) regulations, 40 CFR Part 61. Asbestos disposals shall be immediately covered with a minimum of 2 feet of cover unless managed in a dedicated disposal area. Disposals in dedicated disposal area shall be identified to the public and covered daily. All disposal locations for asbestos shall be recorded for future reference.
17. **Odor Control.** The permittee shall implement procedures for identifying odorous waste received at the landfill and implement odor control procedures and/or mechanisms to control odor at the landfill. Odor control measures may include acceptance standards for the receipt of waste, special handling at the landfill and immediate burial under a minimum of 2 feet of compacted soil. If the selected mechanisms are not adequate, the Department may require that additional measures be taken.
18. **Dead Animals and Offal.** The permittee shall immediately place a minimum of two feet of compacted soil over any accepted dead animals, offal or odorous waste. The cover soil shall be compacted and be of sufficient thickness (2 feet minimum) to control the release of odors.
19. **Inclement Weather.** A wet weather deck shall be prepared to allow for safe disposal of MSW material during times of inclement weather.

Section E. Surface Water Management

1. **Surface Water Management.** At a minimum, the permittee shall:
 - a. Provide run-on control system for a peak discharge from a twenty-five year storm and run-off control system for a 24-hour water volume from a twenty-five year storm, as provided in HAR 11-58.1-15(g).

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- b. Prevent soil erosion and exposure of waste. Surface water that comes into contact with waste material shall be managed as leachate. Should waste become exposed or soil cover materials erode, the permittee shall repair the cover immediately.
 - c. Prevent a discharge of pollutants into waters of the United States, or the violation of any requirement of the Clean Water Act or Hawaii Administrative Rules Title 11, Chapter 54, *Water Pollution Control*.
 - d. Comply with all state and federal requirements related to water quality, as provided in HAR 11-58.1-15(h).
2. **A Surface Water Management Plan** shall be prepared and updated **annually** and filed with the Department by no later than September 1 of each year. The surface water plan shall include the surface water management of all areas in the Molokai Integrated Solid Waste Facility. It shall contain the following information:
- a. Report of an annual inspection of surface water management features and facilities, together with a description of required maintenance and changes, which shall be completed by September 1 of each year.
 - b. Updated drawings showing current topography of the landfill, surface water drainage paths and conveyances, and drainage system modifications planned for the next year in response to waste filling.
 - c. All areas with intermediate cover shall be graded to direct surface water away from the workface and towards the surface water collection system.
 - d. Engineering calculations documenting the capability of the surface water management system to comply with the run-on and run-off requirements listed under Special Conditions I, condition E.1.
 - e. Any Storm Water Pollution Prevention Plan or Spill Prevention Control and Countermeasure Plan prepared pursuant to federal requirements under the Clean Water Act.
3. Top deck areas of the landfill shall have minimum slopes of 2% to 5% to promote drainage. Side-slope grades shall not exceed 3 horizontal to 1 vertical, as shown in Figure 4, Molokai Landfill Operations Plan Phases 1 through 4 Interim Refuse Grades, of the Molokai Integrated Solid Waste Facility Operations Plan prepared by A-Mehr, Inc., dated October 2010 and revised October 2019. Silt control fences shall be used as needed to maintain silt on-site.

Section F. Perimeter Gas Management

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1. The permittee shall implement the Landfill Gas Monitoring Plan located in Appendix F of the Operations Plan for Molokai Integrated Solid Waste Facility, dated October 2010 and revised October 2019.
2. The methane gas monitoring program shall be implemented in accordance with HAR 11-58.1-15(d). The program shall have at a minimum a quarterly monitoring frequency and monitoring results shall be submitted within 45 days of data collection. However, should explosive gas concentrations exceed the limits specified in HAR 11-58.1-15(d) for structures and property boundary, then the permittee shall immediately notify the Department and take corrective measures in accordance with HAR 11-58.1-15(d).

Section G. Groundwater and Leachate Management

1. The permittee shall implement the April 2008, Revised December 2009 Site Specific Groundwater and Leachate Monitoring Plan located in Appendix D of the Operations Plan for Molokai Integrated Solid Waste Facility, dated October 2010 and revised October 2019. The Department may periodically require revisions to the plan. The plan demonstrates compliance with HAR 11-58.1-11(f) and includes a determination that there is no evidence of existing groundwater contamination from the MSW landfill. If the permittee can no longer comply with the requirements of HAR 11-58.1-11(f), then the permittee shall immediately notify the DOH and provide a groundwater monitoring plan that complies with HAR 11-58.1-16.
2. If the groundwater monitoring plan is to include a demonstration of no potential migration, then in addition to the requirements of HAR 11-58.1-16(a)(2), the plan shall include the monitoring of the lysimeters positioned under the liner (if applicable) and under the leachate sumps. In the event any liquid is detected in a lysimeter monitoring the sump and liner system in Phase 3 and Phase 5, the following procedure shall be implemented.
 - a. The permittee shall notify the Department within 10 days after any liquid in the lysimeter is detected, and at a minimum, sample and analyze the liquid for major cations and anions (Mg, Na, Ca, K, Cl, CO₃, SO₄, HCO₃), and major leachate indicators (TDS, TOC, total alkalinity, nitrogen-ammonia, Cl, Fe) to assist in the determination on whether this liquid is leachate.
 - b. The permittee shall submit within 120 days thereafter the results of a technical study, prepared by a registered engineer or geologist, to determine the source and amount of leachate, including but not limited to:
 - i. Results of the liquid sampling;
 - ii. Evaluation of liquid levels or other data to determine the likely source of liquid/leachate (i.e. leakage from the sump or from the liner system);

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- iii. Estimates of the volume of liquid being released from the liner system or sump; and
 - iv. Recommended measures to eliminate or mitigate additional releases.
 - c. Based on its review of the technical report submitted by the permittee, the Department may direct the permittee to implement either or both of the following measures:
 - i. Manage leachate to a specified maximum hydraulic head, less than 1-inch, above the liner, with a corresponding reduction of allowable leachate depth in the sump.
 - ii. Implement a groundwater monitoring system based on detection monitoring wells, as provided in Special Conditions I, condition G.3. If required by the Department, or if the qualified ground water scientist that certified the no potential migration of hazardous constituents demonstration no longer agrees with the original determination, then the permittee shall submit a revised groundwater-monitoring plan that provides for the design of the groundwater monitoring well network and implementation of the monitoring program. The revised plan shall be submitted within 90 days of the Department's determination that the demonstration of no potential migration is no longer appropriate.
3. If the groundwater-monitoring plan is to include the establishment of a groundwater monitoring well network, or the permittee is directed to establish one pursuant to Special Conditions I, condition G.2., the groundwater monitoring plan shall be implemented within one year of the Department's approval. The groundwater plan established under this condition shall also be in accordance with the State of Hawaii Landfill Groundwater Monitoring Guidance Document Version 1.8 dated September 2002 or its latest revision.
4. The permittee shall maintain reasonable access to all groundwater monitoring components, leachate manholes and sumps, and lysimeters. In order to assure that representative samples are obtained, it shall be the responsibility of the permittee to maintain the integrity of the monitoring components and manholes and to protect them from destruction or vandalism. Should any of these components/manholes be destroyed, the permittee shall notify the Department immediately. The notification shall include pertinent information as to the cause, and what steps are being taken to replace the monitoring components/manhole and prevent the recurrence of such problems in the future. A Well Completion or System Repair Report shall be sent to the Department within sixty (60) days of any new groundwater well construction, or significant repair to the monitoring components/manhole.

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5. All groundwater and leachate analyses shall be submitted to the Department within forty-five (45) days of sampling and analysis. Sampling of groundwater wells and leachate sumps/wet wells, if triggered by Special Conditions I, condition G.2.c, shall be on a minimum semi-annual basis unless otherwise approved by the Department.
6. Leachate Management. The permittee shall implement leachate management measures as provided in the Operations Plan including the following:
 - a. Storm water that comes in contact with solid waste shall be treated as leachate. Leachate shall be managed to prevent any entry into the stormwater collection system and any contact with the public.

Absent any order to the contrary issued by the Department pursuant to Special Conditions I, condition G.2.c.i, leachate shall be removed from Phase 1 and Phase 2 of the landfill in a manner that maintains a maximum depth of 12-inches of leachate above any part of the liner in the cell.

Leachate shall be removed from Phase 3 and Phase 5 of the landfill in a manner that maintains a maximum depth of 1 inch of leachate above any part of the liner in the cell, except in the sump area where additional liner is installed, and leachate depth may be up to five feet. The Phase 3 sump compliance elevation shall be no greater than 221.5 feet above mean sea level (msl). Per Sheet 8 of the Molokai Integrated Solid Waste Facility-Phase 5 and Phase 6 Disposal Cells and Drainage Improvements, the Phase 5 sump compliance elevation shall be no greater than 201 feet above msl or as determined after final survey of the completed sump floor elevation.
 - b. Leachate shall be pumped and transported to an authorized wastewater treatment and disposal facility or may be used as dust control at the active workface. The permittee may petition the Department to use the leachate for other purposes at the facility, pending evaluation of leachate quality. The use of leachate cannot constitute bulk disposal, may only be used within the Phase 3, 4, 5, or 6 areas, and is subject to the requirements of Special Conditions I, condition G.6.a.
 - c. If necessary, leachate may be pumped to on-site storage tanks for temporary storage. Storage tanks shall be double lined or be located within a secondary containment structure with capacity to hold the contents of the largest storage tank. If on-site leachate storage tanks are provided, the permittee shall inspect the leachate storage tanks daily and record the volume of leachate in the tank. Leachate shall be pumped and removed from the tank for disposal at a sewage

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treatment plant or may be used at the active working face as provided in Special Conditions I, condition G.6.b.

- d. The permittee shall maintain records regarding the date and volume of leachate pumped from the leachate sumps, storage of leachate and final disposition of the leachate.
7. **Leachate Monitoring.** Leachate levels in the leachate measurement points in Phases 1 and 2, and the leachate sump in Phases 3 and 5, as well as the lysimeters shall be monitored at a minimum once each month and daily after storm events for at least a week. If measured leachate levels exceed the levels specified in Special Conditions I condition G.6.a, leachate level monitoring shall be performed before and after leachate pumping on a daily basis until the level has remained within the allowable limit for a period of one week.

A sample of leachate shall be collected from each wet well or sump on a minimum annual basis for constituent analysis. Leachate samples shall be analyzed for parameters listed in 40 CFR Part 258, Appendix II and major leachate indicators including cations/anions per the Hawaii Landfill Groundwater Monitoring Guidance Document.

8. An updated Site Specific Groundwater and Leachate Monitoring Plan shall be submitted at least 30 days prior to the placement of any waste within Phase 5 and at least 30 days prior to the placement of waste within Phase 6. The plan shall include, but is not limited to, the compliance elevation for the Phase 5 sump with updated leachate monitoring procedures and revised figures for newly constructed or removed cells, sumps and/or lysimeters. The DOH may impose additional conditions following the submission of the updated plans.

Section H. Closure and Post-Closure Requirements

1. The permittee shall maintain and implement the Closure and Post-Closure Plan prepared by A-Mehr, revised October 2019, approved subsequent documents, HAR 11-58.1-17, and these permit conditions. Final grades shall be as shown in Figure 5, Molokai Landfill Operations Plan Final Grades of the Molokai Integrated Solid Waste Facility Operations Plan prepared by A-Mehr, Inc., dated October 2010 and revised October 2019. Should there be any discrepancies between these documents, the HAR and these conditions take precedence.

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2. The permittee shall submit closure construction plans and specifications for DOH review at least one year prior to anticipated closure.
3. The permittee shall provide written notice of intent to close each landfill unit at least ninety (90) days prior to initiating closure activities. The notice of intent shall include a schedule and shall also be placed in the operating record.
4. The permittee shall begin closure activities of each landfill unit after receiving department approval on the closure construction plans and specifications:
 - a. Within thirty (30) days after the date on which the unit receives the known final receipt of wastes;
 - b. Within one (1) year after the most recent receipt of wastes, if remaining capacity exists and there is a reasonable likelihood of additional waste acceptance; or
 - c. Otherwise as approved by the Department.
5. Soil with contaminant concentrations above DOH Environmental Action levels for unrestricted use shall not be used in the final cover system.
6. At a minimum, the Closure and Post-Closure Plan and the Financial Assurance report shall be revised every five (5) years or earlier if facility plans are updated or changed. A notice and summary document shall be submitted for any change to the above documents. This is notwithstanding the requirement to make adjustments for inflation on an annual basis.
7. The permittee shall complete closure activities of each unit within one hundred eighty (180) days following the beginning of closure in Special Conditions I, condition H.3. The permittee shall retain a professional engineer registered in the State of Hawaii for the supervision of the closure construction quality assurance requirements, and upon the completion, the engineer shall submit a summary report to the Department as to the conformance to the plans and specifications as approved. The summary report shall be submitted within sixty (60) days after closure activities are completed. The summary report shall include a certification that the permeability of the final cover system complies with the requirements of HAR 11-58.1-17. The summary report shall also include a description of closure activities, as-built drawings, surveys of the final cover system, a documented control program of the final cover system construction, quality assurance/quality control testing procedures, laboratory analyses, and engineer's certification that the closure was completed in accordance with the closure plan.
8. Within ninety (90) days of completion of any closure construction, the permittee shall submit a copy of the notation on the deed to the landfill property in accordance with HAR

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11-58.1-17 to include an environmental covenant complying with HRS 508C; and implement post-closure care as provided in the approved post-closure plan in accordance with HAR 11-58.1-17.

9. The permittee shall inspect and maintain the final cover system, including portions of the final cover system in the case of a phased closure, and other environmental controls associated with the facility on a semi-annual basis, or more frequently if necessary or required by the department. If post closure plans are inadequate to maintain the integrity of the final cover system and associated environmental controls, additional measures may be required. The Department may periodically require revisions to the plan.
 - a. The inspections of the final cover system shall include, but are not limited to, an assessment of security control; erosion and erosion damage; cover deformation resulting from settlement, subsidence, or deformation; and run on and runoff control structures.
 - b. The inspections of other environmental controls shall include, but is not limited to, an assessment of the surface water management system, perimeter gas monitoring system, leachate collection and control system, and presence of odors, vectors, and litter.
 - c. The permittee shall document findings and implement corrective actions or other procedures, as necessary to maintain the integrity and functionality of the final cover system and environmental controls. The permittee shall submit written notification of any areas requiring attention and any associated corrective actions or procedures performed, within thirty (30) days of the inspection.
10. The permittee shall operate the surface water management system, perimeter gas management system, leachate collection and control system, and groundwater monitoring programs in accordance with this permit. The Department may periodically require revisions to the plans.
11. During closure and post-closure periods, the permittee shall continue to assess the landfill after emergency events such as earthquakes and fires, in accordance with Special Conditions I, condition B.10.
12. If portions of the landfill are closed while the remainder of the facility is still operating, the permittee shall continue operating and monitoring the closed sections in accordance with this permit.
13. If the landfill reaches full design capacity based on permitted final grades, as shown in Figure 5, Molokai Landfill Operations Plan Final Grades of the Molokai Integrated Solid Waste Facility Operations Plan prepared by A-Mehr, Inc., dated October 2010 and

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updated October 2019, the permittee shall cease acceptance of waste and begin closure of remaining active portions of the landfill.

Section I. Recordkeeping and Reporting

1. The permittee shall submit an **Annual Operating Report (AOR)**, using June 30 of each year as the year-end point, by July 31 of each year to:

Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
2827 Waimano Home Road #100
Pearl City, Hawaii 96782
Fax No. (808) 586-7509
2. The **Annual Operating Report** shall include the following information:
 - a. Types of solid waste received (MSW, greenwaste, industrial/commercial, tires, wood, metals, metal containers of 20-gallons or larger capacity, asbestos, and other special wastes).
 - b. Quantities of solid wastes received by type with totals using an appropriate unit of measure.
 - c. The average daily disposal rate on a yearly basis.
 - d. Quantities of semi-solid waste (tons) received and how it is handled or disposed.
 - e. Volume of leachate (gallons) generated and how it was handled or disposed. If requested by the Department, the permittee shall also provide water balance estimates of leachate generation by the use of the most recent EPA HELP model using climatic information collected in accordance with Special Conditions I, condition I.4. Annual rain data for the site on a daily basis shall be provided with this analysis.
 - f. Volume of airspace filled during the reporting year, airspace filled during previous years, and airspace remaining in both cubic yards and years shall be provided. The information shall be provided in both numerical and graphical presentations.
 - g. An annual topographic survey of the site as prepared by a land surveyor registered in the state of Hawaii or an approved alternate method. Any

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exceedance of permit grades shall be identified and the Department shall be notified by the use of a Non-Compliance Report. This survey shall clearly show the horizontal and vertical dimensions of the landfilled area.

- h. A Sequencing Plan, including a drawing, identifying the cell areas to be filled in the coming year including identification of the wet weather areas. The cell areas and wet weather area capacity shall be provided using an appropriate unit of measure.
 - i. Final fill areas, intermediate fill areas, and future unused fill areas shall be identified for the projected year.
 - j. A soil-balance report of the past year and coming projected year reported separately. The soil daily cover and intermediate cover, including erosion replacement soil also shall be reported separately. The source and type of soil shall be recorded separately for daily cover and intermediate cover. The soil-balance report for the past year shall be based on records of actual use in a daily, weekly and monthly basis. Any incomplete/non-application of daily cover shall be identified. Current soil use records shall be maintained at the facility for review.
 - k. After closure of any portion of the landfill, a summary of post-closure care and maintenance activities conducted at the closed landfill phases.
 - l. A copy of the detailed written estimates and documentation of financial assurance.
3. **Recordkeeping Requirements.** The permittee shall comply with the recordkeeping requirements of HAR 11-58.1-15(j).
4. **Climatic Information.** Daily rainfall shall be monitored and recorded for submission with the AOR. If directed by the Department, additional climate information shall be collected on a daily basis, including information on solar radiation, evaporation, wind speed and direction, humidity, temperature, and other applicable meteorological data, as applicable, for use in modeling evapotranspiration and leachate generation with the HELP Model at the landfill.

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SPECIAL CONDITIONS II: Greenwaste Storage and Processing

1. This facility may accept and process clean greenwaste, as defined in HAR 11-58.1-03, and pallets. In this permit, the pallets are defined as untreated and unpainted wooden pallets. Treated lumber of any type is prohibited.
2. No hazardous waste, in accordance with state hazardous waste laws and regulations, may be collected, transported, or disposed of at the facility.
3. The permittee shall implement a screening program, such that unacceptable materials are not accepted or processed at the facility. Should unacceptable material enter the facility, this material should be properly disposed of at permitted disposal facilities prior to causing or creating a nuisance condition, health, safety or environmental hazard.
4. Within ninety (90) days of the issuance date of this permit, the permittee shall submit an operations plan and updated site plan for the greenwaste operations at the facility. The operations plan and site plan shall consist of a brief description of the greenwaste operations; source of the greenwaste; screening procedures for incoming greenwaste; estimated quantity by volume and weight of greenwaste to be accepted, stored, and processed on a monthly basis; methods for identifying and controlling potential invasive species associated with incoming greenwaste; composting method and procedures, if applicable; description of equipment and equipment usages with processing rates including greenwaste grinding frequency; measures to prevent and control fire and nuisances; maximum storage capacity of the unprocessed greenwaste, chipped greenwaste, and finished products; final use of the mulch/compost; and recordkeeping measures. The approved operations plan and site plan, and any approved subsequent submissions shall be implemented and become part of this permit. A copy of the operations plan and site plan shall be maintained at or near the facility. Should there be any discrepancies between the submitted operations plan and these permit conditions, these conditions will take precedence.
5. Storage of the incoming material dropped off at the area of GW 1 is limited to 5,000 cubic yards, and piles of the unprocessed greenwaste shall not exceed 10 feet in height.
6. Storage of stockpiled mulch (processed material) shall be in windrows (a long, relatively narrow and low pile), and shall not exceed 12 feet in width at the base and 5 feet in height, except freshly chipped mulch piles may be up to 10 feet in height during processing/chipping time. If a mulch storage pile exceeds 5 feet in height, daily temperature monitoring of the mulch pile with associated record keeping shall be conducted. If temperature measurements indicate potential fire condition of the mulch pile, the pile shall be turned as necessary.

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7. Location of the processing equipment shall provide adequate separation between the processing area and drop-off/pick up areas to ensure a safety zone for the general public.
8. The facility shall be supervised, secure, and have a permanent sign identifying the facility, hours of operation, and contact in case of emergencies.
9. Scavenging at the facility by the general public is prohibited.
10. The subject site shall be provided with an all-weather working surface and suitable surface water control. Adequate drainage shall be provided to prevent standing water inside the facility. Any discharges from the site shall be in accordance with applicable federal, state, and local laws and regulations.
11. Adequate measures shall be provided to control litter, scattering of wastes, dust, insects, odors and vectors. Unprocessed greenwaste and pallets shall be processed as soon as practicable to prevent a litter, fire, vector, or nuisance situation.
12. Suitable means shall be provided to minimize fire hazards and prevent fires. Adequate spacing shall be provided between all piles to provide firebreaks and to ensure access to the piles in case of an emergency. A twenty (20) foot separation zone shall be provided between greenwaste operation boundary and the other landfill/recycling operations
13. Records of greenwaste operations shall be maintained for a minimum of five (5) years. Information shall include, but is not limited to, incoming greenwaste and pallets screening; date of greenwaste and pallets chipped; and weight or volume of mulch produced; daily temperature monitoring and pile-turning data; and date, time, and type of complaint and incidents. Weight or volume of incoming greenwaste and pallets shall be recorded as much as possible such that estimated quantity is acceptable. Copies of record shall be made available to the Department upon request.
14. An annual report shall be prepared and submitted to the Department reviewing the past year's operations and detailing the quantities by weight or volume of greenwaste received, processed, distributed, and waste recycled or disposed from the previous fiscal year (July 1 to June 30) by July 31 of each year. The report shall also include a summary of incidents outside of normal operations. Reports shall be submitted to:

Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
919 Ala Moana Blvd. Room 212
Honolulu, Hawaii 96814

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Fax No. (808) 586-7509

15. The permittee shall notify the Department, in writing, of any operational changes (e.g., use of different equipment for processing, use of different nuisance control systems, etc.). A revised operations plan, reflecting these changes shall be submitted for the department's review and approval prior to implementation. Depending on the extent of the proposed changes, a modification to this permit may be required.
16. With recent termination of the greenwaste facility operation in the proposed Phase 6 landfill location, the permittee shall perform necessary closure activities including, but not limited to, the removal of all remaining solid waste and perform appropriate site assessments and remedial activities. The permittee shall, within 90 days of the issuance of this permit provide the DOH an updated closure plan, which should accomplish the following objectives:
 - a. Provide an assessment of the site's present and future threat to public health and the environment due to contaminants possibly left on-site from the facility's operation.
 - b. Provide a plan of action to minimize or mitigate any threats to public health and the environment due to contaminants possibly left on-site by the facility's operation, including organics that may affect the landfill's foundation.
 - c. Provide a schedule to implement the plan of action.

Upon the DOH approval of the closure plan, the permittee shall implement the plan in accordance with the approved implementation schedule.