



WASTE MANAGEMENT, INC.

WMRE OF MICHIGAN, LLC PREVENATIVE MAINTENANCE PLAN FOR THE LANDFILL GAS TREATMENT SYSTEM AT REPUBLIC OAKLAND HEIGHTS DEVELOPMENT, INC. LANDFILL

Waste Management Renewable Energy of Michigan, LLC (WMRE) owns and operates a landfill gas treatment system at the Republic Waste Services, Inc./Oakland Heights Development, Inc. (Oakland Heights) landfill located at 2350 Brown Road, Auburn Hills, Michigan. The Oakland Heights landfill operates under Renewable Operating Permit (ROP) No. MI-ROP-N6008-2010. The treatment system is identified as EUTREATMENTSYS in Section 2 of the ROP. Special Condition IX.3 for EUTREATMENTSYS requires a Preventative Maintenance Plan (PMP) for the landfill gas treatment system per Michigan Rule 911. The following sections discuss WMRE's PMP in accordance with the provisions of Rule 911.

Section 1 - R 336.1911(2)(a)

WMRE identifies the following Supervisory personnel for the responsibility of overseeing the inspection, maintenance, and repair of EUTREATMENTSYS.

David Croft
WMRE Plant Manager
248-285-8908

The attached PMP (Table 1) identifies the equipment covered by this PMP, along with the inspection/service frequency and replacement parts maintained in inventory. Inspection records are maintained electronically and saved to a WMRE network drive. In addition, hardcopy records are maintained in a log book stored on-site.

Section 2 - R 336.1911(2)(b)

The attached PMP (Table 2) identifies operating variables monitored to detect equipment malfunction along with the normal operating range of these operating variables and the method of inspection.

Section 3 - R 336.1911(2)(c)

The enclosed flares onsite (identified as EUPERENNIALFLARE and EULFG&EFLARE) serve as back-up control devices should a malfunction occur in EUTREATMENTSYS. The flare capacities are currently sufficient to extract landfill gas and maintain compliance.

WMRE of Michigan, LLC
Landfill Gas Treatment System
Preventative Maintenance Plan

TREATMENT SYSTEM PREVENTATIVE MAINTENANCE PLAN - OPERATING PARAMETERS

Table 2. Treatment System Operating Parameters

Equipment	Operating Parameter	Range
Cooler	Post-compression gas temperature	< 20 F above ambient (79 - 120 F)
Cooler	Lubricate Cooler Motor	per manufacturer's recommendation
Cooler	Inspect cooler tubes for leakage	leakage
Cooler	Inspect fan blades	structurally sound, no deflection
Cooler	Clean Cooler Tubes, Fins, and Fan Blades	visually free of dirt/debris
Filter Vessel	Inspect Air Line to Filter Vessel Drain Valve	Maintain air pressure to valve
Filter Vessel	Inspect Heat Trace Lines	Observe power indicator light on heat trace line
Filter Vessel	Inspect Filter Vessel Liquid Level	Liquid level should be between high and low level float (clean floats/ siteglass/ drain line if not draining properly)
Filter Vessel	Differential Pressure across mesh pad	< 3.5 psi

SPARE PARTS MAINTAINED IN INVENTORY

10 micron mesh pad, motor grease, filter vessel float

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TREATMENT SYSTEM PREVENTATIVE MAINTENANCE PLAN - EQUIPMENT INSPECTED

Table 1. Equipment Inspected

Inspection/Service	Equipment	Frequency of Inspection					
		Weekly	Monthly	Every 3 Months	Every 4 Months	Every 6 Months	Annually
Check Post-compression Gas Temperature	Cooler		X				
Visually Check Cooling Fins	Cooler		X				
Lubricate Cooler Motor	Cooler					X	
Inspect Fan Blades	Cooler					X	
Clean Cooler Fins and Fan Blades	Cooler						X
Inspect Air Line to Filter Vessel Drain Valve	Filter Vessels		X				
Inspect Heat Trace Lines	Filter Vessels		X				
Inspect Filter Vessel Liquid Level	Filter Vessels		X				
Inspect Mesh Pad	Filter Vessels		X				